CHAPTER 14

CLIMATIC DESIGN INFORMATION

THIS chapter and the data on the accompanying CD-ROM provide the climatic design information for 5564 locations in the United States, Canada, and around the world. This is an increase of 1142 stations from the 2005 *ASHRAE Handbook—Fundamentals*. The large number of stations, along with the addition of several new table elements, made printing the whole tables impractical. Consequently, the complete table of design conditions for only Atlanta, GA, appears in this printed chapter to illustrate the table format. However, a subset of the table elements most often used is presented in the Appendix at the end of this chapter for selected stations representing major urban centers in the United States, Canada, and around the world. The complete data tables for all 5564 stations are contained on the CD-ROM that accompanies this book. On the CD-ROM, a StationFinder interactive mapping utility can be used to geographically locate stations. (Note: this utility requires Internet access.)

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 summaries include values of dry-bulb, wet-bulb, and dew-point temperature, and wind speed with direction at various frequencies of occurrence. Also included in this edition are monthly degree-days to various bases, and parameters to calculate clear-sky irradiance. Sources of other climate information of potential interest to ASHRAE members are described later in this chapter.

Design information in this chapter was developed largely through research project RP-1453 (Thevenard 2009). The information includes design values of dry-bulb with mean coincident wet-bulb temperature, design wet-bulb with mean coincident dry-bulb temperature, and design dew-point with mean coincident dry-bulb temperature and corresponding humidity ratio. These data 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).

Warm-season temperature and humidity conditions are based on annual percentiles of 0.4, 1.0, and 2.0. Cold-season conditions are based on annual percentiles of 99.6 and 99.0. The use of annual percentiles to define design conditions ensures that they represent the same probability of occurrence in any climate, regardless of the seasonal distribution of extreme temperature and humidity.

Monthly information including percentiles is compiled in addition to annual percentiles, to provide seasonally representative combinations of temperature, humidity, and solar conditions. Changes from the 2005 edition include the use of different percentiles for monthly design dry-bulb and mean coincident wet-bulb temperatures, and monthly design wet-bulb and mean coincident dry-bulb temperatures: 0.4, 2, 5, and 10% values are now used instead of the 0.4, 1, and 2% values listed in 2005. New elements in the 2009 edition are monthly average temperature and standard deviation of daily average temperature, which can be combined to estimate heating and cooling degree-days to any base, as explained later in this chapter. The tables also list heating and cooling degree-days for bases 65 and 50°F, as well as cooling degree-hours for bases 74 and 80°F. The calculation of daily dry-bulb and wet-bulb temperature profiles, which are useful for generating 24 h weather data sequences suitable as input to many HVAC analysis methods, has been significantly updated, with the inclusion of mean dry-bulb and wet-bulb temperature ranges coincident with the 5% monthly dry-bulb and wet-bulb design temperatures.

Finally, clear-sky solar radiation calculations have been moved to this chapter from other chapters. Two new parameters were included in the tables for that purpose: clear-sky optical depths for beam and diffuse irradiances. From these two parameters, clear-sky radiation for any time of any day of the year can be calculated, using a relatively simple method described later in the chapter. For convenience, the tables include noon-hour beam and diffuse irradiance values on the 21st day of each month.

Design conditions are provided for locations for which long-term hourly observations were available (1982-2006 for most stations in the United States and Canada). Compared to the 2005 chapter, the number of U.S. stations increased from 753 to 1085 (44% increase); Canadian stations increased from 307 to 480 (56% increase); and stations in the rest of the world increased from 3362 to 3999 (19% increase; see Figure 1 for map).

CLIMATIC DESIGN CONDITIONS

Table 1 shows climatic design conditions for Atlanta, GA, to illustrate the format of the data available on the CD-ROM. A limited subset of this data for 1450 of the 5564 locations for 21 annual data elements is provided for convenience in the Appendix.

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

- Name of the observing station, state (USA) or province (Canada), country.
- World Meteorological Organization (WMO) station identifier.
- Weather Bureau Army Navy (WBAN) number (–99999 denotes missing).
- Latitude of station, °N/S.
- Longitude of station, °E/W.
- Elevation of station, ft.
- Standard pressure at elevation, in psia (see Chapter 1 for equations used to calculate standard pressure).
- Time zone, h ± UTC
- Time zone code (e.g., NAE = Eastern Time, USA and Canada). The CD-ROM contains a list of all time zone codes used in the tables.
- Period analyzed (e.g., 82-06 = data from 1982 to 2006 were used).

Annual Design Conditions

Annual climatic design conditions are contained in the first three sections following the top part of the table. They contain information as follows:

Annual Heating and Humidification Design Conditions.

- Coldest month (i.e., month with lowest average dry-bulb temperature; 1 = January, 12 = December).

The preparation of this chapter is assigned to TC 4.2, Climatic Information.

Table 1 Design Conditions for Atlanta, GA, USA

Lat: **33.64N** Long: **84.43W** Elev: **1027** StdP: **14.16** Time Zone: **-5.00 (NAE)** Period: **82-06** WBAN: **13874**

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%	99.6%			99%			0.4%		1%			
			DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
1	**20.7**	**25.8**	**3.5**	**6.8**	**27.4**	**8.8**	**9.0**	**32.2**	**25.5**	**37.3**	**24.0**	**38.1**	**11.8**	**320**

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	**17.1**	**93.8**	**74.3**	**91.5**	**74.0**	**89.3**	**73.4**	**77.2**	**88.2**	**76.2**	**86.5**	**75.3**	**84.9**	**8.9**	**300**

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	55/69
74.2	**132.7**	**81.2**	**73.3**	**128.4**	**80.1**	**72.4**	**124.8**	**79.4**	**41.2**	**88.3**	**40.2**	**86.6**	**39.3**	**85.4**	**813**

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
22.0	**19.2**	**17.3**	**82.4**	**11.8**	**96.5**	**7.6**	**3.3**	**6.4**	**98.9**	**2.0**	**100.8**	**-2.3**	**102.6**	**-7.8**	**105.0**

Monthly Climatic Design Conditions

			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperatures, Degree-Days and Degree-Hours		Tavg	**62.7**	**43.8**	**47.8**	**54.6**	**61.9**	**70.2**	**76.7**	**80.1**	**79.1**	**73.2**	**63.5**	**54.3**	**45.8**
		Sd		**9.61**	**9.09**	**8.99**	**7.82**	**6.02**	**4.54**	**3.56**	**3.71**	**5.83**	**7.08**	**8.38**	**9.36**
		HDD50	**686**	**237**	**136**	**58**	**8**	**0**	**0**	**0**	**0**	**0**	**3**	**52**	**192**
		HDD65	**2694**	**657**	**482**	**333**	**145**	**24**	**1**	**0**	**0**	**11**	**114**	**331**	**596**
		CDD50	**5309**	**46**	**74**	**201**	**366**	**626**	**800**	**934**	**902**	**695**	**422**	**181**	**62**
		CDD65	**1841**	**0**	**1**	**12**	**53**	**184**	**351**	**469**	**438**	**255**	**67**	**10**	**1**
		CDH74	**15755**	**0**	**5**	**96**	**452**	**1433**	**3081**	**4497**	**3952**	**1854**	**352**	**32**	**1**
		CDH80	**5878**	**0**	**0**	**8**	**82**	**387**	**1203**	**1987**	**1592**	**578**	**40**	**1**	**0**
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		**70.4**	**73.7**	**80.7**	**85.8**	**90.1**	**94.7**	**97.9**	**96.3**	**92.1**	**83.7**	**78.0**	**71.9**
		MCWB		**59.6**	**60.9**	**62.9**	**66.1**	**71.9**	**73.7**	**74.9**	**75.1**	**73.2**	**69.7**	**64.3**	**62.5**
	2%	DB		**65.9**	**69.3**	**76.6**	**82.4**	**86.9**	**91.7**	**94.6**	**92.8**	**88.3**	**80.8**	**74.0**	**68.0**
		MCWB		**58.3**	**59.0**	**60.2**	**64.3**	**69.9**	**72.8**	**74.8**	**74.8**	**72.0**	**67.2**	**62.9**	**61.0**
	5%	DB		**62.4**	**65.9**	**73.3**	**79.4**	**84.3**	**89.3**	**92.0**	**90.3**	**86.0**	**78.2**	**71.1**	**64.3**
		MCWB		**55.8**	**57.3**	**58.8**	**62.8**	**68.9**	**72.1**	**74.4**	**74.3**	**71.3**	**65.3**	**61.9**	**58.7**
	10%	DB		**58.8**	**62.6**	**69.7**	**76.0**	**81.7**	**86.8**	**89.4**	**87.9**	**83.5**	**75.1**	**67.9**	**60.7**
		MCWB		**52.7**	**55.1**	**57.7**	**61.5**	**67.6**	**71.4**	**74.3**	**73.6**	**70.6**	**64.4**	**60.4**	**54.7**
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		**64.0**	**65.4**	**66.7**	**70.8**	**75.1**	**76.9**	**78.9**	**78.3**	**76.3**	**72.6**	**69.3**	**66.2**
		MCDB		**67.4**	**67.6**	**73.8**	**78.9**	**83.9**	**87.8**	**90.1**	**89.7**	**85.9**	**80.0**	**72.3**	**69.0**
	2%	WB		**61.1**	**62.5**	**64.3**	**68.2**	**73.0**	**75.4**	**77.4**	**77.0**	**74.6**	**70.3**	**66.8**	**63.2**
		MCDB		**64.0**	**66.6**	**71.6**	**76.1**	**82.6**	**85.9**	**88.5**	**88.0**	**83.3**	**76.2**	**70.8**	**66.0**
	5%	WB		**57.5**	**59.9**	**62.2**	**66.3**	**71.4**	**74.5**	**76.5**	**76.0**	**73.5**	**68.8**	**64.6**	**59.9**
		MCDB		**60.8**	**64.1**	**69.5**	**74.1**	**80.5**	**84.4**	**87.0**	**85.9**	**81.5**	**74.0**	**68.6**	**63.9**
	10%	WB		**53.8**	**56.5**	**59.9**	**64.2**	**69.9**	**73.4**	**75.4**	**75.1**	**72.6**	**67.2**	**62.2**	**55.7**
		MCDB		**57.3**	**60.5**	**66.5**	**72.0**	**78.2**	**82.5**	**85.3**	**84.2**	**80.0**	**72.5**	**66.6**	**59.4**
Mean Daily Temperature Range		MDBR		**17.4**	**17.8**	**19.5**	**20.1**	**18.8**	**17.3**	**17.1**	**16.4**	**16.5**	**17.8**	**18.1**	**17.0**
	5% DB	MCDBR		**20.8**	**21.2**	**23.3**	**23.0**	**20.4**	**20.5**	**20.7**	**19.4**	**18.9**	**19.7**	**20.2**	**19.6**
		MCWBR		**14.5**	**12.9**	**11.9**	**9.8**	**7.9**	**6.6**	**6.3**	**6.1**	**6.7**	**8.7**	**11.5**	**13.4**
	5% WB	MCDBR		**16.9**	**17.2**	**18.3**	**18.1**	**17.5**	**17.3**	**18.0**	**17.0**	**15.7**	**15.0**	**15.7**	**16.8**
		MCWBR		**14.2**	**13.2**	**11.9**	**9.9**	**8.0**	**6.8**	**6.6**	**6.2**	**6.9**	**8.5**	**11.3**	**13.6**
Clear Sky Solar Irradiance		taub		**0.325**	**0.349**	**0.383**	**0.395**	**0.448**	**0.505**	**0.556**	**0.593**	**0.431**	**0.373**	**0.339**	**0.320**
		taud		**2.461**	**2.316**	**2.176**	**2.175**	**2.028**	**1.892**	**1.779**	**1.679**	**2.151**	**2.317**	**2.422**	**2.514**
		Ebn,noon		**282**	**285**	**282**	**283**	**268**	**252**	**238**	**227**	**264**	**273**	**273**	**277**
		Edh,noon		**30**	**37**	**45**	**47**	**55**	**63**	**70**	**76**	**46**	**37**	**31**	**28**

CDD*n* Cooling degree-days base n°F, °F-day
CDH*n* Cooling degree-hours base n°F, °F-hour
DB Dry bulb temperature, °F
DP Dew point temperature, °F
Ebn,noon } Clear sky beam normal and diffuse hori-
Edh,noon } zontal irradiances at solar noon, Btu/h/ft2
Elev Elevation, ft
Enth Enthalpy, Btu/lb
HDD*n* Heating degree-days base n°F, °F-day
Hours 8/4 & 55/69 Number of hours between 8 a.m. and 4 p.m with DB between 55 and 69 °F
HR Humidity ratio, grains of moisture per lb of dry air
Lat Latitude, °
Long Longitude, °
MCDB Mean coincident dry bulb temperature, °F
MCDBR Mean coincident dry bulb temp. range, °F
MCDP Mean coincident dew point temperature, °F
MCWB Mean coincident wet bulb temperature, °F
MCWBR Mean coincident wet bulb temp. range, °F
MCWS Mean coincident wind speed, mph
MDBR Mean dry bulb temp. range, °F
PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East
Period Years used to calculate the design conditions
Sd Standard deviation of daily average temperature, °F
StdP Standard pressure at station elevation, psi
taub Clear sky optical depth for beam irradiance
taud Clear sky optical depth for diffuse irradiance
Tavg Average temperature, °F
Time Zone Hours ahead or behind UTC, and time zone code
WB Wet bulb temperature, °F
WBAN Weather Bureau Army Navy number
WMO# World Meteorological Organization number
WS Wind speed, mph

- Dry-bulb temperature corresponding to 99.6 and 99.0% annual cumulative frequency of occurrence (cold conditions), °F.
- Dew-point temperature corresponding to 99.6 and 99.0% annual cumulative frequency of occurrence, °F; corresponding humidity ratio, calculated at standard atmospheric pressure at elevation of station, grains of moisture per lb of dry air; mean coincident dry-bulb temperature, °F.
- Wind speed corresponding to 0.4 and 1.0% cumulative frequency of occurrence for coldest month, mph; mean coincident dry-bulb temperature, °F.
- Mean wind speed coincident with 99.6% dry-bulb temperature, mph; corresponding most frequent wind direction, degrees from north (east = 90°).

Annual Cooling, Dehumidification, and Enthalpy Design Conditions.

- Hottest month (i.e., month with highest average dry-bulb temperature; 1 = January, 12 = December).
- Daily temperature range for hottest month, °F [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 of occurrence (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, °F; mean coincident dry-bulb temperature, °F.
- Mean wind speed coincident with 0.4% dry-bulb temperature, mph; 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, °F; corresponding humidity ratio, calculated at the standard atmospheric pressure at elevation of station, grains of moisture per lb of dry air; mean coincident dry-bulb temperature, °F.
- Enthalpy corresponding to 0.4, 1.0, and 2.0% annual cumulative frequency of occurrence, Btu/lb; mean coincident dry-bulb temperature, °F.
- Number of hours between 8 AM and 4 PM (inclusive) with dry-bulb temperature between 55 and 69°F.

Extreme Annual Design Conditions.

- Wind speed corresponding to 1.0, 2.5, and 5.0% annual cumulative frequency of occurrence, mph.
- Extreme maximum wet-bulb temperature, °F.
- Mean and standard deviation of extreme annual minimum and maximum dry-bulb temperature, °F.
- 5-, 10-, 20-, and 50-year return period values for minimum and maximum extreme dry-bulb temperature, °F.

Monthly Design Conditions

Monthly design conditions are divided into subsections as follows:

Temperatures, Degree-Days, and Degree-Hours.

- Average temperature, °F. 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, °F. This parameter is useful to calculate heating and cooling degree-days to any base. Its use is explained in the section on Estimation of Degree-Days.
- Heating and cooling degree-days (bases 50 and 65°F). 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 (bases 74 and 80°F). These are used in various standards, such as *Standard* 90.2-2004.

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

For a 30-day month, the 0.4, 2.0, 5.0 and 10.0% values of occurrence 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 corresponding 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. For example, Table 1 shows that the annual 0.4% design dry-bulb temperature at Atlanta, GA, is 93.8°F; the 0.4% monthly dry-bulb temperature exceeds 93.8°F for June, July, and August, with values of 94.7, 97.9, and 96.3°F, respectively. Two new percentiles were added to this chapter (5.0 and 10.0% values) to give a greater range in the frequency of occurrence, in particular providing less extreme options to select for design calculations.

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 1% annual value is roughly equivalent to the 5% monthly value for the hottest month, and the 2% annual value is roughly equivalent to the 10% monthly value for the hottest month.

Mean Daily Temperature Range. These values are useful in calculating daily dry- and wet-bulb temperature profiles, as explained in the section on Generating Design-Day Data. Three kinds of profile are defined:

- Mean daily temperature range for month indicated, °F (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 maximum 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 maximum daily wet-bulb temperature exceeds the 5% monthly design wet-bulb temperature.

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

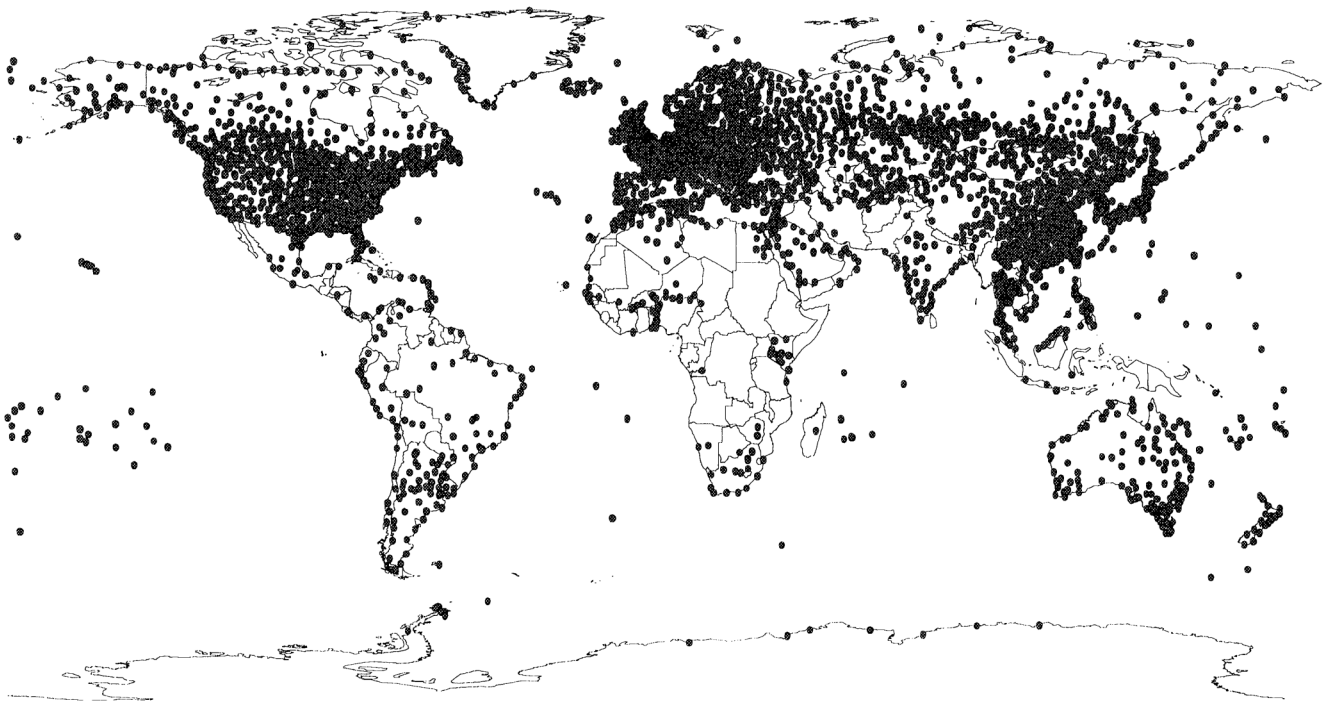

Fig. 1 Location of Weather Stations

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 optical depths but are listed here for convenience.

Data Sources

The following two primary sources of observational data sets were used in calculating design values:

- Integrated Surface Dataset (ISD) data for stations from around the world provided by NCDC for the period 1982 to 2006 (Lott et al. 2001; NCDC 2003).
- Hourly weather records for the period 1982 to 2006 for 480 Canadian locations from Environment Canada (2003).

In most cases, the period of record used in the calculations spanned 25 years. This choice of period is a compromise between trying to derive design conditions from the longest possible period of record, and using the most recent data to capture climatic or land-use trends from the past two decades. The actual number of years used in the calculations for a given station depends on the amount of missing data, and, as discussed in the next section, may be as little as 8 years. The first and last years of the period of record used to calculate design conditions are listed in the top section of the tables of climatic design conditions, as shown in Table 1 for Atlanta.

Clear-sky solar irradiance parameters listed in the tables constitute a simple parameterization of a sophisticated broadband clear-sky radiation model called REST2 (Gueymard 2008, Thevenard 2009). The REST2 model requires detailed knowledge of various atmospheric constituents, such as aerosols, water vapor, ozone, etc. To extend applicability of the model to the whole world, multiple data sets, mainly derived from space observations, were used to obtain these inputs. Water vapor data were derived from the NVAP satellite/radiosonde assimilated dataset for 1988-1999 (Randel et al., 1996), corrected for elevation (Thevenard 2009). Total ozone amount was derived from observations of the TOMS instrument aboard the Nimbus 7 satellite (http://toms.gsfc.nasa.gov) for 1988-1992. A fixed NO_2 amount of 0.4 matm·cm was used throughout the world. Far-field ground albedo was obtained from the Surface and Atmospheric Radiation Budget (SARB) based on CERES data (Charlock et al. 2004) for 2000-2005. Aerosol turbidity data received special attention because they are the primary inputs that condition the accuracy of the direct and diffuse irradiance predictions under clear skies. Spaceborne data sets were used and were calibrated against a large number of ground-based sites. Six years (2000-2005) of simulated monthly-average aerosol optical depth at 550 nm were prepared with the MATCH model (Rasch et al. 1997; Clarke et al. 2001) by the Science Directorate/Climate Science Branch at NASA Langley Research Center, which also supplied aerosol single-scattering albedo estimates. Aerosol optical depth data from MATCH were combined with retrievals from two MODIS instruments (http://modis-atmos.gsfc.nasa.gov), and compared for ground-truthing with a large number of ground-based sites, mostly from the AERONET network (http://aeronet.gsfc.nasa.gov). Other details can be found in Thevenard (2009).

Results from the REST2 model were then fitted to the simple 2-parameter model described in this chapter. The fits enable a concise formulation requiring tabulation, on a monthly basis, of only two parameters per station, referred to here as the clear-sky beam and diffuse optical depths. Details about the fitting procedure can be found in Thevenard (2009).

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 condition 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.

Some stations in the ISD data set also provide data that were not recorded at the beginning of the hour. When data at the exact hour were missing, they were replaced by data up to 0.5 h before or after, when available.

Finally, psychrometric quantities such as wet-bulb temperature or enthalpy are not contained in the weather data sets. They were calculated from dry-bulb temperature, dew-point temperature, and station pressure using the psychrometric equations in Chapter 1.

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 distributions compiled for each month. Each individual month's data were included if they met the following screening criteria for completeness 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 25 years (1982 through 2006 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 ascertained from results of RP-1171 (Hubbard et al. 2004) and 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 number 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, consistency checks among the various parameters, and comparison to the 2005 chapter's values. About 32 stations from the 2005 edition have no equivalent within a 12 mile distance in the 2009 edition. These stations may have been dropped because of quality problems, or simply because they did not have enough data within the 1982-2006 period of record used for the present edition. Further details of the analysis procedures are available in Thevenard (2009).

Differences from Previously Published Design Conditions

- Climatic design conditions in this chapter are generally similar to those in previous editions, because similar if not identical analysis procedures were used. There are some differences, however, owing to a more recent period of record (generally 1982-2006 versus 1972-2001). For example, compared to the 2005 edition, 99.6% heating dry-bulb temperatures have increased by 0.20°F on average, and 0.4% cooling dry-bulb temperatures have increased by 0.25°F on average. Similar trends are observed for other design temperatures. The root mean square differences are 0.77°F for the 99.6% heating dry-bulb values and 0.54°F for 0.4% cooling dry-bulb. The increases noted here are generally consistent with the discussion in the section on Impacts of Climate Change.
- Further details concerning differences between design conditions in the 2005 edition and the 2001 edition are described in Thevenard et al. (2005). Differences between the 1993 and previous editions are described in Colliver et al. (2000).

Applicability and Characteristics of Design Conditions

Climatic design values in this chapter 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 consideration. Additional sources of information on frequency and duration of extremes of temperature and humidity are provided in the section on Other Sources of Climatic Information. Further information is available from Harriman et al. (1999). This section discusses the intended use of design conditions in the order they appear in Table 1.

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 1°F 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 coincident wet-bulb temperatures often represent conditions on hot, mostly sunny days. These are often used in sizing cooling equipment such as chillers or air-conditioning units.

Design conditions based on wet-bulb temperature represent extremes of the total sensible plus latent heat of outdoor air. This information 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 dehumidification, cooling-based dehumidification, and fresh-air ventilation systems. 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 corresponding 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 energies). 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 maximum 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 temperatures 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 temperatures 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 table. 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 occurring at all in any year. The following method can be used to estimate the return period (recurrence interval) of extreme temperatures:

$$T_n = M + IFs \tag{1}$$

where

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

M = mean of annual extreme maximum or minimum dry-bulb temperatures, °F

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

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

= –1 if minimum dry-bulb temperatures are being considered

$$F = -\frac{\sqrt{6}}{\pi}\left\{0.5772 + \ln\left[\ln\left(\frac{n}{n-1}\right)\right]\right\}$$

For example, the 50-year return period extreme maximum dry-bulb temperature estimated for Atlanta, GA, is 105.1°F (according to Table 1, M = 96.5°F, s = 3.3, and n = 50; I = 1). Similarly, the 50-year return period extreme minimum dry-bulb temperature for Atlanta, GA, is –7.8°F [M = 11.8°F, s = 7.6, and n = 50; I = –1]. The n-year return periods can be obtained for most stations using ASHRAE's Weather Data Viewer 4.0 (ASHRAE 2009), which is discussed in the section on Other Sources of Climatic Information.

Calculation of the n-year return period is based on assumptions that annual maxima and minima are distributed according to the Gumbel (Type 1 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 of return period, and decreasing length of the period of record. 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°F or more. Thus, the uncertainty of return period values estimated in this way are greater for stations with fewer years of data than for stations with the complete period of record from 1982-2006.

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 section on Calculating Degree-Days.

Heating and cooling degree-days (base 50 or 65°F) are calculated as the sum of the differences between daily average temperatures and the base temperature. For example the number of **heating degree-days (HDD)** in the month is calculated as

$$\text{HDD} = \sum_{i=1}^{N} (T_{base} - \overline{T}_i)^+ \quad (2)$$

where N is the number of days in the month, T_{base} is the reference temperature to which the degree-days are calculated, and $\overline{T}_i$ is the mean daily temperature calculated by adding the maximum and minimum temperatures for the day, then dividing by 2. The + superscript indicates that only positive values of the bracketed quantity are taken into account in the sum. Similarly, monthly **cooling degree-days (CDD)** are calculated as:

$$\text{CDD} = \sum_{i=1}^{N} (\overline{T}_i - T_{base})^+ \quad (3)$$

Degree-days are used in energy estimating methods, and to classify 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 enthalpy are closely related, so applications with large ventilation flow rates may have maximum cooling requirements under high wet-bulb conditions.

Mean Daily Temperature Range. Mean daily range values are computed using all days of the month, as opposed to coincident values that derive from design days. Mean daily range values have been published in previous Handbook editions and are included for completeness. Coincident daily range values should be used for generating design-day profiles.

Clear-Sky Solar Irradiance. Clear-sky solar irradiance data are used in load calculation methods. **Beam normal irradiance** refers to solar radiation emanating directly from the solar disk and measured perpendicularly to the rays of the sun. **Diffuse horizontal irradiance** refers to solar radiation emanating from the sky dome, sun excepted, and measured on a horizontal surface. Because beam and diffuse irradiance vary during the course of the day, new load calculation methods require their estimation at various times, a method for which is explained in the section on Calculating Clear-Sky Solar Radiation. The method uses the clear-sky optical depths, τ_b and τ_d, listed in Table 1 as *taub* and *taud*, respectively, as inputs. Clear-sky beam normal and diffuse horizontal irradiances at solar noon are also listed in Table 1 for convenience.

CALCULATING CLEAR-SKY SOLAR RADIATION

Knowledge of clear-sky solar radiation at various times of year and day is required by several calculation methods for heat gains in HVAC loads and solar energy applications. The tables of climatic design conditions now include the parameters required to calculate clear-sky beam and diffuse solar irradiance using the equations in the following section. The section on Transposition to Receiving Surfaces of Various Orientations explains how to use these values to calculate clear-sky solar radiation incident on arbitrary surfaces.

Note that in all equations in this section, *angles are expressed in degrees*. This includes the arguments appearing in trigonometric functions.

Solar Constant and Extraterrestrial Solar Radiation

The **solar constant E_{sc}** is defined as the intensity of solar radiation on a surface normal to the sun's rays, just beyond the earth's atmosphere, at the average earth-sun distance. One frequently used value is that proposed by the World Meteorological Organization in 1981, $E_{sc} = 433.3$ Btu/h·ft^2 (Iqbal 1983).

Because the earth's orbit is slightly elliptical, the **extraterrestrial radiant flux E_o** varies throughout the year, reaching a maximum of 447.6 Btu/h·ft^2 near the beginning of January, when the earth is closest to the sun (aphelion) and a minimum of 419.1 Btu/h·ft^2 near the beginning of July, when the earth is farthest from the sun (perihelion). Extraterrestrial solar irradiance incident on a surface normal to the sun's ray can be approximated with the following equation:

$$E_o = E_{sc}\left\{1 + 0.033\cos\left[360° \frac{(n-3)}{365}\right]\right\} \quad (4)$$

where n is the day of year (1 for January 1, 32 for February 1, etc.) and the argument inside the cosine is in degrees. Table 2 tabulates values of E_o for the 21st day of each month.

Equation of Time and Solar Time

The earth's orbital velocity also varies throughout the year, so **apparent solar time (AST)**, as determined by a solar time sundial, varies somewhat from the **mean time** kept by a clock running at a uniform rate. This variation is called the **equation of time (ET)** and is approximated by the following formula (Iqbal 1983):

$$\text{ET} = 2.2918(0.0075 + 0.1868\cos(\Gamma) - 3.2077\sin(\Gamma) - 1.4615\cos(2\Gamma) - 4.089\sin(2\Gamma)) \quad (5)$$

with ET expressed in minutes and

$$\Gamma = 360° \frac{n-1}{365} \quad (6)$$

Table 2 tabulates the values of ET for the 21st day of each month.

The conversion between local standard time and solar time involves two steps: the equation of time is added to the local standard time, and then a longitude correction is added. This longitude correction is four minutes of time per degree difference between the **local (site) longitude** and the longitude of the **local standard meridian (LSM)** for that time zone; hence, AST is related to the **local standard time (LST)** as follows:

$$\text{AST} = \text{LST} + \text{ET}/60 + (\text{LON} - \text{LSM})/15 \quad (7)$$

where

AST = apparent solar time, decimal hours

Table 2 Approximate Astronomical Data for the 21st Day of Each Month

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Day of year	21	52	80	111	141	172	202	233	264	294	325	355
E_o, Btu/h·ft^2	447	443	437	429	423	419	420	424	430	437	444	447
Equation of time (ET), min	–10.6	–14.0	–7.9	1.2	3.7	–1.3	–6.4	–3.6	6.9	15.5	13.8	2.2
Declination δ, degrees	–20.1	–11.2	–0.4	11.6	20.1	23.4	20.4	11.8	–0.2	–11.8	–20.4	–23.4

Table 3 Time Zones in United States and Canada

Time Zone Name	TZ (Hours ± UTC)	Local Standard Meridian Longitude (°E)
Newfoundland standard time	–3.5	–52.5
Atlantic standard time	–4	–60
Eastern standard time	–5	–75
Central standard time	–6	–90
Mountain standard time	–7	–105
Pacific standard time	–8	–120
Alaska standard time	–9	–135
Hawaii-Aleutian standard time	–10	–150

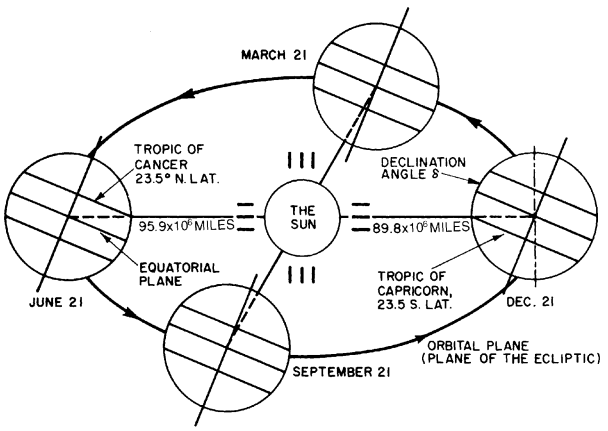

Fig. 2 Motion of Earth around Sun

LST = local standard time, decimal hours
ET = equation of time in minutes, from Table 2 or Equation (5)
LSM = longitude of local standard time meridian, °E of Greenwich (negative in western hemisphere)
LON = longitude of site, °E of Greenwich

Most standard meridians are found every 15° from 0° at Greenwich, U.K., with a few exceptions, such as the province of Newfoundland in Canada. Standard meridian longitude is related to time zone as follows:

$$\text{LSM} = 15\text{TZ} \tag{8}$$

where TZ is the time zone, expressed in hours ahead or behind **coordinated universal time (UTC)**. TZ is listed for each station on the CD-ROM accompanying this book. Table 3 lists time zones and standard time meridians for the United States and Canada.

If **daylight saving time** (DST) is to be used, rather than local standard time, an additional correction has to be performed. In most locales, local standard time can be obtained from daylight savings time by subtracting one hour:

$$\text{LST} = \text{DST} - 1 \tag{9}$$

where DST is in decimal hours.

Declination

Because the earth's equatorial plane is tilted at an angle of 23.45° to the orbital plane, the **solar declination** δ (the angle between the earth-sun line and the equatorial plane) varies throughout the year, as shown in Figure 2. This variation causes the changing seasons with their unequal periods of daylight and darkness. Declination can be obtained from astronomical or nautical almanacs; however, for most engineering applications, the following equation provides sufficient accuracy:

Solution: From Table 1, Atlanta is at latitude L = 33.64°N. From Table 2 or Equation (10), declination δ = 20.44°.

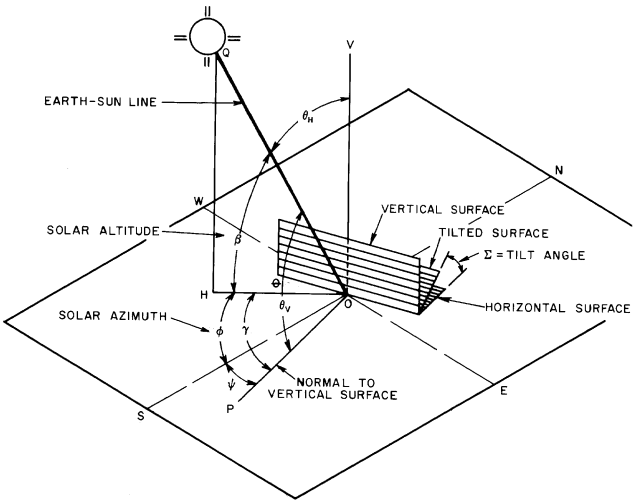

Fig. 3 Solar Angles for Vertical and Horizontal Surfaces

$$\delta = 23.45 \sin\left(360° \frac{n + 284}{365}\right) \tag{10}$$

where δ is in degrees and the argument inside the sine is also in degrees. Table 2 provides δ for the 21st day of each month.

Sun Position

The sun's position in the sky is conveniently expressed in terms of the solar altitude above the horizontal and the solar azimuth measured from the south (see Figure 3). The solar altitude angle β is defined as the angle between the horizontal plane and a line emanating from the sun. Its value ranges from 0° when the sun is on the horizon, to 90° if the sun is directly overhead. Negative values correspond to night times. The solar azimuth angle ϕ is defined as angular displacement from south of the projection, on the horizontal plane, of the earth-sun line. By convention, it is counted positive for afternoon hours and negative for morning hours.

Solar altitude and azimuth angles, in turn, depend on the local latitude L (°N, negative in the southern hemisphere); the solar declination δ, which is a function of the date [see Table 2 or Equation (10)]; and the hour angle H, defined as the angular displacement of the sun east or west of the local meridian due to the rotation of the earth, and expressed in degrees as

$$H = 15(\text{AST} - 12) \tag{11}$$

where AST is the apparent solar time [Equation (7)]. H is zero at solar noon, positive in the afternoon, and negative in the morning.

Equation (12) relates the solar altitude angle β to L, δ, and H:

$$\sin\beta = \cos L \cos\delta \cos H + \sin L \sin\delta \tag{12}$$

Note that at solar noon, H = 0 and the sun reaches its maximum altitude in the sky:

$$\beta_{max} = 90° - |L - \delta| \tag{13}$$

The azimuth angle ϕ is uniquely determined by its sine and cosine, given in Equations (14) and (15):

$$\sin\phi = \sin H \cos\delta / \cos\beta \tag{14}$$

$$\cos\phi = (\cos H \cos\delta \sin L - \sin\delta \cos L)/\cos\beta \tag{15}$$

Example 1. Calculate the position of the sun in Atlanta, GA, for July 21 at noon solar time.

Solar altitude is given by Equation (13):

$$\beta = 90 - |33.64 - 20.44| = 76.80°$$

At solar noon, the sun is due south, so the azimuth angle ϕ is simply 0°.

Example 2. Perform the same calculation as in Example 1, but for 3:00 PM eastern daylight saving time.

