MARMARA UNIVERSITY
INSTITUTE FOR GRADUATE STUDIES
IN PURE AND APPLIED SCIENCES

THE GENERATION OF TYPICAL METEOROLOGICAL YEAR AND CLIMATIC DATABASE OF TURKEY FOR THE ENERGY ANALYSIS OF BUILDINGS

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Ph.D. THESIS

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ÖZET

BİNALARIN ENERJİ ANALİZİ AMACIYLA TÜRKİYE İÇİN TİPİK İKLİM YILI VE İKLİM VERİ KÜTÜĞÜ OLUŞTURMA

Küresel ısınma, hava kirliliği, yenilenemeyen enerji kaynaklarının sürekli tüketimi enerji kaynaklarının bugünkü kullanım metodlarına atfedilmektedir. Ticari, konut ve endüstriyel inşaat sektörü, toplam enerji tüketiminin % 30 – 50'den sorumludur. Sürdürülebilir gelişim için enerji talebinin azalması çok önemlidir. Bu, enerjiyi etkin şekilde kullanmak ve enerji yönetimini ve verimliliğini artırmakla sağlanabilir. Isıtma ve soğutma cihazlarının etkin ve verimli tasarımı o bölgenin hava şartları ile yakından ilgilidir.

Bu çalışmada tipik iklim yılı tasarımı ve iklim veri kütüğü oluşturmak için sql programlama dili kullanılmıştır. Literatür taraması sonrası, tipik iklim yılı oluşturmak için kullanılan en yaygın yöntemin Filkenstein -Schafer (FS) istatistiksel method olduğuna karar verilmiş ve 1989-2012 yılları arası 23 yıllık meteorolojik veriler Türkiye'nin 65 ili için kullanılmıştır. FS method için seçim kriteri 13 meteorolojik veriden oluşmaktadır. Bu veriler : max-min-ort günlük kuru termometre sıcaklıkları, günlük max-min-ort yaş termometre sıcaklıkları,günlük max-ort rüzgar hızları, ort yatay global güneş radyasyon değerleridir. Bütün meteorolojik verilerin ve oluşturulan TMY yardımıyla, etkili enerji tahmin yöntemlerinden olan, ısıtma/soğutma derece saat, derece gün, bin data ve Ashrae meteorolojik tasarım kriterlerin yer aldığı datalar Türkiye'nin 65 ili için hesaplanmıştır.

Yine Ashrae tasarım kriterleri esas alınarak Türkiye 8 iklim zonuna bölünmüş ve grafiksel gösterimi verilmiştir.

Bu tablolar literatürde tekdir ve HVAC uygulamalarında her tasarımcı için eşsiz bir başvuru kaynağı olacaktır.

ABSTRACT

THE GENERATION OF TYPICAL METEOROLOGICAL YEAR AND CLIMATIC DATABASE OF TURKEY FOR THE ENERGY ANALYSIS OF BUILDINGS

Global warming, air pollution and the continuous depletion of nonrenewable energy resources are attributed to the present energy use patterns. The building sector (commercial, residential, and industrial) consumes 30–50% of the total energy requirements of a society. For sustainable development, a reduction in energy demand is essential. This could be achieved through improving energy efficiency, effective energy conservation and management. The weather conditions of a given region are the most important considerations for the proper design of space AC systems.

In this study, The typical meteorological year and climatic database of Turkey for the energy analysis of buildings were generated by SQL database programmimg language. The literature review conducted in this work shows that one of the most common methodologies for generating a TMY is the proposal by Hall using Filkenstein -Schafer (FS) statistical method. This method is an emprical approach that selects individual months from different recorded years . In this study, for the generation of the typical meteorological year, the measured weather data of a 23-year period (1989–2012) for 61 cities in Turkey . The selection criteria were based on 13 meteorological parameters. These parameters are the daily mean, maximum and minimum values and ranges of temperature, dew-point and wind velocity and the daily values of global solar radiation.

All the information and data presented in this paper is unique in Turkey and and aimed to provide a sustainable information needed by building designers for energy calculations.

CLAIM FOR ORIGINALITY

THE GENERATION OF TYPICAL METEOROLOGICAL YEAR AND CLIMATIC DATABASE OF TURKEY FOR THE ENERGY ANALYSIS OF BUILDINGS.

The overall goal of this work is to develop a climatic database of Turkey which is unique in Turkey and very useful in energy estimation applications. The performance of environmentally driven systems, such as HVAC systems, solar thermal systems, solar power systems, greenhouses, and wind generators, is dependent on weather variables such as solar radiation, dry-bulb temperature, wet-bulb temperature, wind speed, etc. However, these variables are neither completely random nor deterministic. In order to simulate the energy performance of an existing system or predict the energy performance of a new system during the design stage, suitable representative weather data are required. Here is where the concept of a typical meteorological year for a given location is a data set of actual hourly meteorological parameters for one year constructed from measured data of several past years. The TMY is commonly used in building energy systems simulations and in assessments of wind and solar energy systems performance including PV systems.

Vast amount of studies have been conducted on residential energy consumption ranging from that of main appliances and lighting to building topologies and environmental impacts. New policies and concepts have been suggested from Europe to China Energy performances and classification were examined and numerous studies have been conducted from the simplified degree-time method to rather comprehensive thermal simulations to determine and also to reduce the heating as well as cooling energy demands of dwellings. Building thermal simulation programs are generally used in the design of energy efficient buildings and in the determination of effective ways of saving energy in conventional buildings. The accuracy of a numerical work is as accurate as the theory behind it and also the input data available. Accurate determination of the vast amount of parameters for comprehensive thermal simulations is crucial since the incorrect data will lead to erroneous results. Estimation of seasonal heating energy requirement is important in energy utilization planning and as a part of economic analyses for buildings,

All the information and data presented in this paper is unique in Turkey and aimed to provide a sustainable information needed by building designers for energy calculations.

SYMBOLS AND ABBREVIATIONS

CZ	Climate zone
DB	Dry bulb temperature, °C
CDD	Cooling degree day
CDH	Cooling degree hour
d_v	Absolute humidity, the ratio of the mass of water vapor to the total volume of the sample:
$FS_{Xi}(y,m)$	Finkelstien–Schafer statistics of the parameter X_i for year y and month m, CDF cumulative distribution function
h	The specific enthalpy of moist air in kJ/kg
H	Montly average daily global radiation on horizontal surface, MJ/m2 day
HDD	Heating degree day
HDH	Heating degree hour
Ho	Montly average daily beam radiation on horizontal surface MJ/m2 day
h_{as}	Difference between specific enthalpy of moist air at saturation and that of dry air itself, kJ/kg (dry air), at same pressure and temperature.
h_{da}	*S*pecific enthalpy of dry air, kJ/kg (dry air).
h_g	The specific enthalpy for saturated water vapor in kJ/kg (water)
hs*	Entalpy of mixture corresponding to saturation at temperature t*
h_w	Specific enthalpy of condensed water, kJ/kg
hw*	The specific entalpy in kJ/kg of the water added at te tempearture t*
Ktot	Total heat loss coefficient of the building, W/°C

SYMBOLS AND ABBREVIATIONS

L	Latitude of location (rad)
L_{tot}	Total heat loss coefficient of the building, W/K
ln	Natural logarithm
n	Number of day starting from the first of the january
Nbin	Number of hours (h)
n_{da}	Number of moles of dry air
n_w	Number of moles of water vapor
x_{ws}	Mole fraction of water vapor in moist air saturated with water at temperature t and pressure p
Qbin	Energy consumption (Wh)
p_{da}	Partial pressure of dry air, kPa
p_s	Vapor pressure of water in saturated moist air, kPa
p_w	Partial pressure of water vapor,kPa
R	Universal gas constant, 8314.41 J/(kg mol·K)
R_{da}	$Gas\ \ constant\ \ for\ dry\ air$, J/($kg_{da}$·K)
R_w	$Gas\ \ constant\ \ for\ water\ vapor$, J/$kg_w$·K
RH max	Maximum relative humidity, %
RH mean	Mean relative humidity ,%
RH min	Minimum relative humidity,%
p	Total barometric pressure of moist air,Pa
P	Aannual precipitation in inches (mm) ,

SYMBOLS AND ABBREVIATIONS

p_{ws}	Saturation pressure, Pa
V	Total mixture volume, m^3
v	Specific volume, m^3/ kg (dry air)
S	Monthly average daily bright sunshine duration, h
S_o	Monthly average maximum possible sunshine duration, h
t	Dry bulb temperature , °C.
T	Absolute temperature, K
t_d	Dew point temperature , °C.
Tdmax	Maximum dew point temperature,°C
Tdmean	Mean dew point temperature, °C
Tdmin	Minimum dew point temperature, °C
Tm	Annual mean temperature in °F (°C).
TMM	Typical meteorological month
TMY	Typical meteoorological year
Tn	n Year return period value of extreme dry-bulb temperature to be estimated
t*	Thermodynamic wet bulb temperature , °C.
U-factor	Heat loss coefficient (W/m^2K)
V	Total mixture volume, m^3
v	The moist air specific volume, m^3/kg (dry air).
V_{da}	Specific volume of dry air, m^3/kg (dry air).

SYMBOLS AND ABBREVIATIONS

V_{as}	Difference between specific volume of moist air at saturation and that of dry air itself, m^3/kg (dry air) at same pressure and temperature.
V_s	$Specific\ volume\ of\ moist\ air\ at\ saturation, m^3/kg\ (dry\ air)$
W	Humidity ratio , kg water/kg dry air
WB	Wet bulb temperature, °C
WS	Wind speed
WYEC	Weather year for energy calculations
Ws	Humidity ratio at saturation
Ws*	Humidity ratio at saturation at thermodynamic wet bulb temperature
w_S	Sunset hour angle (°)
Z	Altitude of sight, km
σ	Standard deviation
η	The efficiency of the HVAC System
δ	The solar declination, (°)
φ	Latitude of location (°)
ρ	The density of a moist air mixture, kg/m^3
γ	Specific humidity , the ratio of the mass of water vapor to the total mass of the moist air sample
μ	Degree of saturation, W/Ws
ϕ	Relative humidity , dimensionless

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CHAPTER I.

INTRODUCTION AND OBJECTIVES

I.1 INTRODUCTION

The design of energy requirements and thermal comfort of buildings requires an updated and very accurate climatological and solar database. A climatological and solar database database is very important for calculation of energy efficiency. The hourly amounts of about 10–13 meteorological parameters such as solar radiation, dry bulb temperature, relative humidity, wind speed, atmospheric pressure and etc. are usually needed for energy simulation. A representative database for a year duration is known as a typical meteorological year (TMY), a term mainly used in the USA, or a test reference year (TRY) or a design reference year (DRY), terms mainly used in Europe. TMY, TRY or DRY consists of individual months of meteorological data sets selected from different years over the available data period, which is called a long term measured data

The primary objective of these methods is to select single years or single months from a multi-year database, preserving a statistical correspondence. This means that the occurrence and the persistence of the weather should be as similar as possible in the TMY to all available years. These different TMY methodologies have been developed with selection criteria based on solar radiation or on solar radiation together with other meteorological variables.

The literature review conducted in this work shows that one of the most common methodologies for generating a TMY is the one proposed by Hall et al. using the Filkenstein–Schafer (FS) statistical method . The other methodologies cited above for generating TMY use a modified version of it. This method is an empirical approach that selects individual months from different recorded years from. The selection criteria was based on 13 meteorological parameters. These parameters were the daily mean, maximum and minimum values and ranges of temperature, dew-point and wind velocity and the daily values of global solar radiation. However, four of 13 parameters were considered to be less effective, and therefore, are given zero weight. These variables are the ranges of daily dry-bulb temperature, 34wet-bulb temperature and wind speed, and daily minimum wind speed. Except for a few changes to the weighting criteria, which account for the relative importance of the solar radiation and meteorological elements, there has been no change in the original methodology which has been adopted by different countries.

I.2 OBJECTIVE OF THE THESSIS

The main objective of this study is to generate climate database. This climatic design information is commonly used for design, sizing, distribution, installation , and marketing of heating, ventilating, air-conditioning, and dehumidification equipment, as well as for other energy-related processes in residential, agricultural, commercial, and industrial applications. These data also allow the designer to consider various operational peak conditions.

Energy consumption in the residential sector is one of the main constituents of the total energy consumption in most countries with a percentage of about 25–30%.After the 1970 energy crisis, energy has become the most important issue for countries which meet great part of their energy needs through importation. Considering the technological improvements, it is evident that energy will be of primary importance in these countries .

Located at the junction point of Asia, Europe, and Africa continents, Turkey is a bridge between Asia and Europe continents. Its area is 779,452 km^2, population is 704,87,917, gross national income per capita is 9233 USD, and economical growth in the last 5 years is approximately 7%. Seventy percent of the population lives in cities, because of economical and social progress the need for energy is rapidly increasing.

Turkey is a country of energy markets which grow rapidly. Annual energy need had increased 6.6% between years 1995 and 2004 and it is estimated to increase by 8.5% between 2005 and 2015. While electricity consumption was 150 billion kW h in 2004, it is estimated that increasing by a factor of 4; this consumption will reach 499 billion kW h by 2020. In that case, it will be necessary to increase the established capacity, which is 38,500 MW as of 2005, to 96,000 MW until 2020. Since Turkey has a dynamic economical growth and rapid increase of population, the need for energy is increasing each year. However, serious economical crises occurring in certain periods since 1994 have prevented the investments that could meet the growing energy need

In Turkey, 80% of the energy consumed in households is utilized for heating purposes. This amount is luxury for a country like Turkey which imports almost all of the energy it is consuming. Together with the increase of environmental problems and decrease of fossil resources, studies focusing on energy reduction as well as usage of renewable energy resources have accelerated. the most reasonable solution is energy saving in energy-efficient households.

Exact information on hourly outside temperature is critical for environmental, agricultural, and industrial applications information on change of outside temperature is very useful in estimating solar radiation and forecasting hourly energy consumption and cooling loads of households and and predicting room temperature . Analyses of annual energy consumption and cost have an important role in heating load calculation of design and heating–cooling system selection . because of the fact that air-conditioning and refrigeration engineers need system design data.

This study aims to be very useful source for design engineers.

I.3. THE SCOPE OF THE THESSIS

The design of energy requirements and thermal comfort of buildings requires an updated and very accurate climatological and solar database. A climatological and solar database database is very important for calculation of energy efficiency.

The database created in this study is unique in Turkey. It will be vey useful source for designers in energy calculations.

I.4. METHODOLOGY

The methodology employed in this study ject was designed to accomplish the objectives described in section 1.2.

Literature review carried out in Chapter II was to carry out a comprehensive and critical survey of available literature in the area under study. This review was done to fully understand the progress made so far made in this particular field of research; this aided with the identification of issues/areas of further research.

The survey took into account published books, journals, papers. It was broadened to take into account information published on the Marmara University intranet sites and on the World Wide Web.

CHAPTER II REVIEW OF THE PREVIOUS RESEARCH

GENERAL BACKGROUND

II.1 TYPICAL METEOROLOGICAL YEAR

The literature review conducted within the framework of this work shows that one of the most common methodologies for generating a TMY is the one using the Filkenstein–Schafer (FS) statistical method [15]. The other methodologies cited above for generating a TMY use a modified version of it. This method is an empirical approach that selects individual months from different years from the period of record. The selection criteria were based on 13 meteorological parameters. These parameters are the daily mean, maximum and minimum values and ranges of temperature, dew point and wind velocity and the daily values of global solar radiation. However, 4 of the 13 parameters are considered to be less effective and, therefore, are given zero weight. These variables are the ranges of daily dry bulb temperature, wet bulb temperature and wind speed, and daily minimum wind speed. Moreover, it finds the typical meteorological month (TMM), which would seem to include the following sensible properties:

- The meteorological measures of the TMM, i.e. temperature, relative humidity, wind and solar radiation should have frequency distributions, which are ‘‘close’’ to the long term distributions

- The sequences of the daily measures of the TMM should in some sense be ‘‘like’’ the sequences often registered at a given location. The relationships among the different measures of the TMM should be ‘‘like’’ the relationships observed in nature.

A TMY consists of the months selected from the individual years and sorted to form a complete year. In the literature, there are many attempts to produce weather databases for different locations . The main objective of these methods is to select representative months from the multi-year database.

Except for a few changes to the weighting criteria, which account for the relative importance of the solar radiation and meteorological elements, there has been no change in the original methodology and it has been adopted by different countries: for example, by date of publication, for Canadian Cities [23], Athens [17], Egypt [55] Ibadan, Nigeria [25], Hong Kong [26], Nicosia,Cyprus [12], Bangkok [28], main Chinese cities [70], Nicosia, Cyprous [40], Damascus, Syria [51], Taiwan [35], Oman [38] and Hong Kong [58].

Recently, ASHRAE has started an international Project to develop TMY data throughout the world, the international weather year for energy calculations (IWEC) [5]. Most recently, using the FS method, Kalogirou developed TMYs for the city of Nicosia, Cyprus. The study of Kalogirou included additional variables such as illuminance, visibility, precipitation and snow fall data [40]. The objective of the present work is to select and implement TMY generating methodologies using long term hourly measured meteorological and global solar radiation data.

Skeiker performed six methods to generate TMY dataset for Damascus, Syria [15]. Then, he used the generated TMYs in evaluation of the typical building' thermal systems. The results showed that the performance calculated by using TMY generated by modified Sandia method is the closest one. Skeiker and Ghani developed a new modern software tool using Delphi 6.0 utilizing the FinkensteineSchafer statistical method for the creation of a typical meteorological year for any site of concern [25]. Kalogirou generated a type 2 TMY dataset for Nicosia, Cyprus [40]. Jin et al. generated typical solar radiation year datasets for 30 meteorological stations of China [70].

For Turkey, only three attempts have been found in the literature for the generation of TMY datasets [6,7,9]. Pusat S, Ekmekçi I, Akkoyunlu T generated TMY for 8 cities. Ecevit et al. generated the TMY for Ankara [6]. They stated that solar radiation data was unreliable in Turkey. Therefore, they evaluated the possibility of using the daily sunshine duration or the ratio of the daily sunshine duration to the day-length instead of daily global solar radiation, as the ninth parameter, in obtaining TMY. They used the data of Ankara covering the period 1979-1999. On the other hand, there is no any other attempt to validate the results of their study. In the paper of Üner and İleri, TMYs for 23 cities representing demographic and climatic conditions of Turkey were investigated by using actual recordings (1990-1996) [9]. They generated the typical meteorological database of 23 locations for building simulations and air-conditioning design. The only deficiency in this study is the number of years used in the generation of TMY. There isn't enough study to generate TMY datasets for Turkish locations in the literature. In Ref. [6], TMY datasets was generated just for Ankara, and number of years used is not enough for TMY generation.

II.1.1 FILKENSTEIN SCHAFER METHOD

It is an empirical methodology for selecting individual months from different years over the available period [15]. For example, in the case that contains 30 years of data, all 30 Januarys are examined and the one judged most typical is selected to be included in the TMY. The other months of the year are treated in a similar manner, and then the 12 selected typical months are con-catenated to form a complete year.. For each station, nine daily meteorological parameters: maximum air temperature (Tmax), minimum air temperature (Tmin), mean air temperature (Tmean), maximum air relative humidity (RHmax), minimum air relative humidity (RHmin), mean air relative humidity (RHmean), maximum wind speed (Wmax), mean wind speed (Wmean) and global solar radiation (G) were employed to create an indicator for selecting typical months (TMM). The weighting factors used are selected according to existing experience on the influence of the meteorological parameters used on the simulated application. Three sets of weighting factors, all oriented towards energy simulation applications were used, as shown in Table 1. These weighting factors express the importance of the impact of the particular meteorological parameter, to which each one of them is assigned, on the behavior of a solar energy conversion system or building. Furthermore, a variation of the original method was introduced, in order to take into account all the meteorological parameters involved.

Table II.1 Weighting Factors for TMY type

PRESENT (FS)				Weather İndex
[15]	[33]	[70]	[34,36]	
1/24	5/100	5/100	1/20	Maximum dry bulb temperature
1/24	5/100	5/100	1/20	Minimum dry bulb temperature
2/24	30/100	30/100	2/20	Mean dry bulb temperature
1/24		2.5/100	1/20	Maximum dew point temperature
1/24		2.5/100	1/20	Minimum dew point temperature
2/24		5/100	1/20	Mean dew point temperature
2/24	5/100	5/100	1/20	Maximum wind speed
2/24	5/100	5/100	1/20	Mean wind speed
12/24	40/100	40/100	5/20	Total horizontal solar radiation
			5/20	Direct Solar Radiation
	10/100			Relative Humidity

Later on, these typical meteorological months were used to form a typical meteorological year (TMY). These nine parameters are denoted in a general form as xi (i =1,2,.,9).

In the first step , for a given parameter xi, a long-term cumulative distribution function (CDFm) of xi for each month covering the period of 23-year (1989–2012) was created.

A short-term cumulative distribution function (CDFy,m) of xi for year y and month m was also generated.. Finkelstein-Schafer (FS) statistics are the most common methodology for creating CDF functions while generating typical weather data. This method is an empirical methodology for selecting individual months from different years over the available period.According to FS statistics (Filkenstein and Schafer, 1971), if a number, n, of observations of a variable X are available and have been sorted into an increasing order X1 , X2,…,Xn, the cumulative frequency distribution Function (CDF) of this variable is given by a function Sn(X) which is defined as follows:

$$S_n(X) = \begin{cases} 0 & \text{for } X < X_1 \\ (k-0.5)/n & \text{for } X_k < X < X_{k+1} \\ 1 & \text{for } X > X_n \end{cases} \qquad (II.1)$$

The FS by which comparison between the long-term CDF of each month and the CDF for each individual year of the month was done is given by the following equation:

$$FS_{Xi}(y,m) = \frac{1}{N_d}\sum_{j=1}^{N_d} \left| CDF_m(X_{ij}) - CDF_{y,m}(X_{i,j}) \right| \quad \text{(II.2)}$$

where $FS_{Xi}(y,m)$ is the Finkelstien–Schafer statistics of the parameter X_i for year y and month m, j is interval number of data and N_d is the total number of data intervals.

In the second step, the weighted sums of FS_{XI} were computed by

$$WS(y,m) = \frac{1}{N_P}\sum_{i=1}^{N_p} WF_{X_i} . FS_{x_i}(y,m) \quad \text{(II.3)}$$

with the condition :

$$\sum_{i=1}^{N_p} WF_{x_i} = 1 \quad \text{(II.4)}$$

where $WF_{x_i}$is the weighting factors for the FS of the variable X_i and Np is the total number of the parameters. In this case, the weighting factor for Tmax, Tmin, RHmax, RHmin is 0.04, for Tmean, RHmean, Wmax,Wmean is 0.08 and for global radiation is 0.5 [20]. All individual months are ranked in ascending order of WS values.

In Table II.2 The Typical Meteorological Years for Turkey were shown.

Table II.2 Typical Meteorological Years For Turkey

CITY CODE	CITY NAME	TYPİCAL METEOROLOGICAL YEARS											
		MONTHS (1- 12)											
		1	2	3	4	5	6	7	8	9	10	11	12
17020	BARTIN	2004	2005	2004	2005	2004	2008	2003	1989	2003	2005	2004	2005
17022	ZONGULDAK	2004	2008	2012	1990	1997	2004	2005	1989	2012	1989	2012	1994
17026	SİNOP	2004	1990	2011	1990	2005	2002	1990	1990	2008	1989	2007	1989
17030	SAMSUN	1995	1998	1994	2001	1995	1998	1995	1999	1989	1997	1995	1997
17033	ORDU	2012	1990	2004	1995	2009	1992	2009	1991	2007	1997	2006	1993
17034	GİRESUN	2009	1989	2009	1990	2012	1990	2012	1989	2009	1990	2009	1990
17037	TRABZON	2004	1989	2004	1990	2004	1989	2003	1993	2004	1989	2004	1989
17040	RİZE	2009	1990	2010	1990	2010	1991	2009	1995	2009	1990	2009	1990
17045	ARTVİN	2011	1990	2007	1990	2010	1991	2008	1995	1995	1989	2012	1991
17046	ARDAHAN	1998	2002	1994	1990	2011	2009	2011	1992	2009	1989	2009	2003
17050	EDİRNE	2011	1994	2011	1992	2011	2002	2010	2010	2010	1994	2009	1993
17052	KIRKLARELİ	2008	1989	2011	1990	2011	1990	2011	1989	2011	1989	2011	1989
17056	TEKİRDAĞ	2011	1990	2011	1990	2011	1993	2010	1998	2009	1989	2008	1989
17062	İSTANBUL	2006	1990	2006	1990	2005	1990	1991	1994	2007	1991	2001	1990
17066	KOCAELİ	2009	1990	2011	1990	2009	1990	2010	2007	2007	1990	2012	1990
17069	SAKARYA	2011	1990	2012	1990	2008	1992	1998	2012	2006	1990	2012	1990
17070	BOLU	2009	1990	2009	1992	2011	1993	2000	1994	1998	1990	2012	1990
17072	DÜZCE	2009	1989	2011	1990	2008	1993	2009	1993	2006	1990	2009	1990
17074	KASTAMONU	2012	1990	2011	1992	2012	2000	2003	2003	2010	1990	2009	1989
17078	KARABÜK	2010	2008	2011	2000	2011	2009	2010	2010	2000	2000	2008	2007
17080	ÇANKIRI	2009	1990	2005	1990	1990	1990	2002	1991	1991	1990	2009	1990
17084	ÇORUM	2009	1990	2006	1990	2010	1990	1999	1989	2003	1989	2008	1989
17085	AMASYA	2004	1994	2010	1990	2005	1990	2008	1994	2010	1989	2008	1989
17086	TOKAT	2011	1989	2011	2006	2009	1989	2010	1989	2009	1990	2009	1990
17088	GÜMÜŞHANE	2007	2004	1991	1990	2010	1990	2001	1989	2008	1989	2009	1990
17089	BAYBURT	2012	1990	2011	1990	2011	1990	2011	1991	2006	1990	2008	1990
17090	SİVAS	2011	1989	2007	1992	2010	1993	2008	2008	2006	1990	2011	1995
17094	ERZİNCAN	2011	2003	2010	1995	2010	1989	1998	1989	2009	1992	2009	1997
17096	ERZURUM	2006	1995	2007	1990	2005	1990	2006	2005	2006	1990	2007	1997
17097	KARS	2000	1992	2007	1993	2009	1994	2008	1991	2000	1992	2003	1991
17099	AĞRI	2009	1989	2009	2000	2010	2009	1996	1994	2009	1990	2009	2003
17100	IĞDIR	2009	1990	2009	1990	2009	1990	2009	2003	2005	1989	2009	1990
17112	ÇANAKKALE	2011	1991	2011	1992	2011	2010	1994	2008	2010	1990	2012	1989
17116	BURSA	2011	1991	2011	1990	2005	1990	1999	1989	2009	1990	2009	1990
17119	YALOVA	2011	1990	2011	1990	2011	1990	2011	1994	2011	1990	2009	1994
17120	BİLECİK	2011	1990	2011	1990	2011	1990	2011	1994	2011	1990	2009	1994
17126	ESKİŞEHİR	2012	2012	2011	2010	2009	2007	2011	2007	2011	2007	2008	2012
17130	ANKARA	2007	1990	2007	1992	2006	2011	2004	2000	2004	1990	2008	1990
17135	KIRIKKALE	2009	1989	2007	1990	2010	1989	2008	1989	2006	1990	2012	1990
17140	YOZGAT	2012	1990	2010	1991	2009	1990	2011	1989	2008	1990	2012	1989
17152	BALIKESİR	1993	1990	1995	1990	1990	1991	1994	1996	1995	1990	1995	1989
17155	KÜTAHYA	2008	1990	2007	1998	2009	1995	1999	1995	2006	1989	2012	1990
17160	KIRŞEHİR	2009	1990	1991	1990	2005	1989	1999	1992	1998	1990	2009	1989
17165	TUNCELİ	2009	1991	2009	1991	2007	1990	2001	1998	2008	2007	2009	1991
17172	VAN	2006	1991	2007	1993	2007	1994	1996	1999	2006	1990	2008	1990
17186	MANİSA	2011	1991	2012	1990	2006	1991	2005	1993	1995	1991	2005	1989
17188	UŞAK	2011	2006	1999	2004	2012	1996	2006	1999	2011	1990	2012	1989
17190	AFYONKARAHISAR	2004	1990	2011	2005	2009	1993	2010	1989	2000	1990	2011	1989
17192	AKSARAY	2011	1993	2008	1990	2010	2007	2007	2007	2009	1990	2009	1989
17193	NEVŞEHİR	1996	1989	2011	1990	2011	1989	2011	1989	1998	1989	2009	1989
17196	KAYSERİ	2009	1989	2009	1992	2009	1989	2006	1996	2009	1990	2009	1990
17199	MALATYA	2012	1994	2011	1993	2012	1995	2006	1995	2009	1992	2008	1993
17201	ELAZIĞ	2009	1991	2011	1990	2009	1991	2004	1998	1994	1990	2009	1993
17203	BİNGÖL	2011	1991	2009	1990	2010	1995	2004	2002	2008	1990	2009	1991
17204	MUŞ	2006	1993	2009	1990	2010	1991	2006	2004	2008	1991	2008	1991
17207	BİTLİS	2009	1993	2009	2004	2008	1997	2006	2000	2008	1991	2009	1997
17210	SİİRT	2009	1991	2011	1996	2010	1995	2009	2005	2005	1990	2007	2000
17220	İZMİR	2011	1990	2012	1990	2009	2012	1996	2011	1990	1990	2010	1989
17234	AYDIN	2007	1991	2011	1990	2009	2009	2000	1992	2011	1991	2012	1997
17237	DENİZLİ	2011	1990	2011	1990	2010	1997	1998	1994	2011	1998	2007	1995
17238	BURDUR	2011	1990	2011	1990	2009	1993	2006	2006	2006	1990	2012	1990
17240	ISPARTA	2006	1990	2005	1999	2012	2010	2002	2007	1993	2007	2012	1990
17244	KONYA	2004	1990	1994	1991	1991	1995	1991	2002	2002	1997	2001	1997
17246	KARAMAN	2009	1990	2011	1990	2009	1991	2007	1996	2006	1990	2009	2003
17250	NİĞDE	1996	1989	2005	1990	2010	1991	1999	1996	2009	1989	2009	1997
17255	KAHRAMANMARAŞ	2011	1991	2007	1991	2008	2007	1998	2008	2006	1991	2012	1997
17261	GAZİANTEP	2006	1991	2011	1991	2009	1995	2004	1999	2006	1994	2008	1993
17262	KİLİS	2006	1990	1991	1991	2005	2005	1998	1992	2006	1991	2012	1993
17265	ADIYAMAN	2009	1990	2011	1991	2004	2002	1990	1990	2001	1998	2009	1998
17270	ŞANLIURFA	2005	1990	2010	1991	2010	1995	2009	1991	2007	1990	2005	2005
17275	MARDİN	2006	1990	2011	1991	2011	1994	2011	1989	2011	1990	2009	1989
17280	DİYARBAKIR	2009	1990	2011	1991	2010	2001	2006	2001	2008	1990	2009	1999
17282	BATMAN	2009	1990	2011	1990	2011	2010	2007	2007	2011	1990	2009	1990
17285	HAKKARİ	2011	1990	2012	1993	2010	1989	2011	1989	2010	1989	2009	1990
17287	ŞIRNAK	2011	2000	2011	2003	2011	2002	2007	2001	2011	1991	2009	1999
17292	MUĞLA	2011	1990	2011	2001	2012	2002	1996	2000	2010	1991	2009	1989
17300	ANTALYA	1995	2006	1998	2005	1998	2006	1999	2002	1998	2006	1997	2004
17340	MERSİN	2009	2004	2009	1991	2009	1993	2007	1999	2009	1990	2009	1990
17351	ADANA	2006	1990	2011	1990	2010	1993	2010	1996	2009	1989	2007	1989
17355	OSMANİYE	2012	1990	2012	1990	2012	1989	2012	1992	1997	1990	1997	1990
17372	HATAY	2006	1991	2007	2005	2009	2003	2007	2007	2007	1991	2007	1989

II.2 . STEADY STATE ENERGY ESTIMATION METHODS

II.2.1 DEGREE HOURS METHOD

Total yearly energy consumption is needed to evaluate the operating cost, which is an Essential step if one wants to come close to an optimal design, in the sense of minimizing the life cycle cost of a building [26,28]. There exist a large number of methods for evaluation of heating and cooling energy consumption of buildings. They range from simple steady-state models to comprehensive dynamic simulation procedures. Today, there is a variety of dynamic simulation programs available (such as DOE-2, BLAST and TRNSYS) in which the influence of many parameters that are mainly function of time are taken into consideration. Although these models have gained widespread acceptance as reliable estimative tools, they have also become very complex and tedious to use [2].

The steady-state models, which are also called single-measure methods, are simple procedures developed for estimation of energy consumption in buildings. Often, the seasonal energy requirements and fuel consumption of heating and air conditioning systems must be estimated in order either to come close to an optimal design, in the sense of minimizing the life cycle cost of a building, or to assure compliance with codes or standards. The energy consumption for heating or cooling purposes is the time integral of instantaneous consumption over the heating or cooling season, respectively, i.e. the instantaneous load divided by the efficiency of the heating or cooling equipment Simpler methods use steady-state models, require less data and provide adequate results for simple systems and applications. They are defined as steady-state methods. The most widely known among them are the degree-day or degree-hour and the variable base degree-day or degree-hour approaches. They are appropriate for a quick estimation of the heating or cooling energy consumption of a building, especially in the case the utilization of the building and the efficiency of the heating equipment can be assumed constant.

In constituting thermal accommodation quality of households, it is necessary to appropriately analyze heating and cooling conditions together with meteorological parameters. Heating degree-hour (HDH) and cooling degree-hour (CDH) values are very frequently used in energy planning and heating–cooling loads calculations. Although there are various methods for calculating yearly, monthly, or hourly energy consumption, the most comprehensible and simple method is degree-hour method which is a continuous state approach , utilizing the hourly outside temperature values of a whole year, very precise results can be obtained for the energy analysis of a household. Degree-hour method is based on the principle that inside conditions are stable during heating and cooling period and it is assumed that heating or cooling equipment efficiency does not get affected by outside temperature changes. If all thermostats in the household are set to the same temperature value at the beginning of the heating or cooling period and kept absolutely unchanged, these circumstances can be obtained.

By this way, instead of full load or design efficiency, seasonal average efficiency is used in heaters or coolers .

Degree-hour method is a very useful method to determine heating and cooling energy need as well as the effect of regional climate change. Method assumes that energy need of the house is proportional to the difference between hourly outside temperature and base temperature. In hourly heating, if base temperature is higher than outside temperature then need for heating arises; contrary to this, in hourly cooling, if base temperature is lower than outside temperature then need for cooling arises

It is very critical to obtain energy consumption values of the houses during design period because these predictions provide great ease in thermal analysis of houses, and heating and cooling load calculation. The predictions have great importance in terms of efficient consumption of energy in households. In this century with global warming having become more effective, energy efficiency is one of the most important issues that should be considered.

Air-conditioning and refrigeration engineers in local or exporting companies need design data. In designing indoor comfort quality of buildings such as heating and cooling conditions, meteorological parameters should be analyzed accurately.The degree-hour method can provide a simple estimate of annual energy loads, which can be quite accurate if the indoor temperature is constant. Degree-hours are conventionally calculated for a reference (or a base) temperature. The degree-hour methods are commonly used in the heating, ventilating, and air conditioning (HVAC) industries to estimate energy consumption by heating systems during the winter season and by cooling systems during the summer season.

Heating and cooling degree-hours are defined as the sum of the differences between daily average temperatures and the base temperature. For example, the number of annual heating degreehours , HDH, is calculated as [14],

$$HDH = \sum_{i=1}^{N} (T_b - T_i)^{+} \qquad \text{(II.5)}$$

where N is the number of hours in the year, T_b is the base temperature to which the degree-hours are calculated, and $T_i$is the mean hourly temperature. The "+" superscript indicates that only positive values of the bracketed quantity are taken into account in the sum. Similarly, annual cooling degreedays CDD are calculated as;

$$CDH = \sum_{i=1}^{N} (T_i - T_b)^{+} \qquad \text{(II.6)}$$

Using HDH and CDH, the annual heating consumption Q_h, the annual cooling requirements Q_c, in terms of Joule can be calculated as [14]

Q_h = 3600 L_{tot} CDH (II.7)

Q_c = 3600 L_{tot} CDH (II.8)

where L_{tot} is total heat loss coefficient in W/K.

The contour map of yearly heating degree hours for Turkey with a base temperature of 18 ºC was given on Figure II.2.1.1. The contour map of yearly cooling degree hours for Turkey with a base temperature of 22 ºC was given on Figure II.2.1.2.

II.2.2 DEGREE-DAYS METHOD

One of significant meteorological variables that relate to building and residential energy consumption is heating(HDD) and cooling degree-days (CDD). Both of them are basic quantities for preliminarily estimating energy consumption of a building. Unfortunately the degree-days are not commonly used in the past few years because of advanced communication systems that allows one to be able to remotely access data storages or servers to directly retrieve data [10,12,19,20,21,22,23,24]. The data could be yearly, daily, hourly, or even subhourly whichever matches the users' requirements. Another reason is that effects of latent loads are not accounted into the degree-days. Nevertheless HDD and CDD are still useful in preliminary energy audits to estimate savings of energy conservation measures (ECM) that depend on seasonal and outdoor temperature for which simple methods are more appropriate
than complex and time-consuming methods. Thus there stil are several researches in recent years to study and predict variations and trends of

Essentially degree-days are a summation of the differences between the outdoor temperature and some reference temperature over a specified time period. The reference temperature is known as the base temperature which, for buildings, is a balance point temperature, i.e. the outdoor temperature at which the heating (or cooling) systems do not need to run in order to maintain comfort conditions. Degree-days provide a significant advantage over other simplified methods that use mean outdoor temperatures to calculate energy demand . Because degree-days account for fluctuations in the outdoor temperature, and eliminate those periods when heating (or cooling) systems do not need to operate, they can capture extreme conditions in a way that mean temperature methods cannot. This makes them more reliable in estimating energy consumption, particularly in the milder months, but also inthose periods with extreme cold snaps where they capture both magnitude and duration of an event.

It is well-established tool for energy analysis if the buildings use, the efficiency of HVAC equipment, indoor temperature and internal gains are relatively constant. The two main uses for degree-days in buildings are:

- to estimate energy consumption and carbon dioxide emissions due to space heating and cooling for new build and major refurbishments
- for on-going energy monitoring and analysis of existing buildings based on historical data

It must be stressed that, particularly for estimation purposes, degree-day techniques can only provide approximate results since there are a number of simplifying assumptions that need to be made. These assumptions particularly relate to the use of average conditions (internal temperatures, casual gains, air infiltration rates etc), and that these can be used in conjunction with each other to provide a good approximation of building response. The advantage to their use, therefore, lies in their relative ease and speed of use, and all of the information required

to conduct estimation analysis is available from the building design The degree-day method is commonly used by very large type of different users, due to the fact that it is really easy of use and that large degree-day database exist in literature. People using the method for estimating future energy demand can be engineers working with architects in the design of buildings, or they can be designers of building control systems, engineers in renewable technologies, power station engineers, etc. People using the method to monitor building energy performance, they can be energy managers, policy makers in local or national government, people working for energy consulting firms or energy utility companies. They can be as well facility managers, energy auditors, or building energy consultants.

Heating and cooling degree-days are defined as the sum of the differences between daily average temperatures and the base temperature. For example, the number of heating degreedays in a month, HDD is calculated as [10]

$$HDD = \sum_{i=1}^{N} (T_b - \overline{T}_i)^{+} \qquad \text{(II.9)}$$

where N is the number of days in the month, T_b is the base temperature to which the degree-days are calculated, and is the mean daily temperature. The "+" superscript indicates that only positive values of the bracketed quantity are taken into account in the sum. Similarly, monthly cooling degreedays CDD are calculated as [10]

$$CDD = \sum_{i=1}^{N} (\overline{T}_i - T_b)^{+} \qquad \text{(II.10)}$$

Many researchers have analyzed outdoor temperatures and published degree-day [16] [21] values for many countries.

The traditional degree-day procedure [2–4] is based on a combination of theory and empirical observations and assumes that, on a long-term average, solar and internal gains will offset heat loss when the mean daily outdoor temperature is 18.3 ºC and that energy consumption will be proportional to the difference between the mean daily temperature and 18.3 ºC. The applicability of this procedure is limited to residential buildings, where envelope transmission and infiltration are the dominating factors contributing to the building load.

However, experience has indicated that energy requirements calculated using the traditional degree-day or degree-hour method did not correlate well with measured values of energy use. The increased use of thermal insulation, the installation of well-fitted windows and doors, the substantial increase in use of electric appliances and lighting and the lower set-point of thermostats decreased the temperature below which a building needs heating. Therefore, energy loads calculated with 18.3 ºC -based degree-days or degreehours are overestimated on most modern buildings. Heating degree-days for a base temperature of 18.3 ºC have been calculated and tabulated for many cities.

Using HDD and CDD, the annual heating consumption Q_h in kWh, the annual cooling requirements Q_c, in kWh can be calculated as [10]

$$Q_h = \frac{K_{tot}}{\eta} HDD \ \frac{24}{1000} \qquad \text{(II.11)}$$

$$Q_c = \frac{K_{tot}}{\eta} CDD \ \frac{24}{1000} \qquad \text{(II.12)}$$

The values of HDH, CDH, HDD and CDD were given on Table II.2.1

Table II.2.1 Heating and Cooling Estimation Values For Turkey

İSTASYON NO	ISTASYON ADI	LONGITUDE (°)	LATITUDE (°)	ELEVATION (m)	COOLING DEGREE HOUR	HEATING DEGREE HOUR	HEATING DEGREE DAY	COOLING DEGREE DAY
17020	BARTIN	32.21	41.38	30	3366.1	57388.60	2330.20	426.50
17022	ZONGULDAK	31.48	41.27	136	1315.60	49950.70	3059.20	485.90
17026	SİNOP	35.10	42.02	32	1300.70	44009.60	2380.60	501.90
17030	SAMSUN	36.20	41.17	44	2962.20	43906.20	1860.60	568.70
17033	ORDU	37.52	40.59	4	3253.50	43935.60	2308.10	850.90
17034	GİRESUN	38.24	40.55	38	3099.50	40486.20	2548.40	859.80
17037	TRABZON	39.43	41.00	30	2364.20	43068.10	1826.90	491.20
17040	RİZE	40.30	41.02	4	2785.50	41931.90	2694.00	808.60
17045	ARTVİN	41.49	41.10	597	1303.40	59351.90	3561.60	363.00
17046	ARDAHAN	42.42	41.08	1829	509.40	120663.30	6428.60	66.50
17050	EDİRNE	26.34	41.40	48	9036.50	52725.60	3202.10	1450.40
17052	KIRKLARELİ	27.13	41.44	232	3644.50	31394.70	3771.10	953.20
17056	TEKİRDAĞ	27.29	40.59	4	4254.80	47447.40	3006.20	899.90
17062	İSTANBUL	29,05	40.58	39	3634.80	44740.60	1887.00	677.00
17066	KOCAELİ	29.54	40.46	76	6176.00	39638.20	2444.50	1270.00
17069	SAKARYA	30.25	40.47	30	5608.10	42581.40	2551.30	897.70
17070	BOLU	31.36	40.44	742	3128.40	71383.00	4161.30	224.70
17072	DÜZCE	40.84	31.16	200	3452.50	52955.00	3156.00	584.20
17074	KASTAMONU	33.46	41.22	791	2689.90	81440.90	4802.60	190.30
17078	KARABÜK	41.21	32.62	316	8149.40	48690.30	4242.40	1376.30
17080	ÇANKIRI	33.37	40.36	751	5362.70	73791.50	3859.30	417.90
17084	ÇORUM	34.58	40.33	798	4117.20	74079.60	3911.10	336.60
17085	AMASYA	35.51	40.39	412	6514.20	57613.10	2840.70	990.80
17086	TOKAT	36.54	40.18	608	4963.20	63418.00	3902.70	771.00
17088	GÜMÜŞHANE	39.27	40.27	1219	3232.40	82680.80	4529.60	298.30
17089	BAYBURT	40.15	40.16	1550	2218.60	102165.10	6041.50	245.50
17090	SİVAS	37.01	39.49	1285	2969.90	84347.60	5420.10	449.90
17094	ERZİNCAN	39.30	39.44	1215	5929.50	69200.20	4248.50	623.50
17096	ERZURUM	41.16	39.55	1869	2297.80	120260.10	6190.30	155.10
17097	KARS	43.05	40.36	1775	1038.90	124315.50	6027.30	78.40
17099	AĞRI	43.08	39.31	1585	1881.60	112175.00	7026.20	267.60
17100	IĞDIR	44.02	39.56	858	7669.90	71448.20	4382.50	1001.20
17112	ÇANAKKALE	26.24	40.08	3	6158.20	43940.00	2730.20	1276.00
17116	BURSA	29,04	40.11	100	6384.20	46741.70	2924.00	733.80
17119	YALOVA	29.16	40.39	2	4924.40	44725.40	2859.20	966.80
17120	BİLECİK	29.58	40.09	526	3743.00	58548.00	3555.60	600.90
17126	ESKİŞEHİR	30.31	39.46	800	5466.70	68900.90	5544.30	1095.00
17130	ANKARA	32.53	39.57	894	4733	78381.90	3763.20	540.60
17135	KIRIKKALE	33.30	39.50	725	6492.00	63173.40	3663.70	898.90
17140	YOZGAT	34.49	39.50	1298	1634.70	81803.10	5137.60	348.20
17152	BALIKESİR	27.52	39.39	147	6393.30	52301.80	2117.00	721.60
17155	KÜTAHYA	29.58	39.24	969	2992.90	68654.10	4294.10	274.00
17160	KIRŞEHİR	34.10	39.08	985	4251.30	71052.00	3795.00	434.30
17165	TUNCELİ	39.32	39.06	979	12160.80	69813.60	4319.10	1141.40

Table II.2.1 Heating and Cooling Estimation Values For Turkey

İSTASYON NO	ISTASYON ADI	LONGITUDE (º)	LATITUDE (º)	ELEVATION (m)	COOLING DEGREE HOUR	HEATING DEGREE HOUR	HEATING DEGREE DAY	COOLING DEGREE DAY
17172	VAN	43.41	38.28	1725	3046.20	80969.50	4369.20	392.20
17186	MANİSA	27.26	38.36	71	13781.10	41867.00	2260.10	1227.70
17188	UŞAK	29.29	38.40	919	5613.00	60192.20	3256.20	632.10
17190	AFYONKARAHISAR	30.32	38.45	1034	4158.80	74924.10	3964.60	596.30
17192	AKSARAY	34.03	38.23	980	6986.90	64506.30	3822.40	1277.10
17193	NEVŞEHİR	38.62	34.72	1213	3877.40	78490.60	4178.10	567.90
17196	KAYSERİ	35.29	38.43	1068	4143.10	78534.80	4713.30	392.70
17199	MALATYA	38.18	38.21	998	8831.20	54847.30	3430.40	986.60
17201	ELAZIĞ	39.13	38.40	1105	10566.60	65003.00	3982.10	902.50
17203	BİNGÖL	40.30	38.52	1177	7002.80	73092.00	4487.30	829.80
17204	MUŞ	41.31	38.44	1283	7026.70	92444.20	4812.50	749.40
17207	BİTLİS	42.06	38.22	1559	4245.00	85086.40	5263.40	374.50
17210	SİİRT	41.56	37.56	875	16448.00	47723.50	3068.00	1809.70
17220	İZMİR	27,1	38.24	25	12772.90	27659.70	1656.30	1999.10
17234	AYDIN	27.50	37.51	57	15589.80	30524.10	1826.40	1876.20
17237	DENİZLİ	29,05	37.47	428	14087.40	38921.00	2438.70	1555.50
17238	BURDUR	37.72	30.29	956	7980.50	55382.10	3357.00	729.30
17240	ISPARTA	30.33	37.45	997	5094.30	63083.90	3090.60	628.50
17244	KONYA	32.20	37.52	1028	4437.50	73441.40	3018.10	403.10
17246	KARAMAN	33.14	37.11	1025	6382.40	68247.20	4095.90	770.60
17250	NİĞDE	34,4	37,59	1208	4077.00	71956.70	3451.50	493.40
17255	KAHRAMANMARAŞ	36.56	37.36	549	17333.50	35751.60	2305.20	2096.40
17261	GAZİANTEP	37.22	37.05	855	13427.50	47488.80	2507.40	1114.20
17262	KİLİS	37.05	36.44	638	14301.80	35898.00	1613.30	1228.00
17265	ADIYAMAN	38.17	37.45	678	18741.10	40285.80	2518.60	1434.70
17270	ŞANLIURFA	38.46	37.08	547	24186.20	33634.80	1536.40	2670.50
17275	MARDİN	40.44	37.18	1080	15332.70	48879.70	2607.40	1985.40
17280	DİYARBAKIR	40.12	37.55	660	17615.20	25694.50	3222.30	1594.60
17282	BATMAN	41.10	37.52	540	18789.90	50041.50	3106.40	2637.00
17285	HAKKARİ	43.46	37.34	1720	6196.00	81301.20	4976.90	1011.50
17287	ŞIRNAK	37.52	42.46	1396	1445.70	20141.00	3427.50	1545.10
17292	MUĞLA	28.21	37.12	646	9481.20	47230.00	2886.60	983.20
17300	ANTALYA	30.42	36.53	42	14182.40	25118.70	1075.90	1241.40
17340	MERSİN	34.36	36.49	5	14162.10	19552.20	1256.30	2115.10
17351	ADANA	35.18	36.59	20	13896.00	25281.60	1265.20	1937.60
17355	OSMANİYE	37.07	36.26	128	465.30	11234.50	1636.60	1560.20
17372	HATAY	36.07	36.15	100	13845.90	29438.50	1456.80	2268.10

Notes :

1) Ref Temp, Tb = 18 ºC for heating
2) Ref Temp, Tb= 23.3 ºC for cooling

Example : For a typical İstanbul city with a building K_{tot} = 255 W/°C, η=0.9 . From Table II.2.1 HDD and CDD are taken as 1,887 and 677 respectively. The annual heating consumption **Q_h is calculated as 12,832 kWh ,** the annual cooling requirements **Q_c is calculated as 4,604 kWh** by using Equations (2.22) and (2.23)

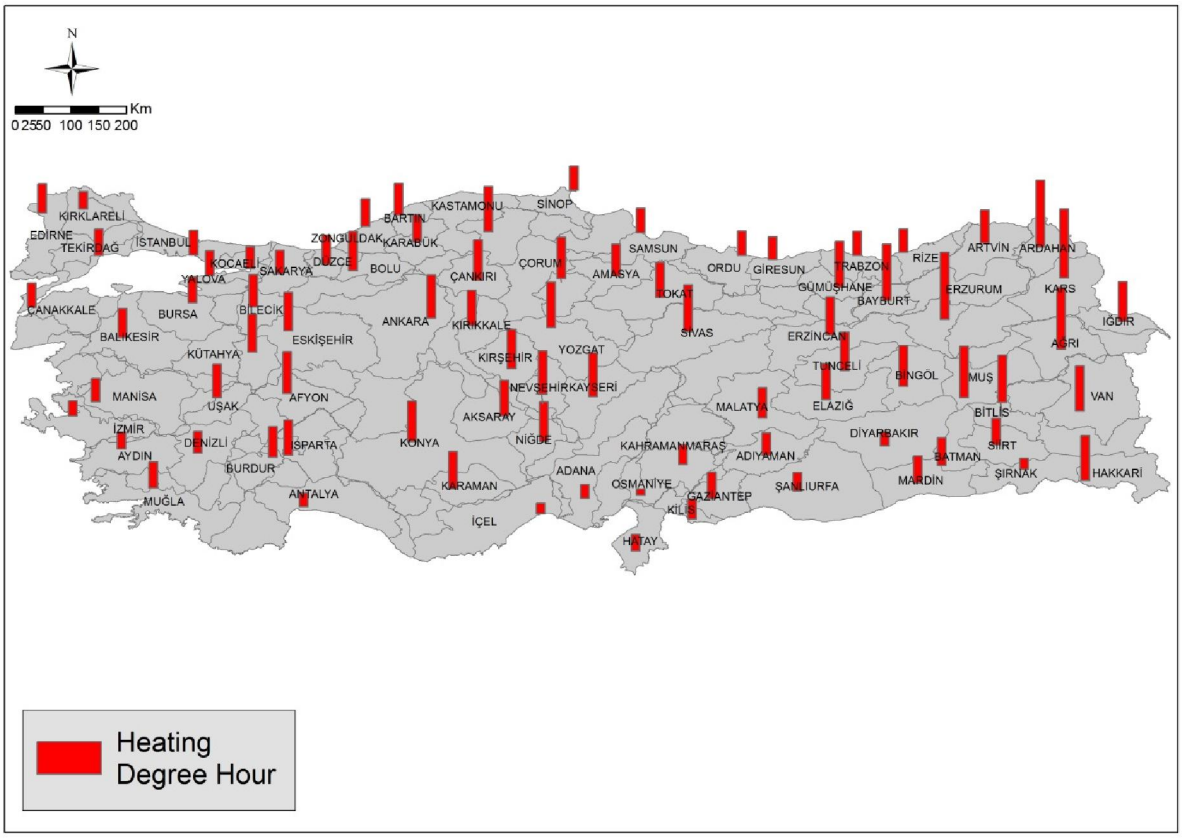

Figure II.2.1.1 The contour map of yearly heating degree hours for Turkey with a base temperature of 18 ºC

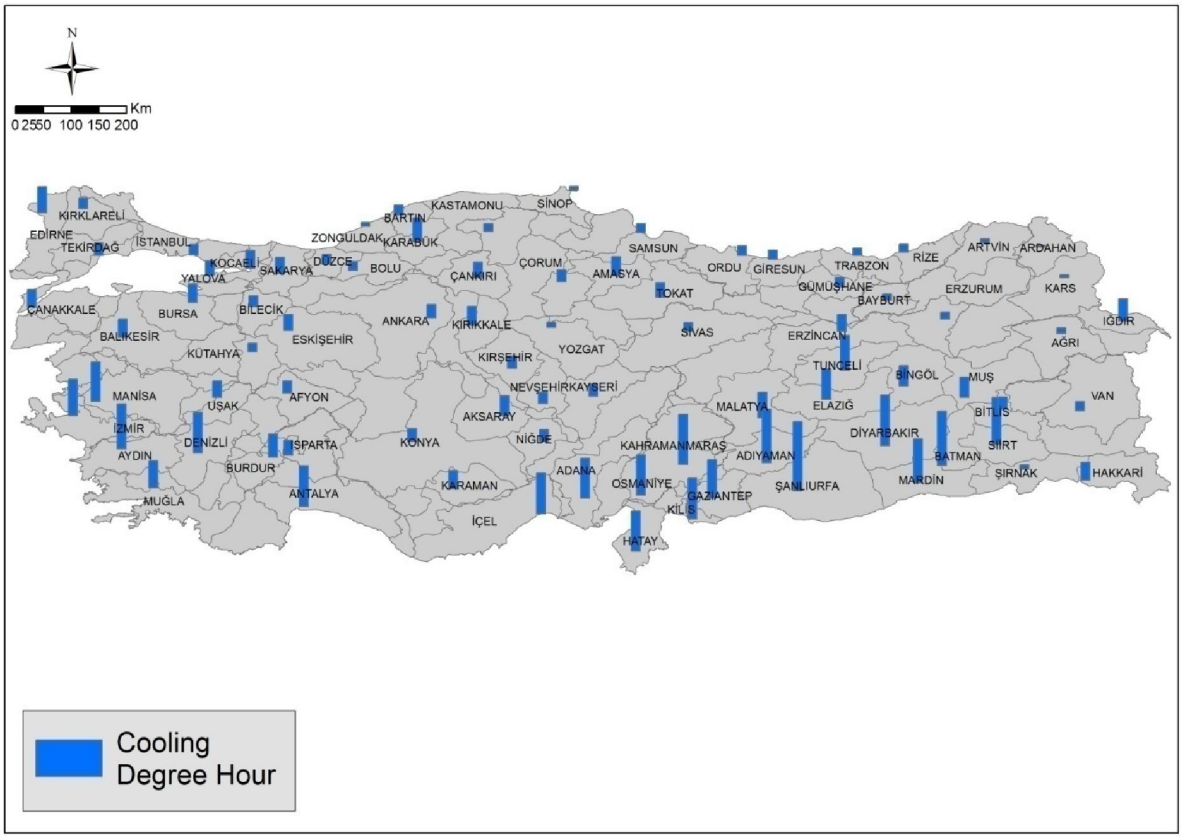

Figure II.2.1.2 The contour map of yearly cooling degree hours for Turkey with a base temperature of 22 ºC

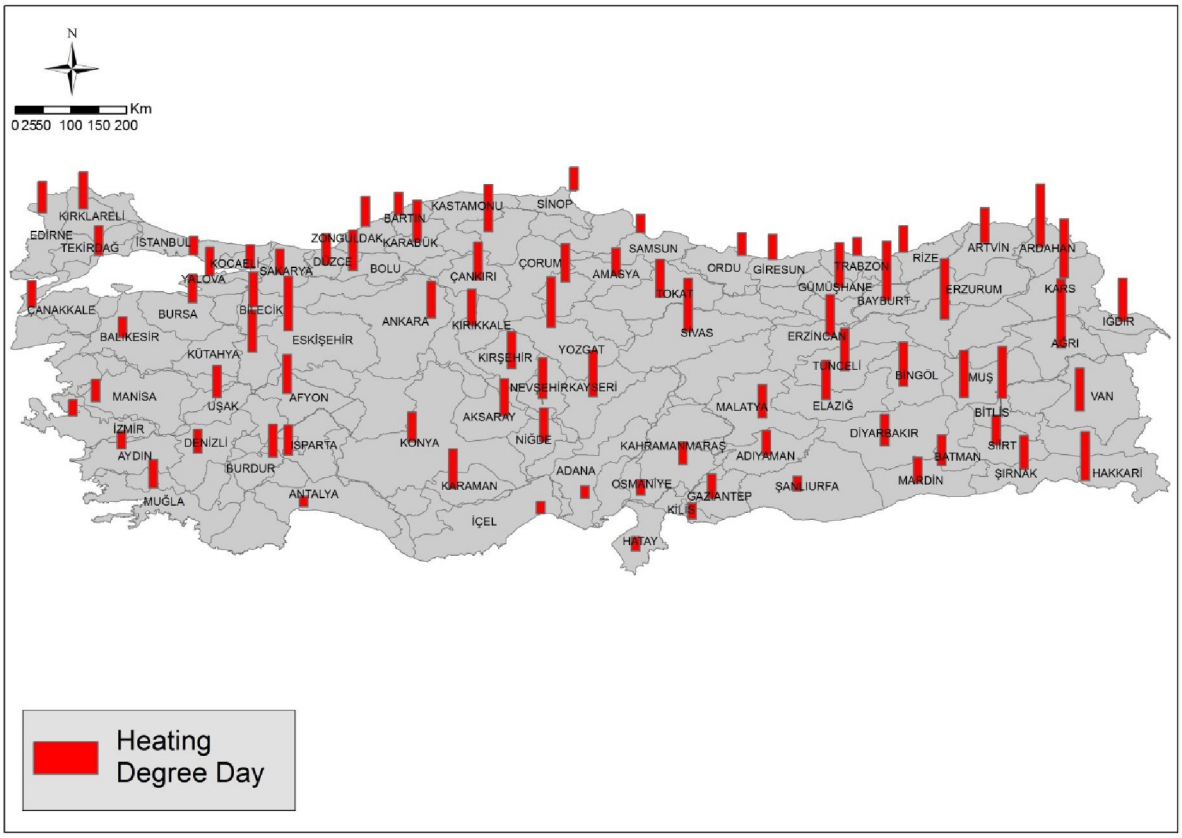

Figure II.2.2.1 The contour map of yearly heating degree days for Turkey with a base temperature of 18 ºC

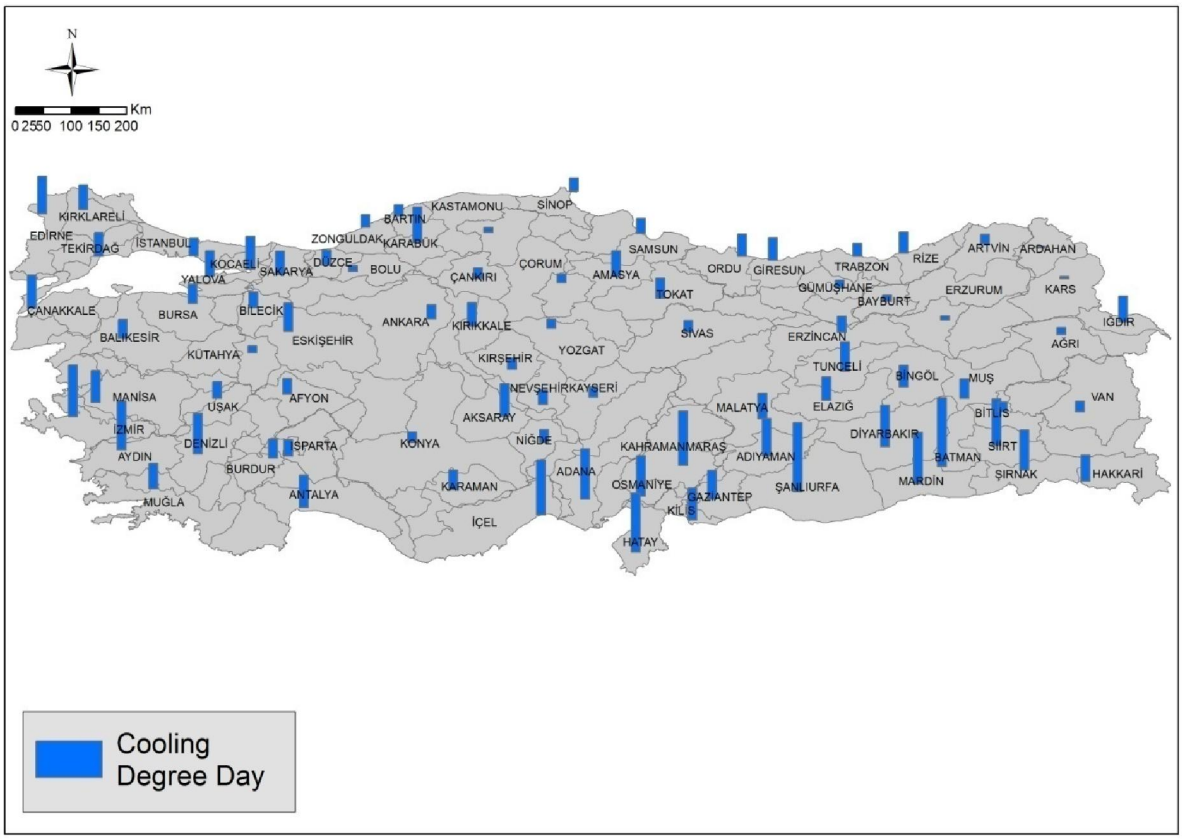

Figure II.2.2.2 The contour map of yearly cooling degree days for Turkey with a base temperature of 22 ºC

The Heating Degree Hour Graphs for Ankara, İstanbul, İzmir, Erzurum were shown in Figures II.2.1.3-II.2.1.6 .

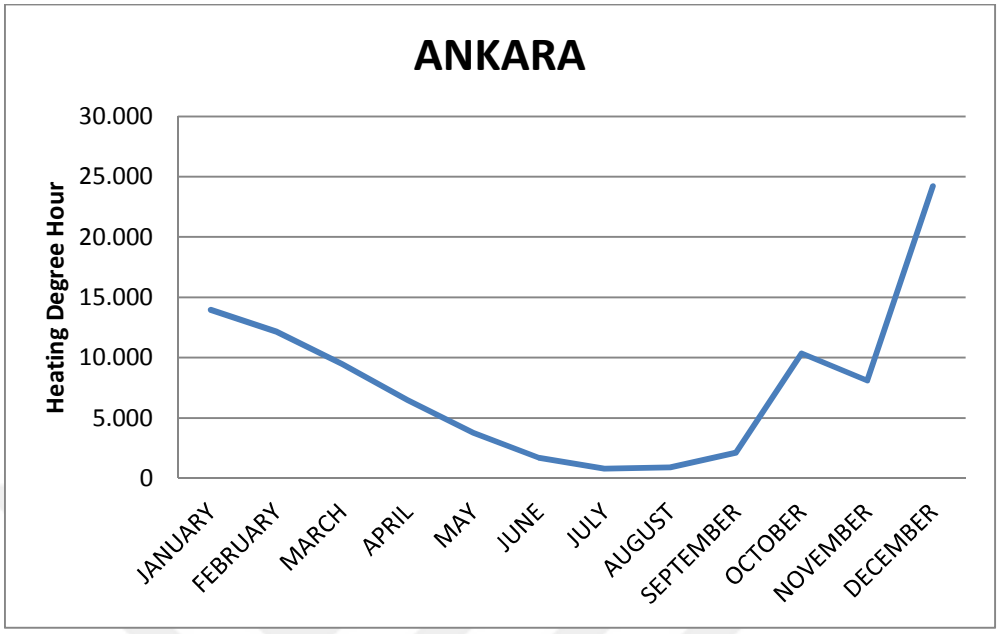

Figure II.2.1.3 The monthly heating degree hour graph for Ankara

The coldest month for Ankara is December, the hottest month is August. HDH value is greater than 20,000 and less than 25,000.

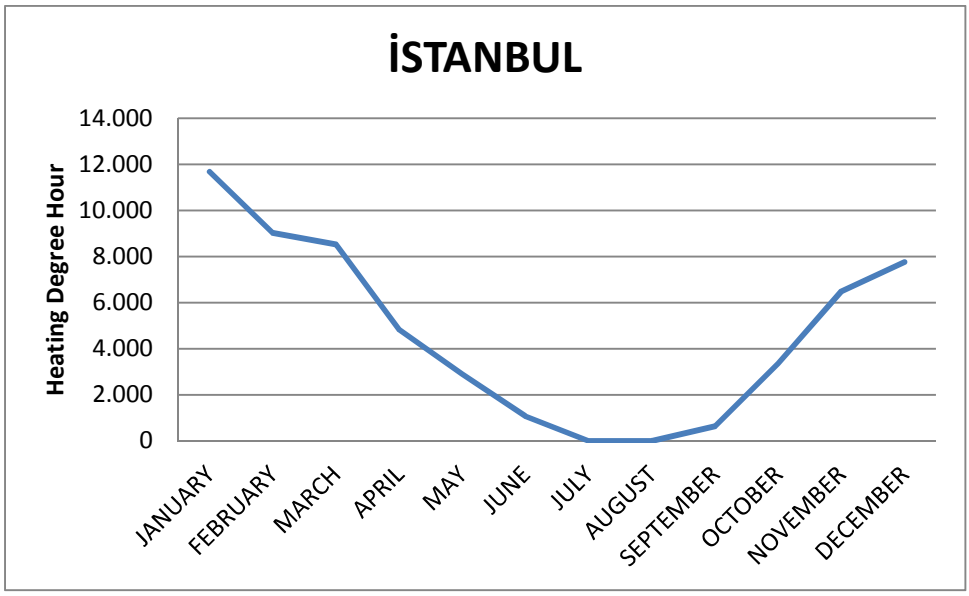

Figure II.2.1.4 The monthly heating degree hour graph for İstanbul

The coldest month for İstanbul is January, the hottest month is August. HDH value is greater than 10,000 and less than 12,000.

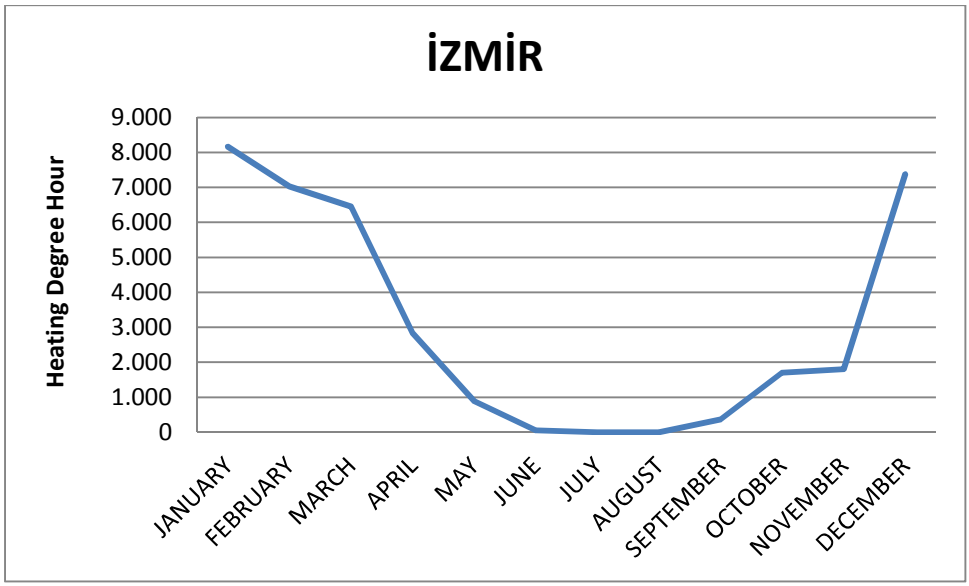

Figure II.2.1.5 The monthly heating degree hour graph for İzmir

The coldest month for İzmir is January , the hottest month is August. HDH value is greater than 6,000 and less than 7,000.

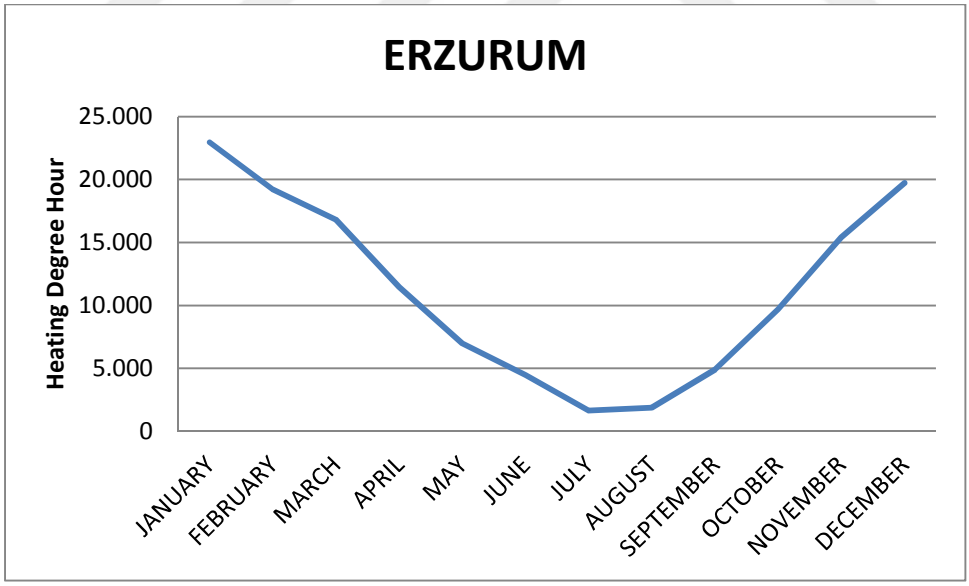

Figure II.2.1.6 The monthly heating degree hour graph for Erzurum

The coldest month for Erzurum is December, the hottest month is July. HDH value is greater than 20,000 and less than 25,000.

II.2.2.3 COMPARISON WITH PREVIOUS STUDIES

The comparison with previous studies was made including 3 cities, Ankara, İstanbul, İzmir.

II.2.2.3.1 Degree Day Method

The comparison of heating degree day values with previous studies are given on the Table II.2.2.3.1.1 for Ankara and on the Table II.2.3.1.2 for İzmir.

Table II.2.2.3.1.1 Comparison of Heating Degree Day Values of Ankara with Previous Studies

ANKARA	PRESENT 2015	İLERİ AND ÜNER 1999	SATMAN 1990	TÜZEMEN 1972	KILKIŞ 1991	KILKIŞ AND OKUTAN 1992	BAYRAM AND YEŞİLATA 2009	BULUT,BÜYÜKALACA AND YILMAZ 2007
HEATING DEGREE DAY	3763	2851	2809	2650	3012	2600	2599	2677
DIFFERENCE (%)	-	31.99	33.96	42.00	24.93	44.73	44.81	40.57

For comparing the present study against previous ones, Ankara city was considered as an example. The reference temperature was taken as 18 ºC and the difference between two studies changes between % 32 - % 45. This difference is reasonable, the use of TMY was shown more advantageous than long term weather pattern. Comparatively, the use of TMY could serve better prediction of energy consumption.

Table II.2.2.3.1.2. Comparison of Heating Degree Day Values Of İzmir with Previous Studies

İZMİR	PRESENT 2015	BULUT,BÜYÜKALACA AND YILMAZ 2007
HEATING DEGREE DAY	1656	1188
DIFFERENCE (%)	-	39.39

For comparing the present study against previous ones, İzmir city was considered as an example.The reference temperature was taken as 18 ºC and the difference with the previous study is % 39.9 for İzmir and % 1.18 for Ankara. This difference is reasonable, the use of TMY was shown more advantageous than long term weather pattern. Comparatively, the use of TMY could serve better prediction of energy consumption.

II.2.2.3.2 Degree Hour Method

The comparison of degree hour values with previous studies are given on the Table II.2.2.3.2.1 for İstanbul, on the Table II.2.2.3.2.2 for Ankara and on the Table II.2.2.3.2.3 for İzmir .

Table II.2.2.3.2.1 Comparison of Heating Degree Hour Values of İstanbul with Previous Studies

İSTANBUL	PRESENT 2015	SATMAN AND YALÇINKAYA 1999
HEATING DEGREE HOUR	44,741	47,530
DIFFERENCE (%)	-	5.87
COOLING DEGREE HOUR	1,887	2,551
DIFFERENCE (%)	-	26.03

Table II.2.2.3.2.2. Comparison of Heating Degree Hour Values of İzmir with Previous Studies

İZMİR	PRESENT 2015	SATMAN AND YALÇINKAYA 1999
HEATING DEGREE HOUR	27,660	31,675
DIFFERENCE (%)	-	12.68
COOLING DEGREE HOUR	12,773	9,854
DIFFERENCE (%)	-	29,62

Table II.2.2.3.2.3. Comparison of Heating Degree Hour Values of Ankara with Previous Studies

ANKARA	PRESENT 2015	SATMAN AND YALÇINKAYA 1999
HEATING DEGREE HOUR	78,382	70,077
DIFFERENCE (%)	-	11,85
COOLING DEGREE HOUR	4733	3,513
DIFFERENCE (%)	-	34.73

For comparing the present study against previous ones, the reference temperatures are 18 ºC in heating and 23.3 is cooling. In heating degree hours method, the difference with the previous study is % 5.87 for İstanbul , % 12.68 for İzmir and % 11.85 for Ankara. In cooling degree hours method, the difference with the previous study is % 26,03 for İstanbul , % 29.62 for İzmir and % 34.73 for Ankara. This difference is reasonable, the use of TMY was shown more advantageous than long term weather pattern. Comparatively, the use of TMY could serve better prediction of energy consumption.

II.2.3. BIN DATA METHOD

Bin method is a well-known simple steady – state method for the accurate assumption of heating and cooling energy consumption of the buildings. The bin method consists of performing an instanteneous energy calculation at many different outdoor dry bulb temperature conditions and multiplying the results by the number of hours of occurence of each condition to get the annual energy requirements of the building. In preparing energy estimates, it should be realized that any estimating method will produce a more reliable result over a long period of operation than over a short period. In many applications, some parameters varies with time. For instance, the pattern of utilization of the building, especially of commercial buildings, may generally exhibit large variations during a day and during a week. The efficiency of a heat pump system and HVAC equipment may be affected directly or indirectly by outdoor temperature . Examples to the sources for non-steadiness can be increased. In such cases the bin method can be used.

This method is based on the calculation of the energy consumpt ion for different values of the outdoor temperature (To,i) and multiplying it by the corresponding number of hours (Nbin,i) in the temperature interval (bin) centered on that temperature [83]:

In this study , dry-bulb temperature bin data for 81 Turkish cities were determined by using a reliable estimating TMY methodology. The bin data from -2 ºC to 45 ºC with 3 ºC increments are calculated in twelve daily 2-h shifts .

$$Q_{bin,i} = N_{bin,i} \frac{K_{tot}}{\eta} \left(T_b - T_{O,i}\right)^{+} \quad \text{(II.13)}$$

where K_{tot} and η are respectively, total heat loss coefficient of the building in W/ ºC, and the efficiency of the HVAC system. $Q_{bin,i}$ is the energy consumption for corresponding number of hours (Nbin,i) in Wh. The balance point temperature Tb is the value of outdoor temperature below or above which heating or cooling is needed [3,4]. The bin method can be used for predicting both heating and cooling energy equirements. The plus subscript on the parenthesis of Equation (II.13) is for heating and indicates that only positive values are to be counted. For cooling, only negative values should be considered. Qbin,i values are calculated separately using Eq. (II.13) for each temperature interval (bin) and summed to obtain total energy consumption:

$$Q_{tot} = \sum_{i=1}^{m} Q_{bin,i} \quad \text{(II.14)}$$

where Q_{tot} is total energy consumption in Wh, m is the total number of the temperature intervals (bins).

Since the bin method is based on hourly weather data rather than daily averages, it is more accurate than the degree-day method [5]. The bin method can account for the part-load performance of HVAC equipment and has been specially used for analys is of heat pump systems. Additionally, by performing separate calculations for different time periods, variations of indoor loads with time, occupancy patterns and ope rating schedules of HVAC systems can be considered. The latent loads at each temperature bin can also be calculated, by the use of wet -bulb temperatures [6].The bin method has several advantages over the degree-day method in that it provides information on concurrent weather conditions. Along with hours of occurrence of dry-bulb temperature, the mean coincident values of wet-bulb temperature, solar radiation, and wind speed can also be provided. This can lead to more precise valuation of cooling tower performance, passive solar design, peak load conditions, and ventilative an d/or evaporative cooling potential [2].

History of the analysis of weather data for design of HVAC systems and energy consumption predictions in Turkey is quite new. This subject has been considered seriously only in recent years and it is not complete yet. A comprehensive analysis of the degreedays data for 78 weather stations located in 78 different provinces of Turkey is presented by the present authors [7].

Although there are some studies on the degree-day and degree-hour data for Turkey [8–10], the bin data studies are very limited. Ileri and Üner [11] presented yearly bin data for dry-bulb temperature for 12 weather stations of Turkey obtained from typical meteorological year data generated from 7 years data. They calculated bin data only in two separate time periods (08:00–16:00 and 16:00–08:00).A complete and detailed bin weather data are not available for Turkey. The need to fill the gap in bin data for Turkey provided stimulus for this study. The bin weather data for Bartın, Zonguldak, Sinop were given in Table II.2.3.1-Table II.2.3.3. The bin weather data for 78 provinces of Turkey were presented in Appendix in Tables A1.1-A1.78 in this study .

Table II.2.3.1 Annual Bindata Table for Bartın

	Hourly Time Interval												
BARTIN	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	1	2	2	1	0	0	0	0	0	0	0	6
-8>=T>=-10	1	1	2	2	2	0	0	0	0	0	0	1	9
-6>=T>=-8	1	4	2	4	3	2	0	0	0	0	1	1	18
-4>=T>=-6	3	5	6	8	6	2	0	0	0	1	3	2	36
-2>=T>=-4	4	9	12	9	12	3	0	0	1	8	9	13	80
0>=T>=-2	16	40	40	42	27	13	9	4	6	5	13	19	234
2>=T>=0	26	52	56	55	50	34	26	25	35	45	49	54	507
4>=T>=2	27	48	50	46	42	27	27	28	28	23	29	40	415
6>=T>=4	28	68	78	68	57	31	24	16	23	39	49	51	532
8>=T>=6	28	53	59	67	63	63	37	39	41	55	66	68	639
10>=T>=8	42	91	75	64	44	46	52	47	45	63	59	65	693
12>=T>=10	37	66	72	70	55	57	41	37	49	41	47	70	642
14>=T>=12	31	63	77	72	56	34	59	45	46	53	69	68	673
16>=T>=14	43	95	99	77	64	51	46	52	54	59	74	68	782
18>=T>=16	34	74	56	51	46	58	53	56	62	65	53	60	668
20>=T>=18	35	39	29	15	61	59	56	53	47	51	54	72	571
22>=T>=20	6	15	10	9	52	51	61	56	64	42	65	64	495
24>=T>=22	2	4	5	1	52	47	64	69	43	53	61	10	411
26>=T>=24	1	2	0	0	30	64	55	55	65	80	25	4	381
28>=T>=26	0	0	0	0	4	48	49	68	71	33	2	4	279
30>=T>=28	0	0	0	0	3	26	15	51	30	7	1		133
32>=T>=30	0	0	0	0	0	10	10	15	15	6	0	0	56
34>=T>=32	0	0	0	0	0	2	5	11	4	0	0	0	22
36>=T>=34	0	0	0	0	0	2	5	1	1	0	0	0	9
38>=T>=36	0	0	0	0	0	0	0	2	0	0	0	0	2
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table II.2.3.2 Annual Bindata Table for Zonguldak

	Hourly Time Interval												
ZONGULDAK	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	0	0	0	0	0	0	0	0	0	0	0
-2>=T>=-4	4	10	10	11	8	2	0	0	3	4	5	8	65
0>=T>=-2	5	11	13	11	13	16	15	13	13	12	11	9	142
2>=T>=0	21	46	47	45	29	18	17	18	18	23	28	33	343
4>=T>=2	20	35	35	37	38	34	33	37	45	46	46	48	454
6>=T>=4	26	53	53	53	48	45	48	49	45	53	50	45	568
8>=T>=6	24	48	48	46	41	40	38	35	38	30	39	44	471
10>=T>=8	28	59	70	66	52	45	43	38	39	58	63	61	622
12>=T>=10	35	69	76	79	60	49	51	52	52	46	51	69	689
14>=T>=12	42	82	64	66	76	71	59	67	78	98	99	91	893
16>=T>=14	22	49	55	41	57	89	96	91	86	71	62	46	765
18>=T>=16	37	75	84	55	34	40	45	43	39	34	32	55	573
20>=T>=18	42	83	82	76	40	35	34	38	29	29	59	67	614
22>=T>=20	40	73	62	88	82	55	44	37	54	80	83	95	793
24>=T>=22	13	24	26	47	92	99	96	84	78	77	83	48	767
26>=T>=24	4	7	4	5	42	74	87	97	82	62	18	9	491
28>=T>=26	2	4	2	4	13	14	18	25	30	6	0	2	120
30>=T>=28	0	0	0	1	4	4	5	7	3	2	0	1	27
32>=T>=30	0	0	0	0	1	0	1	0	0	0	0	0	2
34>=T>=32	0	0	0	0	0	0	0	0	0	0	0	0	0
36>=T>=34	0	0	0	0	0	0	0	0	0	0	0	0	0
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table II.2.3.3 Annual Bindata Table for Sinop

	Hourly Time Interval												
SİNOP	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	0	0	0	0	0	0	0	0	0	0	0
-2>=T>=-4	0	0	0	0	0	0	0	0	0	0	0	0	0
0>=T>=-2	0	0	0	0	0	0	0	0	0	0	0	0	0
2>=T>=0	5	9	13	14	13	2	0	1	3	5	8	6	79
4>=T>=2	17	43	39	41	27	22	15	13	21	20	26	30	314
6>=T>=4	30	56	56	63	56	35	37	39	45	60	53	55	585
8>=T>=6	36	74	70	64	61	68	58	61	69	65	79	80	785
10>=T>=8	44	71	81	80	79	70	64	64	67	86	79	81	866
12>=T>=10	26	57	48	48	53	67	71	66	67	57	57	58	675
14>=T>=12	31	72	78	77	58	51	56	57	56	59	56	61	712
16>=T>=14	36	73	72	75	82	68	49	50	57	64	75	73	774
18>=T>=16	30	51	48	47	56	68	69	76	71	59	54	51	680
20>=T>=18	30	77	86	72	47	47	69	64	53	52	52	54	703
22>=T>=20	60	110	101	112	65	48	38	36	29	39	64	91	793
24>=T>=22	18	33	27	32	100	92	64	57	74	100	103	81	781
26>=T>=24	2	0	0	1	29	70	91	90	81	55	22	8	449
28>=T>=26	0	0	0	0	1	18	35	44	32	8	0	0	138
30>=T>=28	0	0	0	0	0	1	7	8	5	1	0	0	22
32>=T>=30	0	0	0	0	0	0	0	0	0	0	0	0	0
34>=T>=32	0	0	0	0	0	0	0	0	0	0	0	0	0
36>=T>=34	0	0	0	0	0	0	0	0	0	0	0	0	0
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

CHAPTER III

PROBLEM ANALYSIS

III. 1 PROBLEM DEFINITION IN MEASUREMENTS AND DATA

In this thesis, the meteorological data was obtained from The State Meteorological Affairs General Directorate (DMI) and cover a period of 1989-2012 for 81 cities throughout the Turkey. Meteorological stations are located in city centers and there is generally only one station in each city .There were missing and invalid measurements in the data and they were filled as null. So, the data were checked for wrong entries and missing data. The missing and invalid measurements, accounting for approximately 0.30% of the whole database, were replaced with the values of preceding or subsequent days by interpolation. In the calculations, the year was excluded from the database if more than 15 days measurements were not available in a month.

III.2.ESTIMATING HORIZONTAL GLOBAL SOLAR RADIATION

Global solar radiation values in some cities were totally or partly missing. These values were calculated by means of some estimation methods [1,2,11,37].

Solar radiation arriving on earth is the most fundamental renewable energy source in nature. Solar energy, radiant light and heat from the sun, has been harnessed by humans since ancient times using a range of ever evolving technologies. The energy from the sun could play a key role in de-carbonizing the global economy alongside improvements in energy efficiency and imposing costs on greenhouse gas emitters. In the studies of solar energy, data on solar radiation and its components at a given location are a fundamental input for solar energy applications such as photovoltaic, solar-thermal systems, solar furnaces and passive solar design.

The data should be reliable and readily available for design, optimization and performance evaluation of solar systems for any particular location. The best way to determine the amount of global solar radiation at any site is to install measuring instruments such as pyranometer and pyrheliometer at that particular place and to monitor and record its day-to-day recording, which is really a very tedious and costly exercise . In spite of the importance

of solar radiation measurements, in many developing countries this information is not readily available because of not being able to afford the measuring equipments and techniques involved.

Therefore, a number of correlations and methods have been developed to estimate daily or monthly global solar radiation on the basis of the more readily available meteorological data at a majority of weather stations.Empirical models which have been used to calculate solar radiation are usually based on the following factors .

(1) Astronomical factors (solar constant, earth-sun distance, solar declination and hour angle)
(2) Geographical factors (latitude, longitude and elevation of the site).
(3) Geometrical factors (azimuth angle of the surface, tilt angle of the surface, sun elevation azimuth angle, sun angle).
(4) Physical factors (scattering of air molecules, water vapor content, scattering of dust and other atmospheric constituents such as O_2, N_2, CO_2, O, etc.).
(5) Meteorological factors (extraterrestrial solar radiation, sunshine duration, temperature, precipitation, relative humidity, effects of cloudiness, soil temperature, evaporation, reflection of the environs, etc.).

The number of correlation that have been published and tested to estimate the monthly average daily global solar radiation is relatively high, which makes it difficult to choose the most appropriate method for a particular purpose and site. Selecting an appropriate methods from various existing models is based on their data requirements (the selected methods utilize only daily variables normally available at a majority of weather stations) and the model accuracy.

Estimations of the monthly mean daily global solar radiation for a large number of locations are presented in various research works. The global solar radiation models available in the literature, including the study carried out on the estimation of the monthly average daily global solar radiation on horizontal surfaces and to classify them into four categories based on the employed meteorological parameters as model inputs are presented here.. It is noteworthy that all the proposed models contain empirical constants which depend on the season and the geographical location of a particular place. The empirical coefficients for some correlations available in the literature are presented.

The models collected and reviewed during this thessis are chronologically presented and therefore are useful for selecting the appropriate model to estimate global solar radiation for a particular place of interest. In addition, in order to evaluate the performance of the models in each of the four categories , some selected models from each category are used to estimate the monthly average daily global solar radiation by using, astronomical, geographical, geometrical and meteorological data .The solar radiation values produced by the selected

models are then compared with each other as well as with the available experimental data. Among the selected models in each category, the model which produces the most accurate values of global solar radiation is selected and used for predicting the monthly average daily global solar radiation in Turkey.

III.2.1 MODELLING GLOBAL SOLAR RADIATION

Solar researchers have developed many empirical correlations which determine the relation between solar radiation and various meteorological parameters. As the availability of meteorological parameters, which are used as the input of radiation models is the most important key to choose the proper radiation models at any location, empirical models can be mainly classified into four following categories based on the employed meteorological parameters [28]:

(1) Sunshine-based models.
(2) Cloud-based models.
(3) Temperature-based models.
(4) Other meteorological parameter-based models.

Among all such meteorological parameters, bright sunshine hours, cloud cover and temperature are the most widely and commonly used ones to predict global solar radiation and its components at any location of interest.

III.2.1.1 SUNSHINE BASED MODELS

The most commonly used parameter for estimating global solar radiation is sunshine duration. Sunshine duration can be easily and reliably measured, and data are widely available at the weather stations. Most of the models for estimating solar radiation that appear in the literature only use sunshine ratio s=so or prediction of monthly average daily global radiation. In the following section, correlations which use only the sunshine ratio as the key input parameter are presented and classified based on their developing year.

III.2.1.2. ANGSTROM – PRESCOTT MODEL

The first and the most widely used correlation for estimating monthly average daily global solar radiation was proposed by Angstrom, who derived a linear relationship between the ratio of average daily global radiation to the corresponding value on a completely clear day (H/ Hc) at a given location and the ratio of average daily sunshine duration to the maximum possible sunshine duration.

$$\frac{H}{H_C} = a + b\left(\frac{S}{S_O}\right) \qquad \text{(III.1)}$$

A basic difficulty with Eq. (1) lies in the definition of the term Hc. Prescott and the others have modified the method to base it on extraterrestrial radiation on a horizontal surface rather than on clear day radiation and therefore proposed the following relation:

$$\frac{H}{H_O} = a + b\left(\frac{S}{S_O}\right) \qquad \text{(III.2)}$$

The values of the monthly average daily extraterrestrial irradiation (H0) can be calculated from the following equation [III.3].

$$H_O\left(\frac{Wh}{m^2\ day}\right) = \frac{24}{\pi} I_{SC}\left[1 + 0.033\cos\left(\frac{360n}{365}\right)\right]\left[\cos\varphi\cos\delta\sin\frac{\pi}{180}\omega_S\sin\varphi\sin\delta\right] \qquad \text{(III.3)}$$

The solar declination δ and the mean sunrise hour angle w_S an be calculated by following equations [III.4, III.5]:

$$\delta = \mathbf{23.45}\boldsymbol{sin}\left[\frac{\mathbf{360}}{\mathbf{365}}(\mathbf{284} + \boldsymbol{n})\right] \qquad \text{(III.4)}$$

$$\omega_S = cos^{-1}(-tan\,\varphi tan\,\delta) \qquad \text{(III.5)}$$

For a given month, the maximum possible sunshine duration (monthly average day length, (S0) can be computed by using the following equation [III.6]:

$$S_0 = \frac{2}{15} w_S \qquad \text{(III.6)}$$

Although the Angstrom–Prescott¨ equation can be improved to produce more accurate results, it is used as such for many applications. Some of the regression models based on the Angstrom–Prescott¨model which proposed in literature are given as follows:

Bakirci model for Turkey ,

$$\frac{H}{H_0} = 0.2786 + 0.4160(\frac{S}{S_0}) \quad \text{(III.7)}$$

Ulgen and Hepbasli model for Ankara, Istanbul and Izmir in Turkey [24]

$$\frac{H}{H_0} = 0.2671 + 0.4754(\frac{S}{S_0}) \quad \text{(III.8)}$$

Aras et al. model for twelve provinces in the Central Anatolia Region of Turkey ,

$$\frac{H}{H_0} = 0.3078 + 0.4166\left(\frac{S}{S_0}\right) \quad \text{(III.9)}$$

Togrul and Togrul model for Ankara, Antalya, Izmir, Yenihisar (Aydin), Yumurtalik (Adana) and Elazig in Turkey ,

$$\frac{H}{H_0} = 0.318 + 0.449(\frac{S}{S_0}) \quad \text{(III.10)}$$

Solar energy has an important role to achieve the goal of replacing fossil fuels and significant potential to reduce greenhouse gas emissions. Accurate information on solar radiation is very essential for engineers, architects and agriculturist to design the energy systems based on the solar source. The sunshine duration and air temperature are measured by most of the meteorological services in all over the world but global solar radiation measurements are very rare and some of the data are missing. At this point, estimation of solar radiation where stations are not available plays an important role. Different models have been developed in the literature to estimate solar radiation. Angström–Prescott sunshine based model is widely used one and also there are some other approaches based on Angström model in the literature

III.2.1.2.1 KILIÇ AND ÖZTÜRK MODEL

In this this study Kılıç and Öztürk Model of Angstrom Prescott Formula was used for the estimation of global solar radiation [29].

$$\frac{H}{H_O} = a + b\,(\frac{S}{S_O}) \quad \text{(III.11)}$$

Kilic and Ozturk calculated the a and b regression coefficients of Angstrom Prescott Formula as in the following formulas ;

$$a = 0.103 + 0.0000017Z + 0.198 \cos(\varphi - \delta) \quad \text{(III.11.a)}$$

$$b = 0.533 - 0.165 \cos(\varphi - \delta) \quad \text{(III.11.b)}$$

III.2.1.2. 2 MISSING GLOBAL SOLAR RADIATION DATA IN THE STUDY

Some of missing data was replaced by interpolatıon. In some cities, all solar radiation data was missing. In this case, the S_O values of the nearest cities which have closest latitude were obtained and replaced as shown in the following.