Solution: Compared to Example 1, a few extra steps are required to calculate AST. From Table 1, for Atlanta, LON = 84.43°W = –84.43°E and TZ = –5.00. Also, from Table 1 or Equation (5), ET = –6.4 min. Then, from Equation (8):

$$LSM = 15(-5.00) = -75°$$

Because 3 PM daylight savings time is 2 PM standard time, or hour 14, Equation (7) leads to

$$AST = 14 - 6.4/60 + [(-84.43) - (-75)]/15 = 13.27 \text{ h}$$

Then, from Equation (11):

$$H = 15(13.27 - 12) = 18.97°$$

Solar altitude is given by Equation (12), using the same latitude and declination as in Example 1:

$$\sin\beta = \cos(33.64°)\cos(20.44°)\cos(18.97°) + \sin(33.64°)\sin(20.44°) = 0.931$$

Therefore, $\beta = 68.62°$.

Solar azimuth is obtained through Equations (14) and (15):

$$\sin\phi = \sin(18.97°)\cos(20.44°)/\cos(68.62°) = 0.836$$

$$\cos\phi = [\cos(18.97°)\cos(20.44°)\sin(33.64°) - \sin(20.44°)\cos(33.64°)]/\cos(68.62°) = 0.549$$

Therefore, $\phi = 56.69°$.

Air Mass

The relative air mass m is the ratio of the mass of atmosphere in the actual earth/sun path to the mass that would exist if the sun were directly overhead. Air mass is solely a function of solar altitude β and is obtained from (Kasten and Young, 1989)

$$m = 1/[\sin\beta + 0.50572(6.07995 + \beta)^{-1.6364}] \quad (16)$$

where β is expressed in degrees.

Clear-Sky Solar Radiation

Solar radiation on a clear day is defined by its beam (direct) and diffuse components. The direct component represents the part of solar radiation emanating directly from the solar disc, whereas the diffuse component accounts for radiation emanating from the rest of the sky. These two components are calculated as

$$E_b = E_o \exp[-\tau_b m^{ab}] \quad (17)$$

$$E_d = E_o \exp[-\tau_d m^{ad}] \quad (18)$$

where

E_b = beam normal irradiance (measured perpendicularly to rays of the sun)
E_d = diffuse horizontal irradiance (measured on horizontal surface)
E_o = extraterrestrial normal irradiance [Equation (4) or Table 2]
m = air mass [Equation 16)]
τ_b and τ_d = beam and diffuse optical depths (τ_b and τ_d are more correctly termed "pseudo" optical depths, because optical depth is usually employed when the air mass coefficient is unity; "optical depth" is used here for convenience.)
ab and ad = beam and diffuse air mass exponents

Values of τ_b and τ_d are location-specific, and vary during the year. They embody the dependence of clear-sky solar radiation upon local conditions, such as elevation, precipitable water content, and aerosols. Their average values were determined through ASHRAE research project RP-1453 (Thevenard 2009) and are tabulated for the 21st day of each month for all the locations in the tables of climatic design conditions. Values for other days of the year should be found by interpolation.

Air mass exponents ab and ad are correlated to τ_b and τ_d through the following empirical relationships:

$$ab = 1.219 - 0.043\tau_b - 0.151\tau_d - 0.204\tau_b\tau_d \quad (19)$$

$$ad = 0.202 - 0.852\tau_b - 0.007\tau_d - 0.357\tau_b\tau_d \quad (20)$$

Equations (17) to (20) describe a simple parameterization of a sophisticated broadband radiation model and provide accurate predictions of E_b and E_d, even at sites where the atmosphere is very hazy or humid most of the time.

Example 3. Calculate clear-sky beam and diffuse solar irradiance in Atlanta, GA, for July 21 at noon solar time. Note that Table 1 already lists clear-sky beam and diffuse solar irradiance for solar noon. Calculations are shown here to illustrate the application of the method.

Solution: From Example 1, at solar noon on July 21 in Atlanta solar altitude is $\beta = 76.80°$. From Equation (16):

$$m = 1/[\sin(76.80°) + 0.50572(6.07995 + 76.80)^{-1.6364}] = 1.027$$

From Table 1, the beam and diffuse optical depths for Atlanta in July are $\tau_b = 0.556$ and $\tau_d = 1.779$. From Table 2 or Equation (4), normal extraterrestrial irradiance on July 21 is $E_o = 420$ Btu/h•ft^2. Then, from Equations (19) and (20)

$$ab = 1.219 - 0.043 \times 0.556 - 0.151 \times 1.779 - 0.204 \times 0.556 \times 1.779 = 0.725$$

$$ad = 0.202 + 0.852 \times 0.556 - 0.007 \times 1.779 - 0.357 \times 0.556 \times 1.779 = 0.310$$

and from Equations (17) and (18),

$$E_b = 420 \exp(-0.556 \times 1.027^{0.725}) = 238 \text{ Btu/h·ft}^2$$

$$E_d = 420 \exp(-1.779 \times 1.027^{0.310}) = 70 \text{ Btu/h·ft}^2$$

These are the values listed for *Ebn,noon* and *Edh,noon* in Table 1.

Example 4. Perform the same calculation as in Example 3, but for 3 PM eastern daylight saving time.

Solution: This is the same calculation as in the solution of Example 3, but using the solar altitude $\beta = 68.62°$ calculated in Example 2 (ab and ad are unchanged from Example 3):

$$m = 1/[\sin(68.62°) + 0.50572(6.07995 + 68.62)^{-1.6364}] = 1.073$$

$$E_b = 420 \exp(-0.556 \times 1.073^{0.725}) = 234 \text{ Btu/h•ft}^2$$

$$E_d = 420 \exp(-1.779 \times 1.073^{0.310}) = 68 \text{ Btu/h•ft}^2$$

TRANSPOSITION TO RECEIVING SURFACES OF VARIOUS ORIENTATIONS

Calculations developed in the previous section are chiefly concerned with estimating clear-sky solar irradiance either normal to the rays of the sun (direct beam) or on a horizontal surface (diffuse). However, in many circumstances, calculation of clear-sky solar irradiance is required on surfaces of arbitrary orientations. Receiving surfaces can be vertical (e.g., walls and windows) or tilted (e.g., skylights or active solar devices). This section describes **transposition models** that enable calculating solar irradiance on any surface, knowing beam normal and diffuse horizontal irradiance.

Table 4 Surface Orientations and Azimuths, Measured from South

Orientation	N	NE	E	SE	S	SW	W	NW
Surface azimuth ψ	180°	−135°	−90°	−45°	0	45°	90°	135°

Solar Angles Related to Receiving Surfaces

The orientation of a receiving surface is best characterized by its tilt angle and its azimuth, shown in Figure 3. The tilt angle Σ (also called *slope*) is the angle between the surface and the horizontal plane. Its value lies between 0 and 180°. Most often, slopes are between 0° (horizontal) and 90° (vertical). Values above 90° correspond to surfaces facing the ground. The surface azimuth ψ is defined as the displacement from south of the projection, on the horizontal plane, of the normal to the surface. Surfaces that face west have a positive surface azimuth; those that face east have a negative surface azimuth. Surface azimuths for common orientations are summarized in Table 4. Note that, in this chapter, surface azimuth is defined as relative to south in both the northern and southern hemispheres. Other presentations and software use relative-to-north or relative-to-equator; care is required.

The surface-solar azimuth angle γ is defined as the angular difference between the solar azimuth ϕ and the surface azimuth ψ:

$$\gamma = \phi - \psi \tag{21}$$

Values of γ greater than 90° or less than –90° indicate that the surface is in the shade.

Finally, the angle between the line normal to the irradiated surface and the earth-sun line is called the angle of incidence θ. It is important in fenestration, load calculations, and solar technology because it affects the intensity of the direct component of solar radiation striking the surface and the surface's ability to absorb, transmit, or reflect the sun's rays. Its value is given by

$$\cos\theta = \cos\beta\cos\gamma\sin\Sigma + \sin\beta\cos\Sigma \tag{22}$$

Note that for vertical surfaces (Σ = 90°) Equation (22) simplifies to

$$\cos\theta = \cos\beta\cos\gamma \tag{23}$$

whereas for horizontal surfaces (Σ = 0°) it simplifies to

$$\theta = 90 - \beta \tag{24}$$

Example 5. For Atlanta, GA, on July 21 at 3 PM eastern daylight saving time, find the angle of incidence at a vertical widow facing 60° west of south.

Solution: The azimuth of the receiving surface is ψ = +60°. According to Example 2, solar azimuth angle is ϕ = 56.69°. Then, Equation (21) gives the surface-solar azimuth angle as

$$\gamma = 56.69° - 60° = -3.31°$$

Still from Example 2, solar altitude angle is β = 68.62°. Equation (23) leads to

$$\cos\theta = \cos(68.62°)\cos(-3.31°) = 0.364$$

Therefore, θ = 68.66°.

Example 6. For the same conditions as in Example 5, find the angle of incidence at a skylight tilted at 30° and facing 60° west of south.

Solution: The azimuth of the receiving surface is still ψ = +60°, but its slope is Σ = 30°. Other angles are unchanged from Example 5. Equation (22) now applies:

$$\cos\theta = \cos(68.62°)\cos(-3.31°)\sin(30°) + \sin(68.62°)\cos(30°) = 0.988$$

which leads to θ = 8.74°.

Calculation of Clear-Sky Solar Irradiance Incident On Receiving Surface

Total clear-sky irradiance E_t reaching the receiving surface is the sum of three components: the beam component $E_{t,b}$ originating from the solar disc; the diffuse component $E_{t,d}$, originating from the sky dome; and the ground-reflected component $E_{t,r}$ originating from the ground in front of the receiving surface. Thus,

$$E_t = E_{t,b} + E_{t,d} + E_{t,r} \tag{25}$$

Only a simple method for computing all the factors on the right side of Equation (25) is presented here. More elaborate methods, particularly with regard to the calculating the diffuse component, can be found in Gueymard (1987) and Perez et al. (1990).

Beam Component. The beam component is obtained from a straightforward geometric relationship:

$$E_{t,b} = E_b\cos\theta \tag{26}$$

where θ is the angle of incidence. This relationship is valid when cos θ > 0; otherwise, $E_{t,b} = 0$.

Diffuse Component. The diffuse component is more difficult to estimate because of the nonisotropic nature of diffuse radiation: some parts of the sky, such as the circumsolar disc or the horizon, tend to be brighter than the rest of the sky, which makes the development of a simplified model challenging. For vertical surfaces, Stephenson (1965) and Threlkeld (1963) showed that the ratio Y of clear-sky diffuse irradiance on a vertical surface to clear-sky diffuse irradiance on the horizontal is a simple function of the angle of incidence θ:

$$E_{t,d} = E_dY \tag{27}$$

with

$$Y = \max(0.45, 0.55 + 0.437\cos\theta + 0.313\cos^2\theta) \tag{28}$$

For a nonvertical surface with slope Σ, the following simplified relationships are sufficient for most applications described in this volume:

$$E_{t,d} = E_d(Y\sin\Sigma + \cos\Sigma) \qquad \text{if } \Sigma \le 90° \tag{29}$$

$$E_{t,d} = E_dY\sin\Sigma \qquad \text{if } \Sigma > 90° \tag{30}$$

where Y is calculated for a *vertical surface* having the same azimuth as the receiving surface considered.

Note that Equations (27) to (30) are appropriate for clear-sky conditions, but should not be used for cloudy skies.

Ground-Reflected Component. Ground-reflected irradiance for surfaces of all orientations is given by

$$E_{t,r} = (E_b\sin\beta + E_d)\rho_g\frac{1-\cos\Sigma}{2} \tag{31}$$

where ρ_g is ground reflectance, often taken to be 0.2 for a typical mixture of ground surfaces. Table 5 provides estimates of ρ_g for other surfaces, including in the presence of snow.

Example 7. Find the direct, diffuse and ground-reflected components of clear-sky solar irradiance on the window in Example 5.

Solution: Clear-sky beam normal irradiance E_b and diffuse horizontal irradiance E_d were calculated in Example 4 as $E_b = 234$ Btu/h·ft^2 and $E_d = 68$ Btu/h·ft^2. Example 2 provided the solar altitude as β = 68.62° and Example 5 provided the angle of incidence as θ = 68.66°. The surface slope is Σ = 90°, and ground reflectance is assumed to be 0.2. Substituting these values into Equations (26), (27), (28), and (31) leads to

$$E_{t,b} = 234\cos(68.66°) = 85 \text{ Btu/h·ft}^2$$

$$Y = \max[0.45, 0.55 + 0.437\cos(68.66°) + 0.313\cos^2(68.66°)] = 0.750$$

$$E_{t,d} = 68 \times 0.750 = 51 \text{ Btu/h•ft}^2$$

$$E_{t,r} = [234\sin(68.62°) + 68]0.2\frac{1-\cos(90°)}{2} = 29 \text{ Btu/h·ft}^2$$

Example 8. Find the direct, diffuse and ground-reflected components of clear-sky solar irradiance on the skylight in Example 6.

Solution: This example uses the same values as Example 7, except that the surface slope is $\Sigma = 30°$ and the angle of incidence, calculated in Example 6, is $\theta = 8.74°$. The clear-sky irradiance components are then calculated from Equations (26), (29) and (31); the ratio Y is calculated for a *vertical* surface having the same azimuth as the receiving surface, so the value calculated in Example 7 is unchanged.

$$E_{t,b} = 234\cos(8.74°) = 231 \text{ Btu/h·ft}^2$$

$$E_{t,d} = 68[0.750\sin(30°) + \cos(30°)] = 84 \text{ Btu/h·ft}^2$$

$$E_{t,r} = [234\sin(68.62°) + 68]0.2\frac{1-\cos(30°)}{2} = 4 \text{ Btu/h·ft}^2$$

GENERATING DESIGN-DAY DATA

This section provides procedures for generating 24 h temperature data sequences suitable as input to many HVAC analysis methods, including the radiant time series (RTS) cooling load calculation procedure described in Chapter 18.

Temperatures. Table 6 gives a normalized daily temperature profile in fractions of daily temperature range. Recent research projects RP-1363 (Hedrick 2009) and RP-1453 (Thevenard 2009) have shown that this profile is representative of both dry-bulb and wet-bulb temperature variation on typical design days. To calculate hourly temperatures, subtract the Table 6 fraction of the dry- or wet-bulb daily range from the dry- or wet-bulb design temperature (limiting by saturation in the case of the wet-bulb). This procedure is applicable to annual or monthly data and is illustrated in Example 9. Table 7 specifies the input values to be used for generation of several design-day types.

Because daily temperature variation is driven by heat from the sun, the profile in Table 6 is, strictly speaking, specified in terms of solar time. Typical HVAC calculations (e.g., hourly cooling loads) are performed in local time, reflecting building operation schedules. The difference between local and solar time can easily be 1 or 2 h, depending on site longitude and whether daylight saving time is in effect. This difference can be included by accessing the temperature profile using apparent solar time (AST) calculated with Equation (7), as shown in the Example 9.

Additional Moist-Air Properties. Once hourly dry-bulb and wet-bulb temperatures are known, additional moist air properties (e.g., dew-point temperature, humidity ratio, enthalpy) can be derived using the psychrometric chart, equations in Chapter 1, or psychrometric software.

Example 9. Deriving Hourly Design-Day Temperatures. Calculate hourly temperatures for Atlanta, GA, for a July dry-bulb design day using the 5% design conditions.

Solution: From Table 1, the July 5% dry-bulb design conditions for Atlanta are DB = 92.0°F and MCWB = 74.4°F. Daily range values are MCDBR = 20.7°F and MCWBR = 6.3°F. Daylight saving time is in effect for Atlanta in July. Apparent solar time (AST) for hour 1 local daylight saving time (LDT) is –0.73. The nearest hour to the AST is 23, yielding a Table 6 profile value of 0.75. Then $t_{db,1} = 92.0 - 0.75 \times 20.7 = 76.5$°F. Similarly, $t_{wb,1} = 74.4 - 0.75 \times 6.3 = 69.7$°F. With psychrometric formulas, derive $t_{dp,1} = 66.7$ °F. Table 8 shows results of this procedure for all 24 h.

Table 5 Ground Reflectance of Foreground Surfaces

Foreground Surface	Reflectance
Water (large angle of incidences)	0.07
Coniferous forest (winter)	0.07
Bituminous and gravel roof	0.13
Dry bare ground	0.2
Weathered concrete	0.22
Green grass	0.26
Dry grassland	0.2 to 0.3
Desert sand	0.4
Light building surfaces	0.6
Snow-covered surfaces:	
Typical city centre	0.2
Typical urban site	0.4
Typical rural site	0.5
Isolated rural site	0.7

Source: Adapted from Thevenard and Haddad (2006).

ESTIMATION OF DEGREE-DAYS

Monthly Degree-Days

The tables of climatic design conditions in this chapter list heating and cooling degree-days (bases 50 and 65°F). Although 50 and 65°F represent the most commonly used bases for the calculation of degree-days, calculation to other bases may be necessary. With that goal in mind, the tables also provide two parameters (monthly average temperature T, and standard deviation of daily average temperature s_d) that enable estimation of degree-days to any base with reasonable accuracy.

The calculation method was established by Schoenau and Kehrig (1990). Heating degree days HDD_b to base T_b are expressed as

Table 6 Fraction of Daily Temperature Range

Time, h	Fraction	Time, h	Fraction	Time, h	Fraction
1	0.88	9	0.55	17	0.14
2	0.92	10	0.38	18	0.24
3	0.95	11	0.23	19	0.39
4	0.98	12	0.13	20	0.50
5	1.00	13	0.05	21	0.59
6	0.98	14	0.00	22	0.68
7	0.91	15	0.00	23	0.75
8	0.74	16	0.06	24	0.82

Table 7 Input Sources for Design-Day Generation

Design Day Type	Design Conditions	Daily Ranges	Limits
Dry-bulb			
Annual	0.4, 1, or 2% annual cooling DB/MCWB	Hottest month 5% DB MCDBR/MCWBR	Hourly wet-bulb temp. = min(dry-bulb temp., wet-bulb temp.)
Monthly	0.4, 2, 5, or 10% DB/MCWB for month	5% DB MCDBR/MCWBR for month	
Wet-bulb			
Annual	0.4, 1, or 2% annual cooling WB/MCDB	Hottest month 5% WB MCDBR/MCWBR	Hourly dry-bulb temp. = max(dry-bulb temp. wet-bulb temp.)
Monthly	0.4, 2, 5, or 10% WB/MCDB for month	5% WB MCDBR/MCWBR for month	

Table 8 Derived Hourly Temperatures for Atlanta, GA for July for 5% Design Conditions, °F

Hour (LDT)	t_{db}	t_{wb}	t_{dp}	Hour (LDT)	t_{db}	t_{wb}	t_{dp}
1	76.5	69.7	66.7	13	87.2	73.0	67.1
2	75.0	69.2	66.7	14	89.3	73.6	67.3
3	73.8	68.9	66.7	15	91.0	74.1	67.4
4	73.0	68.6	66.7	16	92.0	74.4	67.4
5	72.3	68.4	66.7	17	92.0	74.4	67.4
6	71.7	68.2	66.7	18	90.8	74.0	67.3
7	71.3	68.1	66.7	19	89.1	73.5	67.2
8	71.7	68.2	66.7	20	87.0	72.9	67.1
9	73.2	68.7	66.7	21	83.9	71.9	67.0
10	76.7	69.7	66.8	22	81.7	71.2	66.9
11	80.6	70.9	66.9	23	79.8	70.7	66.8
12	84.1	72.0	67.0	24	77.9	70.1	66.8

LDT = Local daylight saving time

$$HDD_b = Ns_d[Z_bF(Z_b) + f(Z_b)] \quad (32)$$

where N is the number of days in the month and Z_b is the difference between monthly average temperature T and base temperature T_b, normalized by the standard deviation of the daily average temperature s_d:

$$Z_b = \frac{T_b - \overline{T}}{s_d} \quad (33)$$

Function f is the normal (Gaussian) probability density function with mean 0 and standard deviation 1, and function F is the equivalent cumulative normal probability function:

$$f(Z) = \frac{1}{\sqrt{2\pi}}\exp\left(\frac{-Z^2}{2}\right) \quad (34)$$

$$F(Z) = \sum_{-\infty}^{Z} f(z)dz \quad (35)$$

Both f and F are readily available as built-in functions in many scientific calculators or spreadsheet programs, so their manual calculation is rarely warranted.

Cooling degree days CDD_b to base T_b are calculated by the same equation:

$$CDD_b = Ns_d[Z_bF(Z_b) + f(Z_b)] \quad (36)$$

except that Z_b is now expressed as

$$Z_b = \frac{\overline{T} - T_b}{s_d} \quad (37)$$

Annual Degree-Days

Annual degree-days are simply the sum of monthly degree days over the twelve months of the year.

Example 10. Calculate heating and cooling degree-days (base 59°F) for Atlanta for the month of October.

Solution: For October in Atlanta, Table 1 provides $\overline{T}$ = 63.5°F and s_d = 7.08°F. For heating degree-days, Equation (33) provides $Z_b = (59 - 63.5)/7.08 = -0.636$. From a scientific calculator or a spreadsheet program $f(Z_b) = 0.326$, and $F(Z_b) = 0.263$. Equation (32) then gives

$$HDD_{59} = 31 \times 7.08\,[-0.636 \times 0.263 + 0.326] = 34.9°F\text{-day}.$$

For cooling degree-days, $Z_b = 0.636$. Note that $f(-Z_b) = f(Z_b)$ and $F(-Z_b) = 1 - F(Z_b)$, hence

$$f(Z_b) = 0.326 \quad \text{and} \quad F(Z_b) = 0.737$$

and

$$CDD_{59} = 31 \times 7.08\,(-0.636 \times 0.737 + 0.326) = 174.4°F\text{-day}.$$

For most stations, the monthly degree days calculated with this method are within 9°F-day of the observed values.

REPRESENTATIVENESS OF DATA AND SOURCES OF UNCERTAINTY

Representativeness of Data

The climatic design information in this chapter was obtained by direct analysis of observations from the indicated locations. Design values reflect an estimate of the cumulative frequency of occurrence of the weather conditions at the recording station, either for single or jointly occurring elements, for several years into the future. Several sources of uncertainty affect the accuracy of using the design conditions to represent other locations or periods.

The most important of these factors is spatial representativeness. Most of the observed data for which design conditions were calculated were collected from airport observing sites, the majority of which are flat, grassy, open areas, away from buildings and trees or other local influences. Temperatures recorded in these areas may be significantly different (5 to 8°F lower) compared to areas where the design conditions are being applied. Significant variations can also occur with changes in local elevation, across large metropolitan areas, or in the vicinity of large bodies of water. Judgment must always be exercised in assessing the representativeness of the design conditions. It is especially important to note the elevation of locations, because design conditions vary significantly for locations whose elevations differ by as little as a few hundred feet. Data representing psychrometric conditions are generally properties of air masses rather than local features, and tend to vary on regional scales. As a result, a particular value may reasonably represent an area extending several miles. Consult an applied climatologist regarding estimating design conditions for locations not listed in this chapter. For online references to applied climatologists, see http://www.ncdc.noaa.gov/oa/about/amscert.html. Also, GIS-compatible files (KML format) are provided on the CD-ROM accompanying this book. This allows use of the data in a GIS environment such as Google Earth or ArcGIS, which provides capabilities to overlay various layers of information such as elevation, land-use, bodies of water, etc. This type of information can greatly assist in determining the most representative location to use for an application.

The underlying data also depend on the method of observation. During the 1990s, most data gathering in the United States and Canada was converted to automated systems designated either an ASOS (Automated Surface Observation System) or an AWOS (Automated Weather Observing System). This change improved completeness and consistency of available data. However, changes have resulted from the inherent differences in type of instrumentation, instrumentation location, and processing procedures between the prior manual systems and ASOS. These effects were investigated in ASHRAE research project RP-1226 (Belcher and DeGaetano 2004). Comparison of one-year ASOS and manual records revealed some biases in dry-bulb temperature, dew-point temperature, and wind speed. These biases are judged to be negligible for HVAC engineering purposes; the tabulated design conditions in this chapter were derived from mixed automated and manual data as available. It has been recognized that changes in the location of the observing instruments often have a larger effect than the change in instrumentation. On the other hand, ASOS measurements of sky coverage and ceiling height differ markedly from manual observations and are incompatible with solar radiation models used in energy simulation software. An updated solar model, compatible with ASOS data, was developed as

Table 9 Locations Representing Various Climate Types

Cold Snow Forest	Dry	Warm Rainy	Tropical Rainy
Portland, ME	Amarillo, TX	Huntsville, AL	Key West, FL
Grand Island, NE	Bakersfield, CA	Wilmington, NC	West Palm Beach, FL
Minot, ND	Sacramento, CA	Portland, OR	
Indianapolis, IN	Phoenix, AZ	Quillayute, WA	

part of RP-1226. The ASOS-based model was found less accurate than models based on manually observed data when compared to measured solar radiation.

Weather conditions vary from year to year and, to some extent, from decade to decade because of the inherent variability of climate. Similarly, values representing design conditions vary depending on the period of record used in the analysis. Thus, because of short-term climatic variability, there is always some uncertainty in using design conditions from one period to represent another period. Typically, values of design dry-bulb temperature vary less than 2°F from decade to decade, but larger variations can occur. Differing periods used in the analysis can lead to differences in design conditions between nearby locations at similar elevations. Design conditions may show trends in areas of increasing urbanization or other regions experiencing extensive changes to land use. Longer-term climatic change brought by human or natural causes may also introduce trends into design conditions. This is discussed further in the section on Effects of Climate Change.

Wind speed and direction are very sensitive to local exposure features such as terrain and surface cover. The original wind data used to calculate the wind speed and direction design conditions in Table 1 are often representative of a flat, open exposure, such as at airports. Wind engineering methods, as described in Chapter 24, can be used to account for exposure differences between airport and building sites. This is a complex procedure, best undertaken by an experienced applied climatologist or wind engineer with knowledge of the exposure of the observing and building sites and surrounding regions.

Uncertainty from Variation in Length of Record

ASHRAE research project RP-1171 (Hubbard et al. 2004) investigated the uncertainty associated with the climatic design conditions in the 2001 *ASHRAE Handbook—Fundamentals*. The main objectives were to determine how many years are needed to calculate reliable design values and to look at the frequency and duration of episodes exceeding the design values.

Design temperatures in the 1997 and 2001 editions were calculated for locations for which there were at least 8 years of sufficient data; the criterion for using 8 years was based on unpublished work by TC 4.2. RP-1171 analyzed data records from 14 U.S. locations (Table 9) representing four different climate types. The dry-bulb temperatures corresponding to the five annual percentile design temperatures (99.6, 99, 0.4, 1, and 2%) from the 33-year period 1961-1993 (period used for the 2001 edition's U.S. stations) were calculated for each location. The temperatures corresponding to the same percentiles for each contiguous subperiod ranging from 1 to 33 years in length was calculated, and the standard deviation of the differences between the resulting design temperature from each subperiod and the entire 33-year period was calculated. For instance, for a 10-year period, the dry-bulb values corresponding to each of the 23 subperiods 1961-1970, 1962-1971, . . . , 1984-1993 were calculated and the standard deviation of differences with the dry-bulb value for the same percentile from the 33-year period calculated. The standard deviation values represent a measure of uncertainty of the design temperatures relative to the design temperature for the entire period of record.

The results for the five annual percentiles are summarized in Figures 4A to 4E, each of which shows how the uncertainty (the average standard deviation for each of the locations in each climate type) varies with length of period.

To the degree that the differences used to calculate the standard deviations are distributed normally, the short-period design temperatures can be expected to lie within one standard deviation of the long-term design temperature 68% of the time. For example, from Figure 4A, the uncertainty for the Cold Snow Forest for a 1-year period is 6.5°F. This can be interpreted that the probability is 68% that the difference in a 99.6% dry-bulb in any given year will be within 6.5°F of the long-term 99.6% dry-bulb. Similarly, there is a 68% probability that the 99.6% dry-bulb from any 10-year period will be within 1.8°F of the long-term value for a location of the Cold Snow Forest climate type.

The uncertainty for the cold season is higher than for the warm season. For example, the uncertainty for the 99.6% dry-bulb for a 10-year period ranges from 1.1 to 1.8°F for the five climate types, whereas the uncertainty for the 0.4% dry-bulb for a 10-year period ranges from 0.7 to 1.1°F.

A variety of other general characteristics of uncertainty are evident from an inspection of Figure 4. For example, the highest uncertainty of any climate type for a 10-year period is 2.0°F for the Cold Snow Forest 99% dry-bulb case. The smallest uncertainty is 0.4°F for the Tropical Rainy 1% and 2% dry-bulb cases.

Based on these results, it was concluded that using a minimum of 8 years of data would provide reliable (within ±1.8°F) climatic design calculations for most stations.

Effects of Climate Change

The evidence is unequivocal that the climate system is warming globally (IPCC 2007). The most frequently observed effects relate to increases in average, and to some degree, extreme temperatures.

This is partly illustrated by the results of an analysis of design conditions conducted as part of developing the updated values for this chapter (Thevenard 2009). For 1274 observing sites worldwide with suitably complete data from 1977 to 2006, selected design conditions were compared between the period 1977-1986 and 1997-2006. The results, averaged over all locations, are as follows:

- The 99.6% annual dry-bulb temperature increased 2.74°F
- The 0.4% annual dry-bulb increased 1.42°F
- Annual dew point increased by 0.99°F
- Heating-degree days (base 65°F) decreased by 427°F-days
- Cooling degree-days (base 50°F) increased by 245°F-days

Although these results are consistent with general warming of the world climate system, there are other effects that undoubtedly contribute, such as increased urbanization around many of the observing sites (airports, typically). There was no attempt in the analysis to determine the reasons for the changes.

Regardless of the reasons for increases, the general approach of developing design conditions based on analysis of the recent record (25 years, in this case) was specifically adopted for updating the values in this chapter as a balance between accounting for long-term trends and the sampling variation caused by year-to-year variation. Although this does not necessarily provide the optimum predictive value for representing conditions over the next one or two decades, it at least has the effect of incorporating changes in climate and local conditions as they occur, as updates are conducted regularly using recent data. Meteorological services worldwide are considering the many aspects of this complex issue in the calculation of climate "normals" (averages, extremes, and other statistical summary information of climate elements typically calculated for a 30-year period at the end of each decade). Livezey et al. (2007) and WMO (2007) provide detailed analyses and recommendations in this regard.

Extrapolating design conditions to the next few decades based on observed trends should only be done with attention to the particular climate element and the regional and temporal characteristics of observed trends (Livezey et al. 2007).

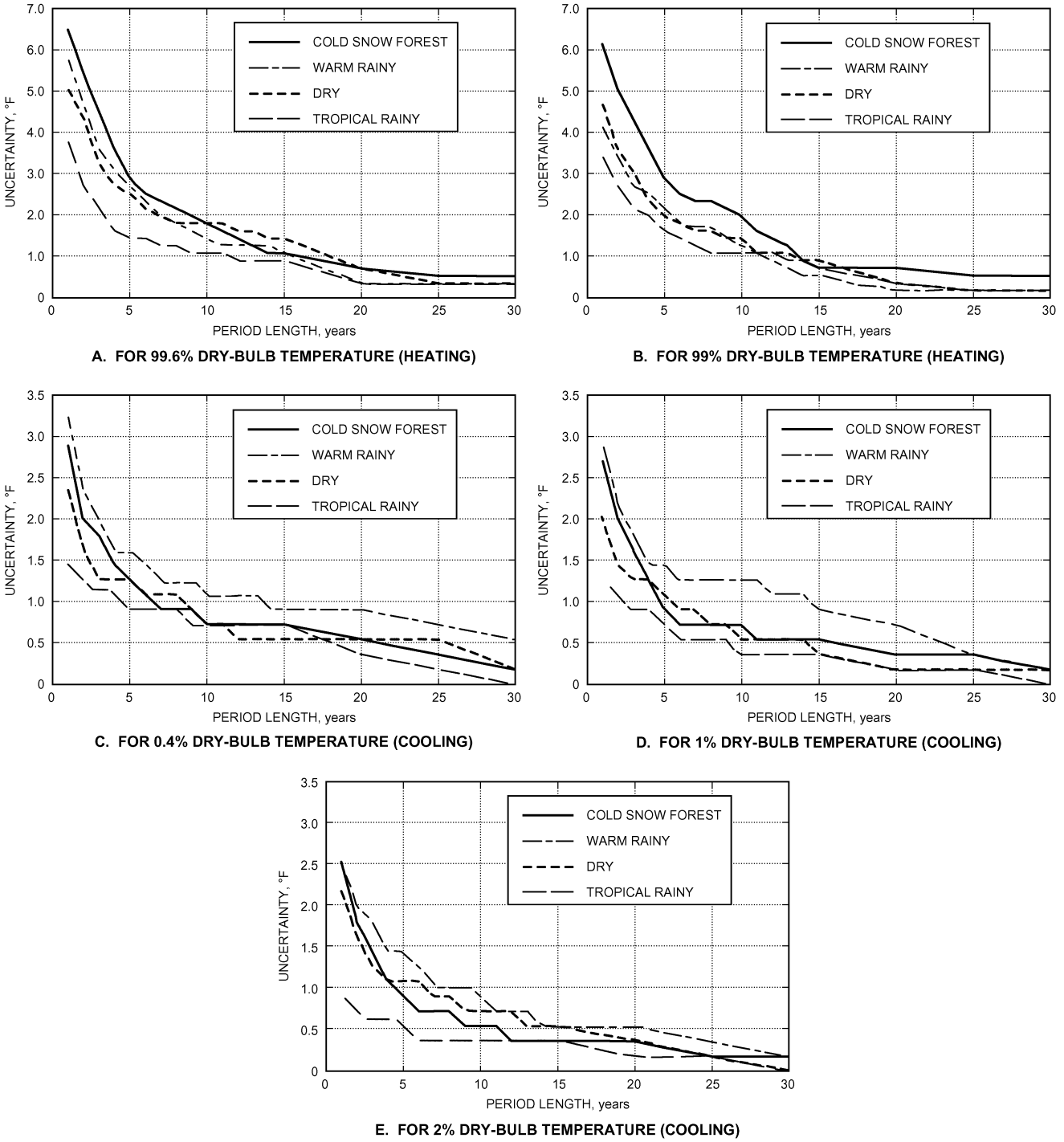

Fig. 4 Uncertainty versus Period Length for Various Dry-Bulb Temperatures, by Climate Type

Episodes Exceeding the Design Dry-Bulb Temperature

Design temperatures based on annual percentiles indicate how many hours each year on average the specific conditions will be exceeded, but do not provide any information on the length or frequency of such episodes. As reported by Hubbard et al. (2004), each episode and its duration for the locations in Table 9 during which the 2001 design conditions represented by the 99.6, 99, 0.4, 1, and 2% dry-bulb temperatures were exceeded (i.e., were more extreme) was tabulated and their frequency of occurrence analyzed. The measure of frequency is the average number of episodes per year or its reciprocal, the average period between episodes.

Cold- and warm-season results are presented in Figures 5A and 5B, respectively, for Indianapolis, IN, as a representative example. The duration for the 10-year period between episodes more extreme than the 99.6% design dry-bulb is 37 h, and 62 h for the 99% design dry-bulb. For the warm season, the 10-year period durations corresponding to the 0.4, 1, and 2% design dry-bulb, are about 10, 12, and 15 h, respectively.

Although the results in Hubbard et al. (2004) varied somewhat among the locations analyzed, generally the longest cold-season episodes last days, whereas the longest warm-season episodes were always shorter than 24 h. These results were seen at almost

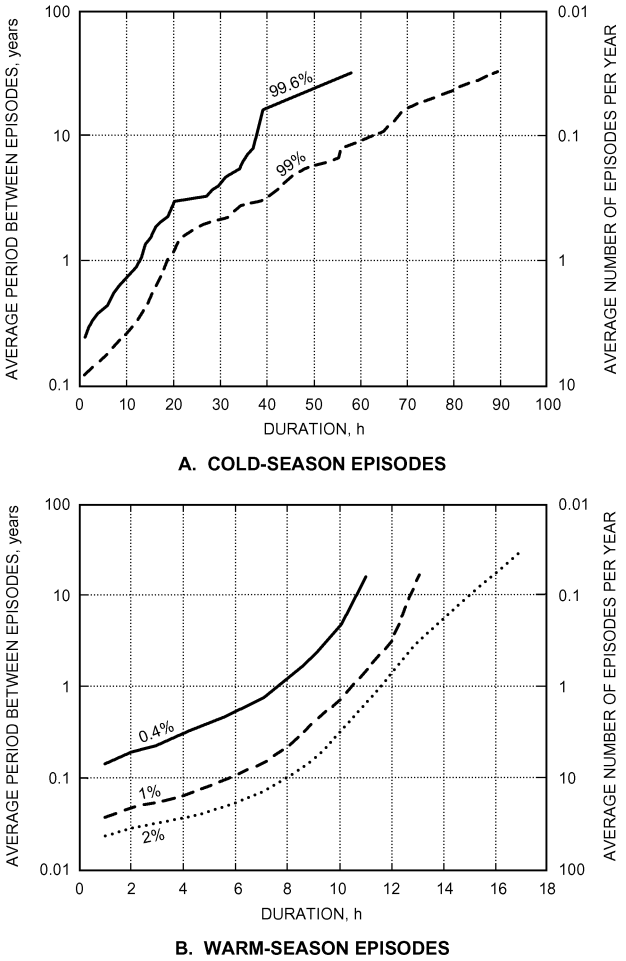

Fig. 5 Frequency and Duration of Episodes Exceeding Design Dry-Bulb Temperature for Indianapolis, IN

all locations, and are general for the continental United States. The only exception was Phoenix, where the longest cold-season episodes were less than 24 h. This is likely the result of the southern latitude and dry climate, which produces a large daily temperature range, even in the cold season.

OTHER SOURCES OF CLIMATIC INFORMATION

Joint Frequency Tables of Psychrometric Conditions

Design values in this chapter were developed by ASHRAE research project RP-1453 (Thevenard 2009). The frequency vectors used to calculate the simple design conditions, and the joint frequency matrices used to calculate the coincident design conditions, are available in ASHRAE's Weather Data Viewer 4.0 (WDView 4.0) (ASHRAE 2009). WDView 4.0 gives users full access to the frequency vectors and joint frequency matrices for all 5564 stations in the 2009 *ASHRAE Handbook—Fundamentals* via a spreadsheet. WDView 4.0 provides the following capabilities:

- Select a station by WMO number or region/country/state/name or by proximity to a given latitude and longitude
- Retrieve design climatic conditions for a specified station, in SI or I-P units
- Display frequency vectors and joint frequency matrices in the form of numerical tables
- Display frequency distribution and the cumulative frequency distribution functions in graphical form
- Display joint frequency functions in graphical form
- Display the table of years and months used for the calculation
- Display hourly binned dry-bulb temperature data
- Calculate heating and cooling degree-days to any base, using the method of Schoenau and Kehrig (1990)

The **Engineering Weather Data CD** (NCDC 1999), an update of Air Force *Manual* 88-29, was compiled by the U.S. Air Force Combat Climatology Center. This CD contains several tabular and graphical summaries of temperature, humidity, and wind speed information for hundreds of locations in the United States and around the world. In particular, it contains detailed joint frequency tables of temperature and humidity for each month, binned at 1°F and 3 h local time-of-day intervals. This CD is available from NCDC: http://ols.nndc.noaa.gov/plolstore/plsql/olstore.prodspecific?prodnum=C00515-CDR-A0001.

The **International Station Meteorological Climate Summary (ISMCS)** is a CD-ROM containing climatic summary information for over 7000 locations around the world (NCDC 1996). A table providing the joint frequency of dry-bulb temperature and wet-bulb temperature depression is provided for the locations with hourly observations. It can be used as an aid in estimating design conditions for locations for which no other information is available. The CD is available here: http://ols.nndc.noaa.gov/plolstore/plsql/olstore.prodspecific?prodnum=C00268-CDR-A0001. A Web version of this product is now available free of charge from NCDC: http://cdo.ncdc.noaa.gov/pls/plclimprod/poemain.accessrouter?datasetabbv= DS3505.

Note that you should select the "advanced" option, then click on the "data summary" option. This service is also available via a GIS Web site: http://gis.ncdc.noaa.gov/website/ims-cdo/ish/viewer.htm.

The monthly frequency distribution of dry-bulb temperatures and mean coincident wet-bulb temperatures for 134 Canadian locations is available from Environment Canada (1983-1987).

Degree Days and Climate Normals

Heating and cooling degree-day summary data for over 4000 U.S. stations are available online at no cost at http://cdo.ncdc.noaa.gov/climatenormals/clim81_supp/CLIM81_Sup_02.pdf (NCDC 2002a, 2002b). This publication presents annual heating degree day normals to the following bases (°F): 65, 60, 57, 55, 50, 45, and 40; and annual cooling degree day normals to the following bases (°F): 70, 65, 60, 57, 55, 50, and 45.

The 1971-2000 climate normals for over 6000 United States locations are available online (free of charge) and on CD from the National Climatic Data Center: http://cdo.ncdc.noaa.gov/cgi-bin/climatenormals/climatenormals.pl. Also, users may generate normals/averages for any chosen period (dynamic normals) at http://www7.ncdc.noaa.gov/CDO/normals.

The Canadian Climate Normals for 1971-2000 are available from Environment Canada at http://climate.weatheroffice.ec.gc.ca (Environment Canada 2003).

The *Climatography of the United States* No. 20 (CLIM20), monthly station climate summaries for 1971-2000 are climatic station summaries of particular interest to engineering, energy, industry, and agricultural applications (NCDC 2004). These summaries contain a variety of statistics for temperature, precipitation, snow, freeze dates, and degree-day elements for 4273 stations. The statistics include means, median (precipitation and snow elements), extremes, mean number of days exceeding threshold values, and heating, cooling, and growing degree-days for various temperature bases. Also included are probabilities for monthly precipitation and freeze data. Information on this product can be found at http://www.ncdc.noaa.gov/oa/documentlibrary/pdf/eis/clim20eis.pdf.

Heating and cooling degree-day and degree-hour data for 3677 locations from 115 countries were developed by Crawley (1994)

from the Global Daily Summary (GDS) version 1.0 and the International Station Meteorological Climate Summary (ISMCS) version 4.0 data.

Typical Year Data Sets

Software is available to simulate the annual energy performance of buildings requiring a 1-year data set (8760 h) of weather conditions. Many data sets in different record formats have been developed to meet this requirement. The data represent a typical year with respect to weather-induced energy loads on a building. No explicit effort was made to represent extreme conditions, so these files do not represent design conditions.

The National Renewable Energy Laboratory's (NREL) TMY3 data set (Wilcox and Marion 2008) contains data for 1020 U.S. locations. TMY3, along with the 1991-2005 National Solar Radiation Data Base (NSRDB) (NREL 2007), contains hourly solar radiation [global, beam (direct), and diffuse} and meteorological data for 1454 stations, and is available at http://ols.nndc.noaa.gov/plolstore/plsql/olstore.prodspecific?prodnum=C00668-TAP-A0001. These were produced using an objective statistical algorithm to select the most typical month from the long-term record.

Canadian Weather Year for Energy Calculation (CWEC) files for 47 Canadian locations were developed for use with the Canadian National Energy Code, using the TMY algorithm and software (Environment Canada 1993). Files for 75 locations are now available.

Examples of the use of these files for energy calculations in both residential and commercial buildings, including the differences among the files, are available in Crawley (1998) and Huang (1998).

Sequences of Extreme Temperature and Humidity Durations

Colliver (1997) and Colliver et al. (1998) compiled extreme sequences of 1-, 3-, 5-, and 7-day duration for 239 U.S. and 144 Canadian locations based independently on the following five criteria: high dry-bulb temperature, high dew-point temperature, high enthalpy, low dry-bulb temperature, and low wet-bulb depression. For the criteria associated with high values, the sequences are selected according to annual percentiles of 0.4, 1.0, and 2.0. For the criteria corresponding to low values, annual percentiles of 99.6, 99.0, and 98.0 are reported. Although these percentiles are identical to those used to select annual heating and cooling design temperatures, the maximum or minimum temperatures within each sequence are significantly more extreme than the corresponding design temperatures. The data included for each hour of a sequence are solar radiation, dry-bulb and dew-point temperature, atmospheric pressure, and wind speed and direction. Accompanying information allows the user to go back to the source data and obtain sequences with different characteristics (i.e., different probability of occurrence, windy conditions, low or high solar radiation, etc.). These extreme sequences are available on CD (ASHRAE 1997).

These sequences were developed primarily to assist the design of heating or cooling systems having a finite capacity before regeneration is required or of systems that rely on thermal mass to limit loads. The information is also useful where information on the hourly weather sequence during extreme episodes is required for design.

Global Weather Data Source Web Page

Because of growing demand for more comprehensive global coverage of weather data for HVAC applications around the world, ASHRAE sponsored research project RP-1170 (Plantico 2001) to construct a Global Weather Data Sources (GWDS) Web page. With the growth of the World Wide Web, many national climate services and other climate data sources are making more information available over the Internet. The purpose of RP-1170 was to provide ASHRAE membership with easy access to major sources of international weather data through one consolidated system via the Web. This Web page was recently updated to better use the resources of the World Meteorological Organization (WMO) and NCDC. The GWDS Web page is accessible at http://www.ncdc.noaa.gov/oa/ashrae/gwds-title.html.

Observational Data Sets

For detailed designs, custom analysis of the most appropriate long-term weather record is best. National weather services are generally the best source of long-term observational data. The National Climatic Data Center (NCDC), in conjunction with U.S. Air Force and Navy partners in Asheville's Federal Climate Complex (FCC), developed the global Integrated Surface Data (Lott 2004; Lott et al. 2001) to address a pressing need for an integrated global database of hourly land surface climatological data. The database of over 20,000 stations contains hourly and some daily summary data from as early as 1900 (many stations beginning in the 1948-1973 timeframe), is operationally updated each day with the latest available data, and is now being further integrated with various data sets from the United States and other countries to further expand the spatial and temporal coverage of the data. For access to ISD, go to http://cdo.ncdc.noaa.gov/pls/plclimprod/poemain.accessrouter?datasetabbv=DS3505 or, for a GIS interface, http://gis.ncdc.noaa.gov/website/ims-cdo/ish/viewer.htm. For a complete review of ISD and all of its products, go to http://www.ncdc.noaa.gov/oa/climate/isd/index.php.

The National Solar Radiation Database (NSRBD) (http://ols.nndc.noaa.gov/plolstore/plsql/olstore.prodspecific?prodnum=C00668-TAP-A0001) and Canadian Weather Energy and Engineering Data Sets (CWEEDS) (Environment Canada 1993) provide long-term hourly data, including solar radiation values for the United States and Canada. A new solar model was required because of the implementation of automated observing systems that do not report traditional cloud elements.

Considerable information about weather and climate services and data sets is available elsewhere through the World Wide Web. Information supplementary to this chapter may also be posted on the ASHRAE Technical Committee 4.2 Web site, the link to which is available from the ASHRAE Web site (www.ashrae.org).

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APPENDIX: DESIGN CONDITIONS FOR SELECTED LOCATIONS

Meaning of acronyms:
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F* *DP: Dew point temperature, °F* *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCWB: Mean coincident wet bulb temperature, °F *MCDB: Mean coincident dry bulb temperature, °F* *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
United States of America																										*541 sites, 544 more on CD-ROM*
Alabama																										*11 sites, 3 more on CD-ROM*
AUBURN-OPELIKA APT	32.62N	85.43W	774	23.7	27.7	93.0	73.5	90.7	73.7	89.5	73.6	77.4	87.2	76.5	85.7	74.7	133.9	81.3	73.3	127.4	79.8	17.5	15.2	12.8	2383	1859
BIRMINGHAM MUNICIPAL AP	33.56N	86.75W	630	19.6	24.0	95.0	75.1	92.6	74.9	90.6	74.6	78.5	88.4	77.6	87.6	76.1	139.4	82.8	74.9	133.8	81.9	18.3	16.4	14.5	2693	1948
CAIRNS AAF/OZARK	31.28N	85.72W	299	26.9	30.3	95.4	76.4	93.4	76.1	91.3	75.6	80.3	89.6	79.1	88.3	77.8	146.1	83.7	76.8	141.3	82.8	16.9	14.4	12.5	1767	2415
DOTHAN MUNICIPAL	31.32N	85.45W	322	27.3	31.1	95.3	76.3	93.2	75.7	91.2	75.4	80.1	89.3	78.8	87.9	77.5	144.9	83.4	76.7	140.7	82.6	19.2	17.5	15.5	1727	2481
GADSEN MUNI (AWOS)	33.97N	86.08W	568	18.6	22.1	93.4	74.7	91.2	74.5	89.9	74.3	78.0	88.8	77.0	87.7	74.9	133.4	83.7	73.3	126.5	82.0	16.7	14.2	12.3	3215	1557
HUNTSVILLE INTL/JONES FIELD	34.64N	86.79W	643	17.0	21.6	94.6	75.1	92.2	74.7	90.1	74.2	78.3	88.1	77.4	87.2	75.8	138.1	82.6	74.6	132.8	81.5	21.5	18.9	17.0	3140	1742
MAXWELL AFB/MONTGOM	32.38N	86.37W	174	27.9	31.5	97.2	76.5	95.2	76.6	93.3	76.3	80.5	90.8	79.6	89.9	78.0	146.3	85.0	77.0	141.3	84.2	18.0	15.6	13.1	1813	2598
MOBILE REGIONAL AP	30.69N	88.25W	220	26.9	30.7	93.5	76.7	91.8	76.4	90.3	76.0	80.1	88.4	79.0	87.0	77.9	146.0	83.4	76.9	141.5	82.4	20.6	18.5	16.8	1662	2463
MONTGOMERY DANNELLY FIELD	32.30N	86.39W	203	23.7	27.3	96.2	76.5	94.0	76.1	92.1	75.8	79.7	90.8	78.5	89.2	76.7	140.3	84.4	75.8	135.8	83.3	18.6	16.5	14.3	2143	2282
MUSCLE SHOALS REGIONAL AF	34.75N	87.61W	561	17.8	22.1	95.5	75.4	93.1	75.2	90.9	74.8	78.7	89.1	77.8	88.2	76.0	138.6	82.9	75.0	134.0	82.0	18.7	16.8	14.6	3084	1822
TUSCALOOSA MUNICIPAL AP	33.21N	87.62W	187	20.6	25.0	95.7	76.5	93.4	76.3	91.4	76.0	79.8	90.2	78.7	88.9	77.1	142.2	83.6	75.9	136.5	82.9	17.5	14.8	13.0	2509	2101
Alaska																										*7 sites, 66 more on CD-ROM*
FAIRBANKS INTL ARPT	64.82N	147.86W	453	-43.3	-38.1	81.2	60.9	78.0	59.8	74.6	58.5	63.0	76.5	61.5	73.9	58.4	74.2	65.1	56.7	69.6	64.1	17.7	15.5	12.6	13528	71
FT. RICHARDSON/BRYA	61.27N	149.65W	377	-18.6	-12.5	73.9	59.7	70.8	58.2	67.8	56.8	61.1	71.8	59.2	68.7	56.0	67.7	64.2	54.5	64.0	62.1	19.0	14.5	11.5	10726	3
ANCHORAGE/ELMENDORF	61.25N	149.80W	194	-26.0	-23.0	73.7	58.4	71.2	57.5	68.0	56.2	60.5	70.2	59.1	67.5	56.9	69.5	61.6	55.2	65.3	60.6	18.8	15.6	12.8	10360	11
LAKE HOOD SEAPLANE	61.18N	149.96W	131	-22.6	-20.1	74.5	59.8	71.4	58.7	68.2	57.1	61.2	72.0	59.6	68.4	56.8	69.0	62.8	55.3	65.3	62.2	18.7	16.3	13.6	9824	16
ANCHORAGE INTL AP	61.18N	149.99W	131	-22.7	-20.2	71.4	58.7	68.3	57.3	65.9	56.1	60.3	68.9	58.8	66.1	56.4	68.0	62.6	55.2	65.1	61.4	20.7	18.5	16.6	10121	5
ANCHORAGE MERRILL FIELD	61.22N	149.86W	138	-23.9	-21.6	72.9	59.4	70.3	58.1	67.9	56.9	61.2	70.3	59.6	67.5	57.2	70.1	63.0	55.5	65.9	62.0	15.2	12.5	10.8	10079	10
JUNEAU INT'L ARPT	58.36N	134.58W	23	3.8	8.2	73.5	59.8	69.9	58.2	66.5	56.8	61.1	71.3	59.5	67.7	57.3	70.0	62.0	56.0	66.9	60.8	26.6	23.8	19.8	8333	3
Arizona																										*9 sites, 7 more on CD-ROM*
CASA GRANDA (AWOS)	32.95N	111.77W	1463	32.0	34.5	108.5	69.2	106.5	68.7	104.4	68.3	73.9	93.1	73.1	93.5	70.1	116.8	79.4	67.9	108.1	79.2	20.3	17.4	14.7	1535	3502
DAVIS-MONTHAN AFB	32.17N	110.88W	2654	32.9	35.7	105.4	65.3	102.5	65.1	100.2	64.7	72.9	85.2	71.9	86.1	70.2	122.8	76.6	68.3	114.7	77.0	19.6	17.2	14.8	1504	3103
FLAGSTAFF AIRPORT	35.13N	111.67W	7005	3.9	9.4	85.5	55.5	83.1	55.2	80.6	54.9	61.1	73.3	59.9	72.7	57.4	91.7	63.5	56.1	87.3	63.1	20.9	18.4	16.3	6912	108
LUKE AFB/PHOENIX	33.53N	112.38W	1086	35.3	37.7	110.8	70.7	108.5	70.6	106.2	70.3	77.4	96.4	76.1	95.7	72.9	127.3	83.8	71.0	118.9	84.4	19.7	17.0	14.3	1245	3923
PHOENIX SKY HARBOR INTL AP	33.44N	111.99W	1106	38.6	41.3	110.2	70.0	108.1	69.8	106.2	69.6	76.1	96.4	75.2	95.8	71.3	120.2	82.6	69.8	114.0	84.4	18.3	15.9	12.9	941	4557
PRESCOTT LOVE FIELD	34.65N	112.42W	5052	17.5	20.7	94.3	61.2	91.4	60.6	89.6	60.1	67.1	81.3	65.7	80.1	63.4	105.6	70.9	61.5	98.6	70.4	20.8	18.5	16.7	4245	947
TUCSON INTERNATIONAL AP	32.13N	110.96W	2556	31.7	34.4	105.9	66.2	103.6	66.0	101.3	65.7	72.5	88.9	71.7	88.3	69.0	117.4	76.2	67.8	112.3	76.6	21.4	18.9	16.9	1466	3180
YUMA INTL AIRPORT	32.65N	114.60W	207	41.8	44.7	110.8	73.5	108.6	73.2	106.6	72.7	79.8	96.7	78.5	96.0	75.4	134.3	87.4	73.7	126.5	88.3	20.7	18.3	16.1	680	4662
YUMA MCAS	32.65N	114.62W	213	41.7	44.6	110.9	73.7	108.7	73.2	106.8	72.7	79.8	96.7	78.4	96.0	75.4	134.2	87.1	73.6	126.2	88.2	20.8	18.3	16.3	680	4661
Arkansas																										*11 sites, 7 more on CD-ROM*
BENTONVILLE (AWOS)	36.35N	94.22W	1296	10.1	15.9	93.5	74.4	91.2	74.8	89.8	74.2	77.6	89.0	76.4	87.8	73.5	130.6	84.1	72.8	127.8	83.3	19.5	17.4	15.5	4052	1335
FAYETTEVILLE DRAKE FIELD	36.01N	94.17W	1260	8.0	14.6	95.2	75.2	92.7	74.8	90.3	74.3	78.0	89.8	77.0	88.4	74.7	136.1	83.8	73.3	129.9	82.8	20.5	18.7	17.5	3935	1434
FORT SMITH REGIONAL AP	35.33N	94.37W	463	14.7	20.1	99.1	76.4	96.4	76.3	93.8	76.0	79.6	92.4	78.5	90.9	76.3	139.8	84.7	75.3	135.0	83.8	20.4	18.0	16.2	3234	2016
JONESBORO MUNI	35.83N	90.63W	269	12.4	18.5	96.4	77.0	93.5	76.1	91.6	75.7	80.1	91.1	78.9	90.0	77.1	142.6	85.7	75.4	134.6	84.0	20.9	18.7	17.1	3550	1913
LITTLE ROCK ADAMS FIELD	34.75N	92.23W	256	17.2	22.3	98.0	77.2	95.3	77.2	93.0	76.6	80.2	91.7	79.2	90.6	77.2	143.0	85.4	76.3	138.4	84.4	18.6	16.7	15.1	2976	2124
LITTLE ROCK AFB	34.92N	92.15W	338	15.3	20.4	99.3	77.3	96.3	77.5	93.3	77.0	81.1	91.1	80.0	90.3	78.9	152.1	85.1	77.3	143.8	84.4	17.6	15.0	12.9	3168	2035
LITTLE ROCK/ADAMS F	34.83N	92.25W	1152	16.4	21.9	95.2	76.4	92.8	76.1	90.8	75.4	78.9	89.9	77.8	88.6	75.8	140.7	84.3	74.9	136.4	83.6	18.4	16.5	14.7	3226	1909
PINE BLUFF FAA AP	34.18N	91.94W	213	21.1	25.3	97.1	77.5	94.9	77.5	92.9	76.9	80.4	91.8	79.4	91.1	77.3	143.0	85.9	76.2	138.0	85.1	18.5	16.8	15.0	2655	2236
ROGERS (AWOS)	36.37N	94.10W	1362	10.0	15.8	93.4	72.8	91.0	73.3	89.1	72.8	76.3	87.5	75.4	86.3	72.9	128.2	82.3	72.2	125.4	81.8	20.8	18.6	16.6	4061	1354
SILOAM SPRING(AWOS)	36.18N	94.48W	1194	10.3	16.1	95.5	74.1	92.6	74.0	90.3	73.7	76.9	89.4	76.0	88.1	72.9	127.8	84.3	72.3	124.9	83.7	22.8	19.9	17.9	3994	1420
TEXARKANA WEBB FIELD	33.45N	94.01W	400	21.6	26.3	98.5	76.3	96.0	76.3	93.5	76.1	79.7	91.2	78.9	90.2	76.8	141.9	84.8	75.8	136.8	84.0	18.8	17.0	14.9	2431	2349
California																										*56 sites, 17 more on CD-ROM*
ALAMEDA NAS	37.73N	122.32W	13	40.3	42.3	83.4	65.0	79.4	63.6	75.8	62.6	66.7	79.1	65.3	76.4	62.5	84.5	69.2	61.1	80.6	68.3	20.6	18.4	16.7	2158	226
BAKERSFIELD MEADOWS FIELD	35.43N	119.06W	492	32.2	34.8	103.1	71.1	100.7	70.2	98.2	69.2	73.9	97.2	72.3	95.5	66.1	97.8	86.6	63.4	89.1	85.6	18.2	15.8	13.2	2134	2236
BEALE AFB/MARYSVILE	39.13N	121.43W	125	32.1	34.6	100.7	70.6	98.0	69.3	95.1	68.2	73.1	96.2	71.3	93.6	64.6	91.5	82.9	63.1	86.8	80.5	21.4	18.3	15.6	2420	1519
BURBANK-GLENDALE-PASSADENA AF	34.20N	118.36W	732	39.0	41.5	98.3	68.8	94.6	68.3	91.3	67.4	73.4	90.4	71.7	88.2	68.0	105.8	79.4	66.3	99.4	77.5	18.4	15.2	12.9	1298	1486
CAMARILLO (AWOS)	34.22N	119.08W	75	37.3	39.4	84.6	62.8	81.6	63.8	79.2	63.9	69.3	78.6	68.1	77.1	65.8	95.6	74.7	64.1	89.8	72.1	24.9	19.9	16.2	1855	362
CAMP PENDLETON MCAS	33.30N	117.35W	79	32.8	35.6	92.0	66.9	87.9	66.2	84.2	65.6	71.8	83.7	70.4	82.1	68.0	103.1	76.8	66.1	96.5	76.1	16.9	14.6	12.7	1673	723
CARLSBAD/PALOMAR	33.13N	117.28W	328	43.0	44.9	81.7	64.5	79.3	64.3	75.4	64.5	70.3	76.6	68.8	75.0	67.8	103.5	74.1	66.1	97.5	72.6	14.1	12.3	10.9	1747	434
CASTLE AFB/MERCED	37.38N	120.57W	197	30.6	32.5	99.5	70.1	97.1	69.3	94.4	68.3	72.3	94.9	70.9	93.3	63.7	89.0	84.3	61.9	83.3	83.9	18.2	14.8	12.6	2629	1474
EL TORO MCAS	33.68N	117.73W	384	40.3	43.1	92.1	68.1	88.6	67.5	85.6	66.6	71.9	86.1	70.5	83.9	67.0	100.7	78.4	65.5	95.4	77.3	14.4	11.7	10.2	1217	1070
FRESNO YOSEMITE INTL AP	36.78N	119.72W	328	31.5	33.7	103.6	71.2	101.1	70.0	98.6	69.0	73.7	98.0	72.2	95.8	65.6	95.8	85.1	63.4	88.6	85.1	18.1	16.3	14.2	2301	2082
FULLERTON MUNICIPAL	33.87N	117.98W	95	39.2	42.8	92.7	68.5	90.1	67.7	87.5	68.2	72.8	86.8	71.4	84.2	68.3	104.3	79.6	66.2	96.9	78.5	13.4	11.3	10.4	1246	1179
GEORGE AFB	34.58N	117.38W	2874	27.6	30.5	100.7	65.3	98.4	64.7	96.0	63.9	69.8	88.4	68.4	88.2	64.5	101.2	76.9	61.9	92.1	78.6	22.7	18.9	16.7	2661	1911
HAYWARD AIR TERM	37.66N	122.12W	46	37.1	39.2	87.6	66.2	82.3	64.8	78.6	63.5	68.3	82.5	66.4	79.4	63.0	86.2	75.3	61.2	80.8	71.2	19.8	17.9	16.3	2531	286

Meaning of acronyms:
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F* *DP: Dew point temperature, °F* *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCWB: Mean coincident wet bulb temperature, °F *MCDB: Mean coincident dry bulb temperature, °F* *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
IMPERIAL	32.83N	115.58W	-56	35.6	37.5	111.1	73.6	108.9	73.3	107.3	73.1	81.4	97.7	80.0	97.0	77.3	141.7	88.6	75.2	131.9	89.3	25.9	21.8	18.7	953	4125
JACK NORTHROP FLD H	33.92N	118.33W	69	44.7	45.6	85.9	62.1	82.1	64.2	80.6	64.1	70.2	78.8	68.9	77.0	66.4	97.5	74.4	65.7	95.1	73.7	16.3	14.2	12.6	1182	709
LANCASTER GEN WM FOX FIELD	34.74N	118.22W	2339	21.5	24.8	102.3	66.4	99.8	65.0	97.3	64.1	69.6	94.1	68.0	93.2	61.3	88.2	80.5	58.3	79.3	81.1	29.7	27.4	25.3	2993	1766
LEMOORE REEVES NAS	36.33N	119.95W	233	29.7	32.6	103.0	72.0	100.4	71.2	98.1	70.0	75.1	97.6	73.2	95.9	67.2	100.9	89.1	64.8	92.7	86.9	19.0	16.4	13.8	2238	1828
LIVERMORE MUNICIPAL	37.69N	121.82W	397	30.3	32.9	98.8	69.2	94.7	67.2	90.9	65.8	70.8	95.0	68.7	91.2	61.4	82.4	80.5	59.5	77.1	75.0	19.6	18.0	16.4	2796	786
LOMPOC (AWOS)	34.67N	120.47W	89	32.4	35.2	81.4	61.1	77.2	61.3	73.7	60.6	65.6	75.4	64.1	73.6	61.5	81.8	69.2	60.5	79.0	68.6	20.3	18.5	17.1	2815	55
LONG BEACH DAUGHERTY FLD	33.83N	118.16W	39	41.2	43.5	91.2	67.9	87.6	67.3	84.4	66.4	72.5	83.8	71.0	81.6	69.1	107.1	76.4	67.5	101.2	75.6	17.5	15.1	12.7	1193	1095
LOS ANGELES INTL ARPT	33.94N	118.41W	325	44.4	46.5	83.7	64.3	80.4	64.7	77.8	64.7	70.2	78.0	69.0	76.1	67.4	102.0	74.0	66.2	97.6	73.0	20.0	17.6	16.0	1284	617
MARCH AFB/RIVERSIDE	33.88N	117.27W	1516	34.2	36.6	100.6	67.8	98.6	67.2	95.4	66.5	72.4	93.0	71.0	91.1	66.4	102.8	77.4	64.3	95.5	76.2	17.9	15.0	12.8	1819	1599
MCCLELLAN AFB	38.67N	121.40W	82	31.7	34.4	101.9	70.1	99.1	69.3	95.9	68.0	72.3	97.4	70.7	95.1	63.3	87.4	80.4	61.5	81.8	79.3	20.5	17.0	14.3	2347	1589
MODESTO CITY-COUNTY AP	37.63N	120.95W	98	31.0	33.6	101.1	70.7	98.2	69.2	95.4	67.8	72.5	96.8	70.8	94.3	63.3	87.5	86.6	61.3	81.2	83.3	18.9	16.9	15.4	2452	1562
MONTEREY PENINSULA	36.58N	121.85W	164	36.7	38.7	77.3	60.3	72.9	59.4	70.4	59.0	63.0	72.0	61.8	69.9	59.3	75.8	64.5	57.4	70.7	63.5	17.0	15.0	12.8	3294	44
MOUNTAIN VIEW MOFFETT FLD NAS	37.42N	122.05W	33	36.4	38.6	88.2	66.1	83.6	64.9	80.6	64.3	68.5	82.6	67.0	80.1	63.3	87.0	74.8	61.6	82.0	72.4	18.8	17.0	15.2	2153	480
NAPA CO. AIRPORT	38.21N	122.28W	56	30.0	32.5	91.2	66.5	86.5	65.3	82.1	64.0	68.8	86.8	67.0	83.4	61.4	81.6	75.9	60.6	79.1	74.3	21.3	19.1	17.6	3194	239
NORTON AFB/SAN BERN	34.10N	117.23W	1158	33.9	36.5	102.9	69.7	100.2	69.5	97.4	68.8	74.5	95.1	73.0	93.6	68.1	107.7	83.1	66.1	100.5	83.3	16.7	12.9	10.9	1652	1811
OAKLAND METROPOLITAN ARPT	37.76N	122.22W	89	37.2	39.5	81.8	65.0	77.7	64.1	74.3	63.1	67.6	78.0	65.9	75.2	63.7	88.6	70.9	62.3	84.3	69.2	23.1	19.5	18.1	2584	153
ONTARIO	34.07N	117.65W	997	36.0	38.9	100.6	70.9	97.8	69.9	94.7	69.1	74.7	93.6	73.1	91.8	69.5	112.7	81.2	67.4	104.6	79.6	23.1	18.5	16.7	1460	1711
PALM SPRINGS INTL	33.83N	116.50W	476	42.7	44.7	111.2	72.5	109.0	72.2	107.8	72.0	79.7	99.9	78.0	98.5	73.4	126.3	92.8	72.2	121.2	92.6	22.9	20.0	18.0	774	4287
PALM SPRINGS THERMAL AP	33.63N	116.16W	-118	31.0	34.2	111.3	73.2	108.9	72.6	106.9	72.2	80.0	97.8	78.5	97.6	75.0	130.9	89.6	73.0	122.0	89.4	19.2	17.0	15.0	1100	3859
POINT ARGUELLO	34.57N	120.63W	112	45.6	47.6	71.2	N/A	67.8	N/A	65.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	42.4	34.7	31.0	3308	21
POINT MUGU NF	34.12N	119.12W	13	38.9	41.2	82.0	61.9	78.7	63.5	75.9	63.8	70.1	76.1	68.6	74.5	68.0	103.0	73.3	66.0	96.0	72.3	22.8	18.8	16.2	1915	260
PORTERVILLE (AWOS)	36.03N	119.07W	443	30.4	33.6	100.4	70.1	99.1	69.3	96.9	68.1	72.9	96.7	71.1	94.0	63.8	90.1	86.8	62.6	86.3	85.1	12.8	11.3	10.4	2541	1654
REDDING MUNICIPAL ARPT	40.52N	122.31W	502	28.4	30.8	105.9	69.3	102.4	68.0	99.3	66.7	72.0	97.5	70.4	95.5	64.1	91.3	80.4	62.0	84.7	79.4	24.9	20.0	17.2	2715	1880
RIVERSIDE MUNI	33.95N	117.43W	840	36.0	37.2	99.8	70.3	97.4	69.1	94.5	68.3	73.5	93.8	71.9	91.6	66.3	99.8	81.6	64.3	93.1	79.6	20.7	16.9	14.2	1622	1550
SACRAMENTO EXECUTIVE ARPT	38.51N	121.49W	26	31.4	33.8	100.1	70.3	97.1	68.9	93.8	67.7	72.7	95.8	70.7	93.3	63.9	89.1	84.3	61.8	82.5	80.5	20.4	18.3	16.4	2539	1212
SACRAMENTO MATHER AIRPORT	38.55N	121.29W	95	29.8	32.3	101.3	69.2	98.3	68.0	94.8	66.8	71.2	97.2	69.5	93.9	61.4	81.6	77.3	60.1	77.7	76.7	20.4	16.9	13.7	2699	1251
SACRAMENTO METROPOLITAN AP	38.70N	121.59W	33	31.5	34.0	100.4	70.7	97.9	69.7	94.8	68.5	73.2	96.7	71.4	94.1	64.3	90.2	84.9	62.7	85.2	83.2	23.3	19.4	17.5	2389	1408
SALINAS MUNICIPAL AP	36.66N	121.61W	79	33.8	36.2	82.9	62.8	78.7	61.8	75.0	61.0	65.5	77.8	64.1	75.0	61.2	81.0	68.2	59.9	77.1	67.0	20.9	18.8	17.6	2720	114
SAN DIEGO LINDBERGH FIELD	32.74N	117.17W	30	44.8	46.8	84.1	67.7	81.1	67.5	78.7	66.9	72.9	79.4	71.3	77.5	70.4	112.2	77.1	68.9	106.2	75.6	17.6	15.9	13.9	1117	761
SAN DIEGO MIRAMAR NAS	32.87N	117.15W	479	38.9	41.4	90.3	67.6	87.0	67.1	83.8	66.7	71.8	83.4	70.6	81.8	68.0	104.9	76.4	66.4	98.9	75.2	14.6	12.4	10.9	1443	868
SAN DIEGO NORTH ISLAND NAS	32.70N	117.20W	26	44.6	46.0	82.3	66.0	79.5	66.5	77.3	66.4	71.6	77.4	70.4	76.3	69.8	109.8	75.9	68.0	103.1	74.3	18.8	16.5	14.5	1226	669
SAN DIEGO/BROWN FLD	32.57N	116.98W	522	38.9	42.6	88.3	65.1	84.1	65.3	81.5	65.0	71.2	81.8	69.7	79.2	67.9	104.7	75.8	66.1	98.2	74.0	16.4	13.3	12.2	1665	632
SAN DIEGO/MONTGOMER	32.82N	117.13W	423	40.9	43.1	88.3	66.2	84.2	65.7	81.7	65.0	71.6	81.4	70.2	79.2	68.4	106.0	75.8	66.6	99.3	74.5	15.9	13.3	12.2	1490	787
SAN FRANCISCO INTL AP	37.62N	122.40W	20	38.8	40.8	83.0	63.0	78.3	62.1	74.4	61.2	65.4	78.2	64.0	74.9	61.0	80.3	67.9	59.6	76.2	66.6	28.6	25.8	23.7	2708	142
SAN JOSE INTL AP	37.36N	121.93W	49	35.7	37.8	92.3	66.9	88.6	66.2	84.8	65.1	69.5	87.2	68.1	84.4	63.1	86.5	76.6	61.5	81.6	75.1	19.8	18.2	16.5	2033	717
SAN LUIS CO RGNL	35.23N	120.63W	217	34.0	36.3	88.3	64.3	84.1	63.3	81.1	62.9	67.4	82.6	65.9	80.1	61.8	83.2	71.2	60.7	79.8	70.2	25.7	23.1	19.9	2202	276
SANTA BARBARA MUNICIPAL AP	34.43N	119.84W	20	34.7	36.8	82.9	64.1	79.6	64.1	77.0	63.5	68.8	77.3	67.4	75.6	65.5	94.3	72.7	64.1	89.5	70.7	19.4	16.8	13.8	2209	219
SANTA MARIA PUBLIC ARPT	34.92N	120.47W	240	32.2	34.7	84.2	62.8	80.2	62.0	76.7	61.1	66.3	78.7	64.7	76.4	61.5	82.4	69.3	60.1	78.2	68.2	23.8	20.2	18.2	2731	116
SANTA ROSA (AWOS)	38.51N	122.81W	148	29.7	31.8	95.3	67.1	91.0	66.6	87.5	65.3	69.8	91.0	68.0	87.9	61.1	80.8	80.3	59.2	75.5	75.4	17.0	15.0	12.6	3005	377
STOCKTON METROPOLITAN ARPT	37.89N	121.24W	26	30.5	32.7	100.8	70.3	97.9	69.3	94.9	68.4	73.4	96.1	71.0	94.4	65.3	93.5	84.8	62.0	83.1	80.9	22.3	19.0	17.3	2505	1386
TRAVIS AFB/FAIRFLD	38.27N	121.93W	59	31.8	34.4	98.8	67.6	95.0	66.8	91.0	65.7	70.3	93.2	68.5	90.4	62.1	83.6	75.7	60.3	78.2	73.9	28.3	26.1	24.0	2496	985
TUSTIN MCAF	33.70N	117.83W	56	38.9	41.1	93.5	70.2	89.9	69.2	86.8	68.7	73.7	86.7	72.4	85.1	69.7	109.4	79.2	68.0	102.9	79.1	17.0	13.4	11.8	1081	1225
VISALIA MUNI (AWOS)	36.32N	119.40W	292	29.9	32.7	99.8	72.1	97.9	71.0	95.2	69.6	75.0	95.0	73.2	92.8	68.5	105.8	85.8	66.0	96.7	84.2	14.7	12.3	10.8	2555	1558
Colorado																									*10 sites, 15 more on CD-ROM*	
BUCKLEY ANGB/DENVER	39.72N	104.75W	5663	-0.2	6.5	93.0	59.0	90.4	58.8	87.8	58.6	64.1	79.3	62.7	78.4	60.6	97.6	66.7	58.5	90.6	66.5	23.4	19.4	16.8	5920	685
COLORADO SPRINGS MUNI AP	38.81N	104.71W	6171	-0.7	5.8	90.3	58.8	87.7	58.5	84.9	58.2	63.3	78.3	62.2	77.4	59.3	95.2	65.6	57.9	90.2	65.4	27.7	24.4	20.6	6279	440
DENVER INTL AP	39.83N	104.66W	5430	0.7	6.9	94.3	60.3	91.8	60.0	89.2	59.7	64.9	81.1	63.7	80.6	60.9	97.8	67.8	59.3	92.3	67.4	26.7	23.3	19.6	5942	777
DENVER STAPLETON INT'L ARPT	39.77N	104.87W	5285	-4.0	3.3	93.5	60.6	90.8	60.1	88.0	59.7	64.6	81.8	63.5	80.5	60.2	94.9	67.9	58.5	89.2	67.7	24.3	19.7	17.2	5908	707
DENVER/CENTENNIAL	39.57N	104.85W	5883	-1.8	4.2	91.4	60.3	89.6	59.9	86.3	59.5	65.1	81.1	63.5	79.6	61.0	100.1	68.4	58.8	92.4	67.8	24.8	21.3	18.7	6207	562
FORT COLLINS (AWOS)	40.45N	105.02W	5016	0.1	6.4	93.5	60.5	90.8	60.3	88.2	60.0	64.8	82.3	63.6	82.0	59.9	92.8	69.4	57.3	84.5	69.2	25.6	21.1	17.8	6212	609
FORT COLLINS(SAWRS)	40.58N	105.08W	5003	-4.8	2.9	89.8	61.2	87.2	60.9	84.6	60.8	66.0	80.7	64.4	79.6	61.2	97.2	72.3	59.5	91.7	70.5	20.8	17.3	13.9	6285	493
GRAND JUNCTION WALKER FIELD	39.13N	108.54W	4839	6.0	11.7	97.4	61.9	94.8	60.9	92.3	60.1	65.5	85.4	64.4	83.9	60.9	95.9	68.7	59.0	89.3	69.5	23.1	19.0	16.8	5369	1200
GREELEY/WELD (AWOS)	40.43N	104.63W	4659	-5.5	1.0	95.4	62.2	92.1	62.0	89.8	62.0	67.1	84.3	65.7	83.7	62.7	101.3	72.6	60.7	94.5	71.6	27.7	23.4	18.9	6510	613
PUEBLO MEMORIAL AP	38.29N	104.50W	4721	-2.0	5.3	98.4	62.7	95.8	62.4	93.0	62.1	67.3	85.0	66.2	84.5	63.1	103.3	70.2	61.6	97.7	69.6	28.8	24.8	20.5	5496	932
Connecticut																									*5 sites, 0 more on CD-ROM*	
BRIDGEPORT SIKORSKY MEMORIAL	41.18N	73.15W	16	10.7	15.4	87.4	73.3	84.5	71.6	82.0	70.4	76.0	83.0	74.8	80.8	73.8	125.8	79.3	72.8	121.6	78.1	24.5	20.9	18.8	5290	814
HARTFORD BRADLEY INTL AP	41.94N	72.68W	180	3.1	8.0	91.5	73.5	88.4	71.9	85.4	70.3	76.3	86.7	74.7	83.8	73.2	124.0	80.4	71.9	118.6	79.1	22.3	19.0	17.4	5992	739