MISSING DATA	REPLACED DATA
Giresun	Ordu
Ardahan	Artvin
Kırklareli	Çorlu
Bayburt	Gümüşhane
Şırnak	Hakkari
Osmaniye	İskenderun
Karabük	Kastamonu
Adana	Mersin

III.3 PSYCHOMETRICS

PSYCHROMETRICS deals with the thermodynamic propertiesties of moist air and uses these properties to analyze conditions and processes involving moist air [33].

III.3.1 COMPOSITION OF DRY AND MOIST AIR

Atmospheric air contains many gaseous components as well as water vapor and miscellaneous contaminants (e.g., smoke, pollen,and gaseous pollutants not normally present in free air far from pollution sources).Dry air exists when all water vapor and contaminants have been removed from atmospheric air. The composition of dry air is relatively constant, but small variations in the amounts of individual components occur with time, geographic location, and altitude. Harrison (1965) lists the approximate percentage composition of dry air by volume as: nitrogen, 78.084; oxygen,20.9476; argon, 0.934; carbon dioxide, 0.0314; neon,0.001818;

helium, 0.000524; methane, 0.00015; sulfur dioxide, 0 to 0.0001; hydrogen, 0.00005; and minor components such as krypton, xenon, and ozone, 0.0002. The relative molecular mass of all components for dry air is 28.9645, based on the carbon-12 scale (Harrison 1965). The gas constant for dry air, based on the carbon-12 scale, is

$$R_{da} = \frac{8314.41}{28.9645} = 287.055 \text{ J/(kg·K)} \qquad \text{(III.12)}$$

Moist air is a binary (two-component) mixture of dry air and water vapor. The amount of water vapor in moist air varies from zero (dry air) to a maximum that depends on temperature and pressure. The latter condition refers to saturation, a state of neutral equilibrium between moist air and the condensed water phase (liquid or solid). Unless otherwise stated, saturation refers to a flat interface surface between the moist air and the condensed phase. Saturation conditions will change when the interface radius is very small such as with ultrafine water droplets. The relative molecular mass of water is 18.01528 on the carbon-12 scale. The gas constant for water vapor is,

$$R_w = \frac{8314.41}{18.01528} = 461.520 \text{ J/(kg·K)} \qquad \text{(III.13)}$$

III.3.2 THERMODYNAMIC PROPERTIES OF MOIST AIR

t = Celsius temperature, based on thermodynamic temperature scale and expressed relative to absolute temperature T in kelvins (K) by the following relation:

$$T = t + 273.15 \qquad \text{(III.14)}$$

The thermodynamic properties of air ;

Ws= humidity ratio at saturation, condition at which gaseous phase (moist air) exists in equilibrium with condensed phase (liquid or solid) at given temperature and pressure (standard atmospheric pressure).At given values of temperature and pressure, humidity ratio W can have any value from zero to Ws.

V_{da} = specific volume of dry air, m^3/kg (dry air).

$V_{as} = V_s - V_{da}$, difference between specific volume of moist air at saturation and that of dry air itself, m^3/kg (dry air), at same pressure and temperature

$V_S = \ specific\ volume\ of\ moist\ air\ at\ saturation, m^3/kg\ (dry\ air)$

h_{da} =specific enthalpy of dry air, kJ/kg (dry air).

$h_{as} = h_s - h_{da}$, difference between specific enthalpy of moist air at saturation and that of dry air itself, kJ/kg (dry air), at same pressure and temperature.

h_w = specific enthalpy of condensed water (liquid or solid) in equilibrium with saturated moist air at specified temperature and pressure, kJ/kg (water).

Note that h_w is greater than the steam-table enthalpy of saturated pure condensed phase by the amount of enthalpy increase governed by the pressure increase from saturation pressure to 101.325 kPa, plus influences from presence of air

p_s = vapor pressure of water in saturated moist air, kPa. The, values of $p_s$can be used at same pressure and temperature in equations where pws appears. Pressure p_s is defined as p_s = x_{ws} p, where x_{ws} is mole fraction of water vapor in moist air saturated with water at temperature t and pressure p, and where p is total barometric pressure of moist air.

III.3.3 THERMODYNAMIC PROPERTIES OF WATER AT SATURATION

The water vapor saturation pressure is required to determine a number of moist air properties, principally the saturation humidity ratio. Values may be obtained from the following formulas[33] .

The saturation pressure over ice for the temperature range of −100 to 0°C is given by

$$\ln p_{ws} = \frac{C_1}{T} + C_2 + C_3 T + C_4 T^2 + C_5 T^3 + C_6 T^4 + C_7 \ln T \qquad \text{(III.15)}$$

where
C_1 = −5.6745359 E+03
C_2= 6.392 5247 E+00
C_3= −9.6778430 E–03
C_4= 6.2215701 E−07
C_5 = 2.074 7825 E−09
C_6= −9.484 0240 E−13
C_7= 4.163 5019 E+00

The saturation pressure over liquid water for the temperature range of 0 to 200°C is given by

$$\ln p_{ws} = \frac{C_8}{T} + C_9 + C_{10} T + C_{11} T^2 + C_{12} T^3 + C_{13} \ln T \qquad \text{(III.16)}$$

where

C_8 = −5.8002206 E+03
C_9= 1.3914993 E+00
C_{10} = −4.8640239 E−02
C_{11} = 4.1764768 E−05
C_{12} = −1.445209 3 E−08
C_{13} = 6.5459673 E+00

ln = natural logarithm
p_{ws} = saturation pressure, Pa
T = absolute temperature, K = °C + 273.15

III.3.4 HUMIDITY PARAMETERS

Basic Parameters

Humidity ratio (alternatively, the moisture content or mixing ratio) W of a given moist air sample is defined as the ratio of the mass of water vapor to the mass of dry air contained in the sample:

$$W = \frac{M_w}{M_{da}} \qquad \text{(III.17)}$$

The humidity ratio W is equal to the mole fraction ratio x_w/x_{da} multiplied by the ratio of molecular masses, namely, 18.01528/28.9645 = 0.62198:

$$W = 0.62198\ x_w/x_{da} \qquad \text{(III.18)}$$

Specific humidity γ is the ratio of the mass of water vapor to the total mass of the moist air sample:

$$\gamma = M_w/(M_w + M_{da}) \qquad \text{(III.19)}$$

In terms of the humidity ratio,

$$\gamma = W/(1+ W) \qquad \text{(III.20)}$$

Absolute humidity (alternatively, water vapor density) dv is the ratio of the mass of water vapor to the total volume of the sample:

$$d_v = M_w / V \qquad \text{(III.21)}$$

The density ρ of a moist air mixture is the ratio of the total mass to the total volume:

$$\rho = (M_w + M_{dA}) / V = (1/v)(1+W) \qquad \text{(III.22)}$$

where v is the moist air specific volume, m^3/kg (dry air).

Humidity Parameters Involving Saturation

The following definitions of humidity parameters involve the concept of moist air saturation:

Saturation humidity ratio Ws (t, p) is the humidity ratio of moist air saturated with respect to water (o rice) at the same temperature t and pressure p.

Degree of saturation μ is the ratio of the air humidity ratio W to the humidity ratio Ws of saturated moist air at the same temperature and pressure:

$$\mu = \frac{W}{Ws} \Big|_{t,p} \qquad \text{(III.23)}$$

Relative humidity ϕ is the ratio of the mole fraction of water vapor x_w in a given moist air sample to the mole fraction x_{ws} in an air sample saturated at the same temperature and pressure:

$$\phi = \frac{X_w}{X_{ws}} \Big|_{t,p} \qquad \text{(III.24)}$$

By combining Equations (III.18) , (III.23) and (III.24) ,

$$\mu = \frac{\phi}{1+(1-\phi)W_s/0.62198} \qquad \text{(III.25)}$$

Dew-point temperature $\boldsymbol{t_d}$ is the temperature of moist air saturated at the same pressure p, with the same humidity ratio W as that of the given sample of moist air. It is defined as the solution $\boldsymbol{t_d}$ (p, W) of the following Equation (III.26),

Ws (p, $\boldsymbol{t_d}$) = W (III.26)

Thermodynamic wet-bulb temperature t* is the temperature at which water (liquid or solid), by evaporating into moist air at a given dry-bulb temperature t and humidity ratio W, can bring air to saturation adiabatically at the same temperature t* while the total pressure p is maintained constant.

III.3.5 PERFECT GAS RELATIONSHIPS FOR DRY AND MOIST AIR

When moist air is considered a mixture of independent perfect gases (i.e., dry air and water vapor), each is assumed to obey the perfect gas equation of state as follows:

Dry air: $p_{da}V = n_{da}RT$ (III.27)

Water vapor: : $p_w V = n_w RT$ (III.28)

where
p_{da} = partial pressure of dry air
p_w = partial pressure of water vapor
V = total mixture volume
n_{da} = number of moles of dry air
n_w = number of moles of water vapor
R = universal gas constant, 8314.41 J/(kg mol·K)
T = absolute temperature, K

The mixture also obeys the perfect gas equation:

$$pV = nRT \quad \text{(III.29)}$$

$$(p_{da} + p_w)V = (n_{da} + n_w)RT \quad \text{(III.30)}$$

where p = p_{da} + p_w is the total mixture pressure and n = $n_{da} + n_w$ is the total number of moles in the mixture,the mole fractions of dry air and water vapor are,respectively

$$X_{da} = p_{da}/(p_{da} + p_{w)=}p_{da}/p \quad \text{(III.31)}$$

and

$$X_w = p_w/(p_{da} + p_{w)=}p_w/p$$ (III.32)

From the Equations (III.18) ,(III.31), (III.32), the humidity ratio W is given by

$$W = 0.62198 \ \frac{p_w}{p-p_w}$$ (III.33)

The degree of saturation μ is given by equation (III.23)

$$\mu = \frac{W}{Ws} \ | \ _{t,p}$$

where

$$W_s = 0.62198 \ \frac{p_{ws}}{p-p_{ws}}$$ (III.34)

The term p_{ws} represents the saturation pressure of water vapor in the absence of air at the given temperature t. This pressure p_{ws} is a function only of temperature and differs slightly from the vapor pressure of water in saturated moist air.

The relative humidity ϕ is, by definition, Equation (III.24)

$$\phi = \frac{X_w}{X_{ws}} \ | \ _{t,p}$$

By substituting Equation (III.32) for X_w and X_{ws} ,

$$\phi = \frac{p_w}{p_{ws}} \ | \ _{t,p}$$ (III.35)

Substituting Equation (III.32) for X_{ws} *into Equation* (III.25),

(III.36)

$$\phi = \frac{\mu}{1-(1-\mu)(p_{ws}/p)}$$

Both ϕ and μ are zero for dry air and unity for saturated moist air. At intermediate states their values differ, substantially so at higher temperatures. The specific volume v of a moist air mixture is expressed in terms of a unit mass of dry air:

$$v = V / M_{da} = V /(28.9645 \ n_{da})$$ (III.37)

where V is the total volume of the mixture, M_{da} is the total mass of dry air, and n_{da} is the number of moles of dry air, with the relation $p = p_{da} + p_w$,

$$v = \frac{RT}{28.9645(p-p_w)} = \frac{R_{da}T}{p-p_w} \quad \text{(III.38)}$$

Using Equation (III.31),

$$v = \frac{RT(1+(1.6078)W)}{28.966p} = \frac{R_{da}T(1+(1.607858)W)}{p} \quad \text{(III.39)}$$

In Equations (III.38) and (III.39), v is specific volume, T is absolute temperature, p is total pressure, p_w is the partial pressure of water vapor, and W is the humidity ratio.

In specific units, Equation (III.39) may be expressed as

$$v = 0.2871(t+273.15)(1+1.6078W)/p \quad \text{(III.40)}$$

where

v = specific volume, m^3/kg (dry air)
t = dry-bulb temperature, °C
W = humidity ratio, kg (water)/kg (dry air)
p = total pressure, kPa

The enthalpy of a mixture of perfect gases equals the sum of the individual partial enthalpies of the components. Therefore, the specific enthalpy of moist air can be written as follows:

$$h = h_{da} + W h_g \quad \text{(III.41)}$$

where h_{da} is the specific enthalpy for dry air in kJ/kg (dry air) and h_g is the specific enthalpy for saturated water vapor in kJ/kg (water) at the temperature of the mixture. As an approximation,

$$h_{da} \approx 1.006\ t \quad \text{(III.42)}$$

$$h_g \approx 2501 + 1.805\ t \quad \text{(III.43)}$$

where t is the dry-bulb temperature in °C. The moist air specific enthalpy in kJ/kg (dry air) then becomes

$$h = 1.006t + W(2501+1.86t) \quad \text{(III.44)}$$

III.3.6 THERMODYNAMIC WET-BULB TEMPERATURE AND DEW-POINT TEMPERATURE

For any state of moist air, a temperature t* exists at which liquid (or solid) water evaporates into the air to bring it to saturation at exactly this same temperature and total pressure (Harrison 1965). During the adiabatic saturation process, the saturated air is expelled at a temperature equal to that of the injected water. In this constant pressure process,

• Humidity ratio is increased from a given initial value W to the value Ws* corresponding to saturation at the temperature t*

• Enthalpy is increased from a given initial value h to the value hs* corresponding to saturation at the temperature t*

• Mass of water added per unit mass of dry air is (Ws* − W), which adds energy to the moist air of amount (Ws* − W)hw*, where hw* denotes the specific enthalpy in kJ/kg (water) of the water added at the temperature t* .

Therefore, if the process is strictly adiabatic, conservation of enthalpy at constant total pressure requires that [33],

$$h+(W_s^* - W)\, h_w^* = h_s^* \qquad \text{(III.45)}$$

The properties W_s^*, h_w^*, and h_s^* are functions only of the temperature t* for a fixed value of pressure. The value of t* is the thermodynamic wet-bulb temperature.

The psychrometer consists of two thermometers; one thermometer's bulb is covered by a wick that has been thoroughly wetted with water. When the wet bulb is placed in an airstream, water evaporates from the wick, eventually reaching an equilibrium temperature called the wet-bulb temperature. This process is not one of adiabatic saturation, which defines the thermodynamic wet-bulb temperature, but one of simultaneous heat and mass transfer from the wet bulb.

As defined, thermodynamic wet-bulb temperature is a unique property of a given moist air sample independent of measurement techniques. Equation (III.45) is exact since it defines the thermodynamic wetbulb temperature t*. Substituting the approximate perfect gas relation, Equation (III.44) for h, the corresponding expression for hs*, and the approximate relation

$$h_w^* \approx 4.186\ t^* \qquad \text{(III.46)}$$

into Equation (III.45) , and solving for the humidity ratio

$$W = \frac{(2501 - 2.326t^*)W_s^* - 1.006(t - t^*)}{2501 + 1.86t - 4.186t*} \qquad \text{(III.47)}$$

where t and t* are in °C. The dew-point temperature td of moist air with humidity ratio W and pressure p was defined earlier as the solution td(p, w) of Ws (p, td). For perfect gases, this reduces to

$$p_{ws}(t_d) = p_w = (pW)/(0.62198 + W) \quad \text{(III.48)}$$

where p_w is the water vapor partial pressure for the moist air sample and $p_{ws}(t_d)$is the saturation vapor pressure at temperature t_d.

For the dew-point temperature range of 0 to 93°C,

$$t_d = C_{14} + C_{15}\alpha + C_{16}\alpha^2 + C_{17}\alpha^3 + C_{18}(p_w)^{0.1984} \quad \text{(III.49)}$$

For temperatures below 0°C,

$$t_d = 6.09 + 12.608\alpha + 0.4959\,\alpha^2 \quad \text{(III.50)}$$

where
t_d= dew-point temperature, °C
α = ln p_w
p w = water vapor partial pressure, kPa
C_{14} = -6.54
C_{15} = 14.526
C_{16} = 0.7389
C_{17}= 0.09486
C_{18}= 0.4569

CHAPTER IV

CLIMATIC DESIGN INFORMATION AND CLIMATE ZONES

IV.1 DESIGN CONDITIONS

This climatic design information is commonly used for design, sizing, distribution, installation , and marketing of heating, ventilating, air-conditioning, and dehumidification equipment, as well as for other energy-related processes in residential, agricultural, commercial, and industrial applications. These data also allow the designer to consider various operational peak conditions. Design values of wind speed facilitate the design of smoke management systems in buildings (Lamming and Salmon 1996, 1998).

The climatic design conditions for 61 cities of Turkey were given in Appendix 2 in tables A.2.1 -A2.62.

The top part of the tables contains station information as follows:

- Name of the city
- Latitude of station,
- Longitude of station
- Elevation of station,m.
- Period analyzed, 89-2012 years.

IV.1.1 DEFINITIONS

Degree-day: the difference in temperature between the outdoor mean temperature over a 24-hour period and a given base temperature. For the purposes of determining building envelope requirements, the classifications are defined as follows:

(a) **Cooling degree-day base 10°C, CDD10:** for any one day, when the mean temperature is more than 10°C, there are as many degree-days as degrees Celsius temperature difference between the mean temperature for the day and 10°C (mean temperature minus 10°C). Annual cooling degree-days (CDDs) are the sum of the degree-days over a calendar year.

(b) **Heating degree-day base 18°C, HDD18:** for any one day, when the mean temperature is less than 18°C, there are as many degree-days as degrees Celsius temperature difference between 18°C and the mean temperature for the day (18°C minus the mean temperature).

c) Annual heating degree-days (HDDs) : the sum of the degree-days over a calendar year.

IV.1.2 ABBREVIATIONS AND ACRONYMS

CDDn Cooling degree-days base n°C, °C-day
CDHn Cooling degree-hours base n°C, °C-hour
CZ Climate Zone
DB Dry bulb temperature, °C
DP Dew point temperature, °C

IV.1.3 ANNUAL DESIGN CONDITIONS

Annual climatic design conditions are contained in the first three sections following the top part of the table. Table(s) mean Ashrae climatic design conditions table format. They contain information as follows:

IV.1.3.1 ANNUAL HEATING AND HUMIDIFICATION DESIGN CONDITIONS

- Coldest month (i.e., month with lowest average dry-bulb temperature; 1 = January, 12 = December).
- Dry-bulb temperature corresponding to 99.6 and 99.0% : annual cumulative frequency of occurrence (cold conditions), °C.
- Dew-point temperature corresponding to 99.6 and 99.0% : annual cumulative frequency of occurrence, °C; corresponding humidity ratio, calculated at standard atmospheric pressure at elevation of station,.
- Wind speed corresponding to 0.4 and 1.0% : cumulative frequency of occurrence for coldest month, m/s; mean coincident dry-bulb temperature, °C.
- Mean wind speed coincident with 99.6% dry-bulb temperature : m/s; corresponding most frequent wind direction, degrees from north (east = 90°).

IV.1.3.2 ANNUAL COOLING, DEHUMIDIFICATION,AND ENTALPY DESIGN CONDITIONS

- Hottest month (i.e., month with highest average dry-bulb temperature; 1 = January, 12 = December).
- Daily temperature range for hottest month °C [defined as mean of the difference between daily maximum and daily minimum dry- bulb temperatures for hottest month].
- Dry-bulb temperature corresponding to 0.4, 1.0, and 2.0% annual cumulative frequency ofoccurrence (warm conditions), °F; mean coincident wet-bulb temperature, °F.
- Wet-bulb temperature corresponding to 0.4, 1.0, and 2.0% annual cumulative frequency of occurrence, °C; mean coincident dry- bulb temperature, °C.
- Mean wind speed coincident with 0.4% dry-bulb temperature m/s, corresponding most frequent wind direction, degrees true from north (east = 90°).

- Dew-point temperature corresponding to 0.4, 1.0, and 2.0% annual cumulative frequency of occurrence, °C; corresponding humidity ratio, calculated at the standard atmospheric pressure at elevation of station, g of moisture per kg of dry air; mean coincident dry-bulb temperature, °C.

  Enthalpy corresponding to 0.4, 1.0, and 2.0% annual cumulative frequency of occurrence, Btu/lb; mean coincident dry-bulb tem perature, °C.
- Numberof hours between 8 am and 4 pm (inclusive) with dry-bulb temperature between 55 and 69°C.

IV.1.3.3 EXTREME ANNUAL DESIGN CONDITIONS

. Wind speed corresponding to 1.0, 2.5, and 5.0% : annual cumulative frequency of occurrence, m/s.

. Extreme maximum wet-bulb temperature: °C.

. Mean and standard deviation of extreme annual minimum and maximum dry-bulb temperature: °C

. 5-, I 0-, 20-, and 50-year return period values for minimum and maximum extreme dry-bulb temperature: °C

IV.1.3.4 MONTHLY CLIMATIC DESIGN CONDITIONS

Monthly climatic design conditions are divided into subsections as follows:

IV.1.3.4.1 TEMPERATURES, DEGREE DAYS AND DEGREE HOURS

- Average temperature, °C. This parameter is a prime indicator of climate and is also useful to calculate heating and cooling degree- days to any base.
- Standard deviation of average daily temperature, °C. This parameter is useful to calculate heating and cooling degree-days to any base.
- Heating and cooling degree-days . These parameters are useful in energy estimating methods. They are also used to classify locations into climate zones in ASHRAE Standard 169.
- Cooling degree-hours . These are used in various standards, such as Standard 90.2-2004.

IV.1.3.4.2 MONTHLY DESIGN DRY-BULB, WET-BULB, AND MEAN COINCIDENT TEMPERATURES

These values are derived from the same analysis that results in the annual design conditions. The monthly summaries are useful when seasonal variations in solar geometry and intensity, building or facility occupancy, or building use patterns require con- sideration. In particular, these values can be used when determining air-conditioning loads during periods of maximum solar radiation.

The values listed in the tables include :

- Dry-bulb temperature corresponding to 0.4, 2.0, 5.0, and 10.0% cumulative frequency of occurrence for indicated month, °C; mean coincident wet-bulb temperature, °C.
- Wet-bulb temperature corresponding to 0.4, 2.0, 5.0, and 10.0% cumulative frequency of occurrence for indicated month, °C; mean coincident dry-bulb temperature, °C.

For a 30-day month, the 0.4, 2.0, 5.0 and I 0.0% values of occur- rence represent the value that occurs or is exceeded for a total of 3, 14, 36, or 72 h, respectively, per month on average over the period of record. Monthly percentile values of dry- or wet-bulb temperature may be higher or lower than the annual design conditions cor- responding to the same nominal percentile, depending on the month and the seasonal distribution of the parameter at that location. Generally, for the hottest or most humid months of the year, the monthly percentile value exceeds the design condition for the same element corresponding to the same nominal percentile

A general, very approximate rule of thumb is that the n % annual cooling design condition is roughly equivalent to the 5n% monthly cooling condition for the hottest month; that is, the 0.4% annual design dry-bulb temperature is roughly equivalent to the 2% monthly design dry-bulb temperature for the hottest month; the I% annual value is roughly equivalent to the 5% monthly value for the hottest month, and the 2% annual value is roughly equivalent to the I 0% monthly value for the hottest month.

IV.1.3.4.3 MONTHLY CLIMATIC DESIGN CONDITIONS

These values are useful in calculating daily dry- and wet-bulb temperature profiles are defined:

Mean daily temperature range for month indicated, °C (defined as mean of difference between daily maximum and minimum dry- bulb temperatures).

- Mean daily dry- and wet-bulb temperature ranges coincident with the 5% monthly design dry-bulb temperature. This is the difference between daily maximum and minimum dry- or wet-bulb temperatures, respectively, averaged over all days where the max- imum daily dry-bulb temperature exceeds the 5% monthly design dry-bulb temperature.
- Mean daily dry- and wet-bulb temperature ranges coincident with the 5% monthly design wet-bulb temperature. This is the difference between daily maximum and minimum dry- or wet-bulb temperatures, respectively, averaged over all days where the max- imum daily wet-bulb temperature exceeds the 5% monthly design wet-bulb temperature.

IV.1.3.4.4 CLEAR-SKY SOLAR IRRADIANCE

Clear-sky irradiance parameters are useful in calculating solar-related air conditioning loads for any time of any day of the year. Parameters are provided for the 21st day of each month. The 21st of the month is usually a convenient day for solar calculations because June 21 and December 21 represent the solstices (longest and shortest days) and March 21 and September 21 are close to the equinox (days and nights have the same length).

Parameters listed in the tables are Clear-sky optical depths for beam and diffuse irradiances, which are used to calculate beam and diffuse irradiance as explained in the section on Calculating Clear-Sky Solar Radiation.

- Clear-sky beam normal and diffuse horizontal irradiances at solar noon. These two values can be calculated from the clear-sky opti- cal depths but are listed here for convenience.

- The values were not calculated since missing solar data.

IV.1.4 CALCULATION OF DESIGN CONDITIONS

Values of ambient dry-bulb, dew-point, and wet-bulb temperature and wind speed corresponding to the various annual percentiles represent the value that is exceeded on average by the indicated percentage of the total number of hours in a year (8760). The 0.4, 1.0, 2.0, and 5.0% values are exceeded on average 35, 88, 175, and 438 h per year, respectively, for the period of record. The design values occur more frequently than the corresponding nominal percentile in some years and less frequently in others. The 99.0 and 99.6% (cold-season) values are defined in the same way but are usually viewed as the values for which the corresponding weather element is less than the design con- dition for 88 and 35 h, respectively.

Simple design conditions were obtained by binning hourly data into frequency vectors, then deriving from the binned data the design condition having the probability of being exceeded a certain percentage of the time. Mean coincident values were obtained by double-binning the hourly data into joint frequency matrices, then calculating the mean coincident value corresponding to the simple design condition.

Coincident temperature ranges were also obtained by double- binning daily temperature ranges (daily maximum minus minimum) versus maximum daily temperature. The mean coincident daily range was then calculated by averaging all bins above the simple design condition of interest.

The weather data sets used for the calculations often contain missing values (either isolated records, or because some stations report data only every third hour). Gaps up to 6 h were filled by linear interpolation to provide as complete a time series as possible. Dry-bulb temperature, dew-point temperature, station pressure, and humidity ratio were interpolated. However, wind speed and direction were not interpolated because of their more stochastic and unpredictable nature.

Finally, psychrometric quantities such as wet-bulb temperature, enthalpy, dew point temperature are not contained in the weather data sets. They were calculated from dry-bulb temperature, humidity ratio, and station pressure using the psychrometric equations in Chapter III.3 .

Measures were taken to ensure that the number and distribution of missing data, both by month and by hour of the day, did not introduce significant biases into the analysis. Annual cumulative frequency distributions were constructed from the relative frequency distribu- tions compiled for each month. Each individual month's data were included if they met the following screening criteria for complete ness and unbiased distribution of missing data after data filling

- The number of hourly dry-bulb temperature values for the month, after filling by interpolation, had to be at least 85% of the total hours for the month.
- The difference between the number of day and nighttime dry-bulb temperature observations had to be less than 60.

Although the nominal period of record selected for this analysis was 23 years (1982 through 2012 for most stations), some variation and gaps in observed data meant that some months' data were unusable because of incompleteness. Some months were also eliminated during additional quality control checks. A station's dry-bulb temperature design conditions were calculated only if there were data from at least 8 months that met the quality control and screening criteria from the period of record for each month of the year. For example, there had to be 8 months each of January, February, March, etc. for which data met the completeness screening criteria. These criteria were the same as used in calculating the design conditions in the 2001 and 2005 ASHRAE Handbook-Fundamentals.

Dew-point temperature, wet-bulb temperature, and enthalpy design conditions were calculated for a given month only if the num- ber of dew-point, wet-bulb, or enthalpy values was greater than 85% of the minimum number of dry-bulb temperature values defined previously; wind speed and direction conditions were calculated for a given month only if the number of values was greater than 28.3% (i.e., one-third of 85%) the minimum number of dry-bulb temperature values. For example, a month of January was included in calculations if the number of dry-bulb temperature values exceeded 85% of 744 h, or 633 h. The month was included in calculation of dew- point temperature design conditions only if dew-point temperature was present for at least 85% of 633 h, or 538 h. The month was included in calculation of wind speed design conditions only if wind speed was present for at least 28.3% of 633 h, or 179 h.

Annual dry-bulb temperature extremes were calculated only for years that were 85% complete. At least 8 annual extremes were required to calculate the mean and standard deviation of extreme annual dry-bulb temperatures.

Daily minimum and maximum temperatures were calculated only for complete days; so were daily temperature ranges and mean coincident temperature ranges.A final quality check was made of the calculated design values to identify potential errors. These checks included contour plots, con- sistency checks among the various parameters.

IV.1.5 APPLICABILITY AND CHARACTERISTICS OF DESIGN CONDITIONS

Climatic design values in this study represent different psychrometric conditions. Design data based on dry-bulb temperature represent peak occurrences of the sensible component of ambient outdoor conditions. Design values based on wet-bulb temperature are related to the enthalpy of the outdoor air. Conditions based on dew point relate to the peaks of the humidity ratio. The designer, engineer, or other user must decide which set(s) of conditions and probability of occurrence apply to the design situation under con- sideration.
Annual Heating and Humidification Design Conditions: The month with the lowest mean dry-bulb temperature is used, for example, to determine the time of year where the maximum heating load occurs.

The 99.6 and 99.0% design conditions are often used in sizing heating equipment.The humidification dew point and mean coincident dry-bulb temperatures and humidity ratio provide information for cold- season humidification applications.

Wind design data provide information for estimating peak loads accounting for infiltration: extreme wind speeds for the coldest month, with the mean coincident dry-bulb temperature; and mean wind speed and direction coincident to the 99.6% design dry-bulb temperature.

Annual Cooling, Dehumidification, and Enthalpy Design Conditions: The month with the highest mean dry-bulb temperature is used, for example, to determine the time of year where the maximum sensible cooling load occurs, not taking into account solar loads.

The mean daily dry-bulb temperature range for the hottest month is the mean difference between the daily maximum and minimum temperatures during the hottest month and is calculated from the extremes of the hourly temperature observations. The true maximum and minimum temperatures for any day generally occur between hourly readings. Thus, the mean maximum and minimum temperatures calculated in this way are about I °C less extreme than the mean daily extreme temperatures observed with maximum and minimum thermometers. This results in the true daily temperature range generally about 2°F greater than that calculated from hourly data. The mean daily dry-bulb temperature range is used in cooling load calculations.

The 0.4, 1.0, and 2.0% dry-bulb temperatures and mean coin cident wet-bulb temperatures often represent conditions on hot, mostly sunny days. These are often used in sizing cooling equip- ment such as chillers or air-conditioning units .

Design conditions based on wet-bulb temperature represent ex tremes of the total sensible plus latent heat of outdoor air. This in- formation is useful for design of cooling towers, evaporative coolers, and fresh-air ventilation systems.The mean wind speed and direction coincident with the 0.4% design dry-bulb temperature is used for estimating peak loads accounting for infiltration .

Design conditions based on dew-point temperatures are directly related to extremes of humidity ratio, which represent peak moisture loads from the weather. Extreme dew-point conditions may occur on days with moderate dry-bulb temperatures, resulting in high relative humidity. These values are especially useful for humidity control applications, such as desiccant cooling and dehumidifica- tion, cooling-based dehumidification, and fresh-air ventilation sys- tems. The values are also used as a check point when analyzing the behavior of cooling systems at part-load conditions, particularly when such systems are used for humidity control as a secondary function. Humidity ratio values are calculated from the correspond- ing dew-point temperature and the standard pressure at the location 's elevation .

Annual enthalpy design conditions give the annual enthalpy for the cooling season; this is used for calculating cooling loads caused by infiltration and/or ventilation into buildings. Enthalpy represents the total heat content of air (the sum of its sensible and latent ener- gies). Cooling loads can be calculated knowing the conditions of both the outdoor ambient and the building's interior air.

Extreme Annual Design Conditions: Extreme annual design wind speeds are used in designing smoke management systems.

The extreme maximum wet-bulb temperature provides the highest wet-bulb temperature observed over the entire period of record and is the most extreme condition observed during the data record for evaporative processes such as cooling towers. For most locations, the extreme maximum wet-bulb value is significantly higher than the 0.4% wet-bulb (see above) and should be used only for design of critical applications where an occasional short-duration capacity shortfall is not acceptable.The mean and standard deviation of the extreme annual maxi- mum and minimum dry-bulb temperatures are used to calculate the probability of occurrence of very extreme conditions. These can be required for design of equipment to ensure continuous operation and serviceability regardless of whether the heating or cooling loads are being met. These values were calculated from extremes of hourly temperature observations. The true maximum and minimum temper- atures for any day generally occur between hourly readings. Thus, the mean maximum and minimum temperatures calculated in this way are about 1°F less extreme than the mean daily extreme temper- atures observed with maximum and minimum thermometers.

The 5-, 10-, 20- and 50-year return periods for maximum and minimum extreme dry-bulb temperature are also listed in the tables IV.1.1 - IV.61. Return period (or recurrence interval) is defined as the reciprocal of the annual probability of occurrence. For instance, the 50-year return period maximum dry-bulb temperature has a probability of occurring or being exceeded of 2.0% (i.e., 1/50) each year. This statistic does not indicate how often the condition will occur in terms of the number of hours each year (as in the design conditions based on percentiles) but describes the probability of the condition occur- ring at all in any year. The following method can be used to estimate the return period (recurrence interval) of extreme temperatures:

$$Tn = M + Is$$

where

Tn = n-year return period value of extreme dry-bulb temperature to be estimated, years

M = mean of annual extreme maximum or minimum dry-bulb temperature s, °C

s = standard deviation of annual extreme maximum or minimum dry-bulb temperatures, °C

I = 1 if maximum dry-bulb temperatures are being considered
= -1 if minimum dry-bulb temperatures are being considered

Calculation of the n-year return period is based on assumptions that annual maxima and minima are distributed according to the Gumbel (Type I Extreme Value) distribution and are fitted with the method of moments (Lowery and Nash 1970). The uncertainty or standard error using this method increases with standard deviation, value ofreturn period, and decreasing length of the period ofrecord. It can be significant. For instance, the standard error in the 50-year return period maximum dry-bulb temperature estimated at a location with a 12-year period of record can be 5°C or more.

Thus, the uncertainty ofreturn period values estimated in this way are greater for stations with fewer years of data than for stations with the com- plete period of record from 1989-2012.

Temperatures, Degree-Days, and Degree-Hours. Monthly average temperatures and standard deviation of daily average temperatures are calculated using the averages of the minimum and maximum temperatures for each complete day within the period analyzed. They are used to estimate heating and cooling degree-days to any base, as explained in the Chapter II.2.2.

Heating and cooling degree-days (base 50°F or 65°F) are calculated as the sum of the differences between daily average temperatures and the base temperature. Degree-days are used in energy estimating methods, and to clas- sify stations into climate zones for ASHRAE Standard 169.

Monthly Design Dry-Bulb and Mean Coincident Wet-Bulb Temperatures: These values provide design conditions for processes driven by dry-bulb air temperature. In particular, air-conditioning cooling loads are generally based on dry-bulb design conditions (plus clear-day solar radiation). Monthly Design Wet-Bulb and Mean Coincident Dry-Bulb Temperatures. Wet-bulb design conditions are of use in analysis of evaporative coolers, cooling towers, and other equipment involving evaporative transfer. Note also that air wet-bulb temperature and Mean Daily Temperature Range. Mean daily range values are computed using all days of the month, as opposed to coincident val ues that derive from design days. Mean daily range values have been published in previous Handbook editions and are included for com- pleteness. Coincident daily range values should be used for gener ating design-day profiles.

The design conditions for Adıyaman, Afyonkarahisar, Aksaray, Amasya were given in Table IV.1.1 - Table IV.1.4. The climatic design conditions for 61 cities of Turkey were given in Appendix 2 in tables A.2.1 -A2.62.

Table IV.1.1 Design Conditions for Adıyaman, Turkey

Lat:**37.45** Long:**38.17** Elev: **678** StdP: Time Zone: Period: **1989-2012**

and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-2.1**	**-0.3**	**-14.98**	**4.4**	**1.2**	**-12.1**	**5.0**	**3**	**7.7**	**-3.2**	**6.5**	**31.6**	**3.1**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**5.8**	**40.0**	**24.9**	**38.7**	**24.3**	**37.5**	**19.6**	**24.8**	**37.9**	**23.8**	**38**	**24.7**	**37.2**		

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
21.5	**47.4**	**37.8**	**20.6**	**25.9**	**41.7**	**19.7**	**38.7**	**34.4**	**180.7**	**40.2**	**167.8**	**38.8**	**157.6**	**37.6**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
6.1	**5.3**	**4.9**	**27.0**	**-1.8**	**41.0**	**2.4**	**2.5**	**-3.8**	**42.5**	**-4.3**	**43.7**	**-5.4**	**44.8**	**-6.8**	**46.3**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours		Tavg	**15.5**	**4.7**	**6.0**	**10.8**	**14.9**	**20.1**	**27.4**	**31.8**	**29.7**	**25.9**	**20.1**	**11.5**	**8.3**
		Sd		**2.5**	**1.7**	**3.51**	**3.36**	**3.89**	**3.40**	**1.28**	**1.19**	**2.32**	**2.43**	**2.27**	**2.03**
		HDD10.0	**573**	**329**	**112**	**61**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	**51**
		HDD18.3	**2519**	**844**	**344**	**466**	**113**	**20**	**0**	**0**	**0**	**0**	**12**	**411**	**308**
		CDD10.0	**3282**	**0**	**0**	**110**	**154**	**314**	**522**	**675**	**611**	**478**	**314**	**103**	**1**
		CDD18.3	**1435**	**0**	**0**	**0**	**14**	**77**	**273**	**418**	**354**	**229**	**69**	**0**	**0**
		CDH23.3	**18741**	**0**	**0**	**0**	**119**	**613**	**3380**	**6170**	**4787**	**2722**	**951**	**0**	**0**
		CDH26.7	**10627**	**0**	**0**	**0**	**4**	**169**	**1801**	**3995**	**2886**	**1429**	**343**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**13.4**	**14.5**	**20.9**	**31.8**	**38.8**	**42.6**	**42.2**	**38.7**	**36.5**	**32.0**	**22.2**	**16.3**
		MCWB		**7.7**	**11.0**	**12.3**	**14.3**	**18.3**	**22.6**	**24.3**	**24.2**	**19.2**	**18.9**	**14.7**	**9.7**
	2%	DB		**12.4**	**13.1**	**19.6**	**26.3**	**30.1**	**37.3**	**40.9**	**37.8**	**35.7**	**31.1**	**20.5**	**15.1**
		MCWB		**8.0**	**7.7**	**13.0**	**15.5**	**18.1**	**23.6**	**23.7**	**20.0**	**18.7**	**17.6**	**14.0**	**10.0**
	5%	DB		**11.4**	**11.9**	**18.6**	**24.9**	**28.7**	**35.8**	**40.0**	**37.0**	**34.9**	**30.2**	**18.8**	**13.7**
		MCWB		**6.9**	**10.6**	**10.3**	**14.8**	**15.6**	**18.7**	**24.9**	**21.8**	**18.4**	**14.0**	**13.4**	**9.1**
	10%	DB		**9.8**	**10.2**	**17.0**	**22.1**	**26.9**	**34.9**	**38.7**	**41.8**	**33.6**	**29.0**	**16.4**	**12.4**
		MCWB		**7.7**	**7.0**	**12.6**	**14.7**	**15.4**	**18.4**	**24.3**	**25.7**	**16.9**	**15.9**	**8.3**	**8.0**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**6.6**	**8.1**	**11.4**	**17.3**	**17.9**	**20.9**	**25.6**	**24.6**	**20.3**	**18.4**	**14.0**	**10.8**
		MCDB		**8.4**	**14.5**	**23.0**	**30.9**	**31.0**	**36.2**	**36.6**	**37.0**	**36.8**	**31.4**	**20.8**	**21.3**
	2%	WB		**6.3**	**7.7**	**10.8**	**16.2**	**17.4**	**20.4**	**25.3**	**23.8**	**19.5**	**17.6**	**13.9**	**10.4**
		MCDB		**11.8**	**12.5**	**21.1**	**28.5**	**29.7**	**36.3**	**40.4**	**41.0**	**36.9**	**29.4**	**20.8**	**16.7**
	5%	WB		**5.9**	**7.3**	**10.3**	**15.5**	**16.9**	**19.9**	**24.6**	**23.3**	**18.9**	**16.9**	**13.3**	**9.9**
		MCDB		**14.9**	**12.1**	**20.6**	**22.3**	**30.6**	**35.3**	**41.2**	**34.2**	**36.4**	**33.0**	**22.9**	**16.5**
	10%	WB		**5.1**	**6.8**	**9.5**	**14.1**	**16.2**	**19.4**	**23.8**	**5.1**	**18.3**	**16.4**	**12.5**	**9.2**
		MCDB		**10.0**	**11.4**	**16.2**	**26.2**	**26.6**	**36.8**	**39.0**	**12.0**	**33.6**	**25.7**	**27.3**	**17.5**
Mean Daily Temperature Range		MDBR		**8.3**	**8.9**	**10.2**	**10.6**	**12.1**	**13.1**	**15.6**	**15.7**	**15.1**	**14.6**	**9.6**	**7.6**
	5% DB	MCDBR		**10.9**	**11.9**	**11.7**	**12.3**	**13.8**	**14.0**	**16.2**	**16.2**	**16.5**	**16.5**	**12.1**	**6.5**
		MCWBR		**5.3**	**6.7**	**9.3**	**5.4**	**3.2**	**3.2**	**4.4**	**5.8**	**5.3**	**7.2**	**5.2**	**6.5**
	5% WB	MCDBR		**1.8**	**0.5**	**11.7**	**12.7**	**13.1**	**13.8**	**15.9**	**15.7**	**15.2**	**14.9**	**11.0**	**8.2**
		MCWBR		**1.0**	**0.2**	**9.4**	**5.4**	**3.0**	**3.7**	**5.6**	**5.7**	**5.3**	**6.8**	**5.0**	**5.2**
Clear Sky Solar Irradiance		taub													
		taud													
		Ebn,noon													
		Edh,noon													

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Tablo IV.1.2 Design Conditions for Afyonkarahisar, Turkey

Lat:**38.45** Long:**30.32** Elev: **1034** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-10.1**	**-8.0**	**-13.1**	**2.9**	**-5.2**	**-11.4**	**2.0**	**-10.0**	**7.0**	**22.6**	**6.0**	**22.2**	**1.8**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7		**32.3**	**18.3**	**31.5**	**17.7**	**30.2**	**16.8**	**19.2**	**22.0**	**18.5**	**27.0**	**19.2**	**29.2**		

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
16.2	**19.8**	**22.0**	**15.4**	**22.9**	**23.4**	**14.6**	**27.5**	**28**	**124.4**	**32.5**	**118.9**	**31.5**	**110.8**	**30.3**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
4.6	**5.0**	**6.0**	**24.0**	**-12.0**	**35.7**	**2.7**	**2.5**	**-13.6**	**37.2**	**-14.8**	**38.4**	**-16.0**	**39.5**	**-17.6**	**41.0**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**11.2**	**-0.2**	**1.4**	**5.9**	**10.2**	**14.9**	**19.1**	**24.7**	**23.3**	**18.3**	**12.7**	**3.3**	**0.9**
	Sd			**5.0**	**2.8**	**4.7**	**5.4**	**3.6**	**3.6**	**3.2**	**1.7**	**3.8**	**3.8**	**2.7**	**0.05**
	HDD10.0		**1593**	**315**	**242**	**265**	**61**	**7**	**0**	**0**	**0**	**0**	**18**	**404**	**280**
	HDD18.3		**3965**	**573**	**474**	**751**	**244**	**230**	**32**	**0**	**0**	**46**	**175**	**902**	**538**
	CDD10.0		**2159**	**0**	**0**	**20**	**66**	**315**	**274**	**721**	**414**	**248**	**101**	**0**	**0**
	CDD18.3		**1516**	**0**	**0**	**0**	**0**	**22**	**57**	**315**	**156**	**45**	**0**	**0**	**0**
	CDH23.3		**4159**	**0**	**0**	**0**	**14**	**99**	**598**	**1273**	**1587**	**538**	**48**	**0**	**0**
	CDH26.7		**1516**	**0**	**0**	**0**	**0**	**3**	**204**	**550**	**622**	**137**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**10.8**	**13.5**	**19.0**	**24.8**	**27.0**	**32.5**	**36.6**	**32.5**	**31.4**	**25.6**	**16.4**	**13.4**
		MCWB		**8.6**	**10.9**	**11.5**	**13.6**	**14.6**	**17.8**	**18.7**	**18.4**	**16.6**	**13.8**	**7.3**	**8.4**
	2%	DB		**9.2**	**10.6**	**16.5**	**22.9**	**26.0**	**31.0**	**33.3**	**32.0**	**29.7**	**24.5**	**13.6**	**11.6**
		MCWB		**4.7**	**7.4**	**13.5**	**12.2**	**14.7**	**16.0**	**19.4**	**17.3**	**15.7**	**13.1**	**6.3**	**8.4**
	5%	DB		**8.5**	**9.0**	**15.3**	**20.9**	**24.3**	**29.0**	**31.1**	**31.4**	**28.2**	**23.4**	**11.8**	**9.1**
		MCWB		**2.8**	**6.5**	**7.2**	**10.1**	**15.0**	**16.4**	**16.7**	**16.3**	**16.3**	**14.9**	**8.5**	**5.2**
	10%	DB		**6.1**	**7.1**	**13.2**	**18.7**	**22.1**	**26.9**	**29.8**	**30.4**	**26.6**	**20.9**	**9.2**	**7.1**
		MCWB		**4.3**	**4.1**	**11.1**	**11.1**	**15.6**	**14.7**	**16.9**	**16.9**	**14.2**	**10.1**	**3.8**	**4.8**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**8.1**	**7.4**	**9.8**	**13.7**	**16.1**	**18.8**	**19.8**	**21.4**	**17.3**	**14.7**	**7.6**	**8.8**
		MCDB		**14.0**	**14.7**	**19.4**	**25.4**	**30.9**	**33.4**	**34.9**	**21.0**	**31.2**	**27.2**	**16.3**	**16.5**
	2%	WB		**6.5**	**6.4**	**9.1**	**13.1**	**15.3**	**17.8**	**19.4**	**19.5**	**16.7**	**14.1**	**6.8**	**8.2**
		MCDB		**10.0**	**12.4**	**14.7**	**22.8**	**17.1**	**32.8**	**33.0**	**31.8**	**24.2**	**25.8**	**12.5**	**13.2**
	5%	WB		**5.3**	**5.0**	**8.5**	**12.5**	**14.6**	**16.7**	**18.2**	**18.9**	**16.4**	**13.4**	**5.9**	**6.4**
		MCDB		**9.8**	**8.2**	**10.3**	**21.7**	**25.7**	**31.4**	**29.5**	**30.4**	**25.4**	**24.6**	**12.6**	**12.4**
	10%	WB		**3.9**	**3.7**	**7.9**	**11.2**	**13.7**	**16.1**	**17.5**	**18.8**	**15.7**	**12.9**	**4.8**	**5.1**
		MCDB		**6.2**	**10.4**	**15.5**	**22.0**	**24.1**	**18.2**	**32.0**	**34.6**	**26.4**	**20.6**	**11.8**	**11.6**
Mean Daily Temperature Range		MDBR		**7.5**	**8.6**	**9.6**	**11.8**	**12.4**	**14.3**	**14.5**	**15.9**	**14.9**	**14.1**	**10.3**	**8.4**
	5% DB	MCDBR		**9.2**	**12.2**	**13.4**	**15.0**	**15.2**	**17.9**	**15.5**	**17.8**	**17.7**	**17.2**	**15.2**	**12.3**
		MCWBR		**5.3**	**6.3**	**11.0**	**4.9**	**11.9**	**2.6**	**11.9**	**3.9**	**4.8**	**6.6**	**13.0**	**7.6**
	5% WB	MCDBR		**7.7**	**14.1**	**11.5**	**14.3**	**14.2**	**16.2**	**14.5**	**16.2**	**16.0**	**15.9**	**15.6**	**13.1**
		MCWBR		**4.4**	**6.5**	**10.0**	**4.9**	**11.5**	**3.0**	**11.3**	**3.7**	**5.1**	**7.0**	**13.3**	**7.7**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table IV.1.3 Design Conditions for Aksaray, Turkey

Lat:**38.23** Long:**34.03** Elev: **980** Time Zone: **1.00 (EUW)** Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**-9.9**	**-7.7**	**-15.9**	**2.2**	**-8.5**	**-12.7**	**2.5**	**-6.8**	**9.0**	**18**	**8.0**	**25.3**	**1.3**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8		**35.2**	**21.3**	**35.9**	**19.9**	**32.5**	**18.0**	**20.6**	**36.7**	**19.9**	**32.2**	**19.2**	**32.2**		

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
15.9	**40.4**	**34.4**	**15.1**	**35.0**	**32.0**	**14.5**	**14.4**	**17.8**	**144.1**	**35.3**	**134.5**	**33.9**	**125.0**	**32.5**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
13.2	**11.5**	**10.1**	**22.0**	**-10.9**	**35.0**	**2.7**	**2.6**	**-12.5**	**36.6**	**-13.8**	**37.8**	**-15.0**	**39.0**	**-16.6**	**40.6**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**14.1**	**2.6**	**0.0**	**10.3**	**11.2**	**17.6**	**22.6**	**25.5**	**25.1**	**17.4**	**12.8**	**6.9**	**0.6**
	Sd			**2.46**	**5.08**	**4.25**	**4.30**	**3.17**	**3.14**	**3.16**	**3.15**	**2.06**	**3.64**	**3.47**	**4.55**
	HDD10.0		**1372**	**454**	**279**	**89**	**29**	**0**	**0**	**0**	**0**	**0**	**15**	**215**	**290**
	HDD18.3		**3822**	**960**	**511**	**505**	**216**	**106**	**10**	**0**	**0**	**115**	**169**	**681**	**547**
	CDD10.0		**3882**	**0**	**0**	**105**	**65**	**473**	**757**	**964**	**933**	**446**	**103**	**31**	**0**
	CDD18.3		**1277**	**0**	**0**	**7**	**3**	**66**	**269**	**450**	**419**	**63**	**0**	**0**	**0**
	CDH23.3		**6987**	**0**	**0**	**20**	**34**	**376**	**1321**	**2502**	**2303**	**335**	**95**	**0**	**0**
	CDH26.7		**3039**	**0**	**0**	**1**	**1**	**82**	**502**	**1305**	**1059**	**83**	**6**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**12.2**	**14.3**	**25.0**	**25.7**	**30.0**	**34.2**	**36.7**	**35.9**	**29.6**	**27.3**	**21.5**	**13.2**
		MCWB		**6.4**	**9.1**	**13.2**	**14.2**	**16.7**	**19.6**	**20.6**	**20.2**	**16.6**	**14.9**	**11.4**	**9.3**
	2%	DB		**10.4**	**10.7**	**22.0**	**24 .6**	**29.0**	**32.5**	**35.8**	**34.5**	**28.8**	**25.7**	**18.8**	**11.3**
		MCWB		**6.7**	**6.6**	**11.3**	**14.4**	**16.2**	**19.4**	**21.5**	**19.2**	**15.7**	**14.2**	**9.9**	**7.5**
	5%	DB		**8.2**	**9.3**	**18.7**	**21.3**	**27.3**	**30.9**	**34.8**	**33.0**	**27.0**	**24.2**	**16.0**	**10.0**
		MCWB		**6.3**	**8.2**	**11.9**	**13.4**	**14.9**	**18.5**	**19.9**	**20.2**	**14.4**	**14.1**	**. 9.4**	**5.6**
	10%	DB		**7.3**	**7.7**	**17.0**	**18.2**	**25.3**	**29.8**	**33.5**	**32.1**	**24.8**	**21.9**	**13.5**	**8.5**
		MCWB		**4.1**	**5.8**	**10.9**	**9.3**	**14.9**	**18.6**	**20.3**	**18.1**	**14.6**	**12.2**	**9.5**	**4.5**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**6.3**	**8.2**	**13.0**	**16.8**	**16.7**	**19.7**	**21.5**	**21.1**	**16.9**	**15.2**	**11.9**	**9.6**
		MCDB		**13.2**	**14.8**	**24.2**	**24.9**	**29.8**	**30.5**	**37.0**	**33.5**	**28.2**	**24.8**	**19.5**	**20.0**
	2%	WB		**5.6**	**5.9**	**11.9**	**15.1**	**15.9**	**19.2**	**20.8**	**20.6**	**16.4**	**14.8**	**11.3**	**7.6**
		MCDB		**12.0**	**11.6**	**25.0**	**27.5**	**29.2**	**31.9**	**37.0**	**33.6**	**29.0**	**27.5**	**22.0**	**17.0**
	5%	WB		**5.1**	**4.8**	**10.3**	**13.9**	**15.2**	**18.6**	**20.3**	**20.1**	**15.7**	**14.2**	**9.5**	**7.1**
		MCDB		**10.5**	**10.1**	**16.5**	**25.5**	**25.0**	**21.0**	**34.9**	**33.2**	**28.8**	**24.3**	**20.0**	**13.0**
	10%	WB		**13.6**	**14.8**	**24.2**	**24.9**	**29.8**	**30.5**	**37.0**	**33.5**	**28.2**	**24.8**	**19.5**	**20.0**
		MCDB		**6.3**	**8.2**	**13.0**	**16.8**	**16.7**	**19.7**	**21.5**	**21.1**	**16.9**	**15.2**	**11.9**	**9.6**
Mean Daily Temperature Range		MDBR		**7.8**	**8.9**	**12.1**	**12.3**	**14.8**	**13.7**	**15.8**	**14.8**	**12.9**	**15.1**	**10.4**	**8.3**
	5% DB	MCDBR		**10.9**	**10.5**	**14.1**	**13.5**	**15.8**	**15.5**	**18.2**	**16.9**	**15.1**	**18.5**	**12.5**	**10.4**
		MCWBR		**9.7**	**5.1**	**6.1**	**5.0**	**4.5**	**5.2**	**6.0**	**6.2**	**6.5**	**8.7**	**6.0**	**5.6**
	5% WB	MCDBR		**11.1**	**10.5**	**13.5**	**14.0**	**15.3**	**14.4**	**18.0**	**16.7**	**13.7**	**17.9**	**13.0**	**10.0**
		MCWBR		**9.9**	**4.5**	**6.7**	**5.0**	**4.6**	**5.3**	**5.6**	**6.3**	**5.4**	**8.2**	**6.3**	**6.1**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table IV.1.4 Design Conditions for Amasya, Turkey

Lat: **40.39** Long: **35.51** Elev: **412** Time Zone: **1.00 (EUW)** Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-8.4**	**-5.4**	**-14.3**	**2.2**	**-4.5**	**-11.1**	**2.6**	**-3.0**	**5.5**	**11.8**	**4.6**	**11.0**	**0.7**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8		**35.9**	**20.9**	**33.9**	**18.9**	**31.9**	**17.4**	**20.9**	**31.3**	**20.1**	**34.0**	**19.3**	**22.4**		

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
17.44	**15.9**	**20.3**	**16.7**	**14.5**	**25.4**	**15.8**	**12.7**	**25.2**	**141.7**	**36.0**	**127.5**	**34.0**	**115.2**	**32.0**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
3.9	**3.6**	**3.1**	**23.0**	**-12.0**	**37.8**	**2.7**	**2.8**	**-13.6**	**39.4**	**-14.9**	**40.8**	**-16.2**	**42.0**	**-17.8**	**43.7**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**14.5**	**2.1**	**3.6**	**9.2**	**13.4**	**17.7**	**21.6**	**24.7**	**23.9**	**22.7**	**13.9**	**9.45**	**3.2**
	Sd			**5.07**	**3.18**	**3.58**	**3.90**	**4.27**	**3.92**	**4.38**	**2.23**	**1.80**	**2.34**	**2.84**	**3.33**
	HDD10.0		**8613**	**245**	**180**	**116**	**13**	**3**	**0**	**0**	**0**	**0**	**0**	**93**	**212**
	HDD18.3		**2841**	**501**	**412**	**561**	**154**	**58**	**10**	**0**	**0**	**0**	**138**	**536**	**469**
	CDD10.0		**3053**	**1**	**0**	**70**	**114**	**244**	**347**	**910**	**430**	**761**	**121**	**541**	**0**
	CDD18.3		**991**	**0**	**0**	**0**	**6**	**41**	**109**	**396**	**173**	**263**	**2**	**0**	**0**
	CDH23.3		**6514**	**0**	**0**	**5**	**44**	**475**	**1114**	**1932**	**1656**	**1230**	**57**	**0**	**0**
	CDH26.7		**2689**	**0**	**0**	**0**	**0**	**146**	**506**	**856**	**707**	**462**	**12**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**15.1**	**12.9**	**24.0**	**26.1**	**32.7**	**36.3**	**39.0**	**38.3**	**35.4**	**28.3**	**21.7**	**16.2**
		MCWB		**8.5**	**6.8**	**14.8**	**16.2**	**16.4**	**20.4**	**19.4**	**21.0**	**18.7**	**15.9**	**11.1**	**9.5**
	2%	DB		**12.7**	**11.9**	**21.0**	**24.6**	**29.5**	**34.9**	**35.9**	**35.0**	**33.6**	**24.1**	**19.6**	**12.7**
		MCWB		**6.2**	**6.9**	**12.2**	**14.1**	**17.1**	**19.7**	**20.3**	**18.2**	**17.1**	**14.4**	**8.3**	**6.4**
	5%	DB		**11.5**	**10.9**	**18.9**	**22.6**	**27.9**	**32.3**	**33.4**	**32.4**	**31.1**	**21.3**	**17.8**	**9.1**
		MCWB		**8.6**	**5.9**	**12.6**	**12.9**	**18.3**	**17.5**	**20.5**	**17.2**	**17.6**	**12.6**	**8.2**	**5.5**
	10%	DB		**10.1**	**9.0**	**16.6**	**20.6**	**26.2**	**29.5**	**31.0**	**30.3**	**28.8**	**19.6**	**15.8**	**7.6**
		MCWB		**5.6**	**5.8**	**8.7**	**11.9**	**15.3**	**17.1**	**16.7**	**17.5**	**16.1**	**10.6**	**9.4**	**4.3**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**7.0**	**6.9**	**13.2**	**15.7**	**17.2**	**21.9**	**21.3**	**21.6**	**19.4**	**16.7**	**11.8**	**9.5**
		MCDB		**15.0**	**12.5**	**25.0**	**28.0**	**31.0**	**38.3**	**35.4**	**33.6**	**29.8**	**25.0**	**19.7**	**17.2**
	2%	WB		**6.4**	**5.8**	**11.7**	**15.1**	**16.5**	**20.8**	**20.6**	**20.7**	**18.7**	**15.7**	**11.1**	**6.8**
		MCDB		**15.5**	**14.1**	**20.9**	**26.2**	**29.2**	**33.1**	**24.4**	**36.8**	**26.0**	**27.8**	**18.2**	**13.0**
	5%	WB		**5.1**	**5.9**	**10.3**	**14.4**	**15.4**	**19.7**	**20.0**	**19.7**	**18.1**	**13.9**	**9.9**	**5.8**
		MCDB		**12.7**	**8.9**	**16.8**	**27.4**	**25.3**	**20.6**	**32.5**	**35.3**	**27.0**	**23.1**	**20.6**	**11.4**
	10%	WB		**4.5**	**5.1**	**9.4**	**13.3**	**14.5**	**18.1**	**19.4**	**34.2**	**17.5**	**12.9**	**8.7**	**4.9**
		MCDB		**11.8**	**9.9**	**16.3**	**22.4**	**22.0**	**31.0**	**27.5**	**28.7**	**31.8**	**17.5**	**16.6**	**12.0**
Mean Daily Temperature Range		MDBR		**8.4**	**9.1**	**12.2**	**12.1**	**14.7**	**15.1**	**15.5**	**15.9**	**14.7**	**12.0**	**11.7**	**6.6**
	5% DB	MCDBR		**11.9**	**12.8**	**17.0**	**15.3**	**18.5**	**19.0**	**19.1**	**19.7**	**19.2**	**14.6**	**15.2**	**8.7**
		MCWBR		**4.0**	**6.0**	**6.9**	**4.1**	**3.8**	**4.1**	**2.4**	**4.8**	**4.2**	**5.1**	**5.2**	**4.1**
	5% WB	MCDBR		**5.7**	**10.8**	**19.7**	**13.6**	**4.2**	**17.9**	**16.3**	**16.9**	**14.9**	**13.5**	**13.1**	**9.0**
		MCWBR		**3.9**	**5.0**	**9.7**	**3.1**	**2.4**	**4.4**	**3.22**	**3.9**	**4.1**	**4.9**	**4.8**	**4.4**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

IV.I.6 COMPARISON WITH ASHRAE

Ashrae publishes design conditions only for the following 8 cities of Turkey.

1) İstanbul
2) Sinop
3) Bolu
4) Tekirdağ
5) Edirne
6) Samsun
7) Zonguldak
8) Trabzon

Here, 3 cities İstanbul, Trabzon and Bolu were compared against Ashrae.

Table IV.1.6.1 The Comparison of Annual Heating and Humidification Design Values for İstanbul

İSTANBUL	Heating DB				Humidification DP				Humidification MCDB			
	99.6%		99%		99.6%		99%		99.6%		99%	
	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT
	-2,6	-1,7	-1	-0,9	-7,2	-4,1	-5,8	-3,2	0,6	-1,2	1,8	5,9
Difference	52,94		11,11		75,61		81,25		150,00		69,49	

According to results of Table Table IV.1.6.1 which is the comparison of annual heating and humidification design values of İstanbul with Ashrae, heating DB changed between 11,1%-52,94%, humidification DP changed between 75,61%-81,25%, humidification MCDB changed between 69,9%-150%. The differences were expected results since the calculation methods were different. In this study, TMY method was used.

Table IV.1.6.2 The Comparison of Annual Heating and Humidification Design Values for Trabzon

TRABZON	Heating DB				Humidification DP				Humidification MCDB			
	99.6%		99%		99.6%		99%		99.6%		99%	
	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT
	0	-0,1	1,1	0,5	-7,6	-6,1	-5,2	-4,9	6,7	5,3	6,4	10,1
Difference	100,00		120,00		24,59		6,12		26,42		36,63	

According to results of Table Table IV.1.6.2 which is the comparison of annual heating and humidification design values of Trabzon with Ashrae, heating DB changed between 100%-120%, humidification DP changed between 6,12%-24,59%, humidification MCDB changed between 26,42%-33,63%. The differences were expected results since the calculation methods were different. In this study, TMY method was used.

Table IV.1.6.3 The Comparison of Annual Heating and Humidification Design Values for Bolu

BOLU	Heating DB				Humidification DP				Humidification MCDB			
	99.6%		99%		99.6%		99%		99.6%		99%	
	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT
	-10,6	-8,6	-7,9	-6	-12,8	-10,1	-10,3	-8,7	-9,6	-9,2	-6,7	-5,4
Difference	23,26		31,67		26,73		18,39		4,35		24,07	

According to results of Table IV.1.6.3 which is the comparison of annual heating and humidification design values of Bolu with Ashrae, heating DB changed between 23,26%-31,67%, humidification DP changed between 18,39%-26,73%, humidification MCDB changed between 4,35%%-24,07%. The differences were expected results since the calculation methods were different. In this study, TMY method was used.

Table IV.1.6.4 The Comparison of Annual Cooling and Evaporation Design Values for İstanbul

İSTANBUL	Cooling DB						Cooling MCWB					
	0.4%		1%		2%		0.4%		1%		2%	
	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT
	31,1	31	30	19,7	28,9	20	21,4	29,8	21,3	28,7	20,9	23,7
Difference	0,32		52,28		44,50		28,19		25,78		11,81	

İSTANBUL	Evaporation WB						Evaporation MCDB					
	0.4%		1%		2%		0.4%		1%		2%	
	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT
	24,3	28,8	23,3	27,9	22,5	23,7	27,6	23,1	27	28,5	26,4	31,2
Difference	15,63		16,49		5,06		19,48		5,26		15,38	

According to results of Table Table IV.1.6.4 which is the comparison of annual cooling and evaporation design values of İstanbul with Ashrae, cooling DB changed between 0,32%-44,50%, cooling MCWB changed between 11,81%-28,19%, evaporation WB changed between 5,06%-16,49%, evaporation MCDB changed between 5,26%-19,48%. The differences were expected results since the calculation methods were different. In this study, TMY method was used.

Table IV.1.6.5 The Comparison of Annual Cooling and Evaporation Design Values for Trabzon

TRABZON	Cooling DB						Cooling MCWB					
	0.4%		1%		2%		0.4%		1%		2%	
	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT
	28,2	28,9	27,5	27,9	26,8	27	23,5	22,7	23	21,5	22,5	20,9
Difference	2,42		1,43		0,74		3,52		6,98		7,66	

TRABZON	Evaporation WB						Evaporation MCDB					
	0.4%		1%		2%		0.4%		1%		2%	
	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT
	24,7	23,6	23,8	22,9	23	22,4	27,5	26	26,8	22,4	26,2	28,7
Difference	4,66		3,93		2,68		5,77		19,64		8,71	

According to results of Table IV.1.6.5 which is the comparison of annual cooling and evaporation design values of Trabzon with Ashrae, cooling DB changed between 0,74%-2,42%, cooling MCWB changed between 3,52%-7,66%, evaporation WB changed between 2,68%-4,66%, evaporation MCDB changed between 5,77%-19,64%. The differences were expected results since the calculation methods were different. In this study, TMY method was used.

Table IV.1.6.6 The Comparison of Annual Cooling and Evaporation Design Values for Bolu

BOLU	Cooling DB						Cooling MCWB					
	0.4%		1%		2%		0.4%		1%		2%	
	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT
	30,8	34,9	29,1	31,8	27,4	29,3	19,9	20,5	19,4	19,1	18,8	18,8
Difference	11,75		8,49		6,48		2,93		1,57		0,00	

BOLU	Evaporation WB						Evaporation MCDB					
	0.4%		1%		2%		0.4%		1%		2%	
	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT
	21,5	21,5	20,6	20,4	19,7	19,1	27,9	35,2	26,9	25	25,8	24,2
Difference	0,00		0,98		3,14		20,74		7,60		6,61	

According to results of Table Table IV.1.6.6 which is the comparison of annual cooling and evaporation design values of Bolu with Ashrae, cooling DB changed between 6,48%-11,75%, cooling MCWB changed between 0,01%-2,93%, evaporation WB changed between 0,0%-3,14%, evaporation MCDB changed between 6,61%-20,74%. The differences were expected results since the calculation methods were different. In this study, TMY method was used.

Table IV.1.6.7 The Comparison of Degree Day and Degree Hour Design Values for İstanbul

İSTANBUL	Heating Degree Day				Cooling Degree Day				Cooling Degree Hour			
	HDD 10.0		HDD 18.3		CDD 10.0		CDD 18.3		CDH 23.3		CDH 26.7	
	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT
	477	450	1927	1887	2206	2468	616	677	3867	3635	942	848
Difference	6,00		2,12		10,62		9,01		6,38		11,08	

According to results of Table Table IV.1.6.7 which is the comparison of degree day and degree hour design values of İstanbul with Ashrae, heating degree day changed between 2,12%- 6,0%, cooling degree day changed between 9,01%-28,10,62%, cooling degree hour changed between 6,38%-11,08%. The differences were expected results since the calculation methods were different. In this study, TMY method was used.

Table IV.1.6.8 The Comparison of Degree Day and Degree Hour Design Values for Trabzon

TRABZON	Heating Degree Day				Cooling Degree Day				Cooling Degree Hour			
	HDD 10.0		HDD 18.3		CDD 10.0		CDD 18.3		CDH 23.3		CDH 26.7	
	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT
	359	433	1783	1827	2104	2126	486	491	2049	2364	188	273
Difference	17,09		2,41		1,03		1,02		13,32		31,14	

According to results of Table IV.1.6.8 which is the comparison of degree day and degree hour design values of Trabzon with Ashrae, heating degree day changed between 2,41%-17,09%, cooling degree day changed between 1,02%-1,03%, cooling degree hour changed between 13,32%-31,14%. The differences were expected results since the calculation methods were different. In this study, TMY method was used.

Table IV.1.6.9 The Comparison of Degree Day and Degree Hour Design Values for Bolu

BOLU	Heating Degree Day				Cooling Degree Day				Cooling Degree Hour			
	HDD 10.0		HDD 18.3		CDD 10.0		CDD 18.3		CDH 23.3		CDH 26.7	
	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT	ASHRAE	PRESENT
	1077	1220	2912	3130	1418	1557	209	225	1931	2110	528	670
Difference	11,72		6,96		8,93		7,11		8,48		21,19	

According to results of Table IV.1.6.9 which is the comparison of degree day and degree hour design values of Bolu with Ashrae, heating degree day changed between 6,96%-11,72%, cooling degree day changed between 7,11%-8,93%, cooling degree hour changed between 8,48%-21,19%. The differences were expected results since the calculation methods were different. In this study, TMY method was used.

IV.2 CLIMATE ZONES

IV.2.1 Climate Zone Definitions

The following information is used to determine climate zone numbers and letters for climate zones [79].

1. If monthly average temperature and precipitation data are available, use the criteria below to determine the moisture zone;
2. If monthly or annual average temperature information (including degree-days) and only annual precipitation is available, use Table IV.2.1 for assigning Marine moisture zones and the 30% and 70% (i.e., the third) criteria for determining Dry/Humid threshold;
3. If only annual average temperature (including degree-day information) data is available, use Table IV.2.1 for assigning Marine zones. It is not possible to assign Dry/Humid splits in this case.

Marine (C) Zone definition—Locations meeting all four of the following criteria:

1. Mean temperature of coldest month between 27°F (-3°C) and 65°F (18°C);
2. Warmest month mean < 72°F (22°C);
3. At least four months with mean temperatures over 50°F (10°C);
4. Dry season in summer. The month with the heaviest precipitation in the cold season has at least three times as much precipitation as the month with the least precipitation in the rest of the year. The cold season is October through March in the Northern Hemisphere and April through September in the Southern Hemisphere.

Dry (B) definition—Locations meeting the following criteria:
1. Not Marine (C);
2. If 70% or more of the precipitation, P, occurs during the high sun period, then the Dry / Humid threshold is $P < 0.44 \times (Tm - 7)$ [I-P units], $P < 20.0 \times (Tm + 14)$ [SI units];
3. If between 30% and 70% of the precipitation, P, occurs during the high sun period, then the Dry/Humid threshold is $P < 0.44 \times (Tm - 19.5)$ [I-P units], $P < 20.0 \times (Tm + 7)$ [SI units];
4. If 30 % or less of the precipitation, P, occurs during the high sun period, then the Dry /Humid threshold is BSR/ASHRAE Addendum b to ANSI/ASHRAE Standard 169-2006, Climatic Data for Building Design Standards First Public Review Draft 8
$P < 0.44 \times (Tm - 32)$ [I-P units], $P < 20 \times Tm$ [SI units].
where
P = annual precipitation in inches (mm) , Tm = annual mean temperature in °F (°C).
Summer or high sun period = April through September in the Northern Hemisphere and October through March in the Southern Hemisphere.Winter or cold season = October through March in the Northern Hemisphere and Aprilthrough September in the Southern Hemisphere.
Humid (A) definition—Locations that are not Marine (C) and not Dry (B).Ashrae Climate Zone Definition was given on nthe Table IV.2.1. Climate Zones For Turkey were given on the Table IV.2.2.

Table IV.2.1 Ashrae Climate Zone Definition [79]

Thermal Zone	Name	I-P Units	SI Units
0	Extremely Hot – Humid (0A), Dry (0B)	10,800 < CDD50°F	6000 < CDD10°C
1	Very Hot – Humid (1A), Dry (1B)	9000 < CDD50°F ≤ 10,800	5000 < CDD10°C ≤ 6000
2	Hot – Humid (2A), Dry (2B)	6300 < CDD50°F ≤ 9000	3500 < CDD10°C ≤ 5000
3A and 3B	Warm – Humid (3A), Dry (3B)	4500 < CDD50°F ≤ 6300 AND HDD65°F ≤ 3600	2500 < CDD10°C < 3500 AND HDD18°C ≤ 2000
3C	Warm – Marine (3C)	CDD50°F ≤ 4500 AND HDD65°F ≤ 3600	CDD10°C ≤ 2500 AND HDD18°C ≤ 2000
4A and 4B	Mixed – Humid (4A), Dry (4B)	2700 < CDD50°F ≤ 6300 AND 3600 < HDD65°F ≤ 5400	1500 < CDD10°C < 3500 AND 2000 < HDD18°C ≤ 3000
4C	Mixed – Marine	CDD50°F ≤ 2700 AND 3600 < HDD65°F ≤ 5400	CDD10°C ≤ 1500 AND 2000 < HDD18°C ≤ 3000
5A and 5B	Cool– Humid (5A), Dry (5B)	1800 < CDD50°F ≤ 6300 AND 5400 < HDD65°F ≤ 7200	1000 < CDD10°C ≤ 3500 AND 3000 < HDD18°C ≤ 4000
5C	Cool – Marine (5C)	CDD50°F ≤ 1800 AND 5400 < HDD65°F ≤ 7200	CDD10°C ≤ 1000 AND 3000 < HDD18°C ≤ 4000
6A and 6B	Cold – Humid (6A), Dry (6B)	7200 < HDD65°F ≤ 9000	4000 < HDD18°C ≤ 5000
7	Very Cold (7)	9000 < HDD65°F ≤ 12600	5000 < HDD18°C ≤ 7000
8	Subarctic/Arctic (8)	12600 < HDD65°F	7000 < HDD18°C

Table IV.2.2 Climate Zones For Turkey

CITY NAME	ZONE NUMBER	ZON EXPLANATION
BARTIN	4A AND 4B	MIXED-HUMID (4A),DRY(4B)
ZONGULDAK	5A AND 5B	COOL-HUMID (5A),DRY(5B)
SİNOP	4A AND 4B	MIXED-HUMID (4A),DRY(4B)
SAMSUN	3C	WARM-MARINE (3C)
ORDU	4A AND 4B	MIXED-HUMID (4A),DRY(4B)
GİRESUN	4A AND 4B	MIXED-HUMID (4A),DRY(4B)
TRABZON	3C	WARM-MARINE (3C)
RİZE	4A AND 4B	MIXED-HUMID (4A),DRY(4B)
ARTVİN	5A AND 5B	COOL-HUMID (5A),DRY(5B)
ARDAHAN	7	VERY COLD(7)
EDİRNE	2	HOT-HUMID (2A),DRY(2B)
KIRKLARELİ	5A AND 5B	COOL-HUMID (5A),DRY(5B)
TEKİRDAĞ	5A AND 5B	COOL-HUMID (5A),DRY(5B)
İSTANBUL	3C	WARM-MARINE (3C)
KOCAELİ	2	HOT-HUMID (2A),DRY(2B)
SAKARYA	4A AND 4B	MIXED-HUMID (4A),DRY(4B)
BOLU	6A AND 6B	COLD-HUMID (6A),DRY(6B)
DÜZCE	5A AND 5B	COOL-HUMID (5A),DRY(5B)
KASTAMONU	6A AND 6B	COLD-HUMID (6A),DRY(6B)
KARABÜK	6A AND 6B	COLD-HUMID (6A),DRY(6B)
ÇANKIRI	5A AND 5B	COOL-HUMID (5A),DRY(5B)
ÇORUM	5A AND 5B	COOL-HUMID (5A),DRY(5B)
AMASYA	4A AND 4B	MIXED-HUMID (4A),DRY(4B)
TOKAT	5A AND 5B	COOL-HUMID (5A),DRY(5B)
GÜMÜŞHANE	6A AND 6B	COLD-HUMID (6A),DRY(6B)
BAYBURT	7	VERY COLD(7)
SİVAS	7	VERY COLD(7)
ERZİNCAN	6A AND 6B	COLD-HUMID (6A),DRY(6B)
ERZURUM	7	VERY COLD(7)
KARS	7	VERY COLD(7)
AĞRI	8	SUBARCTIC/ARCTIC(8)
IĞDIR	6A AND 6B	COLD-HUMID (6A),DRY(6B)
ÇANAKKALE	2	HOT-HUMID (2A),DRY(2B)
BURSA	4A AND 4B	MIXED-HUMID (4A),DRY(4B)
YALOVA	4A AND 4B	MIXED-HUMID (4A),DRY(4B)
BİLECİK	5A AND 5B	COOL-HUMID (5A),DRY(5B)
ESKİŞEHİR	7	VERY COLD(7)
ANKARA	5A AND 5B	COOL-HUMID (5A),DRY(5B)
KIRIKKALE	5A AND 5B	COOL-HUMID (5A),DRY(5B)
YOZGAT	7	VERY COLD(7)
BALIKESİR	4A AND 4B	MIXED-HUMID (4A),DRY(4B)

CITY NAME	ZONE NUMBER	ZON EXPLANATION
KÜTAHYA	6A AND 6B	COLD-HUMID (6A),DRY(6B)
KIRŞEHİR	5A AND 5B	COOL-HUMID (5A),DRY(5B)
TUNCELİ	6A AND 6B	COLD-HUMID (6A),DRY(6B)
VAN	6A AND 6B	COLD-HUMID (6A),DRY(6B)
MANİSA	4A AND 4B	MIXED-HUMID (4A),DRY(4B)
UŞAK	5A AND 5B	COOL-HUMID (5A),DRY(5B)
AFYONKARAHISAR	5A AND 5B	COOL-HUMID (5A),DRY(5B)
AKSARAY	2	HOT-HUMID (2A),DRY(2B)
NEVŞEHİR	6A AND 6B	COLD-HUMID (6A),DRY(6B)
KAYSERİ	6A AND 6B	COLD-HUMID (6A),DRY(6B)
MALATYA	5A AND 5B	COOL-HUMID (5A),DRY(5B)
ELAZIĞ	5A AND 5B	COOL-HUMID (5A),DRY(5B)
BİNGÖL	6A AND 6B	COLD-HUMID (6A),DRY(6B)
MUŞ	6A AND 6B	COLD-HUMID (6A),DRY(6B)
BİTLİS	7	VERY COLD(7)
SİİRT	2	HOT-HUMID (2A),DRY(2B)
İZMİR	1	VERY HOT-HUMID (1A),DRY(1
AYDIN	2	HOT-HUMID (2A),DRY(2B)
DENİZLİ	2	HOT-HUMID (2A),DRY(2B)
BURDUR	5A AND 5B	COOL-HUMID (5A),DRY(5B)
ISPARTA	5A AND 5B	COOL-HUMID (5A),DRY(5B)
KONYA	5A AND 5B	COOL-HUMID (5A),DRY(5B)
KARAMAN	6A AND 6B	COLD-HUMID (6A),DRY(6B)
NİĞDE	5A AND 5B	COOL-HUMID (5A),DRY(5B)
KAHRAMANMARAŞ	2	HOT-HUMID (2A),DRY(2B)
GAZİANTEP	4A AND 4B	MIXED-HUMID (4A),DRY(4B)
KİLİS	3A AND 3B	WARM-HUMID (3A),DRY(3B)
ADIYAMAN	4A AND 4B	MIXED-HUMID (4A),DRY(4B)
ŞANLIURFA	1	VERY HOT-HUMID (1A),DRY(1
MARDİN	2	HOT-HUMID (2A),DRY(2B)
DİYARBAKIR	2	HOT-HUMID (2A),DRY(2B)
BATMAN	1	VERY HOT-HUMID (1A),DRY(1
HAKKARİ	6A AND 6B	COLD-HUMID (6A),DRY(6B)
ŞIRNAK	2	HOT-HUMID (2A),DRY(2B)
MUĞLA	4A AND 4B	MIXED-HUMID (4A),DRY(4B)
ANTALYA	3A AND 3B	WARM-HUMID (3A),DRY(3B)
MERSİN	1	VERY HOT-HUMID (1A),DRY(1B)
ADANA	1	VERY HOT-HUMID (1A),DRY(1B)
OSMANİYE	2	HOT-HUMID (2A),DRY(2B)
HATAY	1	VERY HOT-HUMID (1A),DRY(1B)

Table IV.2.1 Climate Zones For Turkey

CITY NAME	ZONE NUMBER	ZON EXPLANATION
KÜTAHYA	6A AND 6B	COLD-HUMID (6A),DRY(6B)
KIRŞEHİR	5A AND 5B	COOL-HUMID (5A),DRY(5B)
TUNCELİ	6A AND 6B	COLD-HUMID (6A),DRY(6B)
VAN	6A AND 6B	COLD-HUMID (6A),DRY(6B)
MANİSA	4A AND 4B	MIXED-HUMID (4A),DRY(4B)
UŞAK	5A AND 5B	COOL-HUMID (5A),DRY(5B)
AFYONKARAHISAR	5A AND 5B	COOL-HUMID (5A),DRY(5B)
AKSARAY	2	HOT-HUMID (2A),DRY(2B)
NEVŞEHİR	6A AND 6B	COLD-HUMID (6A),DRY(6B)
KAYSERİ	6A AND 6B	COLD-HUMID (6A),DRY(6B)
MALATYA	5A AND 5B	COOL-HUMID (5A),DRY(5B)
ELAZIĞ	5A AND 5B	COOL-HUMID (5A),DRY(5B)
BİNGÖL	6A AND 6B	COLD-HUMID (6A),DRY(6B)
MUŞ	6A AND 6B	COLD-HUMID (6A),DRY(6B)
BİTLİS	7	VERY COLD(7)
SİİRT	2	HOT-HUMID (2A),DRY(2B)
İZMİR	1	VERY HOT-HUMID (1A),DRY(1
AYDIN	2	HOT-HUMID (2A),DRY(2B)
DENİZLİ	2	HOT-HUMID (2A),DRY(2B)
BURDUR	5A AND 5B	COOL-HUMID (5A),DRY(5B)
ISPARTA	5A AND 5B	COOL-HUMID (5A),DRY(5B)
KONYA	5A AND 5B	COOL-HUMID (5A),DRY(5B)
KARAMAN	6A AND 6B	COLD-HUMID (6A),DRY(6B)
NİĞDE	5A AND 5B	COOL-HUMID (5A),DRY(5B)
KAHRAMANMARAŞ	2	HOT-HUMID (2A),DRY(2B)
GAZİANTEP	4A AND 4B	MIXED-HUMID (4A),DRY(4B)
KİLİS	3A AND 3B	WARM-HUMID (3A),DRY(3B)
ADIYAMAN	4A AND 4B	MIXED-HUMID (4A),DRY(4B)
ŞANLIURFA	1	VERY HOT-HUMID (1A),DRY(1
MARDİN	2	HOT-HUMID (2A),DRY(2B)
DİYARBAKIR	2	HOT-HUMID (2A),DRY(2B)
BATMAN	1	VERY HOT-HUMID (1A),DRY(1
HAKKARİ	6A AND 6B	COLD-HUMID (6A),DRY(6B)
ŞIRNAK	2	HOT-HUMID (2A),DRY(2B)
MUĞLA	4A AND 4B	MIXED-HUMID (4A),DRY(4B)
ANTALYA	3A AND 3B	WARM-HUMID (3A),DRY(3B)
MERSİN	1	VERY HOT-HUMID (1A),DRY(1B)
ADANA	1	VERY HOT-HUMID (1A),DRY(1B)
OSMANİYE	2	HOT-HUMID (2A),DRY(2B)
HATAY	1	VERY HOT-HUMID (1A),DRY(1B)

TheContour Map of Climate Zones for Turkey was given İn Figure IV.2.1.

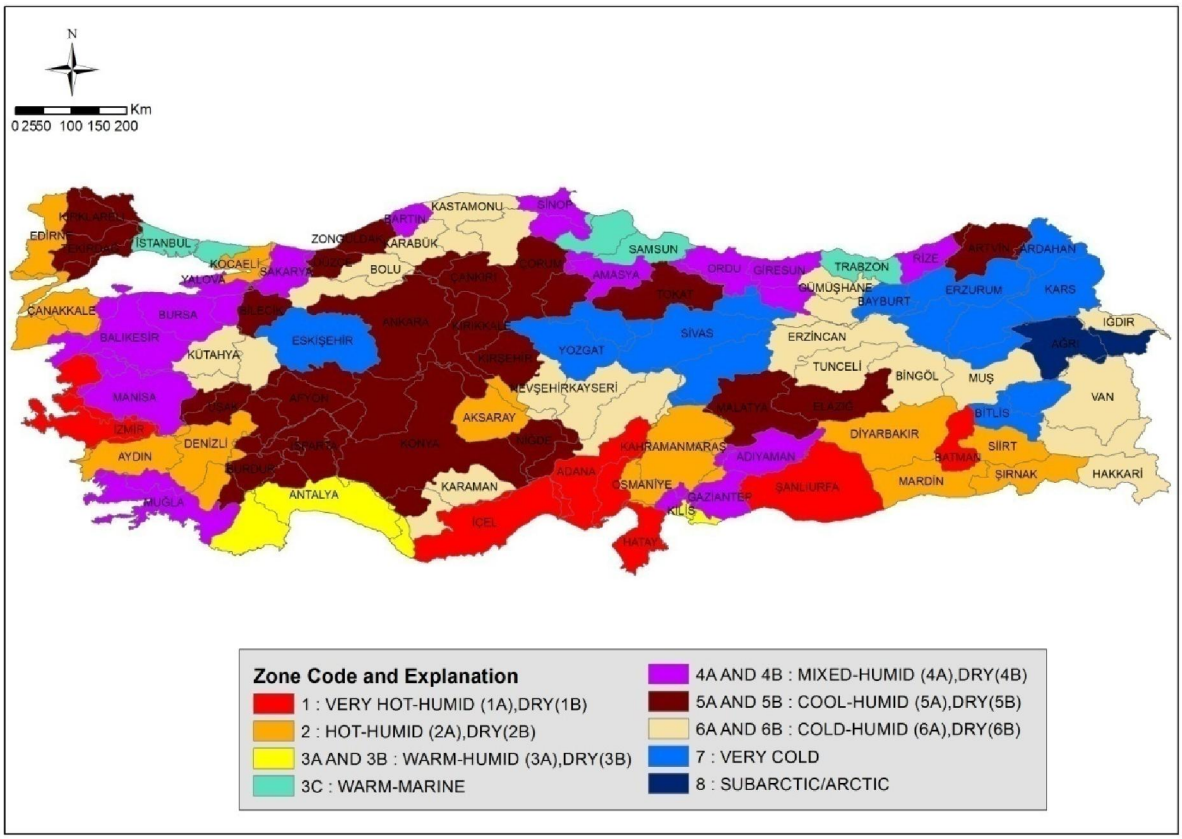

Figure IV.2.1 The Contour Map of Climate Zones for Turkey

CHAPTER V

V.1 RESULTS AND DISCUSSIONS

The results are shown on the following pages thorought this thessis.

- Typical meteorological years on [8] page.
- Climatic database ;
    - Bindata tables are on Appendix A.1 [68-144] pages.
    - Outdoor design conditions are on Appendix A.2 [145-205] pages.
    - Climatic zone graph is on [62] page.

In this study, new outdoor design conditions for space heating and cooling were determined for 61 locations within Turkey according to the format recommended by the American Society of Heating, Refrigerating and AirConditioning Engineers Inc. (ASHRAE). All design data were calculated according to Typical Meteorological Year data.

Climatic design data include information on dry-bulb, wet-bulb temperatures, humidity, wind data . The heating design data were provided at 99.6 and 97.5 percentile frequency of occurrence during winter months. For the cooling design data, the temperature and humidity conditions were provided at 0.4, 1 and 2 percentile frequency of occurrence during summer months.For cooling design values for dry-bulb temperature with mean coincident wet-bulb temperature, wetbulb and dewpoint temperatures with mean coincident dry-bulb temperature and humidity ratio and mean daily range were calculated. Design values of dry-bulb and wet-bulb temperatures and dewpoint corresponding to various annual percentiles represent the value that is exceeded on average by the indicated percentage of the total number of hours in a year (8760 h). The 99.6 and 99 percentile values corresponds to exceeded on the average 35h and 70 h. The 0.4, 1 and 2% values are exceeded on average 35, 88 and 175 h..

Representing the climatic design data for several frequencies of occurrence will enable engineers to choose different risk levels desired for the project in hand. The choice depends on the comfort level to be maintained indoors, thermal inertia and insulation of the building structure. For ordinary buildings, it is customary to use the design data corresponding to annual percentile of 99 in heating. More stringent percentiles are preferred for critical applications such as luxury hotels, hospitals, nurseries or some industrial applications. In this case, 99.6 percentile can be used.

Due to the lack of hourly wet-bulb temperature measurements, design wet-bulb temperatures were calculated by interpolation. in cooling load calculations, the use of design

drybulb temperature with the design wet-bulb temperatures produce cooling loads significantly greater than the actual loads. Therefore, design dry-bulb temperatures should be used with the coincident wet-bulb temperatures in computing cooling loads for cooling applications, especially in air-conditioning since the current design wet-bulb temperatures are generally higher than the coincident wetbulb temperatures. The design wet-bulb temperatures are used for evaporative cooling, cooling towers and fresh air ventilation system design.The probability of occurrence of very extreme conditions are required for the operational design of equipment to ensure continuous operation and serviceability.The mean and Standard deviation of the annual extreme maximum dry-bulb temperatures are based on the daily maximum and minimum temperature observations..

V.2 CASE STUDY FOR THE COMPARISON OF RESULTS

A residential building with 3 floors in İstanbul was taken as an example. In the following Table V.2.1 some properties of the building were given.

Table V.2.1 Some Properties of Sample Residential Building in İstanbul

Element Name	**Area (m^2)**	**U-factor (W/m^2K)**
Outer Walls	900	0.7
Windows (Double glazed)	550	3.02
Total Floors	1750	0.88
Roof (insulated)	700	0.38

The heating load calculations were carried out according to this study, Ashrae and MMO No.84, the results and the comparisons were given on the Table V.2.2.

Table V.2.2 Total Heating Load For Sample Building and Comparison with Present Study

ELEMENT	**HEATING LOAD (w)**					
	MMO NO.88		**ASHRAE**		**THIS STUDY**	
	99.6 %	**99%**	**99.6 %**	**99%**	**99.6 %**	**99%**
Outer Walls	14,490	14,490	14,238	13,230	13,671	13,167
Windows	38,203	38,203	37,539	34,881	36,044	34,715
Total Floors	35,420	35,420	34,804	32,340	33,418	32,186
Roofs(Insulated)	6,118	6,118	6,012	5,586	5,772	5,559
Total Heating Load (W)	94231	94,231	92,592	86,037	88,905	85,627
Difference with Present Study	5.65	9.13	3.98	0.48	-	

According to Table V.2.2 ; the results of MMO No.88 are greater 5.65 -% - 9.13 % than This Study. The results of Ashrae are greater 0.48 %-3.98 % than This Study. The results show the importance of updating present outdoor design conditions.

Notes :

- The outdoor heating design conditions ; -3 °C (MMO No.84), -2.6 °C (%99.6 Ashrae), -1 °C (% 99 Ashrae), -1.7°C (% 99.6 This Study), -0.9 °C (% 99 This Study)
    - Indoor design dry bulb temperature was selected as 20 °C.

CHAPTER VI

CONCLUSIONS

Energy consumption in Turkey is increasing continuously parallel to its development. Because of its limited energy resources,Turkey is heavily dependent on imported oil and gas . Therefore, every means to use energy in a much more rational way should be taken into consideration. Heating, cooling, ventilating and air conditioning (HVAC) systems are major energy users in residential and commercial buildings.

The first step in the design of air-conditioning systems is the calculation of heating and cooling loads of the building that depend on its characteristics, the indoor conditions to be maintained,and on outside weather conditions. If the air-conditioning system is expected to provide the indoor conditions specified (comfort conditions) at all times, it should be designed for peak conditions that are determined by the most extreme weather data recorded for the locality in which the building is located. This approach, however, will result in oversized air conditioning equipment,which in turn, will increase the initial equipment cost and the operating cost.

American Society of Heating, Refrigerating and Air-Conditioning Engineers Inc. (ASHRAE) publishes heating and cooling design conditions corresponding to different levels of probability for several locations in the United States and around the world. It represents the same probability of occurrence anywhere regardless of the seasonal distribution of extreme temperature.Furthermore, the climatic design data given in the 1997 edition of ASHRAE Handbook—Fundamentals are incomplete for Turkey; only eight Turkish localities are considered.

Heating load calculations in Turkey are generally carried out using the climatic design data provided by the Turkish Chamber of Mechanical Engineers (MMO) in Publication No. 84 in which the heating design dry-bulb temperatures are listed for 590 locations within Turkey covering small towns as well. This publication is based on the data given in Turkish Standard No.2164.The heating design data given in these publications are not detailed for design evaluations and building energy analysis. They are based on old weather observations that were taken with the limited instrumentation of the past, which raise doubts about the accuracy of the measurements. The design data have not been updated for the last 35 years. Therefore, a possible change in the climatic conditions during the recent decades cannot have been taken into consideration in load calculations.

Lack of data for various frequency levels is one of the drawbacks of the existing design data that are based on only on elevel of probability (frequency of occurrence). Therefore, designers do not have theopportunity to choose different risk levels desired for the project in hand. The same level of risk factor is assumed for all types of buildings because of the lack of design

data for different frequencies of occurrence. Therefore, some designers tend to adopt their past experience and modify the existingdesign data imposed by the official bodies for non-governmental buildings.In Turkey, the number of studies concerning weather data that are needed for design of airconditioning systems and energy consumption calculations is very limited.The subject has beenconsidered seriously only in recent years and it is not yet complete.

Cooling load calculations in Turkey are generally carried out using the climatic design data provided by the Turkish Chamber of Mechanical Engineers (MMO) in Publication No. 115 and by the Turkish Ministry of Reconstruction and Settlement in Technical Publication No.9. The cooling design data given in these publications are not detailed for design evaluations and building energy analyses. They include only three weather elements: dry-bulb and wet-bulb temperatures, and mean daily temperature range. It is not clear whether the wet-bulb temperature given is 'design wet-bulb temperature' or 'coincident wet-bulb temperature'. Again, the existing cooling design data are based on old weather observations. There is no information about whether the design data were based on the average or the maximum of the observations over a certain period of time or some other methods were applied

Furthermore in practice, an average safety margin of 5–10% is added to the cooling load based on the current design data. As a result of these, both initial and operational costs of the airconditioning system will be high. Being a developing country, Turkey should modify the current cooling and heating design data soon.

All the information and data presented in this thesis will meet all the lack information for the current cooling and heating design data soon.

VI.1 RECOMMENDATIONS FOR FURTHER STUDIES

The research that has been undertaken for this thesis has highlighted a number of topics on which further research would be beneficial. Future studies should include :

1.The generation of typical meteorological year for Turkey with alternative methods such as Sandia, Festa-Ratto,Danish and comparison of the results with this study.
2. The latent heat effect in energy estimation methods; degree day/ degree hour, bindata.
3. Clear Sky Solar Irradiance Data for solar energy calculations;

- Clear sky optical depth for beam irradiance, Taub ,
- Clear sky optical depth for diffuse irradiance, Taud,
- Clear sky beam normal and diffuse horizontal irradiances at solar noon , Ebn and Edh.

4. The comparison of Ashrae outdoor design conditions calculated in this study with the climatic design data provided by the Turkish Chamber of Mechanical Engineers (MMO) in Publication No. 115 and No.84 by carrying out sample studies with different type of buildings such as residential, commercial and industrial buildings for different cities.

APPENDIX

A.1 BINDATA TABLES FOR TURKEY

Table A.1.1 Annual Bindata Table for Bartın

	Hourly Time Interval												
BARTIN	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	1	2	2	1	0	0	0	0	0	0	0	6
-8>=T>=-10	1	1	2	2	2	0	0	0	0	0	0	1	9
-6>=T>=-8	1	4	2	4	3	2	0	0	0	0	1	1	18
-4>=T>=-6	3	5	6	8	6	2	0	0	0	1	3	2	36
-2>=T>=-4	4	9	12	9	12	3	0	0	1	8	9	13	80
0>=T>=-2	16	40	40	42	27	13	9	4	6	5	13	19	234
2>=T>=0	26	52	56	55	50	34	26	25	35	45	49	54	507
4>=T>=2	27	48	50	46	42	27	27	28	28	23	29	40	415
6>=T>=4	28	68	78	68	57	31	24	16	23	39	49	51	532
8>=T>=6	28	53	59	67	63	63	37	39	41	55	66	68	639
10>=T>=8	42	91	75	64	44	46	52	47	45	63	59	65	693
12>=T>=10	37	66	72	70	55	57	41	37	49	41	47	70	642
14>=T>=12	31	63	77	72	56	34	59	45	46	53	69	68	673
16>=T>=14	43	95	99	77	64	51	46	52	54	59	74	68	782
18>=T>=16	34	74	56	51	46	58	53	56	62	65	53	60	668
20>=T>=18	35	39	29	15	61	59	56	53	47	51	54	72	571
22>=T>=20	6	15	10	9	52	51	61	56	64	42	65	64	495
24>=T>=22	2	4	5	1	52	47	64	69	43	53	61	10	411
26>=T>=24	1	2	0	0	30	64	55	55	65	80	25	4	381
28>=T>=26	0	0	0	0	4	48	49	68	71	33	2	4	279
30>=T>=28	0	0	0	0	3	26	15	51	30	7	1		133
32>=T>=30	0	0	0	0	0	10	10	15	15	6	0	0	56
34>=T>=32	0	0	0	0	0	2	5	11	4	0	0	0	22
36>=T>=34	0	0	0	0	0	2	5	1	1	0	0	0	9
38>=T>=36	0	0	0	0	0	0	0	2	0	0	0	0	2
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.2 Annual Bindata Table for Zonguldak

	Hourly Time Interval												
ZONGULDAK	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	0	0	0	0	0	0	0	0	0	0	0
-2>=T>=-4	4	10	10	11	8	2	0	0	3	4	5	8	65
0>=T>=-2	5	11	13	11	13	16	15	13	13	12	11	9	142
2>=T>=0	21	46	47	45	29	18	17	18	18	23	28	33	343
4>=T>=2	20	35	35	37	38	34	33	37	45	46	46	48	454
6>=T>=4	26	53	53	53	48	45	48	49	45	53	50	45	568
8>=T>=6	24	48	48	46	41	40	38	35	38	30	39	44	471
10>=T>=8	28	59	70	66	52	45	43	38	39	58	63	61	622
12>=T>=10	35	69	76	79	60	49	51	52	52	46	51	69	689
14>=T>=12	42	82	64	66	76	71	59	67	78	98	99	91	893
16>=T>=14	22	49	55	41	57	89	96	91	86	71	62	46	765
18>=T>=16	37	75	84	55	34	40	45	43	39	34	32	55	573
20>=T>=18	42	83	82	76	40	35	34	38	29	29	59	67	614
22>=T>=20	40	73	62	88	82	55	44	37	54	80	83	95	793
24>=T>=22	13	24	26	47	92	99	96	84	78	77	83	48	767
26>=T>=24	4	7	4	5	42	74	87	97	82	62	18	9	491
28>=T>=26	2	4	2	4	13	14	18	25	30	6	0	2	120
30>=T>=28	0	0	0	1	4	4	5	7	3	2	0	1	27
32>=T>=30	0	0	0	0	1	0	1	0	0	0	0	0	2
34>=T>=32	0	0	0	0	0	0	0	0	0	0	0	0	0
36>=T>=34	0	0	0	0	0	0	0	0	0	0	0	0	0
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.3 Annual Bindata Table for Sinop

	Hourly Time Interval												
SİNOP	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	0	0	0	0	0	0	0	0	0	0	0
-2>=T>=-4	0	0	0	0	0	0	0	0	0	0	0	0	0
0>=T>=-2	0	0	0	0	0	0	0	0	0	0	0	0	0
2>=T>=0	5	9	13	14	13	2	0	1	3	5	8	6	79
4>=T>=2	17	43	39	41	27	22	15	13	21	20	26	30	314
6>=T>=4	30	56	56	63	56	35	37	39	45	60	53	55	585
8>=T>=6	36	74	70	64	61	68	58	61	69	65	79	80	785
10>=T>=8	44	71	81	80	79	70	64	64	67	86	79	81	866
12>=T>=10	26	57	48	48	53	67	71	66	67	57	57	58	675
14>=T>=12	31	72	78	77	58	51	56	57	56	59	56	61	712
16>=T>=14	36	73	72	75	82	68	49	50	57	64	75	73	774
18>=T>=16	30	51	48	47	56	68	69	76	71	59	54	51	680
20>=T>=18	30	77	86	72	47	47	69	64	53	52	52	54	703
22>=T>=20	60	110	101	112	65	48	38	36	29	39	64	91	793
24>=T>=22	18	33	27	32	100	92	64	57	74	100	103	81	781
26>=T>=24	2	0	0	1	29	70	91	90	81	55	22	8	449
28>=T>=26	0	0	0	0	1	18	35	44	32	8	0	0	138
30>=T>=28	0	0	0	0	0	1	7	8	5	1	0	0	22
32>=T>=30	0	0	0	0	0	0	0	0	0	0	0	0	0
34>=T>=32	0	0	0	0	0	0	0	0	0	0	0	0	0
36>=T>=34	0	0	0	0	0	0	0	0	0	0	0	0	0
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.4 Annual Bindata Table for Samsun

	Hourly Time Interval												
SAMSUN	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	0	0	0	0	0	0	0	0	0	0	0
-2>=T>=-4	0	0	0	0	0	0	0	0	0	0	0	0	0
0>=T>=-2	1	5	5	8	2	0	0	0	0	0	0	0	21
2>=T>=0	15	28	24	22	8	3	2	2	4	10	17	32	167
4>=T>=2	19	42	46	52	41	19	9	13	21	35	41	37	375
6>=T>=4	25	45	48	47	43	40	43	40	43	37	47	45	503
8>=T>=6	31	69	74	61	58	55	44	40	45	60	61	54	652
10>=T>=8	43	87	75	84	69	51	48	49	66	81	71	81	805
12>=T>=10	35	66	71	50	58	77	80	99	86	66	83	80	851
14>=T>=12	21	43	50	53	64	64	65	51	55	68	54	47	635
16>=T>=14	24	55	44	46	35	47	60	63	55	37	33	41	540
18>=T>=16	36	70	78	54	40	36	30	21	27	36	42	57	527
20>=T>=18	38	72	90	78	55	36	34	47	49	61	75	72	707
22>=T>=20	47	99	78	77	68	76	73	64	70	69	63	100	884
24>=T>=22	20	32	35	63	68	61	64	75	60	67	81	50	676
26>=T>=24	9	17	12	31	67	85	83	86	87	64	40	30	611
28>=T>=26	1	0	0	4	40	47	57	37	32	27	22	4	271
30>=T>=28	0	0	0	0	14	23	19	27	23	12	0	0	118
32>=T>=30	0	0	0	0	0	8	15	14	6	0	0	0	43
34>=T>=32	0	0	0	0	0	2	4	2	1	0	0	0	9
36>=T>=34	0	0	0	0	0	0	0	0	0	0	0	0	0
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	1	1
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	2	2
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.5 Annual Bindata Table for Ordu

	Hourly Time Interval												
ORDU	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	0	0	0	0	0	0	0	0	0	0	0
-2>=T>=-4	0	0	0	0	0	0	0	0	0	0	0	0	0
0>=T>=-2	2	6	10	10	5	0	0	0	0	0	3	3	39
2>=T>=0	10	18	15	15	13	6	4	6	9	11	17	19	143
4>=T>=2	15	32	35	41	26	20	13	12	11	20	15	27	267
6>=T>=4	33	66	71	71	52	26	23	23	23	30	50	61	529
8>=T>=6	34	75	79	68	70	50	41	42	56	77	80	65	737
10>=T>=8	43	76	74	77	69	74	58	56	77	96	91	88	879
12>=T>=10	28	66	70	52	51	66	85	88	90	75	63	61	795
14>=T>=12	29	66	56	64	52	59	69	57	55	44	52	55	658
16>=T>=14	30	55	56	49	47	56	51	62	51	41	47	55	600
18>=T>=16	27	53	58	58	50	40	47	48	37	48	50	53	569
20>=T>=18	36	75	73	70	57	53	58	50	50	49	55	61	687
22>=T>=20	36	76	79	73	57	57	48	37	52	52	71	70	708
24>=T>=22	30	48	46	55	71	65	56	70	66	69	62	78	716
26>=T>=24	11	16	8	25	59	63	54	59	48	54	58	30	485
28>=T>=26	1	2	0	2	42	50	74	63	61	55	16	4	370
30>=T>=28	0	0	0	0	9	43	41	49	43	9	0	0	194
32>=T>=30	0	0	0	0	0	2	8	7	1	0	0	0	18
34>=T>=32	0	0	0	0	0	0	0	0	0	0	0	0	0
36>=T>=34	0	0	0	0	0	0	0	0	0	0	0	0	0
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.6 Annual Bindata Table for Giresun

	Hourly Time Interval												
Giresun	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	0	0	0	0	0	0	0	0	0	0	0
-2>=T>=-4	0	0	0	0	0	0	0	0	0	0	0	0	0
0>=T>=-2	0	0	2	3	2	1	0	0	0	0	0	0	8
2>=T>=0	7	14	12	10	6	4	1	4	0	1	5	5	69
4>=T>=2	13	28	33	38	39	16	11	8	11	22	23	31	273
6>=T>=4	28	67	76	70	63	52	25	24	35	39	53	56	588
8>=T>=6	30	56	55	53	47	61	66	58	67	70	62	59	684
10>=T>=8	28	59	64	57	52	44	53	56	47	49	51	51	611
12>=T>=10	34	69	58	71	72	62	70	73	79	79	77	74	818
14>=T>=12	31	48	48	46	53	69	68	59	58	66	62	59	667
16>=T>=14	32	81	72	76	62	47	42	55	45	36	52	68	668
18>=T>=16	44	78	78	70	54	54	53	51	59	63	65	79	748
20>=T>=18	27	56	56	63	69	53	57	56	61	59	73	67	697
22>=T>=20	35	69	80	73	57	72	67	67	55	58	53	47	733
24>=T>=22	37	62	46	55	58	53	55	50	59	59	65	76	675
26>=T>=24	9	17	22	25	51	54	59	55	52	62	59	40	505
28>=T>=26	4	10	6	11	29	54	61	60	60	43	20	14	372
30>=T>=28	0	0	0	0	8	21	28	39	32	15	1	1	145
32>=T>=30	0	0	0	0	0	2	6	6	3	0	0	0	17
34>=T>=32	0	0	0	0	0	0	0	1	0	0	0	0	1
36>=T>=34	0	0	0	0	0	0	1	0	0	0	0	0	1
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.7 Annual Bindata Table for Trabzon

	Hourly Time Interval												
Trabzon	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	0	0	0	0	0	0	0	0	0	0	0
-2>=T>=-4	0	0	0	0	0	0	0	0	0	0	0	0	0
0>=T>=-2	2	8	12	11	5	0	0	0	0	0	0	0	38
2>=T>=0	14	29	22	26	20	6	4	2	6	16	26	29	200
4>=T>=2	20	45	52	49	37	20	15	25	26	31	31	31	382
6>=T>=4	31	59	63	59	68	43	38	32	46	52	56	65	612
8>=T>=6	29	57	47	44	38	48	49	46	48	55	45	48	554
10>=T>=8	23	41	55	59	51	56	47	49	51	56	61	53	602
12>=T>=10	29	65	61	56	48	59	65	69	60	49	53	58	672
14>=T>=12	34	71	70	67	60	47	41	38	51	71	69	66	685
16>=T>=14	37	68	70	67	50	43	58	55	60	50	60	75	693
18>=T>=16	38	80	88	70	65	63	56	62	64	69	61	61	777
20>=T>=18	41	81	77	76	64	72	74	70	55	54	65	73	802
22>=T>=20	38	81	83	89	67	66	64	57	68	67	71	70	821
24>=T>=22	26	42	29	50	74	54	55	56	54	52	78	83	653
26>=T>=24	3	3	1	3	57	70	64	78	81	81	51	18	510
28>=T>=26	0	0	0	2	23	73	74	68	39	20	3	0	302
30>=T>=28	0	0	0	0	2	10	23	18	19	7	0	0	79
32>=T>=30	0	0	0	0	1	0	3	5	2	0	0	0	11
34>=T>=32	0	0	0	0	0	0	0	0	0	0	0	0	0
36>=T>=34	0	0	0	0	0	0	0	0	0	0	0	0	0
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.8 Annual Bindata Table for Rize

Rize	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	0	0	0	0	0	0	0	0	0	0	0
-2>=T>=-4	0	0	0	0	0	0	0	0	0	0	0	0	0
0>=T>=-2	0	1	2	2	1	0	0	0	0	0	0	0	6
2>=T>=0	8	16	19	21	8	0	0	0	3	4	5	12	96
4>=T>=2	21	38	39	40	22	5	3	4	10	15	31	30	258
6>=T>=4	35	80	75	62	59	22	15	15	16	48	59	61	547
8>=T>=6	24	50	55	61	60	55	37	35	55	67	59	65	623
10>=T>=8	40	72	64	65	54	62	65	64	65	58	79	77	765
12>=T>=10	33	73	90	77	71	67	67	67	81	84	69	61	840
14>=T>=12	41	81	74	68	71	72	77	80	68	68	71	77	848
16>=T>=14	29	63	63	63	42	65	56	61	61	49	53	69	674
18>=T>=16	31	57	60	47	57	47	54	52	46	58	53	53	615
20>=T>=18	21	45	38	55	59	69	60	57	61	56	66	57	644
22>=T>=20	47	100	104	67	44	56	69	68	60	55	54	68	792
24>=T>=22	30	47	42	72	76	53	56	53	52	52	81	82	696
26>=T>=24	4	5	5	28	76	70	62	64	56	69	44	14	497
28>=T>=26	1	2	0	2	26	71	70	66	70	38	6	4	356
30>=T>=28	0	0	0	0	4	16	39	36	21	9	0	0	125
32>=T>=30	0	0	0	0	0	0	0	8	5	0	0	0	13
34>=T>=32	0	0	0	0	0	0	0	0	0	0	0	0	0
36>=T>=34	0	0	0	0	0	0	0	0	0	0	0	0	0
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.9 Annual Bindata Table for Artvin

	Hourly Time Interval												
Artvin	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	1	2	2	0	0	0	0	0	0	0	5
-2>=T>=-4	4	9	9	11	13	4	0	0	0	0	1	4	55
0>=T>=-2	10	21	27	33	29	13	12	10	12	17	14	16	214
2>=T>=0	30	62	79	75	65	48	21	28	25	26	38	52	549
4>=T>=2	48	97	76	74	69	74	52	28	39	71	79	85	792
6>=T>=4	23	46	52	53	44	46	73	65	81	64	61	50	658
8>=T>=6	23	50	57	56	51	34	35	52	35	31	32	40	496
10>=T>=8	24	60	49	39	49	44	29	26	28	35	64	58	505
12>=T>=10	28	54	61	66	39	54	40	42	62	73	58	63	640
14>=T>=12	45	79	78	64	64	50	63	58	61	62	59	67	750
16>=T>=14	31	61	61	53	53	50	54	59	50	40	52	61	625
18>=T>=16	42	92	96	88	60	45	40	44	52	71	70	73	773
20>=T>=18	40	67	56	74	75	71	66	64	78	90	92	90	863
22>=T>=20	12	24	20	30	70	62	74	89	72	64	74	53	644
24>=T>=22	4	6	4	6	34	69	64	72	60	47	25	15	406
26>=T>=24	1	2	2	2	10	44	52	38	31	24	5	2	213
28>=T>=26	0	0	0	1	2	19	32	26	28	7	4	1	120
30>=T>=28	0	0	0	0	1	2	16	18	7	5	2	0	51
32>=T>=30	0	0	0	0	0	1	4	5	6	2	0	0	18
34>=T>=32	0	0	0	0	0	0	2	3	2	0	0	0	7
36>=T>=34	0	0	0	0	0	0	1	3	1	0	0	0	5
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.10 Annual Bindata Table for Artvin

	Hourly Time Interval												
Artvin	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	1	2	2	0	0	0	0	0	0	0	5
-2>=T>=-4	4	9	9	11	13	4	0	0	0	0	1	4	55
0>=T>=-2	10	21	27	33	29	13	12	10	12	17	14	16	214
2>=T>=0	30	62	79	75	65	48	21	28	25	26	38	52	549
4>=T>=2	48	97	76	74	69	74	52	28	39	71	79	85	792
6>=T>=4	23	46	52	53	44	46	73	65	81	64	61	50	658
8>=T>=6	23	50	57	56	51	34	35	52	35	31	32	40	496
10>=T>=8	24	60	49	39	49	44	29	26	28	35	64	58	505
12>=T>=10	28	54	61	66	39	54	40	42	62	73	58	63	640
14>=T>=12	45	79	78	64	64	50	63	58	61	62	59	67	750
16>=T>=14	31	61	61	53	53	50	54	59	50	40	52	61	625
18>=T>=16	42	92	96	88	60	45	40	44	52	71	70	73	773
20>=T>=18	40	67	56	74	75	71	66	64	78	90	92	90	863
22>=T>=20	12	24	20	30	70	62	74	89	72	64	74	53	644
24>=T>=22	4	6	4	6	34	69	64	72	60	47	25	15	406
26>=T>=24	1	2	2	2	10	44	52	38	31	24	5	2	213
28>=T>=26	0	0	0	1	2	19	32	26	28	7	4	1	120
30>=T>=28	0	0	0	0	1	2	16	18	7	5	2	0	51
32>=T>=30	0	0	0	0	0	1	4	5	6	2	0	0	18
34>=T>=32	0	0	0	0	0	0	2	3	2	0	0	0	7
36>=T>=34	0	0	0	0	0	0	1	3	1	0	0	0	5
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.11 Annual Bindata Table for Ardahan

Ardahan	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	1	0	0	0	0	0	0	0	0	1
-24>=T>=-26	1	2	1	1	3	0	0	0	0	0	0	0	8
-22>=T>=-24	5	11	14	14	4	1	0	0	0	0	0	6	55
-20>=T>=-22	2	8	10	15	13	3	0	0	0	2	10	9	72
-18>=T>=-20	5	13	16	14	15	7	2	0	3	9	8	6	98
-16>=T>=-18	7	12	15	11	13	12	7	5	9	9	8	14	122
-14>=T>=-16	8	18	14	19	13	18	7	7	10	12	17	21	164
-12>=T>=-14	11	17	15	15	18	16	15	7	8	13	20	17	172
-10>=T>=-12	7	12	14	14	17	17	10	12	7	23	17	18	168
-8>=T>=-10	12	27	23	23	17	18	19	18	22	12	16	10	217
-6>=T>=-8	10	16	16	18	23	11	25	24	27	24	26	30	250
-4>=T>=-6	11	24	21	25	21	22	17	24	26	28	24	21	264
-2>=T>=-4	14	33	53	39	24	27	29	27	32	33	24	20	355
0>=T>=-2	23	51	38	39	25	31	34	35	25	17	23	34	375
2>=T>=0	21	39	42	33	38	23	23	20	20	30	33	46	368
4>=T>=2	17	33	39	28	31	31	31	35	36	33	38	36	388
6>=T>=4	23	43	50	42	25	28	22	27	24	36	38	35	393
8>=T>=6	43	56	75	67	28	24	30	14	28	34	37	34	470
10>=T>=8	37	90	77	75	50	32	23	29	33	24	31	44	545
12>=T>=10	17	53	46	53	44	28	28	38	35	51	50	67	510
14>=T>=12	11	36	21	37	59	38	34	40	42	41	63	72	494
16>=T>=14	1	11	6	15	56	46	38	33	34	41	50	36	367
18>=T>=16	0	1	0	8	45	46	35	41	41	39	35	18	309
20>=T>=18	0	0	0	0	17	63	40	21	34	44	20	10	249
22>=T>=20	0	0	0	0	5	39	54	45	36	21	15	2	217
24>=T>=22	0	0	0	0	2	14	45	50	36	17	3	0	167
26>=T>=24	0	0	0	0	0	9	18	25	14	8	0	0	74
28>=T>=26	0	0	0	0	0	2	11	8	14	4	0	0	39
30>=T>=28	0	0	0	0	0	0	6	17	7	1	0	0	31
32>=T>=30	0	0	0	0	0	0	3	4	3	0	0	0	10
34>=T>=32	0	0	0	0	0	0	0	0	0	0	0	0	0
36>=T>=34	0	0	0	0	0	0	0	0	0	0	0	0	0
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.12 Annual Bindata Table for Edirne

	Hourly Time Interval												
Edirne	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	TOPLAM
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	1	2	2	2	1	0	0	0	0	0	0	0	8
-6>=T>=-8	1	2	4	4	3	1	0	0	0	2	4	4	25
-4>=T>=-6	2	5	6	10	7	4	2	2	2	2	0	2	44
-2>=T>=-4	7	16	14	14	13	2	1	1	3	2	4	9	86
0>=T>=-2	17	40	47	45	33	21	8	5	3	11	17	17	264
2>=T>=0	24	45	51	58	48	28	12	12	20	26	32	50	406
4>=T>=2	26	56	51	49	47	41	35	21	22	23	38	34	443
6>=T>=4	26	60	64	54	55	36	36	30	37	46	56	51	551
8>=T>=6	21	38	48	45	35	64	40	45	38	51	44	57	526
10>=T>=8	31	65	62	63	47	32	50	48	46	39	48	49	580
12>=T>=10	32	62	60	52	50	40	35	36	44	48	50	56	565
14>=T>=12	27	59	65	52	47	37	33	40	47	56	71	69	603
16>=T>=14	33	62	54	57	45	55	51	53	43	43	43	46	585
18>=T>=16	23	55	71	59	23	45	46	39	35	62	50	47	555
20>=T>=18	33	58	45	55	44	30	40	41	52	34	36	47	515
22>=T>=20	24	49	56	45	42	29	42	50	44	40	46	63	530
24>=T>=22	23	41	28	37	65	33	29	38	45	39	60	53	491
26>=T>=24	13	13	2	23	44	57	34	23	30	48	46	41	374
28>=T>=26	1	0	0	3	38	58	45	42	35	43	37	26	328
30>=T>=28	0	0	0	0	29	42	73	68	59	41	35	8	355
32>=T>=30	0	0	0	0	12	43	42	41	43	30	13	0	224
34>=T>=32	0	0	0	0	0	23	41	39	33	31	0	0	167
36>=T>=34	0	0	0	0	0	7	22	36	32	10	0	0	107
38>=T>=36	0	0	0	0	0	0	10	16	15	0	0	0	41
40>=T>=38	0	0	0	0	0	0	0	4	2	0	0	0	6
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.13 Annual Bindata Table for Kırklareli

	Hourly Time Interval												
Kırklareli	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	2	2	0	0	0	0	0	0	0	0	0	4
-8>=T>=-10	1	0	0	1	0	0	0	0	0	0	1	2	5
-6>=T>=-8	0	0	0	1	2	0	0	0	1	4	3	2	13
-4>=T>=-6	1	5	7	8	5	1	1	2	3	0	1	0	34
-2>=T>=-4	9	16	18	18	11	7	4	1	1	4	5	9	103
0>=T>=-2	11	24	27	27	18	11	7	4	8	10	16	21	184
2>=T>=0	15	30	25	24	27	12	12	12	16	23	23	30	249
4>=T>=2	16	35	36	46	34	29	16	20	18	31	43	38	362
6>=T>=4	14	31	30	20	29	28	33	30	36	38	31	28	348
8>=T>=6	17	22	23	21	20	30	23	24	25	20	22	21	268
10>=T>=8	6	17	15	17	15	18	25	19	18	19	20	24	213
12>=T>=10	10	21	27	18	21	16	20	25	21	16	18	18	231
14>=T>=12	10	21	25	14	14	22	16	15	17	18	18	13	203
16>=T>=14	17	35	36	32	13	18	24	19	13	13	17	23	260
18>=T>=16	12	33	33	30	11	14	9	15	16	19	21	28	241
20>=T>=18	18	25	25	36	18	9	15	18	16	21	34	35	270
22>=T>=20	13	34	29	26	26	16	19	10	23	24	25	24	269
24>=T>=22	11	11	10	15	32	21	18	21	16	21	26	34	236
26>=T>=24	2	4	0	13	24	32	15	20	15	23	29	13	190
28>=T>=26	0	0	0	1	30	25	32	29	29	24	14	3	187
30>=T>=28	0	0	0	0	17	31	22	20	19	26	1	0	136
32>=T>=30	0	0	0	0	1	25	36	27	34	12	0	0	135
34>=T>=32	0	0	0	0	0	3	20	33	20	2	0	0	78
36>=T>=34	0	0	0	0	0	0	1	4	3	0	0	0	8
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.14 Annual Bindata Table for Tekirdağ

	Hourly Time Interval												
Tekirdağ	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	0	0	0	0	0	0	0	0	0	0	0
-2>=T>=-4	2	4	5	8	3	0	0	0	0	0	2	1	25
0>=T>=-2	9	21	18	13	12	4	0	0	2	6	9	13	107
2>=T>=0	11	22	37	40	22	13	8	8	8	16	20	21	226
4>=T>=2	30	68	57	52	42	20	13	12	22	25	37	53	431
6>=T>=4	30	55	57	54	58	36	25	30	33	61	79	67	585
8>=T>=6	28	50	54	62	50	71	62	54	61	60	36	43	631
10>=T>=8	25	67	76	67	51	62	69	73	60	36	38	53	677
12>=T>=10	41	76	76	68	55	41	53	46	41	57	78	71	703
14>=T>=12	33	63	54	58	70	54	39	42	46	72	67	66	664
16>=T>=14	32	62	69	48	57	68	70	58	74	62	61	61	722
18>=T>=16	30	65	65	41	39	63	65	63	67	50	50	65	663
20>=T>=18	29	51	48	63	36	33	52	66	39	48	61	62	588
22>=T>=20	26	49	61	53	70	65	52	39	44	55	55	42	611
24>=T>=22	20	53	36	41	36	48	60	67	80	53	43	52	589
26>=T>=24	16	18	13	34	55	48	39	47	36	42	56	42	446
28>=T>=26	3	5	3	24	37	53	66	64	53	45	27	14	394
30>=T>=28	0	0	0	2	26	32	38	35	37	26	10	3	209
32>=T>=30	0	0	0	0	9	15	13	17	15	10	0	0	79
34>=T>=32	0	0	0	0	0	3	5	5	9	5	0	0	27
36>=T>=34	0	0	0	0	0	0	0	3	3	0	0	0	6
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.15 Annual Bindata Table for Ankara

	Hourly Time Interval												
ANKARA	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	0	0	0	0	0	0	0	0	0	0	0
-2>=T>=-4	3	6	1	0	0	0	1		2	2	2	4	21
0>=T>=-2	2	5	11	12	10	10	8	8	7	8	7	6	94
2>=T>=0	7	13	13	13	11	4	1	2	4	8	9	10	95
4>=T>=2	26	54	59	50	29	20	20	14	19	23	31	35	380
6>=T>=4	30	60	55	67	65	41	27	42	50	63	69	75	644
8>=T>=6	26	50	55	52	46	55	57	60	65	53	48	48	615
10>=T>=8	33	70	66	62	60	65	60	55	42	63	68	67	711
12>=T>=10	33	68	74	71	70	60	51	50	61	53	58	66	715
14>=T>=12	29	66	68	65	55	58	48	46	47	51	58	50	641
16>=T>=14	34	69	74	58	50	46	62	51	42	48	44	53	631
18>=T>=16	35	70	63	54	41	47	53	46	46	50	64	69	638
20>=T>=18	33	60	64	66	50	47	47	47	61	60	52	59	646
22>=T>=20	41	87	83	73	71	56	58	60	46	54	67	69	765
24>=T>=22	24	36	31	58	58	56	44	47	50	55	81	82	622
26>=T>=24	6	9	5	19	76	56	53	45	52	69	48	24	462
28>=T>=26	0	0	2	2	20	72	73	65	64	42	11	1	352
30>=T>=28	0	0	0	0	8	20	42	58	41	16	3	1	189
32>=T>=30	0	0	0	0	0	8	16	24	19	1	0	0	68
34>=T>=32	0	0	0	0	0	0	2	4	4	1	0	0	11
36>=T>=34	0	0	0	0	0	1	1	0	0	0	0	0	2
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.16 Annual Bindata Table for Kocaeli

	Hourly Time Interval												
Kocaeli	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	0	0	0	0	0	0	0	0	0	0	0
-2>=T>=-4	0	0	0	0	0	0	0	0	0	0	0	0	0
0>=T>=-2	1	2	3	5	2	0	0	0	0	1	1	0	15
2>=T>=0	10	24	28	27	20	7	3	5	6	8	10	12	160
4>=T>=2	22	48	45	46	44	28	15	8	11	14	25	41	347
6>=T>=4	26	47	58	58	53	48	33	30	38	63	69	59	582
8>=T>=6	25	56	45	43	37	45	52	45	47	36	27	32	490
10>=T>=8	28	56	73	66	48	29	31	40	36	37	44	55	543
12>=T>=10	40	83	80	77	62	45	35	35	40	54	62	76	689
14>=T>=12	33	66	69	70	72	66	52	48	56	66	88	73	759
16>=T>=14	34	78	74	70	60	54	44	49	52	48	38	50	651
18>=T>=16	36	64	53	59	46	54	60	52	44	56	71	64	659
20>=T>=18	20	41	42	40	63	43	49	44	63	66	59	67	597
22>=T>=20	23	63	75	58	35	57	50	61	50	51	50	32	605
24>=T>=22	42	70	58	69	39	49	53	49	41	43	37	65	615
26>=T>=24	11	13	6	16	68	38	58	57	53	40	76	72	508
28>=T>=26	0	0	0	0	48	53	37	41	42	62	54	6	343
30>=T>=28	0	0	0	0	3	68	42	48	48	47	4	0	260
32>=T>=30	0	0	0	0	0	22	58	42	51	15	0	0	188
34>=T>=32	0	0	0	0	0	2	28	31	23	2	0	0	86
36>=T>=34	0	0	0	0	0	0	6	19	3	0	0	0	28
38>=T>=36	0	0	0	0	0	0	1	2	0	0	0	0	3
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.17 Annual Bindata Table for Sakarya

	Hourly Time Interval												
Sakarya	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	2	0	0	0	0	0	0	0	0	0	0	0	2
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	0	0	0	0	0	0	0	0	0	0	0
-2>=T>=-4	0	0	0	0	0	0	0	0	0	0	0	0	0
0>=T>=-2	0	5	10	15	3	0	0	0	0	0	0	0	33
2>=T>=0	17	39	39	42	30	9	2	1	0	3	6	14	202
4>=T>=2	19	39	46	44	40	17	7	9	14	17	33	43	328
6>=T>=4	33	67	71	63	54	43	27	17	22	64	69	65	595
8>=T>=6	33	72	74	67	44	57	47	48	70	51	49	59	671
10>=T>=8	30	62	57	59	56	51	54	50	41	46	47	54	607
12>=T>=10	31	67	67	63	57	36	44	35	41	53	66	71	631
14>=T>=12	35	63	65	72	71	52	45	53	52	58	72	59	697
16>=T>=14	28	65	78	69	51	56	42	48	55	67	50	52	661
18>=T>=16	44	92	91	77	51	57	56	53	59	50	50	76	756
20>=T>=18	35	68	56	66	66	58	61	62	54	63	88	80	757
22>=T>=20	28	40	43	44	63	46	52	55	50	59	60	61	601
24>=T>=22	20	35	24	32	55	69	43	57	63	54	50	56	558
26>=T>=24	9	15	9	16	48	59	70	46	42	47	56	25	442
28>=T>=26	1	0	0	1	30	49	55	60	48	44	27	15	330
30>=T>=28	0	0	0	0	9	43	45	50	46	39	7	0	239
32>=T>=30	0	0	0	0	0	23	38	36	45	14	0	0	156
34>=T>=32	0	0	0	0	0	3	30	32	22	1	0	0	88
36>=T>=34	0	0	0	0	0	0	11	18	4	0	0	0	33
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.18 Annual Bindata Table for Bolu

	Hourly Time Interval												
Bolu	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	2	1	0	0	0	0	0	0	0	3
-10>=T>=-12	0	3	4	2	5	1	0	0	0	0	0	0	15
-8>=T>=-10	0	4	4	6	6	2	0	0	0	0	0	1	23
-6>=T>=-8	4	6	10	8	7	4	1	0	0	0	2	3	45
-4>=T>=-6	4	8	8	10	13	5	2	0	0	2	6	7	65
-2>=T>=-4	7	25	28	34	25	17	4	2	3	12	14	14	185
0>=T>=-2	30	62	68	68	52	31	16	14	17	20	24	35	437
2>=T>=0	34	59	63	56	58	55	49	31	43	62	79	87	676
4>=T>=2	29	67	68	62	45	42	50	51	47	52	41	42	596
6>=T>=4	31	53	58	60	43	39	31	36	39	29	39	47	505
8>=T>=6	26	72	80	78	49	40	32	36	28	44	61	70	616
10>=T>=8	36	73	72	63	71	41	40	35	51	75	75	59	691
12>=T>=10	42	83	90	71	49	55	58	59	72	46	36	58	719
14>=T>=12	50	98	96	102	70	47	45	42	34	39	55	85	763
16>=T>=14	33	61	37	58	66	47	48	53	53	64	95	85	700
18>=T>=16	19	37	34	36	61	68	33	49	54	60	66	51	568
20>=T>=18	14	13	8	11	54	52	52	44	42	66	52	43	451
22>=T>=20	4	6	1	3	32	47	61	44	56	52	34	27	367
24>=T>=22	0	0	0	0	16	49	46	59	58	31	21	12	292
26>=T>=24	0	0	0	0	5	44	46	43	36	26	16	4	220
28>=T>=26	0	0	0	0	2	26	38	43	30	19	10	0	168
30>=T>=28	0	0	0	0	0	11	37	36	26	13	4	0	127
32>=T>=30	0	0	0	0	0	5	17	22	17	10	0	0	71
34>=T>=32	0	0	0	0	0	0	9	12	11	5	0	0	37
36>=T>=34	0	0	0	0	0	1	12	12	7	2	0	0	34
38>=T>=36	0	0	0	0	0	0	1	5	4	1	0	0	11
40>=T>=38	0	0	0	0	0	0	1	2	2	0	0	0	5
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.19 Annual Bindata Table for Düzce

	Hourly Time Interval												
Düzce	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Toplam
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	3	0	0	0	0	0	0	0	0	0	0	0	3
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	2	4	8	6	0	0	0	0	0	0	0	20
-2>=T>=-4	0	12	18	26	19	2	0	0	0	0	0	3	80
0>=T>=-2	16	34	34	28	29	16	0	0	0	0	8	15	180
2>=T>=0	21	45	56	65	50	31	14	7	8	22	33	40	392
4>=T>=2	28	61	66	57	58	45	33	27	33	42	48	54	552
6>=T>=4	28	57	45	47	39	39	35	24	29	43	46	49	481
8>=T>=6	26	66	69	56	51	51	45	49	44	44	57	58	616
10>=T>=8	41	67	62	66	55	52	44	39	43	62	56	68	655
12>=T>=10	25	59	61	59	52	48	44	39	55	55	72	68	637
14>=T>=12	34	77	89	78	57	42	44	36	53	52	49	44	655
16>=T>=14	41	72	66	68	56	59	50	52	43	56	51	67	681
18>=T>=16	34	86	87	79	69	44	48	59	54	54	70	81	765
20>=T>=18	38	64	49	56	68	56	63	57	56	57	81	66	711
22>=T>=20	24	32	21	29	47	64	42	59	62	77	58	68	583
24>=T>=22	3	5	3	8	50	63	62	60	65	54	58	40	471
26>=T>=24	0	0	0	0	21	55	61	67	60	50	36	6	356
28>=T>=26	0	0	0	0	3	40	60	59	58	31	5	0	256
30>=T>=28	0	0	0	0	0	17	42	37	29	22	0	0	147
32>=T>=30	0	0	0	0	0	2	33	40	24	7	0	0	106
34>=T>=32	0	0	0	0	0	1	6	17	11	0	0	0	35
36>=T>=34	0	0	0	0	0	0	1	0	0	0	0	0	1
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.20 Annual Bindata Table for Kastamonu

	Hourly Time Interval												
Kastamonu	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	1	2	2	2	0	0	0	0	0	0	0	7
-12>=T>=-14	0	5	3	3	1	0	0	0	0	0	1	3	16
-10>=T>=-12	0	1	5	7	9	3	0	0	0	1	5	4	35
-8>=T>=-10	5	10	6	2	1	5	4	4	4	9	5	7	62
-6>=T>=-8	4	13	17	23	15	4	1	0	3	8	9	6	103
-4>=T>=-6	17	26	34	28	22	9	6	4	8	7	11	21	193
-2>=T>=-4	20	51	52	55	39	25	13	15	12	22	32	37	373
0>=T>=-2	38	76	75	83	62	37	23	23	29	47	54	64	611
2>=T>=0	29	64	70	61	52	66	58	42	48	54	63	59	666
4>=T>=2	32	59	51	51	56	41	44	32	35	51	52	55	559
6>=T>=4	20	38	47	48	34	39	42	51	49	43	42	53	506
8>=T>=6	27	73	69	39	42	32	31	36	38	31	49	48	515
10>=T>=8	34	60	75	63	44	38	29	30	31	50	46	51	551
12>=T>=10	29	87	105	78	35	51	39	32	45	32	43	54	630
14>=T>=12	45	96	71	74	39	40	43	44	35	46	51	59	643
16>=T>=14	38	44	28	72	62	35	44	32	36	32	56	77	556
18>=T>=16	18	17	14	30	69	41	47	43	39	37	46	78	479
20>=T>=18	4	3	2	7	78	57	36	52	33	40	76	32	420
22>=T>=20	1	2	2	2	45	63	49	39	45	67	56	13	384
24>=T>=22	1	1	0	0	14	86	58	49	53	69	16	8	355
26>=T>=24	0	0	0	0	4	37	73	69	70	36	7	1	297
28>=T>=26	0	0	0	0	3	10	46	67	64	25	5	0	220
30>=T>=28	0	0	0	0	0	6	26	27	21	12	5	0	97
32>=T>=30	0	0	0	0	0	3	9	27	18	6	0	0	63
34>=T>=32	0	0	0	0	0	1	4	4	9	4	0	0	22
36>=T>=34	0	0	0	0	0	0	3	3	4	1	0	0	11
38>=T>=36	0	0	0	0	0	0	1	4	1	0	0	0	6
40>=T>=38	0	0	0	0	0	0	0	1	0	0	0	0	1
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.21 Annual Bindata Table for Karabük

	Hourly Time Interval												
Karabük	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	1	1	2	2	1	0	0	0	0	0	0	0	7
-6>=T>=-8	0	1	2	4	3	1	0	0	0	0	0	1	12
-4>=T>=-6	4	11	15	17	11	1	0	0	0	0	2	3	64
-2>=T>=-4	7	17	16	23	18	9	2	0	2	6	6	13	119
0>=T>=-2	16	37	42	46	29	13	1	2	3	10	20	27	246
2>=T>=0	29	59	66	56	58	27	18	15	21	30	36	38	453
4>=T>=2	33	61	55	58	57	51	23	16	21	27	39	56	497
6>=T>=4	23	44	48	44	48	50	46	40	41	59	71	61	575
8>=T>=6	23	46	36	36	38	53	42	39	49	60	51	46	519
10>=T>=8	13	24	24	19	25	39	62	53	50	40	37	34	420
12>=T>=10	12	26	26	21	12	22	22	38	32	25	29	27	292
14>=T>=12	11	28	34	25	16	23	27	21	26	27	23	15	276
16>=T>=14	20	36	48	42	21	15	31	35	25	22	18	23	336
18>=T>=16	14	40	38	46	17	20	21	20	20	20	18	33	307
20>=T>=18	24	38	37	38	33	11	20	23	18	16	25	32	315
22>=T>=20	14	36	40	42	47	11	15	29	29	21	24	43	351
24>=T>=22	20	34	17	29	55	22	12	13	16	20	34	37	309
26>=T>=24	11	8	0	1	32	37	16	17	24	20	47	35	248
28>=T>=26	0	0	0	0	17	43	21	12	11	36	32	18	190
30>=T>=28	0	0	0	0	9	49	30	20	17	44	24	6	199
32>=T>=30	0	0	0	0	0	29	45	27	41	31	13	0	186
34>=T>=32	0	0	0	0	0	16	34	47	43	16	0	0	156
36>=T>=34	0	0	0	0	0	7	27	29	22	13	0	0	98
38>=T>=36	0	0	0	0	0	0	10	16	18	1	0	0	45
40>=T>=38	0	0	0	0	0	0	8	21	15	1	0	0	45
42>=T>=40	0	0	0	0	0	0	4	12	3	0	0	0	19
44>=T>=42	0	0	0	0	0	0	0	1	1	0	0	0	2
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.22 Annual Bindata Table for Çankırı

	Hourly Time Interval												
Çankırı	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	1	2	1	0	0	0	0	0	0	0	4
-8>=T>=-10	2	4	6	12	8	1	0	0	0	0	0	0	33
-6>=T>=-8	7	16	17	18	17	3	2	0	0	0	1	4	85
-4>=T>=-6	8	18	24	33	27	7	2	3	4	5	14	13	158
-2>=T>=-4	15	43	50	57	36	9	1	2	2	11	6	27	259
0>=T>=-2	38	70	78	63	45	35	10	3	12	24	63	72	513
2>=T>=0	30	59	48	47	61	42	34	22	31	61	57	54	546
4>=T>=2	23	48	54	57	30	50	39	51	48	54	43	51	548
6>=T>=4	23	56	57	62	48	52	39	26	33	52	64	51	563
8>=T>=6	33	75	76	57	51	47	63	57	70	44	36	46	655
10>=T>=8	23	41	47	49	39	38	54	62	57	44	49	44	547
12>=T>=10	26	49	54	60	46	28	37	41	32	45	41	55	514
14>=T>=12	25	57	70	54	37	49	32	36	34	27	43	35	499
16>=T>=14	29	57	40	42	54	38	41	38	39	40	38	48	504
18>=T>=16	22	42	48	45	49	32	39	41	37	35	43	64	497
20>=T>=18	24	43	23	30	40	44	29	26	30	34	52	36	411
22>=T>=20	18	20	6	14	36	63	44	39	33	44	50	40	407
24>=T>=22	5	9	7	6	30	41	41	35	33	46	32	38	323
26>=T>=24	3	1	0	0	30	36	46	38	53	38	34	24	303
28>=T>=26	0	0	0	0	15	39	45	45	34	35	30	6	249
30>=T>=28	0	0	0	0	7	29	41	43	38	26	9	0	193
32>=T>=30	0	0	0	0	1	18	32	38	38	24	2	0	153
34>=T>=32	0	0	0	0	0	7	24	31	27	15	0	0	104
36>=T>=34	0	0	0	0	0	0	9	19	16	4	0	0	48
38>=T>=36	0	0	0	0	0	0	2	8	7	0	0	0	17
40>=T>=38	0	0	0	0	0	0	0	2	0	0	0	0	2
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.23 Annual Bindata Table for Çorum

	Hourly Time Interval												
Çorum	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	1	0	0	0	0	0	0	0	0	0	0	0	1
-10>=T>=-12	0	0	1	2	0	0	0	0	0	0	0	0	3
-8>=T>=-10	0	5	9	12	9	1	0	0	0	0	0	0	36
-6>=T>=-8	5	12	14	13	11	3	0	1	3	6	6	10	84
-4>=T>=-6	10	24	22	24	12	9	8	5	7	8	14	10	153
-2>=T>=-4	15	32	40	46	33	16	7	7	6	12	10	25	249
0>=T>=-2	29	64	65	56	44	26	15	12	13	26	42	44	436
2>=T>=0	30	80	86	89	57	46	29	27	38	45	47	64	638
4>=T>=2	44	74	73	62	58	42	38	38	38	47	72	68	654
6>=T>=4	32	59	56	42	43	35	49	41	38	47	40	56	538
8>=T>=6	28	66	67	72	45	41	1	31	33	44	62	59	549
10>=T>=8	32	62	75	57	54	35	34	36	44	53	54	57	593
12>=T>=10	24	61	70	63	61	59	42	41	54	54	62	51	642
14>=T>=12	29	60	70	69	39	61	54	52	53	53	46	51	637
16>=T>=14	25	68	49	64	49	47	47	57	45	43	42	49	585
18>=T>=16	36	32	27	37	53	52	53	41	40	40	46	45	502
20>=T>=18	13	25	3	17	57	36	54	46	49	40	46	68	454
22>=T>=20	8	5	1	3	56	44	38	44	35	49	62	44	389
24>=T>=22	3	0	0	0	27	60	41	37	44	50	45	15	322
26>=T>=24	0	0	0	0	17	49	45	41	37	42	17	11	259
28>=T>=26	0	0	0	0	4	37	51	39	43	29	13	2	218
30>=T>=28	0	0	0	0	0	23	45	56	46	25	2	0	197
32>=T>=30	0	0	0	0	0	6	23	38	33	9	1	0	110
34>=T>=32	0	0	0	0	0	1	17	20	18	6	0	0	62
36>=T>=34	0	0	0	0	0	0	5	15	9	1	0	0	30
38>=T>=36	0	0	0	0	0	0	1	3	3	0	0	0	7
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.24 Annual Bindata Table for Amasya

Amasya	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	TOPLAM
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	1	2	2	1	0	0	0	0	0	0	0	6
-12>=T>=-14	0	1	1	0	1	0	0	0	0	0	0	1	4
-10>=T>=-12	1	0	5	2	1	0	0	0	0	0	1	1	11
-8>=T>=-10	1	4	4	4	4	1	0	0	0	0	1	2	21
-6>=T>=-8	3	5	12	5	4	5	0	0	1	4	2	3	44
-4>=T>=-6	3	10	24	10	9	3	3	0	3	6	4	5	80
-2>=T>=-4	11	18	40	37	22	8	4	6	11	8	16	18	199
0>=T>=-2	16	36	43	33	34	20	17	17	14	19	23	26	298
2>=T>=0	19	44	54	46	39	33	24	20	22	30	32	33	396
4>=T>=2	28	57	73	64	48	32	25	21	24	30	29	39	470
6>=T>=4	25	54	68	67	53	42	33	27	36	29	56	63	553
8>=T>=6	34	80	46	55	52	48	40	39	35	55	52	52	588
10>=T>=8	32	51	61	49	54	49	39	36	33	49	46	61	560
12>=T>=10	28	53	62	44	45	34	48	47	56	54	58	65	594
14>=T>=12	15	45	95	49	45	48	40	33	47	49	53	36	555
16>=T>=14	27	78	67	84	28	56	46	55	50	43	44	41	619
18>=T>=16	43	80	47	68	43	42	46	45	37	46	37	48	582
20>=T>=18	40	70	19	65	59	20	37	31	41	37	33	58	510
22>=T>=20	26	25	5	35	62	42	34	50	42	41	69	81	512
24>=T>=22	8	15	2	8	66	54	36	33	42	65	81	54	464
26>=T>=24	5	3	0	3	37	69	52	39	48	62	41	30	389
28>=T>=26	0	0	0	0	19	60	64	57	64	46	32	8	350
30>=T>=28	0	0	0	0	3	38	64	72	48	25	12	4	266
32>=T>=30	0	0	0	0	1	16	36	35	24	18	7	1	138
34>=T>=32	0	0	0	0	0	5	22	33	28	6	1	0	95
36>=T>=34	0	0	0	0	0	4	11	20	11	8	0	0	54
38>=T>=36	0	0	0	0	0	1	4	7	11	0	0	0	23
40>=T>=38	0	0	0	0	0	0	5	6	1	0	0	0	12
42>=T>=40	0	0	0	0	0	0	0	1	1	0	0	0	2
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.25 Annual Bindata Table for Tokat

	Hourly Time Interval												
Tokat	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	3	2	2	2	2	0	0	0	0	0	0	0	11
-8>=T>=-10	1	3	7	11	2	0	0	0	0	0	0	2	26
-6>=T>=-8	6	16	15	14	9	0	0	0	0	0	2	3	65
-4>=T>=-6	7	13	12	10	11	3	0	0	0	3	8	17	84
-2>=T>=-4	10	26	36	42	27	11	2	1	5	9	19	21	209
0>=T>=-2	22	50	46	38	33	33	17	14	12	36	33	32	366
2>=T>=0	33	56	65	71	59	37	36	28	38	31	43	57	554
4>=T>=2	22	47	33	39	41	53	43	47	39	44	46	47	501
6>=T>=4	15	35	56	40	38	33	36	19	34	41	52	45	444
8>=T>=6	32	64	53	55	39	44	45	51	49	55	41	37	565
10>=T>=8	29	65	75	70	41	39	43	42	42	35	30	42	553
12>=T>=10	40	72	67	66	66	28	30	41	41	41	60	86	638
14>=T>=12	26	61	67	57	63	64	29	33	31	46	75	53	605
16>=T>=14	30	53	74	64	43	58	43	35	33	52	52	57	594
18>=T>=16	29	73	55	64	41	44	65	39	54	62	49	47	622
20>=T>=18	29	43	29	40	54	28	39	55	60	44	37	54	512
22>=T>=20	17	28	25	27	59	52	41	46	38	40	59	62	494
24>=T>=22	13	21	12	18	49	57	45	42	34	41	62	40	434
26>=T>=24	3	2	0	2	33	59	51	47	55	58	37	22	369
28>=T>=26	0	0	0	0	10	45	58	46	49	49	17	6	280
30>=T>=28	0	0	0	0	10	23	55	51	46	23	6	0	214
32>=T>=30	0	0	0	0	0	15	23	45	35	12	2	0	132
34>=T>=32	0	0	0	0	0	3	20	27	21	7	0	0	78
36>=T>=34	0	0	0	0	0	0	7	15	10	1	0	0	33
38>=T>=36	0	0	0	0	0	0	2	4	3	0	0	0	9
40>=T>=38	0	0	0	0	0	0	0	2	1	0	0	0	3
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.26 Annual Bindata Table for Gümüşhane

	Hourly Time Interval												
Gümüşhane	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	5	0	0	0	0	0	0	0	0	0	0	0	5
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	6	10	17	9	1	0	0	0	0	1	2	46
-8>=T>=-10	3	21	20	14	16	4	0	0	0	1	3	7	89
-6>=T>=-8	15	25	22	23	23	15	4	3	6	7	10	22	175
-4>=T>=-6	11	18	26	26	26	18	4	9	8	18	24	29	217
-2>=T>=-4	25	53	53	58	45	26	21	14	22	27	33	35	412
0>=T>=-2	21	41	41	40	45	40	26	23	30	42	46	44	439
2>=T>=0	30	59	60	56	39	47	46	51	58	54	56	51	607
4>=T>=2	25	55	65	67	46	51	47	38	37	50	50	49	580
6>=T>=4	31	66	51	43	39	28	48	49	50	36	30	51	522
8>=T>=6	26	51	72	68	57	32	29	30	29	37	50	65	546
10>=T>=8	34	81	78	70	61	50	50	48	50	65	71	56	714
12>=T>=10	34	54	52	53	44	55	43	50	63	59	54	60	621
14>=T>=12	18	49	66	55	45	45	46	39	42	42	47	44	538
16>=T>=14	34	75	66	75	45	41	42	53	40	48	50	47	616
18>=T>=16	30	45	32	48	52	41	37	35	42	39	44	71	516
20>=T>=18	14	22	12	11	67	32	42	37	36	56	69	45	443
22>=T>=20	11	9	6	8	39	44	26	35	40	56	33	23	330
24>=T>=22	0	2	0	0	23	51	42	30	56	30	23	24	281
26>=T>=24	0	0	0	0	8	49	51	59	41	24	22	5	259
28>=T>=26	1	0	0	0	3	27	36	37	32	20	9	0	165
30>=T>=28	0	0	0	0	0	17	37	35	23	8	7	2	129
32>=T>=30	0	0	0	0	0	14	21	23	11	9	0	0	78
34>=T>=32	0	0	0	0	0	1	24	21	10	4	0	0	60
36>=T>=34	0	0	0	0	0	2	6	8	5	0	0	0	21
38>=T>=36	0	0	0	0	0	1	4	5	1	0	0	0	11
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.27 Annual Bindata Table for Bayburt

	Hourly Time Interval												
Bayburt	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	4	9	12	3	0	0	0	0	0	0	0	28
-18>=T>=-20	0	7	8	8	7	0	0	0	0	0	3	6	39
-16>=T>=-18	7	13	9	10	16	1	0	0	0	4	11	16	87
-14>=T>=-16	4	14	10	9	5	11	1	0	1	11	10	9	85
-12>=T>=-14	8	13	20	15	15	14	2	1	5	15	13	12	133
-10>=T>=-12	8	14	14	16	13	7	12	8	12	11	10	14	139
-8>=T>=-10	7	16	12	17	17	12	13	11	11	10	17	12	155
-6>=T>=-8	9	23	25	24	22	21	16	18	20	20	17	19	234
-4>=T>=-6	16	26	34	39	21	18	16	14	24	20	17	22	267
-2>=T>=-4	13	44	52	50	31	25	20	22	20	25	31	30	363
0>=T>=-2	30	49	40	39	37	28	27	20	26	25	30	45	396
2>=T>=0	34	70	73	74	50	30	36	39	36	52	64	60	618
4>=T>=2	25	53	52	44	63	51	50	52	55	53	65	68	631
6>=T>=4	34	76	82	47	50	48	31	29	36	53	43	43	572
8>=T>=6	34	66	71	65	38	50	45	44	49	46	52	58	618
10>=T>=8	27	62	66	64	47	55	677	60	59	54	47	65	1283
12>=T>=10	29	60	56	59	45	47	43	49	38	41	57	53	577
14>=T>=12	29	51	51	50	43	38	38	44	45	47	47	51	534
16>=T>=14	24	44	30	50	54	36	36	36	24	48	51	58	491
18>=T>=16	12	15	7	23	50	46	32	31	44	43	50	38	391
20>=T>=18	5	5	4	12	44	40	37	32	43	38	40	25	325
22>=T>=20	2	4	1	3	28	39	45	46	41	42	24	18	293
24>=T>=22	1	0	0	0	16	49	34	34	42	23	13	4	216
26>=T>=24	0	0	0	0	11	26	52	38	36	15	13	3	194
28>=T>=26	0	0	0	0	2	21	29	41	23	16	4	1	137
30>=T>=28	0	0	0	0	1	7	18	25	9	11	1	0	72
32>=T>=30	0	0	0	0	0	7	15	12	17	6	0	0	57
34>=T>=32	0	0	0	0	0	3	9	10	9	1	0	0	32
36>=T>=34	0	0	0	0	0	0	6	14	5	0	0	0	25
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.28 Annual Bindata Table for Sivas

	Hourly Time Interval												
Sivas	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	1	4	0	0	0	0	0	0	0	0	5
-16>=T>=-18	0	4	4	4	3	0	0	0	0	0	0	0	15
-14>=T>=-16	2	7	9	6	8	1	0	0	0	0	0	2	35
-12>=T>=-14	4	10	12	16	10	5				2	7	9	75
-10>=T>=-12	9	12	12	9	13	7	2		1	9	5	6	85
-8>=T>=-10	6	13	11	15	15	8	5	4	9	5	13	19	123
-6>=T>=-8	8	18	24	16	16	17	12	10	7	14	20	18	180
-4>=T>=-6	13	22	19	22	26	22	13	11	16	22	19	20	225
-2>=T>=-4	11	22	37	36	31	25	33	23	31	36	39	34	358
0>=T>=-2	23	54	54	62	43	45	36	38	35	34	33	31	488
2>=T>=0	36	71	64	60	54	45	40	45	46	47	49	59	616
4>=T>=2	28	63	72	60	44	42	58	52	53	50	54	58	634
6>=T>=4	24	40	44	46	37	35	35	44	36	28	37	38	444
8>=T>=6	19	43	53	45	25	36	24	31	27	35	29	37	404
10>=T>=8	22	61	69	55	41	32	33	25	29	29	32	45	473
12>=T>=10	34	60	53	66	59	29	28	27	28	33	50	55	522
14>=T>=12	26	54	71	62	60	34	43	37	35	49	61	48	580
16>=T>=14	35	65	42	54	54	44	32	37	43	44	37	49	536
18>=T>=16	23	37	28	41	57	52	35	40	36	36	54	69	508
20>=T>=18	12	19	13	7	43	58	38	24	21	44	55	46	380
22>=T>=20	8	10	0	0	42	51	52	41	44	49	45	29	371
24>=T>=22	3	0	0	0	18	50	54	48	54	49	35	14	325
26>=T>=24	0	0	0	0	5	42	48	62	50	41	15	11	274
28>=T>=26	0	0	0	0	0	24	37	32	47	24	8	2	174
30>=T>=28	0	0	0	0	0	9	38	42	33	15	5	0	142
32>=T>=30	0	0	0	0	0	2	17	33	22	5	2	0	81
34>=T>=32	0	0	0	0	0	1	10	18	11	6	0	0	46
36>=T>=34	0	0	0	0	0	0	1	5	5	1	0	0	12
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.29 Annual Bindata Table for Erzincan

	Hourly Time Interval												
Erzincan	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	2	0	0	0	0	0	0	0	0	0	0	0	2
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	1	3	7	1	0	0	0	0	0	0	0	12
-8>=T>=-10	0	8	7	8	7	1	0	0	0	0	1	2	34
-6>=T>=-8	5	16	23	21	9	1	0	0	0	1	4	9	89
-4>=T>=-6	16	26	28	32	28	4	1	0	1	10	15	18	179
-2>=T>=-4	18	35	33	31	29	21	8	6	16	25	33	44	299
0>=T>=-2	15	32	28	33	32	34	21	21	17	32	35	24	324
2>=T>=0	27	53	63	58	40	35	28	18	33	41	41	54	491
4>=T>=2	22	46	48	45	46	42	41	40	43	40	45	48	506
6>=T>=4	30	72	82	84	49	40	51	51	50	50	44	41	644
8>=T>=6	38	64	55	43	46	51	37	44	50	53	56	71	608
10>=T>=8	23	55	59	57	42	37	53	54	53	46	57	47	583
12>=T>=10	28	63	58	44	55	43	39	39	28	46	46	57	546
14>=T>=12	34	45	61	50	45	46	39	36	50	37	46	40	529
16>=T>=14	25	49	56	56	45	44	38	45	35	42	41	50	526
18>=T>=16	21	56	65	66	32	39	38	31	34	42	42	35	501
20>=T>=18	30	58	40	55	50	42	37	33	42	39	28	35	489
22>=T>=20	26	29	14	22	53	42	43	41	35	22	43	56	426
24>=T>=22	9	11	0	7	55	44	41	39	25	29	51	42	353
26>=T>=24	3	1	0	0	35	55	37	39	45	44	47	36	342
28>=T>=26	0	0	0	0	15	50	48	35	33	51	32	14	278
30>=T>=28	0	0	0	0	5	33	45	45	42	37	13	3	223
32>=T>=30	0	0	0	0	0	18	48	46	42	27	4	0	185
34>=T>=32	0	0	0	0	0	6	27	41	36	8	0	0	118
36>=T>=34	0	0	0	0	0	0	8	21	16	3	0	0	48
38>=T>=36	0	0	0	0	0	0	2	5	2	0	0	0	9
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.30 Annual Bindata Table for Erzurum

	Hourly Time Interval												
Erzurum	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	2	2
-26>=T>=-28	1	3	2	4	3	0	0	0	0	0	2	1	16
-24>=T>=-26	2	8	9	9	7	0	0	0	0	3	8	7	53
-22>=T>=-24	5	11	10	6	4	2	0	0	1	4	1	4	48
-20>=T>=-22	4	9	13	14	10	7	1	0	1	3	6	8	76
-18>=T>=-20	6	14	11	11	10	5	2	0	1	10	10	6	86
-16>=T>=-18	8	13	14	12	10	7	5	4	6	5	8	17	109
-14>=T>=-16	7	10	7	13	13	12	5	9	10	8	12	17	123
-12>=T>=-14	9	16	18	20	12	11	9	5	11	12	19	15	157
-10>=T>=-12	7	15	25	20	15	14	17	13	8	13	12	14	173
-8>=T>=-10	13	33	31	37	38	26	10	6	8	16	17	21	256
-6>=T>=-8	16	37	36	33	29	25	32	23	32	35	41	35	374
-4>=T>=-6	21	41	40	42	32	32	37	37	51	44	37	38	452
-2>=T>=-4	26	45	51	49	40	41	39	50	32	35	28	25	461
0>=T>=-2	17	41	58	53	45	31	31	36	30	28	35	56	461
2>=T>=0	31	72	54	64	48	42	47	40	39	43	53	57	590
4>=T>=2	24	44	55	40	31	40	35	36	42	46	51	34	478
6>=T>=4	18	33	37	38	28	33	28	40	44	36	31	34	400
8>=T>=6	20	39	31	30	27	38	36	24	22	31	29	40	367
10>=T>=8	13	35	48	42	30	22	28	30	25	32	39	42	386
12>=T>=10	19	43	38	30	31	20	26	36	32	29	44	28	376
14>=T>=12	20	37	30	28	30	31	15	13	15	32	26	37	314
16>=T>=14	18	29	31	36	32	39	26	20	33	32	29	38	363
18>=T>=16	13	14	15	23	30	37	39	33	32	27	33	27	323
20>=T>=18	13	15	5	13	35	27	41	38	38	25	28	20	298
22>=T>=20	2	1	0	3	32	30	26	31	24	24	22	32	227
24>=T>=22	0	0	0	0	25	31	34	32	21	18	37	13	211
26>=T>=24	0	0	0	0	10	34	27	24	20	28	9	0	152
28>=T>=26	0	0	0	0	1	22	33	26	25	19	3	0	129
30>=T>=28	0	0	0	0	0	8	22	25	25	20	0	0	100
32>=T>=30	0	0	0	0	0	0	14	28	29	10	0	0	81
34>=T>=32	0	0	0	0	0	0	1	9	13	2	0	0	25
36>=T>=34	0	0	0	0	0	0	0	2	0	0	0	0	2
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.31 Annual Bindata Table for Kars

Kars	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	2	0	2	2	0	0	0	0	0	0	0	0	6
-26>=T>=-28	0	4	2	2	3	0	0	0	0	0	0	1	12
-24>=T>=-26	3	2	7	9	6	0	0	0	0	0	0	3	30
-22>=T>=-24	4	13	14	14	12	0	0	0	0	0	4	6	67
-20>=T>=-22	6	15	9	10	9	6	0	0	0	2	7	8	72
-18>=T>=-20	6	8	15	17	13	7	0	0	0	6	8	15	95
-16>=T>=-18	5	15	10	11	14	13	2	0	1	6	18	14	109
-14>=T>=-16	12	20	22	18	20	25	11	2	11	20	21	23	205
-12>=T>=-14	10	21	14	16	18	25	26	19	27	28	27	23	254
-10>=T>=-12	7	9	17	26	18	14	25	22	21	32	26	19	236
-8>=T>=-10	13	35	36	38	23	26	30	27	38	23	18	21	328
-6>=T>=-8	21	45	40	33	40	21	22	35	25	22	15	16	335
-4>=T>=-6	11	16	21	18	33	23	31	31	28	18	24	38	292
-2>=T>=-4	16	34	39	48	29	37	16	21	17	27	36	33	353
0>=T>=-2	22	47	50	43	44	36	41	30	24	38	42	41	458
2>=T>=0	29	63	62	48	43	49	44	46	46	56	43	48	577
4>=T>=2	21	48	57	61	41	30	36	32	40	28	45	37	476
6>=T>=4	23	48	54	55	31	36	21	32	28	33	35	48	444
8>=T>=6	29	58	71	57	36	30	34	23	35	32	44	54	503
10>=T>=8	31	62	68	67	41	35	32	35	33	31	36	37	508
12>=T>=10	29	72	50	49	51	32	32	32	29	36	48	56	516
14>=T>=12	29	50	48	54	57	26	30	25	30	42	44	62	497
16>=T>=14	28	31	19	25	58	45	30	35	28	35	62	53	449
18>=T>=16	5	11	3	11	38	61	47	30	38	44	54	51	393
20>=T>=18	3	3	2	0	33	55	47	43	38	38	44	20	326
22>=T>=20	2	2	0	0	19	43	54	54	52	52	20	2	300
24>=T>=22	0	0	0	0	2	38	46	48	51	32	8	3	228
26>=T>=24	0	0	0	0	0	17	41	41	31	23	1	0	154
28>=T>=26	0	0	0	0	0	2	27	43	39	10	2	0	123
30>=T>=28	0	0	0	0	0	0	6	16	15	6	0	0	43
32>=T>=30	0	0	0	0	0	0	1	8	5	2	0	0	16
34>=T>=32	0	0	0	0	0	0	0	2	2	0	0	0	4
36>=T>=34	0	0	0	0	0	0	0	0	0	0	0	0	0
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.32 Annual Bindata Table for Ağrı

Ağrı	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	1	1
-28>=T>=-30	0	1	1	5	4	0	0	0	0	0	2	1	14
-26>=T>=-28	2	10	18	19	12	1	0	0	0	1	0	2	65
-24>=T>=-26	7	14	11	10	12	6	0	0	0	2	3	5	70
-22>=T>=-24	8	16	9	9	7	9	0	0	1	1	7	21	88
-20>=T>=-22	4	7	11	7	8	8	3	0	2	3	15	7	75
-18>=T>=-20	10	13	14	18	14	8	7	3	1	15	14	16	133
-16>=T>=-18	5	15	13	12	18	16	12	4	5	13	10	10	133
-14>=T>=-16	4	7	8	4	5	15	15	9	15	10	9	8	109
-12>=T>=-14	2	10	12	13	8	8	17	21	15	18	14	17	155
-10>=T>=-12	8	16	16	18	16	12	11	17	16	12	13	7	162
-8>=T>=-10	9	17	15	17	22	19	16	17	20	24	21	23	220
-6>=T>=-8	9	16	19	18	10	15	20	22	21	10	17	9	186
-4>=T>=-6	10	23	20	31	18	12	12	16	17	25	17	31	232
-2>=T>=-4	12	26	40	35	30	17	15	13	14	16	24	19	261
0>=T>=-2	22	51	47	47	44	35	26	21	26	27	22	32	400
2>=T>=0	26	49	55	49	47	32	33	38	37	38	48	49	501
4>=T>=2	22	59	71	62	43	43	37	27	44	51	47	51	557
6>=T>=4	35	75	63	64	36	47	40	44	41	39	44	39	567
8>=T>=6	28	49	60	47	39	31	35	38	29	29	33	60	478
10>=T>=8	27	51	42	48	51	27	34	26	20	29	56	59	470
12>=T>=10	22	42	38	45	47	41	32	30	37	47	52	43	476
14>=T>=12	18	34	39	24	43	51	36	36	38	47	47	45	458
16>=T>=14	10	22	27	22	35	41	27	39	44	53	40	26	386
18>=T>=16	15	15	12	22	25	35	47	35	47	29	21	27	330
20>=T>=18	11	14	0	18	15	31	47	39	38	28	27	26	294
22>=T>=20	4	4	5	3	20	24	29	45	31	17	28	22	232
24>=T>=22	2	2	2	1	17	23	26	20	20	22	21	12	168
26>=T>=24	0	0	0	0	19	13	30	30	23	20	12	0	147
28>=T>=26	0	0	0	0	3	26	16	24	19	21	3	0	112
30>=T>=28	0	0	0	0	0	14	19	19	26	10	0	0	88
32>=T>=30	0	0	0	0	0	5	18	14	7	9	0	0	53
34>=T>=32	0	0	0	0	0	0	6	15	12	1	0	0	34
36>=T>=34	0	0	0	0	0	0	0	4	2	0	0	0	6
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.33 Annual Bindata Table for Iğdır

Iğdır	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	3	3	4	3	0	0	0	0	0	0	0	13
-14>=T>=-16	3	5	10	10	6	1	0	0	0	0	1	4	36
-12>=T>=-14	2	11	17	15	12	3	0	0	0	0	3	4	63
-10>=T>=-12	9	14	10	12	8	4	1	0	0	3	4	8	73
-8>=T>=-10	12	16	13	17	20	11	3	2	3	7	14	23	141
-6>=T>=-8	5	19	19	18	19	14	7	3	7	17	24	20	172
-4>=T>=-6	14	29	26	29	21	20	11	5	9	26	23	19	232
-2>=T>=-4	4	37	47	50	36	28	29	30	34	26	23	35	379
0>=T>=-2	18	44	38	29	30	27	33	30	33	29	29	32	372
2>=T>=0	20	18	26	29	26	29	20	31	18	31	36	42	326
4>=T>=2	11	46	50	55	27	27	27	24	33	37	40	18	395
6>=T>=4	16	38	41	36	35	25	25	19	33	30	23	30	351
8>=T>=6	23	44	47	44	43	27	30	28	26	18	30	43	403
10>=T>=8	31	50	41	34	40	38	35	39	31	28	44	51	462
12>=T>=10	25	43	46	37	37	39	32	32	28	56	53	57	485
14>=T>=12	22	42	48	47	32	43	41	36	40	51	51	33	486
16>=T>=14	16	42	57	47	31	42	34	36	47	38	33	34	457
18>=T>=16	25	63	48	49	42	29	47	47	35	32	31	29	477
20>=T>=18	23	54	60	67	52	33	38	39	30	29	38	59	522
22>=T>=20	34	45	45	50	54	43	25	24	38	33	56	65	512
24>=T>=22	20	53	33	39	53	50	45	41	34	31	53	38	490
26>=T>=24	22	13	4	10	63	62	39	32	25	41	42	42	395
28>=T>=26	21	1	0	2	32	56	59	35	42	57	45	36	386
30>=T>=28	2	0	1	0	8	56	61	63	52	47	25	7	322
32>=T>=30	0	0	0	0	0	20	50	58	56	32	8	1	225
34>=T>=32	0	0	0	0	0	1	31	42	41	20	1	0	136
36>=T>=34	0	0	0	0	0	2	4	30	24	10	0	0	70
38>=T>=36	0	0	0	0	0	0	2	1	9	1	0	0	13
40>=T>=38	0	0	0	0	0	0	1	1	1	0	0	0	3
42>=T>=40	0	0	0	0	0	0	0	2	1	0	0	0	3
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.34 Annual Bindata Table for Çanakkale

	Hourly Time Interval												
Çanakkale	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	1	2	2	1	0	0	0	0	0	0	6
-4>=T>=-6	0	6	5	4	2	3	1	0	1	2	2	2	28
-2>=T>=-4	5	4	6	9	5	0	2	2	1	1	3	4	42
0>=T>=-2	10	18	19	14	12	3	2	2	2	2	2	4	90
2>=T>=0	12	28	28	27	20	9	5	4	6	7	13	25	184
4>=T>=2	18	33	43	48	34	25	20	16	16	35	39	33	360
6>=T>=4	31	70	62	56	58	27	21	21	31	33	41	47	498
8>=T>=6	30	53	57	57	49	64	41	38	40	49	58	61	597
10>=T>=8	24	50	47	57	37	54	60	46	64	64	51	51	605
12>=T>=10	31	65	72	66	65	32	46	67	49	46	64	72	675
14>=T>=12	38	82	72	63	66	68	59	53	69	82	75	75	802
16>=T>=14	21	42	45	40	52	67	71	67	63	52	41	40	601
18>=T>=16	22	48	60	54	41	38	47	60	37	34	41	32	514
20>=T>=18	34	66	61	69	46	53	35	23	34	38	56	71	586
22>=T>=20	30	74	86	70	65	45	42	41	43	49	57	65	667
24>=T>=22	48	72	57	69	56	48	57	51	47	61	59	64	689
26>=T>=24	11	19	8	23	78	62	52	54	51	46	64	66	534
28>=T>=26	0	0	0	0	34	69	45	43	43	46	51	16	347
30>=T>=28	0	0	0	0	6	42	65	48	46	45	11	0	263
32>=T>=30	0	0	0	0	0	16	39	48	37	30	0	0	170
34>=T>=32	0	0	0	0	0	2	12	32	38	7	0	0	91
36>=T>=34	0	0	0	0	0	0	7	13	9	0	0	0	29
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.3.35 Annual Bindata Table for Bursa

Bursa	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	1	1	0	0	0	0	0	0	0	2
-8>=T>=-10	0	0	2	1	0	0	0	0	0	0	0	0	3
-6>=T>=-8	0	1	0	2	1	0	0	0	0	0	0	0	4
-4>=T>=-6	0	2	2	11	1	1	0	0	0	0	0	0	17
-2>=T>=-4	0	8	7	16	5	2	0	1	2	2	4	6	53
0>=T>=-2	11	19	19	37	14	9	10	6	4	7	11	21	168
2>=T>=0	12	30	38	56	31	7	5	9	10	9	12	12	231
4>=T>=2	17	48	55	63	35	22	7	4	4	22	32	37	346
6>=T>=4	39	72	68	66	62	41	29	23	32	35	48	56	571
8>=T>=6	27	55	68	60	57	50	48	38	43	59	64	63	632
10>=T>=8	39	92	78	71	46	64	53	49	57	76	69	78	772
12>=T>=10	39	55	60	52	47	45	47	45	62	58	61	56	627
14>=T>=12	17	50	54	54	55	52	55	64	61	35	37	55	589
16>=T>=14	33	62	69	56	55	43	42	42	26	41	60	49	578
18>=T>=16	28	62	60	60	43	43	37	34	33	55	56	54	565
20>=T>=18	26	50	58	58	53	49	58	57	54	45	51	53	612
22>=T>=20	28	65	52	36	48	53	38	42	46	60	51	48	567
24>=T>=22	25	35	20	10	56	47	50	42	48	41	43	60	477
26>=T>=24	11	8	2	2	63	40	51	70	63	42	59	54	465
28>=T>=26	0	0	1	0	30	61	43	41	32	52	44	12	316
30>=T>=28	0	0	0	0	11	54	44	38	50	48	13	1	259
32>=T>=30	0	0	0	0	0	26	51	45	46	21	1	0	190
34>=T>=32	0	0	0	0	0	4	42	47	32	8	0	0	133
36>=T>=34	0	0	0	0	0	1	4	20	10	0	0	0	35
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.36 Annual Bindata Table for Yalova

	Hourly Time Interval												
Yalova	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	2	0	0	0	0	0	0	0	0	0	0	0	2
-2>=T>=-4	0	0	0	0	0	0	0	0	0	0	0	0	0
0>=T>=-2	0	3	4	5	0	0	0	0	0	0	0	2	14
2>=T>=0	13	31	31	28	9	2	2	2	3	3	5	13	142
4>=T>=2	24	58	64	59	42	14	10	10	10	15	34	43	383
6>=T>=4	36	61	60	62	74	47	25	31	39	65	73	75	648
8>=T>=6	32	66	64	59	45	66	60	49	56	71	53	42	663
10>=T>=8	36	69	72	70	54	54	63	71	72	40	59	74	734
12>=T>=10	34	64	66	71	69	47	52	45	43	67	86	79	723
14>=T>=12	26	65	63	54	51	61	54	67	72	70	53	59	695
16>=T>=14	29	65	73	62	60	58	59	50	45	38	51	39	629
18>=T>=16	50	97	110	72	53	55	61	51	53	65	49	65	781
20>=T>=18	34	77	58	65	37	48	44	47	45	35	44	64	598
22>=T>=20	33	43	37	61	59	37	44	43	36	39	63	80	575
24>=T>=22	8	19	20	38	61	48	39	45	45	58	67	53	501
26>=T>=24	9	12	6	21	67	60	56	48	48	62	61	34	484
28>=T>=26	0	0	2	2	34	69	58	57	61	63	25	7	378
30>=T>=28	0	0	0	1	12	42	66	64	63	32	7	0	287
32>=T>=30	0	0	0	0	2	14	32	41	30	6	0	0	125
34>=T>=32	0	0	0	0	1	4	2	7	8	1	0	0	23
36>=T>=34	0	0	0	0	0	0	2	2	0	0	0	0	4
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.37 Annual Bindata Table for Bilecik

	Hourly Time Interval												
Bilecik	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	2	0	0	0	0	0	0	0	0	0	0	0	2
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	2	4	1	0	0	0	0	0	0	0	7
-4>=T>=-6	0	7	7	6	1	0	0	0	0	0	0	0	21
-2>=T>=-4	9	23	24	30	19	2	0	0	0	3	5	11	126
0>=T>=-2	13	28	31	35	27	15	9	9	12	16	23	29	247
2>=T>=0	28	59	60	54	64	46	21	13	19	36	48	50	498
4>=T>=2	30	55	65	64	50	47	47	38	40	53	50	52	591
6>=T>=4	27	55	58	53	32	47	37	41	49	51	53	56	559
8>=T>=6	35	73	66	60	63	45	52	47	46	49	63	66	665
10>=T>=8	30	62	65	56	60	57	47	50	57	63	56	63	666
12>=T>=10	23	43	40	47	36	40	55	58	54	46	42	40	524
14>=T>=12	40	97	97	68	42	38	38	32	34	31	49	55	621
16>=T>=14	38	62	57	81	71	51	33	52	34	49	59	81	668
18>=T>=16	25	56	73	48	51	50	40	36	44	62	73	63	621
20>=T>=18	33	72	57	58	54	47	50	40	56	55	57	57	636
22>=T>=20	24	34	25	52	60	53	65	52	49	58	66	66	604
24>=T>=22	7	4	0	13	58	51	33	46	49	52	52	32	397
26>=T>=24	0	0	0	0	30	60	48	50	61	52	24	9	334
28>=T>=26	0	0	0	0	10	48	62	64	52	31	9	0	276
30>=T>=28	0	0	0	0	1	24	43	44	43	18	1	0	174
32>=T>=30	0	0	0	0	0	9	39	35	20	4	0	0	107
34>=T>=32	0	0	0	0	0	0	9	17	8	1	0	0	35
36>=T>=34	0	0	0	0	0	0	1	4	2	0	0	0	7
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.38 Annual Bindata Table for Ankara

Ankara	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	1	0	4	2	0	0	0	0	0	0	0	7
-12>=T>=-14		7	7	4	6	1	0	0	0	0	4	4	33
-10>=T>=-12	3	1	3	7	5	7	2	0	1	3	0	2	34
-8>=T>=-10	2	7	12	14	12	2	5	5	4	4	3	5	75
-6>=T>=-8	10	24	21	16	12	13	6	5	5	11	21	19	163
-4>=T>=-6	9	12	9	11	17	17	9	7	14	21	16	18	160
-2>=T>=-4	13	30	43	38	36	21	24	24	27	24	26	27	333
0>=T>=-2	19	37	31	38	29	37	32	29	27	31	36	36	382
2>=T>=0	25	52	59	55	47	41	38	41	38	38	43	46	523
4>=T>=2	21	49	46	47	40	38	29	27	31	38	29	28	423
6>=T>=4	19	47	66	58	43	33	33	24	29	29	37	46	464
8>=T>=6	30	56	48	49	44	35	36	42	39	37	38	43	497
10>=T>=8	26	49	53	51	41	23	23	32	21	24	35	46	424
12>=T>=10	20	53	56	50	45	33	25	24	27	24	47	58	462
14>=T>=12	33	56	57	55	43	52	25	21	18	49	57	52	518
16>=T>=14	29	65	61	46	44	42	44	34	47	57	52	41	562
18>=T>=16	23	54	67	62	34	33	48	39	45	43	33	53	534
20>=T>=18	36	63	55	59	42	42	40	50	50	36	51	57	581
22>=T>=20	27	39	19	37	51	37	32	40	35	40	44	61	462
24>=T>=22	12	9	1	7	59	39	40	31	30	45	67	48	388
26>=T>=24	0	0	0	0	36	66	43	30	40	54	51	23	343
28>=T>=26	0	0	0	0	17	52	62	66	53	55	24	1	330
30>=T>=28	0	0	0	0	1	38	64	62	59	39	1	0	264
32>=T>=30	0	0	0	0	1	13	30	42	37	11	0	0	134
34>=T>=32	0	0	0	0	0	4	16	30	24	5	0	0	79
36>=T>=34	0	0	0	0	0	0	9	15	9	0	0	0	33
38>=T>=36	0	0	0	0	0	0	1	1	2	0	0	0	4
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.39 Annual Bindata Table for Kırıkkale

	Hourly Time Interval												
Kırıkkale	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	1	0	0	0	0	0	0	0	0	0	0	0	1
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	1	0	0	0	0	0	0	0	1
-10>=T>=-12	0	4	4	5	3	2	0	0	0	0	0	0	18
-8>=T>=-10	3	11	13	15	6	2	3	2	2	2		2	61
-6>=T>=-8	8	11	18	19	15	4	3	2	2	2	4	14	102
-4>=T>=-6	9	20	16	14	19	9	2	2	2	6	17	10	126
-2>=T>=-4	12	20	25	29	24	18	6	3	2	14	16	25	194
0>=T>=-2	17	46	53	51	39	23	16	13	20	33	32	30	373
2>=T>=0	22	42	38	42	33	35	31	23	29	29	36	47	407
4>=T>=2	19	41	44	45	34	34	37	44	36	32	35	30	431
6>=T>=4	23	61	68	65	49	36	30	29	35	39	45	52	532
8>=T>=6	40	70	68	55	58	37	42	29	42	44	48	56	589
10>=T>=8	27	55	68	52	46	63	48	50	49	53	66	62	639
12>=T>=10	23	52	44	50	37	35	48	48	41	44	38	43	503
14>=T>=12	30	60	63	48	38	35	34	36	29	34	34	33	474
16>=T>=14	34	57	55	49	49	32	28	30	37	41	39	66	517
18>=T>=16	18	50	70	57	51	34	32	37	30	36	62	58	535
20>=T>=18	26	66	56	68	49	52	37	34	37	51	49	42	567
22>=T>=20	38	42	13	42	53	66	52	39	47	38	38	46	514
24>=T>=22	6	14	10	15	62	47	57	53	48	39	39	60	450
26>=T>=24	7	4	1	4	40	63	43	50	45	35	61	33	386
28>=T>=26	1	2	0	0	17	51	62	44	33	56	39	13	318
30>=T>=28	0	0	0	0	3	32	57	61	61	49	16	4	283
32>=T>=30	0	0	0	0	1	13	29	49	53	23	10	2	180
34>=T>=32	0	0	0	0	0	3	22	23	27	20	4	0	99
36>=T>=34	0	0	0	0	0	2	5	18	14	5	0	0	44
38>=T>=36	0	0	0	0	0	0	4	2	3	2	0	0	11
40>=T>=38	0	0	0	0	0	0	0	4	4	2	0	0	10
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.40 Annual Bindata Table for Yozgat

	Hourly Time Interval												
Yozgat	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	2	2	2	1	0	0	0	0	1	0	1	9
-14>=T>=-16	0	2	2	3	1	0	0	0	0	2	2	1	13
-12>=T>=-14	3	5	8	6	8	2	0	0	1	3	4	5	45
-10>=T>=-12	4	6	6	10	4	4	2	2	3	1	4	4	50
-8>=T>=-10	4	11	9	6	8	4	4	3	10	13	11	11	94
-6>=T>=-8	9	20	26	24	18	14	9	16	17	15	14	12	194
-4>=T>=-6	17	30	29	38	31	20	21	11	4	11	20	31	263
-2>=T>=-4	14	38	36	34	30	25	21	20	24	23	24	25	314
0>=T>=-2	17	28	35	30	29	26	24	22	26	35	33	41	346
2>=T>=0	29	62	52	60	47	42	40	35	37	36	50	51	541
4>=T>=2	31	57	66	55	46	36	27	32	36	46	55	62	549
6>=T>=4	35	84	83	78	43	43	47	53	58	59	62	60	705
8>=T>=6	30	68	75	62	47	48	39	39	38	36	41	57	580
10>=T>=8	39	64	50	57	51	45	54	40	43	47	67	73	630
12>=T>=10	19	37	43	40	55	44	33	40	37	51	56	49	504
14>=T>=12	24	57	60	42	48	51	50	50	48	52	53	48	583
16>=T>=14	28	45	45	48	39	43	41	36	43	53	35	41	497
18>=T>=16	16	25	18	29	31	50	52	58	50	30	35	44	438
20>=T>=18	8	16	12	21	47	30	34	44	36	26	43	29	346
22>=T>=20	2	5	1	7	36	41	34	26	28	35	28	13	256
24>=T>=22	2	0	0	4	19	43	39	24	29	32	14	0	206
26>=T>=24	0	0	0	2	13	24	38	45	39	25	6	6	198
28>=T>=26	0	0	0	0	5	23	30	38	31	14	3	1	145
30>=T>=28	0	0	0	0	2	5	17	20	17	9	0	1	71
32>=T>=30	0	0	0	0	1	1	8	7	7	0	0	0	24
34>=T>=32	0	0	0	0	0	3	2	5	4	4	0	0	18
36>=T>=34	0	0	0	0	0	0	2	1	2	1	0	0	6
38>=T>=36	0	0	0	0	0	0	0	1	0	0	0	0	1
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.41 Annual Bindata Table for Balıkesir

Balıkesir	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	3	0	0	0	0	0	0	0	0	0	0	0	3
-4>=T>=-6	0	0	8	13	9	0	0	0	0	0	0	0	30
-2>=T>=-4	0	26	30	32	26	4	0	0	0	0	1	7	126
0>=T>=-2	11	26	24	32	24	18	2	0	1	5	16	20	179
2>=T>=0	21	43	44	34	38	27	12	11	19	36	37	40	362
4>=T>=2	29	62	65	67	59	49	39	28	33	41	43	57	572
6>=T>=4	30	62	59	61	52	65	59	45	43	64	79	66	685
8>=T>=6	30	52	56	54	47	36	47	42	58	50	29	40	541
10>=T>=8	22	55	54	47	50	35	44	57	39	36	49	55	543
12>=T>=10	23	46	57	47	34	38	35	37	36	35	37	41	466
14>=T>=12	31	66	59	55	51	43	29	28	32	35	54	58	541
16>=T>=14	22	44	38	44	42	48	47	36	38	44	57	49	509
18>=T>=16	21	39	66	60	45	37	33	39	48	55	37	38	518
20>=T>=18	35	76	58	55	36	36	42	50	50	43	43	44	568
22>=T>=20	35	77	77	81	64	42	41	43	37	31	51	78	657
24>=T>=22	32	47	27	37	59	42	40	38	35	51	73	75	556
26>=T>=24	8	3	2	3	63	58	38	35	41	73	67	47	438
28>=T>=26	0	0	0	0	21	66	54	57	70	62	41	9	380
30>=T>=28	0	0	0	0	2	59	84	72	74	41	9	0	341
32>=T>=30	0	0	0	0	0	15	47	62	43	17	1	0	185
34>=T>=32	0	0	0	0	0	3	21	31	16	4	0	0	75
36>=T>=34	0	0	0	0	0	1	7	9	9	0	0	0	26
38>=T>=36	0	0	0	0	0	0	1	4	0	0	0	0	5
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.42 Annual Bindata Table for Kütahya

	Hourly Time Interval												
Kütahya	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	1	0	0	0	0	0	0	0	0	0	0	0	1
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	3	1	0	0	0	0	0	0	0	4
-8>=T>=-10	0	0	7	9	6	1	0	0	0	0	0	0	23
-6>=T>=-8	0	4	23	25	17	3	0	0	0	0	0	5	77
-4>=T>=-6	20	7	26	24	28	16	1	0	1	6	16	24	169
-2>=T>=-4	17	21	33	33	23	27	17	11	13	22	38	38	293
0>=T>=-2	20	26	57	57	48	35	27	15	30	51	35	38	439
2>=T>=0	26	27	48	52	34	43	39	39	45	33	51	51	488
4>=T>=2	26	36	58	49	51	28	34	35	32	44	33	32	458
6>=T>=4	25	33	69	64	52	35	31	33	39	36	45	54	516
8>=T>=6	38	34	60	55	56	45	41	46	50	54	68	78	625
10>=T>=8	28	25	65	59	46	47	48	52	50	50	55	45	570
12>=T>=10	24	52	80	63	27	49	37	32	28	41	43	53	529
14>=T>=12	39	55	70	68	50	32	55	44	44	48	52	59	616
16>=T>=14	34	81	94	78	58	37	31	44	51	52	58	62	680
18>=T>=16	41	55	28	62	59	46	53	50	49	51	53	75	622
20>=T>=18	15	21	9	21	62	41	41	44	48	48	67	73	490
22>=T>=20	7	6	1	5	61	58	39	40	37	60	68	27	409
24>=T>=22	1	1	0	0	35	70	41	33	41	64	25	13	324
26>=T>=24	0	0	0	0	9	61	64	61	59	35	19	1	309
28>=T>=26	0	0	0	0	5	32	60	59	51	21	3	0	231
30>=T>=28	0	0	0	0	0	15	49	53	37	10	0	0	164
32>=T>=30	0	0	0	0	0	4	12	26	18	3	0	0	63
34>=T>=32	0	0	0	0	0	2	7	9	7	0	0	0	25
36>=T>=34	0	0	0	0	0	0	2	3	0	0	0	0	5
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.43 Annual Bindata Table for Kırşehir

Kırşehir	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	2	0	0	1	1	0	0	0	0	0	0	0	4
-16>=T>=-18	0	2	4	3	1	0	0	0	0	0	0	0	10
-14>=T>=-16	0	2	0	0	0	0	0	0	0	0	1	0	3
-12>=T>=-14	1	0	0	0	2	1	0	0	0	0	1	2	7
-10>=T>=-12	1	2	1	0	0	3	0	0	1	2	0	1	11
-8>=T>=-10	2	4	9	13	10	2	5	3	3	2	3	2	58
-6>=T>=-8	5	14	14	11	8	6	1	3	3	7	9	10	91
-4>=T>=-6	10	23	26	28	22	11	9	3	4	8	8	10	162
-2>=T>=-4	15	35	39	45	38	20	14	16	17	13	18	22	292
0>=T>=-2	25	56	57	50	43	35	23	11	12	28	33	41	414
2>=T>=0	31	48	45	48	37	37	31	34	38	45	68	67	529
4>=T>=2	26	62	68	66	60	40	41	36	37	43	45	58	582
6>=T>=4	24	52	59	68	44	41	26	32	39	57	46	46	534
8>=T>=6	29	62	53	45	45	48	49	42	41	40	51	49	554
10>=T>=8	26	38	46	38	45	52	48	54	58	45	43	53	546
12>=T>=10	19	45	41	35	38	32	49	38	35	37	46	39	454
14>=T>=12	20	43	48	42	28	32	35	40	34	38	36	42	438
16>=T>=14	22	53	54	45	31	35	26	39	45	39	45	41	475
18>=T>=16	19	44	49	50	42	32	33	24	20	36	32	36	417
20>=T>=18	28	42	39	49	46	43	38	39	45	30	26	43	468
22>=T>=20	15	24	10	22	51	53	51	41	35	30	52	50	434
24>=T>=22	9	11	6	9	41	39	36	42	40	37	46	29	345
26>=T>=24	5	5	0	0	21	45	35	35	32	49	36	18	281
28>=T>=26	1	1	0	0	12	31	51	41	43	38	16	7	241
30>=T>=28	0	0	0	0	2	19	30	42	39	30	6	2	170
32>=T>=30	0	0	0	0	0	8	19	29	27	11	1	0	95
34>=T>=32	0	0	0	0	0	3	15	16	15	2	0	0	51
36>=T>=34	0	0	0	0	0	0	2	8	5	1	0	0	16
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0		0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.44 Annual Bindata Table for Tunceli