Meaning of acronyms:
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F* *DP: Dew point temperature, °F* *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCWB: Mean coincident wet bulb temperature, °F *MCDB: Mean coincident dry bulb temperature, °F* *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
HARTFORD BRAINARD FD	41.74N	72.65W	20	6.4	10.6	90.5	73.4	87.8	72.7	84.4	70.9	77.2	85.7	75.4	83.0	74.6	129.5	81.3	72.9	122.3	80.0	20.0	18.5	17.1	5622	816
OXFORD (AWOS)	41.48N	73.13W	728	3.1	8.7	87.7	72.6	83.8	70.9	81.3	69.3	75.3	83.2	73.6	80.2	72.9	125.4	78.7	72.0	121.7	77.6	19.7	17.2	15.0	6408	461
WILLIMANTIC (ASOS)	41.73N	72.18W	249	3.1	9.1	89.9	73.5	86.3	72.3	83.6	71.0	76.2	85.2	74.7	82.3	73.2	124.4	79.6	72.4	121.2	78.6	19.6	17.4	15.7	6029	596
Delaware																									*2 sites, 1 more on CD-ROM*	
DOVER AFB	39.13N	75.47W	23	13.9	18.2	92.1	75.7	89.8	74.8	86.9	74.0	78.6	87.0	77.5	85.3	76.5	138.5	82.6	75.1	131.9	81.4	24.2	20.3	18.1	4517	1176
WILMINGTON NEW CASTLE CNTY AP	39.67N	75.60W	79	11.7	16.1	91.9	75.1	89.3	74.1	86.7	73.1	78.0	87.3	76.8	85.1	75.4	133.6	81.7	74.3	128.6	80.6	24.4	20.5	18.4	4786	1121
Florida																									*32 sites, 15 more on CD-ROM*	
CECIL FIELD	30.22N	81.87W	89	29.8	33.5	96.3	76.5	94.4	76.1	92.6	75.7	79.4	89.9	78.4	88.8	76.9	140.5	82.9	75.7	134.9	82.3	18.7	16.6	14.6	1166	2824
DAYTONA BEACH INTL AP	29.18N	81.06W	43	34.7	38.8	92.7	76.9	90.8	76.9	89.2	76.7	80.0	88.0	79.1	87.1	77.6	143.7	83.8	76.9	140.3	83.2	20.3	18.1	16.4	772	2926
FORT LAUDERDALE HOLLYWOOD INT	26.07N	80.15W	10	46.7	51.1	91.8	78.4	90.6	78.3	89.8	78.2	81.2	88.0	80.4	87.2	79.3	152.0	84.8	78.6	148.4	84.4	22.4	19.8	18.2	142	4510
FORT MYERS PAGE FIELD	26.59N	81.86W	20	42.4	46.3	93.7	77.1	92.6	77.1	91.3	77.0	80.4	88.3	79.8	87.6	78.6	148.5	83.4	77.7	144.2	83.0	18.9	17.5	15.7	274	3908
GAINESVILLE REGIONAL AP	29.69N	82.27W	164	29.7	33.4	93.5	76.5	92.0	76.3	90.5	76.0	79.7	88.4	78.7	87.3	77.4	143.3	83.1	76.5	138.9	82.3	18.5	16.6	14.5	1159	2640
HOMESTEAD AFB	25.48N	80.38W	16	46.4	50.4	91.2	79.2	90.3	78.9	89.5	78.7	81.5	87.2	80.9	86.7	80.5	158.4	84.3	79.2	151.8	83.8	18.9	16.9	15.0	144	4240
JACKSONVILLE INTL ARPT	30.49N	81.69W	33	29.2	32.5	94.5	77.3	92.7	77.1	90.9	76.7	80.1	89.6	79.2	88.4	77.5	143.2	83.6	76.8	139.8	83.0	20.0	17.9	16.3	1316	2624
JACKSONVILLE NAS	30.23N	81.68W	23	32.2	36.3	95.5	77.2	93.3	76.5	91.5	76.1	80.5	88.5	79.5	88.0	78.8	149.7	83.8	77.3	142.3	83.2	20.4	18.0	16.1	1013	3086
JACKSONVILLE/CRAIG	30.34N	81.52W	43	31.6	35.4	93.4	77.4	91.3	77.0	90.0	76.9	80.3	88.5	79.4	87.4	78.3	147.3	83.8	77.2	141.9	83.1	18.9	17.4	15.7	1240	2570
MACDILL AFB/TAMPA	27.85N	82.52W	26	40.3	44.3	93.1	77.1	91.6	76.8	90.7	76.8	80.9	87.2	80.0	87.0	79.2	151.9	83.5	78.1	146.2	83.3	18.7	16.6	14.7	479	3644
MAYPORT NS	30.40N	81.42W	13	34.4	38.6	94.5	77.5	92.1	77.6	90.3	77.3	81.0	88.9	80.0	88.1	79.0	150.6	85.1	77.7	144.2	84.6	20.1	17.8	15.9	1012	3030
MELBOURNE REGIONAL AP	28.10N	80.65W	26	39.0	43.4	92.6	78.6	90.8	78.4	89.7	78.3	81.6	88.4	80.6	87.5	79.7	154.1	85.4	78.8	149.7	84.8	20.9	19.0	17.9	450	3516
MIAMI INTL AP	25.82N	80.30W	30	47.7	51.7	91.8	77.6	90.7	77.5	89.7	77.4	80.2	86.8	79.5	86.8	78.4	147.4	83.5	77.5	143.0	83.2	20.6	18.7	17.1	130	4458
MIAMI/KENDALL-TAMIA	25.65N	80.43W	10	45.4	49.0	92.4	77.8	91.2	77.6	90.3	77.5	80.3	87.7	79.5	87.2	78.9	149.8	83.1	77.4	142.7	82.8	20.6	18.8	17.6	172	4082
NAPLES MUNICIPAL	26.15N	81.78W	23	43.8	47.4	90.9	77.4	90.2	77.4	89.3	77.4	80.3	87.1	79.5	86.7	78.5	147.8	83.6	77.4	142.6	83.4	18.8	16.8	14.8	279	3686
NASA SHUTTLE FCLTY	28.62N	80.72W	10	38.4	42.4	91.9	78.0	90.4	77.8	89.2	77.6	80.5	87.5	79.8	86.7	79.0	150.7	83.9	77.7	144.1	83.2	19.0	16.9	15.0	552	3150
OCALA MUNI (AWOS)	29.17N	82.22W	89	29.7	34.0	93.2	75.2	91.5	75.2	90.6	75.0	78.7	87.6	78.0	87.2	76.2	137.5	82.5	75.2	132.8	81.9	17.8	15.0	12.5	1035	2745
ORLANDO EXECUTIVE AP	28.55N	81.33W	112	40.0	44.2	93.6	76.0	92.6	75.9	91.1	75.8	79.7	87.0	78.8	86.2	78.2	147.0	82.3	77.1	141.7	81.6	19.0	17.6	15.8	477	3564
ORLANDO INTL ARPT	28.43N	81.33W	105	37.7	41.9	93.7	76.5	92.4	76.3	91.1	76.1	79.6	87.6	78.8	86.8	77.6	143.9	81.9	76.9	140.8	81.5	20.1	18.1	16.4	544	3379
ORLANDO SANFORD AIRPORT	28.78N	81.24W	56	38.6	42.3	94.9	75.4	93.0	75.1	91.2	75.0	78.4	88.3	77.9	87.4	75.4	133.4	82.0	75.1	132.1	81.9	20.4	18.2	16.2	615	3259
PANAMA CITY BAY CO	30.20N	85.68W	20	32.1	36.0	92.7	76.8	91.0	76.9	90.2	76.8	81.5	86.9	80.3	86.4	80.6	158.8	84.6	79.0	150.6	83.7	18.8	16.8	15.2	1203	2848
PENSACOLA FOREST SHERMAN NAS	30.35N	87.32W	30	28.3	32.2	93.2	78.5	91.4	78.1	90.1	77.7	81.8	88.4	80.5	87.6	79.9	155.5	85.4	78.8	149.7	84.7	23.5	19.4	17.5	1488	2614
PENSACOLA REGIONAL AP	30.47N	87.19W	118	29.5	33.3	93.7	77.7	91.6	77.3	90.0	77.0	81.0	88.4	80.0	87.3	79.1	151.8	84.5	78.0	146.1	83.5	20.0	18.1	16.5	1470	2628
SARASOTA BRADENTON	27.38N	82.55W	33	39.3	43.8	92.2	79.2	91.0	79.0	90.3	78.8	82.7	88.8	81.5	88.0	81.2	162.4	86.5	79.7	154.5	85.4	21.7	18.7	17.0	450	3421
SOUTHWEST FLORIDA I	26.53N	81.75W	30	41.2	45.4	93.8	76.9	92.7	76.9	91.2	76.9	80.5	87.8	79.8	87.3	79.1	151.0	83.0	78.0	145.8	82.7	20.7	18.4	16.6	298	3782
ST PETERSBURG CLEAR	27.90N	82.68W	10	42.6	45.8	93.2	78.8	91.6	78.2	90.5	78.0	82.1	88.6	81.2	87.6	80.5	158.2	84.9	79.4	152.6	84.5	20.9	18.8	17.4	425	3788
TALLAHASSEE REGIONAL AP	30.39N	84.35W	69	25.4	28.9	95.5	76.6	93.5	76.1	91.9	75.7	79.7	89.3	78.9	88.1	77.4	142.9	82.8	76.5	138.5	82.2	17.9	16.0	13.6	1534	2563
TAMPA INTERNATIONAL AP	27.96N	82.54W	10	38.4	42.5	92.4	77.4	91.3	77.3	90.3	77.2	80.5	87.9	79.9	87.6	78.4	147.7	84.8	77.5	143.2	84.0	18.1	16.2	14.2	528	3517
TYNDALL AFB	30.07N	85.58W	23	31.9	36.1	91.2	78.5	90.1	78.5	88.6	78.1	82.2	87.5	81.1	86.6	80.7	159.7	85.7	79.4	152.7	84.7	19.8	17.7	15.7	1267	2646
VENICE PIER	27.07N	82.45W	16	42.3	46.2	87.6	N/A	86.5	N/A	85.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	28.2	23.8	19.7	473	2939
VERO BEACH MUNICIPAL ARPT	27.66N	80.42W	30	38.9	43.1	91.7	77.7	90.5	77.7	89.5	77.7	80.3	88.0	79.5	87.4	78.3	146.9	84.4	77.3	142.0	83.9	20.2	18.5	17.1	416	3465
WEST PALM BEACH INTL ARPT	26.69N	80.10W	20	44.2	48.3	91.4	77.6	90.2	77.7	89.2	77.6	80.1	87.7	79.4	87.1	78.0	145.5	83.6	77.3	142.1	83.4	23.1	20.1	18.5	218	4044
Georgia																									*19 sites, 2 more on CD-ROM*	
ALBANY DOUGHERTY COUNTY AP	31.54N	84.19W	194	26.4	29.7	96.7	76.5	94.5	76.1	92.6	75.6	79.7	90.4	78.6	89.0	77.2	142.3	83.4	75.9	136.5	82.3	18.6	16.8	14.8	1763	2510
ATHENS BEN EPPS AP	33.95N	83.33W	801	21.8	26.1	95.2	75.1	92.7	74.6	90.4	74.1	78.1	89.5	77.1	87.8	75.0	135.4	82.4	74.0	130.8	81.2	18.4	16.5	14.5	2762	1789
ATLANTA (NEXRAD)	33.37N	84.55W	971	19.1	23.2	92.8	73.6	90.7	73.8	89.6	73.7	77.4	87.5	76.4	85.8	74.8	135.1	80.9	73.3	128.4	79.1	17.6	15.2	12.5	3045	1481
ATLANTA HARTSFIELD INTL AF	33.64N	84.43W	1027	20.7	25.8	93.8	74.3	91.5	74.0	89.3	73.4	77.2	88.2	76.2	86.5	74.2	132.7	81.2	73.3	128.4	80.1	22.0	19.2	17.3	2694	1841
AUGUSTA BUSH FIELD	33.37N	81.97W	148	22.2	25.8	97.1	76.2	94.7	76.0	92.4	75.5	79.4	91.1	78.3	89.4	76.4	138.6	83.4	75.4	134.0	82.5	18.8	16.6	14.5	2411	2063
AUGUSTA\DANIEL FLD	33.47N	82.03W	420	27.5	29.9	96.8	74.7	93.1	73.7	91.1	73.7	77.8	89.2	77.1	88.0	75.0	133.2	81.0	73.4	126.3	79.8	16.8	14.8	12.6	2102	2256
COLUMBUS METROPOLITAN ARPT	32.52N	84.94W	394	25.1	28.9	96.3	75.1	94.1	74.8	92.1	74.4	78.3	89.6	77.5	88.1	75.5	135.3	82.0	74.7	131.7	81.3	18.2	16.3	14.3	2071	2330
DEKALB PEACHTREE	33.87N	84.30W	1027	22.6	26.8	93.3	73.5	91.2	73.5	90.1	73.1	77.1	88.2	76.2	86.5	73.4	129.2	79.3	73.1	127.7	79.0	18.3	16.2	13.7	2797	1794
DOBBINS AFB/MARIETT	33.92N	84.52W	1083	19.5	25.0	93.5	74.0	91.0	73.8	89.0	73.3	77.0	87.7	75.9	86.3	73.9	131.7	81.0	73.0	127.4	79.9	18.7	16.3	14.0	2892	1728
FORT BENNING	32.33N	85.00W	289	23.0	26.6	96.7	75.9	94.3	75.7	92.1	75.3	79.9	89.9	78.6	88.6	77.3	143.4	83.8	76.1	137.6	82.5	16.6	13.8	11.8	2254	2108
FULTON CO ARPT BROW	33.77N	84.52W	863	19.8	24.9	93.6	74.7	91.4	74.4	89.9	73.8	77.5	88.8	76.6	87.2	74.3	132.4	81.9	73.3	127.9	81.0	18.0	15.8	13.8	2871	1698
GAINESVILLE\LEE GIL	34.27N	83.83W	1276	23.0	27.1	91.3	73.9	90.3	73.7	88.2	73.0	76.7	86.9	75.5	84.7	73.4	130.2	79.5	72.8	127.8	79.0	19.1	17.1	15.4	2968	1591
HUNTER AAF	32.00N	81.13W	43	28.0	31.8	95.4	77.4	93.3	76.9	91.2	76.6	81.1	88.4	79.9	88.0	79.2	151.9	83.7	77.6	143.5	83.0	18.8	16.6	14.4	1644	2540
MACON MIDDLE GA REGIONAL AP	32.69N	83.65W	361	23.5	27.4	96.7	75.8	94.3	75.5	92.2	75.1	79.1	90.5	78.1	89.0	76.1	138.4	83.6	75.2	134.2	82.4	18.2	16.2	13.9	2229	2189
MOODY AFB/VALDOSTA	30.97N	83.20W	233	29.9	33.7	95.7	76.5	93.7	76.2	92.1	75.9	79.9	90.6	78.8	89.1	77.1	142.3	84.4	76.1	137.5	83.4	16.2	13.6	12.1	1402	2666
ROME R B RUSSELL AP	34.35N	85.16W	643	17.2	22.1	96.4	74.7	93.3	74.3	91.1	74.0	78.1	89.8	77.2	88.8	74.9	134.1	83.2	73.5	127.8	82.2	15.1	12.6	10.9	3104	1726
SAVANNAH INTL AP	32.12N	81.20W	52	27.1	30.6	95.5	77.3	93.3	76.9	91.4	76.3	80.2	89.6	79.2	88.2	77.9	145.3	83.4	77.0	140.8	82.6	18.8	16.9	15.4	1753	2439

Meaning of acronyms:
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F* *DP: Dew point temperature, °F* *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCWB: Mean coincident wet bulb temperature, °F *MCDB: Mean coincident dry bulb temperature, °F* *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
VALDOSTA WB AIRPORT	30.78N	83.28W	197	27.5	30.9	95.4	77.4	93.4	76.6	91.8	76.1	80.4	89.8	79.3	88.6	78.3	148.0	83.4	77.1	142.2	82.5	17.1	14.9	13.1	1509	2532
WARNER ROBINS AFB	32.63N	83.60W	302	25.0	28.2	97.3	76.1	94.9	76.0	92.8	75.3	79.8	90.9	78.5	89.5	76.9	141.6	84.5	75.5	135.0	82.9	19.0	16.5	13.9	2135	2246
Hawaii																									*4 sites, 4 more on CD-ROM*	
BARBERS POINT NAS	21.30N	158.07W	33	59.4	61.6	90.9	73.0	89.9	73.0	88.8	72.8	77.6	85.7	76.5	85.1	75.2	132.3	82.7	73.7	125.4	82.1	19.6	17.8	16.3	0	4418
HILO INTERNATIONAL AP	19.72N	155.05W	36	61.5	62.7	85.6	74.1	84.6	73.9	83.8	73.7	76.7	82.1	76.0	81.5	75.1	131.9	79.2	74.2	127.8	78.6	17.6	15.8	13.5	0	3258
HONOLULU INTL ARPT	21.33N	157.94W	16	61.2	63.3	89.9	74.0	89.1	73.6	88.2	73.4	77.2	84.8	76.3	84.2	75.0	131.3	81.3	73.9	126.3	80.6	21.8	20.0	18.7	0	4649
KANEOHE BAY MCAS	21.45N	157.77W	20	64.3	66.2	85.3	74.6	84.3	74.2	83.6	73.9	77.4	82.2	76.4	81.7	75.6	133.9	80.5	74.6	129.7	80.1	19.3	17.6	16.2	0	4297
Idaho																									*7 sites, 7 more on CD-ROM*	
BOISE AIR TERMINAL	43.57N	116.22W	2867	2.7	10.5	98.1	64.2	95.0	63.1	91.9	62.1	66.3	91.7	65.0	90.0	57.8	79.4	72.2	55.5	72.8	72.3	21.8	19.0	17.1	5658	890
CALDWELL (AWOS)	43.63N	116.63W	2428	11.6	16.4	97.0	66.4	93.1	65.0	90.4	63.9	68.3	92.1	66.7	89.8	60.6	86.5	77.5	57.1	76.1	77.3	21.4	18.8	16.6	5698	638
COEUR D`ALENE(AWOS)	47.77N	116.82W	2320	6.7	11.6	91.4	62.8	88.5	62.3	84.2	60.8	65.6	86.3	63.9	83.8	57.4	76.6	70.9	55.4	71.2	69.6	22.4	18.9	16.8	6892	286
IDAHO FALLS FANNING FIELD	43.52N	112.07W	4744	-8.7	-2.4	91.7	61.4	89.4	60.8	86.3	59.8	64.9	83.6	63.2	82.2	58.9	88.5	70.9	56.6	81.5	69.2	27.2	24.3	20.7	7825	275
JOSLIN FLD MAGIC VA	42.48N	114.48W	4255	9.4	12.4	94.5	63.8	91.1	63.1	89.6	62.7	66.9	89.6	65.3	86.8	59.2	88.1	75.8	56.9	80.9	74.7	27.5	24.4	20.8	6157	700
LEWISTON NEZ PERCE CNTY AP	46.38N	117.01W	1437	10.2	17.5	97.8	65.4	94.3	64.5	90.7	63.3	67.7	92.1	66.0	89.8	59.6	80.3	72.8	57.3	73.9	72.0	20.6	17.6	14.8	5124	814
POCATELLO REGIONAL AP	42.92N	112.57W	4478	-4.9	1.3	94.4	61.8	91.3	61.1	88.3	60.2	65.4	86.5	63.7	84.4	58.9	87.7	71.2	56.3	79.7	70.6	28.1	25.0	21.9	7035	419
Illinois																									*14 sites, 6 more on CD-ROM*	
AURORA MUNICIPAL	41.77N	88.47W	705	-2.0	1.4	90.8	74.4	88.4	73.5	85.7	71.8	77.7	87.2	75.9	84.3	74.8	133.9	83.2	73.0	125.6	80.9	25.9	22.8	19.8	6403	711
CAHOKIA/ST. LOUIS	38.57N	90.15W	413	9.5	14.2	93.5	77.3	91.4	76.4	90.3	76.0	80.4	90.3	78.8	89.1	77.5	145.1	85.1	75.3	134.9	83.9	20.6	18.4	16.5	4452	1396
CHICAGO MIDWAY AP	41.79N	87.75W	617	-1.6	4.3	92.1	74.9	89.6	73.3	86.5	71.9	78.0	88.3	76.2	85.4	75.0	134.1	84.3	73.0	125.5	82.2	24.4	21.2	19.2	5930	1022
CHICAGO OHARE INTL AP	41.99N	87.91W	673	-4.0	2.2	91.9	74.6	89.0	73.4	86.1	71.9	77.9	88.2	76.1	85.2	74.9	134.2	84.1	73.2	126.3	81.9	24.8	21.1	19.2	6311	842
DECATUR	39.83N	88.87W	699	-0.4	4.6	93.0	76.7	90.5	75.7	88.2	74.3	79.3	89.6	77.7	87.7	76.2	140.2	85.8	74.7	133.4	84.1	24.8	21.7	19.7	5529	1065
GLENVIEW NAS	42.08N	87.82W	653	-4.6	2.1	93.2	75.0	89.8	73.1	86.7	71.6	77.7	89.9	75.8	86.4	73.9	129.6	84.9	72.2	122.1	83.2	21.0	18.7	16.7	6227	902
MOLINE QUAD CITY INTL AP	41.47N	90.52W	594	-6.2	0.0	93.5	76.3	90.6	75.1	87.7	73.5	79.1	89.7	77.4	87.5	76.1	139.5	85.3	74.4	131.7	83.1	24.6	20.7	18.7	6141	999
PEORIA GREATER PEORIA AP	40.67N	89.68W	663	-3.6	2.3	92.7	76.5	90.1	75.3	87.4	73.8	79.3	89.0	77.7	87.0	76.5	141.4	85.0	74.9	133.9	83.2	23.8	20.2	18.3	5809	1035
QUINCY MUNI BALDWIN FLD	39.94N	91.19W	768	-2.0	3.3	93.3	76.4	90.4	75.3	87.8	74.2	78.6	89.1	77.4	87.8	75.6	137.8	84.7	74.2	131.4	83.2	24.7	21.0	19.2	5552	1100
ROCKFORD GREATER ROCKFORD AP	42.20N	89.09W	745	-8.4	-1.7	91.5	75.0	88.5	73.7	85.8	72.0	78.2	87.8	76.3	85.0	75.3	136.5	84.0	73.5	128.1	82.0	24.6	21.0	19.2	6694	779
SCOTT AFB/BELLEVILL	38.55N	89.85W	443	4.5	10.3	95.1	77.4	92.7	76.6	90.4	75.6	80.2	90.4	78.8	88.9	77.3	144.6	85.7	75.8	137.4	84.1	21.5	18.8	16.7	4638	1428
SPRINGFIELD CAPITAL AP	39.85N	89.68W	614	-2.1	4.6	92.9	76.7	90.5	75.6	88.1	74.2	79.4	89.7	77.9	87.5	76.4	140.9	85.9	74.9	134.0	84.0	24.9	21.8	19.5	5429	1135
UNIV OF ILLINOIS WI	40.03N	88.27W	774	-1.0	4.4	92.5	76.4	90.1	75.4	87.7	74.4	79.8	89.1	77.9	86.7	77.1	145.0	86.3	75.1	135.8	83.5	27.4	24.6	22.0	5657	1010
W. CHICAGO/DU PAGE	41.92N	88.25W	758	-5.4	0.6	90.5	74.9	88.1	73.8	85.1	72.0	78.3	87.3	76.4	84.7	75.3	136.5	84.4	73.4	127.6	81.6	24.5	21.0	19.0	6511	736
Indiana																									*8 sites, 1 more on CD-ROM*	
EVANSVILLE REGIONAL AP	38.04N	87.54W	387	5.6	12.1	93.9	76.2	91.6	75.7	89.5	74.9	79.4	89.8	78.1	88.1	76.4	139.9	85.2	75.3	134.4	83.6	20.7	18.5	16.6	4449	1410
FORT WAYNE INTL AP	41.01N	85.21W	827	-2.6	3.8	91.1	74.4	88.4	73.1	85.7	71.7	77.6	87.0	75.9	84.1	74.8	134.5	82.8	73.2	127.4	80.9	24.6	20.8	18.8	6011	831
GRISSOM ARB	40.65N	86.15W	830	-3.9	3.4	92.4	75.8	89.4	74.8	86.7	72.9	79.2	89.0	77.3	85.9	76.3	141.8	85.5	74.5	133.2	83.1	24.9	20.6	18.4	5761	1025
INDIANAPOLIS INTL AP	39.71N	86.27W	807	-0.5	6.4	91.1	75.3	88.6	74.4	86.3	73.1	78.2	87.6	76.9	85.5	75.4	137.1	83.4	74.1	131.2	82.1	24.5	20.8	18.7	5322	1055
LAFAYETTE PURDUE UNIV AP	40.41N	86.94W	636	-2.3	4.2	92.4	75.6	90.0	74.6	87.5	73.2	78.8	88.7	77.2	86.3	75.9	138.6	84.8	74.4	131.8	82.9	23.1	20.0	18.3	5577	1003
MONROE CO	39.13N	86.62W	866	4.8	10.2	90.6	76.0	89.6	76.1	87.5	74.7	78.9	86.7	77.6	86.0	76.7	143.8	83.7	74.9	135.1	82.3	19.5	17.5	15.8	4936	1009
SOUTH BEND MICHIANA RGNL AP	41.71N	86.33W	774	-1.5	4.5	90.9	74.3	88.1	72.7	85.3	71.3	77.4	86.8	75.6	84.0	74.6	133.2	83.3	72.9	125.7	81.0	24.1	20.5	18.6	6188	810
TERRE HAUTE/HULMAN	39.45N	87.32W	574	-0.3	6.6	92.1	76.6	90.1	75.9	87.8	74.6	79.6	88.9	78.0	86.9	76.9	143.2	85.4	75.2	134.9	83.5	22.8	19.5	17.9	5194	1085
Iowa																									*9 sites, 19 more on CD-ROM*	
AMES MUNI ARPT	42.00N	93.62W	955	-5.8	0.5	90.5	76.1	88.3	74.9	85.6	73.8	79.2	87.4	77.3	85.6	76.8	144.5	84.9	74.8	134.9	82.7	26.5	23.6	20.2	6388	794
ANKENY REGIONAL ARP	41.68N	93.55W	902	-5.4	0.4	94.9	75.2	91.1	74.4	88.3	73.2	77.8	89.1	76.4	87.2	74.6	133.9	84.0	73.0	126.8	82.7	20.7	18.4	16.5	5954	1063
BOONE MUNI	42.05N	93.85W	1161	-5.8	0.4	91.3	77.8	89.8	76.7	86.2	74.4	81.0	89.0	78.9	86.1	79.0	157.4	86.2	76.8	146.1	84.6	26.4	23.5	20.3	6328	894
CEDAR RAPIDS MUNICIPAL AP	41.88N	91.71W	873	-9.6	-3.9	91.6	76.0	88.6	74.6	85.7	73.0	78.6	87.4	77.0	85.6	76.2	141.4	84.3	74.3	132.2	82.2	26.3	23.2	20.2	6703	807
DAVENPORT NEXRAD	41.62N	90.58W	850	-3.4	1.3	90.3	76.2	88.1	75.4	84.4	73.1	78.5	87.0	77.1	85.2	75.4	137.5	83.5	74.5	133.2	82.7	26.4	23.6	20.4	6188	808
DES MOINES INTL AP	41.54N	93.67W	965	-6.9	-1.6	93.4	76.2	90.2	75.0	87.3	73.5	78.4	88.9	77.1	87.3	75.4	138.1	84.7	73.9	131.1	83.4	25.6	22.5	19.6	6240	1041
DUBUQUE REGIONAL AP	42.40N	90.70W	1079	-8.2	-2.6	89.3	74.8	86.3	73.3	83.5	71.2	77.6	86.0	75.5	83.1	75.1	137.3	83.1	73.2	128.3	80.6	25.6	22.8	19.9	6988	649
SIOUX CITY SIOUX GATEWAY AP	42.39N	96.38W	1102	-8.8	-3.6	93.4	75.2	90.4	74.4	87.7	73.0	78.6	88.6	77.1	87.2	75.9	140.9	84.9	73.9	131.6	83.6	28.7	25.4	22.7	6721	921
WATERLOO MUNICIPAL AP	42.55N	92.40W	879	-12.7	-6.3	91.8	75.5	88.8	73.8	86.1	72.4	78.5	87.8	76.7	85.5	75.9	140.0	84.4	74.0	130.9	82.2	26.2	23.5	20.2	7032	786
Kansas																									*10 sites, 16 more on CD-ROM*	
FT RILEY/MARSHALL A	39.05N	96.77W	1063	-1.4	6.0	99.6	75.0	96.3	74.6	93.2	74.3	78.4	91.6	77.2	90.6	74.8	135.7	86.0	73.2	128.4	84.4	20.7	18.3	16.2	5051	1518
LAWRENCE MUNI ARPT	39.00N	95.22W	833	5.1	9.9	99.1	76.9	95.3	76.3	91.3	75.4	80.0	92.2	78.4	90.7	76.7	143.5	87.2	74.9	135.0	85.4	25.0	21.6	19.1	4801	1466
MANHATTAN RGNL	39.13N	96.67W	1083	2.5	8.8	99.9	75.6	97.2	75.7	93.0	74.8	78.6	93.1	77.7	91.9	74.9	136.3	85.5	73.2	128.7	83.7	24.2	20.6	18.4	5081	1456
MCCONNELL AFB	37.62N	97.27W	1358	5.2	11.6	99.9	73.2	97.0	73.4	93.5	73.1	77.5	90.6	76.4	89.2	74.2	134.5	82.5	72.8	128.0	81.9	26.4	23.6	20.6	4347	1726
OLATHE/JOHNSON CO.	38.85N	94.73W	1096	5.2	9.8	96.7	76.4	92.6	75.9	90.2	75.3	79.0	90.0	77.9	89.0	75.3	138.4	85.4	74.6	135.0	84.4	23.4	20.2	18.3	4678	1405
SALINA MUNICIPAL AP	38.81N	97.66W	1283	0.9	7.4	101.3	73.9	98.2	73.7	94.9	73.3	77.4	92.5	76.3	90.9	73.2	129.6	84.2	72.2	125.0	83.1	27.6	24.8	22.2	4847	1661
TOPEKA FORBES FIELD	38.95N	95.66W	1079	1.0	7.1	96.7	74.8	93.0	74.4	90.3	74.0	78.3	89.9	77.0	88.5	74.9	136.4	85.1	73.3	129.0	83.3	25.4	23.4	20.4	4992	1325