Tunceli	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	1	0	0	0	0	0	0	0	0	1
-20>=T>=-22	0	0	3	5	2	0	0	0	0	0	0	0	10
-18>=T>=-20	0	5	4	2	4	0	0	0	0	0	0	0	15
-16>=T>=-18	3	4	5	7	7	3	0	0	0	0	1	5	35
-14>=T>=-16	1	7	7	7	9	4	0	0	0	2	6	5	48
-12>=T>=-14	3	7	10	8	6	4	2	0	0	4	3	4	51
-10>=T>=-12	8	12	7	6	6	7	5	1	2	5	5	7	71
-8>=T>=-10	2	7	10	11	10	7	6	6	8	4	9	10	90
-6>=T>=-8	5	8	10	11	9	9	5	5	3	9	11	11	96
-4>=T>=-6	9	18	13	14	13	12	7	6	5	11	10	9	127
-2>=T>=-4	8	17	21	29	26	15	15	5	11	15	17	21	200
0>=T>=-2	19	44	46	40	34	25	20	28	29	28	28	30	371
2>=T>=0	32	68	69	71	64	57	37	36	38	50	62	70	654
4>=T>=2	23	37	37	34	42	43	55	39	46	46	42	33	477
6>=T>=4	21	43	52	52	42	32	35	51	40	34	34	47	483
8>=T>=6	16	43	35	35	25	35	28	28	33	33	40	32	383
10>=T>=8	23	41	47	52	42	34	34	34	34	43	41	42	467
12>=T>=10	19	43	53	38	36	35	32	24	36	35	27	35	413
14>=T>=12	18	44	44	56	24	22	35	38	31	19	30	31	392
16>=T>=14	28	53	66	60	42	27	29	36	23	22	24	31	441
18>=T>=16	22	56	59	43	36	24	13	12	16	21	36	50	388
20>=T>=18	28	48	36	45	37	28	24	23	17	36	43	57	422
22>=T>=20	21	43	47	49	51	37	27	21	31	37	49	34	447
24>=T>=22	25	40	35	31	43	39	35	35	35	35	37	46	436
26>=T>=24	16	30	8	15	49	42	33	31	42	35	43	56	400
28>=T>=26	9	7	6	7	36	49	40	40	27	30	57	38	346
30>=T>=28	2	5	0	1	25	40	40	38	36	48	49	17	301
32>=T>=30	2	0	0	0	8	53	46	39	46	55	15	7	271
34>=T>=32	0	0	0	0	2	28	54	44	42	44	10	2	226
36>=T>=34	0	0	0	0	0	11	36	57	49	16	0	0	169
38>=T>=36	0	0	0	0	0	7	22	26	29	7	1	0	92
40>=T>=38	0	0	0	0	0	1	13	17	15	6	0	0	52
42>=T>=40	0	0	0	0	0	0	2	10	6	0	0	0	18
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.45 Annual Bindata Table for Van

Van	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	5	6	7	0	0	0	0	0	0	0	2	20
-12>=T>=-14	3	8	7	6	8	0	0	0	0	1	5	8	46
-10>=T>=-12	6	12	13	13	6	2	0	0	0	11	12	10	85
-8>=T>=-10	7	11	12	13	15	5	0	0	9	11	10	13	106
-6>=T>=-8	8	15	14	16	17	11	8	5	7	13	18	17	149
-4>=T>=-6	10	25	24	24	18	13	6	8	13	19	23	26	209
-2>=T>=-4	18	32	38	42	27	19	20	20	22	29	32	29	328
0>=T>=-2	23	54	46	43	35	40	29	28	32	28	21	30	409
2>=T>=0	35	74	91	88	56	29	33	38	33	36	58	74	645
4>=T>=2	33	64	52	48	60	41	44	39	37	46	75	65	604
6>=T>=4	27	46	51	54	54	49	41	33	36	88	56	55	590
8>=T>=6	18	33	34	28	45	66	69	68	86	59	45	37	588
10>=T>=8	15	43	55	39	32	57	56	66	58	31	25	25	502
12>=T>=10	25	58	51	37	18	40	55	53	34	14	29	37	451
14>=T>=12	20	48	55	43	27	22	27	27	25	34	48	50	426
16>=T>=14	38	62	60	43	40	34	25	20	20	24	29	49	444
18>=T>=16	19	40	37	53	44	42	35	31	25	35	55	49	465
20>=T>=18	19	33	36	47	48	38	42	38	49	40	44	36	470
22>=T>=20	19	41	28	46	47	42	41	53	39	37	50	60	503
24>=T>=22	11	13	7	26	50	51	46	42	44	41	42	30	403
26>=T>=24	6	9	8	8	50	59	52	49	41	51	39	16	388
28>=T>=26	1	1	0	1	23	45	55	50	59	42	7	5	289
30>=T>=28	0	0	0	1	6	13	29	44	40	33	3	1	170
32>=T>=30	0	0	0	0	1	7	13	15	17	4	0	0	57
34>=T>=32	0	0	0	0	0	1	0	1	3	0	0	0	5
36>=T>=34	0	0	0	0	0	0	0	0	0	0	0	0	0
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.46 Annual Bindata Table for Manisa

	Hourly Time Interval												
Manisa	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	1	1
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	1	0	0	0	0	0	0	0	0	0	0	0	1
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	3	4	3	0	0	0	0	0	0	0	5	15
-2>=T>=-4	0	3	5	4	1	0	0	0	0	0	3	15	31
0>=T>=-2	6	36	36	27	6	0	0	1	5	9	9	13	148
2>=T>=0	21	29	32	28	15	3	3	6	7	11	17	25	197
4>=T>=2	15	43	43	35	30	15	7	10	21	26	31	31	307
6>=T>=4	21	47	57	50	43	29	17	24	35	38	43	41	445
8>=T>=6	34	82	64	63	57	53	36	38	50	53	58	24	612
10>=T>=8	23	53	55	40	46	50	53	44	48	49	55	24	540
12>=T>=10	31	59	56	48	42	42	50	51	56	68	69	31	603
14>=T>=12	29	43	50	41	35	40	33	50	63	61	50	38	533
16>=T>=14	20	48	31	43	42	37	53	58	33	40	42	26	473
18>=T>=16	24	59	56	32	44	51	51	34	35	35	40	30	491
20>=T>=18	22	53	51	43	31	38	35	32	35	35	46	26	447
22>=T>=20	23	71	55	39	37	31	39	32	38	42	35	17	459
24>=T>=22	32	69	67	46	36	27	18	28	35	40	52	9	459
26>=T>=24	42	29	60	75	39	38	33	37	37	59	73	1	523
28>=T>=26	16	3	5	75	59	37	42	43	50	60	63	2	455
30>=T>=28	3	0	1	33	68	51	37	47	52	64	39	0	395
32>=T>=30	0	0	0	3	64	51	53	44	49	32	3	0	299
34>=T>=32	0	0	0	0	32	61	47	32	47	6	0	0	225
36>=T>=34	0	0	0	0	2	57	50	59	25	0	0	0	193
38>=T>=36	0	0	0	0	0	13	47	38	6	0	0	0	104
40>=T>=38	0	0	0	0	0	4	20	16	1	0	0	0	41
42>=T>=40	0	0	0	0	0	0	4	3		0	0	0	7
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.47 Annual Bindata Table for Uşak

Uşak	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	1	0	0	0	0	0	0	0	0	0	0	0	1
-10>=T>=-12	0	2	2	2	1	0	0	0	0	0	0	0	7
-8>=T>=-10	0	0	1	1	0	0	0	0	0	0	0	1	3
-6>=T>=-8	0	2	3	3	2	1	0	0	0	1	2	1	15
-4>=T>=-6	5	19	22	21	10	2	1	0	1	1	2	6	85
-2>=T>=-4	15	24	25	29	17	3	2	2	1	9	17	23	152
0>=T>=-2	13	30	30	30	25	16	12	11	18	22	25	20	239
2>=T>=0	25	48	59	68	48	27	20	21	22	23	22	44	402
4>=T>=2	31	70	82	71	38	34	20	18	17	31	52	52	485
6>=T>=4	41	80	59	56	64	52	37	31	42	50	62	67	600
8>=T>=6	24	55	62	50	44	39	33	34	36	72	68	79	572
10>=T>=8	24	47	45	44	57	46	58	55	62	46	59	47	566
12>=T>=10	31	75	98	68	40	62	50	44	48	49	51	53	638
14>=T>=12	38	72	61	71	38	54	53	50	54	56	47	45	601
16>=T>=14	26	64	73	65	45	37	58	57	52	44	35	52	582
18>=T>=16	30	50	52	50	55	34	37	48	45	29	54	65	519
20>=T>=18	26	47	33	50	50	52	40	41	23	40	52	42	470
22>=T>=20	17	26	15	36	54	48	32	28	31	48	37	56	411
24>=T>=22	9	7	2	7	60	44	57	45	53	42	62	37	416
26>=T>=24	1	2	0	1	46	63	52	60	51	52	40	23	390
28>=T>=26	2	1	0	0	17	58	49	33	34	46	21	8	267
30>=T>=28	0	0	0	0	9	30	59	58	56	26	11	3	252
32>=T>=30	0	0	0	0	0	13	31	51	38	24	6	1	164
34>=T>=32	0	0	0	0	1	7	11	21	24	11	0	0	75
36>=T>=34	0	0	0	0	0	3	10	12	14	4	0	0	43
38>=T>=36	0	0	0	0	0	0	3	6	4	0	0	0	13
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.48 Annual Bindata Table for Afyonkarahisar

	Hourly Time Interval												
Afyonkarahisar	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	2	1	0	0	0	0	0	0	0	3
-12>=T>=-14	1	2	4	2	3	0	0	0	0	0	0	0	12
-10>=T>=-12	1	4	2	4	4	4	0	0	0	0	2	2	23
-8>=T>=-10	3	4	4	3	3	4	2	1	2	9	7	8	50
-6>=T>=-8	6	12	23	28	15	9	11	7	8	3	3	10	135
-4>=T>=-6	11	29	22	34	24	8	6	7	7	12	18	14	192
-2>=T>=-4	18	45	62	53	44	25	15	13	14	12	19	29	349
0>=T>=-2	31	60	51	53	52	47	26	18	20	35	47	62	502
2>=T>=0	32	68	66	58	50	46	43	43	50	64	63	47	630
4>=T>=2	24	43	51	51	47	47	40	34	44	44	48	53	526
6>=T>=4	21	40	53	41	47	35	40	42	44	47	41	45	496
8>=T>=6	24	58	67	61	35	42	40	41	30	35	37	43	513
10>=T>=8	29	58	40	46	37	33	40	38	39	33	44	47	484
12>=T>=10	27	63	63	60	42	38	32	35	35	37	42	43	517
14>=T>=12	32	53	57	60	48	43	41	37	35	39	45	61	551
16>=T>=14	24	52	63	47	55	35	42	46	40	42	49	48	543
18>=T>=16	19	48	54	46	36	45	28	33	37	40	47	42	475
20>=T>=18	29	43	16	39	38	39	41	31	36	48	38	38	436
22>=T>=20	14	16	2	13	58	38	42	45	41	34	36	50	389
24>=T>=22	5	1	2	2	39	49	33	35	36	37	50	37	326
26>=T>=24	1	2		1	22	45	50	43	32	35	39	15	285
28>=T>=26	0	0	0	1	3	43	47	42	39	45	18	6	244
30>=T>=28	0	0	0	0	2	21	43	43	45	32	6	2	194
32>=T>=30	0	0	0	0	1	4	33	46	48	14	3	0	149
34>=T>=32	0	0	0	0	0	4	6	20	15	3	0	0	48
36>=T>=34	0	0	0	0	0	0	1	0	2	2	0	0	5
38>=T>=36	0	0	0	0	0	0	1	2	1	0	0	0	4
40>=T>=38	0	0	0	0	0	0	0	2	1	0	0	0	3
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.49 Annual Bindata Table for Aksaray

	Hourly Time Interval												
Aksaray	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	3	3	4	4	1	0	0	0	0	0	0	0	15
-10>=T>=-12	3	4	4	4	2	0	0	0	0	0	0	2	19
-8>=T>=-10	2	4	3	5	7	3	0	0	0	2	4	6	36
-6>=T>=-8	5	13	15	18	16	8	4	4	4	10	14	12	123
-4>=T>=-6	6	12	15	9	9	13	11	9	15	13	8	9	129
-2>=T>=-4	15	30	29	35	27	15	18	12	15	20	23	25	264
0>=T>=-2	18	40	51	64	38	25	15	22	17	19	20	24	353
2>=T>=0	31	61	61	50	54	27	23	21	22	24	39	49	462
4>=T>=2	24	44	41	44	46	40	25	18	28	46	56	58	470
6>=T>=4	15	52	63	56	40	43	27	22	23	39	46	44	470
8>=T>=6	36	68	76	67	34	40	39	43	51	53	36	37	580
10>=T>=8	30	61	61	56	43	32	42	31	40	27	42	68	533
12>=T>=10	21	47	42	40	56	34	37	56	38	34	57	48	510
14>=T>=12	26	47	46	51	38	43	39	32	25	47	52	52	498
16>=T>=14	25	45	53	44	48	49	41	36	45	49	48	35	518
18>=T>=16	18	46	62	62	31	43	46	39	39	32	43	61	522
20>=T>=18	28	52	53	59	52	37	42	48	45	50	41	22	529
22>=T>=20	21	56	32	37	66	45	32	33	37	43	35	53	490
24>=T>=22	28	28	16	19	48	64	54	47	54	29	35	52	474
26>=T>=24	8	14	3	6	36	49	62	50	37	28	47	45	385
28>=T>=26	4	1	0	0	27	54	49	53	37	46	38	15	324
30>=T>=28	0	0	0	0	9	31	49	42	47	32	34	11	255
32>=T>=30	0	0	0	0	2	24	31	40	40	44	8	1	190
34>=T>=32	0	0	0	0	0	8	31	40	37	26	3	0	145
36>=T>=34	0	0	0	0	0	0	12	21	22	13	0	0	68
38>=T>=36	0	0	0	0	0	0	0	10	12	2	0	0	24
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.50 Annual Bindata Table for Nevşehir

	Hourly Time Interval												
Nevşehir	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	2	0	1	2	0	0	0	0	0	0	0	0	5
-12>=T>=-14	0	10	9	10	6	0	0	0	0	1	1	0	37
-10>=T>=-12	8	14	17	13	7	2	0	0	0	7	14	15	97
-8>=T>=-10	7	15	15	16	19	8	3	2	6	12	11	16	130
-6>=T>=-8	7	14	14	18	15	18	12	8	12	16	17	14	165
-4>=T>=-6	5	17	26	19	16	20	24	23	20	12	9	9	200
-2>=T>=-4	16	28	21	30	35	21	14	13	14	22	22	29	265
0>=T>=-2	24	48	51	43	36	36	33	31	30	35	48	46	461
2>=T>=0	17	45	43	43	32	35	28	33	37	37	32	34	416
4>=T>=2	30	59	58	60	49	29	27	31	27	25	49	60	504
6>=T>=4	34	59	65	57	52	34	35	20	28	66	64	66	580
8>=T>=6	26	58	66	71	50	61	41	41	52	44	48	52	610
10>=T>=8	32	74	78	50	43	41	54	53	45	50	55	52	627
12>=T>=10	35	67	59	54	50	42	47	42	44	55	51	52	598
14>=T>=12	23	45	69	61	43	44	46	60	59	42	45	49	586
16>=T>=14	17	48	48	60	38	48	40	36	41	32	34	36	478
18>=T>=16	29	60	37	48	59	32	44	40	38	30	27	31	475
20>=T>=18	25	33	27	39	60	41	26	30	27	23	29	58	418
22>=T>=20	19	21	19	20	51	58	50	38	30	32	58	56	452
24>=T>=22	5	9	2	10	27	56	37	40	32	40	62	40	360
26>=T>=24	2	2	1	3	26	50	46	31	32	49	34	8	284
28>=T>=26	0	1	0	1	9	29	58	53	53	48	12	5	269
30>=T>=28	0	0	0	0	3	18	27	47	54	30	6	0	185
32>=T>=30	0	0	0	0	2	3	30	35	28	15	0	0	113
34>=T>=32	0	0	0	0	0	1	4	16	15	4	0	0	40
36>=T>=34	0	0	0	0	0	1	2	3	3	1	0	0	10
38>=T>=36	0	0	0	0	0	0	0	2	1	0	0	0	3
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.51 Annual Bindata Table for Kayseri

	Hourly Time Interval												
Kayseri	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	2	1	0	0	0	0	0	0	0	3
-16>=T>=-18	0	1	2	0	0	0	0	0	0	0	0	0	3
-14>=T>=-16	0	3	2	2	2	0	0	0	0	0	2	1	12
-12>=T>=-14	4	8	14	18	4	0	0	0	0	1	0	5	54
-10>=T>=-12	7	16	14	11	8	1	0	0	2	3	5	3	70
-8>=T>=-10	6	12	10	14	16	7	4	1	2	5	6	22	105
-6>=T>=-8	6	15	17	16	16	8	1	4	4	5	19	12	123
-4>=T>=-6	10	21	32	36	23	19	8	6	6	17	20	13	211
-2>=T>=-4	20	48	42	43	28	19	15	10	14	27	17	31	314
0>=T>=-2	30	54	58	49	43	22	20	17	21	27	38	44	423
2>=T>=0	26	59	59	57	53	50	30	29	34	37	47	62	543
4>=T>=2	19	42	54	53	40	44	46	31	38	49	53	34	503
6>=T>=4	29	64	65	58	44	38	37	38	38	29	28	38	506
8>=T>=6	28	58	74	60	49	38	42	48	39	47	45	51	579
10>=T>=8	32	65	56	56	43	42	40	35	34	31	47	57	538
12>=T>=10	28	59	74	46	47	45	39	45	47	45	49	68	592
14>=T>=12	25	63	60	53	45	42	44	36	39	50	61	49	567
16>=T>=14	40	66	58	64	40	49	36	48	42	41	48	42	574
18>=T>=16	31	50	30	60	55	41	42	44	43	55	37	53	541
20>=T>=18	17	23	8	24	53	43	42	36	41	34	44	66	431
22>=T>=20	5	3	1	8	68	47	33	42	37	30	56	47	377
24>=T>=22	0	0	0	0	36	71	47	29	38	36	61	25	343
26>=T>=24	0	0	0	0	14	47	63	53	38	43	32	6	296
28>=T>=26	0	0	0	0	1	34	49	54	46	46	13	1	244
30>=T>=28	0	0	0	0	1	20	50	57	55	50	2	0	235
32>=T>=30	0	0	0	0	0	3	26	50	58	19	0	0	156
34>=T>=32	0	0	0	0	0	0	5	14	12	3	0	0	34
36>=T>=34	0	0	0	0	0	0	0	3	2	0	0	0	5
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.52 Annual Bindata Table for Malatya

	Hourly Time Interval												
Malatya	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	2	0	0	0	0	0	0	0	0	0	0	0	2
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	2	2	3	2	0	0	0	0	0	2	2	13
-6>=T>=-8	1	3	6	9	3	0	0	0	1	2	1	2	28
-4>=T>=-6	2	11	13	10	10	4	1	1	2	6	7	6	73
-2>=T>=-4	14	21	18	17	19	12	10	11	10	9	12	20	173
0>=T>=-2	7	19	22	30	17	16	7	6	8	16	18	12	178
2>=T>=0	24	54	58	59	41	28	25	20	19	18	26	33	405
4>=T>=2	34	76	82	75	65	34	28	19	23	37	49	61	583
6>=T>=4	31	54	48	51	52	64	56	49	53	72	69	71	670
8>=T>=6	24	41	45	44	46	46	45	54	56	48	45	39	533
10>=T>=8	21	48	57	58	40	38	42	38	40	38	38	43	501
12>=T>=10	24	49	43	27	39	45	33	32	29	33	48	49	451
14>=T>=12	17	35	40	40	38	39	39	36	46	43	42	32	447
16>=T>=14	18	42	47	43	29	29	35	37	26	40	35	46	427
18>=T>=16	24	45	39	35	36	30	38	35	38	35	29	33	417
20>=T>=18	18	40	53	49	40	39	28	40	40	30	40	49	466
22>=T>=20	23	59	65	61	41	44	36	25	23	44	43	38	502
24>=T>=22	34	56	47	49	50	40	38	25	25	37	28	31	460
26>=T>=24	21	32	11	30	51	41	47	52	52	24	34	62	457
28>=T>=26	7	6	0	6	45	50	39	43	29	26	54	40	345
30>=T>=28	1	0	0	0	28	48	39	26	27	37	38	19	263
32>=T>=30	0	0	0	0	3	42	56	40	35	47	29	4	256
34>=T>=32	0	0	0	0	0	7	44	67	62	41	2	0	223
36>=T>=34	0	0	0	0	0	0	11	32	43	17	0	0	103
38>=T>=36	0	0	0	0	0	0	1	6	6	0	0	0	13
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.53 Annual Bindata Table for Elazığ

	Hourly Time Interval												
Elazığ	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	1	0	0	0	0	0	0	0	0	0	0	0	1
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	1	0	1	0	0	0	0	0	0	0	0	2
-12>=T>=-14	0	4	6	5	1	0	0	0	0	0	1	5	22
-10>=T>=-12	3	6	6	7	6	0	0	0	0	2	5	3	38
-8>=T>=-10	4	7	7	9	9	3	1	0	0	3	5	5	53
-6>=T>=-8	5	14	17	16	11	11	4	4	3	6	3	10	104
-4>=T>=-6	5	9	12	15	15	2	9	8	11	9	16	10	121
-2>=T>=-4	9	22	19	22	15	16	8	6	9	16	13	19	174
0>=T>=-2	18	37	48	38	23	23	17	14	14	15	24	29	300
2>=T>=0	22	53	55	54	37	23	20	22	25	38	37	33	419
4>=T>=2	44	79	72	74	73	41	28	24	29	42	56	80	642
6>=T>=4	26	56	56	48	44	54	46	37	55	57	62	55	596
8>=T>=6	26	45	58	47	32	48	57	56	43	52	48	44	556
10>=T>=8	29	61	56	52	46	36	34	43	44	37	39	58	535
12>=T>=10	17	45	58	44	43	47	51	44	49	42	57	36	533
14>=T>=12	24	43	34	40	26	39	37	43	35	37	27	36	421
16>=T>=14	17	33	26	31	37	34	37	39	31	35	44	41	405
18>=T>=16	16	28	46	52	38	31	36	31	27	27	31	40	403
20>=T>=18	14	58	81	49	32	26	19	25	25	26	32	27	414
22>=T>=20	43	76	55	57	44	35	31	29	29	35	31	57	522
24>=T>=22	26	40	15	47	46	29	30	27	29	25	31	55	400
26>=T>=24	13	11	3	20	60	41	32	25	30	27	60	61	383
28>=T>=26	1	1	0	1	54	53	33	39	29	30	65	18	324
30>=T>=28	1	0	0	0	31	59	37	23	28	40	30	7	256
32>=T>=30	0	0	0	0	7	56	60	36	32	60	12	1	264
34>=T>=32	0	0	0	0	0	21	64	71	74	52	1	0	283
36>=T>=34	0	0	0	0	0	2	33	62	60	15	0	0	172
38>=T>=36	0	0	0	0	0	0	6	20	19	2	0	0	47
40>=T>=38	0	0	0	0	0	0	0	2	0	0	0	0	2
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.54 Annual Bindata Table for Bingöl

	Hourly Time Interval												
Bingöl	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	1	0	0	0	0	0	0	0	0	0	0	0	1
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	1	2	0	0	0	0	0	0	0	0	3
-18>=T>=-20	0	2	2	3	2	0	0	0	0	0	0	0	9
-16>=T>=-18	1	4	6	5	3	1	0	0	0	0	0	1	21
-14>=T>=-16	2	4	2	2	5	1	0	0	0	0	4	4	24
-12>=T>=-14	3	8	7	6	4	4	1	0	2	7	5	11	58
-10>=T>=-12	2	0	0	1	3	6	3	2	6	7	7	2	39
-8>=T>=-10	3	7	10	17	9	2	5	3	3	2	1	1	63
-6>=T>=-8	5	13	14	10	12	2	3	6	4	3	6	9	87
-4>=T>=-6	12	29	27	35	19	12	4	3	5	9	14	15	184
-2>=T>=-4	20	32	32	26	28	11	7	7	8	14	19	29	233
0>=T>=-2	16	33	41	44	47	36	17	12	19	38	51	53	407
2>=T>=0	33	76	71	60	66	69	55	49	58	71	64	60	732
4>=T>=2	25	44	49	52	46	53	62	55	58	50	39	44	577
6>=T>=4	17	39	47	42	28	42	52	53	53	32	43	40	488
8>=T>=6	28	50	43	44	34	33	35	41	25	36	35	35	439
10>=T>=8	19	37	44	47	36	28	31	29	32	28	35	55	421
12>=T>=10	16	53	57	51	34	33	32	41	36	45	52	30	480
14>=T>=12	30	51	48	39	33	27	31	30	34	44	25	37	429
16>=T>=14	20	40	50	52	41	30	29	31	32	18	30	52	425
18>=T>=16	17	51	58	50	37	26	25	20	20	22	39	26	391
20>=T>=18	33	49	42	38	37	29	13	15	21	37	33	40	387
22>=T>=20	20	45	30	48	43	33	31	24	38	37	36	57	442
24>=T>=22	20	22	13	15	48	37	29	38	33	26	48	50	379
26>=T>=24	4	4	2	4	41	51	40	34	30	38	55	35	338
28>=T>=26	2	2	0	0	25	46	43	39	30	48	42	10	287
30>=T>=28	0	0	0	0	15	38	39	32	55	46	12	5	242
32>=T>=30	0	0	0	0	3	39	57	60	48	30	6	0	243
34>=T>=32	0	0	0	0	0	13	38	43	37	12	1	0	144
36>=T>=34	0	0	0	0	0	0	19	25	10	4	0	0	58
38>=T>=36	0	0	0	0	0	0	2	11	6	0	0	0	19
40>=T>=38	0	0	0	0	0	0	0	2	1	0	0	0	3
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.55 Annual Bindata Table for Muş

Muş	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	1	1	0	0	0	0	0	0	0	2
-28>=T>=-30	0	3	4	5	5	1	0	0	0	0	0	0	18
-26>=T>=-28	0	1	1	2	2	2	0	0	0	0	0	0	8
-24>=T>=-26	1	3	5	5	3	1	1	0	0	0	1	2	22
-22>=T>=-24	1	2	4	3	3	3	3	1	2	6	7	4	39
-20>=T>=-22	5	10	7	7	4	6	3	3	3	4	6	8	66
-18>=T>=-20	3	8	11	11	9	4	4	2	5	8	7	9	81
-16>=T>=-18	5	8	6	7	9	7	4	4	6	8	8	9	81
-14>=T>=-16	8	18	17	12	11	13	9	8	14	9	12	15	146
-12>=T>=-14	5	10	9	9	11	13	18	14	9	14	10	11	133
-10>=T>=-12	4	5	3	6	9	8	8	13	9	6	10	7	88
-8>=T>=-10	5	8	12	10	9	9	12	10	6	10	10	8	109
-6>=T>=-8	12	26	27	32	26	14	5	11	19	19	17	21	229
-4>=T>=-6	11	21	20	17	18	20	18	18	20	16	15	13	207
-2>=T>=-4	16	37	32	32	34	21	21	15	21	28	38	43	338
0>=T>=-2	16	33	41	53	38	37	30	37	34	43	37	39	438
2>=T>=0	20	47	51	47	48	38	37	32	38	27	25	18	428
4>=T>=2	26	48	54	45	40	40	33	28	16	14	23	45	412
6>=T>=4	25	56	42	42	34	30	23	20	18	30	47	51	418
8>=T>=6	19	36	46	43	36	32	28	22	28	50	50	44	434
10>=T>=8	14	34	45	51	34	36	29	36	50	48	42	29	448
12>=T>=10	27	50	53	41	41	41	49	49	41	34	29	45	500
14>=T>=12	21	45	41	43	44	25	37	32	30	26	31	34	409
16>=T>=14	18	37	61	49	32	33	26	28	30	26	36	41	417
18>=T>=16	21	66	55	59	34	36	27	27	14	26	28	31	424
20>=T>=18	29	45	45	43	45	32	39	36	42	30	35	29	450
22>=T>=20	23	50	33	45	50	36	34	25	21	27	26	53	423
24>=T>=22	23	20	5	8	48	30	34	32	31	27	41	60	359
26>=T>=24	6	3	0	2	32	53	24	30	28	28	53	38	297
28>=T>=26	0	0	0	0	15	58	29	27	23	39	51	20	262
30>=T>=28	0	0	0	0	5	32	50	32	30	33	30	3	215
32>=T>=30	0	0	0	0	0	16	58	45	40	45	4	0	208
34>=T>=32	0	0	0	0	0	3	27	56	52	33	1	0	172
36>=T>=34	0	0	0	0	0	0	10	29	40	15	0	0	94
38>=T>=36	0	0	0	0	0	0	0	8	10	1	0	0	19
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.56 Annual Bindata Table for Bitlis

Bitlis	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	1	2	2	0	0	0	0	0	0	0	0	5
-18>=T>=-20	0	2	3	2	1	0	0	0	0	0	0	0	8
-16>=T>=-18	2	3	1	2	2	0	0	0	0	0	5	7	22
-14>=T>=-16	1	2	2	2	1	0	0	0	0	4	3	1	16
-12>=T>=-14	3	2	1	2	3	0	0	0	1	3	4	5	24
-10>=T>=-12	1	6	5	3	4	0	0	0	2	6	5	5	37
-8>=T>=-10	3	6	7	9	4	5	0	1	5	6	2	0	48
-6>=T>=-8	10	26	26	28	17	6	3	3	10	9	11	17	166
-4>=T>=-6	13	28	44	36	30	13	13	12	15	15	19	25	263
-2>=T>=-4	24	45	34	43	36	19	19	18	20	34	41	41	374
0>=T>=-2	30	63	66	63	62	42	25	23	34	47	53	58	566
2>=T>=0	31	59	54	50	49	72	51	46	60	68	60	65	665
4>=T>=2	29	57	60	53	37	52	73	74	62	55	53	52	657
6>=T>=4	21	46	52	59	52	37	39	49	43	40	42	57	537
8>=T>=6	26	56	60	48	36	44	51	48	47	39	46	36	537
10>=T>=8	36	69	61	53	45	40	42	42	34	36	32	50	540
12>=T>=10	27	49	58	63	31	24	24	29	34	42	54	63	498
14>=T>=12	17	48	48	41	38	35	39	29	31	34	40	32	432
16>=T>=14	26	66	68	58	30	34	29	27	25	27	31	39	460
18>=T>=16	30	44	33	50	47	30	27	32	31	26	38	60	448
20>=T>=18	17	19	19	26	48	40	34	31	25	32	52	64	407
22>=T>=20	11	21	17	25	56	41	35	31	32	39	52	35	395
24>=T>=22	4	8	7	10	48	39	36	30	30	48	42	10	312
26>=T>=24	1	2	0	0	36	57	42	36	46	39	24	8	291
28>=T>=26	1		0	0	16	36	46	43	37	47	10	0	236
30>=T>=28	0	0	0	0	1	46	41	43	42	27	1	0	201
32>=T>=30	0	0	0	0	0	15	47	44	46	7	0	0	159
34>=T>=32	0	0	0	0	0	3	10	33	16	0	0	0	62
36>=T>=34	0	0	0	0	0	0	4	6	2	0	0	0	12
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.57 Annual Bindata Table for Siirt

Siirt	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	2	2	4	2	0	0	0	0	1	0	1	12
-8>=T>=-10	1	2	2	0	1	0	0	0	0	1	3	3	13
-6>=T>=-8	1	2	2	5	2	2	1	0	1	2	1	1	20
-4>=T>=-6	4	10	10	8	10	1	1	2	2	1	2	1	52
-2>=T>=-4	5	10	14	16	13	10	3	2	5	5	6	12	101
0>=T>=-2	6	12	12	15	14	10	11	8	4	7	13	11	123
2>=T>=0	14	36	53	61	41	14	6	5	8	16	21	27	302
4>=T>=2	2	74	68	62	52	32	19	23	28	32	34	50	476
6>=T>=4	37	59	59	48	56	57	34	21	24	53	83	77	608
8>=T>=6	33	43	52	51	39	55	51	41	49	79	49	51	593
10>=T>=8	21	49	40	46	35	45	65	53	61	35	38	27	515
12>=T>=10	17	40	40	37	52	34	46	60	53	37	37	49	502
14>=T>=12	25	25	16	16	32	47	31	41	30	24	42	33	362
16>=T>=14	17	14	14	15	16	31	35	27	26	37	30	22	284
18>=T>=16	4	16	20	26	13	22	33	36	38	32	13	13	266
20>=T>=18	8	47	55	46	18	16	29	34	31	15	13	22	334
22>=T>=20	16	44	53	45	26	11	8	18	16	4	20	31	292
24>=T>=22	22	42	46	56	34	22	16	8	8	25	39	43	361
26>=T>=24	27	63	71	65	42	27	24	21	28	28	53	52	501
28>=T>=26	22	64	34	38	50	37	27	22	16	38	30	46	424
30>=T>=28	33	11	5	7	56	33	32	35	34	38	52	67	403
32>=T>=30	19	2	0	1	43	56	37	30	38	38	58	26	348
34>=T>=32	1	0	0	0	19	55	49	42	42	46	23	3	280
36>=T>=34	0	0	0	0	2	38	60	59	54	42	6	0	261
38>=T>=36	0	0	0	0	0	11	40	47	45	28	2	0	173
40>=T>=38	0	0	0	0	0	2	10	30	25	3	0	0	70
42>=T>=40	0	0	0	0	0	0	0	2	2	1	0	0	5
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.58 Annual Bindata Table for İzmir

İzmir	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	0	0	0	0	0	0	0	0	0	0	0
-2>=T>=-4	2	0	0	0	0	0	0	0	0	0	0	0	2
0>=T>=-2	0	0	0	0	0	0	0	0	0	0	0	0	0
2>=T>=0	0	9	8	9	3	0	0	0	0	0	1	2	32
4>=T>=2	7	21	31	31	14	1	0	0	0	3	5	10	123
6>=T>=4	27	44	50	47	33	8	2	3	8	16	27	35	300
8>=T>=6	19	57	48	49	58	26	15	14	17	31	40	50	424
10>=T>=8	27	45	53	53	44	55	24	24	29	50	56	51	511
12>=T>=10	35	64	57	60	39	53	65	54	64	58	55	58	662
14>=T>=12	19	51	57	54	49	49	50	48	47	39	54	51	568
16>=T>=14	38	82	92	82	56	41	46	47	39	54	55	62	694
18>=T>=16	33	59	50	45	62	53	39	43	53	60	66	57	620
20>=T>=18	29	54	54	49	62	49	52	66	58	57	44	58	632
22>=T>=20	32	73	84	77	40	61	53	39	63	57	61	70	710
24>=T>=22	28	57	66	57	67	53	55	53	44	45	54	44	623
26>=T>=24	25	73	61	63	62	39	45	46	54	55	54	53	630
28>=T>=26	38	37	15	43	80	70	59	59	50	53	42	58	604
30>=T>=28	3	1	0	4	47	73	50	47	49	40	58	55	427
32>=T>=30	0	0	0	0	10	69	84	70	58	64	52	11	418
34>=T>=32	0	0	0	0	2	22	64	75	61	36	1	0	261
36>=T>=34	0	0	0	0	0	2	17	33	29	6	0	0	87
38>=T>=36	0	0	0	0	0	0	1	4	3	0	0	0	8
40>=T>=38	0	0	0	0	0	0	1	2	0	0	0	0	3
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.59 Annual Bindata Table for Aydın

	Hourly Time Interval												
Aydın	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	1	0	0	0	0	0	0	0	0	0	1
-2>=T>=-4	0	4	3	5	4	0	0	0	0	0	0	2	18
0>=T>=-2	3	5	9	11	4	2	0	0	0	0	1	4	39
2>=T>=0	5	17	16	17	14	3	0	0	0	3	6	6	87
4>=T>=2	11	25	28	35	27	7	6	4	4	9	10	15	181
6>=T>=4	18	38	40	43	38	18	7	5	9	13	19	31	279
8>=T>=6	25	48	59	48	37	26	10	10	9	22	37	38	369
10>=T>=8	26	62	53	62	46	40	17	15	17	35	44	60	477
12>=T>=10	38	74	92	78	69	55	42	19	35	60	74	62	698
14>=T>=12	38	74	67	66	68	50	54	55	62	60	62	78	734
16>=T>=14	30	61	54	55	50	64	53	53	54	74	75	66	689
18>=T>=16	24	48	61	46	34	58	53	60	72	58	48	42	604
20>=T>=18	28	63	79	65	40	41	66	67	58	38	38	48	631
22>=T>=20	43	113	114	85	34	30	45	55	45	36	49	51	700
24>=T>=22	50	67	32	66	50	32	32	32	28	38	50	72	549
26>=T>=24	12	18	17	34	75	36	29	22	24	44	69	93	473
28>=T>=26	7	10	4	9	68	39	29	30	39	57	65	40	397
30>=T>=28	2	1	0	4	48	74	37	39	42	62	37	8	354
32>=T>=30	1	0	0	0	16	81	49	40	57	46	23	9	322
34>=T>=32	0	0	0	0	5	46	88	60	58	32	12	1	302
36>=T>=34	0	0	0	0	1	13	63	76	56	19	6	0	234
38>=T>=36	0	0	0	0	0	9	23	48	29	14	1	0	124
40>=T>=38	0	0	0	0	0	1	12	21	11	4	0	0	49
42>=T>=40	0	0	0	0	0	0	9	10	12	1	0	0	32
44>=T>=42	0	0	0	0	0	0	2	6	4	0	0	0	12
46>=T>=44	0	0	0	0	0	0	0	1	0	0	0	0	1
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.60 Annual Bindata Table for Denizli

Denizli	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	0	0	0	0	0	0	0	0	0	0	0
-2>=T>=-4	7		2	0	0	0	0	0	0	0	0	0	9
0>=T>=-2	0	4	6	13	9	1	0	0	0	0	2	3	38
2>=T>=0	11	32	39	48	24	5	5	6	6	8	5	10	199
4>=T>=2	23	48	53	44	44	17	4	2	2	10	31	36	314
6>=T>=4	28	52	60	60	49	45	17	10	21	41	43	51	477
8>=T>=6	35	72	62	59	50	46	35	26	34	44	62	68	593
10>=T>=8	28	66	67	57	49	54	46	35	42	69	57	53	623
12>=T>=10	26	46	46	48	40	52	74	65	82	51	57	52	639
14>=T>=12	28	52	51	51	51	43	42	65	47	47	44	55	576
16>=T>=14	22	39	48	42	44	45	41	39	35	48	63	53	519
18>=T>=16	23	62	65	54	32	40	51	42	45	41	36	37	528
20>=T>=18	24	47	55	55	44	33	30	44	39	40	27	42	480
22>=T>=20	28	60	68	54	57	37	36	36	31	22	53	56	538
24>=T>=22	27	65	63	77	43	51	28	23	26	40	44	43	530
26>=T>=24	33	54	28	42	69	43	34	41	30	48	43	51	516
28>=T>=26	17	21	10	20	68	54	53	33	46	42	60	60	484
30>=T>=28	5	1	0	1	31	71	48	48	35	44	43	42	369
32>=T>=30	1		0	0	18	47	64	37	33	46	45	12	303
34>=T>=32	0	0	0	0	2	31	57	58	52	41	13	0	254
36>=T>=34	0	0	0	0	0	11	36	63	57	40	1	0	208
38>=T>=36	0	0	0	0	0	1	20	33	39	13	0	0	106
40>=T>=38	0	0	0	0	0	0	5	20	18	0	0	0	43
42>=T>=40	0	0	0	0	0	0	1	1	0	0	0	0	2
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.61 Annual Bindata Table for Burdur

Burdur	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	1	0	0	0	0	0	0	0	0	0	0	0	1
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	3	8	12	4	0	0	0	0	0	0	0	27
-2>=T>=-4	0	20	21	28	17	1	0	0	0	3	8	11	109
0>=T>=-2	20	36	48	46	24	9	3	5	4	10	13	18	236
2>=T>=0	25	59	62	57	52	21	8	6	10	22	33	55	410
4>=T>=2	26	43	42	47	41	36	26	17	27	36	53	52	446
6>=T>=4	27	69	80	78	47	56	41	34	23	43	48	41	587
8>=T>=6	32	74	65	54	67	52	43	25	50	76	61	68	667
10>=T>=8	38	58	56	56	57	48	58	64	79	51	72	64	701
12>=T>=10	24	61	64	45	48	68	64	62	46	49	50	57	638
14>=T>=12	27	59	75	67	38	51	42	50	44	55	42	47	597
16>=T>=14	38	67	54	62	47	36	57	34	44	38	46	49	572
18>=T>=16	23	43	40	47	49	49	34	58	48	47	49	67	554
20>=T>=18	19	44	64	55	51	34	33	36	28	32	48	41	485
22>=T>=20	27	60	33	52	44	49	40	31	41	44	43	28	492
24>=T>=22	22	24	13	18	54	42	55	46	43	35	36	57	445
26>=T>=24	8	6	0	2	53	42	33	43	36	30	41	45	339
28>=T>=26	1	0	0	0	27	47	31	36	34	36	52	23	287
30>=T>=28	0	0	0	0	7	45	47	32	27	40	22	5	225
32>=T>=30	0	0	0	0	0	36	40	44	49	42	9	0	220
34>=T>=32	0	0	0	0	0	6	46	39	43	28	2	0	164
36>=T>=34	0	0	0	0	0	2	22	45	36	7	0	0	112
38>=T>=36	0	0	0	0	0	0	5	12	10	0	0	0	27
40>=T>=38	0	0	0	0	0	0	2	7	5	2	0	0	16
42>=T>=40	0	0	0	0	0	0	0	2	0	0	0	0	2
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.62 Annual Bindata Table for Isparta

	Hourly Time Interval												
Isparta	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	2	0	0	2	2	0	0	0	0	0	0	0	6
-10>=T>=-12	0	2	6	6	2	0	0	0	0	0	0	0	16
-8>=T>=-10	1	6	4	2	2	0	0	0	0	0	0	2	17
-6>=T>=-8	3	2	2	5	7	1	0	0	0	0	3	6	29
-4>=T>=-6	7	16	21	22	5	5	0	0	0	3	6	5	90
-2>=T>=-4	9	22	27	30	16	8	5		2	10	16	23	168
0>=T>=-2	22	53	59	67	40	14	9	9	13	19	26	28	359
2>=T>=0	30	61	57	50	48	26	18	16	24	39	46	56	471
4>=T>=2	20	48	55	48	44	43	32	25	31	39	52	44	481
6>=T>=4	31	51	47	46	41	42	39	41	37	46	38	51	510
8>=T>=6	28	65	71	60	33	42	36	34	50	56	53	64	592
10>=T>=8	33	81	95	64	54	50	62	56	64	57	63	61	740
12>=T>=10	40	69	60	58	51	53	57	66	45	44	55	56	654
14>=T>=12	39	65	71	64	62	43	31	32	41	55	48	69	620
16>=T>=14	22	59	53	51	43	43	44	47	43	56	69	62	592
18>=T>=16	28	48	51	48	47	59	43	46	69	41	52	49	581
20>=T>=18	20	39	31	39	53	43	56	54	35	37	39	40	486
22>=T>=20	19	23	7	34	42	38	45	48	36	44	45	44	425
24>=T>=22	8	4	1	23	45	46	36	35	40	47	45	48	378
26>=T>=24	2	2	0	1	48	46	35	30	39	31	44	9	287
28>=T>=26	0	0	0	0	28	47	53	45	0	44	18	4	239
30>=T>=28	0	0	0	0	6	39	47	41	40	36	0	0	209
32>=T>=30	0	0	0	0	0	18	36	48	44	13	0	0	159
34>=T>=32	0	0	0	0	0	3	34	31	24	4	0	0	96
36>=T>=34	0	0	0	0	0	1	2	7	5	0	0	0	15
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.63 Annual Bindata Table for Konya

	Hourly Time Interval												
Konya	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	1	0	0	0	0	0	0	0	0	0	0	0	1
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	1	3	4	2	0	0	0	0	0	0	0	10
-12>=T>=-14	0	5	4	3	2	0	0	0	0	0	1	3	18
-10>=T>=-12	1	4	3	8	4	2	0	0	1	4	3	1	31
-8>=T>=-10	4	6	12	7	8	2	2	2	4	2	2	3	54
-6>=T>=-8	5	11	5	6	7	10	4	3	5	7	8	13	84
-4>=T>=-6	12	22	27	30	22	12	10	12	11	12	16	14	200
-2>=T>=-4	12	29	47	48	43	28	17	9	8	20	28	34	323
0>=T>=-2	30	62	52	55	39	32	33	26	37	40	35	33	474
2>=T>=0	27	52	63	62	41	31	26	34	31	35	49	61	512
4>=T>=2	24	56	55	42	44	38	24	19	25	34	40	43	444
6>=T>=4	30	61	63	55	40	45	36	33	36	43	49	52	543
8>=T>=6	32	76	65	56	50	37	57	48	45	61	55	66	648
10>=T>=8	32	52	58	62	41	43	32	44	42	46	59	48	559
12>=T>=10	25	53	55	54	46	49	44	49	56	45	49	67	592
14>=T>=12	26	55	59	45	35	43	41	35	34	38	47	41	499
16>=T>=14	28	58	58	49	47	33	51	40	36	47	50	50	547
18>=T>=16	24	45	50	54	48	28	34	43	38	37	46	54	501
20>=T>=18	20	31	26	37	57	43	29	34	46	47	53	55	478
22>=T>=20	14	30	19	33	48	48	42	49	44	48	46	39	460
24>=T>=22	11	12	4	14	45	63	49	35	44	37	34	31	379
26>=T>=24	4	7	0	4	39	54	50	45	34	30	37	15	319
28>=T>=26	1	0	0	0	14	43	52	51	44	45	18	5	273
30>=T>=28	0	0	0	0	6	23	51	51	38	27	2	0	198
32>=T>=30	0	0	0	0	0	15	31	40	44	19	1	0	150
34>=T>=32	0	0	0	0	0	2	10	18	19	4	0	0	53
36>=T>=34	0	0	0	0	0	0	3	7	4	1	0	0	15
38>=T>=36	0	0	0	0	0	0	0	1	2	0	0	0	3
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.64 Annual Bindata Table for Karaman

Karaman	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	1	2	2	2	0	0	0	0	0	0	0	7
-20>=T>=-22	0	1	0	0	0	1	0	0	0	0	0	0	2
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	2	2
-16>=T>=-18	0	0	0	0	0	1	0	0	1	2	2	0	6
-14>=T>=-16	1	1	0	0	0	0	1	0	0	0	2	2	7
-12>=T>=-14	1	3	4	4	2	0	1	1	2	2	0	0	20
-10>=T>=-12	3	5	5	7	3	2	1	1	0	0	0	0	27
-8>=T>=-10	3	4	10	13	8	0	1	2	1	0	0	4	46
-6>=T>=-8	7	14	11	6	13	3	0	0	0	1	4	4	63
-4>=T>=-6	6	15	18	29	14	11	1	0	4	9	14	16	137
-2>=T>=-4	16	40	47	49	44	28	15	11	15	25	26	31	347
0>=T>=-2	23	47	46	39	32	27	31	24	26	21	24	25	365
2>=T>=0	20	37	46	51	39	34	25	23	13	21	31	49	389
4>=T>=2	25	49	51	46	36	26	21	24	29	48	64	59	478
6>=T>=4	29	64	79	65	40	40	37	31	40	49	55	46	575
8>=T>=6	32	69	64	62	48	43	40	40	50	60	45	50	603
10>=T>=8	35	72	59	59	36	46	36	41	43	33	36	59	555
12>=T>=10	21	33	47	40	58	29	51	48	41	45	63	60	536
14>=T>=12	27	70	85	60	51	40	31	31	32	44	53	46	570
16>=T>=14	32	67	59	65	43	57	40	39	43	49	35	38	567
18>=T>=16	29	58	52	60	44	37	53	54	54	34	39	56	570
20>=T>=18	28	46	36	43	57	42	38	40	28	27	51	55	491
22>=T>=20	19	26	6	19	53	48	33	27	35	44	54	54	418
24>=T>=22	5	7	3	8	45	54	45	38	34	53	51	41	384
26>=T>=24	4	0	0	3	33	47	44	44	43	44	35	18	315
28>=T>=26	0	0	0	0	21	50	58	52	58	39	28	14	320
30>=T>=28	0	0	0	0	4	32	40	45	38	33	12	1	205
32>=T>=30	0	0	0	0	1	21	37	47	38	23	6	0	173
34>=T>=32	0	0	0	0	3	6	29	30	32	19	0	0	119
36>=T>=34	0	0	0	0	0	4	17	24	21	4	0	0	70
38>=T>=36	0	0	0	0	0	1	4	11	9	1	0	0	26
40>=T>=38	0	0	0	0	0	0	0	2	0	0	0	0	2
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.65 Annual Bindata Table for Niğde

	Hourly Time Interval												
Niğde	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	1	2	2	2	0	0	0	0	0	0	0	7
-10>=T>=-12	0	7	12	13	6	0	0	0	0	0	1	2	41
-8>=T>=-10	9	21	10	12	11	1	0	0	1	3	4	15	87
-6>=T>=-8	7	11	18	15	19	11	0	1	3	11	19	13	128
-4>=T>=-6	6	14	21	25	15	16	12	7	8	17	18	14	173
-2>=T>=-4	17	37	40	37	27	18	18	19	18	14	9	18	272
0>=T>=-2	26	52	55	58	41	25	20	13	15	24	36	47	412
2>=T>=0	23	54	58	53	41	37	22	26	30	40	49	57	490
4>=T>=2	30	57	57	55	47	30	31	24	37	48	43	45	504
6>=T>=4	23	48	55	69	45	43	34	31	37	30	50	54	519
8>=T>=6	33	68	67	48	47	44	51	47	42	51	56	51	605
10>=T>=8	25	52	47	46	42	41	35	36	44	56	57	61	542
12>=T>=10	26	50	56	44	49	63	45	57	55	54	43	39	581
14>=T>=12	25	56	64	53	41	43	61	44	39	39	45	43	553
16>=T>=14	24	60	68	66	47	44	49	61	58	41	28	45	591
18>=T>=16	32	76	74	74	38	41	35	25	31	20	43	45	534
20>=T>=18	33	49	19	38	55	34	41	49	35	41	42	52	488
22>=T>=20	18	11	4	18	67	45	35	36	38	43	47	63	425
24>=T>=22	3	2	0	2	49	63	43	41	35	37	63	46	384
26>=T>=24	1	2	1	0	29	60	57	44	40	51	58	14	357
28>=T>=26	0	0	0	0	8	45	70	48	54	57	12	3	297
30>=T>=28	0	0	0	0	1	19	45	71	58	32	4	1	231
32>=T>=30	0	0	0	0	0	4	19	35	39	17	1	0	115
34>=T>=32	0	0	0	0	0	1	4	11	10	2	0	0	28
36>=T>=34	0	0	0	0	0	0	1	1	0	0	0	0	2
38>=T>=36	0	0	0	0	0	0	0	1	1	0	0	0	2
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.66 Annual Bindata Table for Kahramanmaraş

	Hourly Time Interval												
Kahramanmaraş	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	1	0	0	3	0	0	0	0	0	0	0	0	4
-4>=T>=-6	0	4	6	7	1	0	0	0	0	0	0	0	18
-2>=T>=-4	3	8	6	2	7	0	0	0	0	0	0	7	33
0>=T>=-2	1	7	17	18	9	4	1	0	0	2	10	4	73
2>=T>=0	12	26	20	22	21	7	4	3	5	10	5	15	150
4>=T>=2	14	32	27	35	36	17	7	7	7	14	20	29	245
6>=T>=4	16	33	44	38	41	51	16	12	23	27	39	38	378
8>=T>=6	25	57	66	57	43	43	42	31	41	40	49	52	546
10>=T>=8	22	42	43	46	53	48	57	44	49	60	48	42	554
12>=T>=10	28	58	67	51	47	45	55	64	63	49	46	57	630
14>=T>=12	28	58	44	53	30	36	38	52	32	28	39	39	477
16>=T>=14	26	49	52	56	51	42	44	31	35	45	41	41	513
18>=T>=16	19	28	26	27	52	40	30	39	37	36	58	58	450
20>=T>=18	9	26	35	36	31	36	41	37	36	52	43	26	408
22>=T>=20	21	43	48	49	34	39	32	40	46	25	22	27	426
24>=T>=22	20	49	63	62	38	31	36	30	35	34	29	38	465
26>=T>=24	24	77	78	82	48	31	36	45	22	27	46	57	573
28>=T>=26	44	52	28	17	65	39	25	20	27	36	53	65	471
30>=T>=28	13	18	4	7	48	50	30	25	27	45	68	53	388
32>=T>=30	5	2	0	0	32	45	52	35	35	63	37	19	325
34>=T>=32	0	0	0	0	8	59	44	47	51	43	18	10	280
36>=T>=34	0	0	0	0	1	38	52	46	44	24	14	2	221
38>=T>=36	0	0	0	0	0	12	43	46	49	13	3	1	167
40>=T>=38	0	0	0	0	0	3	21	36	16	7	0	0	83
42>=T>=40	0	0	0	0	0	0	11	22	16	1	0	0	50
44>=T>=42	0	0	0	0	0	0	3	8	4	0	0	0	15
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.67 Annual Bindata Table for Gaziantep

	Hourly Time Interval												
Gaziantep	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	3	4	4	1	0	0	0	0	0	0	0	12
-4>=T>=-6	1	1	6	13	7	0	0	0	0	0	2	2	32
-2>=T>=-4	9	21	18	16	12	0	0	0	0	2	1	10	89
0>=T>=-2	8	28	34	32	16	11	3	3	5	9	22	24	195
2>=T>=0	23	36	36	37	31	18	17	15	17	24	23	30	307
4>=T>=2	20	42	35	31	31	20	15	18	17	30	40	38	337
6>=T>=4	25	60	75	73	40	36	23	13	20	31	34	33	463
8>=T>=6	40	69	73	68	61	47	42	38	50	60	64	82	694
10>=T>=8	30	60	57	58	44	45	47	52	49	49	53	56	600
12>=T>=10	26	54	55	56	50	41	39	47	52	53	61	56	590
14>=T>=12	25	45	42	38	49	45	49	36	38	42	47	48	504
16>=T>=14	15	41	43	43	34	29	38	44	38	41	41	40	447
18>=T>=16	27	50	50	47	51	46	36	36	46	50	33	40	512
20>=T>=18	21	43	46	40	37	38	41	42	39	22	44	48	461
22>=T>=20	26	61	63	59	34	43	43	43	36	36	53	44	541
24>=T>=22	27	51	47	53	46	32	31	24	20	40	36	51	458
26>=T>=24	23	47	41	47	50	33	31	40	38	44	42	53	489
28>=T>=26	17	14	5	15	53	42	29	24	33	42	59	52	385
30>=T>=28	1	2	0	0	36	64	51	35	38	49	52	21	349
32>=T>=30	0	0	0	0	27	50	60	67	59	56	20	2	341
34>=T>=32	0	0	0	0	15	43	48	52	50	34	3	0	245
36>=T>=34	0	0	0	0	55	28	46	45	44	10	0	0	228
38>=T>=36	0	0	0	0	0	16	28	33	26	6	0	0	109
40>=T>=38	0	0	0	0	0	3	11	21	14	0	0	0	49
42>=T>=40	0	0	0	0	0	0	2	2	1	0	0	0	5
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.68 Annual Bindata Table for Kilis

Kilis	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	0	0	0	0	0	0	0	0	0	0	0
-2>=T>=-4	2	0	0	0	0	0	0	0	0	0	0	0	2
0>=T>=-2	0	0	4	6	1	0	0	0	0	0	0	0	11
2>=T>=0	0	22	22	27	16	3	2	2	2	2	2	6	106
4>=T>=2	21	41	42	45	38	17	11	8	10	17	30	39	319
6>=T>=4	24	54	58	54	48	32	17	18	19	38	40	39	441
8>=T>=6	28	52	57	53	49	44	31	15	30	39	49	57	504
10>=T>=8	34	67	66	58	57	58	55	50	49	65	77	75	711
12>=T>=10	30	60	55	58	46	49	49	58	65	78	57	53	658
14>=T>=12	21	41	46	39	32	46	60	54	63	32	30	43	507
16>=T>=14	26	56	54	49	37	25	33	49	38	33	41	42	483
18>=T>=16	30	59	58	55	40	36	33	30	29	30	50	53	503
20>=T>=18	30	56	76	68	51	40	33	31	29	46	47	60	567
22>=T>=20	36	80	84	73	45	36	32	35	33	42	43	57	596
24>=T>=22	33	69	58	77	66	47	34	24	29	37	56	72	602
26>=T>=24	28	41	26	34	80	45	39	44	41	52	76	63	569
28>=T>=26	9	17	11	16	59	54	48	44	47	55	54	47	461
30>=T>=28	3	2	1	4	35	62	51	39	39	53	43	14	346
32>=T>=30	2	4	2	1	13	63	42	43	51	50	19	4	294
34>=T>=32	1	2	1	2	6	41	66	63	53	30	7	1	273
36>=T>=34	0	0	0	0	3	16	43	50	43	17	2	2	176
38>=T>=36	0	0	0	0	1	6	31	38	33	7	1	0	117
40>=T>=38	0	0	0	0	0	4	14	18	14	2	0	0	52
42>=T>=40	0	0	0	0	0	1	5	15	11	2	0	0	34
44>=T>=42	0	0	0	0	0	0	0	2	0	0	0	0	2
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.69 Annual Bindata Table for Adıyaman

Adıyaman	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	2	1	0	0	0	0	0	0	0	0	3
-2>=T>=-4	0	8	7	9	6	0	0	0	0	0	0	0	30
0>=T>=-2	4	8	11	17	8	4	0	0	1	2	4	6	65
2>=T>=0	12	25	32	33	15	5	6	4	6	8	10	14	170
4>=T>=2	18	50	53	49	36	9	6	6	7	16	21	30	301
6>=T>=4	32	57	63	70	62	22	13	16	22	29	46	55	487
8>=T>=6	49	92	83	69	60	50	31	27	31	68	75	84	719
10>=T>=8	19	46	47	43	56	75	43	35	50	68	70	67	619
12>=T>=10	23	48	50	43	37	54	67	54	68	69	51	39	603
14>=T>=12	19	34	41	54	39	44	56	64	57	29	27	39	503
16>=T>=14	25	51	54	52	44	37	45	52	38	30	45	32	505
18>=T>=16	21	46	44	37	39	29	38	40	35	34	34	46	443
20>=T>=18	23	46	44	45	30	37	34	28	27	28	38	50	430
22>=T>=20	18	38	59	58	39	24	28	31	31	32	49	36	443
24>=T>=22	26	75	72	55	46	31	29	28	21	40	32	33	488
26>=T>=24	32	61	47	50	40	43	24	27	34	37	35	52	482
28>=T>=26	23	23	13	30	50	44	40	34	35	28	38	60	418
30>=T>=28	15	16	7	11	53	36	38	36	42	41	65	49	409
32>=T>=30	3	5	1	3	38	42	40	43	33	50	50	31	339
34>=T>=32	1	0	0	1	25	60	43	34	43	43	29	7	286
36>=T>=34	0	0	0	0	6	52	62	58	54	46	10	0	288
38>=T>=36	0	0	0	0	1	22	54	61	52	21	1	0	212
40>=T>=38	0	0	0	0	0	8	23	34	33	10	0	0	108
42>=T>=40	0	0	0	0	0	1	9	15	8	1	0	0	34
44>=T>=42	0	0	0	0	0	0	1	3	2	0	0	0	6
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.70 Annual Bindata Table for Şanlıurfa

	Hourly Time Interval												
Şanlıurfa	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	1	0	0	0	0	0	0	0	0	0	0	0	1
-2>=T>=-4	0	0	0	0	0	0	0	0	0	0	0	0	0
0>=T>=-2	0	3	7	9	2	0	0	0	0	0	0	0	21
2>=T>=0	3	12	11	15	6	0	0	0	0	1	4	6	58
4>=T>=2	20	40	47	52	34	12	2	1	4	9	15	27	263
6>=T>=4	27	61	64	62	56	20	11	7	10	32	43	54	447
8>=T>=6	32	55	61	57	55	44	28	25	31	45	60	56	549
10>=T>=8	32	70	72	70	51	61	38	41	49	62	57	63	666
12>=T>=10	24	48	42	43	43	49	60	55	56	54	53	49	576
14>=T>=12	25	51	52	46	41	22	40	34	41	43	45	48	488
16>=T>=14	17	39	32	32	48	39	30	39	45	46	41	43	451
18>=T>=16	21	34	43	44	35	50	37	34	42	31	30	30	431
20>=T>=18	14	36	32	30	17	45	55	46	35	27	27	29	393
22>=T>=20	20	42	67	60	40	26	40	46	30	22	41	42	476
24>=T>=22	30	65	61	64	32	26	23	30	27	34	37	34	463
26>=T>=24	28	56	55	52	41	34	24	17	17	41	47	65	477
28>=T>=26	21	43	39	39	67	29	35	31	38	38	47	53	480
30>=T>=28	33	60	41	41	53	46	32	35	32	36	48	33	490
32>=T>=30	17	15	4	14	57	62	50	40	39	46	33	63	440
34>=T>=32	0	0	0	0	33	57	47	51	61	36	62	35	382
36>=T>=34	0	0	0	0	14	55	58	56	37	48	34	0	302
38>=T>=36	0	0	0	0	5	38	57	40	47	54	6	0	247
40>=T>=38	0	0	0	0	0	12	49	66	62	23	0	0	212
42>=T>=40	0	0	0	0	0	3	14	35	25	2	0	0	79
44>=T>=42	0	0	0	0	0	0	0	1	2	0	0	0	3
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.71 Annual Bindata Table for Mardin

Mardin	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	1	0	0	0	0	0	0	0	0	0	1
-4>=T>=-6	3	2	1	4	3	2	2	2	2	2	2	2	27
-2>=T>=-4	3	8	8	7	7	4	0	0	0	2	2	4	45
0>=T>=-2	12	26	32	35	27	15	11	8	7	15	19	23	230
2>=T>=0	21	45	43	46	39	23	18	18	21	30	32	39	375
4>=T>=2	31	56	59	52	57	50	43	36	42	37	47	49	559
6>=T>=4	29	63	68	69	48	52	44	43	50	60	62	61	649
8>=T>=6	28	52	47	47	47	42	48	46	57	68	64	60	606
10>=T>=8	14	28	28	20	37	47	40	46	51	40	33	30	414
12>=T>=10	18	42	36	35	23	39	48	49	32	20	27	37	406
14>=T>=12	21	39	43	47	45	22	23	25	22	35	42	41	405
16>=T>=14	16	35	45	42	28	43	34	26	43	51	38	30	431
18>=T>=16	26	50	41	37	44	31	36	48	36	27	32	37	445
20>=T>=18	19	31	36	39	29	29	35	25	23	30	36	47	379
22>=T>=20	16	45	53	55	48	39	30	35	34	48	44	30	477
24>=T>=22	20	53	48	37	47	41	39	35	37	24	28	36	445
26>=T>=24	34	50	56	59	45	35	37	31	34	32	34	55	502
28>=T>=26	28	56	46	45	47	40	28	35	28	33	66	57	509
30>=T>=28	19	33	28	34	52	49	41	31	29	51	49	53	469
32>=T>=30	5	7	3	8	35	47	51	45	57	54	51	28	391
34>=T>=32	1	3	3	5	10	48	59	71	64	49	13	5	331
36>=T>=34	3	4	2	3	5	21	43	42	34	12	5	4	178
38>=T>=36	0	0	0	0	3	7	12	21	17	7	3	2	72
40>=T>=38	0	0	0	0	0	2	5	7	6	2	1	0	23
42>=T>=40	0	0	0	0	0	1	3	3	3	1	0	0	11
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.72 Annual Bindata Table for Diyarbakır

	Hourly Time Interval												
Diyarbakır	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	1	0	0	0	0	0	0	0	0	0	0	0	1
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	2	2	0	0	0	0	0	0	0	0	4
-6>=T>=-8	0	0	3	9	0	0	0	0	0	0	0	0	12
-4>=T>=-6	0	13	11	8	3	0	0	0	0	0	0	0	35
-2>=T>=-4	5	15	19	20	5	0	0	0	0	0	2	8	74
0>=T>=-2	13	19	20	20	13	0	0	0	0	1	10	15	111
2>=T>=0	8	17	22	24	19	6	0	0	0	9	24	29	158
4>=T>=2	18	32	23	16	31	8	4	2	4	25	27	32	222
6>=T>=4	8	21	28	16	24	27	10	2	5	35	26	17	219
8>=T>=6	14	26	28	24	21	41	21	20	27	32	24	19	297
10>=T>=8	11	29	25	28	7	30	37	38	43	18	12	22	300
12>=T>=10	10	18	29	26	20	9	33	18	25	4	15	24	231
14>=T>=12	13	38	34	27	18	13	18	34	21	18	19	18	271
16>=T>=14	19	27	30	34	15	18	13	15	10	18	34	26	259
18>=T>=16	9	21	33	21	23	15	16	15	19	20	21	28	241
20>=T>=18	13	40	38	21	28	9	16	21	17	20	23	31	277
22>=T>=20	19	28	37	28	24	24	9	10	11	20	22	23	255
24>=T>=22	21	43	51	44	15	29	18	12	9	22	23	28	315
26>=T>=24	20	50	30	49	32	23	24	22	30	16	26	48	370
28>=T>=26	23	29	11	31	31	22	22	22	18	17	38	45	309
30>=T>=28	9	13	6	22	48	24	24	22	19	19	51	38	295
32>=T>=30	4	1	0	10	54	42	22	28	24	41	45	24	295
34>=T>=32	0	0	0	0	36	57	44	27	31	50	23	5	273
36>=T>=34	0	0	0	0	13	47	57	54	50	40	14	0	275
38>=T>=36	0	0	0	0	0	31	45	40	45	38	1	0	200
40>=T>=38	0	0	0	0	0	4	40	54	54	16	0	0	168
42>=T>=40	0	0	0	0	0	1	7	24	18	1	0	0	51
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.73 Annual Bindata Table for Batman

Batman	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	1	0	0	0	0	0	0	0	0	0	0	1
-14>=T>=-16	0	1	0	0	0	0	0	0	0	1	3	2	7
-12>=T>=-14		2	3	2	0	0	0	0	0	3	2	4	16
-10>=T>=-12	1	2	2	2	4	2	0	0	2	1	1	0	17
-8>=T>=-10	0	0	2	4	1	2	1	0	0	1	0	0	11
-6>=T>=-8	2	5	8	8	4	1	3	4	3	0	0	0	38
-4>=T>=-6	5	9	13	20	12	2	0	0	1	0	0	4	66
-2>=T>=-4	7	23	33	37	23	8	2	4	2	2	8	9	158
0>=T>=-2	15	33	38	39	29	13	6	0	1	6	10	22	212
2>=T>=0	16	42	38	35	41	22	12	6	7	20	24	26	289
4>=T>=2	25	44	47	38	37	44	14	10	9	13	23	39	343
6>=T>=4	31	51	44	45	37	32	33	17	18	39	52	56	455
8>=T>=6	19	47	57	57	38	42	33	27	32	49	65	52	518
10>=T>=8	25	57	59	45	51	48	52	42	54	68	49	50	600
12>=T>=10	34	55	57	50	32	29	49	61	57	37	45	50	556
14>=T>=12	21	50	58	58	51	34	36	53	48	43	47	54	553
16>=T>=14	22	45	39	37	44	44	40	42	42	43	48	38	484
18>=T>=16	26	56	54	41	36	41	43	27	34	32	36	41	467
20>=T>=18	19	37	37	31	27	32	34	49	47	28	30	45	416
22>=T>=20	23	32	36	55	32	30	26	35	27	21	37	25	379
24>=T>=22	11	41	46	46	26	42	26	23	17	44	30	44	396
26>=T>=24	22	51	40	52	46	21	37	28	24	29	31	32	413
28>=T>=26	23	29	10	13	52	27	30	21	32	30	26	35	328
30>=T>=28	11	8	4	7	50	38	26	33	32	27	52	44	332
32>=T>=30	6	4	1	0	36	53	23	31	28	41	39	38	300
34>=T>=32	0	0	1	0	11	53	57	26	31	37	40	15	271
36>=T>=34	0	0	1	0	3	38	58	68	68	42	21	2	301
38>=T>=36	0	0	0	0	0	23	47	43	36	30	7	0	186
40>=T>=38	0	0	0	0	1	4	36	50	50	30	1	0	172
42>=T>=40	0	0	0	0	0	0	4	27	28	11	0	0	70
44>=T>=42	0	0	0	0	0	0	0	2	0	0	0	0	2
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.74 Annual Bindata Table for Hakkari

Hakkari	Hourly Time Interval												
	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12		2	9	16	7	0	0	0	0	0	0	1	35
-8>=T>=-10	8	20	20	23	16	3	0	0	0	2	3	7	102
-6>=T>=-8	7	26	37	28	32	14	3	0	5	7	14	15	188
-4>=T>=-6	26	39	27	39	39	21	9	7	5	21	23	44	300
-2>=T>=-4	15	38	45	38	41	43	35	23	34	37	44	29	422
0>=T>=-2	25	48	45	49	41	43	43	37	37	56	50	48	522
2>=T>=0	26	50	67	62	52	51	53	64	61	50	46	57	639
4>=T>=2	25	53	46	55	63	49	50	49	43	42	47	52	574
6>=T>=4	28	59	49	39	39	58	47	57	57	67	65	55	620
8>=T>=6	20	27	28	27	30	46	52	47	49	34	35	36	431
10>=T>=8	9	29	36	31	23	26	46	34	39	31	33	28	365
12>=T>=10	17	30	26	29	21	18	22	33	25	28	23	23	295
14>=T>=12	12	28	29	29	25	9	15	27	23	21	24	32	274
16>=T>=14	17	31	48	51	31	25	13	18	22	19	25	23	323
18>=T>=16	20	58	55	48	38	37	24	21	17	26	29	33	406
20>=T>=18	28	55	70	71	38	23	20	17	22	24	35	43	446
22>=T>=20	27	77	58	47	60	35	32	17	26	34	35	44	492
24>=T>=22	35	29	9	21	61	36	20	28	24	36	45	61	405
26>=T>=24	6	4	5	7	39	52	39	33	34	41	77	59	396
28>=T>=26	3	5	1	2	15	53	36	33	32	61	42	17	300
30>=T>=28	0	0	0	0	3	49	69	57	58	47	16	6	305
32>=T>=30	0	0	0	0	0	17	59	74	64	25	3	1	243
34>=T>=32	0	0	0	0	0	0	20	30	29	7	0	0	86
36>=T>=34	0	0	0	0	0	0	3	9	6	0	0	0	18
38>=T>=36	0	0	0	0	0	0	0	0	1	0	0	0	1
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.75 Annual Bindata Table for Şırnak

	Hourly Time Interval												
Şırnak	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	0	0	0	0	0	0	0	0	0	0	0
-2>=T>=-4	3	0	0	0	0	0	0	0	0	0	0	0	3
0>=T>=-2	0	4	8	8	2	0	0	0	0	0	0	0	22
2>=T>=0	12	29	27	34	25	9	4	5	6	18	20	21	210
4>=T>=2	23	39	40	37	34	24	24	19	27	32	43	45	387
6>=T>=4	12	21	19	15	22	33	18	21	20	26	26	24	257
8>=T>=6	4	9	11	9	15	21	26	25	28	17	9	8	182
10>=T>=8	8	14	14	16	6	12	24	23	13	10	7	12	159
12>=T>=10	6	19	19	13	10	5	5	8	12	14	17	16	144
14>=T>=12	6	13	15	15	16	15	11	9	9	15	22	21	167
16>=T>=14	9	16	14	11	16	14	20	16	20	11	7	13	167
18>=T>=16	9	17	18	16	9	18	13	14	9	12	18	16	169
20>=T>=18	7	13	13	16	14	12	11	14	15	15	11	13	154
22>=T>=20	10	18	20	18	17	12	12	13	12	12	16	13	173
24>=T>=22	11	25	25	29	14	14	17	12	12	20	16	28	223
26>=T>=24	5	8	3	8	18	15	10	15	18	20	33	16	169
28>=T>=26	0	0	0	0	24	24	14	12	10	23	1	0	108
30>=T>=28	0	0	0	0	4	16	33	35	33	1	0	0	122
32>=T>=30	0	0	0	0	0	2	4	5	2	0	0	0	13
34>=T>=32	0	0	0	0	0	0	0	0	0	0	0	0	0
36>=T>=34	0	0	0	0	0	0	0	0	0	0	0	0	0
38>=T>=36	0	0	0	0	0	0	0	0	0	0	0	0	0
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.76 Annual Bindata Table for Muğla

	Hourly Time Interval												
Muğla	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	2	2	4	1	0	0	0	0	0	0	0	9
-2>=T>=-4	0	11	12	19	9	0	0	0	0	0	2	1	54
0>=T>=-2	8	26	41	40	27	3	2	2	2	4	4	8	167
2>=T>=0	19	32	32	37	32	14	2	2	3	4	12	24	213
4>=T>=2	20	55	58	57	45	20	6	1	9	24	34	36	365
6>=T>=4	29	71	72	67	48	36	17	14	24	31	32	46	487
8>=T>=6	40	72	68	67	65	46	36	26	32	41	62	87	642
10>=T>=8	35	68	69	64	65	63	46	47	45	87	106	93	788
12>=T>=10	34	53	55	40	55	63	50	48	83	86	71	50	688
14>=T>=12	25	49	50	49	27	53	66	71	65	67	43	50	615
16>=T>=14	16	48	39	44	26	50	63	58	65	34	44	52	539
18>=T>=16	22	32	35	40	28	26	56	73	48	25	38	31	454
20>=T>=18	24	46	45	49	48	30	42	39	24	46	37	37	467
22>=T>=20	24	51	60	50	52	21	20	25	31	38	35	41	448
24>=T>=22	22	52	39	50	52	48	29	24	32	31	38	52	469
26>=T>=24	24	32	25	25	54	51	36	42	33	35	52	59	468
28>=T>=26	5	7	4	6	40	40	50	40	46	41	56	29	364
30>=T>=28	1	0	0	0	28	50	34	45	30	46	30	10	274
32>=T>=30	0	0	0	0	4	50	42	31	51	46	8	0	232
34>=T>=32	0	0	0	0	0	33	60	49	43	18	0	0	203
36>=T>=34	0	0	0	0	0	9	33	42	31	3	0	0	118
38>=T>=36	0	0	0	0	0	1	17	27	10	0	0	0	55
40>=T>=38	0	0	0	0	0	0	1	1	0	0	0	0	2
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.77 Annual Bindata Table for Antalya

	Hourly Time Interval												
Antalya	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	0	0	0	0	0	0	0	0	0	0	0
-2>=T>=-4	0	0	0	0	0	0	0	0	0	0	0	0	0
0>=T>=-2	0	0	0	0	0	0	0	0	0	0	0	0	0
2>=T>=0	2	5	4	4	0	0	0	0	0	0	0	1	16
4>=T>=2	1	4	6	15	5	0	0	0	0	0	5	7	43
6>=T>=4	16	36	36	25	15	2	0	0	0	5	8	15	158
8>=T>=6	23	46	62	68	37	12	6	1	6	18	31	42	352
10>=T>=8	44	95	92	83	54	27	18	23	21	37	51	59	604
12>=T>=10	37	71	74	73	74	49	31	25	38	62	80	100	714
14>=T>=12	29	55	48	42	48	51	44	43	51	74	83	63	631
16>=T>=14	30	69	68	54	55	57	60	49	77	92	57	51	719
18>=T>=16	33	72	81	66	50	61	64	85	78	41	60	66	757
20>=T>=18	29	42	25	46	41	57	57	56	52	58	54	51	568
22>=T>=20	19	35	46	47	51	53	54	65	59	44	46	51	570
24>=T>=22	28	65	66	51	40	36	61	59	48	48	47	34	583
26>=T>=24	35	78	67	51	39	49	42	44	42	44	42	70	603
28>=T>=26	29	35	34	47	48	40	38	29	46	48	82	81	557
30>=T>=28	6	12	11	29	67	62	56	68	76	80	60	24	551
32>=T>=30	0	2	2	19	42	67	82	80	60	48	12	5	419
34>=T>=32	0	0	0	2	36	43	46	47	34	14	2	0	224
36>=T>=34	0	0	0	0	16	24	28	24	24	6	0	0	122
38>=T>=36	0	0	0	0	3	22	19	15	7	1	0	0	67
40>=T>=38	0	0	0	0	1	5	13	7	1	0	0	0	27
42>=T>=40	0	0	0	0	0	1	0	0	0	0	0	0	1
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.1.78 Annual Bindata Table for Mersin

	Hourly Time Interval												
Mersin	0<=t<=2	2<=t<=4	4<=t<=6	6<=t<=8	8<=t<=10	10<=t<=12	12<=t<=14	14<=t<=16	16<=t<=18	18<=t<=20	20<=t<=22	22<=t<=24	Total
-48>=T>=-50	0	0	0	0	0	0	0	0	0	0	0	0	0
-46>=T>=-48	0	0	0	0	0	0	0	0	0	0	0	0	0
-44>=T>=-46	0	0	0	0	0	0	0	0	0	0	0	0	0
-42>=T>=-44	0	0	0	0	0	0	0	0	0	0	0	0	0
-40>=T>=-42	0	0	0	0	0	0	0	0	0	0	0	0	0
-38>=T>=-40	0	0	0	0	0	0	0	0	0	0	0	0	0
-36>=T>=-38	0	0	0	0	0	0	0	0	0	0	0	0	0
-34>=T>=-36	0	0	0	0	0	0	0	0	0	0	0	0	0
-32>=T>=-34	0	0	0	0	0	0	0	0	0	0	0	0	0
-30>=T>=-32	0	0	0	0	0	0	0	0	0	0	0	0	0
-28>=T>=-30	0	0	0	0	0	0	0	0	0	0	0	0	0
-26>=T>=-28	0	0	0	0	0	0	0	0	0	0	0	0	0
-24>=T>=-26	0	0	0	0	0	0	0	0	0	0	0	0	0
-22>=T>=-24	0	0	0	0	0	0	0	0	0	0	0	0	0
-20>=T>=-22	0	0	0	0	0	0	0	0	0	0	0	0	0
-18>=T>=-20	0	0	0	0	0	0	0	0	0	0	0	0	0
-16>=T>=-18	0	0	0	0	0	0	0	0	0	0	0	0	0
-14>=T>=-16	0	0	0	0	0	0	0	0	0	0	0	0	0
-12>=T>=-14	0	0	0	0	0	0	0	0	0	0	0	0	0
-10>=T>=-12	0	0	0	0	0	0	0	0	0	0	0	0	0
-8>=T>=-10	0	0	0	0	0	0	0	0	0	0	0	0	0
-6>=T>=-8	0	0	0	0	0	0	0	0	0	0	0	0	0
-4>=T>=-6	0	0	0	0	0	0	0	0	0	0	0	0	0
-2>=T>=-4	0	0	0	0	0	0	0	0	0	0	0	0	0
0>=T>=-2	0	0	0	0	0	0	0	0	0	0	0	0	0
2>=T>=0	3	4	4	4	2	0	0	0	0	0	0	0	17
4>=T>=2	2	6	8	11	7	0	0	0	0	0	1	4	39
6>=T>=4	9	18	18	15	11	4	0	0	0	2	7	11	95
8>=T>=6	4	11	23	31	16	6	4	0	6	12	16	14	143
10>=T>=8	33	75	79	82	46	10	11	11	13	17	16	31	424
12>=T>=10	44	85	81	80	70	43	24	28	22	40	68	90	675
14>=T>=12	38	71	59	58	60	34	25	26	43	80	91	92	677
16>=T>=14	19	39	51	48	65	72	52	49	71	74	72	48	660
18>=T>=16	23	61	59	46	41	85	90	87	81	68	42	37	720
20>=T>=18	29	45	48	55	55	62	69	71	65	51	49	58	657
22>=T>=20	38	87	88	79	47	51	75	66	58	41	50	61	741
24>=T>=22	29	43	40	43	71	50	42	46	35	42	76	80	597
26>=T>=24	20	51	67	60	56	88	67	62	76	83	58	35	723
28>=T>=26	53	95	78	80	46	56	81	83	73	66	56	84	851
30>=T>=28	20	38	29	39	85	41	33	42	59	105	107	73	671
32>=T>=30	3	3	0	1	0	121	136	129	112	46	21	14	586
34>=T>=32	0	0	0	0	52	7	20	28	15	4	2	0	128
36>=T>=34	0	0	0	0	2	1	2	4	3	1	0	0	13
38>=T>=36	0	0	0	0	0	1	1	0	0	0	0	0	2
40>=T>=38	0	0	0	0	0	0	0	0	0	0	0	0	0
42>=T>=40	0	0	0	0	0	0	0	0	0	0	0	0	0
44>=T>=42	0	0	0	0	0	0	0	0	0	0	0	0	0
46>=T>=44	0	0	0	0	0	0	0	0	0	0	0	0	0
48>=T>=46	0	0	0	0	0	0	0	0	0	0	0	0	0
50>=T>=48	0	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX

A.2 Design Conditions For Turkey

Table A.2.1 Design Conditions for Adıyaman, Turkey

Lat:**37.45** Long:**38.17** Elev: **678** StdP: Time Zone: Period: **1989-2012**

and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-2.1**	**-0.3**	**-14.98**	**4.4**	**1.2**	**-12.1**	**5.0**	**3**	**7.7**	**-3.2**	**6.5**	**31.6**	**3.1**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**5.8**	**40.0**	**24.9**	**38.7**	**24.3**	**37.5**	**19.6**	**24.8**	**37.9**	**23.8**	**38**	**24.7**	**37.2**		

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
21.5	**47.4**	**37.8**	**20.6**	**25.9**	**41.7**	**19.7**	**38.7**	**34.4**	**180.7**	**40.2**	**167.8**	**38.8**	**157.6**	**37.6**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
6.1	**5.3**	**4.9**	**27.0**	**-1.8**	**41.0**	**2.4**	**2.5**	**-3.8**	**42.5**	**-4.3**	**43.7**	**-5.4**	**44.8**	**-6.8**	**46.3**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours		Tavg	**15.5**	**4.7**	**6.0**	**10.8**	**14.9**	**20.1**	**27.4**	**31.8**	**29.7**	**25.9**	**20.1**	**11.5**	**8.3**
		Sd		**2.5**	**1.7**	**3.51**	**3.36**	**3.89**	**3.40**	**1.28**	**1.19**	**2.32**	**2.43**	**2.27**	**2.03**
		HDD10.0	**573**	**329**	**112**	**61**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	**51**
		HDD18.3	**2519**	**844**	**344**	**466**	**113**	**20**	**0**	**0**	**0**	**0**	**12**	**411**	**308**
		CDD10.0	**3282**	**0**	**0**	**110**	**154**	**314**	**522**	**675**	**611**	**478**	**314**	**103**	**1**
		CDD18.3	**1435**	**0**	**0**	**0**	**14**	**77**	**273**	**418**	**354**	**229**	**69**	**0**	**0**
		CDH23.3	**18741**	**0**	**0**	**0**	**119**	**613**	**3380**	**6170**	**4787**	**2722**	**951**	**0**	**0**
		CDH26.7	**10627**	**0**	**0**	**0**	**4**	**169**	**1801**	**3995**	**2886**	**1429**	**343**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**13.4**	**14.5**	**20.9**	**31.8**	**38.8**	**42.6**	**42.2**	**38.7**	**36.5**	**32.0**	**22.2**	**16.3**
		MCWB		**7.7**	**11.0**	**12.3**	**14.3**	**18.3**	**22.6**	**24.3**	**24.2**	**19.2**	**18.9**	**14.7**	**9.7**
	2%	DB		**12.4**	**13.1**	**19.6**	**26.3**	**30.1**	**37.3**	**40.9**	**37.8**	**35.7**	**31.1**	**20.5**	**15.1**
		MCWB		**8.0**	**7.7**	**13.0**	**15.5**	**18.1**	**23.6**	**23.7**	**20.0**	**18.7**	**17.6**	**14.0**	**10.0**
	5%	DB		**11.4**	**11.9**	**18.6**	**24.9**	**28.7**	**35.8**	**40.0**	**37.0**	**34.9**	**30.2**	**18.8**	**13.7**
		MCWB		**6.9**	**10.6**	**10.3**	**14.8**	**15.6**	**18.7**	**24.9**	**21.8**	**18.4**	**14.0**	**13.4**	**9.1**
	10%	DB		**9.8**	**10.2**	**17.0**	**22.1**	**26.9**	**34.9**	**38.7**	**41.8**	**33.6**	**29.0**	**16.4**	**12.4**
		MCWB		**7.7**	**7.0**	**12.6**	**14.7**	**15.4**	**18.4**	**24.3**	**25.7**	**16.9**	**15.9**	**8.3**	**8.0**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**6.6**	**8.1**	**11.4**	**17.3**	**17.9**	**20.9**	**25.6**	**24.6**	**20.3**	**18.4**	**14.0**	**10.8**
		MCDB		**8.4**	**14.5**	**23.0**	**30.9**	**31.0**	**36.2**	**36.6**	**37.0**	**36.8**	**31.4**	**20.8**	**21.3**
	2%	WB		**6.3**	**7.7**	**10.8**	**16.2**	**17.4**	**20.4**	**25.3**	**23.8**	**19.5**	**17.6**	**13.9**	**10.4**
		MCDB		**11.8**	**12.5**	**21.1**	**28.5**	**29.7**	**36.3**	**40.4**	**41.0**	**36.9**	**29.4**	**20.8**	**16.7**
	5%	WB		**5.9**	**7.3**	**10.3**	**15.5**	**16.9**	**19.9**	**24.6**	**23.3**	**18.9**	**16.9**	**13.3**	**9.9**
		MCDB		**14.9**	**12.1**	**20.6**	**22.3**	**30.6**	**35.3**	**41.2**	**34.2**	**36.4**	**33.0**	**22.9**	**16.5**
	10%	WB		**5.1**	**6.8**	**9.5**	**14.1**	**16.2**	**19.4**	**23.8**	**5.1**	**18.3**	**16.4**	**12.5**	**9.2**
		MCDB		**10.0**	**11.4**	**16.2**	**26.2**	**26.6**	**36.8**	**39.0**	**12.0**	**33.6**	**25.7**	**27.3**	**17.5**
Mean Daily Temperature Range		MDBR		**8.3**	**8.9**	**10.2**	**10.6**	**12.1**	**13.1**	**15.6**	**15.7**	**15.1**	**14.6**	**9.6**	**7.6**
	5% DB	MCDBR		**10.9**	**11.9**	**11.7**	**12.3**	**13.8**	**14.0**	**16.2**	**16.2**	**16.5**	**16.5**	**12.1**	**6.5**
		MCWBR		**5.3**	**6.7**	**9.3**	**5.4**	**3.2**	**3.2**	**4.4**	**5.8**	**5.3**	**7.2**	**5.2**	**6.5**
	5% WB	MCDBR		**1.8**	**0.5**	**11.7**	**12.7**	**13.1**	**13.8**	**15.9**	**15.7**	**15.2**	**14.9**	**11.0**	**8.2**
		MCWBR		**1.0**	**0.2**	**9.4**	**5.4**	**3.0**	**3.7**	**5.6**	**5.7**	**5.3**	**6.8**	**5.0**	**5.2**
Clear Sky Solar Irradiance		taub													
		taud													
		Ebn,noon													
		Edh,noon													

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Tablo A.2.2 Design Conditions for Afyonkarahisar, Turkey

Lat:**38.45** Long:**30.32** Elev: **1034** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-10.1**	**-8.0**	**-13.1**	**2.9**	**-5.2**	**-11.4**	**2.0**	**-10.0**	**7.0**	**22.6**	**6.0**	**22.2**	**1.8**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7		**32.3**	**18.3**	**31.5**	**17.7**	**30.2**	**16.8**	**19.2**	**22.0**	**18.5**	**27.0**	**19.2**	**29.2**		

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
16.2	**19.8**	**22.0**	**15.4**	**22.9**	**23.4**	**14.6**	**27.5**	**28**	**124.4**	**32.5**	**118.9**	**31.5**	**110.8**	**30.3**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
4.6	**5.0**	**6.0**	**24.0**	**-12.0**	**35.7**	**2.7**	**2.5**	**-13.6**	**37.2**	**-14.8**	**38.4**	**-16.0**	**39.5**	**-17.6**	**41.0**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**11.2**	**-0.2**	**1.4**	**5.9**	**10.2**	**14.9**	**19.1**	**24.7**	**23.3**	**18.3**	**12.7**	**3.3**	**0.9**
	Sd			**5.0**	**2.8**	**4.7**	**5.4**	**3.6**	**3.6**	**3.2**	**1.7**	**3.8**	**3.8**	**2.7**	**0.05**
	HDD10.0		**1593**	**315**	**242**	**265**	**61**	**7**	**0**	**0**	**0**	**0**	**18**	**404**	**280**
	HDD18.3		**3965**	**573**	**474**	**751**	**244**	**230**	**32**	**0**	**0**	**46**	**175**	**902**	**538**
	CDD10.0		**2159**	**0**	**0**	**20**	**66**	**315**	**274**	**721**	**414**	**248**	**101**	**0**	**0**
	CDD18.3		**1516**	**0**	**0**	**0**	**0**	**22**	**57**	**315**	**156**	**45**	**0**	**0**	**0**
	CDH23.3		**4159**	**0**	**0**	**0**	**14**	**99**	**598**	**1273**	**1587**	**538**	**48**	**0**	**0**
	CDH26.7		**1516**	**0**	**0**	**0**	**0**	**3**	**204**	**550**	**622**	**137**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**10.8**	**13.5**	**19.0**	**24.8**	**27.0**	**32.5**	**36.6**	**32.5**	**31.4**	**25.6**	**16.4**	**13.4**
		MCWB		**8.6**	**10.9**	**11.5**	**13.6**	**14.6**	**17.8**	**18.7**	**18.4**	**16.6**	**13.8**	**7.3**	**8.4**
	2%	DB		**9.2**	**10.6**	**16.5**	**22.9**	**26.0**	**31.0**	**33.3**	**32.0**	**29.7**	**24.5**	**13.6**	**11.6**
		MCWB		**4.7**	**7.4**	**13.5**	**12.2**	**14.7**	**16.0**	**19.4**	**17.3**	**15.7**	**13.1**	**6.3**	**8.4**
	5%	DB		**8.5**	**9.0**	**15.3**	**20.9**	**24.3**	**29.0**	**31.1**	**31.4**	**28.2**	**23.4**	**11.8**	**9.1**
		MCWB		**2.8**	**6.5**	**7.2**	**10.1**	**15.0**	**16.4**	**16.7**	**16.3**	**16.3**	**14.9**	**8.5**	**5.2**
	10%	DB		**6.1**	**7.1**	**13.2**	**18.7**	**22.1**	**26.9**	**29.8**	**30.4**	**26.6**	**20.9**	**9.2**	**7.1**
		MCWB		**4.3**	**4.1**	**11.1**	**11.1**	**15.6**	**14.7**	**16.9**	**16.9**	**14.2**	**10.1**	**3.8**	**4.8**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**8.1**	**7.4**	**9.8**	**13.7**	**16.1**	**18.8**	**19.8**	**21.4**	**17.3**	**14.7**	**7.6**	**8.8**
		MCDB		**14.0**	**14.7**	**19.4**	**25.4**	**30.9**	**33.4**	**34.9**	**21.0**	**31.2**	**27.2**	**16.3**	**16.5**
	2%	WB		**6.5**	**6.4**	**9.1**	**13.1**	**15.3**	**17.8**	**19.4**	**19.5**	**16.7**	**14.1**	**6.8**	**8.2**
		MCDB		**10.0**	**12.4**	**14.7**	**22.8**	**17.1**	**32.8**	**33.0**	**31.8**	**24.2**	**25.8**	**12.5**	**13.2**
	5%	WB		**5.3**	**5.0**	**8.5**	**12.5**	**14.6**	**16.7**	**18.2**	**18.9**	**16.4**	**13.4**	**5.9**	**6.4**
		MCDB		**9.8**	**8.2**	**10.3**	**21.7**	**25.7**	**31.4**	**29.5**	**30.4**	**25.4**	**24.6**	**12.6**	**12.4**
	10%	WB		**3.9**	**3.7**	**7.9**	**11.2**	**13.7**	**16.1**	**17.5**	**18.8**	**15.7**	**12.9**	**4.8**	**5.1**
		MCDB		**6.2**	**10.4**	**15.5**	**22.0**	**24.1**	**18.2**	**32.0**	**34.6**	**26.4**	**20.6**	**11.8**	**11.6**
Mean Daily Temperature Range		MDBR		**7.5**	**8.6**	**9.6**	**11.8**	**12.4**	**14.3**	**14.5**	**15.9**	**14.9**	**14.1**	**10.3**	**8.4**
	5% DB	MCDBR		**9.2**	**12.2**	**13.4**	**15.0**	**15.2**	**17.9**	**15.5**	**17.8**	**17.7**	**17.2**	**15.2**	**12.3**
		MCWBR		**5.3**	**6.3**	**11.0**	**4.9**	**11.9**	**2.6**	**11.9**	**3.9**	**4.8**	**6.6**	**13.0**	**7.6**
	5% WB	MCDBR		**7.7**	**14.1**	**11.5**	**14.3**	**14.2**	**16.2**	**14.5**	**16.2**	**16.0**	**15.9**	**15.6**	**13.1**
		MCWBR		**4.4**	**6.5**	**10.0**	**4.9**	**11.5**	**3.0**	**11.3**	**3.7**	**5.1**	**7.0**	**13.3**	**7.7**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.3 Design Conditions for Aksaray, Turkey

Lat: **38.23** Long: **34.03** Elev: **980** Time Zone: **1.00 (EUW)** Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**-9.9**	**-7.7**	**-15.9**	**2.2**	**-8.5**	**-12.7**	**2.5**	**-6.8**	**9.0**	**18**	**8.0**	**25.3**	**1.3**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8		**35.2**	**21.3**	**35.9**	**19.9**	**32.5**	**18.0**	**20.6**	**36.7**	**19.9**	**32.2**	**19.2**	**32.2**		

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
15.9	**40.4**	**34.4**	**15.1**	**35.0**	**32.0**	**14.5**	**14.4**	**17.8**	**144.1**	**35.3**	**134.5**	**33.9**	**125.0**	**32.5**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
13.2	**11.5**	**10.1**	**22.0**	**-10.9**	**35.0**	**2.7**	**2.6**	**-12.5**	**36.6**	**-13.8**	**37.8**	**-15.0**	**39.0**	**-16.6**	**40.6**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**14.1**	**2.6**	**0.0**	**10.3**	**11.2**	**17.6**	**22.6**	**25.5**	**25.1**	**17.4**	**12.8**	**6.9**	**0.6**
	Sd			**2.46**	**5.08**	**4.25**	**4.30**	**3.17**	**3.14**	**3.16**	**3.15**	**2.06**	**3.64**	**3.47**	**4.55**
	HDD10.0		**1372**	**454**	**279**	**89**	**29**	**0**	**0**	**0**	**0**	**0**	**15**	**215**	**290**
	HDD18.3		**3822**	**960**	**511**	**505**	**216**	**106**	**10**	**0**	**0**	**115**	**169**	**681**	**547**
	CDD10.0		**3882**	**0**	**0**	**105**	**65**	**473**	**757**	**964**	**933**	**446**	**103**	**31**	**0**
	CDD18.3		**1277**	**0**	**0**	**7**	**3**	**66**	**269**	**450**	**419**	**63**	**0**	**0**	**0**
	CDH23.3		**6987**	**0**	**0**	**20**	**34**	**376**	**1321**	**2502**	**2303**	**335**	**95**	**0**	**0**
	CDH26.7		**3039**	**0**	**0**	**1**	**1**	**82**	**502**	**1305**	**1059**	**83**	**6**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**12.2**	**14.3**	**25.0**	**25.7**	**30.0**	**34.2**	**36.7**	**35.9**	**29.6**	**27.3**	**21.5**	**13.2**
		MCWB		**6.4**	**9.1**	**13.2**	**14.2**	**16.7**	**19.6**	**20.6**	**20.2**	**16.6**	**14.9**	**11.4**	**9.3**
	2%	DB		**10.4**	**10.7**	**22.0**	**24 .6**	**29.0**	**32.5**	**35.8**	**34.5**	**28.8**	**25.7**	**18.8**	**11.3**
		MCWB		**6.7**	**6.6**	**11.3**	**14.4**	**16.2**	**19.4**	**21.5**	**19.2**	**15.7**	**14.2**	**9.9**	**7.5**
	5%	DB		**8.2**	**9.3**	**18.7**	**21.3**	**27.3**	**30.9**	**34.8**	**33.0**	**27.0**	**24.2**	**16.0**	**10.0**
		MCWB		**6.3**	**8.2**	**11.9**	**13.4**	**14.9**	**18.5**	**19.9**	**20.2**	**14.4**	**14.1**	**. 9.4**	**5.6**
	10%	DB		**7.3**	**7.7**	**17.0**	**18.2**	**25.3**	**29.8**	**33.5**	**32.1**	**24.8**	**21.9**	**13.5**	**8.5**
		MCWB		**4.1**	**5.8**	**10.9**	**9.3**	**14.9**	**18.6**	**20.3**	**18.1**	**14.6**	**12.2**	**9.5**	**4.5**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**6.3**	**8.2**	**13.0**	**16.8**	**16.7**	**19.7**	**21.5**	**21.1**	**16.9**	**15.2**	**11.9**	**9.6**
		MCDB		**13.2**	**14.8**	**24.2**	**24.9**	**29.8**	**30.5**	**37.0**	**33.5**	**28.2**	**24.8**	**19.5**	**20.0**
	2%	WB		**5.6**	**5.9**	**11.9**	**15.1**	**15.9**	**19.2**	**20.8**	**20.6**	**16.4**	**14.8**	**11.3**	**7.6**
		MCDB		**12.0**	**11.6**	**25.0**	**27.5**	**29.2**	**31.9**	**37.0**	**33.6**	**29.0**	**27.5**	**22.0**	**17.0**
	5%	WB		**5.1**	**4.8**	**10.3**	**13.9**	**15.2**	**18.6**	**20.3**	**20.1**	**15.7**	**14.2**	**9.5**	**7.1**
		MCDB		**10.5**	**10.1**	**16.5**	**25.5**	**25.0**	**21.0**	**34.9**	**33.2**	**28.8**	**24.3**	**20.0**	**13.0**
	10%	WB		**13.6**	**14.8**	**24.2**	**24.9**	**29.8**	**30.5**	**37.0**	**33.5**	**28.2**	**24.8**	**19.5**	**20.0**
		MCDB		**6.3**	**8.2**	**13.0**	**16.8**	**16.7**	**19.7**	**21.5**	**21.1**	**16.9**	**15.2**	**11.9**	**9.6**
Mean Daily Temperature Range		MDBR		**7.8**	**8.9**	**12.1**	**12.3**	**14.8**	**13.7**	**15.8**	**14.8**	**12.9**	**15.1**	**10.4**	**8.3**
	5% DB	MCDBR		**10.9**	**10.5**	**14.1**	**13.5**	**15.8**	**15.5**	**18.2**	**16.9**	**15.1**	**18.5**	**12.5**	**10.4**
		MCWBR		**9.7**	**5.1**	**6.1**	**5.0**	**4.5**	**5.2**	**6.0**	**6.2**	**6.5**	**8.7**	**6.0**	**5.6**
	5% WB	MCDBR		**11.1**	**10.5**	**13.5**	**14.0**	**15.3**	**14.4**	**18.0**	**16.7**	**13.7**	**17.9**	**13.0**	**10.0**
		MCWBR		**9.9**	**4.5**	**6.7**	**5.0**	**4.6**	**5.3**	**5.6**	**6.3**	**5.4**	**8.2**	**6.3**	**6.1**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.4 Design Conditions for Amasya, Turkey

Lat:**40.39** Long:**35.51** Elev: **412** Time Zone: **1.00 (EUW)** Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-8.4**	**-5.4**	**-14.3**	**2.2**	**-4.5**	**-11.1**	**2.6**	**-3.0**	**5.5**	**11.8**	**4.6**	**11.0**	**0.7**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8		**35.9**	**20.9**	**33.9**	**18.9**	**31.9**	**17.4**	**20.9**	**31.3**	**20.1**	**34.0**	**19.3**	**22.4**		

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
17.44	**15.9**	**20.3**	**16.7**	**14.5**	**25.4**	**15.8**	**12.7**	**25.2**	**141.7**	**36.0**	**127.5**	**34.0**	**115.2**	**32.0**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
3.9	**3.6**	**3.1**	**23.0**	**-12.0**	**37.8**	**2.7**	**2.8**	**-13.6**	**39.4**	**-14.9**	**40.8**	**-16.2**	**42.0**	**-17.8**	**43.7**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**14.5**	**2.1**	**3.6**	**9.2**	**13.4**	**17.7**	**21.6**	**24.7**	**23.9**	**22.7**	**13.9**	**9.45**	**3.2**
	Sd			**5.07**	**3.18**	**3.58**	**3.90**	**4.27**	**3.92**	**4.38**	**2.23**	**1.80**	**2.34**	**2.84**	**3.33**
	HDD10.0		**8613**	**245**	**180**	**116**	**13**	**3**	**0**	**0**	**0**	**0**	**0**	**93**	**212**
	HDD18.3		**2841**	**501**	**412**	**561**	**154**	**58**	**10**	**0**	**0**	**0**	**138**	**536**	**469**
	CDD10.0		**3053**	**1**	**0**	**70**	**114**	**244**	**347**	**910**	**430**	**761**	**121**	**541**	**0**
	CDD18.3		**991**	**0**	**0**	**0**	**6**	**41**	**109**	**396**	**173**	**263**	**2**	**0**	**0**
	CDH23.3		**6514**	**0**	**0**	**5**	**44**	**475**	**1114**	**1932**	**1656**	**1230**	**57**	**0**	**0**
	CDH26.7		**2689**	**0**	**0**	**0**	**0**	**146**	**506**	**856**	**707**	**462**	**12**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**15.1**	**12.9**	**24.0**	**26.1**	**32.7**	**36.3**	**39.0**	**38.3**	**35.4**	**28.3**	**21.7**	**16.2**
		MCWB		**8.5**	**6.8**	**14.8**	**16.2**	**16.4**	**20.4**	**19.4**	**21.0**	**18.7**	**15.9**	**11.1**	**9.5**
	2%	DB		**12.7**	**11.9**	**21.0**	**24.6**	**29.5**	**34.9**	**35.9**	**35.0**	**33.6**	**24.1**	**19.6**	**12.7**
		MCWB		**6.2**	**6.9**	**12.2**	**14.1**	**17.1**	**19.7**	**20.3**	**18.2**	**17.1**	**14.4**	**8.3**	**6.4**
	5%	DB		**11.5**	**10.9**	**18.9**	**22.6**	**27.9**	**32.3**	**33.4**	**32.4**	**31.1**	**21.3**	**17.8**	**9.1**
		MCWB		**8.6**	**5.9**	**12.6**	**12.9**	**18.3**	**17.5**	**20.5**	**17.2**	**17.6**	**12.6**	**8.2**	**5.5**
	10%	DB		**10.1**	**9.0**	**16.6**	**20.6**	**26.2**	**29.5**	**31.0**	**30.3**	**28.8**	**19.6**	**15.8**	**7.6**
		MCWB		**5.6**	**5.8**	**8.7**	**11.9**	**15.3**	**17.1**	**16.7**	**17.5**	**16.1**	**10.6**	**9.4**	**4.3**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**7.0**	**6.9**	**13.2**	**15.7**	**17.2**	**21.9**	**21.3**	**21.6**	**19.4**	**16.7**	**11.8**	**9.5**
		MCDB		**15.0**	**12.5**	**25.0**	**28.0**	**31.0**	**38.3**	**35.4**	**33.6**	**29.8**	**25.0**	**19.7**	**17.2**
	2%	WB		**6.4**	**5.8**	**11.7**	**15.1**	**16.5**	**20.8**	**20.6**	**20.7**	**18.7**	**15.7**	**11.1**	**6.8**
		MCDB		**15.5**	**14.1**	**20.9**	**26.2**	**29.2**	**33.1**	**24.4**	**36.8**	**26.0**	**27.8**	**18.2**	**13.0**
	5%	WB		**5.1**	**5.9**	**10.3**	**14.4**	**15.4**	**19.7**	**20.0**	**19.7**	**18.1**	**13.9**	**9.9**	**5.8**
		MCDB		**12.7**	**8.9**	**16.8**	**27.4**	**25.3**	**20.6**	**32.5**	**35.3**	**27.0**	**23.1**	**20.6**	**11.4**
	10%	WB		**4.5**	**5.1**	**9.4**	**13.3**	**14.5**	**18.1**	**19.4**	**34.2**	**17.5**	**12.9**	**8.7**	**4.9**
		MCDB		**11.8**	**9.9**	**16.3**	**22.4**	**22.0**	**31.0**	**27.5**	**28.7**	**31.8**	**17.5**	**16.6**	**12.0**
Mean Daily Temperature Range		MDBR		**8.4**	**9.1**	**12.2**	**12.1**	**14.7**	**15.1**	**15.5**	**15.9**	**14.7**	**12.0**	**11.7**	**6.6**
	5% DB	MCDBR		**11.9**	**12.8**	**17.0**	**15.3**	**18.5**	**19.0**	**19.1**	**19.7**	**19.2**	**14.6**	**15.2**	**8.7**
		MCWBR		**4.0**	**6.0**	**6.9**	**4.1**	**3.8**	**4.1**	**2.4**	**4.8**	**4.2**	**5.1**	**5.2**	**4.1**
	5% WB	MCDBR		**5.7**	**10.8**	**19.7**	**13.6**	**4.2**	**17.9**	**16.3**	**16.9**	**14.9**	**13.5**	**13.1**	**9.0**
		MCWBR		**3.9**	**5.0**	**9.7**	**3.1**	**2.4**	**4.4**	**3.22**	**3.9**	**4.1**	**4.9**	**4.8**	**4.4**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.5 Design Conditions for Ankara, Turkey

Lat: **39.57** Long: **32.53** Elev: **894** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	-5.9	-4.8	-9.1	2.1	-3.0	-8.2	2.8	-6.7	6.1	18.4	5.8	6.2	2.3	

Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	3.0	32.9	19.9	30.3	16.9	30.3	18.5	16.9	32.9	18.9	31.0	18.3	34.2	2.6	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
15.7	12.2	31.0	14.9	11.3	26.7	17.1	14.5	21.6	426.1	33.0	117.8	31.6	109.9	30.4	

Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
2.9	2.7	2.2	27.4	-5.8	32.4	2.2	2.3	-6.4	35.3	-8.3	36.5	-9.9	37.5	-9.3	38.9

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours		Tavg	12.4	-1.7	-3.1	6.2	11.3	15.4	20.8	23.8	24.4	19.3	14.9	7.7	3.8
		Sd		4.52	3.68	4.92	3.34	3.46	3.30	3.05	1.64	2.38	3.59	3.19	3.20
		HDD10.0	2321	708	711	292	51	1	0	0	0	0	12	126	419
		HDD18.3	5544	1214	1159	774	404	181	17	0	0	41	267	570	918
		CDD10.0	3864	0	0	33	120	372	699	859	896	560	255	54	16
		CDD18.3	1095	0	0	0	0	37	226	344	382	103	3	0	0
		CDH23.3	5467	0	0	0	0	0	229	1055	1668	1944	109	0	0
		CDH26.7	2031	0	0	0	0	43	391	658	847	90	2	0	0
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		8.4	4.2	20.0	20.2	28.9	35.3	35.1	35.3	29.7	26.7	21.2	17.3
		MCWB		6.1	2.9	10.6	12.1	14.8	19.1	18.9	19.1	15.5	14.6	12.4	10.0
	2%	DB		-0.7	0.2	5.2	7.8	14.9	27.0	30.3	25.4	27.7	11.2	9.0	5.0
		MCWB		-1.6	-0.2	2.2	2.1	10.2	15.8	17.6	14.7	15.4	6.9	5.9	0.5
	5%	DB		-2.1	-1.1	4.1	12.4	19.0	25.7	28.9	30.8	11.2	18.5	6.9	4.1
		MCWB		-3.1	-2.8	0.8	6.6	11.4	15.4	17.6	17.2	6.9	11.2	4.2	0.8
	10%	DB		-3.4	-2.2	2.9	10.3	17.7	24.2	27.7	29.3	23.2	16.2	5.8	3.0
		MCWB		-6.2	-3.5	0.2	7.7	8.9	15.1	15.4	16.8	15.9	8.3	2.1	1.1
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		5.8	4.1	11.2	16.7	16.2	19.7	21.4	19.5	16.3	15.7	12.5	10.4
		MCDB		8.7	7.6	22.9	29.7	29.6	32.3	25.2	35.7	30.6	22.5	21.5	17.5
	2%	WB		4.6	3.4	10.3	15.4	15.7	18.4	20.3	19.2	16.1	15.1	11.6	9.0
		MCDB		7.1	5.9	18.7	26.1	28.6	31.4	34.3	34.9	26.6	27.7	21.3	16.1
	5%	WB		3.8	2.7	9.7	13.6	15.3	17.6	19.7	18.9	15.7	14.5	10.6	7.9
		MCDB		8.2	5.0	16.5	23.0	26.0	35.3	32.6	30.4	29.1	23.6	20.5	12.8
	10%	WB		2.4	1.3	9.0	12.3	14.7	16.9	19.1	18.4	15.2	14.0	9.4	6.4
		MCDB		4.8	2.0	13.6	15.8	24.1	27.8	23.9	35.2	27.4	25.2	19.3	14.1
Mean Daily Temperature Range		MDBR		8.3	9.3	11.4	11.9	12.0	13.3	13.5	12.2	14.9	13.9	9.9	8.3
	5% DB	MCDBR		13.3	11.2	14.6	14.5	15.6	15.7	14.9	15.7	16.9	17.6	13.7	8.5
		MCWBR		11.2	9.6	11.7	4.6	3.4	12.1	3.2	3.4	5.9	7.8	11.4	4.3
	5% WB	MCDBR		12.4	11.5	13.1	15.9	14.4	13.3	14.1	12.8	14.9	15.9	12.8	9.8
		MCWBR		10.7	6.3	11.2	6.3	3.4	10.9	4.0	4.1	5.6	7.8	11.1	5.0
Clear Sky Solar Irradiance		taub													
		taud													
		Ebn,noon													
		Edh,noon													

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.6 Design Conditions for Antalya, Turkey

Lat:**36.53** Long:**30.42** Elev: **42** StdP: Time Zone: **1.00 (EUW)** Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**3.1**	**4.3**	**-14.5**	**1.1**	**3.8**	**-9.9**	**1.7**	**4.6**	**10.3**	**10.6**	**8.9**	**31.4**	**2.3**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7		**37.4**	**20.7**	**37.4**	**20.8**	**34.4**	**24.3**	**26.8**	**29.5**	**26.1**	**28.9**	**26.8**	**28.9**		

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
26.1	**21.2**	**33.4**	**25.1**	**19.9**	**32.6**	**24.3**	**19.0**	**33.2**	**86.3**	**35.2**	**82.4**	**30.3**	**79.6**	**37.0**	

Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
8.4	**7.8**	**7.2**	**28.0**	**3.2**	**37.8**	**1.9**	**2.4**	**2.1**	**39.2**	**1.1**	**40.3**	**0.3**	**41.4**	**-0.9**	**42.8**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours		Tavg	**18.7**	**10.2**	**11.1**	**11.5**	**16.6**	**20.2**	**9.3**	**25.9**	**28.7**	**25.6**	**19.6**	**14.6**	**11.2**
		Sd		**2.48**	**2.87**	**2.25**	**2.92**	**1.86**	**2.63**	**1.90**	**1.66**	**1.97**	**2.57**	**1.29**	**3.16**
		HDD10.0	**77**	**28**	**22**	**14**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**
		HDD18.3	**1076**	**252**	**202**	**212**	**62**	**4**	**0**	**0**	**0**	**0**	**16**	**110**	**219**
		CDD10.0	**3272**	**33**	**52**	**60**	**200**	**318**	**477**	**595**	**580**	**468**	**298**	**139**	**52**
		CDD18.3	**1241**	**0**	**0**	**0**	**12**	**64**	**228**	**338**	**323**	**219**	**57**	**0**	**0**
		CDH23.3	**14182**	**0**	**0**	**0**	**143**	**311**	**2399**	**4366**	**4142**	**2328**	**486**	**5**	**0**
		CDH26.7	**6431**	**0**	**0**	**0**	**15**	**50**	**968**	**2221**	**2068**	**992**	**117**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**17.1**	**19.9**	**19.1**	**28.4**	**29.7**	**37.0**	**39.8**	**38.2**	**35.4**	**30.6**	**23.4**	**20.7**
		MCWB		**11.4**	**13.4**	**13.4**	**17.8**	**20.9**	**24.4**	**24.8**	**24.8**	**19.1**	**17.6**	**15.3**	**11.3**
	2%	DB		**16.8**	**19.1**	**18.1**	**26.2**	**27.9**	**35.0**	**37.9**	**37.0**	**33.9**	**29.4**	**22.7**	**19.1**
		MCWB		**11.0**	**11.6**	**7.8**	**22.3**	**18.3**	**20.3**	**24.8**	**24.5**	**21.8**	**17.6**	**15.5**	**13.2**
	5%	DB		**15.8**	**17.6**	**17.2**	**25.0**	**26.1**	**33.1**	**36.2**	**35.4**	**32.4**	**28.0**	**21.6**	**18.4**
		MCWB		**9.1**	**7.5**	**9.2**	**16.7**	**14.7**	**22.9**	**21.5**	**24.1**	**24.3**	**18.1**	**16.5**	**14.2**
	10%	DB		**15.0**	**16.3**	**16.2**	**22.8**	**24.9**	**30.8**	**34.8**	**37.9**	**31.2**	**25.8**	**20.7**	**17.1**
		MCWB		**6.6**	**8.2**	**10.9**	**14.8**	**20.3**	**18.0**	**20.3**	**25.6**	**22.6**	**15.1**	**11.3**	**11.4**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**14.2**	**14.1**	**14.5**	**17.8**	**20.2**	**23.7**	**26.8**	**27.9**	**24.4**	**21.4**	**16.6**	**14.1**
		MCDB		**21.4**	**20.0**	**22.8**	**35.4**	**30.2**	**31.0**	**28.9**	**31.6**	**33.0**	**33.0**	**23.0**	**25.1**
	2%	WB		**13.7**	**13.1**	**13.5**	**17.2**	**19.9**	**23.7**	**26.2**	**27.6**	**24.2**	**19.8**	**16.1**	**13.7**
		MCDB		**23.4**	**20.4**	**18.7**	**24.4**	**35.7**	**29.8**	**28.5**	**29.2**	**38.0**	**22.0**	**21.5**	**20.6**
	5%	WB		**13.1**	**11.9**	**12.9**	**16.4**	**19.5**	**23.4**	**25.4**	**26.6**	**23.8**	**19.2**	**15.3**	**12.7**
		MCDB		**20.4**	**19.8**	**19.4**	**27.5**	**32.4**	**32.3**	**27.7**	**31.0**	**30.4**	**24.4**	**24.2**	**24.0**
	10%	WB		**12.3**	**11.4**	**11.5**	**15.7**	**19.0**	**23.1**	**24.8**	**26.0**	**23.4**	**18.5**	**14.5**	**11.6**
		MCDB		**15.4**	**17.2**	**12.0**	**25.0**	**24.2**	**33.6**	**34.0**	**31.8**	**29.0**	**33.5**	**22.8**	**12.6**
Mean Daily Temperature Range		MDBR		**8.1**	**9.0**	**9.5**	**10.9**	**9.1**	**11.1**	**10.7**	**10.9**	**10.9**	**10.4**	**11.3**	**9.6**
	5% DB	MCDBR		**8.8**	**12.0**	**11.3**	**14.0**	**11.9**	**12.7**	**13.6**	**12.6**	**13.0**	**13.5**	**13.3**	**10.9**
		MCWBR		**4.0**	**4.6**	**5.2**	**3.1**	**3.4**	**4.2**	**5.2**	**3.5**	**5.9**	**3.8**	**5.9**	**4.7**
	5% WB	MCDBR		**7.9**	**9.2**	**9.9**	**10.5**	**9.1**	**10.7**	**10.6**	**10.9**	**10.1**	**11.9**	**10.2**	**9.5**
		MCWBR		**3.7**	**4.6**	**4.7**	**4.0**	**2.7**	**3.7**	**4.7**	**4.4**	**5.7**	**4.5**	**5.0**	**4.7**
Clear Sky Solar Irradiance		taub													
		taud													
		Ebn,noon													
		Edh,noon													

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.7 Design Conditions for Artvin, Turkey

Lat: **41.10** Long: **41.49** Elev: **597** StdP: **101.16** Time Zone: **1.00 (EUW)** Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**-2.5**	**-1.7**	**-10.7**	**5.8**	**5**	**-9.7**	**4.1**	**-0.9**	**7**	**4.9**	**6.4**	**6.2**	**2.4**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7		**29.3**	**19.5**	**27.7**	**17.9**	**26.1**	**15.3**	**21.0**	**22.1**	**19.6**	**21.1**	**18.9**	**25.3**		

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
19.8	**19.1**	**25**	**18.5**	**17.4**	**20.1**	**17.6**	**15.4**	**24**	**102.1**	**29.3**	**93.8**	**27.8**	**85.9**	**26.1**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
6.1	**5.7**	**5.2**	**22.0**	**-2.3**	**33.6**	**1.7**	**1.9**	**-3.3**	**34.7**	**-4.1**	**35.6**	**-4.9**	**36.5**	**-5.9**	**37.6**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**12.1**	**3.9**	**3.3**	**6.4**	**10.8**	**16.3**	**18.7**	**20.9**	**20.2**	**18.3**	**13.4**	**11.3**	**2.9**
	Sd			**1.73**	**3.25**	**3.46**	**3.95**	**3.82**	**2.59**	**0.36**	**2.14**	**3.25**	**2.55**	**2.57**	**6.81**
	HDD10.0		**1091**	**375**	**186**	**246**	**37**	**2**	**0**	**0**	**0**	**0**	**1**	**26**	**217**
	HDD18.3		**3562**	**890**	**419**	**736**	**224**	**168**	**29**	**258**	**6**	**40**	**151**	**419**	**474**
	CDD10.0		**2200**	**0**	**0**	**25**	**62**	**396**	**260**	**679**	**318**	**248**	**108**	**105**	**0**
	CDD18.3		**363**	**0**	**0**	**0**	**0**	**47**	**40**	**170**	**66**	**39**	**1**	**0**	**0**
	CDH23.3		**1303**	**0**	**0**	**0**	**0**	**165**	**188**	**406**	**300**	**236**	**7**	**0**	**0**
	CDH26.7		**299**	**0**	**0**	**0**	**0**	**24**	**22**	**101**	**84**	**68**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**12.5**	**12.8**	**19.9**	**21.9**	**29.0**	**28.0**	**33.9**	**31.2**	**31.3**	**23.7**	**19.9**	**12.8**
		MCWB		**10.6**	**6.4**	**12.1**	**16.6**	**17.2**	**15.9**	**20.2**	**18.1**	**15.4**	**13.6**	**11.2**	**6.3**
	2%	DB		**10.8**	**12.0**	**17.9**	**20.3**	**27.0**	**27.3**	**29.0**	**29.0**	**28.0**	**21.4**	**19.0**	**9.8**
		MCWB		**5.7**	**6.1**	**11.7**	**13.3**	**15.6**	**16.0**	**17.9**	**17.3**	**19.4**	**12.6**	**10.6**	**5.3**
	5%	DB		**8.2**	**10.4**	**14.9**	**18.8**	**25.2**	**25.3**	**26.7**	**26.2**	**26.1**	**19.9**	**17.0**	**8.1**
		MCWB		**2.9**	**5.6**	**11.7**	**10.6**	**15.9**	**15.6**	**21.5**	**15.8**	**15.0**	**11.0**	**11.1**	**5.5**
	10%	DB		**6.7**	**8.2**	**12.9**	**17.1**	**23.1**	**23.9**	**25.3**	**26.7**	**23.3**	**18.1**	**15.3**	**6.8**
		MCWB		**4.6**	**5.3**	**6.3**	**10.5**	**12.5**	**12.8**	**15.6**	**13.6**	**14.6**	**11.6**	**10.4**	**5.0**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**5.2**	**6.8**	**9.7**	**13.8**	**15.9**	**19.0**	**21.9**	**19.9**	**19.4**	**16.3**	**12.8**	**6.3**
		MCDB		**12.0**	**12.5**	**15.0**	**21.3**	**26.6**	**24.0**	**29.0**	**28.9**	**25.8**	**21.4**	**21.1**	**14.6**
	2%	WB		**4.8**	**6.1**	**9.2**	**13.4**	**15.1**	**18.6**	**21.3**	**19.5**	**18.6**	**14.4**	**12.1**	**5.6**
		MCDB		**12.1**	**12.6**	**20.9**	**16.7**	**28.3**	**24.9**	**27.5**	**27.9**	**21.3**	**20.6**	**22.2**	**1.0**
	5%	WB		**4.0**	**5.3**	**7.4**	**12.4**	**14.4**	**18.3**	**20.9**	**19.2**	**17.5**	**13.6**	**11.6**	**5.0**
		MCDB		**7.9**	**10.5**	**12.0**	**24.1**	**23.2**	**20.7**	**23.5**	**27.9**	**21.3**	**26.3**	**21.6**	**10.1**
	10%	WB		**3.3**	**4.0**	**6.5**	**11.3**	**13.6**	**17.5**	**19.7**	**18.7**	**17.0**	**13.1**	**11.3**	**4.4**
		MCDB		**8.8**	**8.3**	**12.6**	**19.2**	**23.3**	**25.0**	**22.8**	**22.1**	**18.6**	**20.4**	**17.9**	**8.8**
Mean Daily Temperature Range		MDBR		**5.8**	**7.8**	**7.9**	**10.7**	**10.3**	**9.0**	**8.4**	**7.9**	**9.0**	**8.6**	**6.9**	**5.3**
	5% DB	MCDBR		**7.6**	**9.9**	**12.4**	**13.0**	**14.8**	**11.0**	**11.2**	**12.3**	**13.7**	**11.8**	**8.8**	**8.8**
		MCWBR		**6.4**	**4.4**	**4.2**	**4.4**	**2.7**	**2.4**	**2.2**	**2.7**	**3.3**	**4.8**	**7.1**	**2.1**
	5% WB	MCDBR		**5.8**	**9.5**	**8.4**	**10.2**	**14.8**	**9.3**	**7.9**	**7.7**	**9.5**	**8.9**	**7.3**	**5.2**
		MCWBR		**5.0**	**4.4**	**4.6**	**3.2**	**4.0**	**2.2**	**3.5**	**1.6**	**2.3**	**3.5**	**6.3**	**2.0**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.8 Design Conditions for Aydın, Turkey

Lat: **37.51** Long: **27.5** Elev: **57** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**-0.9**	**0.7**	**-8.5**	**4.5**	**2.5**	**-6.2**	**6.8**	**2.9**	**4.6**	**24.7**	**4.1**	**17.0**	**3.4**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7		**40.7**	**24.8**	**38.3**	**19.9**	**36.3**	**18.6**	**24.7**	**42**	**23.6**	**37.8**	**24.6**	**42.3**		

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
21.9	**22.4**	**26.6**	**20.9**	**29.3**	**30.1**	**20.2**	**24.4**	**28**	**174.7**	**40.8**	**154.3**	**38.3**	**140.0**	**36.4**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
4.4	**3.7**	**3.2**	**26.0**	**-1.8**	**41.4**	**2.4**	**2.9**	**-3.2**	**43.1**	**-4.4**	**44.5**	**-5.6**	**45.8**	**-7.0**	**47.5**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**18.4**	**9.3**	**9.2**	**11.4**	**16.1**	**21.5**	**26.9**	**29.9**	**28.1**	**24.8**	**18.7**	**15.5**	**9.9**
	Sd			**2.93**	**4.07**	**3.53**	**2.53**	**2.99**	**2.10**	**2.66**	**1.62**	**2.32**	**4.14**	**3.12**	**9.2**
	HDD10.0		**248**	**99**	**53**	**53**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**43**
	HDD18.3		**1826**	**549**	**253**	**426**	**77**	**19**	**0**	**0**	**0**	**0**	**49**	**192**	**260**
	CDD10.0		**4838**	**56**	**32**	**142**	**183**	**710**	**1012**	**616**	**560**	**889**	**270**	**329**	**40**
	CDD18.3		**1876**	**0**	**0**	**0**	**11**	**215**	**514**	**358**	**302**	**391**	**61**	**23**	**0**
	CDH23.3		**15590**	**0**	**0**	**0**	**101**	**1107**	**3025**	**4757**	**3687**	**2201**	**667**	**45**	**0**
	CDH26.7		**8547**	**0**	**0**	**0**	**15**	**413**	**1641**	**2971**	**2113**	**1131**	**263**	**1**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**18.9**	**16.6**	**20.9**	**24.0**	**33.5**	**37.9**	**42.9**	**38.6**	**34.4**	**36.0**	**22.5**	**19.5**
		MCWB		**12.9**	**10.4**	**14.1**	**16.2**	**19.3**	**18.9**	**24.8**	**22.2**	**18.7**	**19.9**	**17.2**	**11.7**
	2%	DB		**12.3**	**17.6**	**20.5**	**26.0**	**31.9**	**36.8**	**34.0**	**37.6**	**35.1**	**31.4**	**24.4**	**17.8**
		MCWB		**7.6**	**11.4**	**16.7**	**15.9**	**17.4**	**19.4**	**19.4**	**22.4**	**19.9**	**17.1**	**15.9**	**11.9**
	5%	DB		**16.2**	**16.5**	**19.4**	**23.8**	**19.0**	**24.2**	**40.7**	**36.4**	**34.2**	**29.6**	**22.3**	**16.6**
		MCWB		**12.3**	**13.3**	**14.3**	**18.2**	**13.2**	**18.1**	**24.8**	**19.3**	**19.4**	**15.7**	**17.5**	**10.4**
	10%	DB		**14.8**	**14.9**	**18.1**	**22.2**	**29.2**	**34.0**	**38.4**	**14.8**	**32.8**	**27.3**	**20.9**	**14.8**
		MCWB		**11.4**	**12.4**	**13.8**	**13.6**	**17.8**	**19.4**	**21.3**	**11.4**	**18.2**	**17.1**	**14.1**	**11.4**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**11.4**	**12.4**	**14.1**	**17.9**	**18.9**	**20.4**	**25.6**	**25.3**	**21.0**	**19.5**	**18.9**	**14.2**
		MCDB		**19.9**	**23.4**	**24.2**	**32.6**	**36.4**	**37.3**	**36.0**	**36.2**	**33.6**	**37.0**	**36.1**	**17.2**
	2%	WB		**10.9**	**11.6**	**13.5**	**17.2**	**17.9**	**20.1**	**25.1**	**23.9**	**20.5**	**18.4**	**18.0**	**13.3**
		MCDB		**17.8**	**18.0**	**23.5**	**34.4**	**28.4**	**21.0**	**39.2**	**41.2**	**34.6**	**22.6**	**29.0**	**19.1**
	5%	WB		**10.6**	**11.2**	**12.8**	**16.1**	**17.4**	**19.4**	**24.5**	**23.0**	**20.0**	**17.7**	**17.3**	**12.6**
		MCDB		**18.4**	**19.6**	**15.6**	**31.4**	**33.8**	**34.9**	**40.0**	**32.8**	**33.4**	**30.9**	**32.6**	**17.7**
	10%	WB		**10.0**	**10.7**	**12.1**	**14.4**	**16.9**	**18.9**	**23.5**	**10.0**	**19.5**	**16.9**	**16.5**	**12.2**
		MCDB		**21.0**	**20.7**	**19.9**	**24.1**	**34.2**	**24.7**	**30.5**	**16.0**	**33.2**	**34.3**	**30.6**	**18.7**
Mean Daily Temperature Range		MDBR		**10.6**	**9.4**	**10.9**	**12.4**	**14.4**	**15.2**	**16.8**	**16.1**	**15.0**	**13.2**	**9.8**	**8.1**
	5% DB	MCDBR		**11.3**	**11.1**	**12.6**	**13.8**	**16.1**	**16.6**	**18.7**	**16.8**	**16.2**	**16.2**	**9.4**	**8.4**
		MCWBR		**9.7**	**3.7**	**10.9**	**4.2**	**11.9**	**11.9**	**5.2**	**3.8**	**12.4**	**3.8**	**8.2**	**2.2**
	5% WB	MCDBR		**10.6**	**9.6**	**11.3**	**12.4**	**15.0**	**15.4**	**17.4**	**16.1**	**15.0**	**15.7**	**9.8**	**6.8**
		MCWBR		**9.2**	**7.3**	**10.1**	**9.5**	**11.7**	**11.5**	**5.4**	**3.6**	**11.9**	**4.4**	**8.6**	**2.7**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.9 Design Conditions for Bartın, Turkey

Lat: **37.52** Long: **41.1** Elev: **540** StdP: **101.16** Time Zone: **1.00 (EUW)** Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-6.0**	**-3.1**	**-8.7**	**3.9**	**0.3**	**-6.3**	**4.4**	**-1.1**	**6.6**	**5.0**	**5.5**	**9.9**	**2.3**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7		**32.1**	**19.3**	**31.1**	**19.3**	**28.6**	**21.1**	**23.4**	**26.8**	**22.7**	**24**	**21.9**	**22.4**	**22.4**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
22.3	**25.8**	**29.1**	**21.7**	**23.0**	**26.9**	**20.6**	**17.0**	**24.0**	**112.7**	**32.2**	**100.7**	**30.0**	**93.3**	**28.7**	

Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
5.1	**4.7**	**4.1**	**26.0**	**-8.3**	**33.5**	**2.7**	**2.4**	**-9.7**	**35.1**	**-10.8**	**36.4**	**-11.9**	**37.6**	**-13.3**	**39.2**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**13.5**	**3.8**	**5.9**	**7.6**	**11.3**	**15.3**	**20.5**	**22.2**	**22.4**	**17.2**	**12.6**	**9.0**	**6.5**
	Sd			**4.44**	**4.91**	**2.68**	**4.10**	**2.64**	**2.35**	**0.43**	**1.64**	**2.37**	**3.09**	**4.876**	**6.25**
	HDD10.0		**686**	**548**	**117**	**108**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**82**	**150**
	HDD18.3		**2330**	**1063**	**349**	**560**	**143**	**79**	**0**	**0**	**0**	**2**	**28**	**486**	**396**
	CDD10.0		**2061**	**0**	**0**	**63**	**123**	**484**	**1091**	**1317**	**1269**	**868**	**278**	**93**	**12**
	CDD18.3		**426**	**0**	**0**	**0**	**8**	**57**	**593**	**802**	**754**	**373**	**49**	**0**	**0**
	CDH23.3		**3366**	**0**	**0**	**0**	**112**	**455**	**3773**	**5912**	**5377**	**2481**	**679**	**0**	**0**
	CDH26.7		**913**	**0**	**0**	**0**	**29**	**120**	**2262**	**3865**	**3403**	**1375**	**212**	**2**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**18.9**	**16.6**	**20.9**	**24.0**	**33.5**	**37.9**	**42.9**	**38.6**	**34.4**	**36.0**	**22.5**	**19.5**
		MCWB		**12.9**	**10.4**	**14.1**	**16.2**	**19.3**	**18.9**	**24.8**	**22.2**	**18.7**	**19.9**	**17.2**	**11.7**
	2%	DB		**12.3**	**17.6**	**20.5**	**26.0**	**31.9**	**36.8**	**34.0**	**37.6**	**35.1**	**31.4**	**24.4**	**17.8**
		MCWB		**7.6**	**11.4**	**16.7**	**15.9**	**17.4**	**19.4**	**19.4**	**22.4**	**19.9**	**17.1**	**15.9**	**11.9**
	5%	DB		**16.2**	**16.5**	**19.4**	**23.8**	**19.0**	**24.2**	**40.7**	**36.4**	**34.2**	**29.6**	**22.2**	**16.6**
		MCWB		**12.6**	**13.3**	**14.3**	**18.2**	**13.2**	**18.0**	**24.8**	**19.3**	**19.3**	**15.7**	**17.5**	**10.4**
	10%	DB		**14.8**	**14.9**	**18.1**	**22.2**	**29.2**	**34.0**	**38.4**	**14.8**	**32.8**	**27.3**	**20.9**	**14.8**
		MCWB		**11.4**	**12.4**	**13.8**	**13.6**	**17.8**	**19.4**	**21.3**	**11.4**	**18.2**	**17.1**	**14.1**	**11.4**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**10.2**	**10.3**	**14.5**	**15.4**	**17.3**	**20.9**	**21.8**	**23.9**	**22.8**	**17.9**	**16.5**	**12.9**
		MCDB		**5.8**	**5.6**	**8.3**	**12.3**	**16.5**	**20.6**	**18.3**	**15.6**	**11.7**	**7.9**	**7.4**	**4.8**
	2%	WB		**9.6**	**9.8**	**12.9**	**14.8**	**16.7**	**20.5**	**21.5**	**23.7**	**20.9**	**16.9**	**15.5**	**11.7**
		MCDB		**18.2**	**18.0**	**22.0**	**19.8**	**25.9**	**31.0**	**30.1**	**28.1**	**33.7**	**26.8**	**24.7**	**15.4**
	5%	WB		**9.0**	**9.1**	**11.7**	**13.9**	**16.3**	**19.8**	**21.0**	**23.3**	**18.7**	**16.2**	**15.0**	**10.8**
		MCDB		**14.6**	**17.7**	**22.1**	**18.3**	**18.3**	**27.2**	**27.3**	**28.1**	**27.8**	**25.9**	**16.9**	**18.5**
	10%	WB		**8.2**	**8.5**	**10.6**	**13.2**	**15.8**	**19.2**	**20.6**	**21.4**	**18.1**	**15.1**	**13.9**	**10.1**
		MCDB		**11.8**	**11.0**	**20.0**	**17.5**	**17.9**	**23.0**	**25.6**	**11.8**	**24.1**	**16.9**	**15.7**	**15.9**
Mean Daily Temperature Range		MDBR		**9.1**	**9.0**	**11.1**	**11.8**	**11.9**	**13.9**	**12.8**	**13.1**	**11.0**	**10.3**	**10.8**	**9.7**
	5% DB	MCDBR		**11.8**	**10.8**	**17.7**	**17.4**	**16.4**	**16.5**	**17.5**	**16.1**	**14.7**	**15.6**	**14.9**	**13.2**
		MCWBR		**5.2**	**4.0**	**6.1**	**4.6**	**4.3**	**14.0**	**3.6**	**5.6**	**6.2**	**7.1**	**7.1**	**6.0**
	5% WB	MCDBR		**9.6**	**14.4**	**14.5**	**13.7**	**16.5**	**14.5**	**12.8**	**13.1**	**12.6**	**10.1**	**12.6**	**12.1**
		MCWBR		**4.0**	**6.5**	**5.0**	**3.9**	**3.8**	**12.6**	**3.3**	**5.0**	**5.6**	**4.7**	**6.2**	**6.0**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.10 Design Conditions for Batman, Turkey

Lat: **37.52** Long: **41.1** Elev: **540** Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-11.2**	**-6.2**	**-13.4**	**1.6**	**-12.0**	**-11.0**	**2.4**	**-6.9**	**9.2**	**6**	**7.9**	**36.6**	**3.4**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
6		**40.5**	**23.4**	**39.7**	**22.7**	**38.6**	**22.2**	**25.1**	**38.3**	**24.0**	**41.7**	**23.1**	**39**		

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
22.3	**17.4**	**40.2**	**20.9**	**16.2**	**32**	**19.5**	**14.5**	**38**	**153.9**	**37.2**	**137.3**	**35.0**	**117.9**	**32.1**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
7.1	**6.3**	**5.8**	**28.0**	**-14.2**	**40.0**	**3.4**	**3.1**	**-16.2**	**41.8**	**-17.8**	**43.3**	**-19.4**	**44.7**	**-21.5**	**46.5**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**17.5**	**1.2**	**5.8**	**9.3**	**13.8**	**17.9**	**28.2**	**31.2**	**30.5**	**24.5**	**18.9**	**10.2**	**5.57**
	Sd			**5.20**	**1.84**	**3.17**	**3.67**	**2.51**	**2.73**	**2.64**	**1.94**	**2.63**	**2.71**	**3.28**	**9.14**
	HDD10.0		**1013**	**548**	**117**	**108**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**82**	**150**
	HDD18.3		**3106**	**1063**	**349**	**560**	**143**	**79**	**0**	**0**	**0**	**2**	**28**	**486**	**396**
	CDD10.0		**5599**	**0**	**0**	**63**	**123**	**484**	**1091**	**1317**	**1269**	**868**	**278**	**93**	**12**
	CDD18.3		**2637**	**0**	**0**	**0**	**8**	**57**	**593**	**802**	**754**	**373**	**49**	**0**	**0**
	CDH23.3		**18790**	**0**	**0**	**0**	**112**	**455**	**3773**	**5912**	**5377**	**2481**	**679**	**0**	**0**
	CDH26.7		**11267**	**0**	**0**	**0**	**29**	**120**	**2262**	**3865**	**3403**	**1375**	**212**	**2**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**10.1**	**11.8**	**22.1**	**23.1**	**27.9**	**37.2**	**40.8**	**41.1**	**35.0**	**29.4**	**17.8**	**16.6**
		MCWB		**9.0**	**11.4**	**15.7**	**14.3**	**17.6**	**18.1**	**23.9**	**23.4**	**17.2**	**16.4**	**12.3**	**12.2**
	2%	DB		**11.2**	**13.0**	**21.4**	**26.5**	**29.7**	**38.9**	**36.7**	**40.9**	**30.0**	**30.5**	**19.9**	**15.7**
		MCWB		**10.5**	**10.1**	**15.7**	**17.0**	**15.7**	**22.4**	**24.8**	**22.8**	**19.1**	**17.2**	**11.4**	**12.0**
	5%	DB		**0.0**	**11.5**	**19.9**	**23.0**	**27.7**	**37.1**	**39.7**	**28.2**	**21.2**	**16.2**	**17.6**	**13.9**
		MCWB		**0.4**	**6.2**	**11.4**	**14.4**	**14.7**	**20.9**	**22.7**	**16.3**	**13.1**	**12.7**	**12.5**	**11.2**
	10%	DB		**8.2**	**10.4**	**17.9**	**19.9**	**25.6**	**35.3**	**39.0**	**8.2**	**34.1**	**27.6**	**15.9**	**12.2**
		MCWB		**7.4**	**8.6**	**12.3**	**11.4**	**18.5**	**17.4**	**22.4**	**7.4**	**16.8**	**18.4**	**11.4**	**10.6**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**7.9**	**8.3**	**11.6**	**19.1**	**19.8**	**22.8**	**26.6**	**24.0**	**18.1**	**19.3**	**13.7**	**12.7**
		MCDB		**8.0**	**20.0**	**23.5**	**31.2**	**34.8**	**42.4**	**41.2**	**40.0**	**37.5**	**31.2**	**19.2**	**18.5**
	2%	WB		**7.2**	**7.9**	**10.7**	**18.0**	**17.9**	**22.1**	**25.8**	**23.7**	**17.7**	**18.9**	**13.4**	**12.1**
		MCDB		**8.0**	**11.0**	**21.5**	**36.0**	**30.2**	**36.9**	**40.2**	**40.2**	**36.2**	**32.1**	**22.0**	**18.3**
	5%	WB		**6.1**	**7.4**	**10.1**	**16.4**	**17.5**	**20.7**	**25.1**	**23.1**	**17.3**	**18.4**	**12.7**	**11.4**
		MCDB		**7.2**	**8.5**	**20.4**	**32.5**	**34.9**	**36.1**	**36.8**	**40.4**	**35.6**	**28.0**	**20.2**	**17.1**
	10%	WB		**5.1**	**7.0**	**9.5**	**14.4**	**17.1**	**19.6**	**24.3**	**22.5**	**16.9**	**17.4**	**11.9**	**10.4**
		MCDB		**10.8**	**13.7**	**21.5**	**25.7**	**35.2**	**36.5**	**41.0**	**40.5**	**34.7**	**35.1**	**16.6**	**15.1**
Mean Daily Temperature Range		MDBR		**11.7**	**11.3**	**15.6**	**11.9**	**14.9**	**19.1**	**17.7**	**17.9**	**19.7**	**16.7**	**12.0**	**9.1**
	5% DB	MCDBR		**12.7**	**14.8**	**18.6**	**15.8**	**18.1**	**21.4**	**18.9**	**19.0**	**21.7**	**20.2**	**12.8**	**10.0**
		MCWBR		**6.4**	**8.2**	**15.0**	**5.1**	**15.4**	**5.5**	**6.3**	**7.7**	**14.8**	**10.6**	**5.0**	**4.9**
	5% WB	MCDBR		**10.8**	**10.0**	**16.6**	**14.5**	**14.9**	**19.8**	**16.9**	**19.3**	**19.7**	**18.2**	**12.6**	**9.1**
		MCWBR		**4.0**	**6.5**	**13.7**	**4.9**	**13.1**	**6.3**	**6.0**	**8.4**	**13.9**	**9.1**	**5.2**	**4.2**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.11 Design Conditions for Bayburt, Turkey

Lat: **40.16** Long: **40.15** Elev: **1550** Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-19.6**	**-17.6**	**-22.45**	**1.5**	**-18.7**	**-21.3**	**0.9**	**-18.0**	**7.7**	**27.2**	**6.2**	**26.7**	**1.1**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**33.2**	**16.4**	**30.6**	**15.6**	**28.0**	**15.1**	**17.8**	**34.1**	**16.9**	**23.4**	**16.1**	**30.0**	**0.9**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
13.75	**15.7**	**19.1**	**12.7**	**14.6**	**14.43**	**11.8**	**27.8**	**19.9**	**136.8**	**33.2**	**119.4**	**30.7**	**103.8**	**28.1**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
6.2	**5.4**	**5.1**	**23.0**	**-19.8**	**33.2**	**2.6**	**2.8**	**-21.3**	**34.8**	**-23.0**	**36.2**	**-23.7**	**37.5**	**-25.3**	**39.1**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours		Tavg	**7.1**	**-4.5**	**-1.7**	**-8.8**	**1.4**	**5.4**	**11.5**	**15.1**	**19.4**	**15.2**	**8.8**	**4.3**	**-1.8**
		Sd		**5.33**	**6.38**	**3.67**	**3.43**	**3.41**	**3.62**	**6.2**	**2.85**	**2.96**	**3.28**	**2.04**	**8.11**
		HDD10.0	**2919**	**901**	**527**	**535**	**142**	**41**	**1**	**0**	**0**	**0**	**61**	**344**	**367**
		HDD18.3	**6041**	**1415**	**759**	**1050**	**386**	**426**	**109**	**14**	**20**	**103**	**293**	**842**	**625**
		CDD10.0	**1431**	**0**	**0**	**0**	**6**	**135**	**154**	**663**	**290**	**157**	**25**	**0**	**0**
		CDD18.3	**245**	**0**	**0**	**0**	**0**	**5**	**13**	**164**	**53**	**11**	**0**	**0**	**0**
		CDH23.3	**2219**	**0**	**0**	**0**	**0**	**20**	**118**	**1181**	**654**	**245**	**0**	**0**	**0**
		CDH26.7	**825**	**0**	**0**	**0**	**0**	**0**	**11**	**517**	**225**	**71**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**4.8**	**3.8**	**13.1**	**13.4**	**20.9**	**24.6**	**35.0**	**29.5**	**32.1**	**22.3**	**12.9**	**6.6**
		MCWB		**2.0**	**0.1**	**5.8**	**6.0**	**10.5**	**11.1**	**18.6**	**13.7**	**15.1**	**10.9**	**5.5**	**4.2**
	2%	DB		**3.6**	**-3.3**	**12.4**	**14.7**	**22.4**	**18.5**	**34.0**	**31.3**	**28.7**	**20.9**	**11.9**	**2.6**
		MCWB		**2.1**	**-5.0**	**8.3**	**6.5**	**10.8**	**10.2**	**17.8**	**16.2**	**13.4**	**10.5**	**5.1**	**0.5**
	5%	DB		**3.0**	**-13.3**	**10.7**	**13.3**	**20.8**	**12.1**	**32.0**	**16.7**	**25.7**	**18.9**	**10.5**	**-3.2**
		MCWB		**1**	**-13.6**	**4.2**	**6.8**	**8.2**	**6.4**	**17.1**	**11.3**	**11.3**	**10.5**	**6.4**	**-4.9**
	10%	DB		**2.3**	**1.6**	**8.6**	**11.4**	**18.5**	**22.2**	**29.8**	**2.3**	**23.7**	**16.2**	**9.5**	**5.2**
		MCWB		**0.0**	**0.5**	**3.7**	**5.9**	**10.2**	**10.1**	**14.7**	**0.0**	**12.0**	**7.3**	**3.6**	**3.9**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**1.2**	**1.4**	**6.0**	**10.3**	**13.1**	**15.4**	**18.6**	**19.2**	**15.4**	**11.0**	**5.7**	**6.4**
		MCDB		**4.3**	**4.7**	**10.0**	**17.7**	**26.0**	**26.9**	**34.9**	**26.8**	**32.9**	**22.5**	**12.8**	**10.5**
	2%	WB		**0.7**	**0.6**	**5.6**	**9.8**	**12.6**	**14.9**	**17.4**	**18.4**	**13.9**	**10.5**	**5.6**	**5.7**
		MCDB		**3.1**	**4.4**	**9.6**	**19.8**	**26.0**	**27.4**	**35.8**	**34.6**	**24.5**	**20.9**	**11.2**	**14.9**
	5%	WB		**0.3**	**0.2**	**4.9**	**9.0**	**11.7**	**14.1**	**16.8**	**17.5**	**13.1**	**9.9**	**5.1**	**4.2**
		MCDB		**3.1**	**3.2**	**11.7**	**12.2**	**19.7**	**23.3**	**27.3**	**29.9**	**25.3**	**20.3**	**11.0**	**5.1**
	10%	WB		**-0.2**	**-0.7**	**4.0**	**7.4**	**10.6**	**13.1**	**16.1**	**16.6**	**12.0**	**9.3**	**4.4**	**2.9**
		MCDB		**2.9**	**1.8**	**4.7**	**15.7**	**18.3**	**18.7**	**27.9**	**29.4**	**19.6**	**19.3**	**10.1**	**5.0**
Mean Daily Temperature Range		MDBR		**9.5**	**11.7**	**11.0**	**10.9**	**12.1**	**14.3**	**17.4**	**16.0**	**15.8**	**13.6**	**10.9**	**8.8**
	5% DB	MCDBR		**8.7**	**7.9**	**14.4**	**12.8**	**16.0**	**16.9**	**19.6**	**19.1**	**19.7**	**17.9**	**11.9**	**8.6**
		MCWBR		**7.7**	**4.1**	**12.0**	**4.4**	**12.6**	**2.9**	**14.3**	**4.5**	**5.7**	**6.0**	**5.9**	**4.4**
	5% WB	MCDBR		**8.7**	**9.2**	**11.6**	**12.2**	**12.1**	**15.7**	**17.3**	**16.9**	**17.3**	**17.4**	**10.6**	**8.2**
		MCWBR		**7.8**	**6.0**	**10.0**	**4.1**	**10.3**	**3.2**	**13.5**	**4.2**	**4.9**	**7.0**	**5.3**	**3.7**
Clear Sky Solar Irradiance		taub													
		taud													
		Ebn,noon													
		Edh,noon													

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.12 Design Conditions for Bilecik, Turkey

Lat: **40.09** Long: **29.58** Elev: **526** Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**-3.9**	**-2.9**	**-7.8**	**2.1**	**3.4**	**-6.8**	**2.3**	**-2.3**	**7.1**	**15.4**	**6.1**	**-0.8**	**2.9**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8		**32.0**	**19.0**	**30.7**	**16.2**	**29.5**	**21.6**	**21.1**	**29.9**	**20.1**	**25.1**	**21.1**	**36.6**	**2.2**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
19.1	**14.6**	**26.6**	**18.3**	**14.1**	**21.5**	**17.4**	**13.2**	**24.6**	**116.5**	**32.1**	**108.7**	**30.8**	**102.5**	**29.6**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
5.8	**5.2**	**4.6**	**26.0**	**-4.4**	**32.7**	**2.0**	**2.2**	**-5.6**	**34.0**	**-6.5**	**35.1**	**-7.4**	**36.1**	**-8.6**	**37.4**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**12.6**	**-3.4**	**3.9**	**4.8**	**11.9**	**16.6**	**19.3**	**23.3**	**23.3**	**18.1**	**14.1**	**10.6**	**5.5**
	Sd			**2.13**	**4.81**	**4.12**	**4.0**	**3.62**	**3.05**	**2.86**	**0.09**	**1.87**	**2.30**	**3.73**	**7.44**
	HDD10.0		**2919**	**406**	**185**	**333**	**22**	**0**	**0**	**0**	**0**	**0**	**11**	**62**	**142**
	HDD18.3		**6041**	**921**	**403**	**835**	**199**	**157**	**24**	**0**	**0**	**30**	**134**	**455**	**398**
	CDD10.0		**1431**	**0**	**14**	**12**	**79**	**411**	**278**	**812**	**412**	**242**	**138**	**97**	**1**
	CDD18.3		**245**	**0**	**0**	**0**	**6**	**53**	**54**	**306**	**154**	**23**	**4**	**0**	**0**
	CDH23.3		**2219**	**0**	**0**	**0**	**23**	**212**	**509**	**1269**	**1362**	**281**	**82**	**4**	**0**
	CDH26.7		**825**	**0**	**0**	**0**	**0**	**47**	**146**	**437**	**489**	**53**	**5**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**12.9**	**19.8**	**15.3**	**20.7**	**30.0**	**28.5**	**30.8**	**31.0**	**26.4**	**26.6**	**18.7**	**11.7**
		MCWB		**12.4**	**14.5**	**12.5**	**14.1**	**17.4**	**19.6**	**20.1**	**22.2**	**16.4**	**16.2**	**13.0**	**8.7**
	2%	DB		**9.3**	**17.2**	**17.0**	**23.1**	**27.9**	**29.8**	**32.0**	**32.2**	**28.0**	**25.7**	**20.5**	**8.3**
		MCWB		**6.6**	**10.7**	**13.7**	**17.3**	**18.1**	**19.4**	**19.0**	**19.4**	**16.9**	**16.6**	**14.8**	**5.6**
	5%	DB		**8.2**	**0.9**	**2.3**	**20.0**	**14.6**	**28.4**	**21.5**	**30.8**	**26.3**	**23.6**	**18.6**	**11.0**
		MCWB		**4.9**	**-0.1**	**1.6**	**14.4**	**11.0**	**17.0**	**15.2**	**20.1**	**16.5**	**15.1**	**13.7**	**7.6**
	10%	DB		**7.0**	**11.3**	**13.0**	**18.4**	**23.6**	**26.5**	**29.3**	**7.0**	**24.7**	**21.1**	**16.2**	**9.9**
		MCWB		**6.1**	**7.8**	**9.5**	**12.5**	**15.1**	**16.5**	**16.9**	**6.1**	**16.1**	**9.9**	**14.8**	**8.3**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**7.5**	**12.0**	**9.9**	**14.9**	**17.5**	**19.1**	**22.3**	**22.2**	**18.5**	**17.0**	**15.6**	**9.6**
		MCDB		**15.3**	**21.5**	**17.1**	**25.2**	**27.4**	**32.6**	**31.4**	**24.8**	**28.9**	**28.4**	**29.0**	**13.7**
	2%	WB		**5.9**	**10.5**	**8.7**	**14.3**	**17.1**	**18.5**	**19.6**	**21.5**	**17.6**	**16.4**	**14.6**	**8.7**
		MCDB		**7.4**	**21.3**	**8.6**	**24.0**	**25.3**	**29.6**	**25.5**	**31.6**	**30.2**	**26.4**	**25.3**	**11.7**
	5%	WB		**5.4**	**9.2**	**7.7**	**13.6**	**16.1**	**17.9**	**19.3**	**20.9**	**17.0**	**15.8**	**13.8**	**8.2**
		MCDB		**11.6**	**15.0**	**8.6**	**21.0**	**28.7**	**31.5**	**31.2**	**29.0**	**28.4**	**24.5**	**21.7**	**14.9**
	10%	WB		**4.9**	**7.4**	**6.8**	**12.2**	**15.2**	**17.2**	**18.8**	**20.2**	**16.5**	**15.1**	**12.8**	**7.7**
		MCDB		**8.1**	**15.3**	**7.0**	**20.0**	**24.7**	**28.4**	**26.8**	**29.2**	**26.5**	**24.9**	**19.6**	**8.6**
Mean Daily Temperature Range		MDBR		**5.5**	**9.0**	**9.6**	**9.7**	**11.3**	**12.4**	**10.9**	**13.4**	**11.2**	**11.7**	**7.1**	**6.0**
	5% DB	MCDBR		**7.1**	**10.7**	**13.7**	**13.0**	**14.0**	**15.1**	**13.9**	**14.9**	**15.5**	**15.4**	**11.2**	**7.5**
		MCWBR		**6.6**	**4.6**	**11.1**	**4.0**	**10.9**	**3.1**	**10.8**	**3.9**	**5.1**	**6.1**	**9.7**	**3.2**
	5% WB	MCDBR		**6.5**	**9.7**	**13.6**	**11.5**	**13.2**	**14.2**	**12.2**	**13.4**	**12.9**	**13.2**	**10.9**	**6.5**
		MCWBR		**6.1**	**3.0**	**11.0**	**9.8**	**10.3**	**3.3**	**9.9**	**3.9**	**4.7**	**5.2**	**9.7**	**2.9**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.13 Design Conditions for Bingöl, Turkey

Lat: **38.52** Long: **40.30** Elev: **1177** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**-16.1**	**-13.1**	**-19.7**	**0.9**	**-18.2**	**-17.9**	**1.6**	**-12.8**	**5.5**	**29.2**	**4.9**	**15.2**	**2.3**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**35.0**	**21.8**	**33.7**	**20.1**	**32.2**	**19.8**	**21.5**	**33.4**	**20.6**	**34.5**	**21.5**	**36.0**	**60**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
17.6	**43.1**	**35.3**	**16.6**	**34.9**	**19.0**	**15.7**	**26.2**	**27**	**144.9**	**35.0**	**134.7**	**33.8**	**125.2**	**32.2**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
4.6	**4.15**	**5.2**	**24.0**	**-17.8**	**35.8**	**2.3**	**2.6**	**-19.2**	**37.3**	**-20.3**	**38.6**	**-21.4**	**39.7**	**-22.8**	**41.3**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours		Tavg	**11.2**	**0.5**	**-4.0**	**3.1**	**9.8**	**17.0**	**21.8**	**26.4**	**25.9**	**20.1**	**14.3**	**7.6**	**-0.7**
		Sd		**1.29**	**6.11**	**3.16**	**3.75**	**3.55**	**3.20**	**5.58**	**1.87**	**3.97**	**3.0**	**2.39**	**4.68**
		HDD10.0	**1952**	**590**	**393**	**427**	**43**	**4**	**0**	**0**	**0**	**0**	**3**	**161**	**331**
		HDD18.3	**4487**	**1105**	**625**	**941**	**254**	**132**	**4**	**0**	**0**	**69**	**125**	**644**	**588**
		CDD10.0	**2594**	**0**	**0**	**1**	**39**	**440**	**355**	**508**	**494**	**607**	**136**	**14**	**0**
		CDD18.3	**830**	**0**	**0**	**0**	**1**	**54**	**110**	**250**	**236**	**177**	**1**	**0**	**0**
		CDH23.3	**7003**	**0**	**0**	**0**	**6**	**280**	**1311**	**2897**	**1407**	**934**	**167**	**0**	**0**
		CDH26.7	**3139**	**0**	**0**	**0**	**0**	**41**	**594**	**1516**	**636**	**335**	**16**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**7.5**	**6.0**	**10.7**	**24.0**	**26.7**	**34.8**	**34.3**	**36.5**	**30.0**	**25.6**	**18.2**	**6.2**
		MCWB		**4.2**	**3.4**	**6.3**	**13.9**	**16.8**	**20.8**	**19.9**	**21.4**	**18.4**	**14.1**	**10.6**	**4.8**
	2%	DB		**6.7**	**4.8**	**13.0**	**22.0**	**27.8**	**33.6**	**35.8**	**33.4**	**31.2**	**26.8**	**16.8**	**1.7**
		MCWB		**3.3**	**3.9**	**8.6**	**10.5**	**15.2**	**20.4**	**23.5**	**20.7**	**17.5**	**15.0**	**11.3**	**-1.8**
	5%	DB		**-0.4**	**-6.0**	**10.4**	**7.7**	**26.4**	**32.0**	**34.0**	**31.6**	**29.9**	**11.8**	**14.6**	**4.4**
		MCWB		**-2.4**	**-7.1**	**8.4**	**6.1**	**16.1**	**17.9**	**20.5**	**18.2**	**16.0**	**4.8**	**9.8**	**3.6**
	10%	DB		**4.7**	**2.4**	**8.3**	**16.1**	**24.7**	**30.7**	**33.2**	**4.7**	**28.9**	**22.9**	**11.8**	**3.2**
		MCWB		**3.6**	**1.5**	**6.6**	**12.2**	**15.9**	**18.3**	**20.1**	**3.6**	**18.8**	**11.8**	**4.8**	**2.2**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**2.9**	**3.7**	**7.6**	**15.4**	**17.7**	**20.9**	**23.0**	**22.9**	**19.7**	**16.0**	**11.4**	**4.8**
		MCDB		**7.6**	**7.8**	**16.0**	**24.4**	**32.9**	**35.2**	**37.9**	**36.0**	**32.9**	**27.0**	**19.0**	**10.0**
	2%	WB		**2.3**	**2.8**	**6.5**	**14.2**	**16.9**	**20.0**	**21.9**	**21.2**	**19.1**	**15.6**	**10.5**	**4.2**
		MCDB		**7.1**	**5.0**	**14.2**	**24.0**	**28.8**	**32.8**	**34.0**	**32.7**	**29.4**	**26.4**	**18.5**	**7.5**
	5%	WB		**2.1**	**2.0**	**5.5**	**12.7**	**16.3**	**19.1**	**21.1**	**20.4**	**18.3**	**14.7**	**9.5**	**3.1**
		MCDB		**7.8**	**5.5**	**11.2**	**23.8**	**25.8**	**31.8**	**35.5**	**31.2**	**27.0**	**24.8**	**15.4**	**5.6**
	10%	WB		**1.5**	**1.3**	**4.4**	**11.1**	**15.5**	**18.2**	**20.25**	**22.1**	**17.4**	**13.6**	**8.7**	**2.2**
		MCDB		**2.8**	**5.2**	**5.0**	**18.7**	**27.0**	**29.0**	**33.4**	**35.8**	**19.0**	**25.0**	**18.5**	**6.5**
Mean Daily Temperature Range		MDBR		**8.3**	**7.9**	**8.8**	**10.1**	**12.9**	**15.2**	**15.7**	**13.4**	**15.2**	**13.8**	**10.1**	**6.3**
	5% DB	MCDBR		**11.6**	**6.8**	**12.0**	**13.3**	**15.6**	**17.7**	**16.3**	**13.5**	**17.6**	**18.8**	**13.1**	**4.8**
		MCWBR		**9.7**	**3.9**	**5.7**	**4.5**	**5.4**	**6.0**	**6.1**	**4.9**	**8.2**	**8.8**	**6.2**	**2.3**
	5% WB	MCDBR		**10.9**	**5.1**	**8.7**	**13.8**	**14.3**	**17.9**	**16.0**	**13.4**	**16.6**	**17.1**	**12.3**	**4.0**
		MCWBR		**9.8**	**3.0**	**6.2**	**4.7**	**5.0**	**5.7**	**6.3**	**5.1**	**8.0**	**8.4**	**5.9**	**2.0**
Clear Sky Solar Irradiance		taub													
		taud													
		Ebn,noon													
		Edh,noon													

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C

Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East

Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.14 Design Conditions for Bitlis,Turkey

Lat: **38.22** Long: **42.06** Elev: **1559** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**-16.5**	**-11.4**	**-21.4**	**1.0**	**-18.6**	**-17.9**	**1.7**	**-12.2**	**6**	**-1.9**	**5.2**	**6.3**	**2.3**	**140**

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8	**3.0**	**32.6**	**20.7**	**32.3**	**18.3**	**30.3**	**19.2**	**22.1**	**27.0**	**21.0**	**32**	**22.1**	**28.0**	**5.3**	**160**

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
20.6	**20.7**	**22.4**	**19.3**	**22.2**	**29.6**	**17.8**	**21.3**	**22.8**	**132.5**	**32.6**	**124.9**	**31.6**	**117.3**	**30.3**	**130**

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
4.7	**4.3**	**5.4**	**25.0**	**-19.0**	**33.2**	**2.3**	**2.6**	**-20.4**	**34.7**	**-21.5**	**36.0**	**-22.5**	**37.2**	**-23.9**	**38.8**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**3.3**	**-1.7**	**-1.7**	**-0.8**	**0.9**	**3.8**	**7.0**	**10.0**	**10.0**	**7.7**	**4.0**	**1.1**	**-0.7**
	Sd			**3.64**	**3.50**	**2.87**	**2.99**	**2.49**	**2.67**	**2.86**	**2.51**	**2.66**	**2.96**	**2.96**	**3.50**
	HDD10.0		**2351**	**774**	**374**	**479**	**97**	**54**	**0**	**0**	**0**	**1**	**7**	**252**	**312**
	HDD18.3		**5263**	**1299**	**606**	**993**	**323**	**377**	**33**	**0**	**3**	**117**	**202**	**749**	**570**
	CDD10.0		**1761**	**0**	**0**	**0**	**23**	**193**	**261**	**384**	**386**	**451**	**62**	**2**	**0**
	CDD18.3		**374**	**0**	**0**	**0**	**0**	**2**	**45**	**126**	**132**	**69**	**0**	**0**	**0**
	CDH23.3		**4245**	**0**	**0**	**0**	**0**	**61**	**452**	**1383**	**1635**	**711**	**3**	**0**	**0**
	CDH26.7		**1575**	**0**	**0**	**0**	**0**	**1**	**98**	**513**	**710**	**253**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**4.3**	**3.3**	**11.2**	**21.2**	**23.0**	**29.7**	**31.4**	**34.8**	**30.0**	**20.5**	**16.6**	**8.0**
		MCWB		**3.5**	**2.6**	**6.6**	**12.5**	**11.7**	**15.7**	**16.5**	**24.0**	**16.3**	**12.2**	**7.9**	**3.3**
	2%	DB		**3.7**	**4.2**	**9.8**	**18.9**	**25.1**	**22.4**	**32.2**	**33.1**	**23.2**	**21.9**	**15.6**	**6.3**
		MCWB		**3.1**	**3.4**	**4.2**	**11.2**	**14.1**	**12.4**	**24.4**	**19.6**	**12.1**	**12.0**	**7.5**	**4.2**
	5%	DB		**2.9**	**3.2**	**8.4**	**16.9**	**22.9**	**27.9**	**31.2**	**31.9**	**15.1**	**20.1**	**13.4**	**4.8**
		MCWB		**2.3**	**2.5**	**6.6**	**11.0**	**13.8**	**18.3**	**16.3**	**18.8**	**8.2**	**11.6**	**8.9**	**3.5**
	10%	DB		**2.1**	**2.0**	**7.1**	**14.2**	**21.0**	**26.0**	**29.9**	**2.1**	**27.8**	**18.1**	**10.9**	**3.9**
		MCWB		**1.8**	**-0.4**	**2.9**	**7.8**	**11.4**	**16.1**	**17.5**	**1.8**	**15.3**	**11.7**	**6.3**	**-0.6**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**2.5**	**2.7**	**5.9**	**12.4**	**17.3**	**18.8**	**21.1**	**24.0**	**18.5**	**12.7**	**9.1**	**5.0**
		MCDB		**5.3**	**4.7**	**10.5**	**20.6**	**17.0**	**28.8**	**33.5**	**34.8**	**31.0**	**22.9**	**15.2**	**11.3**
	2%	WB		**1.5**	**1.6**	**4.9**	**11.6**	**16.0**	**18.4**	**20.5**	**23.1**	**17.9**	**12.1**	**8.5**	**4.1**
		MCDB		**4.0**	**5.0**	**9.3**	**19.0**	**25.2**	**30.6**	**26.1**	**29.3**	**31.0**	**20.6**	**14.8**	**5.0**
	5%	WB		**0.6**	**1.1**	**4.3**	**10.0**	**14.6**	**17.7**	**19.9**	**22.1**	**16.5**	**11.8**	**7.6**	**3.4**
		MCDB		**5.1**	**3.6**	**11.9**	**15.5**	**19.8**	**29.3**	**26.6**	**28.0**	**31.7**	**20.0**	**15.1**	**4.0**
	10%	WB		**0.2**	**0.4**	**3.6**	**9.3**	**13.6**	**16.9**	**19.3**	**21.4**	**15.8**	**11.3**	**6.6**	**2.3**
		MCDB		**4.6**	**3.2**	**4.9**	**11.8**	**21.0**	**26.1**	**26.1**	**30.3**	**29.6**	**19.8**	**12.3**	**3.4**
Mean Daily Temperature Range		MDBR		**8.0**	**9.3**	**8.0**	**10.4**	**13.4**	**15.7**	**15.7**	**15.6**	**15.3**	**10.6**	**9.1**	**6.1**
	5% DB	MCDBR		**8.7**	**9.3**	**9.3**	**13.4**	**15.9**	**15.0**	**17.9**	**16.6**	**18.7**	**13.7**	**13.0**	**6.3**
		MCWBR		**4.5**	**4.6**	**3.5**	**4.7**	**4.9**	**5.7**	**6.7**	**6.1**	**5.1**	**3.1**	**4.6**	**2.8**
	5% WB	MCDBR		**7.6**	**3.9**	**8.2**	**13.4**	**14.7**	**14.6**	**16.1**	**15.5**	**18.6**	**8.8**	**14.1**	**5.6**
		MCWBR		**5.4**	**3.0**	**3.5**	**6.0**	**6.7**	**8.5**	**5.7**	**5.3**	**5.7**	**4.0**	**4.7**	**2.8**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.15 Design Conditions for Bolu,Turkey

Lat: **40.44** Long: **31.36** Elev: **742** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-8.6**	**-6.0**	**-10.1**	**3.0**	**-9.2**	**-8.7**	**2.2**	**-5.4**	**4 6**	**1.3**	**4.1**	**-0.1**	**0.7**	**140**

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**34.9**	**20.5**	**31.8**	**19.1**	**29.3**	**18.8**	**21.5**	**35.2**	**20.4**	**25**	**19.1**	**24.2**	**5.3**	**160**

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
19.4	**16.7**	**20.6**	**18.0**	**16.4**	**22.2**	**17.0**	**16.2**	**23.7**	**138.1**	**35.0**	**117.6**	**31.9**	**103.1**	**29.4**	**130**

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
3.9	**3.7**	**3.2**	**24.0**	**-10.8**	**36.3**	**2.4**	**2.7**	**-12.2**	**37.9**	**-13.4**	**39.2**	**-14.5**	**40.5**	**-16.0**	**42.1**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**10.2**	**1.8**	**2.2**	**4.9**	**9.9**	**13.6**	**17.1**	**21.5**	**20.7**	**16.6**	**12.2**	**9.6**	**3.2**
	Sd			**4.28**	**2.81**	**3.94**	**3.30**	**3.26**	**2.85**	**4.34**	**2.32**	**2.67**	**3.21**	**3.27**	**11.5**
	HDD10.0		**1220**	**306**	**358**	**234**	**42**	**17**	**0**	**0**	**0**	**0**	**17**	**97**	**149**
	HDD18.3		**3130**	**620**	**751**	**430**	**251**	**294**	**61**	**6**	**5**	**65**	**190**	**221**	**216**
	CDD10.0		**1557**	**1**	**0**	**18**	**40**	**238**	**212**	**358**	**331**	**198**	**85**	**74**	**0**
	CDD18.3		**225**	**0**	**0**	**0**	**0**	**0**	**24**	**106**	**80**	**14**	**0**	**0**	**0**
	CDH23.3		**2110**	**0**	**0**	**0**	**0**	**28**	**290**	**705**	**770**	**311**	**3**	**3**	**0**
	CDH26.7		**670**	**0**	**0**	**0**	**0**	**0**	**114**	**258**	**270**	**25**	**3**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**10.9**	**16.0**	**14.6**	**22.8**	**25.0**	**30.8**	**33.9**	**35.4**	**26.9**	**26.8**	**17.4**	**10.5**
		MCWB		**7.7**	**13.5**	**10.3**	**13.9**	**16.1**	**16.5**	**19.2**	**20.4**	**18.4**	**17.6**	**13.2**	**8.1**
	2%	DB		**12.0**	**12.2**	**16.2**	**21.4**	**17.1**	**29.3**	**35.2**	**33.7**	**28.8**	**15.3**	**20.8**	**6.9**
		MCWB		**8.8**	**9.0**	**12.8**	**14.6**	**13.4**	**19.5**	**20.3**	**20.5**	**18.6**	**13.2**	**14.3**	**5.9**
	5%	DB		**10.8**	**9.6**	**14.2**	**20.0**	**22.5**	**28.4**	**33.4**	**30.0**	**26.7**	**9.9**	**17.3**	**1.5**
		MCWB		**8.3**	**7.3**	**9.6**	**15.9**	**14.1**	**17.2**	**18.8**	**19.1**	**17.9**	**7.1**	**11.9**	**1.1**
	10%	DB		**9.2**	**7.7**	**12.4**	**17.8**	**20.3**	**24.6**	**30.6**	**9.2**	**24.0**	**19.8**	**15.3**	**9.3**
		MCWB		**6.9**	**4.8**	**8.9**	**12.8**	**15.5**	**17.7**	**19.4**	**6.9**	**17.5**	**13.6**	**13.2**	**8.2**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**8.5**	**9.0**	**12.2**	**14.8**	**17.2**	**20.2**	**23.5**	**22.1**	**19.7**	**17.9**	**14.5**	**9.6**
		MCDB		**11.2**	**16.3**	**18.9**	**21.8**	**25.2**	**29.4**	**30.9**	**24.9**	**31.0**	**25.1**	**23.4**	**17.8**
	2%	WB		**7.7**	**7.6**	**10.1**	**13.7**	**16.8**	**19.1**	**21.9**	**21.2**	**18.6**	**17.2**	**13.6**	**9.0**
		MCDB		**12.2**	**13.9**	**17.2**	**21.0**	**27.8**	**28.3**	**34.0**	**22.5**	**27.9**	**25.2**	**19.8**	**16.0**
	5%	WB		**7.0**	**6.2**	**8.9**	**12.7**	**16.2**	**18.2**	**21.2**	**19.8**	**17.9**	**15.8**	**13.2**	**8.2**
		MCDB		**11.2**	**9.8**	**15.6**	**20.2**	**25.9**	**31.9**	**23.9**	**27.2**	**23.8**	**23.8**	**23.8**	**15.3**
	10%	WB		**6.3**	**5.1**	**7.6**	**11.0**	**15.2**	**16.9**	**20.1**	**19.1**	**16.8**	**14.6**	**12.1**	**7.6**
		MCDB		**13.0**	**7.5**	**11.9**	**17.1**	**23.3**	**28.6**	**24.7**	**28.0**	**24.9**	**21.4**	**16.8**	**14.8**
Mean Daily Temperature Range		MDBR		**8.0**	**9.7**	**8.8**	**13.7**	**11.2**	**14.9**	**16.4**	**16.2**	**14.0**	**14.8**	**10.0**	**7.7**
	5% DB	MCDBR		**9.0**	**13.7**	**13.5**	**18.6**	**14.8**	**19.4**	**22.8**	**20.3**	**18.1**	**20.3**	**12.5**	**9.1**
		MCWBR		**8.1**	**7.7**	**11.3**	**8.3**	**13.7**	**6.1**	**5.7**	**6.6**	**6.7**	**10.4**	**11.4**	**5.1**
	5% WB	MCDBR		**9.0**	**18.5**	**11.5**	**18.2**	**12.6**	**18.4**	**16.5**	**15.9**	**16.0**	**19.5**	**12.1**	**9.1**
		MCWBR		**8.1**	**10.7**	**10.2**	**8.1**	**11.8**	**6.3**	**6.5**	**5.6**	**6.6**	**10.3**	**11.2**	**5.5**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.16 Design Conditions for Burdur,Turkey

Lat: **37.40** Long: **30.20** Elev: **967** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
3	**-3.8**	**-2.8**	**-9.0**	**3.8**	**-8.4**	**-7.9**	**3.5**	**-2.4**	**7.7**	**1.1**	**6.6**	**14.5**	**3.5**	**140**

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8	**3.0**	**36.2**	**21.4**	**34.9**	**23.4**	**33.5**	**21.3**	**22.2**	**35.2**	**21.3**	**33.5**	**20.5**	**38.5**	**5.3**	**160**

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
19.6	**28.9**	**29.0**	**18.4**	**17.7**	**23.0**	**17.0**	**16.9**	**20.4**	**150.4**	**36.2**	**140.9**	**35.0**	**130.9**	**33.5**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
5.9	**5.7**	**4.7**	**24.0**	**-2.7**	**38.0**	**2.5**	**2.7**	**-4.2**	**39.6**	**-5.4**	**40.8**	**-6.7**	**42.0**	**-8.1**	**43.6**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**12.9**	**3.6**	**3.5**	**7.4**	**11.5**	**16.8**	**21.5**	**25.0**	**27.4**	**20.2**	**14.8**	**10.5**	**5.1**
	Sd			**2.57**	**2.51**	**4.27**	**3.77**	**3.53**	**3.08**	**1.50**	**1.81**	**3.14**	**3.32**	**3.44**	**7.26**
	HDD10.0		**1006**	**394**	**183**	**186**	**21**	**0**	**0**	**0**	**0**	**0**	**5**	**65**	**152**
	HDD18.3		**3357**	**908**	**415**	**667**	**209**	**145**	**6**	**0**	**0**	**18**	**113**	**468**	**408**
	CDD10.0		**2420**	**0**	**0**	**25**	**66**	**422**	**345**	**465**	**540**	**307**	**154**	**95**	**1**
	CDD18.3		**729**	**0**	**0**	**0**	**4**	**52**	**102**	**208**	**282**	**76**	**5**	**0**	**0**
	CDH23.3		**7980**	**0**	**0**	**0**	**25**	**247**	**871**	**2357**	**3465**	**898**	**117**	**0**	**0**
	CDH26.7		**3857**	**0**	**0**	**0**	**0**	**46**	**318**	**1139**	**1987**	**361**	**5**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**11.2**	**10.1**	**16.4**	**21.6**	**26.5**	**34.0**	**33.5**	**36.2**	**32.6**	**27.4**	**18.3**	**12.8**
		MCWB		**7.1**	**5.6**	**11.6**	**13.9**	**14.2**	**20.9**	**19.1**	**21.4**	**18.7**	**15.4**	**13.2**	**10.2**
	2%	DB		**10.4**	**10.9**	**18.0**	**23.6**	**28.1**	**24.5**	**34.2**	**32.5**	**31.8**	**26.4**	**13.6**	**11.9**
		MCWB		**7.8**	**6.7**	**12.6**	**12.3**	**17.7**	**16.9**	**20.0**	**17.0**	**17.9**	**15.2**	**11.9**	**9.5**
	5%	DB		**9.4**	**9.9**	**16.3**	**21.4**	**26.3**	**30.1**	**33.2**	**24.9**	**30.6**	**13.1**	**18.1**	**10.9**
		MCWB		**5.4**	**7.3**	**13.2**	**10.4**	**12.9**	**16.9**	**22.5**	**13.3**	**17.5**	**7.9**	**13.7**	**6.7**
	10%	DB		**8.3**	**8.3**	**14.8**	**18.0**	**24.0**	**28.2**	**32.1**	**8.3**	**28.9**	**22.4**	**16.7**	**9.7**
		MCWB		**6.0**	**6.0**	**12.3**	**12.6**	**14.9**	**15.6**	**17.9**	**6.0**	**15.0**	**13.0**	**12.9**	**6.8**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**7.1**	**7.7**	**12.3**	**14.0**	**16.0**	**20.2**	**20.9**	**23.4**	**19.1**	**15.5**	**14.6**	**10.1**
		MCDB		**9.5**	**15.0**	**21.7**	**30.9**	**29.9**	**34.8**	**31.9**	**34.9**	**33.5**	**26.5**	**25.5**	**12.9**
	2%	WB		**6.5**	**7.1**	**10.3**	**13.1**	**15.6**	**19.2**	**20.3**	**22.8**	**18.5**	**14.9**	**14.0**	**9.4**
		MCDB		**13.0**	**13.2**	**19.6**	**22.2**	**29.5**	**33.0**	**32.4**	**36.0**	**33.8**	**27.8**	**23.1**	**12.7**
	5%	WB		**5.9**	**6.2**	**9.5**	**12.1**	**15.0**	**17.9**	**19.6**	**22.1**	**18.0**	**13.9**	**13.4**	**8.6**
		MCDB		**9.2**	**8.6**	**16.8**	**19.0**	**27.8**	**29.4**	**34.6**	**36.0**	**31.1**	**26.8**	**23.8**	**17.0**
	10%	WB		**5.6**	**4.9**	**8.8**	**11.1**	**14.4**	**17.1**	**19.1**	**21.6**	**17.3**	**13.1**	**12.3**	**7.5**
		MCDB		**6.3**	**10.4**	**13.8**	**22.6**	**27.7**	**30.3**	**33.2**	**38.8**	**31.2**	**22.2**	**21.7**	**14.0**
Mean Daily Temperature Range		MDBR		**8.3**	**10.2**	**12.3**	**11.8**	**13.1**	**14.5**	**15.4**	**17.2**	**14.6**	**13.8**	**10.6**	**7.9**
	5% DB	MCDBR		**10.1**	**13.2**	**15.3**	**14.0**	**17.1**	**17.4**	**16.2**	**18.2**	**17.8**	**16.3**	**12.5**	**8.4**
		MCWBR		**9.3**	**6.7**	**12.8**	**4.0**	**13.1**	**3.6**	**3.5**	**4.6**	**5.8**	**6.3**	**10.8**	**3.8**
	5% WB	MCDBR		**10.1**	**5.0**	**16.5**	**14.2**	**14.5**	**16.6**	**15.4**	**17.3**	**16.2**	**14.9**	**12.3**	**7.9**
		MCWBR		**9.5**	**2.0**	**13.8**	**4.36**	**11.7**	**3.9**	**3.5**	**4.5**	**5.5**	**6.2**	**11.0**	**3.7**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.17 Design Conditions for Bursa,Turkey

Lat: **40.11** Long: **29.04** Elev: **100** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**-2.7**	**-1.7**	**-8.3**	**2.0**	**-3.5**	**-6.7**	**2.3**	**-1.5**	**6.9**	**-0.5**	**6.3**	**5.7**	**3.1**	**140**

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8	**3.0**	**33.4**	**20.6**	**33.8**	**18.7**	**31.7**	**17.5**	**22.2**	**32.2**	**21.4**	**22.7**	**22.3**	**34.6**	**5.3**	**160**

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
20.8	**15.6**	**22.8**	**20.0**	**14.7**	**21.9**	**19.1**	**13.5**	**22.0**	**124.1**	**33.9**	**117.9**	**33.0**	**110.8**	**31.8**	**130**

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
5.9	**5.6**	**5.1**	**26.0**	**-7.8**	**32.8**	**2.4**	**2.5**	**-9.2**	**34.2**	**-10.3**	**35.4**	**-11.4**	**36.5**	**-12.8**	**37.9**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**3.3**	**-1.7**	**-1.7**	**-0.8**	**0.9**	**3.8**	**7.0**	**10.0**	**10.0**	**7.7**	**4.0**	**1.1**	**-0.7**
	Sd			**3.64**	**3.50**	**2.87**	**2.99**	**2.49**	**2.67**	**2.86**	**2.51**	**2.66**	**2.96**	**2.96**	**3.50**
	HDD10.0		**742**	**268**	**144**	**179**	**5**	**0**	**0**	**0**	**0**	**0**	**3**	**71**	**72**
	HDD18.3		**2924**	**778**	**369**	**627**	**154**	**41**	**18**	**0**	**0**	**29**	**103**	**497**	**308**
	CDD10.0		**2594**	**5**	**7**	**67**	**107**	**107**	**244**	**349**	**470**	**589**	**164**	**72**	**21**
	CDD18.3		**734**	**0**	**0**	**0**	**7**	**28**	**118**	**241**	**212**	**120**	**8**	**0**	**0**
	CDH23.3		**6384**	**0**	**0**	**0**	**36**	**212**	**1066**	**2305**	**2149**	**482**	**131**	**2**	**0**
	CDH26.7		**2491**	**0**	**0**	**0**	**0**	**20**	**399**	**942**	**973**	**139**	**17**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**11.2**	**10.0**	**16.4**	**21.6**	**26.5**	**34.0**	**33.5**	**36.2**	**32.6**	**27.4**	**18.3**	**12.8**
		MCWB		**7.1**	**5.6**	**11.6**	**13.9**	**14.3**	**20.9**	**19.1**	**21.4**	**18.7**	**15.4**	**13.2**	**10.2**
	2%	DB		**10.4**	**10.9**	**18.0**	**23.6**	**28.1**	**24.5**	**34.2**	**32.5**	**31.8**	**26.4**	**13.6**	**11.9**
		MCWB		**7.8**	**6.7**	**12.6**	**12.3**	**17.7**	**16.9**	**20.0**	**17.0**	**17.9**	**15.2**	**11.9**	**9.5**
	5%	DB		**9.4**	**9.9**	**16.3**	**21.4**	**26.3**	**30.1**	**33.2**	**24.9**	**30.6**	**13.1**	**18.1**	**0.9**
		MCWB		**5.4**	**7.2**	**13.2**	**10.4**	**12.9**	**16.9**	**22.5**	**13.3**	**17.5**	**7.9**	**13.7**	**6.8**
	10%	DB		**8.1**	**8.3**	**14.8**	**18.0**	**24.0**	**28.2**	**32.1**	**8.3**	**28.9**	**22.4**	**16.7**	**9.7**
		MCWB		**6.0**	**6.02**	**12.3**	**12.6**	**14.9**	**15.6**	**17.9**	**6.0**	**15.0**	**12.9**	**12.8**	**6.8**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**10.9**	**10.8**	**14.1**	**18.0**	**19.0**	**19.4**	**23.9**	**22.3**	**19.8**	**19.0**	**15.2**	**12.5**
		MCDB		**15.1**	**18.2**	**20.6**	**26.4**	**28.2**	**19.2**	**29.2**	**26.6**	**29.4**	**26.0**	**25.0**	**24.9**
	2%	WB		**9.0**	**9.9**	**13.3**	**15.7**	**18.2**	**18.8**	**23.1**	**22.0**	**19.3**	**18.7**	**14.9**	**11.9**
		MCDB		**13.3**	**22.6**	**21.0**	**27.1**	**28.0**	**20.0**	**34.2**	**33.0**	**26.8**	**24.0**	**19.8**	**16.9**
	5%	WB		**8.4**	**8.6**	**12.2**	**14.6**	**17.6**	**18.0**	**22.1**	**21.3**	**19.0**	**17.5**	**13.9**	**11.2**
		MCDB		**11.9**	**13.9**	**17.0**	**20.5**	**27.5**	**30.8**	**22.4**	**31.8**	**28.8**	**18.0**	**21.1**	**18.8**
	10%	WB		**7.9**	**7.6**	**11.1**	**13.7**	**17.0**	**17.1**	**21.4**	**20.8**	**18.6**	**16.7**	**12.5**	**10.5**
		MCDB		**13.1**	**11.3**	**18.2**	**23.8**	**19.2**	**33.0**	**22.7**	**34.2**	**26.1**	**19.6**	**20.2**	**18.0**
Mean Daily Temperature Range		MDBR		**8.1**	**7.7**	**9.2**	**11.2**	**11.5**	**13.8**	**12.5**	**14.5**	**12.0**	**12.6**	**11.2**	**6.8**
	5% DB	MCDBR		**10.4**	**11.6**	**14.0**	**14.1**	**13.3**	**17.0**	**14.4**	**16.4**	**14.3**	**16.4**	**14.5**	**7.6**
		MCWBR		**9.8**	**4.0**	**12.6**	**2.9**	**3.9**	**3.1**	**2.5**	**3.3**	**12.0**	**6.1**	**13.6**	**3.0**
	5% WB	MCDBR		**9.1**	**10.2**	**13.0**	**9.2**	**11.6**	**18.0**	**12.3**	**14.5**	**12.1**	**14.2**	**12.4**	**7.5**
		MCWBR		**8.8**	**8.9**	**11.7**	**3.0**	**3.6**	**3.0**	**1.9**	**2.8**	**10.6**	**5.7**	**11.9**	**2.5**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.18 Design Conditions for Çanakkale, Turkey

Lat: **40.08** Long: **26.24** Elev: **3** StdP: **101.16** Time Zone: **1.00 (EUW)** Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**-4.2**	**-1.7**	**- 7.1**	**75**	**-3.5**	**- 6.2**	**54**	**-1.7**	**12.0**	**27.2**	**10.2**	**2.0**	**10.0**	**140**

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8	**3.0**	**33.6**	**22.0**	**32.3**	**21.3**	**31.0**	**21.6**	**23.4**	**25.6**	**22.8**	**26.0**	**23.4**	**33.0**	**5.3**	**160**

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
22.2	**64**	**32.0**	**21.4**	**71**	**24.3**	**20.8**	**60**	**28.9**	**20.8**	**17.4**	**37.0**	**15.3**	**34.1**	**14.0**	**130**