Meaning of acronyms:
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F* *DP: Dew point temperature, °F* *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCWB: Mean coincident wet bulb temperature, °F *MCDB: Mean coincident dry bulb temperature, °F* *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
TOPEKA MUNICIPAL AP	39.07N	95.63W	886	0.6	6.7	97.1	75.8	94.1	75.8	91.2	75.0	78.9	91.1	77.7	89.9	75.5	138.0	86.1	74.2	132.0	84.6	23.8	20.3	18.4	4983	1418
WICHITA MID-CONTINENT AP	37.65N	97.43W	1339	4.0	10.5	100.4	73.3	97.2	73.4	94.0	73.3	77.4	90.2	76.3	89.5	74.0	133.5	83.3	72.7	127.6	81.8	28.0	25.4	23.2	4564	1678
WICHITA/COL. JABARA	37.75N	97.22W	1421	6.9	11.5	99.7	73.8	97.1	74.0	92.8	73.7	77.3	90.9	76.3	89.6	73.2	130.1	83.2	72.5	126.9	82.3	27.3	24.8	22.1	4443	1578
Kentucky																									*8 sites, 5 more on CD-ROM*	
BOWLING GREEN WARREN CO AP	36.98N	86.44W	538	8.5	15.1	93.2	75.5	90.8	75.4	88.8	74.7	78.4	88.6	77.4	87.2	75.5	136.1	83.6	74.5	131.5	82.4	20.1	18.3	16.6	4137	1349
CINCINNATI NORTHERN KY AP	39.04N	84.67W	883	3.1	10.3	91.4	74.5	88.9	73.7	86.5	72.5	77.3	87.1	76.0	85.0	74.4	132.9	82.3	73.2	127.4	80.8	22.3	19.2	17.4	4985	1079
FORT CAMPBELL (AAF)	36.67N	87.50W	568	9.9	16.0	94.4	76.6	92.0	76.1	90.2	75.5	79.8	89.3	78.5	87.9	77.2	144.8	84.1	75.7	137.5	83.2	19.0	16.8	14.8	3817	1600
HENDERSON CITY	37.82N	87.68W	384	7.3	14.9	92.9	76.6	90.9	76.2	89.8	75.6	79.4	90.0	78.0	88.3	76.4	139.9	86.6	74.7	132.0	85.1	21.0	18.7	16.6	4419	1342
LEXINGTON BLUEGRASS AP	38.04N	84.61W	988	6.0	12.7	91.7	73.9	89.3	73.7	87.0	72.8	77.3	87.3	76.0	85.4	74.2	132.6	82.6	73.1	127.5	81.1	20.1	17.9	16.2	4572	1175
LOUISVILLE BOWMAN FIELD	38.23N	85.66W	558	7.1	13.6	93.3	75.3	91.0	74.9	88.9	74.0	78.4	88.6	77.3	87.3	75.4	135.9	83.2	74.3	131.0	82.4	18.9	17.3	15.0	4258	1390
LOUISVILLE STANDIFORD FIELD	38.18N	85.73W	489	8.0	14.5	93.4	75.7	91.2	75.3	89.0	74.3	78.7	89.1	77.5	87.6	75.8	137.3	84.7	74.5	131.2	83.1	21.0	18.8	16.9	4168	1496
SOMERSET(AWOS)	38.00N	84.60W	928	13.6	18.6	94.7	74.9	92.1	74.5	90.3	73.9	78.1	91.0	76.8	88.9	73.4	128.7	84.7	72.8	125.9	83.7	17.9	15.3	12.5	3784	1457
Louisiana																									*12 sites, 5 more on CD-ROM*	
ALEXANDRIA ESLER REGIONAL AP	31.40N	92.30W	118	26.5	28.3	97.3	76.8	94.8	77.3	92.8	77.0	80.4	89.3	79.6	89.2	78.4	148.1	83.6	77.2	142.4	83.3	16.5	13.9	12.2	2005	2412
ALEXANDRIA INTERNATIONAL	31.33N	92.55W	89	26.7	29.7	96.6	77.5	93.6	77.2	92.2	77.0	80.8	89.6	79.8	89.4	78.8	150.1	84.8	77.3	142.4	84.3	18.5	16.2	13.7	1836	2568
BARKSDALE AFB	32.50N	93.67W	177	22.5	26.8	97.3	76.3	94.9	76.3	92.8	76.3	79.8	90.2	78.8	89.3	77.2	142.5	83.7	76.1	137.4	83.0	19.0	16.9	14.7	2287	2321
BATON ROUGE RYAN ARPT	30.54N	91.15W	75	27.6	31.1	94.2	77.5	92.8	77.2	91.3	76.8	80.3	89.0	79.6	88.1	78.2	147.1	83.8	77.4	142.9	83.1	18.7	16.8	15.2	1610	2653
LAFAYETTE REGIONAL AP	30.21N	91.99W	43	28.6	32.4	94.2	77.9	92.7	77.7	91.2	77.3	80.7	89.0	80.1	88.4	78.8	149.9	83.9	77.8	144.8	83.4	20.5	18.4	16.6	1496	2763
LAKE CHARLES REGIONAL ARPT	30.13N	93.23W	10	29.6	33.1	94.1	77.8	92.5	77.8	91.0	77.7	81.4	88.6	80.4	87.6	79.4	152.7	84.4	78.6	148.6	83.8	20.7	18.6	16.8	1469	2770
MONROE REGIONAL AP	32.51N	92.04W	82	23.6	27.2	96.9	78.1	94.6	77.7	92.8	77.3	81.1	91.1	80.2	90.2	78.5	148.4	85.7	77.4	143.2	84.8	18.9	17.1	15.0	2238	2422
NEW ORLEANS ALVIN CALLENDER F	29.83N	90.03W	0	30.1	33.8	92.5	78.4	91.1	78.1	90.0	77.8	82.1	87.5	80.8	86.7	80.5	158.4	84.7	79.3	151.9	83.9	17.7	15.7	13.1	1423	2619
NEW ORLEANS INTL ARPT	29.99N	90.25W	20	31.5	35.4	93.6	78.1	91.9	77.7	90.5	77.4	80.7	88.7	80.1	87.9	78.7	148.9	84.4	78.0	145.5	83.8	20.6	18.6	16.9	1318	2846
NEW ORLEANS LAKEFRONT AP	30.04N	90.03W	10	35.6	38.8	93.4	78.7	92.0	78.3	90.7	77.9	81.4	89.5	80.5	88.3	79.3	152.0	85.5	78.6	148.7	85.0	24.0	20.4	18.5	1110	3213
SHREVEPORT DOWNTOWN	32.54N	93.74W	180	27.0	29.8	99.3	76.5	96.9	76.4	94.0	76.2	79.5	91.5	78.8	90.3	76.6	139.7	83.4	75.5	134.6	83.0	18.7	16.7	14.8	2094	2652
SHREVEPORT REGIONAL ARPT	32.45N	93.82W	259	23.8	27.7	97.8	76.3	95.4	76.4	93.4	76.2	79.4	91.1	78.7	90.0	76.4	139.1	83.3	75.8	136.1	83.0	19.6	17.7	16.1	2156	2493
Maine																									*5 sites, 13 more on CD-ROM*	
AUBURN-LEWISTON	44.05N	70.28W	289	-6.8	-0.8	87.9	70.5	83.7	69.1	81.1	67.3	73.5	83.2	71.3	80.1	70.4	112.9	78.5	68.3	105.2	76.4	20.9	18.5	16.4	7672	307
BANGOR INTERNATIONAL AP	44.81N	68.82W	194	-7.4	-2.2	87.8	70.9	84.2	69.1	81.2	67.1	73.3	83.2	71.3	80.8	70.1	111.6	78.4	68.2	104.2	75.6	23.5	19.6	17.9	7673	359
BRUNSWICK NAS	43.90N	69.93W	75	-2.5	1.8	86.4	70.7	83.1	68.9	80.5	67.3	73.5	82.6	71.5	79.8	70.4	112.3	78.0	68.9	106.5	75.9	22.2	18.9	16.9	7194	375
PORTLAND INTL JETPORT	43.64N	70.30W	62	-0.3	4.2	86.8	71.0	83.5	69.7	80.4	67.9	73.9	83.0	72.0	80.0	70.8	113.9	78.6	69.2	107.7	76.3	23.2	19.6	17.7	7082	365
SANFORD MUNI (AWOS)	43.40N	70.72W	243	-6.8	-0.2	88.4	70.2	84.5	68.8	81.9	67.4	73.7	84.1	71.7	81.6	70.4	113.0	78.3	68.3	104.9	77.1	20.9	18.4	16.1	7541	334
Maryland																									*3 sites, 2 more on CD-ROM*	
ANDREWS AFB	38.82N	76.87W	282	13.9	18.2	94.0	75.2	91.0	74.3	88.4	73.2	78.2	88.6	76.8	86.4	75.2	133.7	82.2	73.9	127.6	80.9	23.5	19.9	17.6	4421	1241
BALTIMORE BLT-WASHNGTN INT'L	39.17N	76.68W	154	12.9	17.3	93.9	74.9	91.2	74.2	88.5	73.1	78.1	88.6	76.8	86.5	75.3	133.3	82.1	74.1	127.9	80.8	22.4	19.2	17.3	4567	1228
THOMAS POINT	38.90N	76.43W	39	17.3	21.1	86.7	N/A	84.8	N/A	83.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	38.6	32.2	26.8	4203	1216
Massachusetts																									*12 sites, 1 more on CD-ROM*	
BARNSTABLE MUNI BOA	41.67N	70.27W	56	9.6	14.0	84.0	73.5	81.3	71.4	79.2	70.2	75.8	81.6	74.3	78.7	73.4	124.3	77.6	72.8	121.9	76.9	24.8	21.3	19.2	5928	487
BOSTON LOGAN INT'L ARPT	42.36N	71.01W	30	7.4	12.4	90.8	73.3	87.6	71.9	84.4	70.4	76.2	86.3	74.6	83.4	73.1	122.9	81.1	71.6	116.9	79.1	26.8	24.1	20.8	5621	750
BUZZARDS BAY	41.38N	71.03W	56	11.9	16.7	75.6	N/A	74.1	N/A	72.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	44.3	38.6	34.1	5566	281
CHATHAM MUNI ARPT	41.68N	70.00W	62	10.4	16.4	81.8	72.1	79.4	70.9	77.1	70.1	75.0	79.7	73.7	77.5	73.2	123.6	77.5	72.5	120.5	76.4	23.3	19.9	17.6	5671	428
LAWRENCE MUNI	42.72N	71.12W	151	2.8	9.3	90.2	73.6	87.8	72.5	83.8	71.2	76.0	85.2	74.7	82.9	73.0	123.3	79.7	72.3	120.1	79.2	20.2	17.9	16.0	6092	636
MARTHAS VINEYARD	41.40N	70.62W	69	8.9	12.4	82.4	71.8	81.0	70.9	78.8	69.8	75.0	80.3	73.6	77.8	73.1	123.2	77.7	72.4	120.3	76.4	26.1	23.5	20.4	5938	395
NEW BEDFORD RGNL	41.67N	70.95W	82	7.4	11.9	88.1	73.1	83.9	71.4	81.5	69.8	75.7	83.5	74.3	80.4	73.1	123.4	78.6	72.4	120.5	77.7	23.2	20.0	18.0	5837	553
NORWOOD MEMORIAL	42.18N	71.18W	49	2.6	8.8	90.4	74.3	87.9	73.4	84.0	71.7	77.1	86.5	75.4	83.2	73.5	124.8	79.6	72.9	122.2	79.0	20.5	18.2	16.3	6222	574
OTIS ANGB	41.65N	70.52W	131	8.3	13.0	84.6	72.1	81.8	71.1	79.3	69.9	75.6	81.0	74.1	78.7	73.6	125.5	77.5	72.6	121.3	76.6	27.2	24.2	20.6	5849	474
PLYMOUTH MUNICIPAL	41.92N	70.73W	148	4.6	9.7	88.4	73.1	84.2	71.7	81.8	70.0	76.0	84.2	74.5	81.0	73.3	124.3	78.7	72.5	120.9	77.8	23.3	19.8	17.8	6217	517
SOUTH WEYMOUTH NAS	42.15N	70.93W	161	5.9	10.4	91.2	73.8	87.7	72.3	84.7	70.7	76.9	86.8	74.9	83.8	74.1	127.9	81.9	72.2	119.7	79.4	18.5	16.5	14.5	5832	646
WORCESTER REGIONAL ARPT	42.27N	71.88W	1017	1.6	6.2	85.7	71.3	83.1	69.9	80.5	68.3	74.2	81.9	72.5	79.5	71.7	121.7	78.1	70.1	115.2	76.3	25.8	22.7	19.6	6707	453
Michigan																									*15 sites, 27 more on CD-ROM*	
DETROIT CITY AIRPORT	42.41N	83.01W	627	4.1	8.9	90.8	73.7	88.3	72.3	85.7	70.9	76.9	86.5	74.9	84.1	73.6	127.9	82.3	72.0	121.3	80.6	20.4	18.6	17.3	5984	898
DETROIT METROPOLITAN ARPT	42.22N	83.35W	663	1.4	6.7	90.3	73.8	87.4	72.5	84.7	71.0	76.9	86.4	75.0	83.5	73.8	129.1	82.5	72.2	122.3	80.3	25.6	22.6	19.7	6183	775
DETROIT WILLOW RUN AP	42.23N	83.53W	715	0.8	6.1	90.4	74.5	87.9	72.7	84.5	70.9	77.1	87.1	75.2	83.9	73.7	129.1	81.9	72.4	123.2	80.3	24.6	21.6	19.0	6393	680
FLINT BISHOP INTL ARPT	42.97N	83.75W	768	-1.0	3.7	89.4	73.9	86.6	72.2	83.9	70.4	76.5	85.4	74.7	83.0	73.6	128.6	82.1	71.9	121.3	79.6	24.2	20.6	18.7	6759	591
GRAND RAPIDS KENT COUNTY INT'	42.88N	85.52W	804	1.4	6.1	89.3	73.5	86.4	71.8	83.7	70.2	76.5	85.4	74.5	82.6	73.6	128.8	81.6	71.9	121.3	79.4	24.8	21.0	19.0	6687	626
GROSSE ISLE ARPT	42.10N	83.15W	577	7.3	10.4	89.8	74.5	86.1	73.9	83.5	72.7	78.2	84.5	76.5	82.9	75.5	136.3	81.2	74.6	132.4	80.5	20.8	18.6	16.7	5784	861
HOLLAND/TULIP CITY	42.75N	86.10W	689	7.4	10.2	88.3	74.1	84.4	72.2	82.2	70.6	76.5	84.6	74.8	82.2	73.3	126.9	81.2	72.4	123.0	79.6	25.9	22.5	19.5	6298	582
JACKSON REYNOLDS FIELD	42.26N	84.46W	1020	-1.0	4.5	88.5	73.7	85.9	72.3	83.3	70.8	76.6	84.9	74.8	82.7	73.8	130.8	81.8	72.2	123.6	79.8	20.3	18.5	17.3	6670	576

Meaning of acronyms:
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F* *DP: Dew point temperature, °F* *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCWB: Mean coincident wet bulb temperature, °F *MCDB: Mean coincident dry bulb temperature, °F* *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
KALAMAZOO BATTLE CR	42.23N	85.55W	896	3.0	9.0	90.1	73.4	87.8	72.3	83.9	70.8	76.2	85.1	74.6	83.0	73.0	126.7	81.4	72.2	123.0	80.2	21.7	19.0	17.3	6198	707
LANSING CAPITAL CITY ARPT	42.78N	84.58W	873	-2.5	3.1	89.4	73.6	86.5	72.1	83.7	70.3	76.4	85.4	74.6	82.9	73.5	128.7	81.4	71.8	121.5	79.5	24.7	20.8	18.8	6889	570
MUSKEGON COUNTY ARPT	43.17N	86.24W	633	4.0	8.5	86.2	72.6	83.8	71.1	81.6	69.7	75.6	82.6	74.1	80.5	73.3	126.8	80.1	71.7	120.1	78.3	25.6	23.2	20.1	6704	517
OAKLAND CO INTL	42.67N	83.42W	1004	1.1	5.5	89.6	73.6	86.2	71.6	83.5	70.1	75.6	85.3	73.7	82.5	72.5	125.1	81.1	71.2	119.6	79.2	24.5	20.9	18.9	6634	627
SAGINAW TRI CITY INTL AP	43.53N	84.08W	669	0.0	3.6	89.9	73.6	86.5	71.8	83.7	70.4	76.4	85.8	74.5	83.1	73.4	127.3	81.7	71.8	120.4	79.7	24.2	20.7	18.9	6968	565
SELFRIDGE ANGB	42.62N	82.83W	581	2.7	7.0	90.3	74.2	87.4	72.7	84.2	71.0	76.9	86.3	74.9	83.3	73.7	128.2	82.2	72.3	122.1	80.2	21.0	18.8	16.9	6433	672
ST.CLAIR COUNTY INT	42.92N	82.53W	650	0.6	5.4	90.3	74.1	86.3	71.6	83.7	70.5	76.4	85.6	74.4	82.5	73.2	126.4	80.4	72.2	122.0	79.2	18.7	16.6	14.7	6638	498
Minnesota																									*11 sites, 51 more on CD-ROM*	
DULUTH HARBOR (CGS)	46.77N	92.08W	610	-12.1	-7.6	86.1	72.5	82.2	70.3	79.3	68.2	76.6	83.4	73.9	80.3	74.6	132.6	80.1	72.3	122.1	77.6	27.7	24.5	21.0	8554	318
DULUTH INTERNATIONAL ARPT	46.84N	92.19W	1417	-19.5	-13.7	84.5	69.9	81.2	67.5	78.3	65.6	72.7	81.4	70.3	78.4	69.6	114.8	78.3	67.4	106.0	75.6	24.8	21.0	19.2	9425	209
FLYING CLOUD	44.82N	93.45W	928	-8.6	-4.0	90.8	74.5	88.3	73.6	84.4	71.4	77.9	87.3	75.8	84.5	74.9	135.4	84.0	72.8	125.8	81.6	22.2	19.3	17.5	7207	794
MANKATO(AWOS)	44.22N	93.92W	1020	-13.2	-8.1	89.8	73.4	86.2	71.5	82.4	69.4	76.7	84.8	74.4	82.9	73.5	129.5	81.7	71.9	122.3	80.5	26.7	23.9	20.7	7689	598
MINNEAPOLIS/BLAINE	45.15N	93.22W	912	-8.7	-4.1	90.3	74.9	87.8	73.7	83.9	71.7	78.2	86.3	75.9	83.7	75.3	137.0	83.2	73.1	127.2	80.7	23.0	19.6	17.7	7464	632
MINNEAPOLIS/CRYSTAL	45.07N	93.35W	869	-8.6	-3.7	90.6	73.9	88.1	72.7	84.2	70.7	77.1	87.1	74.9	83.9	73.3	127.8	83.0	72.2	123.0	81.6	21.5	19.0	17.2	7430	689
MINNEAPOLIS-ST PAUL INT'L ARP	44.88N	93.23W	837	-13.4	-7.6	91.0	73.5	87.9	72.3	85.0	70.5	76.9	87.5	74.9	84.3	73.5	128.8	83.5	71.7	121.0	81.4	24.8	21.9	19.6	7565	751
ROCHESTER INTERNATIONAL ARPT	43.90N	92.49W	1319	-15.2	-9.2	88.2	73.6	85.1	72.0	82.3	70.3	76.8	84.6	74.6	81.9	74.3	134.6	81.8	72.2	125.1	79.6	28.9	26.3	24.0	7975	512
SOUTH ST PAUL MUNI	44.85N	93.15W	820	-9.3	-5.7	90.7	73.5	88.1	72.5	84.3	70.4	77.4	85.9	75.2	83.2	74.9	134.7	82.7	72.6	124.6	80.0	18.3	16.2	13.9	7416	725
ST CLOUD REGIONAL ARPT	45.55N	94.05W	1024	-19.3	-12.9	90.0	72.9	86.5	71.2	83.5	69.1	76.5	86.4	74.5	84.0	73.4	128.9	82.4	71.2	119.5	80.4	22.7	19.3	17.5	8520	473
ST PAUL DOWNTOWN AP	44.93N	93.05W	712	-12.0	-7.6	90.4	74.7	87.5	73.2	83.7	71.1	77.3	86.6	75.1	83.8	74.4	132.1	83.1	72.3	123.0	80.9	22.9	20.0	18.3	7529	669
Mississippi																									*6 sites, 5 more on CD-ROM*	
HATTIESBURG LAUREL	31.47N	89.33W	305	25.3	28.0	95.8	75.8	93.1	75.0	91.2	74.8	78.4	90.0	77.7	88.9	75.2	133.8	83.0	74.6	130.8	82.5	15.4	12.8	11.3	2043	2292
JACKSON INTERNATIONAL AP	32.32N	90.08W	331	22.0	25.8	95.6	76.7	93.6	76.3	91.9	76.2	79.8	90.2	78.8	88.8	77.2	143.2	83.4	76.3	138.9	82.7	18.9	16.9	15.1	2311	2265
KEESLER AFB/BILOXI	30.42N	88.92W	26	30.3	34.9	93.5	80.2	91.5	79.4	90.3	79.0	83.5	90.3	82.2	88.4	81.6	164.7	87.3	80.9	160.4	86.4	17.6	15.4	13.4	1425	2757
MERIDIAN KEY FIELD	32.33N	88.75W	312	21.9	25.8	95.7	76.2	93.5	76.1	91.8	75.9	79.6	89.6	78.6	88.5	77.1	142.5	83.6	76.0	137.6	82.7	18.4	16.5	14.8	2320	2149
MERIDIAN NAAS	32.55N	88.57W	318	20.8	25.5	97.2	77.1	95.0	76.6	92.9	76.1	80.3	91.5	79.1	90.4	77.3	143.7	86.0	75.9	137.0	84.5	15.4	12.7	11.1	2357	2229
TUPELO C D LEMONS ARPT	34.26N	88.77W	361	18.3	22.7	95.9	76.0	93.5	75.6	91.5	75.5	79.1	89.6	78.2	88.6	76.3	139.3	83.6	75.4	134.7	82.7	18.9	16.9	15.4	2929	1969
Missouri																									*9 sites, 7 more on CD-ROM*	
CAPE GIRARDEAU MUNICIPAL AP	37.23N	89.57W	351	7.4	13.8	94.8	77.4	92.5	76.9	90.4	76.2	80.3	90.5	78.9	89.0	77.4	144.4	86.3	76.0	137.6	84.6	21.2	19.1	17.6	4211	1541
COLUMBIA REGIONAL AIRPORT	38.82N	92.22W	899	1.3	7.1	94.7	76.1	91.6	75.9	89.0	74.9	79.1	89.4	77.7	88.1	76.2	141.7	85.3	74.8	134.6	83.7	24.2	20.6	18.6	4990	1234
JEFFERSON CITY MEM	38.58N	92.15W	548	7.4	12.2	95.2	76.4	91.4	75.4	90.2	75.0	79.4	89.1	77.9	88.4	76.8	142.7	84.7	74.9	133.5	82.8	20.9	18.5	16.4	4514	1380
JOPLIN MUNICIPAL AP	37.15N	94.50W	984	5.8	12.3	96.6	75.6	93.9	75.6	91.3	74.9	78.5	90.4	77.6	89.5	75.3	137.6	85.2	74.1	132.1	84.2	24.6	21.0	19.0	4080	1648
KANSAS CITY DOWNTOWN AP	39.12N	94.59W	751	2.6	8.6	97.2	76.0	94.0	75.8	91.3	75.2	79.7	91.4	78.3	89.6	76.5	141.9	86.7	75.0	134.8	85.4	22.6	19.7	18.4	4593	1657
KANSAS CITY INT'L ARPT	39.30N	94.72W	1024	-0.1	5.4	96.2	76.3	92.7	75.8	89.9	75.0	79.5	90.3	78.0	88.9	76.5	143.4	86.3	74.8	135.6	84.7	25.8	23.2	20.1	5104	1356
SPRINGFIELD REGIONAL ARPT	37.24N	93.39W	1270	4.3	10.9	95.0	74.5	92.1	74.4	89.5	74.1	77.6	88.9	76.7	87.7	74.4	134.9	83.5	73.3	129.8	82.3	22.8	19.9	18.2	4459	1366
ST LOUIS LAMBERT INT'L ARPT	38.75N	90.37W	709	4.1	10.2	95.6	76.8	93.1	76.1	90.7	75.0	79.4	90.8	78.2	89.2	76.3	140.9	85.5	75.0	135.0	84.6	24.1	20.3	18.3	4504	1631
ST LOUIS SPIRIT OF ST LOUIS A	38.66N	90.66W	463	5.1	10.8	95.2	77.2	92.7	76.3	90.3	75.3	79.9	90.8	78.4	89.0	76.9	142.4	86.2	75.2	134.5	84.3	20.7	18.6	16.8	4668	1377
Montana																									*7 sites, 11 more on CD-ROM*	
BILLINGS LOGAN INT'L ARPT	45.81N	108.54W	3570	-11.6	-5.5	94.9	63.0	91.4	62.1	88.0	61.4	66.4	85.4	64.7	83.9	60.3	89.3	72.1	58.2	82.7	70.9	26.8	24.2	20.8	6779	636
BOZEMAN GALLATIN FIELD	45.79N	111.15W	4449	-18.1	-9.7	91.3	61.4	88.0	60.4	84.4	59.4	64.4	82.6	62.6	81.2	58.7	87.1	69.7	56.3	79.7	68.1	20.7	18.0	15.1	8372	212
BUTTE BERT MOONEY ARPT	45.95N	112.51W	5535	-20.4	-11.6	87.8	57.9	84.4	56.8	81.5	56.1	60.7	79.0	59.2	77.5	55.1	79.4	63.2	52.8	73.0	62.4	23.0	19.5	17.7	9209	76
GREAT FALLS	47.45N	111.38W	3707	-12.5	-6.4	90.5	60.6	86.9	59.6	83.6	58.9	63.6	83.0	61.9	80.7	57.4	80.7	66.2	55.4	75.1	67.2	N/A	N/A	N/A	7699	311
GREAT FALLS INTL ARPT	47.47N	111.38W	3658	-17.7	-11.2	92.1	61.3	88.6	60.3	85.1	59.6	64.3	84.6	62.5	82.2	57.9	82.2	67.5	55.9	76.3	67.1	31.3	27.5	24.8	7560	328
MALMSTROM AFB	47.52N	111.18W	3465	-16.9	-10.3	92.9	62.3	89.7	61.6	86.0	60.7	65.4	85.7	63.6	83.7	58.5	83.3	70.7	56.4	77.0	68.9	29.0	26.1	22.9	7013	423
MISSOULA INTERNATIONAL AP	46.92N	114.09W	3189	-6.0	1.8	92.5	62.3	89.3	61.7	85.7	60.7	65.4	84.9	63.7	82.9	59.4	85.1	69.3	57.1	78.4	68.4	21.6	18.9	16.8	7484	294
Nebraska																									*5 sites, 16 more on CD-ROM*	
GRAND ISLAND CENTRAL NE REGIO	40.96N	98.31W	1857	-6.1	-0.1	96.2	73.8	93.0	73.0	89.8	71.9	77.3	89.2	75.6	87.9	73.8	135.2	83.7	72.1	127.2	81.9	28.3	25.2	22.6	6164	1046
LINCOLN MUNICIPAL ARPT	40.83N	96.76W	1188	-5.4	0.3	97.2	75.1	93.7	74.3	90.7	73.5	78.2	90.8	76.9	89.1	74.8	136.1	85.1	73.3	129.2	83.6	26.9	24.2	20.8	5993	1184
OFFUTT AFB/BELLEVUE	41.12N	95.92W	1047	-3.2	1.5	95.0	76.8	91.3	75.5	88.8	74.2	79.5	89.8	77.8	87.8	76.8	145.2	85.3	75.0	136.4	83.7	24.4	20.4	18.0	5832	1178
OMAHA EPPLEY AIRFIELD	41.31N	95.90W	981	-6.3	-0.7	95.0	76.1	91.8	75.0	88.9	73.6	79.0	89.7	77.3	87.8	76.0	141.0	85.5	74.2	132.6	83.7	25.9	23.2	20.0	6127	1109
OMAHA WSFO	41.37N	96.02W	1309	-7.8	-1.6	93.4	74.9	90.6	74.4	87.7	72.8	77.4	88.7	76.0	86.9	74.1	133.8	84.0	72.6	126.7	82.8	23.5	19.6	18.0	6193	1055
Nevada																									*3 sites, 9 more on CD-ROM*	
LAS VEGAS MCCARRAN INTL AP	36.08N	115.16W	2182	30.5	33.3	108.3	68.1	106.1	67.5	103.7	66.5	72.6	96.3	71.2	94.7	66.4	105.3	79.9	63.9	96.5	82.6	26.9	24.0	20.4	2105	3348
NELLIS AFB	36.23N	115.03W	1880	28.2	31.5	109.2	67.6	107.3	67.1	104.7	66.2	72.5	95.0	71.2	95.0	66.3	104.1	80.2	63.6	94.5	83.6	26.2	22.9	19.4	2128	3343
RENO TAHOE INTERNATIONAL AP	39.48N	119.77W	4400	11.9	17.0	95.7	61.9	93.1	60.7	90.6	59.6	64.0	89.2	62.4	87.6	55.7	77.7	70.4	52.5	69.0	70.2	25.9	21.7	18.9	5201	695
New Hampshire																									*4 sites, 6 more on CD-ROM*	
CONCORD MUNICIPAL ARPT	43.20N	71.50W	348	-4.8	0.4	89.8	71.3	86.9	69.9	84.0	68.7	74.7	84.7	72.9	82.0	71.7	118.7	78.5	70.1	112.2	77.0	20.9	18.6	16.6	7180	461
JAFFREY MUNICIPAL	42.80N	72.00W	1040	-3.8	1.1	86.4	70.0	83.6	69.2	81.2	67.4	73.2	81.3	71.9	79.2	71.8	122.0	77.0	70.1	115.1	75.3	16.5	14.1	12.3	7307	362

Meaning of acronyms:
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F* *DP: Dew point temperature, °F* *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCWB: Mean coincident wet bulb temperature, °F *MCDB: Mean coincident dry bulb temperature, °F* *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
MANCHESTER AIRPORT	42.93N	71.44W	233	1.0	6.7	91.2	72.1	88.6	70.8	85.8	69.7	75.8	86.4	74.1	83.4	72.5	121.4	80.6	71.5	117.3	79.1	19.0	17.7	15.5	6212	739
PEASE INTL TRADEPOR	43.08N	70.82W	102	2.6	7.7	89.3	72.7	85.9	71.1	82.4	69.5	75.5	84.5	73.5	82.0	72.5	120.8	80.4	71.0	114.7	78.3	22.6	19.4	17.2	6442	534
New Jersey																									*7 sites, 1 more on CD-ROM*	
ATLANTIC CITY INTL AP	39.46N	74.46W	66	9.9	14.9	92.3	75.0	89.4	74.0	86.4	72.8	77.9	87.5	76.6	85.0	75.2	132.4	81.8	74.1	127.8	80.6	24.8	21.1	18.8	4950	995
BELMAR-FARMINGDALE	40.18N	74.13W	85	10.7	15.7	90.7	73.6	88.1	72.5	84.3	71.0	76.4	86.5	74.8	83.8	73.1	123.3	80.9	72.2	119.4	80.1	25.4	22.1	19.4	5118	867
MCGUIRE AFB	40.02N	74.60W	148	10.3	15.1	92.9	75.7	90.3	74.7	87.8	73.4	78.8	87.8	77.2	86.3	76.5	139.1	83.3	74.6	130.1	81.8	23.3	19.8	17.6	4897	1074
MILLVILLE MUNICIPAL AF	39.37N	75.08W	75	10.3	15.3	91.9	74.9	89.5	74.1	86.9	73.0	78.0	87.1	76.7	85.0	75.4	133.3	81.4	74.3	128.7	80.4	19.8	18.2	16.6	4860	1052
NEWARK INTERNATIONAL ARPT	40.72N	74.17W	30	11.0	15.5	94.0	74.9	91.0	73.5	88.2	72.2	77.7	88.8	76.3	85.9	74.7	130.1	82.0	73.5	124.7	80.8	25.0	21.9	19.4	4710	1242
TETERBORO AIRPORT	40.85N	74.06W	7	9.9	14.5	92.4	75.1	89.7	74.0	86.8	72.4	78.0	88.0	76.3	85.5	75.1	131.8	82.8	73.4	124.2	80.5	20.6	18.7	17.3	5055	1002
TRENTON MERCER COUNTY AP	40.28N	74.81W	213	9.8	14.1	92.6	74.4	89.9	73.7	87.2	72.6	77.5	88.9	76.0	85.7	73.7	126.6	81.9	72.9	123.0	81.1	23.5	20.0	18.4	5144	987
New Mexico																									*8 sites, 6 more on CD-ROM*	
ALAMOGORDO WHITE SA	32.83N	105.98W	4308	21.1	25.1	100.0	64.0	98.8	64.1	96.6	64.5	71.4	87.3	70.0	85.6	66.4	114.2	76.2	65.7	111.6	76.2	21.5	18.4	16.1	2833	1960
ALBUQUERQUE INTL ARPT	35.04N	106.62W	5315	17.7	21.2	95.2	60.3	92.9	60.1	90.6	60.0	65.3	82.5	64.5	81.3	61.5	99.6	67.7	60.3	95.3	68.4	28.2	24.8	20.7	4069	1348
CANNON AFB/CLOVIS	34.38N	103.32W	4295	11.8	17.4	97.4	63.6	94.9	63.8	92.2	64.2	70.4	83.2	69.2	82.6	67.7	119.5	73.0	65.8	111.7	73.0	27.9	24.6	21.1	3839	1372
CLOVIS MUNI (AWOS)	34.43N	103.08W	4213	13.8	18.0	97.1	63.9	93.4	63.5	91.2	63.6	69.4	84.1	68.3	83.6	65.5	110.4	74.0	63.9	104.3	72.5	31.7	27.2	24.3	4091	1190
FARMINGTON FOUR CORNERS REGL	36.74N	108.23W	5502	7.5	12.3	94.9	60.2	92.3	59.7	90.0	59.5	65.3	82.4	64.2	81.4	61.2	99.4	68.1	59.3	92.8	68.5	24.7	21.4	18.5	5369	892
HOLLOMAN AFB	32.85N	106.10W	4094	19.0	22.5	99.1	63.2	96.6	63.0	93.9	63.0	68.7	86.4	67.8	85.3	64.3	105.3	71.7	63.1	100.7	71.8	22.9	19.0	16.4	3257	1681
ROSWELL INDUSTRIAL AIR PARK	33.31N	104.54W	3668	16.3	20.8	99.8	65.3	97.4	65.2	95.2	64.9	70.6	87.0	69.5	86.4	66.8	113.0	74.1	65.5	107.9	73.7	25.0	20.5	18.1	3169	1869
WHITE SANDS	32.38N	106.48W	4081	18.4	22.5	99.0	63.7	96.5	63.9	94.2	63.8	69.8	87.4	68.9	86.1	65.9	111.3	72.1	64.6	106.4	72.3	18.7	16.2	13.3	2946	1811
New York																									*19 sites, 8 more on CD-ROM*	
ALBANY COUNTY AP	42.75N	73.80W	292	-1.9	2.9	89.0	73.0	86.1	71.4	83.4	70.2	75.8	84.8	74.2	82.2	73.0	123.8	80.5	71.5	117.7	78.6	23.9	20.4	18.5	6608	592
AMBROSE LIGHT	40.45N	73.80W	69	13.6	17.7	83.8	N/A	80.8	N/A	78.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	42.5	36.9	33.3	4941	688
BINGHAMTON EDWIN A LINK FIELD	42.21N	75.98W	1637	-1.0	3.6	85.5	70.0	82.5	68.4	80.0	67.1	72.7	80.9	71.1	78.6	70.1	117.8	76.6	68.6	111.7	74.9	21.5	19.2	17.7	7105	400
BUFFALO NIAGARA INTL AF	42.94N	78.74W	705	2.7	6.7	86.5	71.2	84.0	70.0	81.6	68.8	74.8	82.1	73.2	80.1	72.4	123.0	79.1	70.7	115.9	77.6	28.1	24.9	21.5	6538	558
ELMIRA CORNING REGIONAL AP	42.16N	76.89W	955	-1.8	3.3	89.9	72.4	86.5	70.3	83.7	69.2	75.2	84.9	73.3	82.3	72.2	123.7	80.3	70.4	116.1	77.9	20.5	18.5	16.7	6777	476
GRIFFISS AFB	43.23N	75.40W	518	-6.0	-0.2	88.7	72.0	85.6	70.0	82.8	68.9	74.8	84.4	72.9	81.6	71.7	119.5	80.3	69.9	112.3	78.0	22.1	18.8	16.4	7081	460
ISLIP LONG ISL MACARTHUR AP	40.79N	73.10W	108	10.6	15.1	88.4	73.4	85.6	72.1	82.7	70.9	76.7	83.6	75.3	81.2	74.6	130.0	79.7	73.3	124.5	78.2	23.7	20.2	18.5	5306	795
JAMESTOWN (AWOS)	42.15N	79.27W	1722	1.0	5.1	82.4	69.7	81.0	68.7	78.6	66.9	72.4	80.0	70.5	77.6	70.1	118.1	77.7	68.0	109.8	75.2	21.5	18.9	17.3	7177	289
NEW YORK J F KENNEDY INT'L AR	40.66N	73.80W	23	12.8	17.2	89.7	73.5	86.5	72.2	83.7	71.4	77.0	84.3	75.8	81.9	74.9	130.8	80.5	73.7	125.7	79.0	27.3	24.6	21.4	4828	978
NEW YORK LAGUARDIA ARPT	40.78N	73.88W	30	12.6	17.3	92.2	74.4	89.3	73.0	86.6	71.9	77.2	87.2	75.9	84.6	74.3	128.5	81.0	73.2	123.3	80.1	27.3	24.7	21.7	4603	1210
NEWBURGH/STEWART	41.50N	74.10W	581	3.5	9.0	89.8	72.5	86.3	71.7	83.8	70.2	76.0	84.6	74.3	82.6	73.2	126.2	80.7	71.9	120.7	79.1	24.4	20.6	18.7	5935	685
NIAGARA FALLS AF	43.11N	78.95W	587	2.5	6.7	87.9	72.8	85.1	71.2	82.5	69.7	75.5	83.9	73.9	81.5	72.9	124.7	80.3	71.6	119.1	78.4	26.2	23.3	20.1	6589	589
PLATTSBURGH AFB	44.65N	73.47W	236	-9.6	-5.1	86.5	71.3	83.2	69.5	80.3	68.2	74.1	82.3	72.2	80.0	71.4	117.0	79.0	69.5	109.5	76.6	20.6	18.4	16.3	7823	360
POUGHKEEPSIE DUTCHESS CO AP	41.63N	73.88W	161	0.5	6.0	91.4	74.0	88.5	72.7	85.5	71.3	76.8	87.4	75.1	84.6	73.3	124.6	82.2	72.1	119.6	80.7	18.4	16.8	14.3	6212	678
REPUBLIC	40.72N	73.40W	85	11.9	17.6	90.2	74.1	87.5	73.3	83.7	71.4	77.0	85.0	75.6	82.4	74.8	130.8	80.2	73.2	123.8	78.3	24.9	23.0	19.5	5036	915
ROCHESTER GREATER ROCHESTER I	43.12N	77.68W	554	2.1	6.0	88.4	73.1	85.4	71.2	82.7	69.7	75.5	84.5	73.6	81.7	72.5	123.0	80.7	70.9	116.2	78.3	25.2	21.5	19.0	6579	549
SYRACUSE HANCOCK INT'L ARPT	43.11N	76.10W	417	-2.7	2.9	88.9	73.0	86.0	71.2	83.3	69.9	75.4	84.8	73.7	82.2	72.4	121.9	80.5	70.8	115.1	78.5	24.2	20.4	18.4	6635	566
UTICA ONEIDA COUNTY AP	43.15N	75.38W	745	-5.0	0.8	87.5	72.3	84.5	70.5	82.0	69.0	74.9	83.2	73.1	81.0	72.3	123.1	79.0	70.5	115.3	77.4	20.7	18.7	17.3	7051	478
WHITE PLAINS WESTCHESTER CO A	41.07N	73.71W	397	7.7	12.1	90.0	74.2	86.6	72.4	83.8	70.9	76.6	85.4	75.0	82.7	73.5	126.5	79.8	72.7	122.9	78.8	20.4	18.0	15.8	5563	755
North Carolina																									*15 sites, 8 more on CD-ROM*	
ASHEVILLE REGIONAL ARPT	35.43N	82.54W	2169	13.6	18.6	88.1	71.6	85.8	70.9	83.6	70.2	74.2	83.3	73.1	81.7	71.6	126.5	77.6	70.4	121.5	76.4	23.2	19.6	17.7	4148	829
CHARLOTTE DOUGLAS INTL ARPT	35.21N	80.94W	768	20.5	24.6	94.1	74.6	91.7	74.2	89.5	73.4	77.1	88.4	76.1	86.7	74.0	130.7	80.8	73.1	126.7	79.9	18.7	16.6	14.6	3081	1669
FAYETTEVILLE RGNL G	34.98N	78.88W	194	21.4	25.6	95.5	76.6	93.1	75.6	90.9	75.1	79.3	90.0	78.3	88.3	76.8	140.5	82.7	75.5	134.3	81.6	19.8	17.5	15.3	2769	1918
FORT BRAGG/SIMMONS	35.13N	78.93W	305	21.7	26.0	96.6	76.3	94.0	75.7	91.3	75.0	79.2	90.4	78.1	88.8	76.4	139.2	83.5	75.2	133.8	82.7	17.8	14.9	12.7	2760	2007
GREENSBORO PIEDMONT TRIAD INT	36.10N	79.94W	886	17.1	21.7	92.2	74.7	89.9	73.9	87.8	73.1	76.9	87.6	75.7	85.7	73.7	129.9	81.1	72.8	125.9	80.0	19.3	17.2	15.4	3667	1367
HICKORY REGIONAL AP	35.74N	81.39W	1188	18.9	23.3	92.5	72.9	90.1	72.9	87.9	72.2	76.2	86.1	75.2	84.7	73.4	129.7	79.6	72.4	125.2	78.6	17.6	14.9	13.1	3497	1354
JACKSONVILLE (AWOS)	34.83N	77.62W	95	20.0	24.7	93.5	76.6	91.3	75.7	90.0	75.1	79.0	90.6	77.8	88.2	75.4	133.5	84.2	74.8	130.7	83.4	20.0	17.6	15.6	2994	1677
NEW RIVER MCAF	34.70N	77.43W	26	22.9	26.8	93.2	78.1	91.1	77.5	89.2	76.7	80.5	89.3	79.4	87.9	78.5	148.3	85.3	77.0	140.7	84.0	19.8	17.5	15.6	2500	1950
PITT GREENVILLE ARP	35.63N	77.40W	26	20.9	24.9	95.2	76.9	93.1	75.5	91.1	74.9	79.2	92.6	77.7	89.6	75.2	132.4	85.0	73.7	125.8	82.9	18.8	16.5	14.2	2873	1938
POPE AFB	35.17N	79.02W	217	21.2	25.2	97.0	76.4	94.3	75.7	91.6	75.1	79.5	89.4	78.3	88.2	77.2	142.6	82.8	75.5	134.5	81.9	18.4	16.0	13.5	2813	2016
RALEIGH DURHAM INTERNATIONAL	35.87N	78.79W	436	18.8	23.1	94.1	75.9	91.7	75.6	89.4	74.5	78.3	89.3	77.3	87.7	75.3	134.8	82.5	74.3	130.3	81.4	18.9	16.8	15.1	3322	1579
RICHMOND INTERNATIONAL AP	37.51N	77.32W	164	16.8	20.8	94.8	76.0	92.3	75.4	89.8	74.4	78.6	89.4	77.6	87.9	75.9	136.3	83.2	74.8	131.0	81.8	20.7	18.5	16.7	3760	1489
SEYMOUR-JOHNSON AFB	35.33N	77.97W	108	21.7	26.2	96.5	76.9	93.5	76.1	91.1	75.6	79.8	90.1	78.6	88.4	77.2	142.1	83.5	76.0	136.5	82.4	18.3	16.0	13.8	2717	1956
WILMINGTON INTERNATIONAL ARPT	34.27N	77.91W	39	24.0	27.6	93.3	78.4	91.0	77.5	89.0	76.7	80.3	89.0	79.3	87.5	78.2	146.5	84.5	77.1	141.4	83.2	20.7	18.5	16.8	2388	1987
WINSTON-SALEM REYNOLDS AP	36.13N	80.22W	971	18.2	22.8	92.4	74.5	90.3	73.9	88.1	73.1	76.9	86.8	75.7	85.3	73.9	130.9	81.1	72.8	125.9	80.2	18.7	16.9	14.4	3455	1429

Meaning of acronyms:
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F* *DP: Dew point temperature, °F* *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCWB: Mean coincident wet bulb temperature, °F *MCDB: Mean coincident dry bulb temperature, °F* *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%			1%	2.5%	5%		
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB						HDD / CDD 65	
North Dakota																									*6 sites, 6 more on CD-ROM*	
BISMARCK MUNICIPAL ARPT	46.77N	100.75W	1660	-20.0	-13.9	93.9	69.4	90.3	68.6	86.8	67.4	74.3	85.8	71.9	84.5	70.7	120.4	81.4	68.0	109.3	78.3	27.3	24.4	20.8	8471	539
FARGO HECTOR INTERNATIONAL AP	46.93N	96.81W	899	-20.4	-15.2	91.0	72.1	87.7	70.3	84.7	68.8	75.4	85.4	73.4	83.6	72.4	123.9	81.8	70.0	113.9	80.1	28.3	25.4	23.1	8793	553
GRAND FORKS AFB	47.97N	97.40W	906	-20.4	-15.8	90.8	71.3	87.7	70.1	84.2	68.3	76.2	84.4	73.6	82.5	73.4	128.4	80.0	71.4	119.9	78.8	28.3	25.3	22.2	9167	477
GRAND FORKS INTERNATIONAL AF	47.95N	97.18W	833	-22.2	-17.2	90.0	71.0	86.6	69.4	83.7	68.0	75.0	84.7	72.7	82.5	71.8	121.0	81.2	69.4	111.3	78.9	26.9	24.2	20.9	9310	434
MINOT AFB	48.42N	101.35W	1631	-22.2	-17.3	93.2	68.6	89.3	67.8	85.6	66.5	73.1	86.3	70.8	83.5	69.4	114.9	79.9	66.4	103.2	77.1	28.9	25.9	22.6	9097	433
MINOT FAA AP	48.26N	101.28W	1713	-19.9	-15.0	91.4	68.9	88.0	68.1	84.3	66.2	73.6	84.4	71.2	82.1	70.3	118.8	79.8	67.7	108.6	77.5	27.5	24.7	21.4	8763	450
Ohio																									*13 sites, 2 more on CD-ROM*	
AKRON AKRON-CANTON REG AP	40.92N	81.44W	1237	1.8	7.1	88.7	72.9	85.9	71.7	83.3	70.2	75.4	84.6	73.9	82.3	72.7	126.9	80.3	71.3	120.8	78.3	23.4	19.8	18.1	6044	676
CINCINNATI MUNICIPAL AP LUNKI	39.10N	84.42W	499	6.3	12.4	92.8	74.9	90.2	74.4	87.9	73.2	77.9	88.0	76.7	86.2	75.1	134.1	82.5	73.8	128.2	81.1	20.2	18.3	16.6	4754	1151
CLEVELAND HOPKINS INTL AP	41.41N	81.85W	804	2.5	8.5	89.4	73.9	86.7	72.5	84.1	71.1	76.3	85.6	74.7	83.1	73.3	127.4	81.4	71.9	121.6	79.6	24.7	21.0	19.0	5904	743
COLUMBUS PORT COLUMBUS INTL A	39.99N	82.88W	817	3.2	9.1	91.1	73.8	88.7	72.8	86.3	71.6	76.7	86.8	75.2	84.5	73.6	129.0	81.2	72.3	123.4	80.2	21.9	18.9	16.9	5322	971
DAYTON INTERNATIONAL AIRPORT	39.91N	84.22W	1004	0.6	6.9	90.3	73.6	87.9	72.8	85.4	71.3	76.5	86.2	75.1	84.0	73.4	128.8	81.8	72.2	123.6	80.4	24.4	20.7	18.7	5549	924
FINDLAY AIRPORT	41.01N	83.67W	814	-0.4	5.6	90.4	73.5	87.8	72.6	84.8	70.8	76.8	86.2	75.0	83.3	73.7	129.5	82.1	72.3	123.1	80.1	24.4	20.7	18.8	5994	777
LANCASTER\FAIRFIEL	39.75N	82.65W	866	3.1	9.9	90.5	74.0	88.3	73.5	85.6	71.9	76.8	86.6	75.4	84.0	73.3	127.8	80.9	72.5	124.6	80.1	20.2	17.9	16.1	5474	776
MANSFIELD LAHM MUNICIPAL ARPT	40.82N	82.52W	1312	0.1	5.7	88.0	73.0	85.5	71.7	83.1	70.4	75.8	84.6	74.3	82.5	73.1	129.0	80.8	71.7	122.8	79.3	24.6	21.1	19.1	6150	659
OHIO STATE UNIVERSI	40.07N	83.07W	928	6.9	11.7	90.4	73.7	88.2	73.1	85.3	71.9	76.4	86.1	75.1	83.8	73.0	126.9	81.1	72.3	123.9	80.1	21.6	19.0	17.2	5343	899
RICKENBACKER ANGB	39.82N	82.93W	755	4.3	10.3	92.5	75.7	90.1	74.9	87.7	73.9	79.8	86.7	77.7	86.1	78.5	152.4	84.2	75.1	135.6	81.3	22.1	18.9	16.8	5172	1028
TOLEDO EXPRESS AIRPORT	41.59N	83.80W	692	-0.3	5.3	91.2	74.2	88.4	72.7	85.7	71.4	77.2	86.9	75.4	84.2	74.2	131.0	82.9	72.7	124.2	80.7	24.3	20.6	18.6	6156	773
WRIGHT-PATERSON AFB	39.83N	84.05W	820	1.4	8.5	91.3	74.5	89.2	73.6	86.4	72.2	77.5	87.1	75.9	85.0	74.8	134.3	82.5	73.0	126.4	80.8	21.5	18.8	16.8	5381	974
YOUNGSTOWN REGIONAL AIRPORT	41.25N	80.67W	1188	1.8	7.1	88.5	72.7	85.8	71.1	83.4	69.7	75.1	84.7	73.5	82.1	72.1	124.3	79.6	70.7	118.1	77.7	21.9	19.0	17.4	6218	577
Oklahoma																									*9 sites, 6 more on CD-ROM*	
FORT SILL	34.65N	98.40W	1211	12.6	18.9	100.5	72.8	98.2	73.0	95.5	73.2	77.4	90.6	76.4	89.6	74.1	133.1	82.6	72.8	127.3	81.7	24.8	21.2	19.2	3268	2111
LAWTON MUNICIPAL	34.57N	98.42W	1109	17.9	20.8	102.4	73.4	100.2	73.7	98.9	73.8	78.1	92.9	77.2	91.6	73.4	129.4	83.9	72.9	127.2	83.3	26.0	23.1	20.1	3163	2248
OKLAHOMA CITY WILL ROGERS WOR	35.39N	97.60W	1306	11.4	17.4	99.5	74.1	96.8	74.1	94.0	73.8	77.7	90.8	76.7	89.9	74.1	133.6	83.7	73.0	128.7	82.4	27.2	24.7	22.2	3516	1926
OKLAHOMA CITY/WILEY	35.53N	97.65W	1299	12.1	17.9	99.5	73.8	97.2	73.9	94.2	73.7	77.4	91.1	76.4	89.9	73.4	130.2	83.4	72.6	126.7	82.5	26.4	24.1	21.3	3493	2045
STILLWATER RGNL	36.15N	97.08W	1010	13.6	18.2	101.8	75.0	99.2	75.3	96.6	75.2	79.0	93.4	77.9	92.2	75.1	136.8	85.7	73.4	128.8	83.8	24.6	21.5	19.5	3571	1982
TINKER AFB	35.42N	97.38W	1260	12.1	17.9	99.3	73.6	96.7	74.0	93.6	73.9	78.2	90.8	77.1	89.8	74.8	136.8	84.8	73.3	129.8	82.9	25.5	22.7	20.0	3407	1971
TULSA INTERNATIONAL AIRPORT	36.20N	95.89W	676	10.9	16.8	99.4	75.8	96.8	76.0	94.2	75.6	79.2	92.3	78.1	91.2	75.5	136.9	85.4	74.4	131.9	84.5	24.5	21.0	19.2	3494	2060
TULSA/LLOYD JONES	36.03N	95.98W	633	15.8	18.8	100.1	76.5	98.8	76.8	95.4	76.7	79.6	94.3	78.5	92.7	75.4	136.1	85.5	74.8	133.5	85.1	19.8	17.8	16.1	3481	2004
VANCE AFB	36.33N	97.92W	1339	6.5	13.1	100.6	73.5	98.6	73.5	95.5	73.7	77.4	91.8	76.4	90.9	73.4	130.7	83.2	72.4	126.2	82.6	26.7	23.9	20.7	3996	1903
Oregon																									*9 sites, 12 more on CD-ROM*	
AURORA STATE	45.25N	122.77W	197	27.5	29.7	91.2	67.2	88.2	67.1	83.9	65.8	70.2	85.6	68.4	83.8	64.0	90.0	76.5	63.1	87.2	74.1	18.2	15.9	12.9	4333	385
CORVALLIS MUNI	44.48N	123.28W	253	25.0	27.7	92.9	66.7	89.8	65.7	85.7	64.1	68.4	89.5	66.8	86.9	60.6	79.9	77.8	57.4	71.0	74.6	19.7	17.7	15.9	4204	412
EUGENE MAHLON SWEET ARPT	44.13N	123.21W	374	22.4	26.3	91.4	66.6	87.6	65.5	83.9	64.4	68.7	87.2	67.0	84.5	62.0	84.3	74.5	60.2	79.0	72.1	19.6	17.5	15.9	4676	259
MC MINNVILLE MUNI	45.18N	123.13W	167	27.6	29.8	91.4	65.8	89.5	66.1	84.1	64.6	68.5	87.4	66.9	85.5	61.5	82.0	72.2	60.7	79.7	71.7	20.9	18.0	15.8	4559	300
MEDFORD ROGUE VALLEY INTL AP	42.39N	122.87W	1329	22.9	25.7	98.9	67.2	95.3	65.9	91.9	64.7	69.0	94.0	67.5	91.4	60.4	82.4	74.5	58.6	77.1	73.9	18.4	15.5	12.5	4323	790
PORTLAND INTERNATIONAL AP	45.59N	122.60W	108	23.9	28.6	91.2	67.5	87.1	66.5	83.4	65.3	69.4	87.0	67.8	84.5	62.9	86.1	75.2	61.4	81.6	73.1	23.8	19.8	17.6	4222	423
PORTLAND/HILLSBORO	45.53N	122.95W	203	21.8	26.6	91.8	68.1	88.1	67.1	83.9	65.6	70.5	87.9	68.3	85.1	63.8	89.2	77.3	61.8	83.0	74.1	18.9	17.1	14.6	4750	280
REDMOND ROBERTS FIELD	44.25N	121.15W	3084	5.4	11.9	92.8	61.9	89.9	61.0	86.5	59.7	63.8	88.4	62.2	85.9	54.8	71.7	67.4	53.0	66.9	67.0	20.6	18.5	16.7	6540	229
SALEM MCNARY FIELD	44.91N	123.00W	200	21.9	26.2	92.0	67.0	87.9	65.8	84.1	64.6	68.7	88.2	67.1	85.0	61.4	82.0	73.9	59.8	77.4	72.6	20.8	18.3	16.3	4576	292
Pennsylvania																									*14 sites, 5 more on CD-ROM*	
ALLENTOWN LEHIGH VALLEY INTL	40.65N	75.45W	384	7.0	11.5	91.0	73.8	88.2	72.5	85.6	71.3	76.7	86.3	75.2	83.8	73.8	127.8	81.1	72.5	122.0	79.7	24.2	20.3	18.1	5564	828
ALTOONA BLAIR CO ARPT	40.30N	78.32W	1470	4.7	9.6	88.5	72.0	85.7	70.7	83.0	69.6	74.7	83.9	73.2	82.0	72.0	125.0	79.6	70.3	118.0	77.7	21.9	18.8	17.2	5959	617
BUTLER CO. (AWOS)	40.78N	79.95W	1247	3.1	8.9	88.0	72.4	84.4	70.6	82.1	69.1	74.6	83.5	73.0	81.7	72.1	124.6	79.8	70.4	117.1	77.3	17.8	15.3	12.9	6098	535
ERIE INTERNATIONAL AP	42.08N	80.18W	738	5.2	9.7	86.4	72.9	84.0	71.6	81.7	70.7	75.3	82.6	73.8	81.0	72.8	125.2	80.5	71.3	118.7	78.6	24.7	21.7	19.5	6092	643
HARRISBURG CAPITAL CITY ARPT	40.22N	76.85W	348	8.7	13.3	92.4	73.8	89.6	72.5	86.7	71.5	76.5	86.8	75.2	84.5	73.4	125.7	80.4	72.4	121.5	79.4	20.5	18.4	16.6	5228	990
MIDDLETOWN HARRISBURG INTL AP	40.19N	76.76W	312	10.7	14.8	92.6	74.8	89.8	73.9	87.0	72.6	78.0	87.7	76.4	85.4	75.2	133.6	82.9	73.5	126.1	81.0	25.3	22.9	19.0	5035	1114
PHILADELPHIA INTERNATIONAL AF	39.87N	75.23W	30	12.6	16.9	93.2	75.4	90.6	74.5	88.0	73.0	78.3	88.5	77.0	86.3	75.4	133.4	82.5	74.3	128.2	81.4	24.4	20.6	18.5	4579	1273
PHILADELPHIA NE PHILADELPHIA	40.08N	75.01W	118	11.0	15.6	93.1	75.7	90.4	74.6	88.1	73.4	78.7	88.8	77.0	86.8	75.6	134.6	83.3	74.0	127.4	81.4	21.1	18.7	17.3	4822	1132
PITTSBURGH ALLEGHENY CO AP	40.36N	79.92W	1273	4.3	9.8	89.9	72.5	87.4	71.1	84.6	69.8	75.2	84.9	73.7	83.1	72.3	125.4	79.9	70.9	119.5	78.4	20.3	18.5	17.0	5356	875
PITTSBURGH INTERNATIONAL AP	40.50N	80.23W	1204	3.7	9.4	89.5	72.5	86.6	71.1	84.2	69.8	75.2	84.8	73.7	82.6	72.2	124.7	79.9	70.8	118.8	78.3	23.4	19.7	17.8	5624	751
READING SPAATZ FIELD	40.37N	75.96W	354	9.4	13.4	92.4	74.1	89.6	73.0	86.5	72.0	77.2	87.5	75.5	84.6	73.7	127.0	82.3	72.7	122.7	80.8	22.6	19.2	17.9	5191	946
WASHINGTON (AWOS)	40.13N	80.28W	1184	2.7	8.8	88.4	71.1	85.4	69.8	82.8	68.7	73.5	83.0	72.1	82.1	70.4	117.0	79.1	69.6	113.5	77.8	19.5	17.1	14.8	5988	542
WILKES-BARRE SCRANTON INTL AF	41.34N	75.73W	961	3.5	8.3	88.9	72.1	86.0	70.6	83.3	69.1	75.0	84.0	73.3	81.6	72.2	123.5	79.3	70.7	117.3	77.6	20.3	18.2	16.5	6105	625
WILLOW GROVE NAS	40.20N	75.15W	361	10.2	14.4	92.7	75.0	90.0	73.8	87.4	72.6	77.7	88.6	76.3	86.1	74.5	130.7	83.2	73.1	124.6	81.7	18.3	15.9	13.5	4959	1059

Meaning of acronyms:
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F*
MCWB: Mean coincident wet bulb temperature, °F
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DP: Dew point temperature, °F *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCDB: Mean coincident dry bulb temperature, °F *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%			1%	2.5%	5%		
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB						HDD / CDD 65	
Rhode Island																									*2 sites, 1 more on CD-ROM*	
PAWTUCKET (AWOS)	41.92N	71.50W	440	3.1	8.9	88.1	72.6	84.0	70.8	81.6	69.1	75.2	84.1	73.4	81.1	72.4	122.0	80.3	71.1	116.5	78.6	19.5	17.2	15.1	6267	488
PROVIDENCE T F GREEN STATE AR	41.72N	71.43W	62	7.2	11.9	90.1	73.3	86.7	71.7	83.8	70.4	76.5	85.2	74.9	82.0	73.9	126.6	80.3	72.6	121.2	78.6	24.4	20.7	18.8	5591	729
South Carolina																									*6 sites, 3 more on CD-ROM*	
CHARLESTON INTL ARPT	32.90N	80.04W	49	26.9	30.4	94.3	78.2	92.1	77.6	90.2	77.0	80.5	89.1	79.7	87.9	78.5	148.2	84.1	77.5	143.1	83.3	20.3	18.2	16.5	1889	2328
COLUMBIA METRO ARPT	33.94N	81.12W	226	22.0	25.9	97.0	75.4	94.5	75.1	92.3	74.6	78.4	90.0	77.6	88.7	75.6	135.2	82.0	74.7	131.0	81.2	19.1	17.0	15.3	2529	2108
FLORENCE REGIONAL AP	34.19N	79.73W	151	23.4	26.9	95.9	76.9	93.4	76.2	91.2	75.6	79.5	90.4	78.4	88.7	76.9	140.7	83.9	75.5	134.4	82.3	19.1	17.6	15.7	2432	2063
FOLLY ISLAND	32.68N	79.88W	16	31.6	34.9	87.6	N/A	86.2	N/A	85.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	34.1	26.7	23.3	1902	2113
GREER GREENV'L-SPARTANBRG AP	34.90N	82.22W	971	20.5	24.7	94.0	74.1	91.4	73.9	89.1	73.2	77.0	88.2	76.0	86.3	74.0	131.4	80.3	73.1	127.4	79.6	19.5	17.6	15.9	3123	1561
SHAW AFB/SUMTER	33.97N	80.47W	243	24.2	27.5	95.4	75.3	92.9	75.1	90.6	74.7	78.5	89.0	77.6	87.7	75.7	135.6	82.1	75.0	132.3	81.4	18.9	16.7	14.7	2474	1962
South Dakota																									*3 sites, 11 more on CD-ROM*	
ELLSWORTH AFB	44.15N	103.10W	3215	-9.2	-3.6	96.5	65.9	92.3	65.4	88.8	64.7	70.9	86.1	69.1	84.6	66.1	108.6	77.9	64.0	100.7	75.5	34.3	28.7	25.0	6999	696
RAPID CITY REGIONAL ARPT	44.05N	103.05W	3169	-10.5	-4.6	96.9	65.9	92.8	65.6	89.3	64.9	71.0	85.8	69.3	84.9	66.5	109.8	78.2	64.4	102.0	76.1	34.7	30.0	26.1	7027	678
SIOUX FALLS FOSS FIELD	43.58N	96.75W	1427	-13.7	-8.4	92.8	74.0	89.4	73.3	86.3	71.5	77.4	87.6	75.5	85.8	74.5	135.9	83.6	72.4	126.5	81.8	27.6	24.6	21.2	7524	753
Tennessee																									*7 sites, 2 more on CD-ROM*	
BRISTOL TRI CITY AIRPORT	36.48N	82.40W	1526	11.4	16.9	89.8	72.2	87.5	71.7	85.4	71.1	75.0	84.9	74.0	83.5	72.2	126.1	79.0	71.1	121.5	77.8	18.9	16.5	14.0	4234	996
CHATTANOOGA LOVELL FIELD AP	35.03N	85.20W	689	17.7	22.3	94.5	75.0	92.1	74.6	89.9	73.9	77.8	88.9	76.8	87.4	74.9	134.1	81.4	73.8	129.3	80.5	17.9	16.0	13.7	3197	1680
JACKSON MCKELLAR-SIPES REGL A	35.59N	88.92W	423	13.5	18.7	94.7	76.9	92.6	76.6	90.6	76.0	79.7	90.5	78.5	89.0	76.7	141.3	85.3	75.4	135.4	84.0	19.6	18.0	16.2	3439	1728
KNOXVILLE MCGHEE TYSON AP	35.82N	83.99W	981	15.0	20.2	92.6	74.3	90.2	73.9	88.1	73.2	77.1	87.7	76.0	86.0	74.0	131.5	81.6	73.0	127.1	80.5	20.2	17.5	15.2	3614	1451
MEMPHIS INTERNATIONAL AP	35.06N	89.99W	331	17.0	21.7	96.0	77.3	93.9	76.9	92.1	76.4	80.2	91.1	79.2	89.9	77.3	143.6	85.8	76.2	138.5	84.9	20.3	18.3	16.6	2935	2214
MILLINGTON MUNI ARP	35.35N	89.87W	322	14.0	19.6	97.3	77.8	95.0	76.5	92.8	76.0	80.4	92.4	78.9	90.8	77.1	142.7	87.1	75.3	134.4	85.1	18.6	16.4	14.2	3185	2047
NASHVILLE INTERNATIONAL AP	36.12N	86.69W	604	12.9	18.2	94.4	75.0	92.1	74.8	90.0	74.1	78.2	88.7	77.2	87.7	75.3	135.5	82.7	74.1	130.3	81.7	19.9	17.8	16.0	3542	1683
Texas																									*51 sites, 18 more on CD-ROM*	
ABILENE DYESS AFB	32.43N	99.85W	1788	16.2	22.2	101.4	72.1	99.2	72.1	96.9	71.9	77.0	90.9	75.7	90.0	73.4	132.7	81.3	72.3	127.7	80.7	24.0	20.5	18.5	2599	2560
ABILENE REGIONAL AP	32.41N	99.68W	1791	17.9	23.3	99.3	70.7	97.2	70.6	95.1	70.7	75.4	89.0	74.4	88.1	71.8	125.9	80.1	70.8	121.4	79.4	25.9	23.7	20.6	2537	2402
AMARILLO INTERNATIONAL AP	35.22N	101.71W	3606	7.2	13.7	97.3	66.2	94.8	66.2	92.3	66.2	71.1	86.1	70.0	85.3	67.2	114.3	75.2	65.9	109.4	74.4	28.8	26.1	24.0	4198	1369
AUSTIN/BERGSTROM	30.18N	97.68W	495	25.2	29.6	99.7	75.0	97.8	75.1	95.9	75.4	79.1	89.9	78.3	89.0	76.8	142.0	81.8	75.9	137.8	81.1	20.9	18.8	16.9	1654	2989
BROWNSVILLE S PADRE ISL INTL	25.91N	97.43W	23	36.4	40.8	95.5	77.7	94.4	77.7	93.2	77.7	80.7	87.9	80.2	87.6	79.2	151.6	83.0	78.4	147.6	82.7	26.2	23.8	20.7	565	3991
CAMP MABRY	30.32N	97.77W	659	26.7	31.3	99.4	74.4	97.5	74.5	95.5	74.7	78.5	88.9	77.8	88.2	76.3	140.7	81.0	75.4	136.5	80.4	20.2	18.0	16.3	1545	3054
COLLEGE STATION EASTERWOOD FL	30.59N	96.36W	328	26.0	30.3	99.2	76.1	97.1	75.9	95.1	75.9	79.9	90.9	78.8	89.3	77.3	143.7	83.2	76.5	139.7	82.4	20.0	18.2	16.6	1628	2976
CORPUS CHRISTI INTL ARPT	27.77N	97.51W	43	32.6	37.1	95.8	77.8	94.3	77.8	93.0	77.7	80.9	89.4	80.3	88.5	79.0	150.6	83.4	78.3	147.2	83.0	26.9	24.7	22.6	891	3493
CORPUS CHRISTI NAS	27.70N	97.28W	20	35.6	40.0	93.2	79.1	92.1	79.1	91.1	79.0	82.3	88.5	81.5	88.1	81.1	161.7	85.0	79.5	153.0	84.6	24.8	22.0	19.8	736	3798
DALLAS HENSLEY FIELD NAS	32.73N	96.97W	495	18.5	25.6	99.7	75.3	97.7	75.1	95.5	74.8	78.6	91.9	77.6	91.4	75.1	134.0	85.3	73.8	128.3	83.8	20.8	18.9	17.3	2252	2733
DALLAS LOVE FIELD	32.85N	96.85W	489	21.6	27.4	100.3	75.6	98.7	75.6	96.7	75.4	79.5	92.7	78.3	91.4	76.2	139.2	85.2	74.9	133.4	83.9	21.9	19.7	18.2	2105	2924
DALLAS/REDBIRD ARPT	32.68N	96.87W	659	26.5	28.1	100.2	74.9	99.0	74.9	96.9	74.7	78.4	91.9	77.6	90.8	75.1	135.0	82.4	73.5	127.6	81.3	22.6	19.5	17.7	2109	2744
DALLAS-FORT WORTH INTL AP	32.90N	97.04W	597	20.3	25.8	100.4	74.5	98.4	74.6	96.2	74.8	78.6	91.4	77.8	90.7	75.4	136.1	83.7	74.4	131.3	82.8	26.1	23.7	20.6	2275	2719
DEL RIO INTERNATIONAL AP	29.37N	100.92W	1027	30.7	34.2	101.5	72.3	99.4	72.3	97.6	72.2	77.5	89.5	76.6	88.8	74.6	134.5	81.5	73.4	129.0	81.2	20.6	18.4	16.6	1274	3450
DRAUGHON MILLER CEN	31.15N	97.40W	699	24.9	28.3	99.5	74.1	97.5	74.2	95.5	74.3	78.0	90.6	77.2	89.8	74.9	134.2	81.3	73.5	127.9	80.6	24.8	22.2	19.8	1954	2728
EL PASO INTERNATIONAL AP	31.81N	106.38W	3917	22.6	26.4	100.6	64.6	98.3	64.3	96.0	64.2	70.3	86.1	69.3	85.3	66.9	114.7	73.0	65.6	109.5	73.1	25.4	20.8	18.1	2466	2314
FORT HOOD/GRAY AAF	31.07N	97.83W	1024	23.7	28.2	99.9	73.4	98.1	73.3	95.8	73.5	77.7	90.0	76.9	89.1	75.0	136.4	81.0	73.6	130.2	80.1	22.0	19.4	17.8	1870	2817
FORT WORTH ALLIANCE	32.98N	97.32W	741	21.5	26.6	101.6	74.5	99.4	74.7	97.2	74.5	78.4	92.4	77.5	91.3	75.0	134.7	83.7	73.4	127.8	82.1	24.0	21.1	19.2	2376	2623
FORT WORTH MEACHAM	32.82N	97.36W	705	19.9	25.3	100.9	74.6	99.0	74.8	96.8	74.6	78.5	91.8	77.6	91.2	75.2	135.6	84.0	74.1	130.4	82.7	21.8	19.7	18.3	2261	2759
FORT WORTH NAS	32.77N	97.44W	650	18.8	25.5	100.2	75.0	98.3	75.2	96.2	75.2	79.3	92.3	78.2	91.3	75.9	138.9	84.6	74.8	133.4	83.8	23.5	20.3	18.5	2259	2722
GALVESTON/SCHOLES	29.27N	94.86W	10	33.0	37.2	91.4	78.7	90.6	78.6	89.9	78.6	81.5	86.7	80.9	86.5	80.8	159.8	84.1	79.3	152.1	84.4	25.6	22.4	20.0	1094	3203
GEORGETOWN (AWOS)	30.68N	97.68W	787	26.5	28.4	99.1	72.8	97.0	72.8	94.7	72.9	76.9	88.4	76.1	87.6	73.4	127.9	79.7	73.0	126.1	79.7	21.0	18.9	17.2	1938	2704
HARLINGEN RIO GRANDE VALLEY I	26.23N	97.65W	36	36.6	40.7	98.8	77.8	97.2	77.7	95.9	77.7	81.3	91.0	80.4	89.8	79.3	152.5	83.7	78.8	149.5	83.4	27.8	24.9	23.3	559	4099
HOUSTON BUSH INTERCONTINENTAL	29.99N	95.36W	105	29.1	32.9	96.8	76.6	95.0	76.6	93.3	76.6	80.1	89.0	79.3	88.2	77.9	145.7	82.9	77.2	142.2	82.5	19.2	17.5	16.1	1414	3001
HOUSTON WILLIAM P HOBBY AP	29.65N	95.28W	46	31.3	35.7	95.1	77.6	93.3	77.5	91.9	77.2	80.5	89.0	80.0	88.3	78.7	149.4	83.5	77.8	144.9	83.0	20.9	19.0	17.6	1204	3103
HOUSTON/D.W. HOOKS	30.07N	95.55W	151	30.2	34.0	98.7	76.0	95.3	76.7	93.0	76.6	80.3	88.2	79.5	87.7	79.1	151.8	82.6	77.4	143.5	82.4	17.6	15.9	13.7	1395	2969
HOUSTON/ELLINGTON	29.60N	95.17W	39	32.0	36.1	96.1	78.3	94.4	78.4	92.8	78.3	82.0	88.6	81.2	88.0	81.0	161.1	84.1	79.4	152.5	83.5	19.8	18.0	16.2	1216	3156
KELLY AFB	29.38N	98.58W	682	28.4	32.7	100.2	74.4	98.7	74.3	96.6	74.3	79.4	86.8	78.5	86.7	78.1	149.8	81.4	76.9	143.7	81.0	19.9	17.8	15.9	1380	3285
KILLEEN MUNI (AWOS)	31.08N	97.68W	846	25.9	29.6	99.5	74.2	97.5	74.2	95.4	74.5	77.9	91.7	77.1	90.7	74.0	131.1	82.8	73.2	127.3	82.3	22.0	19.7	18.2	1870	2827
LAREDO INTL AIRPORT	27.55N	99.47W	509	33.9	37.7	102.5	73.9	100.9	73.9	99.5	74.0	79.0	91.7	78.2	90.7	75.9	137.9	82.5	75.2	134.6	82.0	24.7	22.2	20.1	861	4238
LAUGHLIN AFB	29.37N	100.78W	1073	29.4	33.6	104.2	72.2	101.7	72.8	99.4	72.7	78.4	91.0	77.3	90.5	75.3	138.1	83.1	73.7	130.9	82.4	22.1	19.2	17.4	1262	3522
LONGVIEW GREGG COUNTY AP	32.39N	94.71W	374	21.6	27.0	99.1	75.2	96.5	75.5	93.4	75.2	79.0	90.1	78.2	89.2	76.1	138.4	82.5	75.3	134.5	82.0	19.4	17.4	15.6	2108	2496
LUBBOCK INTERNATIONAL AP	33.67N	101.82W	3241	13.3	18.8	98.8	67.0	96.3	67.4	93.9	67.5	73.1	87.5	71.9	86.4	69.3	121.7	77.0	68.2	116.8	76.2	28.9	25.9	23.4	3343	1829
LUFKIN ANGELINA CO	31.23N	94.75W	315	25.4	29.2	97.5	76.6	95.2	76.7	93.3	76.4	80.0	90.3	79.2	89.3	77.4	144.1	82.8	76.8	141.4	82.5	17.8	16.1	14.4	1886	2580