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
20.8	**18.5**	**16.1**	**21.8**	**-10.7**	**21.1**	**2.3**	**2.2**	**-12.4**	**22.7**	**-13.7**	**24.0**	**-15.0**	**25.3**	**-16.7**	**26.9**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**3.3**	**-1.7**	**-1.7**	**-0.8**	**0.9**	**3.8**	**7.0**	**10.0**	**10.0**	**7.7**	**4.0**	**1.1**	**-0.7**
	Sd			**3.64**	**3.50**	**2.87**	**2.99**	**2.49**	**2.67**	**2.86**	**2.51**	**2.66**	**2.96**	**2.96**	**3.50**
	HDD10.0		**650**	**240**	**112**	**175**	**6**	**0**	**0**	**0**	**0**	**0**	**8**	**5**	**104**
	HDD18.3		**2730**	**749**	**338**	**659**	**184**	**129**	**0**	**0**	**0**	**0**	**81**	**252**	**339**
	CDD10.0		**3985**	**5**	**7**	**31**	**72**	**437**	**774**	**477**	**992**	**710**	**199**	**259**	**22**
	CDD18.3		**1276**	**0**	**0**	**0**	**0**	**51**	**285**	**220**	**485**	**212**	**15**	**8**	**0**
	CDH23.3		**6158**	**0**	**0**	**0**	**1**	**125**	**999**	**2073**	**2367**	**560**	**34**	**0**	**0**
	CDH26.7		**2191**	**0**	**0**	**0**	**0**	**1**	**334**	**851**	**932**	**72**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**13.4**	**16.3**	**14.1**	**22.1**	**26.7**	**33.1**	**34.7**	**34.9**	**27.3**	**25.3**	**20.3**	**15.4**
		MCWB		**11.9**	**15.6**	**12.3**	**19.8**	**17.4**	**18.2**	**22.4**	**21.1**	**16.8**	**21.3**	**19.8**	**11.5**
	2%	DB		**12.7**	**9.2**	**15.0**	**20.0**	**25.8**	**32.3**	**28.8**	**34.2**	**28.4**	**20.1**	**21.4**	**11.2**
		MCWB		**10.6**	**8.8**	**11.4**	**16.5**	**19.2**	**19.5**	**20.4**	**21.7**	**17.0**	**18.8**	**15.9**	**9.6**
	5%	DB		**4.9**	**12.9**	**14.0**	**17.5**	**15.5**	**30.4**	**32.0**	**32.4**	**27.2**	**22 8**	**20.2**	**13.8**
		MCWB		**0.6**	**11.4**	**11.7**	**15.8**	**11.8**	**18.5**	**21.6**	**20.9**	**19.8**	**21.5**	**17.7**	**12.3**
	10%	DB		**10.7**	**11.4**	**13.1**	**16.2**	**23.2**	**28.5**	**30.9**	**10.7**	**26.4**	**21.9**	**19.1**	**12.9**
		MCWB		**9.8**	**9.4**	**10.4**	**15.7**	**22.4**	**17.6**	**21.7**	**9.8**	**19.7**	**18.1**	**14.9**	**11.4**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**10.8**	**13.6**	**13.2**	**16.4**	**18.2**	**22.6**	**26.5**	**23.4**	**21.3**	**21.9**	**22.0**	**13.4**
		MCDB		**14.2**	**16.8**	**16.5**	**24.0**	**26.0**	**31.2**	**31.9**	**33.5**	**27.9**	**25.8**	**22.5**	**14.0**
	2%	WB		**10.4**	**11.6**	**12.5**	**15.6**	**17.8**	**22.2**	**24.6**	**22.9**	**21.0**	**21.3**	**20.9**	**12.9**
		MCDB		**12.8**	**14.8**	**15.6**	**19.5**	**26.8**	**32.0**	**28.0**	**27.9**	**26.7**	**25.3**	**21.8**	**13.8**
	5%	WB		**9.9**	**11.0**	**11.7**	**14.6**	**17.3**	**21.7**	**23.3**	**22.3**	**20.6**	**20.2**	**19.8**	**12.4**
		MCDB		**11.4**	**15.8**	**14.4**	**20.8**	**26.4**	**28.4**	**32.4**	**25.7**	**24.7**	**23.0**	**24.6**	**14.0**
	10%	WB		**9.1**	**9.7**	**11.0**	**13.5**	**16.8**	**20.9**	**22.6**	**21.8**	**19.9**	**19.4**	**18.5**	**12.0**
		MCDB		**12.8**	**13.1**	**14.0**	**17.0**	**25.8**	**30.1**	**33.0**	**25.3**	**24.3**	**26.2**	**22.0**	**15.1**
Mean Daily Temperature Range		MDBR		**7.2**	**6.4**	**6.4**	**8.4**	**9.3**	**9.4**	**11.2**	**9.8**	**8.6**	**9.4**	**5.9**	**6.5**
	5% DB	MCDBR		**8.3**	**7.6**	**8.4**	**10.7**	**11.8**	**12.5**	**13.9**	**12.3**	**10.8**	**11.8**	**7.1**	**5.6**
		MCWBR		**8.1**	**5.3**	**7.9**	**5.0**	**9.8**	**10.3**	**3.6**	**10.4**	**9.2**	**7.4**	**7.5**	**2.5**
	5% WB	MCDBR		**7.6**	**6.9**	**7.5**	**7.2**	**11.7**	**10.4**	**12.7**	**9.8**	**9.1**	**10.2**	**6.5**	**4.8**
		MCWBR		**7.6**	**5.0**	**7.4**	**5.8**	**10.1**	**9.1**	**3.6**	**8.3**	**8.0**	**6.1**	**6.8**	**2.4**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.19 Design Conditions for Çankırı,Turkey

Lat: **40.36** Long: **33.37** Elev: **100** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-8.1**	**-6.7**	**-10.7**	**4.2**	**0.4**	**-9.4**	**2.6**	**-6.0**	**5.2**	**6.5**	**4.6**	**26.8**	**2.1**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8	**3.0**	**34.6**	**20.3**	**33.4**	**21.1**	**22.3**	**25.8**	**21.2**	**32.8**	**20.4**	**30.7**	**20.4**	**30.7**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
19.7	**30.0**	**33.6**	**17.9**	**22.3**	**22.0**	**16.9**	**14.7**	**34.7**	**136.7**	**34.7**	**127.9**	**33.4**	**117.6**	**31.9**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
4.3	**3.9**	**3.4**	**25.0**	**-7.6**	**35.6**	**2.8**	**2.9**	**-9.2**	**37.3**	**-10.6**	**38.7**	**-11.8**	**40.1**	**-13.5**	**41.8**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours		Tavg	**3.3**	**-1.7**	**-1.7**	**-0.8**	**0.9**	**3.8**	**7.0**	**10.0**	**10.0**	**7.7**	**4.0**	**1.1**	**-0.7**
		Sd		**3.64**	**3.50**	**2.87**	**2.99**	**2.49**	**2.67**	**2.86**	**2.51**	**2.66**	**2.96**	**2.96**	**3.50**
		HDD10.0	**1540**	**581**	**231**	**150**	**24**	**21**	**0**	**0**	**0**	**0**	**22**	**269**	**242**
		HDD18.3	**3859**	**1079**	**463**	**397**	**230**	**140**	**35**	**0**	**0**	**50**	**201**	**766**	**498**
		CDD10.0	**1617**	**0**	**0**	**10**	**43**	**154**	**278**	**434**	**406**	**211**	**78**	**1**	**1**
		CDD18.3	**418**	**0**	**0**	**0**	**0**	**16**	**64**	**177**	**149**	**12**	**0**	**0**	**0**
		CDH23.3	**5363**	**0**	**0**	**0**	**0**	**220**	**733**	**2051**	**1772**	**538**	**49**	**0**	**0**
		CDH26.7	**2307**	**0**	**0**	**0**	**0**	**46**	**290**	**979**	**814**	**178**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**11.2**	**8.5**	**18.5**	**22.9**	**25.8**	**33.8**	**36.6**	**33.4**	**31.4**	**23.0**	**14.0**	**12.9**
		MCWB		**6.9**	**5.9**	**9.7**	**16.6**	**13.8**	**21.2**	**21.9**	**21.1**	**18.6**	**12.0**	**9.5**	**9.6**
	2%	DB		**9.3**	**4.3**	**16.8**	**21.3**	**19.4**	**32.6**	**34.5**	**35.3**	**30.3**	**24.7**	**16.6**	**5.9**
		MCWB		**4.2**	**2.3**	**12.6**	**13.9**	**14.7**	**21.1**	**21.0**	**21.4**	**17.3**	**13.5**	**11.5**	**2.6**
	5%	DB		**7.4**	**8.4**	**15.2**	**19.3**	**11.7**	**29.8**	**33.7**	**33.0**	**28.7**	**22.7**	**13.9**	**8.9**
		MCWB		**6.8**	**5.6**	**9.1**	**13.2**	**9.2**	**20.5**	**21.7**	**18.3**	**15.8**	**14.4**	**9.8**	**7.9**
	10%	DB		**6.0**	**7.0**	**12.8**	**17.2**	**23.9**	**27.7**	**32.0**	**6.0**	**26.7**	**20.9**	**11.2**	**8.1**
		MCWB		**2.7**	**5.1**	**5.9**	**11.6**	**16.9**	**16.7**	**17.9**	**2.7**	**14.4**	**14.5**	**6.9**	**6.8**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**7.8**	**8.1**	**10.8**	**13.5**	**18.3**	**20.0**	**23.5**	**23.7**	**18.5**	**14.9**	**12.4**	**9.5**
		MCDB		**10.4**	**8.5**	**19.1**	**24.7**	**31.0**	**33.6**	**30.7**	**37.0**	**32.0**	**26.2**	**19.0**	**15.0**
	2%	WB		**6.5**	**7.1**	**10.2**	**12.9**	**17.7**	**18.7**	**22.4**	**22.7**	**17.8**	**14.5**	**11.6**	**8.3**
		MCDB		**10.3**	**12.5**	**17.5**	**20.0**	**29.3**	**32.0**	**30.1**	**36.5**	**30.8**	**20.9**	**17.2**	**10.5**
	5%	WB		**5.6**	**6.0**	**8.9**	**12.0**	**16.5**	**17.6**	**21.4**	**21.4**	**16.7**	**13.9**	**9.9**	**7.3**
		MCDB		**10.0**	**10.6**	**18.5**	**19.0**	**27.2**	**29.0**	**21.1**	**35.3**	**26.5**	**25.0**	**16.2**	**10.0**
	10%	WB		**4.1**	**4.3**	**8.1**	**10.8**	**15.4**	**16.7**	**20.7**	**21.3**	**15.7**	**13.1**	**8.3**	**6.2**
		MCDB		**11.5**	**9.0**	**14.0**	**20.0**	**20.0**	**23.0**	**26.6**	**28.2**	**25.7**	**22.3**	**10.9**	**7.8**
Mean Daily Temperature Range		MDBR		**8.4**	**11.0**	**12.3**	**12.5**	**14.4**	**15.1**	**16.6**	**17.4**	**18.2**	**16.1**	**11.0**	**8.6**
	5% DB	MCDBR		**11.5**	**13.9**	**15.1**	**15.8**	**18.5**	**19.5**	**19.4**	**18.7**	**23.9**	**19.6**	**13.6**	**7.6**
		MCWBR		**10.7**	**8.3**	**6.4**	**5.0**	**4.8**	**3.5**	**4.2**	**5.3**	**9.8**	**8.1**	**12.6**	**3.2**
	5% WB	MCDBR		**10.7**	**14.3**	**11.6**	**15.3**	**18.0**	**14.6**	**18.2**	**17.7**	**21.6**	**18.1**	**13.3**	**5.9**
		MCWBR		**10.0**	**8.8**	**3.5**	**5.4**	**4.8**	**10.2**	**4.6**	**5.1**	**8.5**	**7.8**	**12.4**	**2.4**
Clear Sky Solar Irradiance		taub													
		taud													
		Ebn,noon													
		Edh,noon													

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.20 Design Conditions for Çorum,Turkey

Lat: **40.33** Long: **34.58** Elev: **798** StdP: **751** Time Zone: **1.00 (EUW)** Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-8.2**	**-6.7**	**- 9.9**	**1.9**	**-6.3**	**-8.9**	**2.7**	**-5.2**	**8.0**	**7.6**	**6.7**	**30.9**	**0.7**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**33.8**	**17.6**	**32.3**	**19.1**	**30.4**	**19.0**	**20.5**	**30.8**	**19.9**	**32.6**	**20.5**	**30.8**	**0.9**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
17.9	**18.4**	**20.0**	**16.9**	**16.2**	**31.0**	**16.4**	**14.1**	**30.8**	**132.0**	**34.0**	**121.0**	**32.3**	**109.9**	**30.5**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
6.3	**5.8**	**5.4**	**26.0**	**-10.3**	**35.7**	**3.0**	**2.9**	**-12.1**	**37.4**	**-13.5**	**38.9**	**-14.9**	**40.2**	**-16.7**	**42.0**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**10.5**	**0.9**	**1.7**	**6.3**	**10.0**	**16.4**	**17.8**	**22.1**	**22.3**	**16.7**	**10.6**	**6.8**	**0.6**
	Sd			**3.82**	**2.64**	**3.05**	**3.68**	**3.29**	**3.25**	**4.64**	**1.93**	**3.36**	**2.15**	**2.53**	**3.10**
	HDD10.0		**1466**	**564**	**232**	**121**	**41**	**0**	**0**	**0**	**0**	**0**	**17**	**199**	**291**
	HDD18.3		**3911**	**1078**	**464**	**371**	**248**	**154**	**48**	**0**	**0**	**70**	**239**	**689**	**549**
	CDD10.0		**1676**	**0**	**0**	**8**	**42**	**391**	**235**	**376**	**380**	**200**	**35**	**8**	**0**
	CDD18.3		**337**	**0**	**0**	**0**	**0**	**9**	**35**	**119**	**123**	**21**	**0**	**0**	**0**
	CDH23.3		**4117**	**0**	**0**	**0**	**0**	**314**	**543**	**1333**	**1542**	**373**	**11**	**0**	**0**
	CDH26.7		**1619**	**0**	**0**	**0**	**0**	**73**	**213**	**527**	**673**	**133**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**12.8**	**14.3**	**17.0**	**22.4**	**30.1**	**32.6**	**31.7**	**34.3**	**26.8**	**24.2**	**16.1**	**10.9**
		MCWB		**10.2**	**10.9**	**9.4**	**14.3**	**18.3**	**19.1**	**19.8**	**19.1**	**14.3**	**13.5**	**8.6**	**7.7**
	2%	DB		**10.9**	**4.1**	**18.4**	**21.0**	**28.6**	**31.5**	**33.0**	**27.2**	**30.2**	**20.8**	**19.1**	**9.2**
		MCWB		**7.7**	**3.4**	**10.3**	**14.0**	**19.4**	**17.3**	**17.7**	**14.9**	**17.0**	**12.2**	**13.2**	**5.6**
	5%	DB		**9.5**	**8.6**	**16.9**	**19.2**	**13.3**	**29.2**	**31.4**	**32.8**	**26.5**	**18.1**	**15.5**	**6.9**
		MCWB		**8.5**	**7.3**	**10.2**	**12.7**	**8.3**	**18.3**	**19.2**	**17.0**	**19.1**	**11.8**	**11.3**	**6.2**
	10%	DB		**7.3**	**6.8**	**14.9**	**17.3**	**24.8**	**26.8**	**29.7**	**7.3**	**24.8**	**16.3**	**13.7**	**5.2**
		MCWB		**5.0**	**4.9**	**7.8**	**11.1**	**15.1**	**14.3**	**16.5**	**5.0**	**15.1**	**14.2**	**7.8**	**4.1**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**8.5**	**7.4**	**12.5**	**15.1**	**17.7**	**21.5**	**20.9**	**20.9**	**20.5**	**15.2**	**13.8**	**8.6**
		MCDB		**18.0**	**14.1**	**20.2**	**23.5**	**33.0**	**29.4**	**33.7**	**34.0**	**33.7**	**20.3**	**19.9**	**16.1**
	2%	WB		**7.8**	**6.4**	**11.1**	**14.1**	**17.4**	**20.2**	**20.6**	**20.2**	**19.3**	**14.3**	**11.9**	**6.2**
		MCDB		**17.0**	**8.9**	**21.0**	**20.7**	**29.4**	**32.2**	**36.0**	**24.4**	**36.4**	**24.9**	**16.0**	**11.8**
	5%	WB		**6.8**	**5.1**	**9.8**	**13.5**	**16.5**	**18.9**	**20.0**	**19.5**	**17.3**	**12.9**	**10.6**	**5.0**
		MCDB		**9.6**	**10.0**	**17.5**	**23.3**	**29.2**	**33.0**	**33.6**	**30.0**	**23.0**	**21.0**	**19.6**	**5.6**
	10%	WB		**5.8**	**4.3**	**8.9**	**12.3**	**15.7**	**17.3**	**19.4**	**19.0**	**15.9**	**11.6**	**9.5**	**4.2**
		MCDB		**8.6**	**5.2**	**17.7**	**18.2**	**26.8**	**29.5**	**34.3**	**32.5**	**27.8**	**21.0**	**12.1**	**5.3**
Mean Daily Temperature Range		MDBR		**9.1**	**9.6**	**13.4**	**12.5**	**18.4**	**15.6**	**17.2**	**19.1**	**15.9**	**12.4**	**13.7**	**6.1**
	5% DB	MCDBR		**11.9**	**14.4**	**18.7**	**16.0**	**19.8**	**18.5**	**19.3**	**22.1**	**19.0**	**16.0**	**16.6**	**9.9**
		MCWBR		**11.6**	**8.4**	**9.5**	**5.4**	**16.7**	**4.8**	**4.9**	**6.3**	**6.4**	**7.2**	**15.2**	**6.1**
	5% WB	MCDBR		**10.8**	**16.1**	**16.8**	**12.1**	**18.3**	**18.8**	**17.7**	**19.6**	**15.1**	**12.8**	**15.3**	**10.6**
		MCWBR		**10.7**	**9.3**	**8.7**	**3.0**	**15.9**	**5.2**	**4.7**	**5.7**	**6.0**	**5.3**	**14.2**	**6.5**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.21 Design Conditions for Denizli, Turkey

Lat: **37.47** Long: **29.05** Elev: **428** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
3	**-0.2**	**0.7**	**-4.8**	**4.5**	**2.0**	**-4.2**	**4.6**	**2.0**	**4.6**	**18.1**	**3.9**	**31.5**	**3.1**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8	**3.0**	**37.9**	**24.4**	**36.9**	**21.2**	**35.6**	**22.1**	**23.9**	**39.4**	**22.9**	**35.4**	**23.8**	**38.1**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
20.9	**29.6**	**30.4**	**19.6**	**22.8**	**26.1**	**18.6**	**42.5**	**36.5**	**157.2**	**38.0**	**149.1**	**37.0**	**139.4**	**35.7**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
3.4	**3.1**	**2.9**	**26.0**	**0.7**	**38.3**	**2.4**	**2.5**	**-0.7**	**39.8**	**-1.8**	**41.0**	**-2.9**	**42.1**	**-4.3**	**43.6**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**16.6**	**6.4**	**6.8**	**9.9**	**15.0**	**21.8**	**25.3**	**29.2**	**28.2**	**25.1**	**18.5**	**11.7**	**8.8**
	Sd			**2.47**	**2.45**	**4.28**	**3.29**	**3.38**	**3.94**	**0.16**	**2.29**	**2.85**	**3.13**	**3.37**	**3.79**
	HDD10.0		**529**	**231**	**94**	**103**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**34**	**67**
	HDD18.3		**2439**	**740**	**321**	**515**	**114**	**25**	**48**	**0**	**0**	**0**	**38**	**391**	**294**
	CDD10.0		**3921**	**6**	**5**	**102**	**150**	**706**	**458**	**594**	**563**	**905**	**265**	**137**	**30**
	CDD18.3		**1555**	**0**	**0**	**0**	**15**	**233**	**209**	**337**	**306**	**407**	**45**	**4**	**0**
	CDH23.3		**14087**	**0**	**0**	**0**	**86**	**1050**	**2293**	**4247**	**3722**	**2194**	**478**	**19**	**0**
	CDH26.7		**7089**	**0**	**0**	**0**	**8**	**360**	**1128**	**1128**	**2397**	**1062**	**138**	**4**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**14.2**	**13.5**	**18.3**	**27.4**	**32.5**	**34.4**	**37.4**	**36.1**	**35.7**	**31.2**	**23.1**	**17.3**
		MCWB		**9.3**	**8.9**	**13.3**	**17.5**	**17.4**	**18.5**	**21.1**	**17.9**	**17.8**	**17.9**	**15.7**	**11.2**
	2%	DB		**13.1**	**9.6**	**19.8**	**18.2**	**31.6**	**36.9**	**33.1**	**31.9**	**28.9**	**22.2**	**21.9**	**16.0**
		MCWB		**8.7**	**5.3**	**14.5**	**12.2**	**16.8**	**23.9**	**17.4**	**18.9**	**18.7**	**14.7**	**14.6**	**10.5**
	5%	DB		**11.9**	**13.3**	**18.2**	**23.5**	**30.6**	**34.2**	**37.3**	**36.0**	**34.0**	**28.6**	**19.2**	**15.4**
		MCWB		**8.5**	**10.8**	**12.2**	**15.7**	**19.6**	**17.7**	**22.8**	**21.5**	**17.4**	**16.9**	**12.3**	**11.6**
	10%	DB		**10.7**	**11.7**	**16.9**	**21.0**	**28.8**	**32.8**	**36.0**	**10.7**	**33.0**	**25.9**	**17.4**	**14.7**
		MCWB		**6.7**	**8.6**	**12.5**	**14.9**	**18.8**	**17.4**	**21.5**	**6.7**	**18.1**	**14.9**	**11.5**	**9.6**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**9.1**	**11.2**	**12.4**	**17.2**	**18.7**	**22.4**	**25.0**	**23.9**	**18.9**	**20.6**	**15.7**	**11.9**
		MCDB		**14.3**	**18.3**	**19.9**	**23.0**	**31.2**	**37.0**	**35.0**	**36.9**	**35.0**	**36.0**	**23.7**	**19.4**
	2%	WB		**8.7**	**10.7**	**12.0**	**16.8**	**18.3**	**21.8**	**24.3**	**22.3**	**18.5**	**19.0**	**15.1**	**11.5**
		MCDB		**17.3**	**17.3**	**20.1**	**17.4**	**31.5**	**33.6**	**33.4**	**39.1**	**32.9**	**31.9**	**24.8**	**16.6**
	5%	WB		**8.1**	**9.4**	**11.4**	**15.8**	**17.8**	**21.3**	**23.8**	**21.5**	**20.0**	**17.8**	**14.3**	**10.8**
		MCDB		**12.5**	**13.9**	**18.1**	**29.2**	**31.0**	**32.9**	**38.0**	**37.0**	**34.0**	**31.4**	**15.8**	**13.3**
	10%	WB		**7.3**	**8.2**	**10.8**	**14.1**	**16.9**	**20.5**	**23.1**	**20.8**	**17.4**	**17.1**	**13.4**	**10.2**
		MCDB		**10.5**	**11.7**	**20.9**	**18.9**	**27.8**	**30.6**	**39.0**	**35.1**	**25.5**	**28.2**	**15.9**	**16.2**
Mean Daily Temperature Range		MDBR		**7.7**	**9.8**	**9.8**	**10.9**	**13.8**	**13.1**	**14.3**	**14.2**	**14.8**	**13.2**	**9.0**	**7.5**
	5% DB	MCDBR		**9.1**	**11.5**	**13.2**	**12.5**	**14.3**	**14.3**	**15.3**	**15.4**	**16.2**	**15.9**	**10.4**	**5.7**
		MCWBR		**8.0**	**5.2**	**11.1**	**4.4**	**10.7**	**2.3**	**4.3**	**4.0**	**11.6**	**7.3**	**8.8**	**1.7**
	5% WB	MCDBR		**8.9**	**9.4**	**11.8**	**11.7**	**14.1**	**13.7**	**15.1**	**16.0**	**15.0**	**15.1**	**8.5**	**5.3**
		MCWBR		**7.8**	**3.6**	**10.2**	**4.0**	**10.7**	**3.4**	**4.6**	**3.7**	**11.0**	**6.7**	**7.4**	**1.5**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.22 Design Conditions for Düzce, Turkey

Lat: **37.47** Long: **29.05** Elev: **428** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**-3.4**	**-2.3**	**-6.5**	**4.3**	**-4.3**	**- 5.6**	**4.1**	**-4.0**	**4.1**	**4.4**	**3.8**	**31.9**	**1.0**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**31.9**	**21.1**	**30.7**	**18.3**	**29.3**	**20.3**	**23.6**	**28.0**	**22.5**	**28.4**	**23.6**	**31.0**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
22.2	**23.9**	**27.5**	**21.1**	**19.6**	**27.3**	**20.3**	**17.7**	**30.1**	**112.2**	**32.0**	**105.4**	**30.8**	**97.8**	**29.4**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
3.6	**3.3**	**2.9**	**28.0**	**-3.0**	**31.6**	**2.2**	**2.6**	**-4.3**	**33.1**	**-5.4**	**34.3**	**-6.4**	**35.5**	**-7.7**	**37.1**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**13.3**	**5.5**	**5.0**	**7.9**	**12.3**	**16.5**	**19.9**	**23.5**	**22.0**	**18.9**	**14.1**	**9.8**	**6.9**
	Sd			**4.64**	**4.51**	**4.36**	**3.56**	**3.90**	**2.65**	**3.43**	**1.64**	**1.43**	**2.88**	**2.60**	**6.4**
	HDD10.0		**873**	**320**	**157**	**197**	**15**	**0**	**0**	**0**	**0**	**0**	**3**	**71**	**110**
	HDD18.3		**3156**	**793**	**372**	**636**	**181**	**165**	**8**	**0**	**0**	**8**	**131**	**510**	**352**
	CDD10.0		**2601**	**42**	**17**	**67**	**85**	**406**	**297**	**839**	**373**	**268**	**129**	**60**	**16**
	CDD18.3		**584**	**0**	**0**	**0**	**3**	**57**	**57**	**324**	**116**	**27**	**1**	**0**	**0**
	CDH23.3		**3452**	**0**	**0**	**2**	**14**	**340**	**608**	**1244**	**823**	**263**	**58**	**0**	**0**
	CDH26.7		**1060**	**0**	**0**	**0**	**0**	**98**	**240**	**459**	**221**	**39**	**3**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**16.2**	**20.0**	**19.3**	**25.0**	**27.2**	**33.0**	**30.8**	**31.8**	**26.1**	**26.4**	**21.7**	**18.0**
		MCWB		**11.2**	**11.9**	**15.5**	**17.2**	**18.4**	**24.0**	**23.0**	**23.4**	**18.1**	**17.6**	**15.5**	**10.4**
	2%	DB		**17.3**	**18.1**	**11.5**	**15.8**	**29.3**	**31.8**	**31.9**	**30.8**	**27.2**	**17.0**	**20.0**	**16.6**
		MCWB		**16.7**	**17.1**	**8.1**	**11.8**	**20.3**	**23.4**	**25.1**	**23.0**	**18.4**	**10.2**	**11.9**	**10.6**
	5%	DB		**15.8**	**16.7**	**19.1**	**20.4**	**26.9**	**30.1**	**30.6**	**28.9**	**26.0**	**22.4**	**17.5**	**15.7**
		MCWB		**11.8**	**13.9**	**10.5**	**15.1**	**18.2**	**18.4**	**21.9**	**17.9**	**18.5**	**15.7**	**13.9**	**8.4**
	10%	DB		**14.2**	**13.1**	**16.2**	**18.5**	**24.7**	**26.5**	**29.6**	**14.2**	**24.7**	**20.0**	**15.3**	**13.0**
		MCWB		**10.3**	**8.5**	**11.2**	**12.4**	**17.5**	**21.5**	**21.6**	**10.3**	**17.5**	**11.9**	**12.7**	**9.2**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**11.1**	**12.3**	**13.0**	**15.6**	**19.3**	**24.9**	**22.4**	**24.7**	**19.7**	**18.5**	**15.5**	**12.1**
		MCDB		**16.0**	**16.8**	**20.4**	**19.9**	**29.3**	**33.4**	**31.2**	**31.1**	**28.8**	**28.0**	**20.3**	**20.0**
	2%	WB		**10.6**	**11.2**	**12.5**	**14.3**	**18.7**	**23.4**	**22.1**	**23.8**	**19.0**	**17.6**	**14.6**	**11.3**
		MCDB		**15.6**	**17.8**	**15.8**	**20.4**	**26.2**	**32.3**	**30.2**	**25.3**	**27.9**	**27.9**	**19.1**	**18.1**
	5%	WB		**9.7**	**9.5**	**11.7**	**13.6**	**17.7**	**22.2**	**21.9**	**23.2**	**18.5**	**16.7**	**13.2**	**10.4**
		MCDB		**15.1**	**17.5**	**14.4**	**21.6**	**20.7**	**33.3**	**31.3**	**30.1**	**27.0**	**25.0**	**21.3**	**3.8**
	10%	WB		**8.9**	**8.0**	**11.0**	**12.5**	**17.0**	**20.5**	**21.4**	**22.3**	**17.9**	**15.9**	**12.1**	**9.8**
		MCDB		**16.4**	**17.4**	**12.8**	**16.8**	**26.3**	**29.3**	**30.3**	**26.0**	**25.2**	**23.0**	**21.0**	**14.5**
Mean Daily Temperature Range		MDBR		**8.6**	**9.5**	**9.7**	**9.4**	**13.1**	**13.7**	**11.5**	**11.8**	**11.5**	**11.3**	**11.0**	**7.6**
	5% DB	MCDBR		**12.9**	**12.4**	**17.2**	**11.6**	**16.3**	**17.9**	**13.6**	**14.2**	**14.6**	**15.1**	**14.5**	**11.8**
		MCWBR		**11.2**	**4.7**	**14.6**	**7.0**	**13.9**	**7.4**	**11.5**	**6.3**	**5.2**	**7.8**	**13.4**	**5.9**
	5% WB	MCDBR		**12.4**	**11.7**	**16.3**	**14.6**	**15.4**	**15.5**	**11.7**	**11.8**	**12.2**	**13.4**	**11.7**	**8.5**
		MCWBR		**10.9**	**9.6**	**13.2**	**10.2**	**13.2**	**6.6**	**10.3**	**5.2**	**4.9**	**7.1**	**11.0**	**4.5**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.23 Design Conditions for Edirne, Turkey

Lat: **41.4** Long: **26.34** Elev: **48** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-6.2**	**-3.8**	**-10.2**	**2.8**	**-3.9**	**- 7.8**	**4.5**	**1.5**	**6.0**	**13.8**	**5.3**	**-4.9**	**0.4**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8	**3.0**	**36.1**	**23.3**	**35.0**	**23.1**	**23.9**	**38.2**	**23.5**	**38.2**	**23.5**	**33.6**	**22.9**	**29.0**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
22.3	**36.0**	**27.7**	**21.8**	**21.5**	**33.4**	**21.2**	**17.7**	**24.0**	**137.8**	**36.2**	**130.5**	**35.1**	**121.1**	**33.6**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
5.2	**4.5**	**4.1**	**30.0**	**-6.1**	**36.1**	**2.4**	**2.5**	**-7.5**	**37.6**	**-8.6**	**38.7**	**-9.7**	**39.9**	**-11.2**	**41.4**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**15.3**	**3.4**	**4.4**	**7.9**	**12.7**	**18.3**	**23.4**	**25.0**	**27.9**	**21.0**	**15.4**	**9.9**	**6.3**
	Sd			**2.61**	**4.35**	**4.75**	**3.27**	**3.36**	**2.98**	**2.31**	**2.18**	**2.06**	**3.7**	**3.42**	**5.95**
	HDD10.0		**995**	**424**	**157**	**194**	**13**	**0**	**0**	**0**	**0**	**0**	**0**	**79**	**127**
	HDD18.3		**3202**	**931**	**389**	**635**	**168**	**87**	**1**	**4**	**0**	**5**	**112**	**499**	**370**
	CDD10.0		**4040**	**0**	**0**	**65**	**95**	**516**	**403**	**930**	**1109**	**661**	**168**	**78**	**14**
	CDD18.3		**1450**	**0**	**0**	**0**	**1**	**88**	**155**	**420**	**595**	**168**	**23**	**0**	**0**
	CDH23.3		**9036**	**0**	**0**	**2**	**57**	**498**	**1599**	**2147**	**3702**	**807**	**227**	**0**	**0**
	CDH26.7		**4207**	**0**	**0**	**0**	**3**	**106**	**724**	**982**	**2078**	**229**	**85**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**10.8**	**12.8**	**21.6**	**22.4**	**29.5**	**35.8**	**34.1**	**36.1**	**29.3**	**25.8**	**18.1**	**17.6**
		MCWB		**7.8**	**10.8**	**17.1**	**18.5**	**17.5**	**23.3**	**20.3**	**21.5**	**17.9**	**19.4**	**15.2**	**12.6**
	2%	DB		**9.5**	**14.2**	**20.4**	**16.7**	**22.7**	**34.8**	**33.9**	**37.1**	**30.7**	**29.0**	**20.6**	**10.2**
		MCWB		**8.4**	**11.3**	**16.1**	**11.7**	**15.4**	**24.0**	**22.3**	**22.9**	**18.7**	**17.8**	**16.0**	**9.6**
	5%	DB		**8.1**	**12.6**	**18.1**	**22.2**	**28.2**	**20.9**	**32.8**	**36.0**	**29.1**	**25.6**	**17.6**	**14.1**
		MCWB		**6.5**	**11.2**	**15.2**	**18.3**	**19.0**	**16.3**	**22.2**	**22.5**	**22.3**	**18.5**	**12.6**	**7.6**
	10%	DB		**7.1**	**10.1**	**16.3**	**19.9**	**26.6**	**30.8**	**31.6**	**7.1**	**27.9**	**21.7**	**15.6**	**13.2**
		MCWB		**4.5**	**7.9**	**14.3**	**14.3**	**19.0**	**19.2**	**17.6**	**4.5**	**19.2**	**17.9**	**10.9**	**11.6**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**9.0**	**10.9**	**14.6**	**17.0**	**18.7**	**22.0**	**24.4**	**24.5**	**22.2**	**19.7**	**17.0**	**13.0**
		MCDB		**11.1**	**13.1**	**22.1**	**18.3**	**27.7**	**35.0**	**28.5**	**36.6**	**28.3**	**20.6**	**22.1**	**15.1**
	2%	WB		**7.9**	**9.6**	**13.9**	**15.9**	**18.2**	**21.6**	**23.5**	**24.2**	**20.6**	**19.2**	**16.1**	**12.7**
		MCDB		**11.1**	**15.2**	**22.2**	**19.8**	**30.5**	**36.2**	**33.1**	**35.3**	**34.8**	**30.6**	**28.7**	**19.7**
	5%	WB		**7.1**	**8.6**	**13.0**	**14.2**	**17.6**	**20.5**	**23.0**	**23.8**	**19.2**	**18.5**	**15.1**	**12.1**
		MCDB		**8.2**	**11.5**	**14.3**	**24.0**	**29.5**	**33.4**	**25.5**	**28.3**	**30.6**	**22.0**	**27.2**	**15.1**
	10%	WB		**6.4**	**7.7**	**12.1**	**13.1**	**17.2**	**19.9**	**22.5**	**24.3**	**18.2**	**17.3**	**13.8**	**11.2**
		MCDB		**8.9**	**11.6**	**20.0**	**19.0**	**19.2**	**30.8**	**33.1**	**36.2**	**28.3**	**21.0**	**21.1**	**16.1**
Mean Daily Temperature Range		MDBR		**6.2**	**9.2**	**11.0**	**13.0**	**13.6**	**14.0**	**12.6**	**14.2**	**13.1**	**8.9**	**8.7**	**8.2**
	5% DB	MCDBR		**6.5**	**13.8**	**16.0**	**17.1**	**16.4**	**17.1**	**13.7**	**15.8**	**15.8**	**13.9**	**10.5**	**10.2**
		MCWBR		**6.6**	**8.3**	**14.3**	**6.9**	**13.8**	**3.4**	**11.7**	**13.2**	**12.7**	**4.6**	**10.0**	**5.5**
	5% WB	MCDBR		**6.9**	**16.0**	**13.7**	**11.2**	**15.1**	**14.2**	**12.8**	**14.2**	**13.9**	**12.9**	**9.9**	**9.7**
		MCWBR		**7.0**	**12.0**	**12.7**	**9.6**	**13.1**	**11.4**	**11.2**	**12.0**	**11.7**	**4.7**	**9.7**	**5.6**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.24 Design Conditions for Elazığ, Turkey

Lat: **38.4** Long: **39.13** Elev: **1105** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**-11.3**	**-9.5**	**-16.5**	**1.8**	**-10.8**	**-14.9**	**1.7**	**-10.8**	**10.2**	**1.0**	**8.5**	**7.0**	**2.3**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8	**3.0**	**36.1**	**20.7**	**35.1**	**19.9**	**34.1**	**20.1**	**21.1**	**35.2**	**20.3**	**35.2**	**19.6**	**35.2**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
15.4	**16.4**	**20.0**	**14.5**	**27.7**	**29.9**	**13.8**	**19.8**	**22.8**	**150.9**	**36.2**	**143.1**	**35.2**	**136.3**	**34.2**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
7.4	**7.0**	**5.9**	**22.0**	**-11.6**	**35.4**	**2.5**	**2.6**	**-13.1**	**36.9**	**-14.3**	**38.2**	**-15.5**	**39.4**	**-17.1**	**40.9**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**12.0**	**-0.1**	**-1.5**	**6.9**	**10.9**	**17.2**	**23.2**	**26.8**	**27.3**	**23.1**	**13.8**	**7.7**	**3.8**
	Sd			**3.14**	**5.51**	**3.51**	**4.09**	**3.44**	**3.83**	**0.34**	**1.38**	**2.55**	**3.00**	**2.36**	**2.02**
	HDD10.0		**1550**	**626**	**322**	**220**	**33**	**0**	**0**	**0**	**0**	**0**	**4**	**152**	**193**
	HDD18.3		**3982**	**1140**	**555**	**696**	**224**	**133**	**4**	**0**	**0**	**2**	**140**	**638**	**450**
	CDD10.0		**2512**	**0**	**0**	**31**	**60**	**445**	**396**	**520**	**535**	**393**	**121**	**121**	**0**
	CDD18.3		**902**	**0**	**0**	**0**	**2**	**64**	**150**	**262**	**278**	**146**	**0**	**0**	**0**
	CDH23.3		**10567**	**0**	**0**	**0**	**15**	**348**	**1696**	**3124**	**3490**	**1806**	**88**	**0**	**0**
	CDH26.7		**5369**	**0**	**0**	**0**	**0**	**78**	**797**	**1642**	**1994**	**856**	**2**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**7.4**	**10.9**	**18.4**	**20.0**	**27.4**	**35.0**	**36.9**	**35.9**	**34.0**	**24.1**	**14.9**	**8.8**
		MCWB		**5.4**	**7.7**	**11.3**	**11.6**	**17.2**	**20.3**	**19.7**	**20.7**	**19.9**	**13.7**	**9.9**	**6.1**
	2%	DB		**6..7**	**8.0**	**17.7**	**14.8**	**28.7**	**34.6**	**35.8**	**36.5**	**33.8**	**25.8**	**21.1**	**9.9**
		MCWB		**2.3**	**5.1**	**10.6**	**9.7**	**17.1**	**20.1**	**22.2**	**21.4**	**17.4**	**14.1**	**9.8**	**5.9**
	5%	DB		**5.9**	**7.0**	**5.5**	**19.9**	**27.2**	**33.1**	**34.9**	**35.8**	**32.9**	**23.9**	**12.9**	**8.7**
		MCWB		**5.7**	**6.1**	**4.2**	**13.0**	**14.7**	**17.6**	**19.6**	**22.2**	**18.7**	**12.5**	**9.2**	**7.2**
	10%	DB		**4.9**	**5.7**	**14.6**	**17.5**	**25.0**	**31.8**	**33.4**	**4.9**	**31.9**	**21.9**	**11.9**	**7.8**
		MCWB		**3.1**	**5.7**	**14.1**	**7.3**	**13.4**	**16.1**	**17.8**	**3.1**	**17.0**	**13.1**	**8.0**	**7.1**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**4.2**	**5.1**	**9.3**	**14.8**	**16.0**	**19.9**	**20.8**	**22.2**	**20.1**	**14.9**	**10.2**	**7.8**
		MCDB		**10.7**	**11.1**	**17.8**	**23.2**	**29.0**	**35.0**	**36.0**	**35.8**	**33.2**	**26.4**	**15.9**	**15.0**
	2%	WB		**3.4**	**4.7**	**8.9**	**14.2**	**15.4**	**19.3**	**20.2**	**21.4**	**18.9**	**14.5**	**9.7**	**7.4**
		MCDB		**7.5**	**9.8**	**18.2**	**21.0**	**22.1**	**34.7**	**36.0**	**37.8**	**34.8**	**24.0**	**15.4**	**15.0**
	5%	WB		**2.7**	**4.1**	**8.4**	**12.5**	**14.3**	**18.5**	**19.7**	**21.0**	**18.1**	**13.5**	**9.3**	**7.1**
		MCDB		**6.9**	**10.3**	**17.0**	**17.6**	**24.0**	**33.9**	**36.9**	**37.6**	**30.4**	**27.7**	**12.4**	**14.2**
	10%	WB		**2.4**	**3.1**	**7.5**	**11.0**	**13.6**	**18.0**	**18.8**	**20.3**	**17.4**	**12.7**	**8.9**	**6.2**
		MCDB		**8.5**	**9.9**	**14.6**	**19.0**	**26.8**	**34.3**	**32.0**	**38.2**	**33.8**	**25.4**	**16.0**	**10.0**
Mean Daily Temperature Range		MDBR		**7.7**	**8.4**	**11.3**	**11.4**	**14.6**	**15.8**	**15.7**	**17.3**	**16.3**	**13.6**	**8.6**	**7.2**
	5% DB	MCDBR		**8.0**	**8.3**	**14.7**	**13.7**	**17.6**	**17.2**	**16.5**	**18.6**	**17.3**	**17.4**	**8.2**	**8.1**
		MCWBR		**3.4**	**4.0**	**11.7**	**4.5**	**4.7**	**4.3**	**5.8**	**5.6**	**5.3**	**7.8**	**2.3**	**3.3**
	5% WB	MCDBR		**9.6**	**10.2**	**13.5**	**13.3**	**16.9**	**16.2**	**16.6**	**15.2**	**16.4**	**17.6**	**7.4**	**6.4**
		MCWBR		**7.4**	**8.1**	**10.9**	**3.7**	**4.4**	**4.5**	**6.6**	**13.7**	**5.3**	**8.5**	**2.0**	**2.3**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.25 Design Conditions for Erzincan, Turkey

Lat: **39.44** Long: **39.30** Elev: **1215** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**-8.8**	**-7.1**	**-12.2**	**2.6**	**-5.0**	**-11.2**	**2.8**	**-5.6**	**5.7**	**13.4**	**5.0**	**9.8**	**1.4**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**34.6**	**19.4**	**31.9**	**17.6**	**20.8**	**32.0**	**19.7**	**31.8**	**18.9**	**34.1**	**17.1**	**38.0**	**1.1**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
17.1	**36.5**	**32.4**	**16.2**	**28.6**	**33.7**	**15.2**	**19.4**	**17.0**	**143.2**	**34.8**	**131.1**	**33.0**	**123.3**	**31.9**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
4.7	**4.1**	**3.8**	**23.0**	**-8.6**	**34.4**	**2.5**	**2.6**	**-10.1**	**35.9**	**-11.3**	**37.2**	**-12.5**	**38.3**	**-14.0**	**39.9**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**11.3**	**0.3**	**-0.8**	**8.4**	**9.8**	**16.9**	**20.7**	**24.5**	**24.8**	**17.5**	**12.1**	**6.2**	**1.7**
	Sd			**2.10**	**3.71**	**4.15**	**3.10**	**3.22**	**3.32**	**0.67**	**1.40**	**4.56**	**2.84**	**2.79**	**1.69**
	HDD10.0		**1624**	**600**	**304**	**167**	**41**	**0**	**0**	**0**	**0**	**8**	**12**	**236**	**257**
	HDD18.3		**4248**	**1114**	**536**	**614**	**254**	**136**	**17**	**3**	**0**	**140**	**192**	**728**	**514**
	CDD10.0		**2298**	**0**	**0**	**67**	**36**	**426**	**320**	**450**	**459**	**457**	**77**	**6**	**0**
	CDD18.3		**623**	**0**	**0**	**0**	**0**	**47**	**88**	**196**	**202**	**91**	**0**	**0**	**0**
	CDH23.3		**5929**	**0**	**0**	**0**	**0**	**179**	**859**	**2182**	**2120**	**479**	**20**	**0**	**0**
	CDH26.7		**2518**	**0**	**0**	**0**	**0**	**12**	**272**	**1069**	**1026**	**140**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**7.2**	**6.2**	**20.7**	**21.0**	**27.6**	**32.4**	**34.4**	**34.4**	**30.8**	**24.4**	**13.9**	**11.2**
		MCWB		**4.6**	**4.2**	**12.2**	**11.4**	**15.4**	**18.1**	**18.5**	**18.5**	**16.8**	**12.3**	**8.9**	**6.4**
	2%	DB		**6.6**	**7.7**	**19.0**	**19.6**	**26.8**	**31.5**	**35.6**	**33.9**	**29.8**	**16.4**	**15.8**	**5.6**
		MCWB		**2.2**	**5.0**	**10.5**	**10.2**	**16.6**	**17.3**	**20.3**	**18.3**	**18.8**	**9.1**	**8.9**	**2.3**
	5%	DB		**5.9**	**6.0**	**17.6**	**17.3**	**25.5**	**29.8**	**34.2**	**22.8**	**28.2**	**10.0**	**13.6**	**0.5**
		MCWB		**3.3**	**3.1**	**11.3**	**11.0**	**15.9**	**18.8**	**19.2**	**11.9**	**16.5**	**5.4**	**7.9**	**-2.1**
	10%	DB		**4.8**	**5.1**	**15.9**	**15.3**	**23.6**	**27.9**	**32.0**	**4.8**	**25.8**	**20.8**	**11.7**	**7.9**
		MCWB		**3.8**	**4.5**	**12.2**	**10.3**	**13.7**	**16.1**	**17.9**	**3.9**	**13.4**	**12.7**	**6.7**	**6.7**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**3.3**	**5.1**	**12.2**	**12.1**	**18.5**	**18.0**	**22.3**	**19.2**	**18.7**	**14.7**	**10.3**	**7.0**
		MCDB		**6.0**	**10.0**	**21.4**	**22.0**	**33.8**	**33.1**	**34.8**	**30.4**	**31.0**	**23.0**	**20.7**	**9.5**
	2%	WB		**2.9**	**4.5**	**11.3**	**11.4**	**16.4**	**17.5**	**21.7**	**19.0**	**18.0**	**14.0**	**9.9**	**6.6**
		MCDB		**5.7**	**9.6**	**18.8**	**16.2**	**29.9**	**31.5**	**31.4**	**30.8**	**29.0**	**25.2**	**18.2**	**9.6**
	5%	WB		**2.4**	**3.8**	**10.5**	**10.5**	**15.7**	**16.7**	**20.8**	**18.5**	**16.9**	**13.4**	**9.2**	**5.9**
		MCDB		**6.4**	**6.0**	**16.0**	**20.2**	**28.0**	**24.0**	**30.2**	**33.6**	**33.0**	**25.8**	**12.6**	**2.7**
	10%	WB		**1.8**	**3.1**	**9.7**	**9.6**	**14.7**	**16.2**	**20.0**	**21.2**	**16.2**	**12.7**	**8.0**	**5.3**
		MCDB		**4.5**	**6.0**	**18.0**	**12.8**	**27.2**	**28.0**	**35.8**	**37.4**	**29.6**	**22.0**	**13.8**	**6.4**
Mean Daily Temperature Range		MDBR		**9.5**	**6.8**	**10.7**	**10.6**	**13.0**	**14.7**	**15.8**	**16.7**	**13.6**	**15.2**	**9.1**	**8.6**
	5% DB	MCDBR		**11.7**	**6.5**	**13.3**	**14.2**	**15.5**	**16.8**	**18.1**	**19.2**	**16.7**	**17.9**	**12.9**	**8.4**
		MCWBR		**9.8**	**2.7**	**6.2**	**3.9**	**4.8**	**3.2**	**4.1**	**6.3**	**5.4**	**6.9**	**6.0**	**4.1**
	5% WB	MCDBR		**9.1**	**6.6**	**13.6**	**11.9**	**15.0**	**17.2**	**16.3**	**16.4**	**15.1**	**13.8**	**12.1**	**8.7**
		MCWBR		**7.9**	**2.8**	**6.3**	**2.5**	**5.3**	**7.4**	**4.5**	**4.9**	**6.0**	**4.0**	**5.7**	**4.6**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.26 Design Conditions for Erzurum, Turkey

Lat: **39.55** Long: **41.16** Elev: **1869** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-25.3**	**-23.5**	**-28.9**	**2.3**	**-25.0**	**-26.2**	**0.6**	**-24.0**	**11.2**	**-4.4**	**9.8**	**7.5**	**2.4**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8	**3.0**	**31.4**	**19.2**	**31.4**	**19.2**	**28.4**	**16.7**	**19.1**	**29.9**	**18.5**	**34.8**	**17.9**	**25.0**	**1.9**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
16.1	**16.1**	**26.4**	**15.4**	**24.7**	**25.9**	**14.6**	**33.9**	**22.0**	**126.4**	**31.5**	**116.9**	**30.0**	**107.5**	**28.5**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
9.4	**8.7**	**7.6**	**21.0**	**-30.0**	**31.1**	**3.0**	**2.8**	**-31.8**	**32.8**	**-33.2**	**34.1**	**-34.6**	**35.4**	**-36.4**	**37.1**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**4.1**	**-11.2**	**-8.3**	**-2.5**	**4.1**	**10.6**	**14.2**	**20.3**	**14.1**	**20.3**	**7.0**	**-1.4**	**-6.5**
	Sd			**6.43**	**4.73**	**3.85**	**3.41**	**2.80**	**3.06**	**4.68**	**2.15**	**2.92**	**2.86**	**4.92**	**4.12**
	HDD10.0		**3444**	**656**	**511**	**774**	**182**	**26**	**2**	**0**	**0**	**0**	**96**	**686**	**511**
	HDD18.3		**6190**	**913**	**744**	**1289**	**427**	**240**	**125**	**13**	**7**	**130**	**350**	**1184**	**768**
	CDD10.0		**945**	**0**	**0**	**0**	**3**	**43**	**130**	**319**	**323**	**124**	**3**	**0**	**0**
	CDD18.3		**155**	**0**	**0**	**0**	**0**	**0**	**3**	**74**	**73**	**4**	**0**	**0**	**0**
	CDH23.3		**2298**	**0**	**0**	**0**	**0**	**0**	**214**	**760**	**1106**	**217**	**0**	**0**	**0**
	CDH26.7		**752**	**0**	**0**	**0**	**0**	**0**	**18**	**223**	**455**	**56**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**6.5**	**6.4**	**6.4**	**9.2**	**13.5**	**18.0**	**21.7**	**20.2**	**16.3**	**12.2**	**8.4**	**7.8**
		MCWB		**5.2**	**4.8**	**4.5**	**6.2**	**9.1**	**13.3**	**16.4**	**15.0**	**13.2**	**9.9**	**6.7**	**6.2**
	2%	DB		**5.7**	**5.2**	**5.1**	**7.4**	**10.5**	**14.8**	**18.6**	**17.5**	**14.2**	**10.2**	**7.2**	**6.6**
		MCWB		**4.8**	**4.2**	**3.6**	**5.4**	**7.6**	**11.3**	**14.3**	**14.2**	**12.1**	**8.1**	**6.0**	**5.5**
	5%	DB		**4.8**	**4.5**	**4.2**	**6.0**	**8.6**	**12.4**	**16.2**	**15.5**	**12.8**	**9.0**	**6.2**	**5.5**
		MCWB		**3.8**	**3.5**	**3.0**	**4.5**	**6.5**	**9.9**	**12.6**	**13.0**	**10.9**	**7.5**	**5.1**	**4.4**
	10%	DB		**3.6**	**3.5**	**3.2**	**5.0**	**7.2**	**10.3**	**14.2**	**13.7**	**11.3**	**8.0**	**5.1**	**4.2**
		MCWB		**2.6**	**2.5**	**2.1**	**3.8**	**5.6**	**8.7**	**11.8**	**11.9**	**9.8**	**6.9**	**4.0**	**3.2**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**-0.6**	**-0.4**	**3.5**	**11.0**	**14.1**	**20.1**	**20.5**	**19.1**	**18.1**	**11.4**	**6.2**	**3.0**
		MCDB		**0.9**	**1.0**	**8.1**	**19.4**	**25.0**	**22.3**	**30.0**	**30.0**	**18.0**	**23.2**	**14.6**	**8.5**
	2%	WB		**-1.2**	**-0.8**	**2.8**	**9.9**	**12.7**	**18.7**	**19.2**	**18.6**	**16.5**	**10.8**	**5.6**	**2.4**
		MCDB		**1.3**	**0.9**	**7.2**	**16.0**	**19.2**	**26.0**	**29.9**	**34.0**	**31.5**	**21.0**	**10.0**	**6.0**
	5%	WB		**-3.0**	**-2.3**	**1.7**	**8.7**	**11.8**	**18.0**	**18.8**	**17.9**	**15.4**	**10.0**	**4.7**	**2.0**
		MCDB		**-2.0**	**-1.0**	**4.8**	**17.5**	**19.3**	**22.2**	**27.0**	**33.0**	**27.7**	**12.2**	**9.8**	**4.3**
	10%	WB		**-4.3**	**-3.1**	**0.8**	**6.9**	**11.2**	**16.5**	**18.1**	**17.4**	**14.3**	**9.2**	**3.5**	**1.3**
		MCDB		**-3.8**	**-1.3**	**3.1**	**14.0**	**16.2**	**22.4**	**26.3**	**30.8**	**22.5**	**10.8**	**8.1**	**4.3**
Mean Daily Temperature Range		MDBR		**11.0**	**12.2**	**8.9**	**11.7**	**13.0**	**17.1**	**14.8**	**18.7**	**18.4**	**16.5**	**11.6**	**10.7**
	5% DB	MCDBR		**11.8**	**11.6**	**9.5**	**15.7**	**15.3**	**21.1**	**17.5**	**22.7**	**22.7**	**22.9**	**11.5**	**11.3**
		MCWBR		**7.1**	**6.4**	**5.0**	**5.9**	**3.9**	**5.5**	**4.4**	**7.0**	**9.6**	**10.9**	**6.0**	**5.7**
	5% WB	MCDBR		**7.3**	**10.4**	**9.1**	**14.9**	**13.9**	**21.6**	**16.2**	**19.7**	**20.7**	**20.2**	**13.9**	**9.1**
		MCWBR		**4.6**	**6.0**	**4.7**	**5.9**	**3.9**	**8.0**	**4.5**	**5.9**	**9.9**	**9.4**	**7.6**	**4.5**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.27 Design Conditions for Eskisehir, Turkey

Lat: **39.46** Long: **30.31** Elev: **800** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	-12.6	-9.7	-14.8	1.3	-11.1	-12.5	1.6	-10.8	4.4	-3.3	4.0	4.3	1.6	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	3.0	34.0	19.2	32.3	19.7	30.9	18.5	19.7	30.3	19.1	31.3	19.7	32.1	0.9	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
16.9	13.2	21.7	16.2	12.6	26.9	15.4	11.7	22.4	133.4	34.2	121.4	32.4	112.6	30.9	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
3.9	3.6	3.2	27.0	-12.4	33.6	2.3	2.4	-13.7	35.0	-14.8	36.2	-15.9	37.3	-17.3	38.7

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		12.1	-1.6	-3.2	5.8	11.2	15.9	21.8	23.8	24.4	19.3	13.9	8.8	3.5
	Sd			4.52	3.68	4.92	3.34	3.46	3.30	3.05	1.64	2.38	3.59	3.19	3.20
	HDD10.0		2321	708	711	292	51	1	0	0	0	0	12	126	419
	HDD18.3		5544	1214	1159	774	404	181	17	0	0	41	267	570	918
	CDD10.0		3864	0	0	33	120	372	699	859	896	560	255	54	16
	CDD18.3		1095	0	0	0	0	37	226	344	382	103	3	0	0
	CDH23.3		5467	0	0	0	0	0	229	1055	1668	1944	109	0	0
	CDH26.7		2031	0	0	0	0	43	391	658	847	90	2	0	0
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		8.4	4.2	20.0	20.2	28.9	35.3	35.1	35.3	29.7	26.7	21.2	17.3
		MCWB		6.1	2.9	10.6	12.1	14.8	19.1	18.9	19.1	15.5	14.6	12.4	10.0
	2%	DB		-0.7	0.2	5.2	7.8	14.9	27.0	30.3	25.4	27.7	11.2	9.0	5.0
		MCWB		-1.6	-0.2	2.2	2.1	10.2	15.8	17.6	14.7	15.4	6.9	5.9	0.5
	5%	DB		-2.1	-1.1	4.1	12.4	19.0	25.7	28.9	30.8	11.2	18.5	6.9	4.1
		MCWB		-3.1	-2.8	0.8	6.6	11.4	15.4	17.6	17.2	6.9	11.2	4.2	0.8
	10%	DB		-3.4	-2.2	2.9	10.3	17.7	24.2	27.7	29.3	23.2	16.2	5.8	3.0
		MCWB		-6.2	-3.5	0.2	7.7	8.9	15.1	15.4	16.8	15.9	8.3	2.1	1.1
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		5.8	4.1	11.2	16.7	16.2	19.7	21.4	19.5	16.3	15.7	12.5	10.4
		MCDB		8.7	7.6	22.9	29.7	29.6	32.3	25.2	35.7	30.6	22.5	21.5	17.5
	2%	WB		4.6	3.4	10.3	15.4	15.7	18.4	20.3	19.2	16.1	15.1	11.6	9.0
		MCDB		7.1	5.9	18.7	26.1	28.6	31.4	34.3	34.9	26.6	27.7	21.3	16.1
	5%	WB		3.8	2.7	9.7	13.6	15.3	17.6	19.7	18.9	15.7	14.5	10.6	7.9
		MCDB		8.2	5.0	16.5	23.0	26.0	35.3	32.6	30.4	29.1	23.6	20.5	12.8
	10%	WB		2.4	1.3	9.0	12.3	14.7	16.9	19.1	18.4	15.2	14.0	9.4	6.4
		MCDB		4.8	2.0	13.6	15.8	24.1	27.8	23.9	35.2	27.4	25.2	19.3	14.1
Mean Daily Temperature Range		MDBR		5.2	6.7	9.5	10.9	12.5	13.1	13.4	13.8	13.9	12.2	9.6	6.3
	5% DB	MCDBR		6.4	6.0	14.5	12.0	16.0	16.6	14.9	15.7	16.0	15.3	14.1	9.6
		MCWBR		6.0	5.6	11.7	10.3	12.7	12.3	11.9	12.0	12.8	13.2	12.2	7.7
	5% WB	MCDBR		6.4	6.0	12.4	11.9	13.3	13.3	13.6	13.8	14.2	12.9	12.1	8.6
		MCWBR		6.0	5.6	10.6	10.1	10.9	10.7	11.0	10.8	11.4	11.3	10.8	7.6
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.28 Design Conditions for Gaziantep, Turkey

Lat: **37.05** Long: **37.22** Elev: **855** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**-4.7**	**-2.9**	**-12.35**	**3.7**	**-2.9**	**-10.7**	**3.2**	**-3.4**	**3.6**	**13.3**	**3.1**	**28.5**	**1.7**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8	**3.0**	**38.3**	**20.6**	**38.3**	**20.6**	**35.7**	**21.7**	**24.4**	**39.5**	**23.9**	**27.6**	**23.4**	**28.9**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
22.5	**23.6**	**25.8**	**21.8**	**23.7**	**24.8**	**21.4**	**35.4**	**32.5**	**166.6**	**38.3**	**155.9**	**37.0**	**146.3**	**35.8**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
2.9	**2.7**	**2.4**	**26.0**	**-5.7**	**39.0**	**2.3**	**2.7**	**-7.1**	**40.6**	**-8.2**	**41.9**	**-9.3**	**43.2**	**-10.7**	**44.8**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**15.2**	**2.4**	**3.5**	**9.6**	**13.4**	**18.5**	**24.6**	**28.7**	**28.3**	**23.1**	**18.1**	**11.3**	**6.9**
	Sd			**2.44**	**3.36**	**3.34**	**3.57**	**3.96**	**2.97**	**5.71**	**2.28**	**2.69**	**2.76**	**1.66**	**2.02**
	HDD10.0		**628**	**235**	**183**	**95**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**93**
	HDD18.3		**2507**	**492**	**415**	**538**	**148**	**97**	**2**	**0**	**0**	**2**	**41**	**421**	**351**
	CDD10.0		**3028**	**0**	**0**	**72**	**111**	**525**	**437**	**580**	**567**	**393**	**252**	**91**	**0**
	CDD18.3		**1114**	**0**	**0**	**0**	**2**	**107**	**190**	**323**	**310**	**146**	**36**	**0**	**0**
	CDH23.3		**13427**	**0**	**0**	**0**	**73**	**594**	**2062**	**4332**	**4140**	**1658**	**568**	**0**	**0**
	CDH26.7		**6942**	**0**	**0**	**0**	**0**	**214**	**960**	**2427**	**2399**	**726**	**215**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**9.5**	**10.5**	**18.5**	**26.1**	**32.8**	**36.2**	**37.0**	**40.0**	**34.0**	**29.9**	**22.3**	**15.3**
		MCWB		**6.1**	**9.6**	**11.1**	**16.4**	**25.1**	**24.2**	**24.4**	**23.6**	**23.4**	**28.5**	**14.2**	**11.3**
	2%	DB		**8.7**	**12.4**	**19.9**	**25.1**	**31.0**	**35.3**	**38.0**	**33.2**	**27.8**	**21.7**	**21.0**	**14.4**
		MCWB		**8.5**	**7.9**	**13.3**	**16.8**	**23.2**	**19.3**	**24.0**	**23.6**	**16.4**	**0.3**	**9.2**	**11.4**
	5%	DB		**1.2**	**10.4**	**18.3**	**23.8**	**16.4**	**33.9**	**36.8**	**37.3**	**32.4**	**29.7**	**19.8**	**6.7**
		MCWB		**-0.1**	**9.6**	**11.9**	**14.9**	**14.5**	**22.3**	**23.8**	**23.5**	**24.9**	**16.5**	**10.1**	**5.3**
	10%	DB		**7.0**	**8.8**	**16.7**	**21.1**	**26.4**	**31.8**	**35.7**	**36.5**	**30.8**	**27.3**	**18.2**	**11.0**
		MCWB		**6.8**	**8.7**	**12.9**	**14.1**	**16.1**	**22.1**	**25.1**	**26.2**	**17.2**	**17.1**	**14.5**	**9.9**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**7.0**	**8.5**	**10.6**	**18.4**	**18.3**	**21.8**	**20.8**	**25.4**	**24.9**	**18.8**	**15.1**	**11.8**
		MCDB		**10.5**	**14.8**	**16.1**	**30.1**	**28.4**	**35.0**	**35.7**	**35.2**	**32.4**	**33.4**	**18.8**	**21.6**
	2%	WB		**6.4**	**7.7**	**10.2**	**15.9**	**17.0**	**21.3**	**20.5**	**24.8**	**23.7**	**18.3**	**13.3**	**10.8**
		MCDB		**9.4**	**15.0**	**21.0**	**25.4**	**23.2**	**33.5**	**38.5**	**38.5**	**35.0**	**30.9**	**24.2**	**16.5**
	5%	WB		**5.7**	**7.0**	**9.5**	**15.0**	**15.9**	**20.6**	**20.0**	**24.3**	**23.4**	**17.6**	**11.6**	**9.6**
		MCDB		**6.8**	**13.8**	**19.2**	**27.5**	**24.0**	**38.0**	**37.0**	**33.6**	**35.1**	**34.4**	**19.2**	**15.5**
	10%	WB		**5.0**	**6.1**	**8.8**	**14.1**	**15.3**	**19.8**	**19.4**	**20.6**	**22.8**	**17.0**	**10.8**	**9.1**
		MCDB		**7.0**	**8.0**	**17.5**	**31.0**	**24.2**	**27.8**	**32.0**	**35.7**	**30.5**	**30.4**	**17.0**	**19.6**
Mean Daily Temperature Range		MDBR		**7.4**	**9.7**	**11.1**	**11.9**	**13.4**	**13.4**	**15.1**	**15.5**	**13.9**	**13.0**	**10.9**	**8.3**
	5% DB	MCDBR		**9.3**	**11.7**	**13.5**	**15.3**	**16.0**	**14.6**	**16.8**	**16.5**	**14.7**	**16.9**	**14.3**	**12.1**
		MCWBR		**5.0**	**6.4**	**10.2**	**4.6**	**2.1**	**3.0**	**3.4**	**4.2**	**5.1**	**6.1**	**2.7**	**7.8**
	5% WB	MCDBR		**7.6**	**8.9**	**12.2**	**14.9**	**12.4**	**11.7**	**14.2**	**15.9**	**15.3**	**16.3**	**19.2**	**9.6**
		MCWBR		**5.3**	**6.1**	**9.7**	**5.4**	**4.2**	**4.0**	**5.2**	**4.4**	**5.5**	**6.5**	**4.3**	**6.2**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.29 Design Conditions for Giresun, Turkey

Lat: **40.55** Long: **38.24** Elev: **38** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**1.1**	**2.1**	**-8.0**	**6.5**	**7.6**	**-6.1**	**5.5**	**4.8**	**6.8**	**4.5**	**5.5**	**6.0**	**0.2**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**29.4**	**23.5**	**29.4**	**23.5**	**27.7**	**23.3**	**23.9**	**29.9**	**23.6**	**29.3**	**23.1**	**28.3**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
22.9	**21.3**	**27.7**	**22.5**	**20.1**	**27.0**	**22.0**	**19.2**	**27.7**	**97.9**	**29.5**	**93.4**	**28.6**	**89.4**	**27.8**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
5.1	**4.3**	**3.9**	**28.0**	**1.4**	**31.6**	**1.2**	**1.4**	**0.7**	**32.4**	**0.1**	**33.1**	**-0.5**	**33.7**	**-1.2**	**34.5**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**15.2**	**7.9**	**6.4**	**8.4**	**11.7**	**17.9**	**19.7**	**25.3**	**23.8**	**20.2**	**15.8**	**13.0**	**10.5**
	Sd			**3.64**	**5.16**	**3.51**	**3.44**	**1.86**	**2.40**	**4.97**	**1.25**	**2.98**	**2.84**	**2.79**	**3.58**
	HDD10.0		**520**	**174**	**132**	**153**	**17**	**0**	**2**	**0**	**0**	**0**	**0**	**4**	**40**
	HDD18.3		**2548**	**641**	**338**	**620**	**199**	**52**	**290**	**0**	**0**	**35**	**86**	**322**	**244**
	CDD10.0		**3371**	**47**	**33**	**52**	**69**	**473**	**290**	**947**	**427**	**612**	**180**	**184**	**57**
	CDD18.3		**860**	**0**	**6**	**5**	**2**	**27**	**52**	**432**	**169**	**149**	**9**	**5**	**3**
	CDH23.3		**3099**	**0**	**10**	**3**	**4**	**24**	**178**	**1791**	**905**	**144**	**29**	**4**	**7**
	CDH26.7		**486**	**0**	**0**	**0**	**0**	**2**	**36**	**380**	**68**	**0**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**18.0**	**24.8**	**23.5**	**23.6**	**26.0**	**29.1**	**30.7**	**28.0**	**26.0**	**25.0**	**21.6**	**24.3**
		MCWB		**10.7**	**13.9**	**19.0**	**20.6**	**19.0**	**22.7**	**24.1**	**22.7**	**19.0**	**13.7**	**11.4**	**13.2**
	2%	DB		**16.0**	**21.4**	**22.0**	**21.2**	**23.0**	**27.4**	**29.9**	**27.9**	**25.4**	**24.0**	**19.8**	**22.9**
		MCWB		**11.0**	**11.2**	**11.6**	**15.4**	**14.2**	**23.6**	**23.9**	**23.6**	**20.7**	**15.1**	**12.7**	**12.4**
	5%	DB		**14.5**	**20.0**	**19.4**	**19.9**	**21.7**	**24.9**	**29.4**	**27.4**	**24.8**	**21.9**	**18.2**	**18.6**
		MCWB		**8.9**	**11.3**	**12.7**	**14.3**	**20.0**	**20.1**	**23.7**	**23.6**	**13.9**	**14.6**	**13.1**	**11.0**
	10%	DB		**13.4**	**13.1**	**13.8**	**17.5**	**20.8**	**23.3**	**28.6**	**13.4**	**23.8**	**20.0**	**17.4**	**15.0**
		MCWB		**9.7**	**12.6**	**9.9**	**12.3**	**17.7**	**18.9**	**21.9**	**9.7**	**15.8**	**11.4**	**11.5**	**8.0**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**9.9**	**16.1**	**13.7**	**16.3**	**18.1**	**22.3**	**24.5**	**24.2**	**21.4**	**17.9**	**16.3**	**15.0**
		MCDB		**11.0**	**19.2**	**24.0**	**20.3**	**21.9**	**27.6**	**29.0**	**29.8**	**25.8**	**22.0**	**19.0**	**19.4**
	2%	WB		**9.3**	**13.3**	**10.5**	**15.7**	**17.6**	**21.7**	**24.1**	**24.0**	**21.1**	**17.2**	**15.2**	**13.4**
		MCDB		**16.2**	**24.8**	**22.0**	**20.9**	**22.1**	**24.6**	**27.8**	**27.0**	**24.0**	**24.2**	**18.9**	**24.5**
	5%	WB		**8.6**	**10.8**	**9.4**	**15.1**	**17.3**	**20.5**	**23.7**	**23.7**	**20.6**	**16.6**	**14.3**	**12.9**
		MCDB		**10.6**	**20.7**	**17.0**	**18.7**	**20.9**	**25.0**	**28.2**	**25.0**	**23.8**	**19.8**	**15.6**	**15.6**
	10%	WB		**8.0**	**7.3**	**8.2**	**14.0**	**16.8**	**19.8**	**23.4**	**23.2**	**20.2**	**16.0**	**13.1**	**12.4**
		MCDB		**16.8**	**16.7**	**17.0**	**18.8**	**18.5**	**22.4**	**25.6**	**27.0**	**25.0**	**20.1**	**16.7**	**22.9**
Mean Daily Temperature Range		MDBR		**5.5**	**6.0**	**6.1**	**6.6**	**5.7**	**6.5**	**6.6**	**6.1**	**5.6**	**6.2**	**5.4**	**5.2**
	5% DB	MCDBR		**7.8**	**11.4**	**12.8**	**10.9**	**6.6**	**8.6**	**6.3**	**7.1**	**6.0**	**9.6**	**7.6**	**10.4**
		MCWBR		**2.7**	**6.2**	**2.5**	**3.4**	**5.9**	**3.8**	**5.5**	**3.1**	**2.0**	**3.3**	**3.5**	**2.2**
	5% WB	MCDBR		**6.2**	**9.8**	**10.2**	**9.7**	**6.5**	**8.2**	**6.3**	**6.1**	**5.7**	**7.5**	**7.0**	**6.9**
		MCWBR		**2.2**	**7.5**	**8.2**	**3.4**	**6.3**	**3.7**	**5.5**	**2.9**	**2.2**	**3.1**	**3.7**	**2.5**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.30 Design Conditions for Gümüşhane, Turkey

Lat: **40.27** Long: **39.27** Elev: **1219** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**-10.2**	**-8.8**	**-13.1**	**1.9**	**-10.4**	**-12.3**	**2.4**	**-7.8**	**7.6**	**24.8**	**6.8**	**24.2**	**0.9**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
2	**3.0**	**33.7**	**18.2**	**31.9**	**17.8**	**29.7**	**15.7**	**21.4**	**33.8**	**20.1**	**24.2**	**21.3**	**27.7**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
19.6	**17.7**	**27.0**	**18.8**	**18.2**	**29.0**	**16.8**	**18.0**	**28.2**	**135.2**	**33.7**	**123.5**	**32.0**	**109.9**	**29.8**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
6.2	**6.0**	**5.2**	**24.0**	**-11.0**	**34.5**	**2.5**	**2.7**	**-12.5**	**36.1**	**-13.6**	**37.4**	**-14.8**	**38.7**	**-16.2**	**40.3**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours		Tavg	**9.6**	**-1.9**	**-0.1**	**3.9**	**8.1**	**14.4**	**16.6**	**21.8**	**21.8**	**17.1**	**10.5**	**4.7**	**2.4**
		Sd		**3.17**	**4.59**	**2.87**	**3.55**	**3.10**	**4.07**	**5.34**	**2.12**	**3.31**	**2.37**	**3.50**	**6.74**
		HDD10.0	**1893**	**735**	**199**	**77**	**6**	**0**	**0**	**0**	**0**	**0**	**23**	**322**	**237**
		HDD18.3	**4530**	**1250**	**534**	**447**	**306**	**245**	**79**	**2**	**0**	**117**	**240**	**815**	**493**
		CDD10.0	**1712**	**0**	**0**	**9**	**20**	**277**	**199**	**367**	**365**	**429**	**40**	**4**	**1**
		CDD18.3	**298**	**0**	**0**	**0**	**0**	**2**	**29**	**112**	**108**	**47**	**0**	**0**	**0**
		CDH23.3	**3232**	**0**	**0**	**0**	**0**	**90**	**381**	**1198**	**1200**	**360**	**2**	**0**	**0**
		CDH26.7	**1276**	**0**	**0**	**0**	**0**	**3**	**124**	**1198**	**521**	**92**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**8.8**	**12.2**	**20.2**	**19.9**	**27.0**	**31.9**	**36.4**	**34.3**	**31.0**	**22.1**	**17.4**	**14.0**
		MCWB		**5.7**	**9.8**	**10.9**	**15.1**	**15.1**	**17.1**	**20.7**	**17.6**	**18.3**	**12.4**	**9.4**	**8.8**
	2%	DB		**7.4**	**10.0**	**19.4**	**18.0**	**25.9**	**30.0**	**35.0**	**33.5**	**29.4**	**19.6**	**16.0**	**12.0**
		MCWB		**6.1**	**4.6**	**11.8**	**9.6**	**15.9**	**16.1**	**21.2**	**17.9**	**19.4**	**10.5**	**9.9**	**6.7**
	5%	DB		**5.4**	**8.8**	**15.8**	**16.3**	**24.1**	**27.8**	**32.4**	**32.2**	**27.2**	**18.0**	**14.6**	**10.3**
		MCWB		**3.5**	**5.7**	**9.9**	**12.4**	**15.7**	**17.3**	**17.7**	**18.2**	**16.3**	**9.6**	**8.9**	**7.3**
	10%	DB		**3.2**	**7.0**	**12.8**	**14.2**	**22.2**	**25.0**	**29.6**	**30.0**	**25.1**	**15.9**	**10.9**	**8.9**
		MCWB		**2.7**	**4.3**	**8.9**	**7.8**	**12.9**	**16.0**	**17.3**	**16.1**	**15.9**	**8.7**	**6.4**	**7.1**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**3.3**	**7.5**	**11.1**	**13.2**	**16.5**	**17.7**	**22.8**	**19.4**	**19.9**	**12.8**	**10.2**	**8.8**
		MCDB		**9.2**	**12.2**	**20.6**	**25.0**	**25.4**	**30.4**	**32.2**	**29.8**	**29.9**	**16.8**	**15.9**	**8.7**
	2%	WB		**3.1**	**6.3**	**10.4**	**11.9**	**15.6**	**16.4**	**21.9**	**18.8**	**18.1**	**11.9**	**9.5**	**8.1**
		MCDB		**8.0**	**10.3**	**11.2**	**21.8**	**26.4**	**26.8**	**24.0**	**29.0**	**25.9**	**22.8**	**17.0**	**16.8**
	5%	WB		**1.6**	**5.1**	**8.7**	**10.4**	**14.2**	**15.5**	**21.3**	**18.2**	**16.9**	**10.9**	**9.0**	**7.3**
		MCDB		**5.6**	**10.0**	**16.6**	**17.1**	**30.0**	**32.4**	**27.0**	**33.7**	**29.8**	**11.8**	**15.3**	**13.3**
	10%	WB		**0.5**	**4.0**	**7.3**	**9.4**	**13.7**	**14.9**	**20.5**	**21.3**	**16.2**	**10.4**	**7.8**	**6.1**
		MCDB		**1.0**	**6.4**	**13.3**	**10.6**	**16.2**	**31.0**	**29.8**	**32.4**	**29.8**	**11.8**	**14.2**	**8.8**
Mean Daily Temperature Range		MDBR		**9.9**	**10.1**	**10.0**	**10.8**	**14.7**	**13.1**	**15.8**	**15.9**	**14.8**	**10.0**	**9.1**	**7.7**
	5% DB	MCDBR		**12.9**	**10.6**	**16.5**	**13.4**	**17.9**	**17.5**	**18.0**	**19.7**	**18.6**	**14.6**	**14.0**	**6.4**
		MCWBR		**7.2**	**5.7**	**6.7**	**5.0**	**5.1**	**2.2**	**4.3**	**5.1**	**5.6**	**5.7**	**6.4**	**2.0**
	5% WB	MCDBR		**13.4**	**9.2**	**15.9**	**10.6**	**18.0**	**11.2**	**16.5**	**15.5**	**17.2**	**11.8**	**12.9**	**7.4**
		MCWBR		**9.0**	**5.0**	**6.5**	**4.5**	**5.7**	**5.0**	**4.3**	**4.7**	**5.3**	**4.6**	**5.9**	**3.0**
Clear Sky Solar Irradiance		taub													
		taud													
		Ebn,noon													
		Edh,noon													

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.31 Design Conditions for Hakkari, Turkey

Lat: **37.34** Long: **43.46** Elev: **1720** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-10.1**	**-9.0**	**-16.6**	**1.2**	**-5.4**	**-14.9**	**1.4**	**-6.0**	**5.5**	**6.8**	**4.8**	**14.0**	**2.2**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**33.3**	**18.3**	**32.1**	**16.1**	**31.0**	**18.5**	**18.5**	**36.4**	**17.8**	**29.4**	**16.9**	**29.9**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
14.7	**12.3**	**28.1**	**13.5**	**11.2**	**31.2**	**12.2**	**10.5**	**23.2**	**59.2**	**29.3**	**55.6**	**28.0**	**52.4**	**29.9**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
4.5	**4.2**	**3.8**	**22.0**	**-9.5**	**34.1**	**2.1**	**2.2**	**-10.8**	**35.4**	**-11.8**	**36.4**	**-12.8**	**37.4**	**-14.0**	**38.7**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours		Tavg	**10.9**	**-2.7**	**-2.3**	**0.6**	**6.3**	**14.0**	**21.6**	**25.6**	**24.8**	**22.5**	**2.5**	**4.1**	**1.4**
		Sd		**2.52**	**2.20**	**3.69**	**2.95**	**3.94**	**2.61**	**0.01**	**1.66**	**2.16**	**3.48**	**2.93**	**0.46**
		HDD10.0	**2398**	**762**	**345**	**497**	**121**	**31**	**0**	**0**	**0**	**0**	**21**	**351**	**268**
		HDD18.3	**4977**	**1260**	**578**	**937**	**360**	**269**	**6**	**0**	**0**	**0**	**193**	**849**	**525**
		CDD10.0	**2898**	**0**	**0**	**0**	**11**	**279**	**349**	**966**	**460**	**747**	**86**	**0**	**0**
		CDD18.3	**1011**	**0**	**0**	**0**	**0**	**2**	**106**	**452**	**203**	**249**	**0**	**0**	**0**
		CDH23.3	**6196**	**0**	**0**	**0**	**0**	**9**	**822**	**2323**	**1971**	**1070**	**0**	**0**	**0**
		CDH26.7	**2379**	**0**	**0**	**0**	**0**	**0**	**212**	**1013**	**805**	**349**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**3.8**	**4.1**	**10.7**	**17.8**	**19.4**	**31.8**	**35.3**	**32.8**	**34.8**	**22.5**	**12.0**	**10.1**
		MCWB		**3.1**	**2.5**	**7.4**	**9.7**	**11.3**	**18.1**	**18.0**	**17.0**	**17.0**	**12.1**	**6.2**	**5.4**
	2%	DB		**2.8**	**3.0**	**8.9**	**15.6**	**23.2**	**30.5**	**34.1**	**31.8**	**34.2**	**21.0**	**11.9**	**10.5**
		MCWB		**-0.9**	**1.0**	**4.4**	**9.3**	**12.1**	**17.2**	**16.4**	**18.1**	**16.3**	**12.5**	**6.4**	**12.0**
	5%	DB		**1.9**	**2.1**	**8.0**	**14.2**	**22.2**	**28.9**	**33.1**	**31.2**	**27.6**	**19.8**	**10.6**	**8.0**
		MCWB		**-0.6**	**0.9**	**4.6**	**7.8**	**12.8**	**18.5**	**15.9**	**14.9**	**17.3**	**13.2**	**5.8**	**4.6**
	10%	DB		**1.0**	**1.1**	**6.2**	**11.2**	**20.8**	**27.9**	**31.7**	**30.8**	**28.8**	**17.8**	**8.8**	**6.8**
		MCWB		**-1.9**	**-2.3**	**3.1**	**6.6**	**11.2**	**15.9**	**17.8**	**15.9**	**14.2**	**9.7**	**5.0**	**2.5**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**1.5**	**2.3**	**4.5**	**9.8**	**14.5**	**18.7**	**18.0**	**20.1**	**18.3**	**13.4**	**7.4**	**6.0**
		MCDB		**2.7**	**8.0**	**10.3**	**10.2**	**24.0**	**26.6**	**35.3**	**24.2**	**33.3**	**27.0**	**13.0**	**11.5**
	2%	WB		**1.0**	**1.9**	**3.3**	**9.1**	**14.2**	**17.9**	**16.9**	**18.8**	**17.8**	**12.7**	**6.9**	**5.4**
		MCDB		**2.6**	**5.5**	**8.6**	**17.0**	**28.8**	**25.7**	**26.3**	**29.0**	**29.2**	**15.0**	**12.2**	**10.1**
	5%	WB		**0.3**	**0.5**	**2.5**	**8.3**	**13.5**	**16.3**	**16.2**	**18.2**	**16.9**	**12.1**	**6.3**	**4.7**
		MCDB		**4.0**	**3.7**	**8.2**	**14.8**	**28.3**	**21.8**	**33.6**	**31.3**	**32.0**	**25.1**	**11.0**	**10.2**
	10%	WB		**-0.5**	**-0.4**	**2.1**	**6.7**	**12.6**	**15.4**	**15.7**	**17.2**	**16.0**	**11.2**	**5.4**	**4.2**
		MCDB		**1.9**	**0.5**	**4.7**	**14.4**	**26.4**	**25.2**	**26.8**	**29.8**	**26.8**	**17.8**	**10.0**	**9.0**
Mean Daily Temperature Range		MDBR													
	5% DB	MCDBR													
		MCWBR													
	5% WB	MCDBR		**6.6**	**5.0**	**9.6**	**9.7**	**12.7**		**12.7**	**13.2**	**14.1**	**14.0**	**9.6**	**6.9**
		MCWBR		**5.9**	**2.0**	**8.3**	**3.5**	**5.0**	**5.7**	**8.9**	**5.1**	**6.0**	**9.5**	**5.0**	**3.4**
Clear Sky Solar Irradiance		taub		**N/A**	**0.289**	**0.289**	**0.324**	**0.342**	**0.349**	**0.365**	**0.352**	**0.332**	**0.312**	**N/A**	**N/A**
		taud			**2.611**	**2.438**	**2.237**	**2.206**	**2.283**	**2.268**	**2.299**	**2.302**	**2.499**	**N/A**	**N/A**
		Ebn,noon		**N/A**	**487**	**728**	**800**	**829**	**836**	**803**	**763**	**652**	**411**	**N/A**	**N/A**
		Edh,noon		**N/A**	**39**	**69**	**104**	**118**	**112**	**110**	**97**	**77**	**40**	**N/A**	**N/A**

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.32 Design Conditions for Iğdır Turkey

Lat: **39.56** Long: **44.02** Elev: **997** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-14.9**	**-12.9**	**-19.5**	**1.1**	**-16.4**	**-18.1**	**0.9**	**-9.8**	**6.2**	**-0.1**	**5.5**	**23.0**	**2.8**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8	**3.0**	**35.0**	**20.5**	**33.9**	**20.2**	**32.3**	**18.5**	**20.9**	**35.0**	**20.2**	**33.4**	**20.9**	**33.2**	**1.9**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
17.4	**13.2**	**25.0**	**16.2**	**12.8**	**31.0**	**15.4**	**11.3**	**33.3**	**141.1**	**35.0**	**132.6**	**34.0**	**121.9**	**32.4**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
5.1	**4.6**	**3.9**	**23.0**	**-15.6**	**39.0**	**2.6**	**2.7**	**-17.1**	**40.6**	**-18.3**	**41.9**	**-19.5**	**43.1**	**-21.1**	**44.7**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours		Tavg	**11.8**	**-5.8**	**-1.4**	**7.3**	**11.9**	**18.6**	**22.2**	**25.6**	**26.6**	**21.0**	**12.5**	**7.7**	**0.0**
		Sd		**3.85**	**3.16**	**3.21**	**3.82**	**3.31**	**2.92**	**1.80**	**1.96**	**1.76**	**2.63**	**3.14**	**12.57**
		HDD10.0	**1971**	**977**	**319**	**180**	**23**	**0**	**0**	**0**	**0**	**0**	**8**	**153**	**310**
		HDD18.3	**4382**	**1492**	**552**	**680**	**191**	**78**	**3**	**0**	**0**	**0**	**181**	**637**	**567**
		CDD10.0	**2897**	**0**	**0**	**15**	**82**	**532**	**367**	**967**	**504**	**331**	**85**	**14**	**0**
		CDD18.3	**1001**	**0**	**0**	**0**	**2**	**96**	**122**	**452**	**247**	**82**	**1**	**0**	**0**
		CDH23.3	**7670**	**0**	**0**	**0**	**6**	**434**	**1339**	**2322**	**2739**	**813**	**16**	**0**	**0**
		CDH26.7	**3242**	**0**	**0**	**0**	**0**	**91**	**549**	**1052**	**1331**	**218**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**5.4**	**8.9**	**19.2**	**24.1**	**30.2**	**34.6**	**35.8**	**38.2**	**31.8**	**24.8**	**18.0**	**11.9**
		MCWB		**0.4**	**8.8**	**11.2**	**14.2**	**17.0**	**19.9**	**22.8**	**21.4**	**17.3**	**13.1**	**9.9**	**4.9**
	2%	DB		**3.0**	**8.0**	**17.3**	**22.5**	**28.7**	**32.8**	**34.9**	**35.8**	**29.8**	**23.4**	**17.0**	**10.9**
		MCWB		**-1.3**	**3.2**	**12.4**	**15.1**	**18.3**	**20.8**	**17.9**	**22.8**	**15.4**	**13.1**	**8.2**	**5.6**
	5%	DB		**1.9**	**6.0**	**15.5**	**20.9**	**27.9**	**31.0**	**33.9**	**37.4**	**29.1**	**22.2**	**15.4**	**9.2**
		MCWB		**0.1**	**3.4**	**9.9**	**12.6**	**15.8**	**19.5**	**20.4**	**22.3**	**15.7**	**12.4**	**10.3**	**4.9**
	10%	DB		**0.1**	**3.9**	**14.1**	**19.1**	**25.9**	**29.9**	**32.0**	**36.8**	**27.9**	**20.9**	**13.2**	**7.0**
		MCWB		**-2.4**	**2.6**	**8.1**	**11.1**	**16.9**	**18.9**	**17.1**	**19.6**	**15.8**	**12.6**	**6.2**	**2.7**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**1.1**	**3.8**	**8.1**	**14.5**	**16.2**	**20.1**	**21.0**	**22.9**	**17.3**	**14.2**	**10.5**	**6.5**
		MCDB		**2.0**	**10.5**	**19.8**	**24.2**	**31.9**	**32.9**	**35.0**	**36.8**	**29.0**	**20.2**	**21.0**	**10.0**
	2%	WB		**0.6**	**2.8**	**7.7**	**13.5**	**15.9**	**19.4**	**20.3**	**22.1**	**16.9**	**13.7**	**9.8**	**6.5**
		MCDB		**4.6**	**9.1**	**19.2**	**20.6**	**27.4**	**32.8**	**34.0**	**36.0**	**31.4**	**26.5**	**16.8**	**14.1**
	5%	WB		**-0.2**	**2.2**	**7.1**	**12.6**	**15.4**	**18.5**	**19.5**	**20.8**	**16.4**	**13.1**	**9.1**	**4.9**
		MCDB		**2.1**	**2.6**	**12.5**	**24.4**	**26.1**	**31.2**	**29.0**	**34.2**	**30.2**	**23.0**	**19.6**	**13.0**
	10%	WB		**-1.3**	**1.1**	**6.5**	**11.5**	**14.4**	**17.7**	**18.9**	**20.3**	**16.0**	**12.6**	**8.5**	**3.6**
		MCDB		**3.3**	**2.0**	**16.6**	**22.0**	**28.0**	**31.8**	**35.0**	**34.0**	**27.0**	**26.0**	**14.7**	**7.9**
Mean Daily Temperature Range		MDBR		**11.1**	**9.2**	**12.0**	**11.7**	**13.8**	**15.3**	**13.6**	**14.6**	**14.5**	**13.3**	**11.4**	**10.1**
	5% DB	MCDBR		**10.6**	**11.0**	**14.6**	**13.0**	**15.1**	**17.6**	**15.1**	**15.7**	**16.1**	**16.0**	**14.4**	**13.2**
		MCWBR		**5.5**	**6.0**	**5.7**	**2.9**	**4.1**	**3.7**	**3.5**	**4.5**	**5.1**	**3.7**	**5.6**	**6.1**
	5% WB	MCDBR		**9.4**	**7.0**	**9.8**	**13.1**	**15.1**	**18.9**	**16.4**	**15.3**	**14.8**	**13.9**	**11.3**	**11.6**
		MCWBR		**4.7**	**4.0**	**5.2**	**3.0**	**3.9**	**5.3**	**4.3**	**5.0**	**4.4**	**3.7**	**3.5**	**5.3**
Clear Sky Solar Irradiance		taub													
		taud													
		Ebn,noon													
		Edh,noon													

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.33 Design Conditions for Isparta, Turkey