Meaning of acronyms:
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F* *DP: Dew point temperature, °F* *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCWB: Mean coincident wet bulb temperature, °F *MCDB: Mean coincident dry bulb temperature, °F* *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
MC GREGOR (AWOS)	31.48N	97.32W	591	25.2	28.1	99.9	74.8	98.8	74.9	96.9	74.7	78.9	91.7	78.0	91.3	75.3	135.7	83.2	74.7	132.9	82.8	22.7	20.1	18.3	2075	2690
MCALLEN MILLER INTL AP	26.18N	98.24W	112	36.5	40.8	100.1	76.4	98.8	76.6	97.2	76.5	80.4	90.9	79.7	89.6	78.5	148.8	82.6	77.5	143.7	82.1	24.7	22.4	20.3	576	4428
MCKINNEY MUNI ARPT	33.18N	96.58W	577	21.4	26.6	100.3	74.9	99.2	75.1	97.1	75.1	78.5	92.3	77.8	91.6	75.1	134.4	83.5	73.5	127.2	81.7	22.5	19.4	17.5	2407	2537
MIDLAND INTERNATIONAL AP	31.93N	102.21W	2861	18.3	23.1	100.3	67.3	98.0	67.5	95.9	67.7	73.2	87.1	72.2	86.6	69.9	122.4	76.5	68.5	116.5	76.1	26.7	24.1	20.7	2655	2260
NACOGDOCHES (AWOS)	31.58N	94.72W	354	25.3	27.9	97.4	75.7	95.1	75.8	92.8	75.6	78.8	89.6	78.1	89.0	75.5	135.2	81.5	75.2	133.7	81.5	18.2	16.0	13.5	2119	2374
PORT ARANSAS	27.82N	97.05W	20	36.6	40.9	85.9	78.0	85.3	78.1	84.7	77.9	80.4	84.1	80.1	83.9	79.3	152.4	83.3	78.7	148.8	83.1	39.4	33.1	27.0	831	3023
PORT ARTHUR JEFFERSON COUNTY	29.95N	94.02W	16	30.5	34.2	94.2	78.1	92.7	78.2	91.2	78.2	81.7	88.9	80.8	88.0	79.7	154.1	85.0	78.9	150.2	84.3	21.3	19.0	17.5	1357	2873
RANDOLPH AFB	29.53N	98.28W	761	27.5	31.4	99.4	73.8	97.4	73.9	95.4	74.1	78.3	89.2	77.5	88.2	75.6	137.9	80.8	75.1	135.3	80.6	20.6	18.5	16.6	1553	2974
REESE AFB	33.60N	102.05W	3327	12.1	18.0	100.0	67.3	96.9	67.2	94.1	67.1	72.8	87.1	71.5	86.5	69.0	120.9	78.4	67.4	114.2	77.4	27.1	23.7	20.4	3325	1734
SABINE	29.67N	94.05W	20	32.2	35.9	88.4	76.9	87.0	77.2	86.2	77.3	81.1	85.3	80.2	84.8	80.0	155.6	83.9	78.8	149.7	83.6	35.8	29.2	24.2	1439	2566
SAN ANGELO MATHIS FIELD	31.35N	100.49W	1893	20.1	24.9	100.2	70.0	98.1	69.9	96.0	70.1	75.1	88.6	74.1	87.8	71.6	125.3	79.2	70.6	120.9	78.6	24.8	21.5	19.4	2296	2482
SAN ANTONIO INTL AP	29.53N	98.46W	810	27.4	31.6	98.5	73.5	96.9	73.6	95.2	73.7	78.0	88.0	77.3	87.1	75.9	139.4	80.1	75.2	136.0	79.8	20.2	18.2	16.6	1480	3115
SAN ANTONIO/STINSON	29.34N	98.47W	577	30.5	34.1	100.0	74.6	98.9	74.4	96.7	74.2	79.3	89.5	78.4	88.5	77.1	144.1	82.4	75.5	136.3	81.0	18.8	17.0	15.8	1267	3278
SAN MARCOS MUNI	29.88N	97.87W	597	27.9	30.9	99.1	74.3	97.2	74.3	95.1	74.1	78.2	90.8	77.4	90.0	74.9	133.7	83.0	73.4	127.1	81.9	24.3	20.9	18.9	1613	2944
VICTORIA REGIONAL AP	28.86N	96.93W	118	29.8	34.0	96.6	76.4	94.9	76.6	93.3	76.6	80.2	87.9	79.4	87.2	78.4	147.9	82.2	77.6	144.1	81.8	24.3	20.9	19.0	1203	3182
WACO REGIONAL AP	31.61N	97.23W	509	22.9	27.5	100.8	75.1	98.9	75.3	96.9	75.4	78.7	91.6	78.1	91.0	75.8	137.4	82.4	75.0	133.6	81.8	24.7	21.8	19.7	2054	2849
WICHITA FALLS MUNICIPAL ARPT	33.98N	98.49W	1030	15.3	21.1	102.5	73.2	100.1	73.3	97.7	73.3	77.7	92.0	76.7	91.1	74.0	131.7	82.8	72.9	126.8	81.7	26.9	24.3	21.3	2896	2421
Utah																									*5 sites, 5 more on CD-ROM*	
HILL AFB/OGDEN	41.12N	111.97W	4787	8.6	12.2	93.3	61.2	90.8	60.6	88.3	59.9	65.1	84.5	63.7	83.2	59.0	89.3	72.3	56.2	80.5	72.9	22.8	19.6	17.9	6053	915
LOGAN-CACHE AIRPORT	41.79N	111.85W	4455	-6.3	0.2	95.0	63.0	91.4	61.5	89.9	60.9	65.4	87.1	64.1	85.6	59.4	89.4	69.4	56.6	80.5	70.7	19.6	16.6	13.1	7181	480
PROVO MUNI (AWOS)	40.22N	111.72W	4491	9.0	12.6	94.6	62.4	91.2	62.2	89.6	61.8	66.4	87.0	65.0	85.2	59.4	89.4	75.0	57.1	82.3	74.8	24.1	20.1	17.5	5953	766
SAINT GEORGE (AWOS)	37.08N	113.60W	2940	26.8	28.4	106.2	66.1	103.5	64.8	100.4	64.1	68.7	93.4	67.6	93.3	62.9	95.6	76.1	59.3	84.1	78.2	26.7	23.1	19.5	2943	2710
SALT LAKE CITY INT'L ARPT	40.79N	111.97W	4226	9.3	14.1	97.4	63.5	94.8	62.6	92.2	61.9	67.0	86.8	65.7	86.1	61.5	95.5	73.3	59.1	87.5	73.8	25.0	20.8	18.6	5521	1193
Vermont																									*1 site, 4 more on CD-ROM*	
BURLINGTON INTERNATIONAL AP	44.47N	73.15W	341	-8.3	-3.5	88.3	71.0	85.3	69.6	82.4	68.2	74.2	83.8	72.3	81.1	71.1	116.1	78.7	69.4	109.3	77.2	23.8	20.3	18.5	7406	496
Virginia																									*17 sites, 13 more on CD-ROM*	
DANVILLE FAA AP	36.57N	79.34W	591	18.4	22.1	93.2	74.7	91.0	74.3	89.5	73.8	77.8	88.7	76.7	87.0	74.9	133.6	83.0	73.3	126.7	81.0	18.5	16.4	14.2	3588	1424
DINWIDDIE CO	37.18N	77.50W	197	15.9	19.2	97.4	77.8	94.7	76.7	91.6	75.4	80.9	91.9	79.4	91.1	78.6	149.6	87.2	75.4	134.2	84.1	18.1	15.7	13.0	3750	1559
FORT BELVOIR/DAVISO	38.72N	77.18W	89	12.6	17.9	96.2	76.2	93.2	75.2	90.5	74.3	79.4	90.9	78.0	88.7	76.2	137.4	85.4	74.8	131.0	83.8	20.5	17.1	13.6	4312	1353
LANGLEY AFB/HAMPTON	37.08N	76.37W	10	20.6	24.8	92.9	77.2	90.5	76.5	88.3	75.6	80.1	88.1	78.8	86.7	78.5	148.1	83.6	76.7	139.3	82.9	23.4	19.9	17.9	3413	1575
LEESBURG/GODFREY	39.08N	77.57W	390	14.2	17.9	94.8	76.8	91.8	75.6	90.2	74.6	79.4	91.0	78.0	88.7	75.5	135.4	83.4	74.9	132.7	82.8	22.3	18.7	16.1	4501	1267
LYNCHBURG REGIONAL ARPT	37.34N	79.21W	938	14.4	18.9	92.1	73.9	89.7	73.2	87.3	72.3	76.5	87.0	75.3	85.4	73.4	128.6	80.6	72.4	124.3	79.6	18.3	16.4	14.3	4191	1124
MANASSAS MUNI(AWOS)	38.72N	77.52W	194	11.9	16.3	92.8	74.2	90.5	73.6	88.2	72.6	77.1	88.1	75.6	86.2	73.3	124.8	81.9	72.5	121.1	81.1	21.5	18.6	16.2	4809	1033
NEWPORT NEWS	37.13N	76.49W	52	18.7	22.7	94.5	77.4	91.6	76.6	89.8	75.7	79.7	90.6	78.4	88.3	76.9	140.5	84.2	75.5	133.7	82.8	19.9	18.3	16.9	3559	1551
NORFOLK INTERNATIONAL AF	36.90N	76.19W	30	21.7	25.6	93.7	76.7	91.3	76.0	88.9	75.1	79.0	88.5	78.0	87.0	76.5	138.5	82.8	75.5	133.6	81.6	25.0	21.8	19.5	3244	1657
NORFOLK NAS	36.93N	76.28W	16	22.7	26.8	93.8	77.5	91.2	76.7	89.4	76.0	79.9	89.3	78.6	87.6	77.4	142.4	84.0	76.1	136.2	82.9	25.3	21.8	19.1	3111	1758
OCEANA NAS	36.82N	76.03W	23	21.1	25.3	92.9	77.3	90.4	76.4	88.2	75.4	79.3	88.6	78.1	86.9	76.8	139.7	83.9	75.4	133.0	82.4	24.0	20.3	18.2	3301	1553
QUANTICO MCAS	38.50N	77.30W	13	16.2	19.7	92.6	76.5	90.4	75.9	88.1	74.6	79.4	89.2	78.0	87.4	76.7	139.4	85.1	75.1	131.7	83.2	19.1	16.8	14.6	4138	1369
ROANOKE REGIONAL AP	37.32N	79.97W	1175	14.2	19.0	92.1	72.9	89.8	72.4	87.4	71.6	75.4	86.7	74.5	85.2	72.3	125.0	79.6	71.3	120.7	78.5	22.5	18.9	16.8	4098	1184
STAUNTON/SHENANDOAH	38.27N	78.90W	1201	12.1	16.8	93.3	74.1	91.0	73.9	89.6	73.5	78.4	87.4	77.2	86.1	75.4	139.3	82.8	74.7	136.0	82.0	17.6	15.3	12.7	4389	1168
VIRGINIA TECH ARPT	37.22N	80.42W	2133	10.3	15.7	88.4	71.3	86.1	70.6	83.7	69.6	74.3	84.1	72.8	82.2	71.7	126.7	80.4	70.1	120.1	78.4	20.7	18.3	16.1	4841	737
WASHINGTON DC DULLES INT'L AR	38.94N	77.45W	325	10.7	15.7	93.5	75.1	90.8	74.3	88.2	73.0	77.7	88.8	76.5	86.6	74.5	130.5	82.0	73.5	126.0	80.8	20.5	18.3	16.4	4735	1119
WASHINGTON DC REAGAN AP	38.87N	77.03W	66	16.3	20.3	94.3	76.0	91.7	75.2	89.2	73.9	78.6	89.1	77.5	87.3	76.0	136.0	83.3	74.8	130.8	82.2	23.2	20.0	18.1	4001	1524
Washington																									*20 sites, 13 more on CD-ROM*	
ARLINGTON MUNI	48.17N	122.17W	138	20.8	24.7	82.1	65.9	79.3	64.2	75.4	62.9	67.3	80.5	65.4	77.4	62.2	84.1	72.7	60.7	79.8	71.1	20.9	18.1	15.5	5324	60
BELLINGHAM INTL AP	48.79N	122.54W	151	18.0	23.0	79.4	65.1	76.0	63.7	73.0	62.1	66.5	77.5	64.7	74.5	61.7	82.6	71.2	60.5	79.2	69.3	25.0	20.7	18.6	5370	51
BREMERTON NATIONAL	47.48N	122.75W	449	23.7	27.0	85.6	64.9	81.7	63.6	78.7	62.2	66.3	82.9	64.6	79.9	59.2	76.4	71.5	57.4	71.4	68.6	18.7	16.5	14.3	5502	100
FAIRCHILD AFB	47.62N	117.65W	2438	4.6	10.6	91.4	62.2	88.5	61.5	85.2	60.5	64.9	85.3	63.3	83.1	58.4	79.8	68.1	56.2	73.5	67.4	23.6	19.8	17.4	6762	396
FELTS FLD	47.68N	117.32W	2001	6.9	12.9	94.7	65.6	91.1	64.3	88.1	63.1	67.9	89.8	66.1	87.0	60.9	86.0	71.5	58.7	79.4	71.4	19.7	17.5	15.1	6121	447
GRAY AAF	47.08N	122.58W	302	19.3	24.4	86.4	64.7	82.4	63.5	79.1	62.3	66.4	82.7	64.8	79.5	60.9	80.8	68.7	59.2	75.8	68.1	17.5	14.8	12.6	5192	125
KELSO WB AP	46.12N	122.89W	20	21.6	26.4	88.0	67.5	82.5	65.8	79.5	64.0	68.8	84.6	66.8	81.3	62.7	85.4	75.7	61.0	80.2	73.0	17.7	15.3	13.0	4755	186
MC CHORD AFB/TACOMA	47.13N	122.48W	289	20.6	24.8	86.2	64.8	82.2	63.4	79.0	62.3	66.4	82.6	64.7	79.7	60.3	79.0	70.0	58.8	74.8	68.6	19.7	17.2	14.8	5109	124
OLYMPIA AIRPORT	46.97N	122.90W	200	20.1	24.1	87.3	66.0	83.3	64.8	79.8	63.5	67.8	84.8	65.9	81.1	61.3	81.6	71.6	59.8	77.4	69.9	18.8	16.7	14.8	5372	101
PASCO	46.27N	119.12W	404	6.8	14.5	99.5	69.9	96.5	68.5	92.6	67.1	72.1	94.5	70.2	92.2	64.3	91.5	79.6	62.8	86.7	78.1	24.6	20.8	18.4	4911	819
PEARSON FLD	45.62N	122.65W	26	25.3	27.9	90.7	66.2	87.7	66.2	82.4	64.8	69.3	85.7	67.6	84.0	63.2	86.8	74.8	61.3	81.2	72.8	16.9	14.4	12.3	4403	369
SEATTLE BOEING FIELD	47.53N	122.30W	30	24.0	28.0	86.1	65.6	82.3	63.9	79.4	62.8	66.8	83.4	65.3	79.8	61.0	80.1	69.5	59.4	75.6	69.1	18.7	17.1	14.8	4280	279
SEATTLE SEATTLE-TACOMA INTL A	47.46N	122.31W	433	24.5	29.1	84.9	65.0	81.3	63.6	78.0	62.5	66.5	82.2	64.8	78.8	60.6	80.1	69.5	59.2	76.3	67.8	20.2	18.1	16.4	4729	177

Meaning of acronyms:
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F* *DP: Dew point temperature, °F* *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCWB: Mean coincident wet bulb temperature, °F *MCDB: Mean coincident dry bulb temperature, °F* *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
SHELTON/SANDERSON	47.24N	123.15W	269	24.7	27.0	87.6	64.8	82.8	64.5	79.3	63.0	67.2	83.9	65.4	80.5	61.1	81.3	70.3	59.4	76.3	68.5	20.4	18.3	16.4	5337	108
SNOHOMISH CO	47.90N	122.28W	620	27.7	30.1	79.4	62.7	75.3	62.0	72.8	61.0	65.2	75.9	63.4	73.4	61.1	82.4	68.2	59.2	76.8	67.0	24.2	20.0	17.4	5151	68
SPOKANE INTERNATIONAL AP	47.62N	117.53W	2365	2.9	9.6	92.8	63.0	89.4	61.9	85.9	60.7	65.2	87.0	63.6	84.7	58.1	78.6	68.0	56.0	72.9	67.9	25.6	21.9	19.1	6687	423
TACOMA NARROWS	47.27N	122.57W	299	29.5	32.6	83.7	64.1	80.7	62.9	77.0	61.8	65.9	80.7	64.3	77.3	60.9	80.8	68.5	59.1	75.7	67.1	19.6	17.6	15.7	4631	154
WALLA WALLA CITY COUNTY AP	46.10N	118.29W	1204	8.1	16.2	98.9	66.8	94.9	65.5	91.1	64.2	68.8	93.2	67.0	91.0	60.9	83.4	74.0	58.3	76.0	73.2	23.7	19.8	17.8	4866	912
WEST POINT (LS)	47.67N	122.43W	30	29.0	33.2	70.6	60.8	68.2	60.0	66.2	59.3	62.1	67.5	61.0	65.6	59.9	77.0	63.9	59.0	74.6	62.9	38.0	31.3	26.1	4884	9
YAKIMA AIR TERMINAL	46.56N	120.53W	1066	6.3	12.1	95.7	66.5	92.4	65.3	89.0	63.8	68.4	90.7	66.6	88.5	60.3	81.3	76.4	58.0	74.8	74.9	23.5	19.3	16.7	5946	488
West Virginia																									*3 sites, 6 more on CD-ROM*	
CHARLESTON YEAGER ARPT	38.38N	81.59W	981	8.5	14.7	91.3	73.4	88.8	73.0	86.5	72.1	76.7	86.3	75.3	84.3	74.0	131.4	80.8	72.7	125.7	79.4	17.3	15.0	12.5	4443	1066
HUNTINGTON TRI-STATE ARPT	38.38N	82.56W	837	8.4	14.6	91.9	73.8	89.4	73.5	87.0	72.6	77.3	86.7	76.0	84.9	74.5	133.2	81.5	73.3	127.6	80.1	17.1	15.2	12.9	4429	1139
PARKERSBURG WOOD COUNTY AP	39.35N	81.44W	863	5.4	11.8	90.8	73.7	88.3	72.8	85.9	71.9	76.8	86.3	75.3	84.0	73.9	130.4	81.3	72.6	124.6	79.7	18.2	16.0	14.0	4906	964
Wisconsin																									*14 sites, 13 more on CD-ROM*	
APPLETON/OUTAGAMIE	44.25N	88.52W	919	-5.8	-0.1	88.5	74.8	85.5	73.1	82.3	70.7	77.6	85.6	75.3	82.5	75.1	136.1	81.5	72.9	126.4	79.6	24.7	21.3	19.0	7184	603
EAU CLAIRE COUNTY AP	44.87N	91.49W	896	-15.6	-9.6	90.8	73.4	87.3	71.4	84.3	69.5	76.0	86.1	74.2	83.7	72.9	126.2	82.0	71.0	118.1	79.8	19.8	17.9	16.3	7859	615
FOND DU LAC CO.	43.77N	88.49W	807	-3.9	0.4	88.5	74.3	85.6	72.7	82.3	70.1	76.6	85.3	74.7	82.4	73.3	127.4	82.3	72.3	123.1	80.6	23.7	20.2	18.3	6992	591
GREEN BAY AUSTIN STRAUBEL INT	44.51N	88.12W	702	-9.9	-4.3	88.4	73.8	85.2	72.0	82.4	70.3	76.4	85.0	74.4	82.3	73.7	128.8	81.6	71.7	120.3	79.4	23.9	20.2	18.3	7684	470
KENOSHA RGNL	42.58N	87.92W	761	0.5	5.1	90.3	75.0	87.8	73.8	83.9	71.9	77.4	87.3	75.4	83.9	73.4	128.0	81.9	72.5	124.0	80.7	24.9	21.8	19.4	6554	630
LA CROSSE MUNICIPAL ARPT	43.75N	91.26W	656	-12.3	-5.8	92.1	75.1	89.0	73.5	85.9	71.7	78.0	87.9	75.9	85.0	75.0	134.7	83.9	73.0	125.5	81.5	23.0	19.5	18.1	7076	813
MADISON DANE CO REGIONAL ARPT	43.14N	89.35W	866	-9.1	-2.9	89.8	74.4	86.8	72.8	84.0	71.1	77.1	86.4	75.0	83.5	74.0	131.0	83.5	72.2	123.0	80.7	23.6	20.2	18.3	7197	608
MANITOWAC MUNI AWOS	44.13N	87.68W	650	-4.2	0.5	84.5	71.3	81.7	69.9	79.3	68.1	74.6	82.5	72.2	79.3	72.2	122.0	80.3	70.1	113.3	77.7	24.2	20.8	18.8	7538	338
MILWAUKEE MITCHELL INTL AP	42.95N	87.90W	692	-4.0	1.8	90.3	74.6	86.8	72.6	83.6	70.8	77.0	86.9	75.0	83.5	73.9	129.8	82.6	72.2	122.2	80.6	25.7	23.0	20.0	6774	684
MOSINEE/CENTRAL WI	44.78N	89.67W	1276	-10.7	-6.4	87.6	72.6	83.8	70.7	81.4	68.3	74.4	83.5	72.3	80.9	71.8	123.1	80.9	69.8	114.8	78.7	22.9	19.6	17.6	8227	374
SHEBOYGAN	43.78N	87.85W	748	-1.9	1.1	88.2	74.0	84.0	71.4	81.3	69.3	76.2	85.3	74.1	82.3	73.0	125.9	82.1	71.9	121.3	80.0	24.6	21.1	18.9	7309	432
SHEBOYGAN	43.75N	87.68W	620	-2.2	2.5	83.2	72.2	79.3	70.6	76.5	70.1	76.7	80.2	74.4	77.6	75.6	137.1	78.1	73.5	127.5	76.7	41.8	34.1	28.5	7284	321
WAUSAU MUNICIPAL ARPT	44.93N	89.63W	1198	-13.6	-7.9	88.1	71.7	84.8	70.0	82.0	67.9	74.5	83.4	72.7	81.3	71.8	123.0	79.1	69.9	114.8	77.6	19.3	17.4	15.6	8013	472
WITTMAN RGNL	43.98N	88.55W	830	-5.6	-0.2	88.4	74.0	84.4	72.4	82.1	70.2	76.6	85.0	74.5	82.2	73.3	127.6	81.3	72.3	123.1	80.0	23.3	20.1	18.2	7258	550
Wyoming																									*2 sites, 10 more on CD-ROM*	
CASPER NATRONA CO INTL AP	42.90N	106.47W	5289	-10.3	-2.1	93.8	60.0	91.1	59.2	88.2	58.6	63.6	83.3	62.1	82.0	58.0	87.5	66.6	55.9	81.2	66.6	32.2	28.2	25.7	7346	469
CHEYENNE MUNICIPAL ARPT	41.16N	104.81W	6142	-6.4	1.7	89.2	58.6	86.3	58.0	83.5	57.5	63.0	77.6	61.8	76.8	59.0	94.0	65.9	57.2	87.9	65.3	33.7	28.9	25.9	7148	324
Canada																									*102 sites, 378 more on CD-ROM*	
Alberta																									*13 sites, 40 more on CD-ROM*	
CALGARY INT'L A	51.11N	114.02W	3556	-20.4	-14.2	83.5	60.3	80.0	59.2	76.6	58.1	63.1	77.7	61.2	75.3	57.7	81.1	68.3	55.8	75.6	66.1	27.3	23.4	20.6	9154	67
COP UPPER	51.08N	114.22W	4052	-18.3	-12.4	82.7	58.3	78.8	57.2	75.2	56.6	62.9	74.1	60.7	72.4	59.0	86.7	67.1	56.6	79.3	64.5	23.4	20.4	17.9	9070	75
EDMONTON CITY CENTRE A	53.57N	113.52W	2201	-21.5	-16.4	82.5	64.1	79.1	62.1	76.2	60.5	66.0	78.6	64.1	76.1	61.4	88.1	72.2	59.4	81.9	69.5	21.7	18.6	16.4	9495	114
EDMONTON INT'L A	53.32N	113.58W	2372	-26.5	-20.9	81.5	63.6	78.1	61.8	75.3	60.5	66.2	77.6	64.2	75.2	61.7	89.7	72.7	59.7	83.6	70.1	23.0	19.9	17.3	10359	41
EDMONTON NAMAO A	53.67N	113.47W	2257	-23.1	-18.0	80.9	63.2	77.9	61.6	74.9	59.9	65.5	76.8	63.7	74.6	61.3	88.0	71.0	59.2	81.8	68.6	23.2	20.2	17.6	9889	63
FORT MCMURRAY A	56.65N	111.22W	1211	-34.2	-29.3	84.1	63.8	80.4	61.8	77.0	60.3	65.9	79.8	64.0	76.8	61.0	83.8	70.5	59.1	78.2	68.4	18.5	16.3	14.2	11492	85
GRANDE PRAIRIE A	55.18N	118.88W	2195	-33.5	-25.6	81.4	61.8	77.9	60.0	74.8	58.5	64.3	77.1	62.1	74.1	59.5	82.4	68.9	57.4	76.3	66.1	25.0	21.5	18.7	10595	44
LACOMBE CDA 2	52.45N	113.76W	2822	-27.2	-20.0	82.9	64.2	79.1	62.6	76.0	60.7	66.3	78.8	64.4	76.4	61.5	90.8	73.0	59.4	84.1	70.5	21.1	18.2	15.6	10323	38
LETHBRIDGE A	49.63N	112.80W	3048	-21.6	-15.5	88.5	61.8	84.8	61.0	81.2	60.1	65.4	80.9	63.5	79.3	60.0	86.4	71.5	57.8	79.8	68.8	36.2	31.4	27.9	8380	164
LETHBRIDGE CDA	49.70N	112.78W	3022	-19.0	-13.1	89.5	62.1	85.7	61.1	82.0	60.5	65.7	81.5	63.9	79.4	60.2	87.2	71.6	58.1	80.8	69.4	29.7	26.4	23.3	8115	210
MEDICINE HAT A	50.02N	110.72W	2352	-24.1	-17.9	90.4	63.6	87.1	62.6	83.6	61.3	66.0	84.4	64.3	82.1	60.0	84.4	71.3	57.9	78.3	69.7	24.9	21.5	18.8	8447	303
RED DEER A	52.18N	113.89W	2969	-26.8	-20.0	82.3	62.6	78.8	61.1	75.7	59.7	65.1	78.1	63.2	75.3	60.2	87.0	71.1	58.2	80.9	68.8	20.6	18.4	16.7	10289	40
SPRINGBANK A	51.10N	114.37W	3940	-25.0	-18.3	80.3	60.0	76.7	58.3	73.6	57.3	62.3	75.5	60.4	73.2	57.1	80.6	68.0	55.2	75.1	65.3	24.8	21.2	18.6	10293	8
British Columbia																									*27 sites, 50 more on CD-ROM*	
ABBOTSFORD A	49.03N	122.36W	194	16.5	21.8	85.4	67.1	81.7	65.7	78.2	64.1	68.5	83.1	66.5	79.7	62.3	84.5	76.5	60.7	79.8	73.0	19.0	16.6	14.2	5333	121
AGASSIZ CS	49.25N	121.77W	49	18.6	23.4	86.2	68.1	82.9	67.1	79.7	66.2	70.7	82.8	68.8	80.2	66.0	96.0	78.3	64.1	89.7	75.3	23.2	18.2	14.4	5082	199
BALLENAS ISLAND	49.35N	124.16W	43	30.7	33.6	75.1	67.1	72.8	66.0	70.9	64.8	68.6	73.7	67.0	71.8	66.6	98.1	72.0	65.0	92.6	70.3	35.5	30.5	26.9	4492	123
COMOX A	49.72N	124.90W	85	22.4	26.3	80.1	63.3	76.4	62.2	73.3	61.1	64.8	76.0	63.5	73.5	60.5	79.0	68.2	59.3	75.7	66.8	30.1	25.7	21.8	5574	88
DISCOVERY ISLAND	48.42N	123.23W	49	31.8	36.9	73.7	N/A	70.2	N/A	67.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	36.6	29.2	22.6	4566	25
ENTRANCE ISLAND CS	49.22N	123.80W	16	29.1	32.8	75.1	N/A	72.2	N/A	70.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	32.0	28.0	25.1	4753	111
ESQUIMALT HARBOUR	48.43N	123.44W	10	28.2	31.8	72.6	61.1	69.5	59.9	66.9	59.1	62.6	69.5	61.3	67.2	59.7	76.4	64.8	58.6	73.4	63.5	21.6	18.7	16.4	5194	15
HOWE SOUND - PAM ROCKS	49.49N	123.30W	16	27.2	31.6	77.2	66.9	74.0	65.2	71.7	64.1	68.3	74.5	66.6	72.3	65.7	94.9	72.6	64.1	89.7	70.7	40.5	35.6	30.3	4636	155
KAMLOOPS A	50.70N	120.44W	1132	-5.5	2.8	92.7	64.7	88.8	63.6	85.0	62.2	66.4	87.7	64.8	84.5	59.6	79.4	70.3	57.6	73.7	69.5	22.2	19.2	17.6	6421	461
KELOWNA A	49.96N	119.38W	1411	-1.0	6.2	90.9	64.5	87.4	63.5	83.6	62.0	66.5	85.4	64.8	83.0	60.2	82.1	70.4	58.4	76.7	69.3	16.8	14.0	11.7	7067	224
MALAHAT	48.57N	123.53W	1201	21.9	26.6	81.7	62.7	78.2	61.8	75.2	60.6	65.9	77.4	64.1	74.6	61.1	84.0	73.1	59.4	79.0	70.6	14.9	12.8	11.0	5783	173
PENTICTON A	49.46N	119.60W	1129	6.4	11.3	90.6	65.2	87.0	64.0	83.8	62.7	66.8	86.0	65.2	83.6	59.9	80.4	72.0	58.1	75.2	71.4	22.8	19.9	17.9	6250	369

Meaning of acronyms:
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F* *DP: Dew point temperature, °F* *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCWB: Mean coincident wet bulb temperature, °F *MCDB: Mean coincident dry bulb temperature, °F* *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
PITT MEADOWS CS	49.21N	122.69W	16	18.9	23.5	87.0	68.6	83.3	67.1	79.9	65.7	69.8	83.5	67.8	80.7	64.4	90.7	76.2	62.8	85.5	73.4	12.4	10.4	9.0	5280	141
POINT ATKINSON	49.33N	123.26W	115	31.2	35.0	77.0	N/A	74.6	N/A	72.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	30.7	26.3	22.5	3840	246
PRINCE GEORGE A	53.89N	122.68W	2267	-23.9	-15.1	81.8	61.2	78.1	59.6	74.6	57.9	62.8	78.0	60.8	75.0	57.0	75.5	66.0	55.3	70.9	64.1	21.0	18.4	16.1	9255	34
SANDHEADS CS	49.11N	123.30W	0	25.4	30.8	72.1	N/A	70.3	N/A	68.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	30.5	26.9	24.0	4790	60
SUMMERLAND CS	49.56N	119.64W	1490	5.9	13.4	91.3	64.3	88.0	63.3	84.5	62.1	67.1	85.3	65.2	82.8	60.8	84.0	72.6	58.6	77.7	71.7	18.7	14.9	12.1	6274	458
VANCOUVER HARBOUR CS	49.30N	123.12W	10	26.8	31.1	78.3	N/A	75.8	N/A	73.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4719	124
VANCOUVER INT'L A	49.20N	123.18W	13	19.4	24.9	77.0	64.8	74.3	63.8	72.0	62.7	66.2	74.8	64.7	72.8	62.3	83.9	71.2	61.0	80.2	69.3	23.1	19.7	17.0	5278	73
VERNON CS	50.22N	119.19W	1581	5.4	11.4	91.6	65.0	87.7	64.0	83.7	62.6	66.9	86.3	65.4	83.6	61.3	85.9	69.2	59.7	81.0	68.2	15.4	12.1	10.5	6699	369
VICTORIA GONZALES CS	48.41N	123.33W	230	27.5	31.7	76.4	62.7	72.2	61.3	69.1	59.9	63.9	73.1	62.4	70.1	60.4	79.0	66.0	59.2	75.7	65.0	27.4	23.4	20.6	5045	40
VICTORIA HARTLAND CS	48.53N	123.46W	505	27.0	30.6	83.4	66.6	80.1	65.1	77.1	63.9	68.4	79.8	66.8	77.5	64.2	91.6	73.1	62.7	86.8	71.0	21.8	19.0	16.6	4815	185
VICTORIA INT'L A	48.65N	123.43W	62	23.6	27.4	79.9	63.5	76.2	62.3	73.1	61.0	64.4	77.5	62.9	74.6	58.7	73.9	68.4	57.6	70.9	67.1	19.0	16.1	13.8	5439	40
VICTORIA MARINE	48.37N	123.75W	105	22.0	27.4	69.9	59.2	66.7	57.9	64.1	56.7	60.5	68.0	58.8	64.7	57.6	71.2	62.0	55.9	66.8	60.5	30.2	26.2	21.9	6110	1
VICTORIA UNIVERSITY CS	48.46N	123.30W	197	28.2	32.2	80.5	65.2	77.4	64.1	74.3	63.1	67.2	77.4	65.7	74.7	63.6	88.7	70.5	62.1	84.1	68.7	13.2	11.4	9.8	4796	70
WEST VANCOUVER AUT	49.35N	123.19W	551	21.6	26.7	80.6	66.2	77.6	65.3	74.8	64.1	68.0	78.1	66.4	75.6	63.9	90.9	73.8	62.5	86.4	71.9	11.4	9.7	8.2	5320	127
WHITE ROCK CAMPBELL SCIENTIFI	49.02N	122.78W	43	22.4	27.1	76.7	65.7	74.0	64.5	71.7	63.5	67.5	74.2	65.8	72.0	64.8	91.8	71.3	63.2	86.9	69.3	14.3	12.0	9.7	4987	51
Manitoba																									*1 site, 32 more on CD-ROM*	
WINNIPEG RICHARDSON INT'L A	49.92N	97.23W	784	-25.9	-21.8	87.4	69.7	84.1	68.6	81.0	66.9	73.0	83.0	70.8	80.7	69.8	112.8	79.2	67.3	103.4	76.3	27.9	24.6	21.8	10350	303
New Brunswick																									*3 sites, 9 more on CD-ROM*	
FREDERICTON A	45.87N	66.53W	69	-10.5	-5.8	85.5	69.7	82.2	67.7	79.2	66.1	72.0	82.0	70.1	79.0	68.6	105.2	77.1	66.9	99.1	74.8	22.0	19.2	17.4	8445	238
MONCTON A	46.10N	64.69W	233	-8.7	-4.5	83.2	69.0	80.1	67.1	77.3	65.5	71.4	79.6	69.6	76.8	68.7	106.4	75.5	67.1	100.4	73.6	27.8	24.0	21.1	8626	171
SAINT JOHN A	45.32N	65.89W	358	-8.3	-3.8	78.9	65.3	75.9	63.9	73.0	62.2	68.0	75.2	66.2	72.6	65.4	95.2	70.8	63.8	89.7	68.6	26.6	23.0	20.4	8588	53
Newfoundland and Labrador																									*1 site, 29 more on CD-ROM*	
ST JOHN'S A	47.62N	52.74W	463	3.7	7.6	76.3	65.9	73.4	64.4	70.8	63.1	68.5	73.8	66.6	71.1	66.5	99.3	71.5	64.8	93.3	69.5	36.1	30.7	27.6	8832	51
Northwest Territories																									*1 site, 26 more on CD-ROM*	
YELLOWKNIFE A	62.46N	114.44W	676	-41.7	-37.9	77.4	60.6	74.3	59.1	71.3	58.0	62.7	73.1	60.9	71.3	58.4	74.8	66.6	56.4	69.5	65.1	21.3	18.9	17.1	14951	59
Nova Scotia																									*4 sites, 13 more on CD-ROM*	
HALIFAX STANFIELD INT'L A	44.88N	63.52W	476	-1.4	2.4	81.7	68.0	78.6	66.3	75.8	64.8	70.7	77.6	69.0	75.2	68.5	106.6	73.6	66.8	100.4	71.6	26.9	23.0	20.4	7840	177
SHEARWATER A	44.63N	63.50W	167	1.4	5.2	78.7	67.0	75.7	65.2	73.0	64.1	69.7	74.4	68.0	72.5	68.2	104.2	71.6	66.4	97.8	69.8	26.7	23.1	20.5	7626	116
SHEARWATER JETTY	44.63N	63.52W	20	7.0	11.3	78.5	N/A	75.6	N/A	73.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	27.2	23.8	20.9	6990	130
SYDNEY A	46.17N	60.05W	203	-0.4	3.8	81.1	68.1	78.2	66.8	75.0	65.0	70.6	78.0	68.6	75.2	67.9	103.5	74.4	66.2	97.2	72.0	28.1	24.6	21.8	8329	135
Nunavut																									*1 site, 34 more on CD-ROM*	
IQALUIT A	63.75N	68.55W	112	-40.2	-37.1	61.7	51.7	57.1	49.2	53.6	47.5	52.6	60.1	50.0	56.1	47.9	49.6	54.7	45.9	45.9	52.2	34.0	28.5	24.9	18136	0
Ontario																									*20 sites, 34 more on CD-ROM*	
BEAUSOLEIL	44.85N	79.87W	600	-11.0	-4.8	85.9	74.1	82.6	71.9	79.7	70.3	76.0	82.6	74.0	80.0	74.1	130.1	79.6	72.0	120.9	77.2	14.0	12.1	10.7	7851	379
BELLE RIVER	42.30N	82.70W	604	5.7	10.1	88.9	75.6	86.0	74.6	83.3	73.0	78.6	85.3	76.8	83.1	76.7	142.5	83.0	74.9	133.8	80.6	29.0	25.3	22.2	5983	810
BURLINGTON PIERS (AUT)	43.30N	79.80W	253	4.5	8.8	86.5	70.3	83.6	69.1	80.7	68.0	73.9	80.7	72.1	79.4	71.9	119.0	77.8	69.8	110.8	75.6	23.3	20.2	17.6	6403	558
ERIEAU (AUT)	42.25N	81.90W	584	5.7	9.8	80.4	73.5	78.7	72.5	77.1	71.7	76.5	78.0	75.1	76.9	76.0	138.9	77.6	74.5	131.8	76.3	29.2	25.5	22.5	6437	519
LAGOON CITY	44.55N	79.22W	725	-11.1	-5.2	81.6	73.2	79.2	71.6	77.1	70.2	75.3	79.5	73.4	77.5	73.9	129.7	78.1	72.0	121.5	76.5	28.5	25.0	22.0	7969	339
LONDON INT'L AIRPORT	43.03N	81.15W	912	-0.9	3.4	86.2	72.2	83.3	70.6	80.8	69.2	74.4	82.7	72.8	80.4	71.8	121.8	79.0	70.2	115.0	77.1	24.1	21.2	18.9	7172	420
NORTH BAY A	46.36N	79.42W	1214	-18.1	-12.9	82.0	68.0	79.1	66.4	76.4	64.9	71.1	78.5	69.1	75.2	68.7	110.2	74.6	66.9	103.6	72.8	21.3	18.8	16.8	9437	213
OTTAWA MACDONALD-CARTIER INT	45.32N	75.67W	374	-12.0	-7.2	87.1	70.9	84.1	69.1	81.2	67.7	73.5	82.7	71.7	80.1	70.7	114.7	78.2	68.9	107.5	76.5	22.4	19.7	17.5	8213	425
PETERBOROUGH A	44.23N	78.37W	627	-11.0	-4.7	85.2	71.1	82.5	69.4	80.0	68.2	73.9	81.8	72.0	79.1	71.4	118.7	77.9	69.7	111.7	75.6	19.8	17.3	15.1	7927	247
PORT WELLER (AUT)	43.25N	79.22W	259	7.7	11.6	84.7	74.5	81.9	73.1	79.4	71.9	76.7	81.7	75.1	79.5	75.2	133.6	79.7	73.8	127.2	78.0	32.3	28.6	25.2	6351	576
SAULT STE MARIE A	46.48N	84.51W	630	-13.2	-7.5	83.1	70.1	79.8	67.9	76.9	66.3	72.2	79.9	70.0	76.9	69.5	111.1	76.7	67.5	103.6	74.1	24.6	21.1	18.5	8989	163
SUDBURY A	46.62N	80.80W	1142	-18.7	-13.3	84.5	68.2	81.1	66.2	78.2	64.5	70.8	80.5	68.9	77.3	67.7	106.1	74.3	65.9	99.7	73.0	23.2	20.6	18.4	9535	234
THUNDER BAY A	48.37N	89.33W	653	-21.9	-16.6	84.3	68.9	80.6	66.5	77.3	64.7	71.2	80.6	68.7	77.2	67.9	104.9	76.9	65.7	97.1	73.4	22.2	19.2	16.9	10139	125
TIMMINS VICTOR POWER A	48.57N	81.38W	968	-28.6	-23.1	84.9	67.6	81.4	65.1	78.1	63.8	70.4	80.8	68.2	77.2	66.8	102.3	74.8	64.8	95.3	73.0	18.8	17.6	15.4	10978	151
TORONTO BUTTONVILLE A	43.86N	79.37W	650	-4.2	1.0	89.1	72.5	85.6	70.5	82.5	69.1	74.7	85.1	72.6	82.3	71.4	118.6	80.5	69.4	110.8	78.0	21.6	18.9	17.3	7394	451
TORONTO ISLAND A	43.63N	79.40W	253	3.0	8.1	83.3	71.2	80.2	70.5	77.5	69.5	74.4	79.3	72.8	77.5	72.8	122.8	77.2	71.2	116.0	75.6	29.7	26.5	23.4	6698	427
TORONTO LESTER B. PEARSON INT	43.68N	79.63W	568	-1.8	3.0	88.1	72.0	85.0	70.2	82.0	68.7	74.4	84.2	72.6	81.7	71.4	118.4	79.7	69.6	111.1	77.7	26.5	23.1	20.4	7120	496
TRENTON A	44.12N	77.53W	282	-7.3	-1.9	84.5	71.7	81.9	70.4	79.4	69.0	74.4	81.5	72.7	79.2	72.0	119.5	78.7	70.4	113.1	77.0	24.1	20.9	18.4	7526	367
WELCOME ISLAND (AUT)	48.37N	89.12W	692	-14.8	-10.6	76.2	66.0	73.3	64.7	70.7	63.8	69.1	72.8	67.1	70.9	67.6	104.1	70.9	65.5	96.8	69.2	34.7	29.7	26.3	9680	78
WINDSOR A	42.28N	82.96W	623	2.4	7.4	89.4	73.1	86.6	71.9	83.9	70.5	75.9	85.5	74.1	82.8	72.9	124.9	81.6	71.3	118.1	79.2	25.4	22.3	19.9	6267	753
Prince Edward Island																									*1 site, 3 more on CD-ROM*	
CHARLOTTETOWN A	46.29N	63.13W	161	-4.9	-0.6	80.1	68.9	77.4	67.1	74.9	65.6	70.9	77.5	69.1	75.0	68.4	104.9	74.7	66.8	99.1	73.0	25.7	22.3	19.8	8465	170