Lat: **37.45** Long: **30.3** Elev: **39** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-8.6**	**-5.3**	**-12.7**	**1.9**	**-10.5**	**-11.3**	**3.1**	**-4.0**	**7.4**	**-1.0**	**6.1**	**7.8**	**3.4**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8	**3.0**	**33.4**	**17.2**	**32.2**	**20.2**	**31.0**	**17.9**	**20.7**	**28.4**	**19.9**	**26.6**	**19.1**	**31.0**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
17.8	**24.3**	**26.0**	**17.1**	**15.9**	**19.2**	**16.0**	**19.9**	**23.3**	**130.6**	**33.4**	**123.4**	**32.3**	**115.3**	**31.0**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
5.7	**5.3**	**4.9**	**25.0**	**-9.6**	**32.6**	**2.8**	**2.7**	**-11.2**	**34.2**	**-12.5**	**35.5**	**-13.7**	**36.7**	**-15.3**	**38.3**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**13.3**	**0.1**	**2.9**	**6.7**	**11.5**	**14.7**	**19.2**	**23.7**	**24.9**	**19.2**	**14.2**	**8.9**	**4.5**
	Sd			**3.64**	**2.25**	**3.28**	**3.15**	**2.20**	**3.17**	**3.92**	**1.19**	**2.43**	**3.21**	**3.20**	**6.05**
	HDD10.0		**933**	**308**	**199**	**106**	**23**	**2**	**0**	**0**	**0**	**0**	**7**	**117**	**170**
	HDD18.3		**3091**	**565**	**431**	**361**	**205**	**225**	**53**	**0**	**0**	**19**	**241**	**565**	**426**
	CDD10.0		**2596**	**0**	**0**	**2**	**67**	**293**	**543**	**425**	**685**	**275**	**253**	**50**	**1**
	CDD18.3		**628**	**0**	**0**	**0**	**0**	**1**	**106**	**168**	**303**	**44**	**6**	**0**	**0**
	CDH23.3		**5094**	**0**	**0**	**0**	**0**	**22**	**480**	**1686**	**2073**	**692**	**141**	**0**	**0**
	CDH26.7		**1994**	**0**	**0**	**0**	**0**	**0**	**133**	**702**	**965**	**186**	**8**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**9.9**	**13.0**	**18.0**	**22.5**	**25.3**	**30.9**	**34.4**	**34.9**	**31.0**	**27.7**	**21.6**	**13.0**
		MCWB		**5.0**	**9.7**	**12.2**	**13.9**	**12.9**	**16.3**	**20.3**	**18.6**	**16.9**	**13.1**	**12.9**	**9.7**
	2%	DB		**8.8**	**10.6**	**16.6**	**21.3**	**23.7**	**29.9**	**33.0**	**33.8**	**30.2**	**26.5**	**18.9**	**11.8**
		MCWB		**3.2**	**9.1**	**10.5**	**12.5**	**12.0**	**16.4**	**16.9**	**20.9**	**17.2**	**14.1**	**11.9**	**7.3**
	5%	DB		**7.3**	**9.4**	**14.8**	**20.3**	**22.4**	**28.0**	**32.1**	**33.0**	**28.8**	**25.2**	**17.3**	**10.8**
		MCWB		**3.7**	**6.2**	**9.8**	**12.0**	**13.6**	**14.0**	**16.9**	**16.9**	**15.5**	**14.5**	**12.5**	**7.9**
	10%	DB		**5.6**	**7.9**	**12.9**	**18.3**	**20.4**	**26.3**	**30.8**	**5.6**	**27.4**	**22.6**	**15.7**	**9.8**
		MCWB		**4.6**	**3.7**	**7.9**	**13.2**	**14.1**	**11.9**	**17.4**	**4.6**	**17.5**	**12.0**	**8.8**	**4.8**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**5.7**	**7.2**	**10.7**	**13.7**	**14.0**	**20.0**	**21.2**	**21.4**	**17.9**	**14.4**	**13.5**	**9.9**
		MCDB		**11.8**	**11.7**	**18.5**	**28.1**	**28.0**	**33.3**	**32.0**	**35.0**	**28.4**	**25.7**	**21.9**	**17.7**
	2%	WB		**5.5**	**6.6**	**9.2**	**13.1**	**14.0**	**17.9**	**20.7**	**20.8**	**17.5**	**14.0**	**12.8**	**8.9**
		MCDB		**11.2**	**9.1**	**13.8**	**27.7**	**24.8**	**31.0**	**33.8**	**33.5**	**28.0**	**23.1**	**23.0**	**10.7**
	5%	WB		**4.7**	**5.7**	**8.6**	**12.4**	**13.3**	**17.5**	**20.1**	**19.6**	**16.9**	**13.5**	**12.2**	**8.0**
		MCDB		**8.8**	**11.8**	**15.8**	**19.0**	**25.4**	**30.6**	**32.4**	**33.9**	**30.6**	**17.8**	**19.6**	**10.9**
	10%	WB		**3.6**	**4.3**	**8.0**	**11.5**	**13.0**	**16.7**	**19.7**	**18.4**	**16.1**	**12.9**	**10.9**	**7.0**
		MCDB		**4.7**	**10.0**	**14.8**	**19.2**	**26.1**	**31.5**	**33.2**	**33.1**	**31.4**	**23.6**	**18.0**	**9.5**
Mean Daily Temperature Range		MDBR		**9.2**	**10.2**	**11.0**	**12.3**	**11.3**	**13.2**	**15.0**	**16.0**	**17.0**	**14.4**	**11.4**	**8.4**
	5% DB	MCDBR		**9.7**	**12.8**	**15.1**	**16.0**	**15.8**	**15.8**	**17.4**	**17.5**	**19.6**	**17.9**	**13.5**	**9.8**
		MCWBR		**4.4**	**7.1**	**6.2**	**5.5**	**12.5**	**12.4**	**3.8**	**13.1**	**6.9**	**14.1**	**12.0**	**4.6**
	5% WB	MCDBR		**8.7**	**9.1**	**14.8**	**15.9**	**11.7**	**13.5**	**15.0**	**16.0**	**18.2**	**15.0**	**13.8**	**4.7**
		MCWBR		**4.5**	**5.0**	**6.1**	**5.6**	**9.9**	**11.4**	**3.4**	**11.9**	**6.4**	**12.5**	**12.4**	**2.8**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.34 Design Conditions for İstanbul, Turkey

Lat: **36.49** Long: **34.36** Elev: **5** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**-1.7**	**-0.9**	**- 4.1**	**3.4**	**-1.2**	**- 3.2**	**5.8**	**5.9**	**7.1**	**11.0**	**6 .4**	**25.7**	**6.1**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**31.0**	**29.8**	**19.7**	**28.7**	**20.0**	**23.7**	**28.8**	**23.1**	**27.9**	**28.5**	**23.7**	**31.2**	**1.1**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
22.8	**21.9**	**28.0**	**22.0**	**22.3**	**28.1**	**21.5**	**24.4**	**22.9**	**105.9**	**31.0**	**99.6**	**29.9**	**93.8**	**28.8**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
6.1	**5.7**	**5.2**	**29.0**	**-1.2**	**32.4**	**1.6**	**1.7**	**-2.2**	**33.4**	**-2.9**	**34.2**	**-3.7**	**35.0**	**-4.7**	**36.0**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**15.2**	**4.4**	**6.6**	**8.6**	**13.5**	**16.4**	**20.9**	**23.7**	**24.6**	**21.6**	**15.9**	**10.9**	**9.5**
	Sd			**3.72**	**1.90**	**3.87**	**3.23**	**1.99**	**3.55**	**1.31**	**1.60**	**2.58**	**4.68**	**4.09**	**4.99**
	HDD10.0		**450**	**178**	**100**	**73**	**4**	**0**	**0**	**0**	**0**	**0**	**9**	**38**	**47**
	HDD18.3		**1887**	**430**	**329**	**300**	**151**	**63**	**20**	**0**	**0**	**4**	**96**	**224**	**271**
	CDD10.0		**2468**	**6**	**3**	**30**	**108**	**198**	**327**	**425**	**454**	**626**	**192**	**64**	**32**
	CDD18.3		**677**	**0**	**0**	**0**	**5**	**4**	**98**	**168**	**197**	**181**	**22**	**2**	**0**
	CDH23.3		**3635**	**0**	**0**	**0**	**2**	**10**	**495**	**952**	**1519**	**547**	**110**	**0**	**0**
	CDH26.7		**848**	**0**	**0**	**0**	**0**	**0**	**86**	**156**	**458**	**120**	**26**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**16.1**	**14.8**	**19.1**	**23.1**	**24.2**	**30.1**	**29.9**	**32.4**	**33.0**	**29.3**	**22.0**	**16.9**
		MCWB		**11.5**	**11.1**	**16.1**	**16.6**	**17.9**	**19.4**	**19.8**	**20.5**	**23.6**	**19.7**	**13.3**	**12.0**
	2%	DB		**14.0**	**13.1**	**17.7**	**22.5**	**22.3**	**28.9**	**29.1**	**31.3**	**29.3**	**26.8**	**20.5**	**15.8**
		MCWB		**10.2**	**10.7**	**16.9**	**16.4**	**14.1**	**22.7**	**16.6**	**20.5**	**19.7**	**20.6**	**16.8**	**11.1**
	5%	DB		**11.9**	**11.7**	**16.0**	**19.9**	**21.6**	**27.6**	**28.3**	**30.5**	**27.5**	**23.7**	**19.0**	**15.1**
		MCWB		**10.5**	**10.4**	**12.0**	**14.4**	**13.0**	**18.9**	**16.8**	**21.4**	**19.2**	**17.0**	**12.1**	**10.5**
	10%	DB		**9.8**	**10.2**	**14.7**	**18.6**	**20.5**	**25.9**	**27.6**	**29.5**	**26.1**	**21.8**	**16.9**	**14.0**
		MCWB		**9.2**	**10.1**	**11.8**	**18.0**	**16.8**	**23.2**	**18.9**	**19.1**	**20.7**	**19.6**	**12.0**	**10.2**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**11.6**	**10.7**	**12.5**	**16.3**	**17.6**	**21.5**	**24.5**	**25.6**	**23.7**	**20.6**	**16.6**	**13.4**
		MCDB		**17.5**	**16.1**	**18.9**	**18.0**	**18.5**	**28.3**	**28.8**	**29.6**	**33.6**	**27.0**	**28.0**	**20.1**
	2%	WB		**11.0**	**9.6**	**11.9**	**15.6**	**17.3**	**20.8**	**23.9**	**23.8**	**22.9**	**20.1**	**14.8**	**12.5**
		MCDB		**14.7**	**16.4**	**20.0**	**19.0**	**22.8**	**30.0**	**28.0**	**26.9**	**29.3**	**31.0**	**20.4**	**13.6**
	5%	WB		**9.5**	**8.7**	**10.9**	**14.9**	**17.0**	**20.1**	**23.1**	**23.2**	**22.2**	**19.3**	**14.3**	**12.1**
		MCDB		**11.8**	**13.7**	**15.4**	**17.2**	**18.9**	**28.0**	**23.9**	**28.6**	**25.9**	**27.0**	**18.8**	**19.5**
	10%	WB		**8.5**	**7.5**	**10.1**	**13.9**	**16.2**	**19.2**	**22.8**	**22.4**	**21.3**	**18.8**	**13.8**	**11.6**
		MCDB		**9.0**	**12.5**	**16.0**	**18.6**	**25.0**	**29.9**	**29.4**	**30.8**	**24.6**	**19.0**	**19.2**	**18.8**
Mean Daily Temperature Range		MDBR		**5.3**	**5.8**	**7.8**	**8.4**	**7.9**	**9.2**	**7.8**	**9.7**	**8.9**	**7.0**	**6.4**	**4.9**
	5% DB	MCDBR		**7.9**	**8.6**	**11.0**	**9.6**	**8.9**	**11.3**	**9.1**	**11.3**	**9.1**	**10.9**	**9.2**	**5.8**
		MCWBR		**3.2**	**4.7**	**3.1**	**2.6**	**2.5**	**2.6**	**2.1**	**2.4**	**8.6**	**3.0**	**3.0**	**2.7**
	5% WB	MCDBR		**6.2**	**7.1**	**10.3**	**9.2**	**8.1**	**10.6**	**7.8**	**10.6**	**9.6**	**8.1**	**6.9**	**5.5**
		MCWBR		**2.5**	**5.0**	**3.0**	**2.4**	**2.1**	**2.5**	**1.8**	**2.5**	**8.3**	**3.3**	**2.3**	**2.6**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.35 Design Conditions for İzmir, Turkey

Lat: **38.24** Long: **27.10** Elev: **549** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
3	**1.9**	**3.1**	**- 4.8**	**6.9**	**5.0**	**- 3.6**	**7.5**	**9.7**	**7.9**	**32.2**	**7.2**	**30.0**	**2.7**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**35.1**	**19.6**	**34.0**	**20.9**	**33.1**	**21.9**	**23.5**	**32.1**	**22.7**	**28.9**	**23.5**	**30.0**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
21.5	**30.0**	**32.4**	**20.7**	**24.8**	**31.5**	**19.7**	**73**	**24.4**	**131.4**	**35.2**	**123.9**	**34.1**	**118.0**	**33.1**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
6.8	**6.4**	**6.1**	**26.0**	**3.0**	**36.0**	**2.0**	**1.9**	**1.8**	**37.2**	**0.9**	**38.1**	**0.1**	**39.0**	**-1.2**	**40.2**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**18.9**	**9.0**	**9.7**	**11.3**	**16.5**	**21.7**	**27.8**	**28.3**	**28.4**	**23.1**	**19.3**	**17.8**	**10.1**
	Sd			**2.46**	**2.17**	**3.42**	**3.08**	**2.82**	**2.77**	**1.33**	**1.71**	**2.52**	**3.43**	**2.30**	**9.9**
	HDD10.0		**227**	**97**	**29**	**53**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**47**
	HDD18.3		**1656**	**547**	**241**	**427**	**72**	**14**	**0**	**0**	**0**	**1**	**30**	**72**	**253**
	CDD10.0		**5077**	**41**	**21**	**133**	**196**	**715**	**1070**	**566**	**1140**	**393**	**288**	**463**	**51**
	CDD18.3		**1999**	**0**	**0**	**0**	**19**	**223**	**572**	**309**	**625**	**145**	**61**	**45**	**0**
	CDH23.3		**12773**	**0**	**0**	**0**	**108**	**751**	**3228**	**3509**	**3614**	**1165**	**385**	**14**	**0**
	CDH26.7		**5361**	**0**	**0**	**0**	**13**	**158**	**1516**	**1625**	**1580**	**384**	**84**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**16.6**	**18.1**	**21.6**	**28.0**	**31.0**	**35.7**	**37.1**	**36.0**	**34.2**	**30.8**	**24.5**	**19.7**
		MCWB		**12.0**	**14.1**	**14.0**	**18.7**	**19.7**	**20.8**	**23.8**	**19.3**	**20.0**	**19.7**	**17.3**	**15.2**
	2%	DB		**15.3**	**16.7**	**20.5**	**26.5**	**29.7**	**34.9**	**34.8**	**35.2**	**31.8**	**29.3**	**23.5**	**18.5**
		MCWB		**11.3**	**13.9**	**13.3**	**16.3**	**19.8**	**20.1**	**23.1**	**20.9**	**20.9**	**18.9**	**16.2**	**15.3**
	5%	DB		**14.4**	**15.3**	**18.8**	**23.8**	**28.4**	**33.6**	**34.6**	**33.8**	**30.4**	**27.1**	**22.9**	**17.1**
		MCWB		**12.7**	**11.3**	**11.2**	**16.4**	**17.2**	**18.9**	**20.2**	**19.1**	**20.6**	**18.0**	**14.9**	**12.2**
	10%	DB		**13.5**	**14.2**	**17.6**	**21.9**	**27.3**	**32.9**	**32.8**	**32.5**	**28.9**	**25.4**	**22.0**	**15.9**
		MCWB		**10.5**	**11.6**	**14.3**	**14.7**	**18.7**	**20.1**	**18.4**	**21.0**	**20.7**	**15.0**	**14.4**	**13.3**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**11.8**	**13.9**	**12.7**	**17.9**	**19.5**	**22.6**	**22.4**	**20.6**	**21.4**	**20.1**	**16.9**	**15.3**
		MCDB		**18.1**	**23.7**	**21.8**	**29.4**	**30.8**	**34.4**	**33.0**	**35.4**	**30.2**	**31.0**	**31.1**	**26.7**
	2%	WB		**11.3**	**12.3**	**12.4**	**17.2**	**18.8**	**22.2**	**23.8**	**20.3**	**20.8**	**29.2**	**26.7**	**14.5**
		MCDB		**16.8**	**19.8**	**19.1**	**28.4**	**30.0**	**24.3**	**37.1**	**30.0**	**28.6**	**31.4**	**30.8**	**21.2**
	5%	WB		**10.9**	**11.8**	**12.4**	**16.5**	**18.1**	**21.7**	**23.5**	**20.0**	**20.5**	**18.7**	**16.2**	**13.9**
		MCDB		**17.4**	**17.7**	**18.3**	**24.9**	**29.4**	**33.2**	**30.0**	**32.8**	**33.5**	**29.9**	**26.1**	**20.7**
	10%	WB		**10.1**	**10.4**	**11.2**	**15.4**	**17.5**	**21.3**	**22.9**	**19.6**	**20.1**	**18.3**	**15.6**	**13.3**
		MCDB		**12.1**	**16.7**	**21.2**	**22.0**	**28.1**	**33.1**	**31.9**	**34.6**	**34.9**	**29.6**	**27.7**	**23.7**
Mean Daily Temperature Range		MDBR		**7.2**	**8.5**	**9.0**	**8.6**	**11.0**	**11.1**	**10.9**	**9.4**	**10.6**	**9.9**	**7.6**	**6.7**
	5% DB	MCDBR		**7.4**	**10.0**	**10.6**	**10.5**	**12.4**	**11.6**	**11.7**	**11.0**	**12.1**	**11.7**	**7.3**	**7.2**
		MCWBR		**6.9**	**5.9**	**8.8**	**4.0**	**9.9**	**2.8**	**9.1**	**8.0**	**4.0**	**4.5**	**6.4**	**4.2**
	5% WB	MCDBR		**7.3**	**8.9**	**10.5**	**9.9**	**11.6**	**11.0**	**10.9**	**9.6**	**10.8**	**10.3**	**7.6**	**7.0**
		MCWBR		**6.6**	**5.4**	**8.9**	**3.9**	**9.3**	**8.8**	**2.7**	**7.2**	**3.8**	**4.3**	**6.8**	**4.2**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-

Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air

Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C

MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East

Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance

Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.36 Design Conditions for KahramanMaraş, Turkey

Lat: **37.36** Long: **36.56** Elev: **1025** StdP: Time Zone: **)** Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**-3.4**	**-0.9**	**-12.0**	**4.8**	**38.2**	**- 9.5**	**5.3**	**3.8**	**6.2**	**6.4**	**5.5**	**0.8**	**1.3**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**40.8**	**23.9**	**40.8**	**23.9**	**37.4**	**24.9**	**26.1**	**29.2**	**25.6**	**29.2**	**26.1**	**29.6**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
25.1	**63**	**32.7**	**24.4**	**80**	**28**	**23.7**	**55**	**33.4**	**40.4**	**17.4**	**37.0**	**15.3**	**34.1**	**14.0**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
5.2	**4.6**	**4.1**	**27.0**	**-3.8**	**41.3**	**2.3**	**2.6**	**-5.2**	**42.8**	**-6.3**	**44.0**	**-7.3**	**45.2**	**-8.7**	**66.9**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**17.9**	**6.4**	**4.9**	**11.4**	**15.0**	**20.1**	**27.5**	**29.8**	**30.1**	**26.2**	**18.6**	**13.9**	**7.2**
	Sd			**1.36**	**3.54**	**2.30**	**3.72**	**3.86**	**3.23**	**1.25**	**1.90**	**2.93**	**3.21**	**2.91**	**3.42**
	HDD10.0		**488**	**225**	**141**	**21**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**94**
	HDD18.3		**2305**	**740**	**373**	**425**	**107**	**45**	**0**	**0**	**0**	**0**	**34**	**236**	**345**
	CDD10.0		**4778**	**0**	**1**	**111**	**156**	**630**	**1048**	**615**	**1249**	**487**	**268**	**207**	**7**
	CDD18.3		**2096**	**0**	**0**	**0**	**8**	**160**	**550**	**358**	**734**	**238**	**44**	**3**	**0**
	CDH23.3		**17333**	**0**	**0**	**0**	**71**	**754**	**3416**	**4836**	**5137**	**2740**	**355**	**24**	**0**
	CDH26.7		**9425**	**0**	**0**	**0**	**2**	**282**	**1879**	**2812**	**2977**	**1380**	**93**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**12.7**	**14.2**	**21.2**	**26.9**	**33.0**	**40.2**	**42.7**	**41.6**	**37.40**	**32.6**	**25.3**	**13.8**
		MCWB		**5.4**	**8.5**	**11.5**	**16.8**	**18.1**	**23.2**	**25.2**	**22.9**	**24.0**	**17.5**	**14.3**	**5.8**
	2%	DB		**12.0**	**14.2**	**19.6**	**24.9**	**31.6**	**39.0**	**41.4**	**40.8**	**36.2**	**28.7**	**23.9**	**12.7**
		MCWB		**8.7**	**11.3**	**11.7**	**13.8**	**17.8**	**20.8**	**21.4**	**23.9**	**22.5**	**17.4**	**13.4**	**5.4**
	5%	DB		**10.8**	**11.8**	**18.2**	**23.5**	**29.8**	**37.1**	**38.9**	**38.8**	**34.9**	**27.1**	**21.3**	**11.7**
		MCWB		**5.3**	**8.6**	**13.3**	**15.9**	**19.2**	**22.9**	**26.0**	**26.4**	**19.0**	**16.6**	**11.9**	**8.8**
	10%	DB		**9.8**	**10.3**	**16.8**	**21.3**	**27.8**	**34.9**	**37.1**	**37.6**	**33.3**	**25.0**	**18.9**	**11.1**
		MCWB		**7.6**	**8.0**	**9.8**	**11.9**	**16.9**	**19.0**	**22.9**	**25.9**	**16.9**	**14.1**	**11.3**	**8.5**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**7.1**	**9.1**	**11.4**	**17.7**	**20.6**	**23.3**	**26.3**	**26.7**	**25.1**	**18.2**	**14.5**	**10.4**
		MCDB		**13.8**	**11.2**	**21.0**	**35.1**	**37.0**	**30.5**	**40.2**	**36.6**	**36.0**	**34.0**	**25.4**	**11.4**
	2%	WB		**6.7**	**7.9**	**11.0**	**16.2**	**19.3**	**22.7**	**26.0**	**26.5**	**23.9**	**17.6**	**14.0**	**10.0**
		MCDB		**7.8**	**11.0**	**11.5**	**16.4**	**35.0**	**35.3**	**36.8**	**28.8**	**43.0**	**31.0**	**23.0**	**12.0**
	5%	WB		**6.4**	**7.2**	**10.3**	**15.4**	**18.5**	**22.1**	**25.2**	**25.9**	**23.0**	**16.6**	**13.1**	**9.6**
		MCDB		**9.3**	**7.9**	**12.0**	**24.8**	**24.0**	**29.9**	**34.7**	**30.0**	**41.6**	**32.2**	**17.6**	**11.2**
	10%	WB		**6.0**	**6.7**	**9.9**	**14.2**	**17.9**	**21.5**	**24.6**	**28.1**	**22.1**	**15.8**	**12.8**	**9.0**
		MCDB		**9.6**	**10.7**	**11.0**	**25.0**	**35.8**	**39.0**	**28.0**	**33.6**	**32.6**	**26.0**	**20.2**	**16.5**
Mean Daily Temperature Range		MDBR		**7.5**	**9.2**	**10.4**	**10.8**	**12.7**	**13.9**	**14.7**	**14.4**	**14.3**	**11.3**	**9.1**	**6.8**
	5% DB	MCDBR		**10.2**	**12.0**	**14.0**	**14.1**	**14.8**	**16.4**	**17.8**	**16.2**	**15.7**	**14.3**	**12.0**	**7.4**
		MCWBR		**8.6**	**5.9**	**4.4**	**3.6**	**3.4**	**4.2**	**3.7**	**3.8**	**4.8**	**4.1**	**10.2**	**3.2**
	5% WB	MCDBR		**7.8**	**9.6**	**11.1**	**12.8**	**14.5**	**14.1**	**17.4**	**13.6**	**14.2**	**13.1**	**10.2**	**3.9**
		MCWBR		**6.8**	**5.7**	**6.7**	**3.7**	**4.5**	**4.3**	**4.0**	**4.2**	**4.7**	**4.0**	**9.0**	**1.4**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.37 Design Conditions for Karaman, Turkey

Lat: **37.11** Long: **33.14** Elev: **1025** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-12.9**	**-9.1**	**-18.4**	**1.5**	**-13.0**	**-11.9**	**3.2**	**-3.7**	**9.8**	**6.2**	**8.5**	**5.4**	**4.1**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**35.4**	**19.1**	**34.0**	**17.6**	**32.4**	**16.9**	**19.9**	**34.7**	**19.2**	**37.9**	**19.9**	**34.7**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
15.9	**31.4**	**30.2**	**15.2**	**18.3**	**29.8**	**14.4**	**26.2**	**27.3**	**146.0**	**35.5**	**135.4**	**34.0**	**124.8**	**32.5**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
7.1	**6.8**	**6.3**	**21.0**	**-21.4**	**36.2**	**2.9**	**2.7**	**-23.1**	**37.8**	**-24.5**	**39.1**	**-25.8**	**40.4**	**-27.6**	**42.1**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**11.9**	**2.3**	**0.0**	**5.8**	**11.2**	**15.3**	**21.4**	**25.3**	**23.6**	**18.9**	**12.7**	**6.5**	**2.8**
	Sd			**5.79**	**4.34**	**5.06**	**4.55**	**3.44**	**3.36**	**0.1**	**1.87**	**2.09**	**3.44**	**3.86**	**1.38**
	HDD10.0		**1557**	**479**	**279**	**288**	**30**	**0**	**0**	**0**	**0**	**0**	**16**	**243**	**223**
	HDD18.3		**4096**	**993**	**511**	**776**	**218**	**212**	**10**	**0**	**0**	**17**	**173**	**707**	**480**
	CDD10.0		**2540**	**0**	**0**	**27**	**67**	**330**	**342**	**949**	**423**	**268**	**100**	**35**	**0**
	CDD18.3		**771**	**0**	**0**	**0**	**5**	**27**	**103**	**434**	**165**	**36**	**0**	**0**	**0**
	CDH23.3		**6382**	**0**	**0**	**0**	**79**	**223**	**1087**	**2517**	**1915**	**481**	**81**	**0**	**0**
	CDH26.7		**2802**	**0**	**0**	**0**	**9**	**53**	**423**	**1326**	**882**	**101**	**6**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**14.3**	**12.0**	**21.1**	**27.9**	**29.9**	**34.1**	**37.6**	**36.0**	**30.0**	**27.5**	**20.3**	**13.7**
		MCWB		**6.4**	**8.9**	**13.5**	**17.4**	**17.2**	**17.4**	**20.4**	**19.7**	**15.9**	**15.8**	**10.1**	**6.2**
	2%	DB		**12.0**	**10.2**	**17.8**	**26.0**	**28.8**	**33.1**	**36.2**	**34.0**	**29.2**	**26.0**	**18.5**	**11.9**
		MCWB		**8.9**	**4.5**	**10.7**	**13.9**	**16.6**	**18.8**	**21.6**	**20.3**	**16.1**	**13.9**	**10.2**	**8.5**
	5%	DB		**10.0**	**8.6**	**17.0**	**22.9**	**25.9**	**31.2**	**35.1**	**32.6**	**27.8**	**23.4**	**16.3**	**10.2**
		MCWB		**5.7**	**4.7**	**9.8**	**14.3**	**14.4**	**16.9**	**18.7**	**17.1**	**14.6**	**13.2**	**9.7**	**4.5**
	10%	DB		**8.6**	**6.8**	**14.7**	**18.6**	**23.1**	**29.2**	**33.9**	**8.6**	**26.0**	**21.7**	**13.9**	**8.8**
		MCWB		**4.7**	**3.0**	**14.2**	**11.5**	**12.2**	**16.1**	**20.2**	**4.7**	**13.9**	**13.4**	**9.0**	**4.5**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**7.8**	**7.5**	**9.9**	**16.5**	**16.4**	**19.5**	**21.3**	**20.3**	**18.1**	**15.8**	**11.2**	**8.9**
		MCDB		**12.8**	**14.3**	**13.8**	**30.0**	**29.9**	**30.3**	**38.0**	**34.9**	**34.5**	**27.5**	**16.7**	**17.3**
	2%	WB		**6.8**	**6.7**	**9.4**	**15.4**	**15.0**	**18.9**	**20.3**	**19.9**	**17.4**	**14.1**	**10.9**	**7.4**
		MCDB		**12.4**	**15.6**	**13.3**	**26.2**	**27.8**	**32.6**	**35.9**	**31.0**	**27.9**	**26.3**	**16.6**	**14.1**
	5%	WB		**5.7**	**5.5**	**8.4**	**13.5**	**13.9**	**18.3**	**19.4**	**19.2**	**16.5**	**13.5**	**10.0**	**6.6**
		MCDB		**10.9**	**10.8**	**17.2**	**25.2**	**24.4**	**33.6**	**37.9**	**29.8**	**25.8**	**16.0**	**17.0**	**12.0**
	10%	WB		**5.0**	**4.2**	**7.7**	**11.8**	**13.1**	**17.5**	**18.7**	**18.3**	**15.6**	**12.7**	**9.0**	**5.7**
		MCDB		**11.9**	**10.0**	**17.2**	**24.1**	**26.0**	**29.8**	**32.0**	**29.9**	**29.0**	**25.9**	**16.8**	**14.1**
Mean Daily Temperature Range		MDBR		**9.6**	**8.2**	**11.6**	**14.0**	**14.3**	**15.6**	**17.1**	**17.2**	**14.8**	**15.5**	**11.9**	**8.3**
	5% DB	MCDBR		**10.7**	**9.8**	**17.1**	**16.3**	**19.0**	**17.5**	**19.4**	**18.3**	**17.7**	**18.8**	**14.3**	**10.8**
		MCWBR		**4.6**	**4.4**	**13.7**	**5.6**	**3.7**	**2.9**	**4.2**	**4.4**	**6.4**	**7.0**	**5.1**	**5.4**
	5% WB	MCDBR		**10.7**	**9.6**	**15.0**	**17.5**	**17.8**	**16.2**	**18.3**	**17.0**	**16.2**	**16.7**	**14.3**	**9.3**
		MCWBR		**5.2**	**4.7**	**12.5**	**6.3**	**4.7**	**3.4**	**4.2**	**4.1**	**6.0**	**6.7**	**5.2**	**4.4**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.38 Design Conditions for Kars, Turkey

Lat: **40.36** Long: **43.05** Elev: **1025** StdP: Time Zone: **)** Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-24.6**	**-23.0**	**-27.9**	**0.6**	**-25.4**	**-25.4**	**0.9**	**-20.8**	**10.2**	**10.0**	**9.1**	**-8.0**	**4.3**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8	**3.0**	**28.8**	**18.6**	**27.1**	**13.3**	**25.9**	**12.8**	**17.8**	**29.0**	**17.0**	**25.2**	**17.8**	**30.0**	**3.7**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
14.0	**31.0**	**32.8**	**13.5**	**27.3**	**24.3**	**13.0**	**14.3**	**16.0**	**109.9**	**28.8**	**100.1**	**27.1**	**94.1**	**26.0**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
8.8	**8.1**	**7.6**	**19.0**	**-28.0**	**30.2**	**2.8**	**2.9**	**-29.7**	**31.8**	**-31.0**	**33.2**	**-32.3**	**34.5**	**-33.9**	**36.2**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours		Tavg	**11.8**	**2.3**	**0.0**	**5.8**	**11.2**	**15.3**	**21.4**	**25.4**	**23.6**	**18.9**	**12.7**	**6.5**	**2.8**
		Sd		**5.79**	**4.34**	**5.06**	**4.55**	**3.44**	**3.36**	**0.1**	**1.87**	**2.09**	**3.44**	**3.86**	**1.38**
		HDD10.0	**3210**	**658**	**645**	**694**	**187**	**77**	**9**	**0**	**0**	**3**	**66**	**282**	**590**
		HDD18.3	**6027**	**915**	**885**	**1208**	**433**	**500**	**133**	**105**	**37**	**119**	**313**	**531**	**848**
		CDD10.0	**1071**	**0**	**0**	**0**	**3**	**92**	**128**	**455**	**248**	**134**	**10**	**0**	**0**
		CDD18.3	**78**	**0**	**0**	**0**	**0**	**0**	**3**	**46**	**28**	**2**	**0**	**0**	**0**
		CDH23.3	**1039**	**0**	**0**	**0**	**0**	**0**	**99**	**376**	**427**	**427**	**136**	**0**	**0**
		CDH26.7	**194**	**0**	**0**	**0**	**0**	**0**	**3**	**60**	**126**	**4**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**7.0**	**5.3**	**6.2**	**16.2**	**22.9**	**23.5**	**29.4**	**32.0**	**27.2**	**20.2**	**14.1**	**12.4**
		MCWB		**4.9**	**3.2**	**3.5**	**10.7**	**12.4**	**18.9**	**19.2**	**18.7**	**17.7**	**12.7**	**6.2**	**1.8**
	2%	DB		**2.7**	**-0.8**	**5.0**	**14.8**	**21.6**	**26.2**	**28.1**	**29.8**	**26.2**	**18.4**	**12.4**	**0.6**
		MCWB		**1.1**	**-2.1**	**1.5**	**10.3**	**14.3**	**14.1**	**17.2**	**17.9**	**14.1**	**11.7**	**6.3**	**-0.5**
	5%	DB		**0.6**	**-4.6**	**4.1**	**10.8**	**20.1**	**23.6**	**27.1**	**28.0**	**25.0**	**17.8**	**9.0**	**-1.4**
		MCWB		**-0.5**	**-6.0**	**2.1**	**7.7**	**11.7**	**14.8**	**16.1**	**16.9**	**17.2**	**11.6**	**5.2**	**-2.1**
	10%	DB		**-1.2**	**-5.8**	**3.1**	**9.2**	**18.0**	**21.6**	**26.0**	**29.4**	**23.0**	**16.0**	**6.1**	**-2.5**
		MCWB		**-2.9**	**-6.6**	**2.4**	**5.6**	**11.9**	**14.3**	**17.2**	**17.8**	**12.9**	**10.4**	**3.5**	**-3.7**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**2.9**	**-0.5**	**3.3**	**11.0**	**13.6**	**15.1**	**18.0**	**19.3**	**17.4**	**12.3**	**7.2**	**-0.2**
		MCDB		**7.0**	**2.8**	**6.0**	**22.0**	**20.1**	**26.0**	**28.2**	**30.2**	**26.6**	**18.8**	**14.4**	**1.1**
	2%	WB		**0.6**	**-2.7**	**2.5**	**9.8**	**12.1**	**14.5**	**17.4**	**18.5**	**16.4**	**12.0**	**6.4**	**-0.8**
		MCDB		**4.0**	**0.2**	**6.7**	**17.0**	**23.4**	**26.6**	**27.7**	**29.2**	**24.0**	**16.6**	**9.0**	**1.2**
	5%	WB		**-0.5**	**-4.6**	**1.8**	**7.5**	**11.4**	**13.8**	**17.0**	**17.5**	**15.2**	**11.2**	**5.3**	**-2.4**
		MCDB		**3.4**	**-3.4**	**4.0**	**11.6**	**19.3**	**20.6**	**27.2**	**26.0**	**24.8**	**16.4**	**8.0**	**-0.8**
	10%	WB		**2.7**											
		MCDB		**3.5**											
Mean Daily Temperature Range		MDBR		**11.9**	**13.1**	**10.0**	**10.8**	**13.5**	**14.1**	**16.2**	**15.4**	**17.4**	**14.9**	**10.0**	**8.0**
	5% DB	MCDBR		**10.3**	**10.6**	**8.6**	**12.7**	**16.7**	**19.2**	**16.7**	**17.9**	**19.9**	**17.2**	**14.4**	**6.8**
		MCWBR		**6.4**	**6.0**	**3.6**	**5.9**	**4.7**	**3.0**	**4.4**	**5.9**	**7.4**	**8.4**	**7.5**	**4.0**
	5% WB	MCDBR		**10.3**	**10.6**	**8.3**	**10.5**	**16.2**	**16.1**	**16.2**	**16.8**	**17.4**	**16.6**	**13.7**	**6.5**
		MCWBR		**6.4**	**6.0**	**1.0**	**5.0**	**5.7**	**6.5**	**4.3**	**6.4**	**6.0**	**9.1**	**7.2**	**3.8**
Clear Sky Solar Irradiance		taub													
		taud													
		Ebn,noon													
		Edh,noon													

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.39 Design Conditions for Kastamonu, Turkey

Lat: **41.22** Long: **33.46** Elev: **791** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-11.2**	**-9.1**	**-14.3**	**1.5**	**-5.0**	**-12.5**	**1.8**	**-10.8**	**4.6**	**14.5**	**3.9**	**16.8**	**1.0**	**140**

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**32**	**17.3**	**30.3**	**17.3**	**28.2**	**16.7**	**18.9**	**30.0**	**18.1**	**35.1**	**17.3**	**26.0**		**160**

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
15.8	**15.2**	**19.0**	**14.6**	**18.3**	**17.6**	**13.9**	**31.3**	**18.0**	**119.4**	**32.0**	**109.1**	**30.3**	**97.4**	**28.1**	**130**

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
3.6	**3.3**	**2.9**	**26.0**	**-13.0**	**35.7**	**2.6**	**3.0**	**-14.5**	**37.5**	**-15.7**	**38.9**	**-16.9**	**40.3**	**-18.5**	**42.1**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**9.4**	**-1.5**	**1.4**	**4.4**	**9.1**	**14.8**	**16.8**	**20.3**	**20.5**	**18.1**	**10.1**	**5.6**	**-1.4**
	Sd			**3.83**	**2.78**	**3.93**	**2.84**	**1.52**	**3.43**	**1.21**	**1.90**	**1.71**	**3.48**	**2.35**	**6.80**
	HDD10.0		**2024**	**716**	**241**	**349**	**49**	**0**	**0**	**0**	**0**	**0**	**46**	**265**	**353**
	HDD18.3		**4803**	**1230**	**474**	**864**	**275**	**216**	**62**	**4**	**3**	**46**	**254**	**764**	**611**
	CDD10.0		**1711**	**0**	**0**	**0**	**23**	**299**	**207**	**320**	**326**	**487**	**50**	**0**	**0**
	CDD18.3		**190**	**0**	**0**	**0**	**0**	**0**	**17**	**67**	**72**	**35**	**0**	**0**	**0**
	CDH23.3		**2690**	**0**	**0**	**0**	**0**	**0**	**102**	**330**	**779**	**371**	**28**	**0**	**0**
	CDH26.7		**831**	**0**	**0**	**0**	**0**	**4**	**68**	**296**	**392**	**71**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**10.8**	**14.6**	**20.2**	**22.7**	**26.9**	**30.5**	**37.0**	**34.8**	**30.3**	**25.0**	**18.6**	**9.8**
		MCWB		**9.3**	**10.3**	**12.8**	**13.7**	**15.2**	**18.6**	**21.3**	**19.7**	**17.3**	**15.1**	**12.5**	**4.5**
	2%	DB		**8.9**	**12.2**	**17.4**	**20.2**	**25.9**	**28.5**	**33.1**	**31.9**	**28.5**	**24.0**	**16.3**	**5.7**
		MCWB		**4.9**	**5.9**	**11.0**	**12.8**	**15.5**	**16.2**	**19.2**	**16.2**	**16.2**	**14.3**	**9.9**	**3.3**
	5%	DB		**6.9**	**9.1**	**15.5**	**19.3**	**24.3**	**26.8**	**29.9**	**30.9**	**27.3**	**21.8**	**13.6**	**4.1**
		MCWB		**5.2**	**5.5**	**9.5**	**15.3**	**15.5**	**16.4**	**18.5**	**17.12**	**16.3**	**13.3**	**10.1**	**2.8**
	10%	DB		**3.6**	**7.8**	**12.8**	**17.3**	**22.7**	**25.0**	**26.9**	**28.5**	**25.5**	**18.8**	**11.5**	**3.2**
		MCWB		**2.6**	**3.8**	**8.1**	**10.4**	**13.7**	**15.1**	**15.2**	**18.9**	**15.6**	**12.7**	**6.1**	**0.4**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**6.1**	**7.3**	**9.8**	**11.9**	**16.3**	**18.6**	**21.8**	**19.1**	**18.9**	**14.8**	**12.2**	**4.6**
		MCDB		**12.9**	**15.0**	**20.1**	**21.7**	**27.2**	**30.5**	**37.1**	**30.2**	**26.7**	**25.9**	**12.9**	**10.0**
	2%	WB		**4.8**	**6.2**	**9.3**	**11.3**	**15.2**	**18.0**	**20.1**	**18.5**	**17.2**	**14.3**	**10.8**	**3.2**
		MCDB		**8.6**	**13.2**	**20.2**	**19.5**	**28.4**	**29.0**	**31.1**	**35.1**	**27.8**	**26.5**	**15.4**	**7.8**
	5%	WB		**3.8**	**5.0**	**8.8**	**10.2**	**14.6**	**17.2**	**18.5**	**18.0**	**16.7**	**13.3**	**9.3**	**2.8**
		MCDB		**7.6**	**10.5**	**19.4**	**11.6**	**27.0**	**28.1**	**29.2**	**26.2**	**27.9**	**23.0**	**12.9**	**4.1**
	10%	WB		**1.9**	**3.6**	**8.1**	**9.2**	**13.9**	**16.2**	**17.0**	**17.2**	**16.1**	**12.0**	**7.7**	**2.3**
		MCDB		**3.4**	**7.0**	**12.8**	**18.5**	**23.0**	**28.0**	**32.2**	**25.0**	**28.9**	**19.9**	**11.4**	**5.2**
Mean Daily Temperature Range		MDBR		**7.7**	**9.9**	**11.8**	**14.5**	**14.8**	**14.5**	**16.3**	**17.9**	**14.7**	**13.8**	**11.3**	**6.3**
	5% DB	MCDBR		**10.8**	**14.4**	**18.3**	**18.8**	**19.9**	**19.3**	**21.7**	**20.6**	**18.3**	**18.6**	**14.8**	**7.2**
		MCWBR		**10.2**	**7.6**	**15.8**	**7.2**	**16.9**	**5.3**	**6.7**	**6.0**	**15.8**	**8.8**	**13.8**	**4.2**
	5% WB	MCDBR		**10.8**	**16.2**	**15.1**	**14.2**	**15.4**	**16.4**	**23.0**	**17.7**	**14.9**	**19.0**	**14.5**	**5.9**
		MCWBR		**10.2**	**8.2**	**13.2**	**9.4**	**13.7**	**4.9**	**7.7**	**4.8**	**13.1**	**9.1**	**13.6**	**3.6**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.40 Design Conditions for Kayseri, Turkey

Lat: **38.43** Long: **35.29** Elev: **1068** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-13.4**	**-11.9**	**-15.4**	**1.5**	**-13.9**	**71**	**-9.9**	**9.1**	**20.5**	**7.7**	**16.9**	**10.0**	**0.7**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
6	**3.0**	**31.9**	**16.8**	**29.9**	**15.3**	**18.9**	**31.8**	**18.0**	**31.1**	**18.0**	**31.1**	**18.9**	**31.5**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
15.4	**24.9**	**26.3**	**14.2**	**14.9**	**31.5**	**13.7**	**25.9**	**17.4**	**122.1**	**32.0**	**116.1**	**30.9**	**109.8**	**30.0**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
4.9	**5.5**	**7.7**	**21.0**	**-16.0**	**32.3**	**3.0**	**2.8**	**-17.8**	**33.9**	**-19.2**	**35.3**	**-20.6**	**36.6**	**-22.4**	**38.2**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**9.9**	**-0.3**	**-1.7**	**4.3**	**10.4**	**14.9**	**20.3**	**22.2**	**22.3**	**16.0**	**12.5**	**5.7**	**1.3**
	Sd			**4.59**	**5.86**	**4.20**	**3.36**	**3.65**	**3.12**	**1.79**	**1.64**	**3.84**	**3.52**	**3.04**	**3.33**
	HDD10.0		**1934**	**642**	**332**	**364**	**33**	**0**	**0**	**0**	**0**	**6**	**18**	**265**	**275**
	HDD18.3		**4713**	**1157**	**561**	**865**	**238**	**236**	**16**	**2**	**0**	**175**	**179**	**758**	**528**
	CDD10.0		**1913**	**0**	**3**	**14**	**46**	**308**	**308**	**379**	**382**	**367**	**96**	**5**	**4**
	CDD18.3		**393**	**0**	**0**	**0**	**1**	**29**	**75**	**124**	**38**	**4**	**0**	**0**	**0**
	CDH23.3		**4143**	**0**	**0**	**0**	**0**	**0**	**214**	**760**	**1106**	**217**	**0**	**0**	**0**
	CDH26.7		**1438**	**0**	**0**	**0**	**0**	**0**	**18**	**223**	**455**	**56**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**10.8**	**16.9**	**16.5**	**23.0**	**29.8**	**33.4**	**31.9**	**33.4**	**30.8**	**26.2**	**18.6**	**17.1**
		MCWB		**8.7**	**9.7**	**9.5**	**12.9**	**14.5**	**17.4**	**16.8**	**17.4**	**15.1**	**14.2**	**10.2**	**7.3**
	2%	DB		**8.8**	**14.7**	**15.4**	**21.4**	**28.6**	**31.4**	**31.3**	**32.7**	**29.0**	**24.9**	**16.8**	**13.9**
		MCWB		**4.8**	**6.8**	**8.9**	**16.1**	**17.4**	**15.5**	**15.4**	**17.7**	**14.1**	**13.5**	**8.9**	**9.3**
	5%	DB		**7.4**	**11.8**	**13.9**	**19.9**	**26.6**	**29.9**	**30.6**	**30.9**	**27.2**	**23.0**	**14.2**	**12.7**
		MCWB		**5.7**	**4.3**	**9.3**	**11.8**	**14.9**	**14.7**	**15.2**	**17.1**	**13.5**	**12.9**	**8.3**	**8.3**
	10%	DB		**6.3**	**7.5**	**11.8**	**17.7**	**23.8**	**28.0**	**29.4**	**31.4**	**24.8**	**21.3**	**11.9**	**9.9**
		MCWB		**5.1**	**4.9**	**4.3**	**10.2**	**12.6**	**15.3**	**14.8**	**14.6**	**15.2**	**12.3**	**7.6**	**4.9**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**6.0**	**9.1**	**9.0**	**19.9**	**15.6**	**20.0**	**18.5**	**20.0**	**16.9**	**14.8**	**10.0**	**9.9**
		MCDB		**12.2**	**17.8**	**19.3**	**23.8**	**29.8**	**33.4**	**31.8**	**32.2**	**32.0**	**27.0**	**18.4**	**19.0**
	2%	WB		**5.5**	**7.8**	**7.5**	**12.8**	**14.7**	**19.0**	**18.1**	**18.2**	**16.2**	**13.7**	**9.3**	**8.8**
		MCDB		**6.2**	**14.0**	**16.0**	**21.6**	**28.8**	**32.0**	**28.6**	**34.2**	**27.8**	**24.5**	**17.0**	**19.8**
	5%	WB		**4.3**	**6.2**	**7.0**	**11.6**	**14.1**	**18.4**	**17.8**	**17.7**	**15.3**	**13.2**	**8.1**	**7.8**
		MCDB		**9.5**	**12.2**	**13.2**	**19.2**	**27.5**	**30.0**	**31.0**	**32.7**	**27.8**	**26.0**	**16.8**	**14.2**
	10%	WB		**3.4**	**4.5**	**6.1**	**10.5**	**13.2**	**17.1**	**17.2**	**19.2**	**14.7**	**12.3**	**7.0**	**6.5**
		MCDB		**8.0**	**7.6**	**13.8**	**22.2**	**26.8**	**29.0**	**27.6**	**30.7**	**29.0**	**24.2**	**13.4**	**11.5**
Mean Daily Temperature Range		MDBR		**9.5**	**11.5**	**10.7**	**14.4**	**15.3**	**16.5**	**16.2**	**17.7**	**16.4**	**15.6**	**11.7**	**10.2**
	5% DB	MCDBR		**11.1**	**14.0**	**13.7**	**15.4**	**20.3**	**19.2**	**18.5**	**19.8**	**20.5**	**19.0**	**14.3**	**11.6**
		MCWBR		**5.7**	**6.2**	**5.2**	**6.9**	**2.0**	**4.8**	**2.4**	**3.8**	**4.0**	**7.0**	**6.0**	**4.8**
	5% WB	MCDBR		**10.6**	**13.8**	**11.2**	**17.3**	**18.5**	**17.0**	**15.9**	**18.6**	**16.9**	**16.8**	**15.1**	**10.8**
		MCWBR		**5.7**	**7.0**	**9.7**	**8.1**	**2.5**	**4.3**	**3.1**	**4.2**	**3.8**	**6.9**	**6.7**	**3.7**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.41 Design Conditions for Kilis, Turkey

Lat: **36.44** Long: **37.05** Elev: **638** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**0.4**	**1.3**	**-14.1**	**4.4**	**1.1**	**-12.3**	**4.3**	**1.0**	**8.0**	**25.0**	**7.1**	**15**	**4.2**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**33.8**	**25.1**	**37.9**	**20.8**	**36.3**	**18.6**	**24.1**	**29.2**	**23.3**	**36.5**	**24.1**	**23.9**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
22.7	**25.9**	**27.7**	**21.9**	**20.3**	**24.9**	**21.3**	**24.6**	**26.9**	**175.8**	**39.8**	**159.8**	**37.9**	**147.1**	**36.2**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
6.9	**6.3**	**5.8**	**26.0**	**0.7**	**39.3**	**2.1**	**2.5**	**-0.5**	**40.8**	**-1.6**	**42.0**	**-2.5**	**43.1**	**-3.8**	**44.6**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**17.3**	**4.9**	**6.6**	**11.4**	**15.6**	**20.7**	**24.7**	**29.1**	**28.4**	**24.9**	**19.5**	**14.2**	**9.4**
	Sd			**2.18**	**1.66**	**4.09**	**3.99**	**3.81**	**2.22**	**3.06**	**2.07**	**2.66**	**3.13**	**3.20**	**1.94**
	HDD10.0		**315**	**156**	**95**	**32**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**32**
	HDD18.3		**1613**	**413**	**328**	**215**	**100**	**21**	**0**	**0**	**0**	**1**	**23**	**235**	**277**
	CDD10.0		**3167**	**0**	**0**	**74**	**172**	**332**	**443**	**591**	**570**	**447**	**295**	**233**	**10**
	CDD18.3		**1228**	**0**	**0**	**0**	**20**	**96**	**194**	**334**	**312**	**199**	**60**	**12**	**0**
	CDH23.3		**14302**	**0**	**0**	**12**	**164**	**932**	**2013**	**4418**	**4174**	**2042**	**529**	**18**	**0**
	CDH26.7		**7451**	**0**	**0**	**0**	**17**	**295**	**918**	**2636**	**2643**	**963**	**158**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**11.7**	**14.5**	**24.6**	**28.2**	**33.1**	**34.2**	**41.8**	**40.4**	**36.5**	**33.6**	**24.8**	**16.3**
		MCWB		**8.1**	**9.4**	**15.2**	**21.8**	**15.8**	**20.0**	**21.9**	**20.8**	**19.2**	**15.9**	**14.2**	**9.7**
	2%	DB		**10.5**	**13.4**	**23.4**	**27.0**	**32.4**	**33.7**	**40.5**	**39.1**	**34.3**	**30.8**	**23.7**	**15.0**
		MCWB		**10.2**	**9.9**	**11.0**	**15.1**	**15.7**	**18.4**	**21.6**	**21.3**	**19.9**	**16.1**	**13.8**	**9.8**
	5%	DB		**9.7**	**11.6**	**21.2**	**25.7**	**29.9**	**32.9**	**39.7**	**37.7**	**32.8**	**28.1**	**22.2**	**13.9**
		MCWB		**8.7**	**8.9**	**14.2**	**15.7**	**15.5**	**21.3**	**22.2**	**21.8**	**15.2**	**16.8**	**13.6**	**6.6**
	10%	DB		**8.9**	**10.4**	**18.3**	**22.8**	**27.9**	**31.5**	**37.1**	**38.7**	**31.9**	**25.8**	**19.8**	**12.8**
		MCWB		**7.9**	**8.5**	**11.2**	**13.6**	**20.4**	**16.1**	**19.6**	**23.2**	**15.6**	**14.3**	**12.6**	**6.1**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**6.4**	**9.0**	**16.6**	**19.4**	**18.1**	**21.0**	**25.1**	**24.5**	**20.2**	**19.1**	**14.5**	**10.8**
		MCDB		**10.5**	**10.8**	**26.0**	**26.0**	**31.5**	**38.2**	**31.2**	**33.8**	**37.4**	**27.6**	**23.6**	**14.5**
	2%	WB		**6.1**	**8.5**	**15.1**	**16.2**	**17.5**	**20.3**	**24.7**	**22.4**	**19.7**	**17.0**	**14.0**	**10.3**
		MCDB		**12.8**	**12.0**	**25.0**	**29.3**	**33.0**	**35.5**	**31.0**	**39.0**	**32.6**	**26.2**	**24.2**	**12.2**
	5%	WB		**5.5**	**7.5**	**13.7**	**14.3**	**16.5**	**19.6**	**23.9**	**21.9**	**19.2**	**15.9**	**13.5**	**10.0**
		MCDB		**11.7**	**12.0**	**26.5**	**26.4**	**32.1**	**34.8**	**37.3**	**34.0**	**27.0**	**34.0**	**22.9**	**22.1**
	10%	WB		**4.7**	**6.9**	**12.9**	**13.4**	**15.9**	**18.4**	**23.4**	**21.6**	**18.6**	**15.4**	**13.0**	**9.6**
		MCDB		**10.5**	**10.0**	**22.3**	**28.2**	**21.2**	**34.0**	**33.5**	**33.0**	**27.8**	**21.8**	**25.2**	**19.8**
Mean Daily Temperature Range		MDBR		**5.8**	**8.2**	**9.6**	**11.1**	**13.1**	**14.2**	**15.1**	**16.1**	**12.8**	**11.8**	**7.4**	**7.2**
	5% DB	MCDBR		**7.3**	**10.3**	**12.7**	**13.7**	**13.6**	**13.7**	**17.0**	**16.2**	**14.1**	**13.6**	**9.4**	**9.6**
		MCWBR		**3.2**	**4.6**	**3.3**	**2.9**	**3.6**	**3.3**	**2.7**	**1.9**	**2.8**	**3.2**	**7.7**	**3.6**
	5% WB	MCDBR		**4.6**	**5.0**	**11.8**	**11.6**	**13.6**	**13.5**	**15.7**	**17.1**	**12.6**	**12.5**	**8.5**	**7.1**
		MCWBR		**3.2**	**2.5**	**4.3**	**6.0**	**3.3**	**3.0**	**2.2**	**3.2**	**2.4**	**5.3**	**7.4**	**2.8**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.42 Design Conditions for Kırıkkale, Turkey

Lat: **39.50** Long: **33.30** Elev: **725** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-9.7**	**-8.0**	**-12.1**	**1.6**	**-8.5**	**-10.6**	**1.8**	**-8.5**	**8.4**	**23.3**	**6.9**	**12**	**1.6**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**34.9**	**19.4**	**33.3**	**16.5**	**31.6**	**16.4**	**20.8**	**33.4**	**19.9**	**34.8**	**19.4**	**28.2**	**1.1**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
17.9	**13.7**	**29.0**	**17.1**	**13.2**	**30.0**	**16.1**	**12.2**	**33.6**	**138.9**	**35.0**	**127.5**	**33.4**	**116.7**	**31.6**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
6.3	**5.9**	**5.2**	**24.0**	**-9.1**	**36.6**	**2.6**	**2.4**	**-10.6**	**38.0**	**-11.8**	**39.2**	**-13.0**	**40.3**	**-14.6**	**41.8**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours		Tavg	**12.9**	**2.1**	**-0.5**	**7.7**	**11.9**	**18.1**	**21.1**	**25.9**	**25.5**	**19.3**	**13.6**	**8.5**	**3.2**
		Sd		**4.24**	**4.83**	**2.97**	**3.62**	**3.34**	**3.11**	**0.5**	**1.6**	**2.1**	**3.3**	**3.96**	**9.23**
		HDD10.0	**1339**	**482**	**296**	**163**	**18**	**0**	**0**	**0**	**0**	**0**	**8**	**157**	**214**
		HDD18.3	**3664**	**989**	**526**	**648**	**195**	**89**	**9**	**0**	**0**	**9**	**146**	**585**	**467**
		CDD10.0	**2823**	**0**	**3**	**21**	**74**	**468**	**333**	**970**	**480**	**280**	**119**	**70**	**4**
		CDD18.3	**899**	**0**	**0**	**0**	**2**	**76**	**93**	**464**	**223**	**41**	**0**	**0**	**0**
		CDH23.3	**6492**	**0**	**0**	**3**	**10**	**478**	**786**	**2457**	**2280**	**389**	**87**	**0**	**0**
		CDH26.7	**2659**	**0**	**0**	**0**	**0**	**128**	**262**	**1171**	**1020**	**73**	**4**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**12.5**	**17.3**	**23.1**	**24.5**	**31.1**	**33.4**	**38.8**	**35.2**	**31.1**	**27.3**	**22.7**	**18.0**
		MCWB		**9.7**	**11.1**	**12.1**	**13.9**	**16.3**	**20.9**	**19.1**	**20.7**	**16.3**	**15.2**	**13.0**	**10.9**
	2%	DB		**11.2**	**13.0**	**18.2**	**22.9**	**29.8**	**31.2**	**36.4**	**34.6**	**28.6**	**25.9**	**21.3**	**12.5**
		MCWB		**9.2**	**8.7**	**11.2**	**15.8**	**19.9**	**18.4**	**18.9**	**20.5**	**16.3**	**15.2**	**13.5**	**9.7**
	5%	DB		**9.7**	**10.0**	**16.3**	**20.8**	**28.1**	**29.8**	**33.8**	**33.4**	**26.9**	**23.9**	**18.9**	**10.9**
		MCWB		**7.8**	**8.1**	**12.3**	**12.7**	**15.4**	**19.9**	**17.9**	**20.9**	**15.1**	**15.7**	**12.5**	**8.4**
	10%	DB		**8.0**	**7.1**	**14.5**	**18.7**	**26.3**	**27.9**	**32.2**	**31.5**	**25.4**	**21.7**	**15.8**	**9.2**
		MCWB		**3.8**	**5.6**	**9.6**	**12.3**	**15.2**	**15.6**	**17.4**	**19.7**	**14.5**	**13.9**	**10.4**	**7.1**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**8.7**	**10.2**	**12.0**	**16.2**	**17.4**	**19.4**	**20.3**	**21.7**	**17.7**	**15.6**	**13.8**	**11.1**
		MCDB		**19.5**	**17.4**	**24.9**	**31.6**	**30.7**	**33.0**	**38.9**	**34.3**	**29.6**	**28.2**	**26.1**	**21.0**
	2%	WB		**8.2**	**8.5**	**9.6**	**15.4**	**16.5**	**18.9**	**19.1**	**21.3**	**17.0**	**15.3**	**13.3**	**9.7**
		MCDB		**15.3**	**18.7**	**19.5**	**25.7**	**32.3**	**28.0**	**38.8**	**33.5**	**33.8**	**26.0**	**23.3**	**17.8**
	5%	WB		**6.9**	**6.9**	**7.8**	**13.8**	**14.8**	**17.4**	**17.7**	**32.2**	**15.8**	**14.0**	**10.8**	**7.4**
		MCDB		**13.2**	**15.7**	**16.3**	**21.6**	**27.4**	**33.8**	**30.8**	**33.4**	**32.3**	**25.7**	**18.4**	**10.4**
	10%	WB		**5.8**	**4.3**	**7.8**	**13.8**	**14.8**	**17.4**	**17.7**	**18.5**	**15.8**	**14.0**	**10.8**	**7.4**
		MCDB		**10.9**	**9.7**	**19.4**	**20.5**	**24.6**	**21.0**	**33.2**	**31.5**	**28.8**	**30.2**	**17.8**	**11.3**
Mean Daily Temperature Range		MDBR		**7.8**	**9.2**	**11.7**	**10.8**	**15.0**	**13.7**	**14.4**	**14.5**	**12.6**	**13.5**	**8.2**	**6.8**
	5% DB	MCDBR		**8.5**	**12.1**	**15.4**	**12.0**	**17.1**	**16.1**	**16.7**	**17.5**	**16.1**	**17.7**	**13.8**	**6.3**
		MCWBR		**7.9**	**6.2**	**12.7**	**3.8**	**13.4**	**2.9**	**11.8**	**6.7**	**5.8**	**8.0**	**11.4**	**3.8**
	5% WB	MCDBR		**9.1**	**10.7**	**15.7**	**12.0**	**15.5**	**15.6**	**14.6**	**14.7**	**12.8**	**16.5**	**12.1**	**6.1**
		MCWBR		**8.6**	**4.5**	**12.7**	**3.8**	**12.4**	**3.5**	**10.6**	**5.0**	**4.4**	**8.1**	**10.4**	**3.8**
Clear Sky Solar Irradiance		taub													
		taud													
		Ebn,noon													
		Edh,noon													

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.44 Design Conditions for Kırşehir, Turkey

Lat: **39.08** Long: **34.10** Elev: **985** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-10.2**	**-8.3**	**-12.7**	**1.6**	**-8.3**	**-10.6**	**1.8**	**-6.2**	**9.9**	**7.6**	**8.8**	**22.9**	**3.7**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**32.9**	**19.1**	**31.5**	**17.1**	**29.9**	**18.3**	**20.1**	**30.0**	**19.4**	**32.2**	**18.8**	**30.3**	**2.4**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
17.4	**13.6**	**19.2**	**16.5**	**12.8**	**29.3**	**15.7**	**12.1**	**17.0**	**127.3**	**33.0**	**119.0**	**31.6**	**109.1**	**30.0**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
7.8	**7.3**	**6.7**	**21.0**	**-16.2**	**33.2**	**2.4**	**2.6**	**-17.6**	**34.7**	**-18.7**	**35.9**	**-19.8**	**37.1**	**-21.2**	**38.7**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours		Tavg	**10.4**	**1.5**	**1.1**	**6.2**	**9.7**	**15.4**	**19.7**	**23.7**	**23.1**	**18.6**	**12.3**	**5.9**	**-0.2**
		Sd		**4.62**	**3.05**	**4.87**	**3.79**	**4.05**	**2.75**	**0.2**	**2.57**	**3.06**	**2.72**	**3.04**	**3.57**
		HDD10.0	**1539**	**527**	**241**	**134**	**45**	**9**	**0**	**0**	**0**	**0**	**12**	**253**	**315**
		HDD18.3	**3795**	**1042**	**466**	**376**	**257**	**106**	**14**	**0**	**1**	**35**	**186**	**740**	**573**
		CDD10.0	**1706**	**0**	**0**	**16**	**37**	**176**	**291**	**425**	**406**	**259**	**84**	**11**	**0**
		CDD18.3	**434**	**0**	**0**	**0**	**0**	**16**	**57**	**167**	**149**	**45**	**0**	**0**	**0**
		CDH23.3	**4251**	**0**	**0**	**3**	**0**	**190**	**442**	**1557**	**1454**	**589**	**19**	**0**	**0**
		CDH26.7	**1454**	**0**	**0**	**0**	**0**	**35**	**108**	**578**	**552**	**180**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**12.8**	**10.7**	**21.4**	**22.7**	**29.3**	**30.4**	**34.9**	**34.0**	**31.8**	**25.2**	**20.0**	**10.8**
		MCWB		**7.5**	**5.4**	**12.4**	**16.8**	**17.9**	**18.1**	**18.6**	**18.6**	**19.3**	**14.1**	**10.8**	**7.5**
	2%	DB		**10.5**	**9.4**	**19.7**	**21.5**	**27.4**	**29.0**	**33.4**	**33.1**	**30.4**	**23.6**	**18.5**	**9.2**
		MCWB		**5.9**	**5.8**	**12.3**	**12.8**	**17.9**	**16.7**	**20.2**	**19.6**	**18.1**	**12.9**	**10.2**	**5.1**
	5%	DB		**9.4**	**8.2**	**16.8**	**18.6**	**25.2**	**27.8**	**31.6**	**31.9**	**29.0**	**21.9**	**15.1**	**7.8**
		MCWB		**5.8**	**5.7**	**10.4**	**11.8**	**14.0**	**17.7**	**19.2**	**18.4**	**16.7**	**11.6**	**9.5**	**4.9**
	10%	DB		**7.6**	**5.6**	**14.2**	**16.0**	**23.4**	**26.0**	**29.9**	**30.4**	**27.1**	**19.8**	**11.9**	**6.0**
		MCWB		**4.8**	**4.5**	**10.6**	**10.4**	**12.9**	**14.1**	**18.1**	**16.1**	**16.2**	**11.5**	**6.4**	**4.9**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**7.9**	**7.5**	**11.5**	**13.6**	**16.8**	**18.9**	**20.7**	**20.4**	**23.2**	**14.1**	**12.0**	**7.6**
		MCDB		**14.4**	**15.6**	**20.2**	**22.4**	**27.3**	**28.0**	**30.3**	**34.2**	**32.0**	**23.6**	**19.0**	**10.8**
	2%	WB		**7.2**	**5.6**	**10.8**	**13.0**	**15.9**	**17.9**	**20.1**	**19.5**	**19.9**	**13.4**	**11.3**	**6.4**
		MCDB		**11.1**	**9.7**	**18.1**	**22.7**	**27.6**	**30.5**	**33.8**	**32.8**	**30.5**	**22.8**	**20.5**	**11.1**
	5%	WB		**6.2**	**4.7**	**9.8**	**12.2**	**14.7**	**17.3**	**19.7**	**18.9**	**18.6**	**12.7**	**10.1**	**5.4**
		MCDB		**13.3**	**8.4**	**17.9**	**19.8**	**24.5**	**29.0**	**31.5**	**35.4**	**30.0**	**18.8**	**16.8**	**11.5**
	10%	WB		**5.3**	**3.0**	**9.0**	**11.2**	**13.9**	**16.0**	**19.1**	**18.6**	**17.7**	**12.1**	**8.7**	**4.5**
		MCDB		**11.6**	**6.4**	**14.0**	**21.8**	**25.0**	**26.7**	**32.3**	**34.7**	**32.0**	**22.2**	**19.0**	**5.4**
Mean Daily Temperature Range		MDBR		**8.9**	**7.5**	**10.9**	**11.3**	**12.6**	**13.9**	**13.3**	**13.9**	**14.4**	**13.9**	**11.2**	**7.7**
	5% DB	MCDBR		**10.8**	**12.3**	**15.3**	**13.9**	**16.7**	**15.0**	**14.5**	**16.5**	**15.7**	**17.1**	**15.3**	**10.0**
		MCWBR		**10.1**	**6.6**	**5.7**	**3.2**	**4.7**	**3.3**	**2.6**	**4.2**	**4.9**	**6.1**	**14.0**	**5.0**
	5% WB	MCDBR		**9.6**	**11.7**	**16.7**	**13.7**	**15.5**	**14.2**	**13.5**	**14.8**	**15.9**	**14.9**	**12.9**	**9.4**
		MCWBR		**9.2**	**6.0**	**6.5**	**3.0**	**4.7**	**4.0**	**2.9**	**3.4**	**5.3**	**5.4**	**11.9**	**5.1**
Clear Sky Solar Irradiance		taub													
		taud													
		Ebn,noon													
		Edh,noon													

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.45 Design Conditions for Kocaeli, Turkey

Lat: **40.46** Long: **29.54** Elev: **76** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-0.4**	**1.1**	**-2.9**	**5.1**	**2.0**	**-1 .9**	**4.5**	**2.4**	**5.3**	**18.8**	**4.7**	**5.8**	**1.3**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8	**3.0**	**33.8**	**21.6**	**32.4**	**21.1**	**31.1**	**21.7**	**23.3**	**35.0**	**22.9**	**31.7**	**22.6**	**23.4**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
22.2	**18.3**	**26.2**	**21.8**	**17.2**	**23.5**	**21.4**	**18.2**	**23.0**	**122.8**	**33.8**	**114.4**	**32.4**	**107.4**	**31.2**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
4.3	**3.9**	**3.5**	**32.0**	**-6.7**	**34.0**	**1.8**	**2.2**	**-7.8**	**35.3**	**-8.6**	**36.3**	**-9.5**	**37.3**	**-10.5**	**38.6**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**16.2**	**7.3**	**6.7**	**8.3**	**13.9**	**18.1**	**21.4**	**25.4**	**26.0**	**21.2**	**15.7**	**14.1**	**9.5**
	Sd			**4.50**	**2.61**	**4.76**	**3.69**	**3.16**	**3.87**	**2.29**	**1.61**	**2.84**	**3.01**	**2.99**	**5.68**
	HDD10.0		**564**	**220**	**102**	**188**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**49**
	HDD18.3		**2444**	**636**	**324**	**617**	**142**	**80**	**18**	**0**	**0**	**6**	**88**	**259**	**573**
	CDD10.0		**4088**	**65**	**10**	**86**	**122**	**505**	**343**	**954**	**961**	**581**	**178**	**249**	**33**
	CDD18.3		**1270**	**0**	**0**	**0**	**10**	**71**	**112**	**440**	**463**	**155**	**9**	**0**	**10**
	CDH23.3		**6176**	**0**	**0**	**0**	**45**	**270**	**1007**	**1964**	**2269**	**542**	**46**	**32**	**0**
	CDH26.7		**2249**	**0**	**0**	**0**	**2**	**62**	**367**	**679**	**993**	**143**	**0**	**3**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**19.5**	**19.4**	**21.4**	**26.5**	**30.3**	**33.9**	**33.2**	**35.7**	**31.6**	**25.7**	**26.8**	**28.4**
		MCWB		**12.5**	**16.1**	**14.6**	**17.7**	**22.9**	**20.8**	**23.2**	**19.5**	**21.7**	**19.1**	**17.6**	**11.5**
	2%	DB		**17.7**	**16.8**	**20.2**	**24.8**	**28.7**	**31.8**	**32.3**	**34.5**	**30.3**	**24.8**	**23.4**	**17.3**
		MCWB		**11.4**	**10.8**	**15.8**	**16.1**	**16.9**	**20.5**	**21.1**	**22.1**	**22.9**	**16.1**	**16.6**	**11.9**
	5%	DB		**16.1**	**14.9**	**18.6**	**21.9**	**26.1**	**30.8**	**31.3**	**33.1**	**28.3**	**22.9**	**20.8**	**16.3**
		MCWB		**10.6**	**8.8**	**12.6**	**15.0**	**22.5**	**19.7**	**20.1**	**19.4**	**17.7**	**16.0**	**15.5**	**10.6**
	10%	DB		**14.8**	**12.0**	**16.5**	**20.0**	**24.4**	**28.6**	**30.2**	**14.8**	**26.0**	**21.1**	**19.5**	**14.3**
		MCWB		**11.2**	**11.5**	**9.5**	**12.6**	**17.5**	**21.2**	**22.3**	**11.2**	**17.7**	**15.9**	**12.5**	**8.9**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**11.9**	**11.7**	**13.0**	**18.0**	**19.1**	**23.1**	**24.7**	**23.2**	**23.1**	**18.9**	**17.6**	**12.6**
		MCDB		**16.8**	**13.0**	**14.8**	**28.2**	**30.0**	**34.5**	**35.5**	**32.7**	**29.4**	**25.6**	**27.7**	**20.3**
	2%	WB		**11.1**	**10.9**	**12.4**	**17.3**	**18.4**	**22.1**	**24.0**	**22.9**	**22.5**	**18.41**	**16.8**	**11.8**
		MCDB		**15.9**	**20.2**	**20.3**	**27.1**	**30.3**	**30.6**	**29.1**	**33.9**	**30.7**	**28.0**	**21.8**	**14.3**
	5%	WB		**9.9**	**10.1**	**11.4**	**16.6**	**17.4**	**21.3**	**23.3**	**22.4**	**22.2**	**17.5**	**15.9**	**11.3**
		MCDB		**19.0**	**13.4**	**15.2**	**26.1**	**26.8**	**31.8**	**26.7**	**30.8**	**25.9**	**25.0**	**25.1**	**15.2**
	10%	WB		**9.3**	**8.0**	**11.0**	**15.3**	**16.7**	**20.6**	**22.9**	**21.8**	**21.6**	**17.0**	**15.2**	**11.0**
		MCDB		**15.6**	**15.8**	**14.0**	**15.7**	**22.8**	**29.2**	**28.1**	**15.9**	**32.0**	**21.4**	**20.8**	**12.9**
Mean Daily Temperature Range		MDBR		**7.4**	**7.1**	**8.0**	**9.4**	**10.6**	**10.9**	**9.6**	**11.6**	**9.7**	**8.8**	**7.1**	**5.9**
	5% DB	MCDBR		**10.1**	**12.7**	**12.8**	**13.0**	**13.2**	**13.4**	**10.8**	**13.4**	**12.1**	**11.0**	**10.6**	**8.1**
		MCWBR		**8.3**	**7.0**	**10.9**	**4.2**	**11.3**	**4.0**	**9.6**	**11.2**	**10.8**	**4.4**	**9.4**	**3.3**
	5% WB	MCDBR		**10.1**	**12.7**	**11.9**	**11.4**	**13.9**	**12.9**	**9.7**	**11.6**	**10.2**	**9.3**	**9.7**	**7.1**
		MCWBR		**8.6**	**6.9**	**10.2**	**3.5**	**12.0**	**4.1**	**8.7**	**9.9**	**9.1**	**4.4**	**9.1**	**3.2**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.46 Design Conditions for Muğla, Turkey

Lat: **37.12** Long: **28.21** Elev: 646 StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
3	**-2.7**	**-1.7**	**- 8.7**	**2.0**	**3.3**	**- 7.3**	**2.3**	**0.0**	**4.9**	**14.9**	**4.3**	**7.8**	**2.4**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**36.5**	**24.0**	**35.0**	**21.6**	**33.9**	**19.4**	**23.2**	**36.6**	**22.2**	**30.5**	**21.3**	**31.8**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
20.9	**16.3**	**31.4**	**20.1**	**15.3**	**31.8**	**19.2**	**14.9**	**23.6**	**74.3**	**32.4**	**70.2**	**37.0**	**65.6**	**35.0**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
4.1	**3.8**	**3.3**	**30.0**	**-2.0**	**36.0**	**2.4**	**2.7**	**-3.4**	**37.6**	**-4.5**	**38.9**	**-5.6**	**40.1**	**-7.0**	**41.7**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**14.5**	**5.5**	**6.6**	**8.6**	**12.8**	**17.0**	**27.5**	**26.5**	**22.6**	**22.7**	**16.6**	**10.4**	**6.8**
	Sd			**1.96**	**1.87**	**3.59**	**3.33**	**2.38**	**2.71**	**0.41**	**2.05**	**2.38**	**4.47**	**1.95**	**1.72**
	HDD10.0		**627**	**272**	**96**	**111**	**6**	**0**	**0**	**0**	**0**	**0**	**1**	**34**	**107**
	HDD18.3		**2887**	**778**	**328**	**592**	**170**	**105**	**1**	**0**	**0**	**0**	**84**	**472**	**357**
	CDD10.0		**2915**	**0**	**1**	**25**	**89**	**436**	**416**	**542**	**513**	**621**	**206**	**60**	**7**
	CDD18.3		**983**	**0**	**0**	**0**	**4**	**26**	**167**	**285**	**256**	**215**	**31**	**0**	**0**
	CDH23.3		**9481**	**0**	**0**	**0**	**51**	**155**	**1794**	**3395**	**2937**	**748**	**400**	**0**	**0**
	CDH26.7		**4453**	**0**	**0**	**0**	**0**	**16**	**797**	**1820**	**1417**	**278**	**124**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**14.3**	**16.4**	**19.4**	**26.4**	**28.1**	**36.1**	**37.8**	**36.5**	**33.8**	**33.9**	**20.0**	**17.4**
		MCWB		**8.4**	**13.8**	**12.7**	**14.7**	**16.1**	**20.5**	**21.4**	**24.0**	**17.2**	**17.7**	**14.5**	**9.0**
	2%	DB		**12.8**	**14.9**	**18.3**	**25.1**	**26.9**	**34.3**	**37.4**	**35.3**	**31.8**	**30.1**	**18.9**	**14.9**
		MCWB		**11.2**	**9.3**	**11.2**	**14.6**	**14.7**	**20.3**	**21.1**	**20.9**	**17.3**	**16.4**	**9.7**	**9.3**
	5%	DB		**11.7**	**12.8**	**17.6**	**22.0**	**24.9**	**32.9**	**36.1**	**34.7**	**30.0**	**27.1**	**17.6**	**13.3**
		MCWB		**10.5**	**11.2**	**10.1**	**13.7**	**14.5**	**17.7**	**20.5**	**17.2**	**16.9**	**14.7**	**10.1**	**10.6**
	10%	DB		**9.9**	**11.4**	**16.4**	**18.9**	**23.5**	**31.5**	**34.2**	**36.7**	**28.0**	**25.0**	**16.2**	**11.9**
		MCWB		**6.2**	**9.2**	**13.8**	**9.7**	**13.8**	**23.4**	**20.8**	**18.2**	**15.1**	**14.2**	**14.1**	**10.6**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**9.9**	**9.3**	**12.1**	**15.5**	**17.8**	**22.4**	**23.3**	**24.1**	**19.6**	**18.1**	**14.5**	**12.3**
		MCDB		**11.3**	**15.3**	**20.0**	**26.6**	**30.8**	**33.6**	**36.4**	**34.9**	**22.6**	**31.8**	**24.7**	**16.9**
	2%	WB		**9.2**	**8.8**	**11.5**	**14.7**	**17.3**	**21.2**	**22.0**	**23.5**	**17.8**	**17.2**	**13.8**	**11.2**
		MCDB		**11.6**	**14.9**	**18.5**	**26.4**	**32.4**	**35.6**	**34.4**	**31.7**	**31.5**	**31.4**	**20.6**	**11.9**
	5%	WB		**8.6**	**8.0**	**10.7**	**13.8**	**16.8**	**20.6**	**21.2**	**23.1**	**17.4**	**16.1**	**13.3**	**10.5**
		MCDB		**11.0**	**10.5**	**14.4**	**24.2**	**25.7**	**32.5**	**33.3**	**33.4**	**30.2**	**26.2**	**21.8**	**14.8**
	10%	WB		**7.8**	**7.0**	**10.2**	**12.8**	**16.2**	**19.7**	**20.7**	**22.3**	**16.9**	**15.3**	**12.5**	**9.6**
		MCDB		**11.6**	**11.2**	**10.0**	**22.0**	**26.1**	**32.9**	**26.8**	**29.0**	**32.1**	**28.2**	**22.2**	**11.8**
Mean Daily Temperature Range		MDBR		**9.5**	**10.1**	**12.4**	**11.2**	**13.1**	**14.1**	**14.0**	**13.1**	**14.3**	**11.9**	**11.5**	**9.1**
	5% DB	MCDBR		**12.8**	**11.8**	**15.2**	**15.3**	**15.4**	**16.5**	**15.4**	**13 .7**	**15.9**	**14.8**	**13.7**	**10.0**
		MCWBR		**11.8**	**6.5**	**13.7**	**4.3**	**13.2**	**2.7**	**3.7**	**3.4**	**12.5**	**4.8**	**12.5**	**4.8**
	5% WB	MCDBR		**11.0**	**12.4**	**13.1**	**13.7**	**13.1**	**14.6**	**13.9**	**13.4**	**14.3**	**14.5**	**11.7**	**6.9**
		MCWBR		**10.6**	**11.3**	**11.8**	**4.0**	**12.0**	**2.9**	**3.9**	**3.6**	**11.6**	**4.6**	**10.9**	**4.2**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.47 Design Conditions for Muş, Turkey

Lat: **38.44** Long: **41.31** Elev: **1283** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-25.5**	**-22.1**	**-29.3**	**0.3**	**-29.3**	**-26.3**	**0.5**	**-25.0**	**5.7**	**18.6**	**4.6**	**25.1**	**2.3**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**35.0**	**21.2**	**35.0**	**21.2**	**32.9**	**20.9**	**21.0**	**32.5**	**20.2**	**32.0**	**21.0**	**32.5**	**.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
17.6	**25.3**	**26.0**	**16.7**	**32.7**	**31.9**	**15.8**	**21.3**	**23.3**	**147.4**	**35.1**	**139.2**	**34.0**	**131.6**	**33.0**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
3.9	**3.8**	**4.9**	**23.0**	**-27.8**	**35.0**	**2.5**	**2.5**	**-29.3**	**36.5**	**-30.5**	**37.7**	**-31.6**	**38.8**	**-33.2**	**40.3**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**9.9**	**-9.7**	**-7.3**	**2.6**	**8.7**	**14.6**	**21.4**	**25.3**	**25.4**	**20.4**	**13.0**	**5.9**	**-5.6**
	Sd			**7.56**	**6.72**	**3.56**	**4.03**	**3.32**	**3.26**	**0.29**	**1.50**	**4.59**	**2.53**	**1.55**	**9.40**
	HDD10.0		**2364**	**612**	**486**	**458**	**70**	**7**	**0**	**0**	**0**	**0**	**4**	**243**	**484**
	HDD18.3		**4812**	**869**	**719**	**973**	**287**	**237**	**10**	**1**	**0**	**72**	**165**	**741**	**741**
	CDD10.0		**2343**	**0**	**0**	**0**	**32**	**292**	**342**	**474**	**476**	**628**	**97**	**0**	**0**
	CDD18.3		**749**	**0**	**0**	**0**	**0**	**7**	**103**	**217**	**219**	**202**	**1**	**0**	**0**
	CDH23.3		**7027**	**0**	**0**	**0**	**0**	**43**	**940**	**2560**	**2388**	**1067**	**27**	**0**	**0**
	CDH26.7		**3302**	**0**	**0**	**0**	**0**	**0**	**333**	**1352**	**1182**	**435**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**3.0**	**4.0**	**15.2**	**22.4**	**25.7**	**32.5**	**36.9**	**36.0**	**34.2**	**25.3**	**14.9**	**3.8**
		MCWB		**1.8**	**2.2**	**9.0**	**15.4**	**14.7**	**19.8**	**18.1**	**20.2**	**18.9**	**15.3**	**8.9**	**3.8**
	2%	DB		**1.0**	**2.2**	**11.9**	**20.8**	**24.6**	**31.9**	**35.9**	**34.6**	**33.3**	**24.0**	**13.2**	**3.9**
		MCWB		**-0.1**	**1.0**	**7.7**	**12.9**	**13.8**	**20.4**	**18.6**	**21.1**	**20.6**	**15.6**	**8.2**	**2.4**
	5%	DB		**-0.2**	**0.7**	**9.6**	**18.1**	**23.1**	**30.4**	**34.8**	**33.5**	**31.4**	**21.5**	**12.0**	**2.8**
		MCWB		**-1.6**	**-0.1**	**6.1**	**11.7**	**15.2**	**17.3**	**19.6**	**18.9**	**18.1**	**13.7**	**7.1**	**0.8**
	10%	DB		**-1.2**	**-0.6**	**7.9**	**14.9**	**21.7**	**28.6**	**33.8**	**32.5**	**29.3**	**19.8**	**10.4**	**1.8**
		MCWB		**-2.7**	**-1.8**	**7.1**	**8.9**	**13.4**	**15.5**	**18.1**	**19.8**	**16.4**	**12.8**	**6.4**	**0.3**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**1.4**	**1.8**	**8.8**	**14.2**	**17.9**	**22.0**	**20.9**	**21.3**	**21.0**	**15.8**	**9.0**	**4.0**
		MCDB		**3.0**	**4.1**	**15.7**	**23.2**	**33.2**	**33.0**	**36.8**	**32.6**	**34.2**	**32.5**	**15.2**	**7.5**
	2%	WB		**-0.3**	**0.5**	**7.7**	**13.5**	**16.9**	**21.0**	**20.0**	**20.9**	**19.4**	**14.8**	**8.3**	**3.0**
		MCDB		**2.1**	**1.6**	**9.9**	**22.1**	**30.0**	**30.0**	**35.8**	**34.0**	**32.0**	**29.5**	**13.9**	**3.6**
	5%	WB		**-1.2**	**-0.8**	**6.1**	**12.1**	**15.9**	**20.1**	**19.5**	**20.2**	**18.7**	**13.7**	**7.7**	**2.0**
		MCDB		**0.3**	**2.4**	**8.7**	**19.9**	**27.8**	**28.8**	**29.5**	**35.8**	**27.5**	**24.8**	**13.0**	**3.3**
	10%	WB		**-2.2**	**-1.7**	**5.2**	**10.1**	**15.1**	**18.9**	**18.8**	**19.2**	**17.6**	**12.7**	**7.1**	**0.8**
		MCDB		**-0.2**	**0.0**	**9.8**	**12.1**	**30.8**	**30.0**	**35.0**	**37.2**	**30.0**	**19.9**	**10.8**	**2.8**
Mean Daily Temperature Range		MDBR		**8.4**	**8.7**	**8.4**	**10.1**	**11.8**	**15.4**	**16.3**	**17.2**	**14.9**	**12.9**	**10.2**	**6.4**
	5% DB	MCDBR		**5.7**	**6.7**	**9.6**	**12.8**	**14.3**	**16.9**	**16.9**	**17.8**	**18.2**	**15.6**	**13.4**	**5.0**
		MCWBR		**2.8**	**3.2**	**4.7**	**4.3**	**5.8**	**5.2**	**4.0**	**5.3**	**8.8**	**6.2**	**7.6**	**2.1**
	5% WB	MCDBR		**5.5**	**8.0**	**10.5**	**13.0**	**13.4**	**16.3**	**16.4**	**16.3**	**17.1**	**15.6**	**11.8**	**4.5**
		MCWBR		**3.0**	**3.3**	**5.7**	**4.7**	**6.4**	**4.5**	**5.4**	**5.7**	**8.8**	**6.7**	**6.4**	**2.3**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.48 Design Conditions for Nevşehir, Turkey

Lat: **38.25** Long: **34.40** Elev: **1260** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-12.4**	**-10.9**	**-15.1**	**1.8**	**-11.1**	**-14.2**	**1.8**	**-11.0**	**7.5**	**12.6**	**6.4**	**24.0**	**0.7**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**32.3**	**15.3**	**31.1**	**17.2**	**29.8**	**16.7**	**17.9**	**30.9**	**17.2**	**31.6**	**17.9**	**32.9**	**.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
13.9	**14.8**	**17.8**	**13.3**	**17.4**	**19.9**	**12.3**	**16.2**	**19.1**	**126.1**	**32.3**	**119.2**	**31.2**	**110.9**	**29.9**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
5.1	**5.3**	**6.4**	**24.0**	**-13.2**	**34.1**	**2.3**	**2.4**	**-14.6**	**35.5**	**-15.7**	**36.6**	**-16.8**	**37.7**	**-18.1**	**39.1**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**10.9**	**0.1**	**-2.9**	**4.6**	**9.0**	**13.3**	**19.1**	**23.6**	**22.6**	**18.4**	**10.2**	**6.7**	**0.3**
	Sd			**4.08**	**6.13**	**4.52**	**4.57**	**3.13**	**3.34**	**0.95**	**1.9**	**3.51**	**3.66**	**3.84**	**4.48**
	HDD10.0		**1671**	**306**	**362**	**341**	**69**	**17**	**0**	**0**	**0**	**0**	**43**	**233**	**300**
	HDD18.3		**4178**	**563**	**593**	**850**	**279**	**312**	**28**	**0**	**0**	**44**	**254**	**697**	**557**
	CDD10.0		**2111**	**0**	**1**	**5**	**39**	**220**	**274**	**847**	**390**	**253**	**48**	**34**	**0**
	CDD18.3		**568**	**0**	**0**	**0**	**0**	**0**	**53**	**332**	**132**	**49**	**2**	**0**	**0**
	CDH23.3		**3877**	**0**	**0**	**0**	**0**	**2**	**453**	**1569**	**1375**	**466**	**12**	**0**	**0**
	CDH26.7		**1305**	**0**	**0**	**0**	**0**	**0**	**113**	**595**	**489**	**108**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**9.2**	**14.8**	**17.3**	**22.8**	**23.1**	**31.2**	**35.8**	**32.5**	**31.2**	**24.9**	**20.8**	**10.9**
		MCWB		**5.9**	**7.7**	**8.0**	**12.8**	**12.2**	**17.3**	**17.9**	**16.2**	**17.3**	**11.7**	**10.3**	**7.2**
	2%	DB		**8.1**	**12.7**	**15.7**	**21.7**	**21.8**	**19.9**	**33.7**	**31.8**	**29.0**	**21.9**	**17.8**	**9.9**
		MCWB		**3.8**	**8.7**	**9.2**	**10.2**	**11.0**	**17.5**	**18.6**	**17.5**	**17.2**	**10.0**	**10.3**	**6.2**
	5%	DB		**6.8**	**10.5**	**14.5**	**19.2**	**20.8**	**27.8**	**32.0**	**31.0**	**27.8**	**18.6**	**16.0**	**8.6**
		MCWB		**3.5**	**7.8**	**8.9**	**11.9**	**10.3**	**18.0**	**17.3**	**16.8**	**18.0**	**11.1**	**9.5**	**4.6**
	10%	DB		**5.8**	**6.2**	**13.0**	**16.4**	**19.6**	**26.1**	**29.9**	**32.5**	**26.2**	**16.2**	**13.0**	**7.5**
		MCWB		**3.4**	**4.8**	**7.7**	**10.5**	**12.0**	**12.4**	**17.5**	**17.2**	**13.9**	**8.2**	**7.7**	**4.2**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**6**	**7.5**	**8.4**	**13.0**	**13.6**	**16.4**	**19.0**	**17.5**	**18.9**	**12.4**	**11.6**	**7.4**
		MCDB		**9.0**	**12.0**	**12.1**	**28.4**	**20.5**	**31.0**	**34.0**	**31.8**	**26.7**	**26.1**	**22.4**	**13.0**
	2%	WB		**4.9**	**6.4**	**8.0**	**12.3**	**12.9**	**15.3**	**18.4**	**17.3**	**17.4**	**11.6**	**10.3**	**6.4**
		MCDB		**7.6**	**11.2**	**16.8**	**23.0**	**26.3**	**29.9**	**30.0**	**29.0**	**30.0**	**22.9**	**21.4**	**14.5**
	5%	WB		**4.3**	**5.0**	**7.4**	**11.5**	**12.3**	**14.5**	**17.6**	**16.8**	**16.6**	**10.3**	**9.4**	**5.5**
		MCDB		**10.3**	**11.2**	**15.2**	**19.1**	**22.8**	**29.3**	**34.0**	**30.5**	**29.3**	**20.4**	**18.1**	**11.1**
	10%	WB		**3.6**	**2.6**	**6.7**	**10.4**	**11.7**	**13.6**	**16.7**	**16.1**	**15.6**	**9.2**	**8.4**	**4.6**
		MCDB		**8.1**	**6.7**	**12.2**	**20.1**	**21.1**	**27.3**	**20.8**	**32.1**	**27.4**	**16.9**	**10.5**	**8.2**
Mean Daily Temperature Range		MDBR		**6.7**	**8.0**	**9.1**	**10.4**	**10.6**	**13.5**	**14.3**	**15.5**	**14.6**	**11.6**	**8.3**	**8.2**
	5% DB	MCDBR		**7.1**	**10.4**	**11.7**	**11.1**	**11.9**	**15.1**	**14.9**	**15.5**	**15.9**	**13.4**	**11.3**	**8.4**
		MCWBR		**2.9**	**4.0**	**8.8**	**2.4**	**9.4**	**3.1**	**10.7**	**4.9**	**4.7**	**4.2**	**4.0**	**3.3**
	5% WB	MCDBR		**6.2**	**8.5**	**11.2**	**11.4**	**10.8**	**12.4**	**14.3**	**14.2**	**12.2**	**14.0**	**10.4**	**6.8**
		MCWBR		**2.3**	**5.0**	**8.5**	**2.2**	**9.0**	**10.2**	**11.0**	**4.7**	**6.0**	**4.5**	**4.3**	**3.4**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.49 Design Conditions for Ordu, Turkey

Lat: **40.59** Long: **37.52** Elev: **4** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
3	**-0.3**	**0.7**	**-10.3**	**3.8**	**0.2**	**- 6.1**	**3.7**	**0.2**	**6.4**	**5.6**	**5.5**	**21.8**	**1.9**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
9	**3.0**	**29.5**	**23.4**	**28.9**	**23.1**	**28.0**	**23.6**	**24.4**	**29.3**	**23.7**	**29.0**	**24.4**	**29.5**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
23.2	**21.5**	**28.2**	**22.6**	**19.6**	**29.2**	**22.0**	**18.2**	**28.9**	**97.9**	**29.6**	**94.8**	**29.0**	**90.7**	**28.1**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
4.8	**4.3**	**3.9**	**26.0**	**1.0**	**28.2**	**1.5**	**1.8**	**0.1**	**29.2**	**-0.6**	**30.1**	**-1.3**	**30.9**	**-2.2**	**32.0**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**15.3**	**6.5**	**7.4**	**8.3**	**10.8**	**16.2**	**20.6**	**24.2**	**23.8**	**21.6**	**16.2**	**10.9**	**9.1**
	Sd			**3.32**	**3.36**	**4.49**	**3.23**	**2.38**	**2.09**	**1.80**	**1.75**	**2.91**	**3.54**	**2.94**	**0.85**
	HDD10.0		**496**	**227**	**91**	**89**	**29**	**0**	**0**	**0**	**0**	**0**	**2**	**19**	**39**
	HDD18.3		**2308**	**722**	**305**	**310**	**224**	**146**	**6**	**0**	**0**	**5**	**84**	**223**	**284**
	CDD10.0		**3081**	**11**	**18**	**14**	**38**	**53**	**318**	**880**	**428**	**694**	**195**	**46**	**13**
	CDD18.3		**851**	**0**	**0**	**1**	**0**	**17**	**75**	**366**	**171**	**200**	**20**	**1**	**0**
	CDH23.3		**3253**	**0**	**0**	**19**	**0**	**5**	**185**	**1163**	**1146**	**667**	**68**	**0**	**0**
	CDH26.7		**554**	**0**	**0**	**0**	**0**	**0**	**3**	**152**	**224**	**168**	**6**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**16.8**	**19.7**	**24.7**	**22.0**	**23.9**	**27.0**	**29.6**	**29.9**	**30.0**	**27.5**	**21.9**	**18.0**
		MCWB		**15.0**	**16.4**	**20.8**	**15.4**	**19.2**	**17.4**	**24.6**	**22.6**	**24.9**	**18.3**	**12.8**	**12.0**
	2%	DB		**14.0**	**18.6**	**23.4**	**19.4**	**22.9**	**26.1**	**28.9**	**29.4**	**29.6**	**25.5**	**19.1**	**15.8**
		MCWB		**8.1**	**13.7**	**17.4**	**13.6**	**17.3**	**23.2**	**23.6**	**23.5**	**24.6**	**18.3**	**15.1**	**9.5**
	5%	DB		**12.7**	**16.8**	**19.8**	**17.2**	**21.9**	**25.0**	**28.1**	**28.9**	**27.9**	**23.4**	**17.5**	**13.9**
		MCWB		**8.9**	**15.0**	**16.3**	**12.5**	**12.8**	**21.9**	**18.2**	**23.6**	**21.7**	**17.4**	**11.5**	**9.8**
	10%	DB		**11.1**	**13.1**	**16.0**	**15.4**	**20.6**	**24.3**	**27.4**	**29.0**	**27.2**	**22.2**	**16.4**	**12.9**
		MCWB		**9.4**	**8.5**	**8.9**	**9.7**	**15.9**	**22.8**	**23.7**	**24.4**	**18.3**	**15.9**	**9.6**	**9.4**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**9.2**	**10.8**	**14.2**	**18.3**	**22.3**	**24.1**	**24.4**	**25.1**	**25.4**	**18.3**	**15.4**	**12.0**
		MCDB		**12.8**	**20.7**	**24.9**	**24.4**	**26.6**	**27.6**	**29.0**	**29.3**	**30.0**	**20.1**	**17.9**	**18.0**
	2%	WB		**8.8**	**10.2**	**13.3**	**12.9**	**17.6**	**21.6**	**23.5**	**24.4**	**24.6**	**17.8**	**14.9**	**10.3**
		MCDB		**11.4**	**19.4**	**17.8**	**20.5**	**23.1**	**25.3**	**28.5**	**28.3**	**28.7**	**27.3**	**17.6**	**19.6**
	5%	WB		**8.3**	**8.8**	**12.3**	**12.1**	**17.1**	**21.1**	**23.0**	**23.7**	**24.0**	**17.3**	**13.5**	**9.9**
		MCDB		**16.5**	**16.9**	**23.0**	**19.0**	**21.8**	**24.7**	**25.5**	**29.6**	**29.5**	**23.2**	**15.5**	**17.6**
	10%	WB		**7.7**	**7.8**	**10.8**	**11.5**	**16.4**	**20.4**	**22.5**	**23.1**	**22.8**	**16.8**	**11.6**	**9.4**
		MCDB		**16.6**	**15.8**	**16.6**	**16.7**	**25.7**	**24.8**	**28.6**	**30.0**	**24.9**	**23.7**	**20.0**	**13.1**
Mean Daily Temperature Range		MDBR		**6.5**	**6.9**	**7.4**	**7.1**	**8.1**	**7.8**	**7.3**	**8.0**	**7.4**	**7.1**	**8.8**	**7.9**
	5% DB	MCDBR		**8.7**	**12.2**	**15.5**	**10.9**	**9.6**	**8.4**	**7.7**	**9.0**	**8.2**	**9.7**	**10.1**	**10.2**
		MCWBR		**7.3**	**4.2**	**3.6**	**2.9**	**3.1**	**3.6**	**3.0**	**3.9**	**4.4**	**3.5**	**4.5**	**3.4**
	5% WB	MCDBR		**7.4**	**8.1**	**9.6**	**10.2**	**8.5**	**7.7**	**7.3**	**8.9**	**7.9**	**7.6**	**9.3**	**9.0**
		MCWBR		**6.6**	**4.0**	**3.8**	**2.5**	**2.9**	**3.9**	**2.9**	**4.1**	**4.0**	**3.2**	**5.0**	**3.6**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.50 Design Conditions for Rize, Turkey

Lat: **41.02** Long: **40.30** Elev: **4** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**1.0**	**1.7**	**- 3.2**	**6.2**	**8.0**	**- 2.3**	**4.9**	**9.0**	**4.6**	**25.9**	**3.8**	**10.6**	**1.1**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**29.0**	**22.9**	**28.2**	**22.1**	**27.5**	**21.7**	**23.7**	**25.4**	**23.2**	**26.4**	**23.7**	**25.4**	**0.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
22.6	**21.6**	**28.0**	**21.8**	**20.3**	**28.7**	**21.4**	**19.3**	**21.5**	**95.5**	**29.1**	**91.4**	**28.2**	**88.2**	**27.6**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
3.5	**3.0**	**2.7**	**25.0**	**1.4**	**29.2**	**1.5**	**1.8**	**0.5**	**30.3**	**-0.2**	**31.1**	**-1.0**	**31.9**	**-1.9**	**33.0**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**14.8**	**7.1**	**6.7**	**8.6**	**11.9**	**17.7**	**20.3**	**24.3**	**23.1**	**20.4**	**15.2**	**12.2**	**9.1**
	Sd			**3.27**	**2.38**	**2.78**	**3.46**	**2.64**	**2.31**	**0.95**	**1.50**	**3.45**	**2.42**	**2.44**	**4.43**
	HDD10.0		**497**	**202**	**99**	**111**	**17**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**61**
	HDD18.3		**2694**	**693**	**325**	**599**	**191**	**87**	**7**	**0**	**0**	**42**	**99**	**366**	**284**
	CDD10.0		**3168**	**24**	**6**	**26**	**75**	**475**	**309**	**890**	**408**	**622**	**161**	**139**	**34**
	CDD18.3		**809**	**0**	**0**	**0**	**0**	**47**	**67**	**375**	**150**	**166**	**3**	**0**	**0**
	CDH23.3		**2785**	**0**	**0**	**0**	**2**	**90**	**159**	**1332**	**751**	**427**	**24**	**0**	**0**
	CDH26.7		**381**	**0**	**0**	**0**	**0**	**16**	**1**	**273**	**50**	**39**	**2**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**16.0**	**18.0**	**21.5**	**22.0**	**29.8**	**26.6**	**30.2**	**28.7**	**28.2**	**25.4**	**22.8**	**20.3**
		MCWB		**12.0**	**11.1**	**19.4**	**14.1**	**23.7**	**22.1**	**22.9**	**22.5**	**19.8**	**16.0**	**16.2**	**13.9**
	2%	DB		**14.8**	**5.4**	**16.4**	**20.5**	**25.2**	**25.8**	**29.6**	**27.7**	**27.9**	**22.6**	**20.8**	**17.4**
		MCWB		**8.8**	**10.9**	**12.6**	**17.5**	**16.5**	**21.9**	**21.1**	**21.7**	**21.5**	**15.9**	**14.1**	**12.2**
	5%	DB		**13.8**	**12.2**	**13.8**	**18.9**	**23.9**	**25.1**	**28.9**	**27.1**	**26.9**	**21.6**	**19.8**	**15.9**
		MCWB		**11.6**	**8.5**	**11.6**	**14.5**	**20.8**	**22.8**	**22.7**	**21.2**	**21.5**	**16.3**	**15.3**	**14.2**
	10%	DB		**12.8**	**10.3**	**12.6**	**17.2**	**22.7**	**24.1**	**28.3**	**30.2**	**25.8**	**20.0**	**17.2**	**14.9**
		MCWB		**7.8**	**7.3**	**9.6**	**13.9**	**21.4**	**21.0**	**23.5**	**23.5**	**21.9**	**13.5**	**13.9**	**10.6**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**11.2**	**9.4**	**12.4**	**15.0**	**20.3**	**21.3**	**24.1**	**24.3**	**23.0**	**18.8**	**17.3**	**14.1**
		MCDB		**15.4**	**11.4**	**22.0**	**20.8**	**30.0**	**28.7**	**30.7**	**26.2**	**28.0**	**24.2**	**23.0**	**22.0**
	2%	WB		**10.4**	**8.1**	**10.8**	**14.6**	**19.0**	**21.1**	**23.8**	**23.7**	**22.2**	**18.4**	**16.5**	**13.7**
		MCDB		**11.6**	**10.8**	**18.0**	**17.0**	**25.3**	**24.0**	**28.5**	**26.7**	**28.1**	**25.0**	**18.3**	**17.2**
	5%	WB		**9.6**	**7.6**	**10.0**	**14.0**	**18.4**	**20.7**	**23.4**	**23.1**	**21.7**	**17.1**	**15.5**	**13.1**
		MCDB		**13.0**	**13.2**	**11.2**	**20.8**	**24.3**	**23.2**	**29.9**	**30.0**	**27.9**	**28.0**	**20.8**	**18.0**
	10%	WB		**9.0**	**6.9**	**9.6**	**12.8**	**17.6**	**20.2**	**22.8**	**22.4**	**21.3**	**16.3**	**14.3**	**12.0**
		MCDB		**13.0**	**9.4**	**11.5**	**15.0**	**22.0**	**25.4**	**26.6**	**28.8**	**28.7**	**19.9**	**21.6**	**16.6**
Mean Daily Temperature Range		MDBR		**8.0**	**6.8**	**8.0**	**7.3**	**8.1**	**6.2**	**7.8**	**7.1**	**7.6**	**8.0**	**8.0**	**7.6**
	5% DB	MCDBR		**3.1**	**10.1**	**11.7**	**10.0**	**10.5**	**7.2**	**8.5**	**8.1**	**8.3**	**9.7**	**10.8**	**8.7**
		MCWBR		**3.5**	**3.6**	**3.1**	**1.9**	**2.9**	**1.0**	**1.9**	**2.8**	**2.4**	**4.6**	**5.5**	**4.4**
	5% WB	MCDBR		**5.6**	**10.4**	**18.0**	**9.3**	**16.6**	**12.4**	**8.1**	**7.6**	**8.1**	**9.3**	**10.3**	**9.4**
		MCWBR		**3.0**	**3.5**	**5.0**	**1.3**	**5.0**	**4.2**	**2.2**	**2.7**	**2.5**	**4.9**	**5.1**	**5.0**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.51 Design Conditions for Sakarya, Turkey

Lat: **0** Long: **.0** Elev: **0** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**0.0**	**0.6**	**- 2.9**	**4.8**	**1.8**	**- 2.1**	**6.5**	**0.5**	**4.9**	**13.0**	**4.3**	**18.7**	**1.3**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8	**3.0**	**33.8**	**24.0**	**32.4**	**23.9**	**31.0**	**21.0**	**24.5**	**29.2**	**24.0**	**33.8**	**23.6**	**25.4**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
23.2	**19.7**	**34.6**	**22.9**	**22.7**	**24.4**	**22.3**	**31.7**	**24.5**	**122.3**	**33.9**	**114.0**	**32.5**	**106.2**	**31.2**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
4.1	**3.7**	**3.2**	**31.0**	**1.0**	**33.1**	**2.1**	**2.4**	**-0.2**	**34.5**	**-1.2**	**35.6**	**-2.2**	**36.7**	**-3.5**	**38.1**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours		Tavg	**15.1**	**7.1**	**6.5**	**8.1**	**13.6**	**18.1**	**21.2**	**23.8**	**25.3**	**20.2**	**15.2**	**14.8**	**8.8**
		Sd		**2.49**	**3.01**	**4.12**	**4.02**	**4.13**	**2.56**	**4.53**	**2.50**	**1.73**	**3.10**	**2.98**	**6.1**
		HDD10.0	**560**	**189**	**111**	**186**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**65**
		HDD18.3	**2551**	**692**	**331**	**632**	**153**	**115**	**2**	**0**	**0**	**3**	**103**	**227**	**293**
		CDD10.0	**3214**	**12**	**12**	**69**	**116**	**504**	**337**	**429**	**952**	**306**	**161**	**287**	**30**
		CDD18.3	**898**	**0**	**0**	**0**	**12**	**104**	**90**	**171**	**437**	**61**	**7**	**17**	**0**
		CDH23.3	**5608**	**0**	**0**	**1**	**92**	**514**	**628**	**1500**	**2351**	**380**	**96**	**44**	**0**
		CDH26.7	**2050**	**0**	**0**	**0**	**13**	**179**	**204**	**528**	**1044**	**69**	**7**	**7**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**15.9**	**20.7**	**22.8**	**27.9**	**33.6**	**32.9**	**32.8**	**35.3**	**30.8**	**27.2**	**27.9**	**18.2**
		MCWB		**12.9**	**18.5**	**18.6**	**18.1**	**20.6**	**21.5**	**24.3**	**24.4**	**17.6**	**18.2**	**19.5**	**10.8**
	2%	DB		**14.7**	**17.5**	**21.1**	**16.5**	**31.0**	**31.1**	**31.9**	**34.3**	**28.4**	**26.4**	**24.2**	**17.0**
		MCWB		**8.7**	**17.1**	**18.1**	**17.5**	**21.0**	**19.4**	**20.8**	**23.6**	**17.6**	**18.2**	**19.5**	**10.8**
	5%	DB		**13.4**	**15.7**	**18.8**	**22.9**	**28.3**	**28.8**	**30.9**	**33.4**	**26.8**	**23.4**	**22.1**	**15.6**
		MCWB		**8.2**	**9.0**	**12.8**	**19.1**	**19.5**	**19.3**	**21.7**	**21.6**	**18.1**	**18.0**	**14.7**	**9.7**
	10%	DB		**11.9**	**13.4**	**16.7**	**20.9**	**26.2**	**26.9**	**29.9**	**32.2**	**25.1**	**21.0**	**20.0**	**14.0**
		MCWB		**10.7**	**8.2**	**13.3**	**14.5**	**17.7**	**18.2**	**19.2**	**10.7**	**18.1**	**13.7**	**12.5**	**9.7**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**9.9**	**12.3**	**12.6**	**18.9**	**21.7**	**23.6**	**24.9**	**25.3**	**21.1**	**18.8**	**18.6**	**12.8**
		MCDB		**15.6**	**21.3**	**19.6**	**29.2**	**35.1**	**32.0**	**33.9**	**30.1**	**31.8**	**31.7**	**31.6**	**18.8**
	2%	WB		**9.6**	**11.1**	**11.5**	**18.1**	**10.7**	**22.6**	**24.4**	**24.9**	**19.7**	**18.4**	**18.1**	**11.9**
		MCDB		**11.0**	**16.4**	**19.1**	**28.1**	**34.3**	**35.2**	**32.0**	**28.1**	**33.5**	**25.2**	**26.8**	**16.3**
	5%	WB		**9.1**	**9.9**	**10.8**	**16.9**	**19.4**	**21.7**	**24.2**	**24.3**	**19.1**	**17.8**	**17.5**	**11.2**
		MCDB		**9.8**	**16.6**	**11.6**	**27.3**	**28.0**	**32.3**	**32.2**	**32.8**	**28.0**	**26.0**	**27.1**	**13.6**
	10%	WB		**8.4**	**8.5**	**9.5**	**15.5**	**18.3**	**21.0**	**23.8**	**23.6**	**18.5**	**16.9**	**16.4**	**10.4**
		MCDB		**11.6**	**11.2**	**11.0**	**21.6**	**22.7**	**29.3**	**27.9**	**24.7**	**26.4**	**21.6**	**28.0**	**17.5**
Mean Daily Temperature Range		MDBR		**7.2**	**8.0**	**9.9**	**10.7**	**12.6**	**10.9**	**11.3**	**13.1**	**10.7**	**10.6**	**7.9**	**6.7**
	5% DB	MCDBR		**10.1**	**14.1**	**14.5**	**15.2**	**16.2**	**14.2**	**12.6**	**14.6**	**13.2**	**13.9**	**10.6**	**8.2**
		MCWBR		**9.1**	**7.0**	**12.0**	**5.4**	**13.4**	**4.2**	**4.2**	**12.8**	**3.9**	**6.6**	**9.4**	**3.1**
	5% WB	MCDBR		**9.2**	**13.9**	**14.5**	**12.0**	**14.6**	**11.0**	**11.3**	**13.1**	**12.3**	**12.8**	**8.8**	**7.1**
		MCWBR		**8.2**	**6.7**	**12.0**	**5.0**	**12.5**	**3.6**	**3.8**	**11.4**	**4.4**	**5.9**	**8.1**	**3.6**
Clear Sky Solar Irradiance		taub													
		taud													
		Ebn,noon													
		Edh,noon													

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.52 Design Conditions for Samsun, Turkey

Lat: **41.17** Long: **.36.20** Elev: **44** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**0.2**	**0.9**	**- 6.7**	**4.6**	**2.9**	**- 5.7**	**4.9**	**3.8**	**8.9**	**13.5**	**7.4**	**16.4**	**1.9**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8	**3.0**	**30.0**	**16.5**	**29.9**	**24.3**	**27.8**	**20.7**	**24.2**	**29.1**	**23.4**	**28.8**	**22.6**	**26.4**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
23.1	**24.4**	**29.2**	**22.3**	**20.5**	**27.9**	**21.4**	**17.2**	**29.0**	**100.2**	**30.0**	**94.9**	**29.0**	**89.3**	**27.9**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
6.8	**7.1**	**6.9**	**26.0**	**1.1**	**31.2**	**1.6**	**1.7**	**0.1**	**32.2**	**-0.6**	**33.0**	**-1.4**	**33.8**	**-2.4**	**34.8**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours		Tavg	**14.8**	**8.3**	**5.5**	**8.1**	**11.6**	**16.6**	**21.2**	**23.4**	**24.7**	**20.4**	**16.0**	**10.9**	**9.7**
		Sd		**4.14**	**2.84**	**3.75**	**2.14**	**3.72**	**1.77**	**1.12**	**2.36**	**2.03**	**4.30**	**4.89**	**0.36**
		HDD10.0	**404**	**81**	**128**	**84**	**4**	**0**	**0**	**0**	**0**	**0**	**4**	**47**	**55**
		HDD18.3	**1861**	**313**	**358**	**317**	**202**	**77**	**1**	**0**	**0**	**3**	**96**	**226**	**268**
		CDD10.0	**2142**	**28**	**2**	**25**	**52**	**205**	**337**	**416**	**455**	**311**	**191**	**75**	**45**
		CDD18.3	**569**	**2**	**0**	**0**	**1**	**24**	**88**	**159**	**198**	**65**	**26**	**5**	**0**
		CDH23.3	**2962**	**0**	**0**	**1**	**22**	**55**	**203**	**689**	**1590**	**177**	**214**	**10**	**0**
		CDH26.7	**515**	**0**	**0**	**0**	**3**	**10**	**2**	**20**	**388**	**1**	**91**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**22.0**	**16.1**	**21.8**	**25.8**	**27.0**	**27.2**	**27.9**	**31.6**	**26.6**	**33.1**	**23.8**	**20.2**
		MCWB		**13.3**	**9.9**	**11.2**	**19.5**	**21.6**	**18.9**	**19.5**	**25.8**	**23.0**	**17.2**	**12.2**	**11.4**
	2%	DB		**20.4**	**14.4**	**20.0**	**21.4**	**24.6**	**25.7**	**27.2**	**30.3**	**25.9**	**29.2**	**22.8**	**18.3**
		MCWB		**14.3**	**11.3**	**13.1**	**11.8**	**12.4**	**18.3**	**18.9**	**23.9**	**17.8**	**17.1**	**13.6**	**10.5**
	5%	DB		**17.3**	**11.3**	**16.8**	**16.0**	**23.1**	**25.1**	**26.6**	**29.9**	**25.3**	**24.7**	**21.1**	**16.8**
		MCWB		**11.4**	**8.8**	**7.1**	**8.8**	**16.3**	**19.5**	**23.0**	**24.3**	**15.6**	**17.5**	**12.9**	**7.1**
	10%	DB		**14.9**	**10.1**	**13.9**	**14.8**	**21.9**	**24.6**	**26.2**	**29.4**	**24.3**	**22.8**	**19.6**	**15.2**
		MCWB		**9.9**	**9.0**	**8.5**	**6.3**	**17.9**	**12.3**	**19.6**	**22.7**	**19.0**	**13.6**	**12.1**	**6.7**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**12.8**	**10.1**	**13.1**	**15.8**	**19.4**	**22.4**	**24.3**	**25.8**	**22.7**	**19.5**	**16.7**	**11.8**
		MCDB		**22.4**	**19.0**	**20.0**	**25.1**	**26.7**	**27.5**	**29.2**	**31.6**	**26.8**	**25.0**	**21.6**	**14.9**
	2%	WB		**12.2**	**8.8**	**11.6**	**14.6**	**18.9**	**21.6**	**23.5**	**24.6**	**21.9**	**18.5**	**14.9**	**11.5**
		MCDB		**23.8**	**16.0**	**20.0**	**21.5**	**22.6**	**27.8**	**26.8**	**28.6**	**25.6**	**22.0**	**25.0**	**19.8**
	5%	WB		**10.9**	**8.2**	**10.6**	**12.6**	**18.4**	**21.0**	**22.8**	**24.1**	**20.9**	**17.7**	**13.7**	**10.8**
		MCDB		**18.6**	**14.2**	**14.4**	**21.3**	**24.1**	**28.0**	**26.4**	**29.6**	**26.0**	**23.0**	**18.5**	**14.9**
	10%	WB		**9.4**	**7.6**	**9.8**	**12.0**	**17.8**	**20.1**	**22.2**	**23.7**	**19.9**	**16.9**	**13.0**	**10.1**
		MCDB		**12.4**	**8.5**	**11.8**	**13.9**	**22.5**	**23.1**	**23.0**	**11.1**	**22.1**	**23.0**	**15.8**	**17.9**
Mean Daily Temperature Range		MDBR		**7.4**	**7.3**	**7.9**	**7.1**	**7.3**	**7.2**	**7.0**	**7.9**	**6.8**	**8.4**	**8.3**	**6.8**
	5% DB	MCDBR		**11.3**	**9.4**	**14.3**	**10.9**	**11.2**	**8.4**	**7.4**	**9.6**	**7.7**	**14.2**	**11.1**	**9.7**
		MCWBR		**3.6**	**3.4**	**2.8**	**3.2**	**1.3**	**3.3**	**3.4**	**4.4**	**3.1**	**4.1**	**3.1**	**3.7**
	5% WB	MCDBR		**7.8**	**9.8**	**10.3**	**7.4**	**7.6**	**7.7**	**7.6**	**8.8**	**6.8**	**11.9**	**9.9**	**7.1**
		MCWBR		**2.0**	**3.5**	**2.8**	**2.7**	**1.8**	**3.1**	**3.7**	**4.3**	**3.4**	**4.6**	**4.0**	**3.3**
Clear Sky Solar Irradiance		taub													
		taud													
		Ebn,noon													
		Edh,noon													

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.54 Design Conditions for Sinop, Turkey

Lat: **42.02** Long: **35.10** Elev: **32** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**1.5**	**2.1**	**- 7.3**	**6.3**	**7.1**	**- 5.3**	**6.0**	**3.9**	**11.7**	**3.4**	**10.2**	**8.0**	**6.0**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8	**3.02**	**27.4**	**21.4**	**26.5**	**20.1**	**25.7**	**21.2**	**22.3**	**23.4**	**21.9**	**25.0**	**21.5**	**24.8**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
21.4	**18.6**	**25.7**	**20.8**	**17.5**	**22.5**	**20.5**	**16.2**	**23.2**	**88.3**	**27.6**	**83.5**	**26.6**	**80.0**	**25.8**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
9.4	**8.7**	**7.6**	**26.0**	**3.0**	**27.0**	**1.2**	**1.4**	**2.3**	**27.8**	**1.7**	**28.5**	**1.1**	**29.1**	**0.4**	**29.9**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**14.1**	**8.1**	**7.0**	**7.2**	**11.2**	**15.5**	**20.2**	**23.0**	**22.1**	**20.6**	**15.9**	**11.7**	**8.3**
	Sd			**3.32**	**2.71**	**2.74**	**2.98**	**2.41**	**2.31**	**12.3**	**1.32**	**2.37**	**2.17**	**2.98**	**1.97**
	HDD10.0		**471**	**76**	**95**	**183**	**16**	**0**	**0**	**0**	**0**	**0**	**0**	**23**	**77**
	HDD18.3		**2381**	**316**	**316**	**661**	**214**	**91**	**9**	**0**	**0**	**17**	**83**	**363**	**309**
	CDD10.0		**2319**	**18**	**11**	**20**	**52**	**172**	**306**	**405**	**377**	**635**	**182**	**117**	**25**
	CDD18.3		**502**	**0**	**0**	**0**	**1**	**5**	**67**	**147**	**120**	**154**	**8**	**0**	**0**
	CDH23.3		**1301**	**0**	**0**	**0**	**5**	**7**	**155**	**568**	**353**	**177**	**40**	**0**	**0**
	CDH26.7		**73**	**0**	**0**	**0**	**0**	**0**	**4**	**35**	**24**	**7**	**4**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**16.8**	**18.6**	**19.0**	**21.2**	**24.0**	**27.0**	**28.4**	**29.6**	**27.4**	**27.0**	**22.0**	**19.9**
		MCWB		**8.5**	**10.9**	**11.9**	**20.1**	**14.9**	**15.8**	**15.9**	**16.1**	**21.4**	**15.8**	**13.7**	**10.8**
	2%	DB		**15.2**	**16.4**	**15.5**	**19.5**	**20.8**	**26.0**	**27.7**	**27.2**	**26.2**	**24.0**	**18.5**	**16.8**
		MCWB		**13.4**	**10.8**	**12.6**	**13.4**	**13.2**	**15.5**	**16.3**	**18.1**	**16.1**	**14.9**	**16.5**	**8.5**
	5%	DB		**13.7**	**11.3**	**13.4**	**18.0**	**19.9**	**25.1**	**26.8**	**25.8**	**25.2**	**21.7**	**17.5**	**14.9**
		MCWB		7.9	7.1	7.4	10.0	10.8	21.9	18.3	15.1	22.7	15.9	9.9	7.6
	10%	DB		12.9	12.3	11.7	15.8	19.0	23.9	25.9	25.1	24.1	19.0	16.2	13.7
		MCWB		8.2	9.5	8.1	11.5	11.9	21.3	19.6	21.9	18.1	11.9	9.4	7.9
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**9.9**	**9.2**	**10.6**	**14.4**	**18.8**	**22.5**	**22.8**	**22.2**	**22.5**	**17.7**	**16.8**	**11.7**
		MCDB		**12.0**	**12.9**	**19.0**	**20.8**	**22.7**	**25.3**	**26.0**	**24.8**	**24.3**	**21.7**	**18.0**	**13.3**
	2%	WB		**9.6**	**8.2**	**9.7**	**13.9**	**18.3**	**21.8**	**22.3**	**21.8**	**22.3**	**16.9**	**15.5**	**11.1**
		MCDB		**16.6**	**12.4**	**11.9**	**21.0**	**23.2**	**25.5**	**28.0**	**24.4**	**25.8**	**22.5**	**21.6**	**11.6**
	5%	WB		**9.0**	**7.2**	**9.2**	**13.4**	**17.5**	**21.4**	**21.8**	**21.3**	**21.8**	**15.7**	**14.0**	**9.9**
		MCDB		**13.3**	**13.2**	**13.0**	**13.4**	**24.0**	**25.8**	**24.4**	**24.2**	**25.7**	**22.2**	**19.4**	**14.5**
	10%	WB		**8.6**	**6.2**	**8.6**	**11.9**	**17.1**	**20.9**	**21.3**	**20.6**	**21.3**	**14.8**	**13.3**	**9.4**
		MCDB		**12.7**	**12.9**	**13.3**	**14.8**	**22.7**	**24.3**	**24.6**	**24.2**	**25.5**	**19.2**	**17.8**	**11.1**
Mean Daily Temperature Range		MDBR		**5.5**	**5.9**	**4.7**	**6.1**	**6.0**	**5.9**	**6.3**	**6.7**	**5.8**	**5.9**	**6.0**	**5 .9**
	5% DB	MCDBR		**7.6**	**10.0**	**9.3**	**8.1**	**7.0**	**7.7**	**7.6**	**7.8**	**8.0**	**9.4**	**8.8**	**7.7**
		MCWBR		**2.9**	**3.0**	**8.2**	**2.0**	**1.8**	**2.4**	**1.9**	**3.4**	**7.7**	**3.7**	**7.9**	**2.6**
	5% WB	MCDBR		**5.9**	**11.0**	**6.1**	**7.0**	**6.2**	**6.6**	**6.3**	**6.7**	**7.5**	**8.2**	**6.3**	**6.0**
		MCWBR		**2.4**	**3.7**	**5.6**	**2.0**	**1.8**	**3.5**	**2.3**	**2.9**	**7.4**	**3.5**	**5.8**	**2.1**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.55 Design Conditions for Sivas, Turkey

Lat: **39.49** Long: **37.01** Elev: **1285** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**-14.8**	**-13.2**	**-17.6**	**61**	**-12.0**	**-15.5**	**41**	**-4.8**	**4.9**	**27.1**	**4.1**	**18.0**	**10.0**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**32.5**	**20.0**	**30.7**	**16.9**	**28.8**	**18.2**	**19.0**	**28.2**	**18.5**	**32.6**	**19.0**	**34.0**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
16.1	**67**	**18.0**	**15.4**	**nn**	**26.7**	**14.8**	**86**	**24.2**	**40.4**	**17.4**	**37.0**	**15.3**	**34.1**	**14.0**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
20.8	**18.5**	**16.1**	**21.0**	**-15.8**	**32.6**	**2.6**	**2.7**	**-17.3**	**34.2**	**-18.6**	**35.4**	**-19.8**	**36.7**	**-21.3**	**38.2**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours		Tavg	**9.2**	**-3.2**	**-4.7**	**4.1**	**8.3**	**14.9**	**16.5**	**20.9**	**21.9**	**16.2**	**10.8**	**0.4**	**-0.8**
		Sd		**4.04**	**5.87**	**3.09**	**2.70**	**3.16**	**3.39**	**2.72**	**2.05**	**2.30**	**3.20**	**2.82**	**2.09**
		HDD10.0	**2589**	**803**	**413**	**337**	**64**	**2**	**0**	**0**	**0**	**0**	**30**	**576**	**335**
		HDD18.3	**5420**	**1309**	**645**	**878**	**301**	**223**	**76**	**16**	**2**	**70**	**233**	**1074**	**592**
		CDD10.0	**2176**	**0**	**0**	**3**	**12**	**305**	**196**	**677**	**742**	**187**	**54**	**0**	**0**
		CDD18.3	**450**	**0**	**0**	**0**	**0**	**12**	**23**	**179**	**229**	**8**	**0**	**0**	**0**
		CDH23.3	**2970**	**0**	**0**	**0**	**0**	**102**	**281**	**1093**	**1280**	**197**	**16**	**0**	**0**
		CDH26.7	**1030**	**0**	**0**	**0**	**0**	**11**	**66**	**420**	**497**	**36**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**5.0**	**12.0**	**16.6**	**21.4**	**28.0**	**30.6**	**34.8**	**33.4**	**31.0**	**26.4**	**12.9**	**9.2**
		MCWB		**0.8**	**7.2**	**10.1**	**10.0**	**15.3**	**18.0**	**19.1**	**16.4**	**19.3**	**12.3**	**4.9**	**4.3**
	2%	DB		**4.5**	**10.2**	**14.3**	**18.0**	**25.2**	**28.4**	**33.2**	**33.3**	**26.8**	**23.4**	**9.1**	**7.8**
		MCWB		**3.2**	**7.5**	**11.0**	**10.4**	**15.5**	**14.8**	**20.1**	**18.5**	**13.4**	**12.3**	**3.5**	**4.8**
	5%	DB		**3.6**	**6.8**	**12.8**	**16.8**	**24.3**	**26.8**	**30.6**	**31.1**	**25.5**	**21.8**	**6.4**	**6.2**
		MCWB		**0.9**	**2.7**	**10.4**	**10.2**	**16.5**	**13.4**	**18.0**	**18.1**	**16.3**	**10.6**	**3.7**	**1.4**
	10%	DB		**2.7**	**3.0**	**10.2**	**15.4**	**22.8**	**24.2**	**28.8**	**30.4**	**23.8**	**19.7**	**4.8**	**3.3**
		MCWB		**1.7**	**-0.1**	**7.5**	**9.7**	**11.1**	**16.9**	**17.8**	**26.7**	**12.2**	**10.8**	**0.5**	**0.3**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**2.3**	**6.2**	**9.9**	**10.4**	**16.7**	**17.7**	**19.8**	**19.9**	**19.3**	**13.5**	**5.0**	**5.6**
		MCDB		**6.3**	**12.0**	**20.6**	**22.5**	**29.0**	**32.0**	**32.8**	**32.4**	**31.0**	**24.0**	**12.1**	**9.0**
	2%	WB		**1.9**	**5.0**	**7.6**	**9.5**	**14.7**	**17.2**	**19.0**	**19.2**	**16.7**	**12.5**	**3.6**	**4.7**
		MCDB		**3.9**	**11.2**	**14.2**	**19.6**	**26.4**	**28.6**	**35.2**	**28.6**	**29.0**	**24.0**	**9.5**	**8.2**
	5%	WB		**1.5**	**2.7**	**6.7**	**9.0**	**13.8**	**16.0**	**18.4**	**18.6**	**16.1**	**11.9**	**2.7**	**3.6**
		MCDB		**3.5**	**9.4**	**14.4**	**17.5**	**26.8**	**26.0**	**35.0**	**27.9**	**26.6**	**23.8**	**6.8**	**4.8**
	10%	WB		**1.0**	**0.9**	**5.4**	**8.2**	**13.2**	**14.9**	**17.9**	**18.4**	**15.3**	**11.1**	**2.2**	**2.6**
		MCDB		**3.5**	**4.2**	**12.6**	**12.0**	**19.4**	**28.0**	**31.8**	**35.6**	**27.2**	**21.2**	**4.8**	**3.5**
Mean Daily Temperature Range		MDBR		**7.0**	**9.4**	**10.1**	**12.5**	**13.8**	**13.3**	**15.8**	**15.9**	**14.9**	**14.4**	**10.0**	**7.5**
	5% DB	MCDBR		**6.5**	**10.5**	**15.1**	**15.2**	**15.7**	**16.5**	**18.0**	**17.0**	**18.0**	**19.3**	**12.3**	**8.6**
		MCWBR		**6.0**	**5.7**	**7.4**	**5.8**	**3.6**	**3.5**	**4.3**	**4.1**	**6.7**	**7.3**	**10.7**	**4.9**
	5% WB	MCDBR		**6.1**	**9.5**	**10.4**	**11.6**	**14.4**	**16.3**	**16.9**	**15.9**	**14.2**	**16.4**	**9.8**	**7.3**
		MCWBR		**5.6**	**5.2**	**5.8**	**6.3**	**5.0**	**3.6**	**5.6**	**5.4**	**4.7**	**6.2**	**8.7**	**4.2**
Clear Sky Solar Irradiance		taub													
		taud													
		Ebn,noon													
		Edh,noon													

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.53 Design Conditions for Şanlıurfa, Turkey

Lat: **37.08** Long: **.38.46** Elev: **547** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**0.3**	**2.1**	**- 8.2**	**14.0**	**19.5**	**- 6.6**	**5.7**	**4.9**	**6.3**	**25.2**	**5.6**	**3.8**	**2.7**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8	**3.0**	**40.3**	**22.6**	**39.8**	**22.3**	**38.9**	**21.2**	**23.5**	**35.2**	**22.8**	**41.0**	**22.3**	**39.2**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
20.2	**24.5**	**27.0**	**19.5**	**23.8**	**26.0**	**18.8**	**36.9**	**33.8**	**180.9**	**40.5**	**175.6**	**39.9**	**167.9**	**39.0**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
5.2	**4.8**	**4.1**	**27.0**	**1.4**	**39.6**	**2.4**	**2.6**	**0.1**	**41.1**	**24.0**	**-1.1**	**42.4**	**-2.2**	**26.9**	**45.2**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours		Tavg	**20.6**	**6.5**	**6.9**	**13.8**	**16.8**	**24.0**	**28.5**	**32.0**	**31.6**	**28.4**	**21.1**	**11.2**	**9.9**
		Sd		**1.42**	**1.67**	**3.36**	**3.97**	**3.63**	**3.36**	**3.62**	**2.26**	**3.12**	**3.48**	**2.20**	**4.88**
		HDD10.0	**276**	**106**	**85**	**13**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**59**
		HDD18.3	**1536**	**364**	**317**	**278**	**202**	**78**	**7**	**0**	**0**	**0**	**18**	**214**	**260**
		CDD10.0	**5460**	**0**	**0**	**250**	**204**	**869**	**556**	**1365**	**669**	**1102**	**343**	**47**	**56**
		CDD18.3	**2670**	**0**	**0**	**1**	**32**	**361**	**307**	**850**	**411**	**603**	**105**	**0**	**0**
		CDH23.3	**24186**	**0**	**0**	**17**	**306**	**1927**	**4032**	**6411**	**6302**	**4188**	**1002**	**0**	**0**
		CDH26.7	**14227**	**0**	**0**	**0**	**78**	**864**	**2280**	**4113**	**4058**	**2473**	**361**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**14.8**	**15.5**	**24.8**	**30.5**	**35.8**	**39.9**	**40.7**	**41.9**	**41.0**	**33.1**	**22.0**	**17.2**
		MCWB		**10.4**	**11.2**	**14.7**	**17.8**	**18.5**	**23.0**	**22.4**	**22.9**	**21.9**	**18.0**	**13.3**	**13.2**
	2%	DB		**13.4**	**14.0**	**23.8**	**29.5**	**34.8**	**38.9**	**39.9**	**40.4**	**40.0**	**32.2**	**19.0**	**20.8**
		MCWB		**11.8**	**9.0**	**14.3**	**15.0**	**16.4**	**21.2**	**23.0**	**21.3**	**22.2**	**17.8**	**11.3**	**13.3**
	5%	DB		**11.9**	**12.2**	**22.5**	**26.9**	**33.4**	**37.8**	**39.3**	**39.8**	**38.4**	**30.5**	**17.9**	**19.9**
		MCWB		**7.7**	**8.2**	**13.2**	**14.4**	**17.4**	**26.1**	**22.6**	**22.3**	**24.7**	**17.8**	**11.5**	**12.4**
	10%	DB		**10.8**	**11.1**	**20.7**	**24.8**	**31.6**	**35.8**	**38.6**	**38.8**	**35.4**	**28.7**	**16.7**	**17.1**
		MCWB		**9.0**	**6.7**	**12.5**	**14.7**	**16.8**	**18.5**	**21.7**	**26.4**	**17.4**	**16.9**	**10.4**	**11.3**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**7.6**	**10.3**	**16.3**	**18.0**	**19.3**	**22.9**	**23.0**	**23.8**	**26.1**	**18.2**	**13.7**	**14.3**
		MCDB		**15.1**	**20.2**	**28.7**	**31.4**	**35.7**	**38.7**	**39.2**	**40.1**	**37.0**	**31.1**	**26.5**	**25.1**
	2%	WB		**7.1**	**9.8**	**14.8**	**16.8**	**17.7**	**22.2**	**22.6**	**23.2**	**24.6**	**17.9**	**12.5**	**13.5**
		MCDB		**12.0**	**20.0**	**30.9**	**30.8**	**34.5**	**33.3**	**40.3**	**36.0**	**39.8**	**35.5**	**18.1**	**22.3**
	5%	WB		**6.7**	**8.7**	**13.7**	**15.9**	**17.2**	**21.5**	**22.0**	**22.9**	**23.0**	**17.5**	**11.4**	**12.9**
		MCDB		**16.4**	**15.0**	**23.2**	**30.0**	**31.2**	**39.0**	**38.8**	**39.3**	**40.9**	**33.5**	**16.0**	**17.8**
	10%	WB		**6.2**	**8.0**	**13.0**	**14.8**	**16.9**	**20.8**	**21.7**	**22.4**	**22.2**	**16.6**	**10.5**	**11.6**
		MCDB		**11.9**	**8.7**	**17.4**	**28.9**	**30.3**	**37.9**	**38.0**	**41.0**	**39.7**	**32.2**	**15.0**	**18.0**
Mean Daily Temperature Range		MDBR		**7.7**	**9.0**	**10.9**	**11.7**	**13.1**	**13.4**	**13.6**	**14.8**	**14.0**	**12.3**	**10.0**	**9.4**
	5% DB	MCDBR		**8.9**	**11.0**	**12.3**	**14.0**	**13.8**	**14.6**	**13.7**	**15.6**	**13.8**	**14.1**	**11.3**	**13.1**
		MCWBR		**5.0**	**5.5**	**4.5**	**4.4**	**2.5**	**3.0**	**2.7**	**2.5**	**4.6**	**4.5**	**5.3**	**6.7**
	5% WB	MCDBR		**6.9**	**8.7**	**9.6**	**13.1**	**11.7**	**12.6**	**14.7**	**16.6**	**13.9**	**13.7**	**10.3**	**13.2**
		MCWBR		**4.3**	**5.8**	**4.3**	**4.4**	**3.3**	**4.2**	**3.0**	**3.4**	**6.0**	**4.9**	**5.0**	**6.7**
Clear Sky Solar Irradiance		taub													
		taud													
		Ebn,noon													
		Edh,noon													

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.56 Design Conditions for Tekirdağ, Turkey

Lat: **40.59** Long: **27.29** Elev: **4** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**-1.9**	**-0.9**	**- 5.9**	**4.0**	**4.0**	**- 4.1**	**3.4**	**1.0**	**7.7**	**7.5**	**7.1**	**15.1**	**2.3**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**31.7**	**23.7**	**31.6**	**25.8**	**28.9**	**22.9**	**25.4**	**31.6**	**24.2**	**25.2**	**23.5**	**25.9**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
24.3	**27.8**	**30.3**	**23.2**	**22.0**	**28.2**	**22.5**	**29.8**	**31.5**	**108.8**	**31.7**	**101.8**	**30.4**	**94.7**	**29.0**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
6.8	**6.4**	**5.9**	**28.0**	**-0.9**	**33.4**	**1.6**	**1.7**	**-1.8**	**34.4**	**-2.6**	**35.2**	**-3.4**	**36.1**	**-4.3**	**37.1**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**14.4**	**5.2**	**6.4**	**7.1**	**12.8**	**16.7**	**21.2**	**25.6**	**25.0**	**19.7**	**14.1**	**12.2**	**6.5**
	Sd			**2.74**	**2.23**	**3.82**	**2.67**	**3.03**	**1.81**	**4.65**	**2.00**	**2.09**	**2.49**	**2.98**	**4.45**
	HDD10.0		**775**	**301**	**107**	**206**	**4**	**0**	**0**	**0**	**0**	**0**	**1**	**28**	**128**
	HDD18.3		**3006**	**813**	**334**	**671**	**163**	**135**	**1**	**2**	**0**	**21**	**136**	**365**	**364**
	CDD10.0		**3201**	**2**	**6**	**33**	**90**	**419**	**337**	**954**	**466**	**585**	**127**	**161**	**21**
	CDD18.3		**900**	**0**	**0**	**0**	**0**	**39**	**89**	**450**	**209**	**107**	**5**	**0**	**0**
	CDH23.3		**4255**	**0**	**0**	**0**	**1**	**21**	**317**	**2082**	**1670**	**154**	**10**	**0**	**0**
	CDH26.7		**1094**	**0**	**0**	**0**	**0**	**0**	**31**	**656**	**398**	**9**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**12.8**	**19.2**	**21.3**	**21.4**	**24.9**	**29.5**	**33.6**	**34.1**	**27.7**	**25.0**	**19.4**	**18.4**
		MCWB		**10.2**	**18.0**	**21.4**	**17.3**	**18.9**	**22.7**	**21.2**	**27.4**	**20.6**	**17.4**	**12.7**	**12.5**
	2%	DB		**11.0**	**15.8**	**15.2**	**20.1**	**23.8**	**27.3**	**32.3**	**31.5**	**26.5**	**22.2**	**19.0**	**16.6**
		MCWB		**7.7**	**7.6**	**11.7**	**18.8**	**16.7**	**21.5**	**24.8**	**23.2**	**21.5**	**13.9**	**14.9**	**14.2**
	5%	DB		**10.3**	**12.5**	**13.7**	**18.6**	**22.7**	**26.3**	**31.0**	**30.1**	**24.8**	**20.2**	**28.0**	**14.3**
		MCWB		**8.4**	**8.7**	**13.3**	**14.7**	**21.7**	**19.9**	**24.1**	**26.0**	**22.3**	**15.9**	**14.3**	**12.8**
	10%	DB		**9.4**	**10.4**	**12.4**	**17.0**	**21.6**	**24.9**	**29.6**	**33.1**	**23.7**	**19.3**	**17.0**	**12.7**
		MCWB		**7.8**	**8.7**	**10.9**	**11.9**	**19.5**	**18.9**	**22.6**	**18.3**	**20.2**	**18.5**	**11.9**	**9.1**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**9.8**	**12.8**	**13.0**	**15.0**	**18.7**	**23.2**	**25.9**	**26.3**	**23.7**	**17.9**	**18.5**	**14.3**
		MCDB		**14.2**	**18.8**	**17.7**	**22.4**	**24.0**	**27.8**	**31.5**	**35.1**	**23.9**	**22.9**	**24.2**	**18.3**
	2%	WB		**9.7**	**10.3**	**12.5**	**14.6**	**18.3**	**21.7**	**24.8**	**25.9**	**22.7**	**17.0**	**17.5**	**13.7**
		MCDB		**12.1**	**14.0**	**21.3**	**20.0**	**23.6**	**29.0**	**31.5**	**29.4**	**22.9**	**21.9**	**19.8**	**18.4**
	5%	WB		**8.7**	**9.0**	**11.4**	**14.3**	**17.9**	**20.9**	**24.1**	**25.0**	**22.2**	**15.9**	**16.1**	**12.0**
		MCDB		**14.7**	**15.3**	**13.2**	**18.9**	**22.7**	**27.2**	**28.6**	**31.6**	**27.5**	**22.2**	**19.9**	**14.8**
	10%	WB		**7.8**	**8.0**	**10.6**	**13.7**	**17.2**	**19.9**	**23.6**	**23.9**	**21.7**	**14.8**	**14.5**	**10.9**
		MCDB		**9.9**	**12.5**	**11.8**	**20.3**	**21.3**	**24.7**	**27.3**	**28.4**	**25.7**	**20.5**	**19.8**	**13.6**
Mean Daily Temperature Range		MDBR		**6.8**	**7.7**	**6.4**	**8.1**	**7.8**	**9.5**	**9.2**	**8.1**	**7.4**	**8.2**	**7.1**	**7.3**
	5% DB	MCDBR		**8.1**	**12.4**	**9.5**	**10.0**	**9.2**	**10.5**	**10.8**	**9.6**	**8.3**	**9.6**	**8.5**	**8.3**
		MCWBR		**7.8**	**7.0**	**9.1**	**3.0**	**8.0**	**3.2**	**9.2**	**3.9**	**7.6**	**4.5**	**8.1**	**3.4**
	5% WB	MCDBR		**7.6**	**11.1**	**10.5**	**8.0**	**11.3**	**9.9**	**9.1**	**10.6**	**7.2**	**8.6**	**8.0**	**8.5**
		MCWBR		**7.4**	**8.3**	**10.2**	**3.0**	**11.0**	**3.4**	**8.2**	**4.7**	**6.9**	**4.8**	**7.6**	**3.5**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.57 Design Conditions for Tokat, Turkey

Lat: **40.18** Long: **36.54** Elev: **608** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**-8.1**	**-6.5**	**-11.6**	**8.9**	**-7.9**	**-10.7**	**3.5**	**-4.0**	**7.2**	**18.0**	**6.1**	**28.35**	**0.7**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**34.1**	**20.8**	**32.2**	**21.9**	**30.8**	**18.0**	**22.0**	**32.0**	**21.1**	**30.3**	**20.3**	**31.0**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
20.2	**31.5**	**35.4**	**18.9**	**18.5**	**24.6**	**18.3**	**25.1**	**29.8**	**131.8**	**34.2**	**118.9**	**32.3**	**110.4**	**30.8**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
5.9	**5.1**	**4.6**	**25.0**	**-9.4**	**36.8**	**2.4**	**2.6**	**-10.8**	**38.3**	**-12.0**	**39.5**	**-13.1**	**40.7**	**-14.5**	**42.2**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**12.6**	**2.5**	**1.2**	**6.7**	**13.1**	**15.6**	**20.3**	**25.0**	**23.7**	**17.8**	**13.1**	**7.8**	**4.0**
	Sd			**2.96**	**4.89**	**4.25**	**3.91**	**3.37**	**2.81**	**2.00**	**1.93**	**3.69**	**3.07**	**3.38**	**2.90**
	HDD10.0		**1371**	**466**	**254**	**249**	**17**	**0**	**0**	**0**	**0**	**0**	**9**	**177**	**199**
	HDD18.3		**3903**	**981**	**477**	**722**	**160**	**200**	**11**	**0**	**0**	**113**	**162**	**632**	**443**
	CDD10.0		**2796**	**0**	**9**	**41**	**111**	**346**	**308**	**930**	**424**	**467**	**104**	**42**	**13**
	CDD18.3		**771**	**0**	**0**	**0**	**5**	**31**	**70**	**415**	**167**	**82**	**0**	**0**	**0**
	CDH23.3		**4963**	**0**	**0**	**0**	**30**	**202**	**619**	**2004**	**1695**	**360**	**54**	**0**	**0**
	CDH26.7		**1895**	**0**	**0**	**0**	**0**	**39**	**183**	**874**	**729**	**67**	**2**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**11.6**	**18.4**	**19.9**	**25.5**	**29.3**	**34.2**	**36.9**	**36.1**	**30.4**	**26.4**	**21.7**	**19.9**
		MCWB		**7.8**	**11.3**	**9.4**	**13.7**	**16.8**	**19.6**	**21.0**	**20.7**	**17.5**	**14.2**	**13.9**	**9.4**
	2%	DB		**10.8**	**17.0**	**18.4**	**23.8**	**27.9**	**30.0**	**34.1**	**34.7**	**28.9**	**24.8**	**20.0**	**16.0**
		MCWB		**5.8**	**8.1**	**11.3**	**13.2**	**18.1**	**17.8**	**20.8**	**19.5**	**18.1**	**14.4**	**13.5**	**8.8**
	5%	DB		**10.0**	**14.1**	**17.5**	**21.8**	**25.5**	**28.7**	**32.2**	**32.8**	**26.8**	**23.1**	**16.8**	**13.8**
		MCWB		**5.4**	**10.1**	**7.9**	**12.1**	**13.7**	**18.7**	**20.8**	**20.0**	**16.7**	**14.1**	**12.1**	**7.2**
	10%	DB		**8.1**	**9.0**	**15.6**	**20.7**	**23.1**	**26.6**	**31.1**	**34.1**	**25.3**	**19.8**	**14.3**	**12.2**
		MCWB		**5.6**	**5.8**	**9.7**	**15.5**	**14.1**	**16.6**	**18.2**	**17.2**	**16.4**	**11.1**	**10.5**	**8.9**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**6.1**	**9.8**	**11.2**	**14.7**	**17.7**	**18.3**	**23.9**	**20.8**	**18.7**	**14.4**	**14.0**	**10.4**
		MCDB		**10.1**	**17.6**	**20.0**	**25.0**	**28.8**	**29.7**	**26.3**	**34.1**	**32.0**	**24.8**	**24.3**	**16.8**
	2%	WB		**5.9**	**8.8**	**10.4**	**13.7**	**17.0**	**17.9**	**22.8**	**20.2**	**17.8**	**14.1**	**12.7**	**9.3**
		MCDB		**12.8**	**15.6**	**18.4**	**24.0**	**29.9**	**30.6**	**31.0**	**33.0**	**30.0**	**18.5**	**21.6**	**16.0**
	5%	WB		**5.0**	**6.5**	**9.7**	**13.3**	**15.8**	**16.9**	**22.0**	**19.7**	**17.0**	**13.0**	**11.5**	**8.5**
		MCDB		**11.0**	**14.2**	**17.1**	**23.0**	**24.5**	**28.8**	**32.2**	**20.0**	**25.2**	**23.8**	**18.0**	**14.2**
	10%	WB		**4.0**	**3.9**	**8.8**	**12.2**	**15.0**	**16.2**	**21.4**	**19.0**	**16.5**	**12.1**	**10.3**	**7.8**
		MCDB		**9.8**	**10.1**	**18.2**	**20.5**	**28.4**	**29.3**	**25.0**	**34.2**	**20.3**	**18.6**	**17.5**	**4.6**
Mean Daily Temperature Range		MDBR		**7.5**	**9.2**	**10.7**	**12.2**	**13.2**	**14.1**	**12.5**	**16.0**	**12.8**	**12.9**	**9.3**	**8.5**
	5% DB	MCDBR		**9.5**	**12.5**	**15.1**	**13.2**	**17.5**	**17.2**	**15.0**	**19.3**	**14.8**	**16.4**	**13.5**	**8.5**
		MCWBR		**7.7**	**5.5**	**12.4**	**5.0**	**5.4**	**4.3**	**3.3**	**6.4**	**3.4**	**6.0**	**6.3**	**3.1**
	5% WB	MCDBR		**9.1**	**11.2**	**13.7**	**12.9**	**15.7**	**16.4**	**11.8**	**17.3**	**14.2**	**15.8**	**14.7**	**8.7**
		MCWBR		**7.8**	**9.6**	**11.3**	**5.2**	**4.8**	**5.0**	**2.8**	**6.7**	**3.7**	**6.0**	**6.3**	**3.1**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.58 Design Conditions for Trabzon, Turkey

Lat: **41.00** Long: **39.43** Elev: **30** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
3	**-0.1**	**0.5**	**- 6.1**	**4.1**	**5.3**	**- 4.9**	**10.6**	**10.1**	**8.8**	**17.7**	**7.4**	**14.1**	**0.9**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**28.9**	**22.7**	**27.9**	**21.5**	**27.0**	**20.9**	**23.6**	**26.0**	**22.9**	**25.1**	**22.4**	**28.7**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
22.6	**25.8**	**29.0**	**22.0**	**20.1**	**26.3**	**21.1**	**18.5**	**29.2**	**94.7**	**28.9**	**90.0**	**27.9**	**85.8**	**27.1**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
6.9	**6.1**	**5.7**	**25.0**	**0.8**	**28.3**	**1.5**	**1.6**	**-0.1**	**29.2**	**-0.8**	**30.0**	**-1.5**	**30.8**	**-2.3**	**31.7**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**14.6**	**8.2**	**5.9**	**9.3**	**11.9**	**15.5**	**20.4**	**23.6**	**23.7**	**20.3**	**16.5**	**12.5**	**7.7**
	Sd			**3.99**	**4.62**	**5.49**	**3.55**	**2.44**	**1.72**	**0.13**	**1.14**	**2.18**	**2.17**	**4.20**	**5.02**
	HDD10.0		**433**	**84**	**139**	**84**	**17**	**0**	**0**	**0**	**0**	**0**	**0**	**25**	**83**
	HDD18.3		**1827**	**314**	**348**	**287**	**193**	**94**	**2**	**2**	**0**	**7**	**77**	**174**	**329**
	CDD10.0		**2126**	**27**	**25**	**61**	**74**	**169**	**311**	**422**	**423**	**311**	**191**	**101**	**11**
	CDD18.3		**491**	**0**	**2**	**7**	**1**	**6**	**65**	**165**	**166**	**69**	**10**	**1**	**0**
	CDH23.3		**2364**	**0**	**1**	**10**	**6**	**41**	**90**	**1035**	**867**	**300**	**13**	**0**	**0**
	CDH26.7		**273**	**0**	**0**	**0**	**0**	**5**	**0**	**191**	**52**	**24**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**19.1**	**23.1**	**24.0**	**23.0**	**26.3**	**25.9**	**30.1**	**28.5**	**29.0**	**25.0**	**22.1**	**19.8**
		MCWB		**10.4**	**18.7**	**21.1**	**17.3**	**21.0**	**21.7**	**23.7**	**23.8**	**19.9**	**19.8**	**15.9**	**9.9**
	2%	DB		**18.3**	**21.1**	**22.8**	**21.7**	**24.0**	**25.1**	**29.4**	**27.7**	**27.0**	**22.9**	**20.6**	**13.9**
		MCWB		**14.4**	**16.5**	**20.3**	**16.8**	**21.1**	**19.9**	**22.4**	**21.3**	**21.1**	**19.4**	**17.2**	**9.0**
	5%	DB		**16.8**	**18.7**	**21.1**	**20.0**	**20.9**	**24.3**	**28.7**	**27.2**	**26.0**	**21.1**	**19.9**	**12.6**
		MCWB		**9.6**	**15.2**	**16.5**	**9.9**	**16.4**	**18.9**	**22.7**	**17.7**	**21.4**	**16.5**	**10.1**	**7.2**
	10%	DB		**15.0**	**13.0**	**19.8**	**18.0**	**19.8**	**23.4**	**27.9**	**30.6**	**25.0**	**19.7**	**18.5**	**11.7**
		MCWB		**10.8**	**8.1**	**9.9**	**14.8**	**15.1**	**13.7**	**23.5**	**10.8**	**19.9**	**15.8**	**16.2**	**9.1**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**10.5**	**13.0**	**15.7**	**16.2**	**18.0**	**22.3**	**23.7**	**24.5**	**22.4**	**20.2**	**16.8**	**10.3**
		MCDB		**12.1**	**22.2**	**21.3**	**19.3**	**26.2**	**28.6**	**30.1**	**26.9**	**29.4**	**24.8**	**28.4**	**12.2**
	2%	WB		**10.0**	**11.9**	**13.4**	**15.3**	**17.5**	**21.8**	**23.0**	**23.9**	**21.4**	**18.8**	**16.5**	**9.9**
		MCDB		**15.8**	**20.5**	**21.2**	**18.8**	**26.0**	**25.7**	**29.9**	**26.6**	**24.2**	**20.8**	**26.5**	**20.0**
	5%	WB		**9.3**	**9.9**	**12.6**	**14.3**	**16.7**	**21.2**	**22.4**	**23.6**	**20.8**	**17.8**	**15.7**	**9.4**
		MCDB		**12.9**	**20.0**	**21.1**	**21.0**	**22.3**	**28.0**	**28.1**	**28.0**	**22.9**	**22.5**	**21.3**	**12.1**
	10%	WB		**8.7**	**7.1**	**11.6**	**13.3**	**16.1**	**20.2**	**21.9**	**22.7**	**20.2**	**17.0**	**14.7**	**8.7**
		MCDB		**15.7**	**13.2**	**18.8**	**23.5**	**20.0**	**27.0**	**28.4**	**15.7**	**24.8**	**19.0**	**17.6**	**16.3**
Mean Daily Temperature Range		MDBR		**7.6**	**6.0**	**7.7**	**6.6**	**6.5**	**6.0**	**8.5**	**6.8**	**8.2**	**5.6**	**7.8**	**6.1**
	5% DB	MCDBR		**10.2**	**11.4**	**13.4**	**10.9**	**9.6**	**7.1**	**10.4**	**7.3**	**9.8**	**6.8**	**8.2**	**8.1**
		MCWBR		**3.0**	**3.3**	**4.9**	**2.6**	**3.7**	**3.3**	**5.8**	**3.7**	**6.2**	**4.4**	**4.3**	**4.0**
	5% WB	MCDBR		**7.7**	**9.8**	**12.7**	**7.6**	**8.8**	**6.7**	**9.5**	**6.7**	**9.0**	**6.5**	**8.3**	**6.1**
		MCWBR		**3.6**	**6.8**	**8.0**	**2.5**	**3.9**	**3.3**	**5.3**	**3.3**	**5.7**	**4.5**	**4.7**	**3.6**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.59 Design Conditions for Tunceli, Turkey

Lat: **39.06** Long: **39.32** Elev: **979** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**-17.7**	**-15.1**	**-20.2**	**0.9**	**-17.7**	**-17.7**	**0.8**	**-9.7**	**4.5**	**2.0**	**4.0**	**0.2**	**1.9**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**38.9**	**21.2**	**37.1**	**19.6**	**35.6**	**22.7**	**21.3**	**41.3**	**20.7**	**39.9**	**20.1**	**38.2**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
16.8	**35.9**	**32.6**	**15.8**	**20.8**	**25.2**	**14.6**	**11.8**	**31.5**	**173.6**	**38.9**	**158.3**	**37.1**	**146.6**	**35.7**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
3.6	**3.3**	**2.9**	**23.0**	**-19.9**	**39.1**	**2.6**	**2.8**	**-21.4**	**40.7**	**-22.7**	**42.1**	**-23.9**	**43.4**	**-25.5**	**45.0**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours		Tavg	**12.5**	**-2.3**	**-3.4**	**5.4**	**12.9**	**20.1**	**22.4**	**28.6**	**27.7**	**20.9**	**16.0**	**7.5**	**0.4**
		Sd		**3.85**	**7.11**	**3.01**	**4.09**	**2.82**	**3.73**	**2.67**	**1.28**	**4.05**	**3.43**	**2.26**	**13.47**
		HDD10.0	**1896**	**762**	**377**	**293**	**13**	**0**	**0**	**0**	**0**	**0**	**1**	**154**	**297**
		HDD18.3	**4319**	**1276**	**609**	**798**	**167**	**33**	**8**	**0**	**0**	**53**	**174**	**645**	**554**
		CDD10.0	**3275**	**0**	**0**	**10**	**101**	**629**	**372**	**576**	**550**	**659**	**373**	**6**	**0**
		CDD18.3	**1141**	**0**	**0**	**0**	**6**	**147**	**131**	**318**	**293**	**214**	**32**	**0**	**0**
		CDH23.3	**12161**	**0**	**0**	**0**	**45**	**794**	**1394**	**4287**	**3823**	**1517**	**303**	**0**	**0**
		CDH26.7	**6443**	**0**	**0**	**0**	**0**	**241**	**587**	**2564**	**2220**	**747**	**84**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**5.8**	**11.4**	**18.6**	**26.0**	**32.1**	**33.8**	**41.2**	**38.8**	**35.7**	**30.1**	**18.4**	**7.5**
		MCWB		**4.2**	**8.9**	**13.9**	**15.8**	**19.3**	**18.3**	**21.3**	**20.5**	**20.4**	**18.4**	**10.9**	**5.3**
	2%	DB		**5.0**	**7.8**	**15.1**	**24.7**	**30.1**	**33.6**	**40.0**	**37.9**	**35.0**	**29.6**	**15.5**	**6.4**
		MCWB		**2.1**	**5.6**	**10.5**	**15.3**	**18.4**	**18.5**	**21.5**	**21.0**	**22.0**	**17.5**	**10.1**	**3.1**
	5%	DB		**3.5**	**5.3**	**12.5**	**22.9**	**29.3**	**31.9**	**38.8**	**36.7**	**33.4**	**26.8**	**13.7**	**5.1**
		MCWB		**2.3**	**4.4**	**7.0**	**14.4**	**17.1**	**17.0**	**20.5**	**19.8**	**18.2**	**16.4**	**10.1**	**3.9**
	10%	DB		**2.6**	**4.1**	**10.7**	**21.2**	**27.9**	**30.2**	**36.7**	**38.4**	**31.4**	**24.5**	**12.4**	**4.3**
		MCWB		**2.1**	**0.5**	**6.2**	**14.0**	**17.6**	**17.9**	**19.8**	**20.1**	**19.9**	**15.2**	**7.1**	**3.5**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**2.9**	**6.0**	**8.8**	**14.9**	**19.5**	**21.1**	**21.7**	**21.2**	**22.3**	**18.4**	**11.3**	**5.5**
		MCDB		**4.9**	**11.9**	**19.0**	**24.3**	**37.0**	**33.5**	**34.6**	**39.9**	**35.6**	**30.1**	**18.0**	**8.7**
	2%	WB		**2.3**	**4.2**	**7.9**	**13.7**	**18.8**	**20.4**	**21.5**	**20.7**	**20.9**	**17.5**	**10.5**	**4.4**
		MCDB		**8.2**	**8.5**	**13.1**	**26.2**	**30.0**	**33.3**	**40.0**	**33.5**	**39.8**	**33.3**	**15.1**	**5.3**
	5%	WB		**1.7**	**3.2**	**7.3**	**13.1**	**18.2**	**19.5**	**20.9**	**20.2**	**19.9**	**16.1**	**10.0**	**3.8**
		MCDB		**5.0**	**8.8**	**10.6**	**25.0**	**28.0**	**36.3**	**38.5**	**37.0**	**34.0**	**21.4**	**16.3**	**9.2**
	10%	WB		**1.3**	**2.4**	**6.4**	**12.2**	**17.3**	**18.3**	**20.2**	**19.7**	**18.7**	**15.3**	**9.3**	**3.2**
		MCDB		**2.2**	**7.5**	**9.4**	**22.0**	**27.6**	**33.9**	**36.3**	**35.0**	**33.8**	**29.9**	**15.0**	**9.0**
Mean Daily Temperature Range		MDBR		**9.2**	**8.3**	**9.1**	**10.9**	**14.5**	**14.1**	**16.4**	**17.0**	**17.2**	**15.5**	**10.4**	**5.8**
	5% DB	MCDBR		**8.6**	**7.6**	**12.1**	**14.3**	**16.9**	**16.4**	**17.0**	**18.7**	**19.7**	**17.6**	**13.3**	**5.9**
		MCWBR		**5.0**	**4.0**	**5.2**	**4.1**	**5.3**	**4.8**	**3.8**	**6.3**	**8.0**	**8.1**	**6.5**	**2.8**
	5% WB	MCDBR		**6.9**	**6.6**	**11.0**	**13.1**	**16.0**	**15.3**	**15.5**	**15.9**	**19.3**	**17.5**	**14.5**	**4.3**
		MCWBR		**3.3**	**3.5**	**4.6**	**4.0**	**5.4**	**4.7**	**5.2**	**5.9**	**9.0**	**8.6**	**7.0**	**1.8**
Clear Sky Solar Irradiance		taub													
		taud													
		Ebn,noon													
		Edh,noon													

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

TableA.2.60 Design Conditions for Uşak, Turkey

Lat: **38.40** Long: **29.29** Elev: **919** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**-5.9**	**-4.6**	**-14.3**	**30.5**	**30.0**	**-11.4**	**19.7**	**22.9**	**5.7**	**7.9**	**4.9**	**24.2**	**0.7**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
8	**3.0**	**34.7**	**20.1**	**32.7**	**19.6**	**31.1**	**18.9**	**20.6**	**28.3**	**20.0**	**31.2**	**20.6**	**29.9**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
17.4	**20.3**	**22.3**	**16.8**	**14.5**	**26.3**	**16.1**	**27.9**	**28.5**	**138.3**	**34.7**	**125.2**	**32.7**	**115.2**	**31.2**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
3.7	**4.3**	**4.9**	**22.0**	**-8.4**	**35.2**	**2.5**	**2.6**	**-9.8**	**36.7**	**-11.0**	**37.9**	**-12.2**	**39.1**	**-13.6**	**40.7**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours		Tavg	**12.9**	**2.8**	**2.7**	**6.6**	**10.9**	**15.2**	**20.9**	**23.2**	**24.4**	**21.1**	**14.5**	**9.8**	**3.7**
		Sd		**2.77**	**4.06**	**2.70**	**3.44**	**2.41**	**2.97**	**0.94**	**3.68**	**2.78**	**3.60**	**2.78**	**8.49**
		HDD10.0	**1043**	**431**	**203**	**108**	**25**	**0**	**0**	**0**	**0**	**0**	**8**	**74**	**195**
		HDD18.3	**3256**	**929**	**435**	**363**	**222**	**194**	**8**	**2**	**4**	**18**	**120**	**509**	**452**
		CDD10.0	**2444**	**0**	**0**	**2**	**54**	**326**	**329**	**408**	**446**	**669**	**148**	**62**	**0**
		CDD18.3	**632**	**0**	**0**	**0**	**1**	**88**	**153**	**193**	**193**	**189**	**2**	**0**	**0**
		CDH23.3	**5613**	**0**	**0**	**0**	**20**	**38**	**894**	**1508**	**2040**	**1011**	**102**	**0**	**0**
		CDH26.7	**2234**	**0**	**0**	**0**	**0**	**0**	**314**	**567**	**1032**	**321**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**12.0**	**14.8**	**17.3**	**25.2**	**24.9**	**34.3**	**32.7**	**36.7**	**31.3**	**26.0**	**20.7**	**15.4**
		MCWB		**7.9**	**9.8**	**9.9**	**16.7**	**11.3**	**20.5**	**18.9**	**20.9**	**13.3**	**17.2**	**12.9**	**7.9**
	2%	DB		**10.8**	**12.9**	**16.0**	**22.7**	**24.5**	**32.5**	**32.2**	**35.7**	**30.7**	**25.7**	**19.0**	**13.7**
		MCWB		**7.3**	**7.4**	**8.5**	**11.8**	**14.4**	**19.2**	**18.4**	**20.6**	**12.7**	**16.2**	**10.6**	**7.8**
	5%	DB		**9.5**	**10.5**	**15.1**	**19.9**	**23.1**	**30.1**	**31.2**	**34.7**	**30.0**	**24.4**	**17.9**	**12.1**
		MCWB		**4.7**	**6.6**	**7.8**	**14.6**	**10.9**	**12.6**	**17.7**	**20.8**	**12.7**	**12.8**	**12.3**	**9.0**
	10%	DB		**8.7**	**8.8**	**13.6**	**17.9**	**21.6**	**28.1**	**30.0**	**31.4**	**28.7**	**23.2**	**16.6**	**9.7**
		MCWB		**6.4**	**7.4**	**7.9**	**12.3**	**11.9**	**12.5**	**12.7**	**14.1**	**12.5**	**12.8**	**13.0**	**8.1**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**6.1**	**8.7**	**9.0**	**13.8**	**14.6**	**19.0**	**20.3**	**21.1**	**14.1**	**16.8**	**14.4**	**9.9**
		MCDB		**14.3**	**15.9**	**21.0**	**25.1**	**24.8**	**33.6**	**31.6**	**35.5**	**31.1**	**25.8**	**24.5**	**23.7**
	2%	WB		**5.8**	**8.0**	**8.6**	**12.9**	**14.1**	**18.6**	**20.0**	**20.9**	**13.8**	**16.3**	**14.0**	**9.0**
		MCDB		**8.9**	**15.1**	**17.0**	**30.0**	**25.8**	**33.7**	**31.2**	**37.1**	**29.3**	**24.5**	**24.2**	**20.2**
	5%	WB		**5.4**	**7.2**	**8.0**	**11.9**	**13.6**	**17.7**	**19.7**	**20.5**	**13.3**	**15.5**	**13.0**	**7.9**
		MCDB		**6.0**	**13.3**	**14.7**	**20.0**	**24.8**	**28.1**	**32.6**	**35.0**	**24.9**	**23.9**	**27.3**	**19.9**
	10%	WB		**4.9**	**6.0**	**7.4**	**10.9**	**13.1**	**16.6**	**19.2**	**20.0**	**12.9**	**14.8**	**12.0**	**6.9**
		MCDB		**5.5**	**15.4**	**18.3**	**26.6**	**30.9**	**29.1**	**32.8**	**30.2**	**30.0**	**24.6**	**27.1**	**12.7**
Mean Daily Temperature Range		MDBR		**8.1**	**8.2**	**11.1**	**11.5**	**10.7**	**14.9**	**14.7**	**15.1**	**14.6**	**14.0**	**10.7**	**9.5**
	5% DB	MCDBR		**10.3**	**11.0**	**15.3**	**14.6**	**14.0**	**17.2**	**16.1**	**17.8**	**17.0**	**17.3**	**11.6**	**12.8**
		MCWBR		**9.4**	**5.1**	**7.1**	**4.6**	**11.3**	**3.9**	**3.7**	**4.4**	**11.5**	**6.3**	**10.1**	**6.1**
	5% WB	MCDBR		**8.7**	**10.2**	**14.8**	**12.6**	**10.7**	**14.9**	**14.8**	**15.7**	**15.0**	**15.1**	**11.7**	**11.6**
		MCWBR		**8.1**	**5.5**	**7.2**	**8.1**	**9.3**	**3.4**	**4.4**	**4.5**	**10.2**	**5.8**	**10.5**	**6.0**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.61 Design Conditions for Van, Turkey

Lat: **38.28** Long: **43.41** Elev: **1725** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
2	**-13.8**	**-11.7**	**1.7**	**54**	**-12.8**	**-18.2**	**2.4**	**-8.7**	**9.2**	**0.0**	**7.9**	**7.8**	**3.9**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**30.5**	**16.6**	**29.2**	**16.1**	**28.3**	**16.8**	**19.8**	**32.2**	**18.8**	**30.6**	**19.8**	**27.1**	**5.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
16.9	**33.1**	**29.8**	**15.5**	**22.4**	**17.0**	**14.5**	**14.4**	**30.3**	**119.2**	**30.5**	**111.8**	**29.3**	**106.2**	**28.5**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
7.2	**6.5**	**5.8**	**22.0**	**-13.9**	**31.4**	**2.0**	**2.1**	**-15.1**	**32.6**	**-16.1**	**33.7**	**-17.1**	**34.6**	**-18.3**	**35.9**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours		Tavg	**9.6**	**-3.1**	**-3.2**	**3.0**	**6.6**	**15.7**	**18.0**	**23.2**	**23.8**	**17.9**	**11.6**	**4.9**	**0.5**
		Sd		**3.42**	**4.53**	**2.43**	**3.35**	**2.69**	**2.54**	**6.74**	**2.01**	**3.44**	**2.50**	**1.58**	**1.67**
		HDD10.0	**1933**	**407**	**370**	**432**	**112**	**0**	**0**	**0**	**0**	**0**	**15**	**304**	**293**
		HDD18.3	**4369**	**665**	**602**	**946**	**350**	**168**	**32**	**0**	**0**	**46**	**207**	**802**	**551**
		CDD10.0	**1749**	**0**	**0**	**0**	**11**	**356**	**241**	**410**	**427**	**238**	**65**	**0**	**0**
		CDD18.3	**392**	**0**	**0**	**0**	**0**	**10**	**24**	**153**	**170**	**36**	**0**	**0**	**0**
		CDH23.3	**3046**	**0**	**0**	**0**	**38**	**98**	**1133**	**1402**	**375**	**0**	**0**	**0**	**0**
		CDH26.7	**692**	**0**	**0**	**0**	**0**	**3**	**0**	**290**	**315**	**84**	**0**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**5.7**	**7.0**	**10.9**	**18.7**	**27.0**	**26.0**	**32.2**	**31.2**	**30.0**	**21.3**	**12.4**	**10.9**
		MCWB		**3.0**	**2.9**	**5.5**	**9.4**	**15.1**	**14.3**	**19.8**	**20.6**	**16.1**	**9.9**	**5.3**	**5.5**
	2%	DB		**3.9**	**5.6**	**9.6**	**16.0**	**24.0**	**25.3**	**31.1**	**30.2**	**29.0**	**19.9**	**11.7**	**10.0**
		MCWB		**-0.8**	**2.6**	**4.4**	**8.1**	**13.8**	**15.4**	**18.4**	**18.5**	**15.6**	**10.3**	**7.5**	**4.6**
	5%	DB		**2.9**	**3.9**	**7.9**	**13.8**	**22.1**	**24.5**	**29.5**	**29.4**	**27.2**	**19.0**	**10.9**	**8.3**
		MCWB		**2.1**	**-0.8**	**3.4**	**7.6**	**14.6**	**14.4**	**18.6**	**15.5**	**14.7**	**8.9**	**5.5**	**3.6**
	10%	DB		**1.9**	**2.9**	**7.1**	**11.6**	**20.8**	**23.3**	**28.2**	**28.4**	**25.1**	**17.7**	**9.9**	**7.3**
		MCWB		**-0.8**	**2.1**	**4.1**	**4.9**	**12.7**	**13.2**	**15.3**	**17.6**	**14.1**	**8.9**	**4.7**	**2.7**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**2.7**	**2.8**	**5.7**	**9.0**	**17.4**	**15.8**	**19.8**	**21.0**	**16.8**	**10.5**	**6.6**	**5.7**
		MCDB		**5.6**	**8.0**	**11.0**	**18.7**	**27.7**	**24.0**	**32.2**	**29.1**	**26.7**	**19.8**	**14.0**	**11.2**
	2%	WB		**2.1**	**1.7**	**4.9**	**7.9**	**16.6**	**15.2**	**18.9**	**20.6**	**16.4**	**10.1**	**6.0**	**5.4**
		MCDB		**5.1**	**6.1**	**8.0**	**14.2**	**19.5**	**21.7**	**30.0**	**29.0**	**28.0**	**21.8**	**11.9**	**11.5**
	5%	WB		**1.1**	**1.0**	**4.0**	**7.5**	**15.5**	**14.4**	**17.9**	**19.6**	**15.9**	**9.5**	**5.5**	**4.1**
		MCDB		**5.0**	**4.9**	**8.0**	**15.6**	**20.8**	**25.2**	**29.1**	**27.6**	**25.9**	**19.4**	**10.8**	**7.4**
	10%	WB		**0.5**	**0.4**	**3.6**	**6.2**	**14.4**	**13.8**	**17.1**	**18.2**	**15.3**	**9.0**	**4.8**	**3.5**
		MCDB		**3.0**	**2.4**	**6.3**	**10.3**	**24.8**	**20.5**	**27.1**	**29.4**	**28.2**	**18.7**	**12.5**	**9.4**
Mean Daily Temperature Range		MDBR		**8.6**	**8.5**	**7.8**	**8.9**	**10.4**	**11.0**	**12.5**	**11.3**	**11.8**	**10.9**	**9.7**	**9.6**
	5% DB	MCDBR		**8.1**	**8.2**	**8.2**	**10.2**	**11.7**	**13.0**	**13.9**	**11.7**	**11.8**	**12.6**	**9.9**	**8.9**
		MCWBR		**4.3**	**3.6**	**3.1**	**2.3**	**3.4**	**4.2**	**4.7**	**4.4**	**4.6**	**4.1**	**4.0**	**3.6**
	5% WB	MCDBR		**10.5**	**7.8**	**7.4**	**10.6**	**10.7**	**10.2**	**13.2**	**11.3**	**11.9**	**12.1**	**8.8**	**8.7**
		MCWBR		**4.5**	**3.3**	**3.1**	**2.5**	**3.7**	**4.0**	**5.6**	**4.6**	**5.1**	**3.9**	**4.0**	**3.4**
Clear Sky Solar Irradiance		taub													
		taud													
		Ebn,noon													
		Edh,noon													

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

Table A.2.62 Design Conditions Yalova, Turkey

Lat: **40.39.** Long: **29.16** Elev: **2** StdP: Time Zone: Period: **1989-2012**

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
			99.6%			99%			0.4%		1%			
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
3	**0.3**	**1.1**	**- 3.1**	**2.9**	**1.2**	**- 2.1**	**3.2**	**8.0**	**6.2**	**3.4**	**5.2**	**2.2**	**2.7**	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	**3.0**	**31.5**	**21.0**	**30.5**	**22.2**	**29.7**	**20.4**	**24.2**	**30.2**	**23.6**	**30.2**	**22.9**	**29.2**	**2.3**	

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours
0.4%			1%			2%			0.4%		1%		2%		8 to 4 &
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	12.8/20.6
23.1	**17.8**	**31.3**	**22.3**	**16.6**	**29.4**	**21.5**	**16.0**	**29.6**	**108.2**	**31.5**	**103.3**	**30.7**	**99.1**	**29.8**	

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
				Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
4.9	**4.5**	**3.7**	**28.0**	**-0.8**	**32.8**	**2.0**	**2.1**	**-2.0**	**34.0**	**-2.9**	**35.0**	**-3.9**	**35.9**	**-5.1**	**37.1**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours	Tavg		**14.8**	**6.5**	**6.9**	**7.7**	**13.8**	**15.8**	**21.1**	**25.6**	**24.3**	**21.5**	**15.3**	**11.9**	**7.5**
	Sd			**2.23**	**3.01**	**3.52**	**3.51**	**2.90**	**3.28**	**2.61**	**1.61**	**1.62**	**3.08**	**2.26**	**5.43**
	HDD10.0		**608**	**224**	**99**	**177**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**95**
	HDD18.3		**2859**	**730**	**318**	**656**	**145**	**169**	**17**	**0**	**0**	**5**	**98**	**385**	**336**
	CDD10.0		**3273**	**8**	**14**	**36**	**115**	**359**	**333**	**968**	**444**	**692**	**165**	**123**	**17**
	CDD18.3		**967**	**0**	**0**	**0**	**9**	**14**	**101**	**453**	**187**	**198**	**6**	**0**	**0**
	CDH23.3		**4924**	**0**	**0**	**0**	**12**	**51**	**516**	**2111**	**1537**	**682**	**17**	**0**	**0**
	CDH26.7		**1402**	**0**	**0**	**0**	**1**	**3**	**76**	**721**	**481**	**118**	**2**	**0**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**14.9**	**20.2**	**20.9**	**24.0**	**26.5**	**29.8**	**33.7**	**33.2**	**30.6**	**24.6**	**20.4**	**17.0**
		MCWB		**10.5**	**17.7**	**16.0**	**17.5**	**18.6**	**19.2**	**22.1**	**23.2**	**20.2**	**17.1**	**12.8**	**10.8**
	2%	DB		**12.8**	**17.0**	**17.6**	**22.9**	**24.7**	**28.2**	**31.8**	**31.3**	**29.1**	**23.0**	**19.4**	**16.5**
		MCWB		**7.9**	**10.8**	**12.4**	**18.3**	**19.8**	**19.6**	**20.9**	**24.4**	**17.3**	**16.9**	**14.8**	**11.1**
	5%	DB		**11.9**	**15.8**	**15.7**	**21.9**	**22.6**	**27.2**	**30.9**	**30.3**	**28.0**	**21.8**	**18.3**	**13.2**
		MCWB		**7.6**	**10.4**	**12.9**	**16. 6**	**17.9**	**18.3**	**18.4**	**22.4**	**18.4**	**16.0**	**15.2**	**8.7**
	10%	DB		**10.6**	**12.2**	**14.0**	**18.7**	**21.0**	**25.8**	**30.2**	**29.2**	**26.9**	**20.9**	**16.4**	**11.9**
		MCWB		**7.8**	**9.9**	**9.6**	**11.9**	**15.2**	**20.6**	**17.9**	**22.4**	**19.6**	**16.0**	**13.9**	**7.6**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**10.5**	**11.3**	**13.4**	**17.3**	**18.5**	**23.0**	**24.5**	**25.3**	**21.4**	**19.5**	**15.7**	**11.5**
		MCDB		**15.2**	**17.0**	**16.4**	**23.5**	**29.1**	**33.5**	**30.1**	**30.8**	**27.8**	**24.0**	**23.5**	**17.0**
	2%	WB		**9.3**	**10.9**	**12.4**	**16.2**	**18.0**	**22.1**	**24.2**	**24.4**	**21.1**	**18.4**	**15.0**	**10.6**
		MCDB		**16.6**	**13.4**	**19.3**	**24.0**	**21.0**	**33.9**	**29.8**	**31.3**	**25.6**	**28.6**	**23.0**	**16.2**
	5%	WB		**8.7**	**9.9**	**11.6**	**15.6**	**17.4**	**21.2**	**23.9**	**23.7**	**20.6**	**17.9**	**14.0**	**9.6**
		MCDB		**12.0**	**19.0**	**16.0**	**19.0**	**21.7**	**26.9**	**24.5**	**29.0**	**24.4**	**24.2**	**17.8**	**15.0**
	10%	WB		**8.1**	**7.9**	**10.8**	**14.9**	**16.8**	**20.2**	**23.3**	**23.0**	**20.2**	**17.2**	**13.1**	**9.1**
		MCDB		**9.8**	**15.4**	**18.9**	**17.2**	**21.3**	**25.2**	**30.7**	**29.2**	**30.6**	**22.7**	**17.8**	**11.7**
Mean Daily Temperature Range		MDBR		**5.9**	**8.9**	**6.6**	**10.3**	**8.7**	**11.5**	**10.5**	**13.3**	**11.5**	**10.8**	**7.3**	**8.3**
	5% DB	MCDBR		**7.5**	**14.1**	**11.2**	**13.3**	**11.7**	**13.2**	**11.8**	**14.8**	**13.3**	**11.9**	**9.4**	**8.9**
		MCWBR		**6.5**	**6.0**	**10.0**	**2.2**	**11.0**	**3.0**	**10.0**	**5.3**	**11.5**	**4.3**	**8.4**	**3.0**
	5% WB	MCDBR		**7.1**	**12.6**	**9.8**	**12.6**	**9.6**	**12.3**	**10.5**	**14.2**	**11.5**	**11.3**	**9.1**	**8.4**
		MCWBR		**6.7**	**6.0**	**9.0**	**4.0**	**9.1**	**3.5**	**9.1**	**5.3**	**10.1**	**4.3**	**8.4**	**3.2**
Clear Sky Solar Irradiance	taub														
	taud														
	Ebn,noon														
	Edh,noon														

CDD*n* Cooling degree-days base n°C, °C-day
CDH*n* Cooling degree-hours base n°C, °C-hour
DB Dry bulb temperature, °C
DP Dew point temperature, °C
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, W/m2
Elev Elevation, m
Enth Enthalpy, kJ/kg
HDD*n* Heating degree-days base n°C, °C-day
Hours 8/4 & 12.8/20.6 Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C
HR Humidity ratio, g of moisture per kg of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °C
MCDBR Mean coincident dry bulb temp. range, °C
MCDP Mean coincident dew point temperature, °C
MCWB Mean coincident wet bulb temperature, °C
MCWBR Mean coincident wet bulb temp. range, °C
MCWS Mean coincident wind speed, m/s
MDBR Mean dry bulb temp. range, °C
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °C
StdP Standard pressure at station elevation, kPa
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °C
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °C
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, m/s

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EDUCATION

MARMARA MECHANICAL ENG. (ENG)	SEPT 2010 – OCT 2015	PHD
METU MECHANICAL ENG.	FEB.1987 – DEC. 1989	MSC
METU MECHANICAL ENG.	FEB.1981 – DEC. 1987	BSC

FOREIGN LANGUAGES

ENGLISH (VERY GOOD) , GERMAN (MEDIUM)

COMPUTER KNOWLEDGE

BASIC, FORTRAN, COBOL, MS PROJECT, VISUAL DBASE, EXCEL,WINWORD,POWERPOINT

RESEARCH EXPERIENCE

- **MARMARA UNIVERSITY :** DOCTORAL THESIS RESEARCH CONDUCTED WITH PROF DR İSMAİL EKMEKÇİ
  - DEVELOPMENT OF TYPICAL METEOROLOGICAL YEAR
  - ENERGY ESTIMATION METHODS
    - HEATING / COOLING DEGREE DAY
    - HEATING / COOLING DEGREE HOUR
    - BINDATA
  - HEATING, VENTILATING, AIR CONDITIONING DESIGN PRINCIPLES
  - OUTDOOR DESIGN CONDITIONS
  - CLIMATIC DATA ZONES

- **ASHRAE / USA :** DOCTORAL THESIS RESEARCH CONDUCTED WITH ASHRAE TC 4.1 MEMBER MR MICHAEL THENEVARD
  - ASHRAE OUTDOOR DESIGN CONDITION PRINCIPLES
  - ASHRAE HVAC CALCULATION METHODS
  - ASHRAE CLIMATIC ZONES

- **MIDDLE EAST TECHNICAL UNIVERSITY :** MASTER THESIS RESEARCH CONDUCTED WITH PROF DR BİROL KILKIŞ

- CAD DESIGN APPLICATIONS
- LATHE TABLES IN INDUSTRY
- LATHE TABLE DESIGN BY CAD

- **PROFESSIONAL COMPANY** : WITH TURK DEMIRDOKUM A.S, ALARKO CARRIER A.S, DAIKIN AIRCONDITIONING CO, BAYMAK A.S

  - HEATING, VENTILATING, AIR CONDITIONING PRODUCT MANAGEMENT PRINCIPLES
  - HVAC PROJECT ANALYSIS AND DESIGN PRINCIPLES
  - HVAC PRODUCTION METHODS
  - DETAILED CONSUMER ANALYSIS

RESEARCH INTERESTS

- DESIGN PRINCIPLES FOR HEATING, VENTILATING , AIR CONDITIONING SYSTEMS
- NEW METHODS FOR TYPICAL METEOROLOGICAL / SOLAR YEAR
- RENEWABLE ENERGY SYSTEMS
  - SOLAR
  - WIND
  - FOTOVOLTAIC
- CLIMATIC ZONES
-

PUBLICATIONS (ON REVIEW)

- THE CREATION OF TYPICAL METEOROLOGICAL YEAR FOR TURKEY
- COOLING / HEATING DEGREE HOUR FOR TURKEY
- COOLING / HEATING DEGREE DAY FOR TURKEY
- OUTDOOR DESIGN CONDITIONS FOR TURKEY
- CLIMATIC ZONES FOR TURKEY

TEACHING EXPERIENCE

MARMARA UNIVERSITY

- ADVANCED HVAC APPLICATIONS CONDUCTED WITH PROF İSMAİL EKMEKÇİ

COMMUNITY

- DEALER TRAINING
  - HVAC PRODUCT DESCRIPTION AND DESIGN PRINCIPLES FOR TDDF, ALARKO, DAIKIN DEALERS

- SERVICE TRAINING
  - AFTER SALES HVAC PRODUCT AND MAINTENANCE DESCRIPTION FOR TDDF,ALARKO,DAIKIN DEALERS

PROFESSIONAL WORK EXPERIENCE

MARKETING AND SALES COORDINATOR DEKO ENG LTD. ŞTİ. SEPT. 2009 – JUNE 2014

- MANAGING MARKETING AND SALES ACTIVITIES FOR HVAC DESIGN & INSTALLATION PROJECTS
- MANAGING HVAC PROJECT APPROVAL, PROCUREMENT, MECHANICAL INSTALLATION, COMMISSIONING FOR DOMESTIC , COMMERCIAL AND INDUSTRIAL PLANTS
- MANAGED DOCUMENTATION, TRAINING, ADVERTISING ACTIVITIES

NEW BUSINESS AND KEY ACCOUNTS EXECUTIVE (SENIOR) DAIKIN AIRCONDITIONING CO. FEB 2008 – JUNE 2009

- MANAGED MARKETING AND SALES ACTIVITIES FOR DAIKIN TURKEY HEATING PRODUCTS, AIR TO WATER HEAT PUMPS
- PREPARED MARKETING STRATEGIES , ACTION PLANS, PRICING POLICIES, TO ACHIEVE TARGET MARKET SHARE AND TURNOVER
- MANAGED DOCUMENTATION, TRAINING, ADVERTISING ACTIVITIES

GOLD CENTER CHANNEL MARKETING MANAGER BAYMAK SAN. VE TİC. A.Ş. NOV 2007 – JAN 2008

- ESTABLISHED BAYMAK GOLD CENTER DEALERSHIP, VISITED POTENTIAL DEALERS, MANAGED CONTRACTS
- PREPARED MARKETING AND SALES STRATEGIES, PRICING POLICIES TO ACHIEVE TARGET MARKET SHARE AND TURNOVER
- MANAGED DOCUMENTATION, TRAINING, ADVERTISING FOR CUSTOMER SATISFACTION

PRODUCT MANAGER ALARKO CARRIER SAN. VE. TİC. A.Ş. JULY 2003 – NOV 2007

- MANAGED MARKETING AND SALES ACTIVITIES OF HEATING PRODUCTS (WALL HUNG BOILERS, BOILERS, BURNERS, RADIATORS, DHW TANKS,THERMOSTATIC RADIATOR VALVES) INCLUDING POSITIONING, PRICING, PREPARING SALES BUDGET, MARKET RESEARH REPORTS , BENCHMARKING, ALL MARKETING AND PLANNING REPORTS TO ACHIEVE TARGET MARKET SHARE AND TURNOVER
- GAVE TECHNICAL AND COMMERCIAL TRAINING TO SALES TEAM TO DEVELOP STRATEGIES TO BE PART OF TENDERS / PROJECTS TO INCREASE SALES OPPORTUNITIES

SALES AND MARKETING MANAGER (OWNER OF COMPANY) GÖKKUŞAĞI LTD. ŞTİ. SEPT. 1995 - JULY 2003

- MANAGED SALES & MARKETING ACTIVITIES FOR HVAC PRODUCTS (WALL HUNG BOILERS, BOILERS, BURNERS) INCLUDING PREPARATION OF TENDER LETTERS, SALES BUDGETS, SALES & MARKETING REPORTS
- MANAGED HVAC PROJECT DESIGN, PROJECT APPROVAL, PROCUREMENT, MECHANICAL INSTALLATION, COMMISSIONING FOR DOMESTIC , COMMERCIAL AND INDUSTRIAL PLANTS

- MANAGED DOCUMENTATION, TRAINING, ADVERTISING FOR CUSTOMER SATISFACTION

PRODUCT MANAGER T. DEMİRDÖKÜM FAB.A.Ş (KOÇ HOLDING) NOV 1990 – SEPT 1995

- MANAGED MARKETING ACTIVITIES OF TÜRK DEMİRDÖKÜM HEATING PRODUCTS (WALL HUNG BOILERS, STOVES, BOILERS, BURNERS WITH ANNUAL TURNOVER OF 100,000,000 EURO) IN HVAC SECTOR INCLUDING MARKET SURVEY, PRICING, BENCHMARKING AND BUDGET PREPARATION
- MANAGED DEALER RELATIONS AND ORGANIZED TRAINING PROGRAMMES

PROJECT ENGINEER PTT GENERAL DIRECTORATE SEPT 1987 – NOV 1990

- DESIGNED AND DEVELOPED AUTOMATION PROJECTS FOR PTT OFFICES
- PREPARED SOFTWARE PACKAGES FOR SPECIFIC WORKS (COBOL, DBASE 3 PLUS) ORGANISED TRAINING SESSIONS FOR PTT PERSONNEL

COURSES AND SEMINARS ATTENDED

- DATA ENTRY SYSTEMS / USA, MARCH 1988
- COMPUTER APPLICATIONS (WS, DBASE 3 PLUS) / PTT SEPT.89-OCT.89
- COBOL PROGRAMMING LANGUAGE / PTT MARCH 1990
- EFFECTIVE SELLING / KOGEM-KOÇ HOLDING , JUNE 1991
- ADVANCED EXCEL / KOGEM – AUGUST 1992
- GERMAN LANGUAGE / GERMAN CULTURE INSTITUTE , APR.1992-JUNE 1994
- MARKETING STRATEGIES / TELOS CONSULTING – ITALY , JUNE 1994-SEPT 1994
- ISO 2000 OUALITY MANAGEMENT SYSTEMS / BUREAU VERITAS, JUNE 2001 – SEPT. 2001
- TIME MANAGEMENT / ALARKO HOLDING – SEPT 2004
- LEADERSHIP / ALARKO HOLDING - JUNE 2005
- EFFECTIVE PRESENTATION TECHNIGUES / ALARKO HOLDING - MARCH 2006
- RENEWABLE ENERY PRODUCTS, EUROPEAN APPLİCATIONS / DAIKIN ACADEMY (BELGIUM) – APRIL 2008
- AIR TO WATER HEAT PUMPS, DESIGN PRINCIPLES / DAIKIN ACADEMY (BELGIUM) – SEPTEMBER 2009

REFERENCES

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