Meaning of acronyms:
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F* *DP: Dew point temperature, °F* *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCWB: Mean coincident wet bulb temperature, °F *MCDB: Mean coincident dry bulb temperature, °F* *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
Québec																									*23 sites, 59 more on CD-ROM*	
BAGOTVILLE A	48.33N	71.00W	522	-22.2	-17.8	84.6	66.9	81.0	65.3	77.7	63.9	70.1	79.6	68.1	76.8	66.9	100.8	73.9	65.0	94.2	72.4	26.5	23.2	20.7	10365	171
JONQUIERE	48.42N	71.15W	420	-20.6	-16.3	84.2	67.7	80.9	66.0	77.6	64.9	71.4	80.1	69.5	76.9	68.6	106.6	75.6	66.7	99.9	73.3	23.8	21.2	19.1	9974	175
LA BAIE	48.30N	70.92W	499	-22.8	-18.4	84.4	67.0	80.9	66.0	77.6	64.8	71.3	79.8	69.2	76.5	68.5	106.5	75.3	66.6	99.7	73.1	23.1	20.5	18.1	10303	129
LAC SAINT-PIERRE	46.18N	72.92W	52	-13.9	-8.4	81.7	69.4	79.0	67.5	76.7	66.8	72.0	78.0	70.5	76.4	69.7	109.6	76.2	68.3	104.1	74.8	29.6	26.3	23.4	8608	307
L'ACADIE	45.29N	73.35W	144	-11.3	-7.1	86.2	71.1	83.6	69.9	80.9	68.5	74.7	82.1	72.7	79.3	72.2	119.9	79.1	70.5	112.9	76.8	23.2	20.1	17.4	7933	415
L'ASSOMPTION	45.81N	73.43W	69	-14.7	-9.2	86.7	71.3	83.7	69.4	81.0	68.0	74.1	82.4	72.0	79.5	71.3	115.8	78.2	69.6	109.1	76.4	19.1	16.7	14.7	8291	366
LENNOXVILLE	45.37N	71.82W	594	-14.8	-8.7	85.0	70.9	82.3	69.3	79.9	67.9	73.8	81.1	72.0	79.0	71.6	119.3	77.6	69.6	111.4	76.0	20.2	17.8	15.8	8277	269
MCTAVISH	45.50N	73.58W	240	-8.2	-3.2	86.3	71.3	83.5	69.6	81.1	68.1	74.0	82.8	72.0	79.6	71.0	115.3	78.8	69.4	109.1	77.2	11.4	9.9	9.0	7485	537
MONT-JOLI A	48.60N	68.22W	171	-11.0	-7.1	80.1	67.6	76.9	65.6	74.2	64.1	69.3	77.4	67.3	74.8	66.1	96.9	75.0	64.1	90.1	72.3	28.2	24.7	22.0	9763	120
MONT-ORFORD	45.31N	72.24W	2776	-19.2	-12.9	77.2	65.3	74.3	63.9	71.6	62.8	69.0	73.6	66.7	70.7	67.4	111.8	71.2	65.4	104.2	69.0	35.1	30.3	27.2	10139	96
MONTREAL/MIRABEL INT'L A	45.67N	74.03W	269	-15.6	-10.4	85.0	71.3	82.1	69.3	79.4	67.8	73.2	81.9	71.3	79.3	70.3	112.6	78.5	68.4	105.5	76.0	19.8	17.0	14.8	8729	292
MONTREAL/PIERRE ELLIOTT TRUDE	45.47N	73.75W	118	-10.6	-6.0	86.0	71.7	83.3	69.9	80.8	68.4	73.8	82.6	72.0	79.9	70.9	114.4	78.8	69.3	108.2	77.3	24.8	21.7	19.1	7971	456
MONTREAL/ST-HUBERT A	45.52N	73.42W	89	-11.7	-7.3	86.2	71.2	83.4	69.7	80.8	68.4	74.0	82.5	72.1	79.8	71.3	115.7	78.4	69.5	108.8	76.7	25.4	22.4	19.9	8215	391
MONTREAL-EST	45.63N	73.55W	164	-10.0	-5.0	86.9	69.8	84.1	68.1	81.6	66.9	72.9	81.9	71.1	79.1	70.1	111.4	76.6	68.4	104.9	75.7	19.3	17.0	15.2	7774	509
NICOLET	46.23N	72.66W	26	-14.1	-9.1	83.8	72.7	81.0	70.5	78.5	69.1	74.6	81.0	72.5	78.5	72.5	120.3	78.7	70.5	112.5	76.3	21.5	18.4	16.0	8468	294
POINTE-AU-PERE (INRS)	48.51N	68.47W	16	-7.8	-3.3	73.6	65.6	70.7	63.5	68.4	61.9	67.3	72.1	64.9	69.3	65.2	93.2	71.0	62.8	85.6	68.3	29.4	25.9	23.0	9590	20
QUEBEC/JEAN LESAGE INTL A	46.80N	71.38W	243	-15.2	-10.5	84.0	70.3	81.1	68.3	78.3	66.5	72.9	80.5	70.7	77.9	70.3	112.5	77.5	68.1	104.3	75.2	24.9	21.8	19.4	9169	238
SHERBROOKE A	45.43N	71.68W	791	-19.0	-13.2	83.5	69.6	80.8	68.1	78.2	66.5	72.2	80.4	70.1	77.7	69.3	111.0	76.7	67.4	103.8	74.5	20.3	17.8	15.6	9105	167
ST-ANICET 1	45.12N	74.29W	161	-12.7	-7.6	86.2	72.5	83.6	70.7	81.0	69.2	75.3	83.0	73.3	80.4	72.8	122.5	79.9	71.0	115.0	77.7	21.0	18.5	16.3	8068	338
STE-ANNE-DE-BELLEVUE 1	45.43N	73.93W	128	-11.5	-6.4	86.1	71.3	83.3	69.7	80.7	68.4	74.3	82.4	72.4	79.5	71.7	117.8	78.4	70.1	111.2	76.2	20.1	17.8	15.8	8002	405
STE-FOY (U. LAVAL)	46.78N	71.29W	299	-12.9	-8.0	84.5	69.5	81.6	67.4	78.9	65.7	72.7	80.7	70.7	77.8	70.0	111.6	76.4	68.3	105.2	74.5	21.1	18.2	15.5	8732	261
TROIS-RIVIERES	46.35N	72.52W	20	-11.4	-6.7	81.4	70.5	79.3	69.7	77.2	68.5	73.5	78.3	71.8	76.8	71.8	117.5	76.8	70.1	110.7	75.1	23.9	20.9	18.6	8239	338
VARENNES	45.72N	73.38W	59	-10.9	-6.4	86.6	71.1	83.6	69.4	81.0	68.0	74.2	82.3	72.3	79.7	71.5	116.6	78.2	69.8	109.9	76.7	24.5	21.2	18.8	8088	371
Saskatchewan																									*6 sites, 38 more on CD-ROM*	
MOOSE JAW A	50.33N	105.55W	1893	-27.9	-22.6	90.3	64.7	86.6	63.6	82.8	62.3	68.1	83.1	66.0	81.0	63.5	94.0	73.3	61.2	86.5	70.7	29.5	25.7	22.9	9617	285
MOOSE JAW CS	50.33N	105.56W	1893	-21.5	-16.1	90.0	66.1	86.3	65.5	82.4	63.8	71.9	81.2	69.3	79.2	69.2	115.1	76.5	66.3	103.9	73.0	27.0	24.2	21.5	9439	228
PRINCE ALBERT A	53.22N	105.67W	1404	-33.8	-28.3	84.7	65.4	81.1	63.9	78.0	61.9	67.9	80.3	65.9	77.8	63.5	92.4	73.4	61.3	85.4	71.1	21.2	18.8	17.0	11192	123
REGINA A	50.43N	104.67W	1893	-29.2	-23.6	88.5	65.6	84.9	64.8	81.4	63.2	69.8	82.7	67.3	79.7	65.6	101.4	75.8	62.8	91.9	73.2	29.9	26.3	23.3	10262	227
SASKATOON DIEFENBAKER INT'L A	52.17N	106.72W	1654	-31.0	-25.6	87.5	65.3	83.7	64.1	80.2	62.7	68.7	82.0	66.4	79.1	64.4	96.2	73.9	62.0	88.3	71.5	25.1	22.0	19.6	10550	189
SASKATOON KERNEN FARM	52.15N	106.55W	1673	-28.3	-23.0	87.2	63.8	83.4	62.4	80.2	61.0	68.9	80.5	66.5	76.9	65.1	98.8	74.6	62.6	90.3	71.6	24.0	21.2	19.0	10626	182
Yukon Territory																									*1 site, 11 more on CD-ROM*	
WHITEHORSE A	60.71N	135.07W	2316	-40.0	-31.5	78.1	57.4	73.8	55.7	70.1	54.1	58.5	74.2	56.7	71.1	52.1	63.1	61.2	50.4	59.0	60.0	23.2	21.0	18.8	12246	10
Albania																									*1 site, 0 more on CD-ROM*	
TIRANA	41.33N	19.78E	295	28.1	30.3	93.3	72.0	91.0	71.5	88.4	70.8	78.8	84.7	75.5	82.4	77.2	143.2	81.2	73.6	126.5	78.1	15.1	12.1	10.3	2959	1140
Algeria																									*3 sites, 29 more on CD-ROM*	
CONSTANTINE	36.28N	6.62E	2277	31.2	33.0	100.8	67.6	97.8	67.5	94.6	67.3	71.9	90.5	70.5	88.8	66.7	106.9	77.3	65.1	101.0	76.8	22.9	19.5	16.7	3034	1499
DAR-EL-BEIDA	36.68N	3.22E	95	35.4	37.4	95.4	71.9	92.1	72.3	89.5	72.5	77.9	87.1	76.5	85.5	75.3	133.2	82.5	73.7	125.9	81.4	23.9	20.8	18.1	1799	1592
ORAN-SENIA	35.63N	0.60W	299	35.8	38.4	93.0	69.5	89.7	70.1	87.3	70.1	75.8	84.5	74.7	82.8	73.4	125.5	80.5	72.0	119.4	79.7	27.3	22.9	20.2	1685	1531
Argentina																									*15 sites, 36 more on CD-ROM*	
AEROPARQUE BS. AS.	34.57S	58.42W	20	39.5	42.3	87.8	73.7	85.6	73.4	83.2	72.3	77.3	84.0	75.9	82.4	75.2	132.3	82.2	73.6	125.2	80.8	24.8	21.9	19.5	1635	1318
CORDOBA AERO	31.32S	64.22W	1555	31.8	35.2	94.2	72.2	91.3	71.5	88.8	70.8	77.0	88.0	75.3	85.7	73.9	134.2	82.8	72.0	125.5	80.8	26.4	23.1	20.6	1752	1327
CORRIENTES AERO.	27.45S	58.77W	203	40.6	42.9	97.2	76.1	95.2	76.3	93.0	75.7	81.0	90.2	79.9	88.8	78.8	150.8	86.8	77.3	143.3	84.8	23.1	20.0	17.6	706	2853
EZEIZA AERO	34.82S	58.53W	66	31.7	34.3	92.6	72.5	89.7	71.7	87.3	70.8	76.3	86.1	74.8	84.2	73.6	125.3	80.8	71.9	118.4	79.1	22.5	19.5	17.4	2180	1147
MAR DEL PLATA AERO	37.93S	57.58W	69	30.0	32.3	87.8	70.4	84.2	69.1	80.9	68.2	73.7	81.4	72.1	79.2	71.6	117.1	76.7	70.0	110.5	75.1	25.7	22.8	20.6	3324	433
MENDOZA AERO	32.83S	68.78W	2310	31.1	33.7	95.7	67.8	93.2	67.5	91.1	67.2	72.8	88.3	71.4	86.8	68.1	112.4	81.0	66.3	105.7	80.0	19.7	16.6	14.0	2233	1591
PARANA AERO	31.78S	60.48W	256	36.4	38.8	93.3	73.8	91.0	72.7	88.8	72.2	77.9	87.6	76.3	85.8	75.1	133.0	83.9	73.5	125.7	82.0	24.6	21.6	19.1	1539	1625
POSADAS AERO.	27.37S	55.97W	410	40.6	43.3	96.8	75.6	94.9	75.3	93.1	75.1	79.9	90.7	78.9	89.7	76.9	142.3	86.3	75.6	136.0	84.7	19.7	16.8	14.6	594	3075
RESISTENCIA AERO	27.45S	59.05W	171	35.5	39.1	98.4	75.2	95.8	75.6	93.5	75.4	80.5	90.6	79.5	89.3	77.8	145.6	85.8	76.9	140.9	84.8	20.2	17.3	15.3	827	2801
ROSARIO AERO	32.92S	60.78W	82	30.8	33.7	93.5	73.7	91.1	72.9	88.5	72.1	77.9	87.2	76.3	85.4	75.3	132.9	83.3	73.6	125.3	81.5	26.6	23.1	21.1	1887	1394
SALTA AERO	24.85S	65.48W	4006	30.4	33.5	91.0	65.2	87.9	65.6	85.6	66.0	71.9	82.3	70.9	80.8	69.0	124.1	76.3	68.0	119.7	75.3	17.8	14.8	12.7	1691	986
SAN JUAN AERO	31.40S	68.42W	1962	28.6	31.5	100.2	68.0	97.4	67.6	95.0	67.0	72.7	92.2	71.3	90.4	66.6	105.4	81.8	65.0	99.5	81.1	31.2	26.5	22.7	2107	2013
SANTIAGO DEL ESTERO	27.77S	64.30W	653	31.0	35.0	102.0	74.3	98.9	73.7	96.2	73.4	79.1	92.0	77.9	90.8	75.8	138.3	85.3	74.6	132.7	83.7	23.4	20.4	17.5	1081	2603
SAUCE VIEJO AERO	31.70S	60.82W	59	33.0	36.0	94.7	76.6	91.8	75.2	89.6	74.3	80.2	89.6	78.7	87.5	77.6	144.0	85.7	76.0	136.3	84.2	33.9	27.8	25.8	1468	1813
TUCUMAN AERO	26.85S	65.10W	1476	37.8	40.7	96.8	74.1	93.9	73.9	91.5	73.6	79.1	89.8	77.8	88.4	76.2	144.6	86.1	74.9	138.3	84.6	20.4	16.9	13.7	1059	2169
Armenia																									*1 site, 2 more on CD-ROM*	
YEREVAN/YEREVAN-ARA	40.13N	44.47E	3740	7.0	12.0	96.9	70.3	94.3	69.4	91.6	68.3	72.6	93.1	70.9	91.1	65.9	109.8	87.3	64.0	102.5	84.5	22.3	18.6	15.2	5047	1340

Meaning of acronyms:
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F* *DP: Dew point temperature, °F* *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCWB: Mean coincident wet bulb temperature, °F *MCDB: Mean coincident dry bulb temperature, °F* *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%			1%	2.5%	5%		
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB						HDD / CDD 65	
Australia																									*25 sites, 243 more on CD-ROM*	
ADELAIDE AIRPORT	34.95S	138.53E	26	39.1	41.3	96.5	65.1	92.1	64.2	88.3	63.4	70.3	83.6	68.6	82.2	66.5	97.6	75.2	64.1	89.8	73.8	26.3	23.3	21.0	2163	811
ADELAIDE REGIONAL O	34.92S	138.62E	167	40.6	42.4	97.4	66.2	93.1	65.6	89.3	64.5	70.9	87.4	69.2	85.1	66.6	98.6	75.1	63.8	89.2	74.3	18.9	16.6	15.0	1995	940
ARCHERFIELD AIRPORT	27.57S	153.00E	43	41.4	43.7	91.6	73.4	89.1	73.0	86.8	72.2	77.6	86.1	76.4	84.1	75.6	134.0	80.6	74.3	128.2	79.9	20.3	18.1	16.3	663	1919
BANKSTOWN AIRPORT A	33.92S	150.98E	26	37.7	39.7	92.9	69.0	88.5	69.1	84.8	68.4	74.4	84.1	72.8	81.3	71.7	117.1	78.1	70.3	111.5	76.3	22.0	19.3	17.2	1678	961
BRISBANE AERO	27.38S	153.13E	33	42.6	45.0	88.0	72.7	85.9	73.2	84.3	72.2	77.5	83.5	76.3	82.2	75.5	133.8	81.1	74.4	128.7	80.1	21.8	19.3	17.3	600	1844
CANBERRA AIRPORT	35.30S	149.20E	1903	26.0	28.2	91.7	64.0	88.1	62.7	84.4	62.1	68.0	80.8	66.3	79.1	64.4	97.1	71.4	62.4	90.5	70.1	23.8	21.2	18.9	3804	443
CANTERBURY RACECOUR	33.90S	151.12E	10	38.6	40.5	91.0	67.7	86.9	68.2	83.5	67.9	74.0	81.8	72.7	80.0	71.8	117.4	77.5	70.4	111.9	76.3	25.6	20.6	17.5	1610	929
COOLANGATTA AIRPORT	28.17S	153.50E	20	43.7	46.6	84.6	74.2	83.0	74.0	81.9	73.4	77.8	82.0	76.5	80.8	76.4	138.0	80.3	75.3	132.6	79.6	21.8	20.0	18.3	568	1656
GOLD COAST SEAWAY	27.93S	153.43E	10	49.4	51.5	87.3	73.6	84.8	72.9	82.8	72.6	77.8	82.1	76.4	80.9	76.5	138.4	80.0	75.2	132.0	79.1	28.2	24.3	21.3	348	1943
HOMEBUSH (OLYMPIC SITE)	33.85S	151.07E	92	42.7	44.4	92.8	66.9	88.6	67.2	85.1	67.0	72.8	83.3	71.5	81.1	69.7	109.6	76.7	68.4	104.6	75.5	21.7	18.4	16.0	1314	1162
JANDAKOT AERO	32.10S	115.88E	102	35.2	37.7	96.7	67.6	93.3	67.5	89.9	66.3	73.3	86.4	70.7	84.6	69.6	109.1	77.2	66.7	98.6	74.7	23.5	20.7	18.7	1769	1156
LAVERTON AERODROME	37.87S	144.75E	66	35.2	37.4	93.4	66.2	88.0	65.0	83.0	64.1	69.7	82.0	67.8	80.3	66.0	96.2	74.0	64.0	89.4	71.6	27.2	23.7	21.1	3079	371
MELBOURNE	37.82S	144.97E	105	40.4	42.2	94.3	65.9	89.6	64.7	85.1	64.3	70.1	83.6	68.1	81.5	65.9	95.8	75.0	63.9	89.3	73.0	17.1	15.0	13.2	2357	567
MELBOURNE AIRPORT	37.67S	144.85E	390	37.1	38.9	94.3	64.4	89.4	63.7	84.4	63.0	69.1	82.2	67.1	80.0	65.1	94.0	72.3	63.0	87.2	70.1	30.9	27.5	24.1	3115	425
MOORABBIN AIRPORT	37.98S	145.10E	43	36.5	38.9	92.9	66.7	88.1	65.5	83.2	64.9	70.9	81.3	68.9	79.5	68.4	104.4	73.4	65.8	95.3	71.8	26.3	23.4	21.1	3002	351
MOUNT LAWLEY PERTH	31.92S	115.87E	82	39.1	41.4	97.1	68.4	93.5	67.6	89.9	66.9	72.5	87.4	70.8	85.2	68.2	104.0	76.8	66.8	98.8	75.4	18.9	16.5	14.8	1355	1340
MT LOFTY AWS	34.97S	138.70E	2395	36.3	37.5	85.8	62.0	82.4	60.0	79.1	58.6	66.0	77.3	64.0	75.6	62.6	92.9	67.9	60.0	84.5	67.6	36.0	32.3	29.0	4815	278
NEWCASTLE NOBBYS SI	32.92S	151.78E	108	45.9	47.6	86.6	67.6	81.6	67.5	78.4	68.9	74.5	78.0	73.3	76.6	73.4	124.7	76.2	72.2	119.8	75.3	40.7	34.3	31.0	1083	1005
PERTH AIRPORT	31.93S	115.97E	66	39.5	42.0	98.8	66.7	95.2	66.6	91.6	65.9	71.8	87.5	70.2	85.6	67.4	100.9	75.7	65.8	95.5	74.7	24.5	21.7	19.6	1407	1380
SCORESBY RESEARCH	37.87S	145.25E	295	36.1	38.1	92.4	66.2	88.6	65.8	84.6	65.3	70.4	84.2	68.3	82.1	66.1	97.1	74.8	63.9	89.9	72.6	18.7	16.5	14.8	3014	429
SWANBOURNE	31.95S	115.77E	66	43.5	45.4	94.4	67.6	90.2	67.9	86.7	67.2	73.9	83.2	72.0	80.8	71.4	116.1	77.5	69.6	109.2	75.2	30.3	25.8	22.7	1189	1192
SYDNEY AIRPORT AMO	33.93S	151.18E	16	42.8	44.5	91.0	67.3	86.0	68.1	82.6	67.9	73.6	81.2	72.4	79.3	71.4	116.2	76.6	70.1	110.8	75.5	28.3	25.1	22.4	1292	1098
SYDNEY REGIONAL OFF	33.85S	151.20E	131	45.0	46.4	87.9	68.0	83.9	68.5	81.1	68.5	73.5	80.8	72.3	79.2	71.2	115.6	77.2	70.1	111.3	76.1	N/A	N/A	N/A	1165	1074
TUGGERANONG ISABELL	35.42S	149.10E	1929	24.9	26.9	92.5	64.8	88.9	63.7	85.4	62.5	68.5	82.2	66.8	80.7	64.6	98.1	72.6	62.6	91.1	70.7	19.0	16.6	14.9	3764	506
WILLIAMTOWN RAAF	32.80S	151.83E	26	39.5	41.6	93.1	69.9	88.5	69.7	84.6	68.8	74.5	83.9	73.2	81.5	71.9	118.1	77.6	70.8	113.5	76.5	27.6	23.6	21.0	1455	1044
Austria																									*5 sites, 63 more on CD-ROM*	
GUMPOLDSKIRCHEN	48.03N	16.28E	764	14.2	18.1	87.7	69.9	84.4	68.4	81.3	66.8	71.0	85.1	69.4	82.2	66.2	99.4	76.7	64.7	94.2	76.0	17.8	14.7	12.7	5503	450
TULLN	48.32N	16.12E	577	9.0	14.7	87.6	69.7	84.2	68.0	81.1	66.5	71.2	84.8	69.3	81.5	66.3	99.1	78.0	64.7	93.5	75.3	26.4	22.9	20.0	5824	348
WIEN/CITY	48.20N	16.37E	561	17.3	21.1	88.8	71.3	85.6	69.9	82.8	68.3	72.7	86.1	71.2	83.0	68.4	106.4	78.7	67.0	101.3	77.7	20.2	17.5	15.6	4954	665
WIEN/HOHE WARTE	48.25N	16.37E	656	13.4	17.8	87.1	70.2	84.0	68.5	81.1	66.8	71.5	84.8	69.7	81.4	66.9	101.4	77.5	65.5	96.3	75.6	22.2	18.8	16.5	5473	436
WIEN/SCHWECHAT-FLUG	48.12N	16.57E	623	11.2	15.7	87.5	68.5	84.2	67.3	80.9	65.9	70.2	83.3	68.7	81.0	66.0	98.0	75.4	64.4	92.6	73.9	27.2	24.0	21.3	5724	382
Belarus																									*6 sites, 12 more on CD-ROM*	
BREST	52.12N	23.68E	479	-1.4	4.9	85.2	67.3	81.9	65.8	78.6	64.2	69.2	80.5	67.5	78.1	65.5	95.8	73.4	63.9	90.4	71.8	17.0	14.6	12.7	6921	219
GOMEL	52.40N	30.95E	413	-6.0	0.4	84.6	67.0	81.8	65.9	78.8	64.6	69.7	79.9	68.0	77.7	66.2	98.2	74.0	64.5	92.4	71.9	18.5	16.2	14.5	7603	241
GRODNO	53.60N	24.05E	440	-4.4	1.7	82.9	66.6	79.6	65.2	76.6	63.6	69.0	79.0	67.0	76.4	65.4	95.3	73.5	63.7	89.6	71.0	24.2	21.0	18.5	7573	129
MINSK	53.93N	27.63E	758	-5.1	1.1	82.8	65.8	80.2	64.7	77.0	63.5	68.3	79.0	66.6	76.6	64.5	93.5	72.4	62.8	88.0	70.5	18.0	15.4	13.7	7929	151
MOGILEV	53.95N	30.07E	630	-8.9	-2.4	81.8	66.2	78.9	65.3	76.0	63.9	68.8	77.9	67.0	75.8	65.5	96.3	73.5	63.7	90.3	71.2	22.5	19.9	17.7	8308	125
VITEBSK	55.17N	30.22E	577	-8.5	-1.6	81.3	66.4	78.5	65.1	75.7	63.6	68.6	77.7	66.9	75.4	65.4	95.7	73.4	63.7	90.2	71.3	18.5	15.9	13.9	8242	142
Belgium																									*3 sites, 15 more on CD-ROM*	
ANTWERPEN/DEURNE	51.20N	4.47E	46	18.5	23.0	84.5	69.2	80.9	67.7	77.5	66.0	70.6	81.4	68.9	78.6	66.8	98.9	75.9	65.1	93.0	73.8	22.8	19.8	17.4	5188	188
BRUXELLES NATIONAL	50.90N	4.53E	190	18.2	23.0	84.1	68.2	80.6	67.1	77.2	65.4	69.9	80.9	68.2	78.1	66.1	96.9	74.6	64.4	91.2	72.8	25.8	22.4	19.7	5279	173
UCCLE	50.80N	4.35E	341	18.8	23.3	83.7	67.8	80.4	66.6	77.0	65.0	69.6	80.4	67.7	77.7	65.8	96.5	74.7	64.0	90.5	72.2	21.6	18.5	16.1	5293	198
Benin																									*1 site, 5 more on CD-ROM*	
COTONOU	6.35N	2.38E	30	71.4	72.6	90.7	81.1	89.8	81.0	89.3	80.9	84.0	88.8	83.0	87.6	82.5	169.8	88.2	81.9	166.4	87.5	18.3	16.6	15.7	0	6010
Bolivia																									*3 sites, 0 more on CD-ROM*	
COCHABAMBA	17.42S	66.18W	8360	35.2	37.3	85.8	59.2	84.0	58.5	82.4	58.0	62.8	78.6	61.8	77.4	58.4	100.0	66.8	57.3	96.1	65.0	21.8	17.9	12.7	1024	463
LA PAZ/ALTO	16.52S	68.18W	13248	23.8	26.0	63.4	43.4	62.2	43.0	60.7	42.7	48.5	57.1	47.6	56.0	44.9	73.3	50.4	44.4	71.8	49.9	19.5	17.1	14.5	7093	0
VIRU-VIRU	17.63S	63.13W	1224	48.5	51.4	93.6	74.9	92.4	75.2	91.2	75.3	78.9	87.8	78.2	86.9	76.8	146.4	83.1	75.6	140.3	81.3	29.3	25.7	22.9	161	3855
Bosnia and Herzegovina																									*3 sites, 3 more on CD-ROM*	
BJELASNICA	43.72N	18.27E	6791	-3.7	1.2	65.5	52.4	62.7	50.9	60.4	50.5	55.0	60.7	53.7	59.5	52.8	76.4	56.8	51.3	72.3	55.8	76.1	67.7	60.1	11016	1
SARAJEVO/BUTMIR	43.82N	18.33E	1677	7.5	12.4	89.7	68.5	86.2	67.7	82.6	66.0	71.2	84.9	69.2	81.7	66.4	103.6	78.6	64.6	97.1	75.5	18.6	14.5	11.5	5834	341
SARAJEVO-BJELAVE	43.87N	18.43E	2093	9.7	14.1	88.3	65.6	85.2	64.9	82.0	63.3	68.8	82.6	66.8	80.0	64.3	97.5	74.6	62.4	91.2	71.2	11.9	9.8	8.1	5735	390
Brazil																									*30 sites, 7 more on CD-ROM*	
ANAPOLIS (BRAZ-AFB)	16.23S	48.97W	3730	55.0	57.1	89.1	69.0	87.2	69.0	85.6	68.9	74.8	80.7	74.0	80.0	73.5	143.3	77.6	72.1	136.7	76.6	14.8	12.9	11.5	21	2729
ARACAJU (AEROPORTO)	10.98S	37.07W	30	69.9	71.4	89.9	79.9	89.3	79.6	88.1	79.1	81.1	87.1	80.5	86.8	79.2	151.7	85.0	78.9	150.1	85.1	16.3	14.4	13.4	0	5605
BELEM (AEROPORTO)	1.38S	48.48W	52	73.0	73.1	91.6	78.9	91.1	78.7	89.9	78.5	82.5	86.6	81.8	86.3	81.0	161.4	85.0	80.7	159.8	84.9	18.8	15.7	13.4	0	6008

Meaning of acronyms:
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F*
MCWB: Mean coincident wet bulb temperature, °F
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DP: Dew point temperature, °F *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCDB: Mean coincident dry bulb temperature, °F *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
BELO HORIZONTE	19.93S	43.93W	2789	51.8	53.8	89.8	69.0	88.0	69.3	86.3	69.4	75.3	81.3	74.2	80.9	73.6	138.8	77.8	72.0	131.4	76.5	17.6	15.4	13.7	67	2485
BELO HORIZONTE (AERO)	19.85S	43.95W	2575	52.6	55.0	91.4	69.3	89.6	69.3	88.0	69.2	73.5	83.4	72.7	82.5	71.5	127.9	75.6	70.2	122.4	74.5	13.9	12.0	11.0	44	2960
BRASILIA (AEROPORTO)	15.87S	47.93W	3481	49.7	51.8	89.8	64.3	88.1	65.1	86.4	65.5	71.9	79.6	71.0	79.0	70.0	125.7	74.1	69.0	121.2	73.2	16.6	14.0	12.2	42	2422
CAMPINAS (AEROPORTO)	23.00S	47.13W	2169	47.9	50.2	91.8	70.7	90.0	70.7	88.2	70.6	75.6	84.6	74.7	83.7	73.5	135.3	78.4	72.0	128.4	77.2	25.2	23.0	21.4	189	2591
CAMPO GRANDE (AERO)	20.47S	54.67W	1860	47.3	51.5	97.2	72.9	95.3	73.2	93.6	73.5	79.1	89.6	78.2	88.7	76.8	149.6	83.9	75.5	143.2	82.2	23.3	21.8	19.8	105	4613
CUIABA (AEROPORTO)	15.65S	56.10W	614	55.6	58.9	100.4	73.2	98.6	73.6	96.9	74.2	82.6	89.1	81.2	87.6	81.0	164.5	85.4	80.2	160.5	84.8	17.2	14.2	12.2	22	6065
CURITIBA (AEROPORTO)	25.52S	49.17W	2979	36.9	40.7	87.7	68.6	85.7	68.6	83.8	68.5	73.6	80.5	72.5	79.5	71.8	131.6	75.8	70.6	126.1	74.6	19.0	16.6	14.3	1152	1085
EDUARDO GOMES INTL	3.03S	60.05W	7	71.2	71.5	96.7	79.3	95.2	79.1	93.6	79.0	83.2	90.3	82.3	89.2	81.0	161.3	85.0	80.8	159.9	84.7	13.1	11.4	9.8	0	6202
FLORIANOPOLIS (AERO)	27.67S	48.55W	16	46.0	49.0	89.9	77.8	87.8	77.3	85.9	76.2	79.8	86.3	78.7	84.8	78.0	145.6	82.9	77.0	140.9	81.9	18.6	16.3	14.3	394	2376
FORTALEZA (AEROPORTO)	3.78S	38.53W	82	73.1	73.4	90.0	77.4	89.7	77.3	89.2	77.1	80.1	85.6	79.6	85.2	79.1	151.4	82.1	78.5	148.4	81.7	20.8	18.7	17.3	0	6161
GALEAO	22.82S	43.25W	20	58.8	60.6	100.1	78.0	96.9	77.5	94.7	77.2	82.5	90.7	81.3	89.2	80.7	159.5	86.1	79.2	151.5	84.7	18.5	16.2	14.1	10	4508
GOIANIA (AEROPORTO)	16.63S	49.22W	2451	53.4	55.8	95.0	68.5	93.2	69.3	91.6	69.4	76.1	85.6	75.4	84.9	73.7	137.4	78.9	73.2	135.0	78.4	18.2	15.8	12.3	8	4047
GUARULHOS	23.43S	46.47W	2520	45.0	48.3	91.0	71.7	88.2	71.2	86.4	70.8	76.5	83.4	75.3	82.0	75.1	145.0	78.3	73.6	137.4	77.2	17.0	15.1	13.6	417	1933
LONDRINA (AEROPORTO)	23.33S	51.13W	1867	46.1	49.6	93.0	71.2	91.1	71.5	89.4	71.8	78.0	84.1	77.1	83.3	76.9	150.1	80.5	75.5	143.1	79.3	14.6	12.5	11.2	223	2903
MACAPA	0.03N	51.05W	49	73.0	73.1	93.2	79.2	91.8	78.9	91.4	78.8	81.5	88.9	80.7	88.5	79.2	152.0	85.4	78.8	149.7	84.9	18.8	16.6	14.9	0	6220
MACEIO (AEROPORTO)	9.52S	35.78W	384	66.4	67.7	91.4	77.7	89.9	77.1	89.3	76.9	80.3	86.4	79.6	85.6	79.0	152.6	83.1	78.3	149.2	82.6	17.0	15.2	13.8	0	4949
MANAUS (AEROPORTO)	3.15S	59.98W	276	71.7	73.0	94.4	78.7	93.2	78.7	91.7	78.4	81.0	88.6	80.5	88.3	79.1	152.8	84.6	78.8	150.8	84.4	13.8	11.9	10.8	0	6132
NATAL AEROPORTO	5.92S	35.25W	171	69.7	70.9	91.2	77.9	90.0	77.5	89.5	77.3	80.1	86.0	79.6	85.7	78.9	151.2	83.0	78.0	146.6	82.5	22.3	20.4	18.6	0	5716
PORTO ALEGRE (AERO)	30.00S	51.18W	10	39.4	42.7	94.8	76.3	91.7	75.1	89.3	74.3	79.3	88.9	77.9	86.9	77.0	140.5	83.0	75.4	133.2	81.4	20.7	17.8	15.4	832	2066
PORTO VELHO (AERO)	8.77S	63.92W	335	64.4	67.2	95.8	78.1	94.5	78.0	93.1	78.0	82.5	88.0	81.7	87.5	81.0	162.9	84.1	80.6	161.0	83.9	13.7	11.5	9.8	1	5879
RECIFE (AEROPORTO)	8.07S	34.85W	62	71.2	71.6	93.2	80.7	91.8	79.7	91.3	79.3	81.7	90.4	80.9	89.4	79.2	151.6	87.3	78.7	149.1	86.9	18.2	16.4	14.5	0	6178
RIO DE JANEIRO (AERO)	22.90S	43.17W	10	61.1	62.7	93.3	77.2	91.1	76.9	89.2	76.7	79.9	87.7	79.1	86.7	77.4	142.5	84.2	76.9	140.4	83.7	18.8	16.5	14.5	8	4135
SALVADOR (AEROPORTO)	12.90S	38.33W	20	68.3	69.9	90.3	79.9	89.6	79.5	88.2	78.8	81.4	87.5	80.6	87.1	79.5	153.0	85.1	78.9	150.2	84.9	20.4	18.4	16.6	0	5440
SAO LUIZ (AEROPORTO)	2.60S	44.23W	174	73.1	73.5	93.3	79.4	92.0	79.1	91.5	78.9	81.9	87.4	81.3	87.1	80.8	160.9	85.0	80.1	157.2	84.3	20.2	18.3	16.5	0	6509
SAO PAULO (AEROPORTO)	23.62S	46.65W	2635	48.0	50.0	89.8	68.8	87.9	68.8	86.0	68.8	73.9	81.9	72.8	80.9	71.7	129.3	77.8	70.2	122.6	76.0	16.8	14.5	12.8	413	2022
TERESINA (AEROPORTO)	5.05S	42.82W	226	71.3	72.2	100.5	74.9	99.0	75.3	98.4	75.4	80.7	89.5	80.0	89.4	78.9	151.5	83.3	78.1	147.1	82.9	11.6	10.0	8.9	0	7099
VITORIA (AEROPORTO)	20.27S	40.28W	13	61.9	63.7	93.2	78.2	91.6	77.7	90.1	77.3	80.9	87.0	80.0	86.0	79.2	151.8	83.3	78.8	149.4	82.9	22.5	20.2	18.0	0	4653
Bulgaria																									*4 sites, 24 more on CD-ROM*	
CHERNI VRAH (TOP/SOMMET)	42.58N	23.27E	7520	-3.8	0.5	62.3	51.6	59.5	50.6	57.2	49.7	53.8	58.5	52.2	57.0	51.9	76.3	55.5	50.3	71.7	53.8	63.5	54.1	44.5	11705	0
PLOVDIV	42.13N	24.75E	607	13.6	18.7	93.5	69.7	90.7	69.2	87.9	68.1	73.0	88.3	71.3	85.8	68.1	105.5	80.6	66.4	99.4	77.9	27.0	23.1	20.8	4642	958
SOFIA (OBSERV.)	42.65N	23.38E	1939	9.6	14.1	89.6	65.7	86.1	65.3	82.8	64.4	68.7	82.6	67.2	80.9	64.3	96.8	74.2	62.7	91.4	72.3	21.1	18.0	15.5	5704	430
VARNA	43.20N	27.92E	141	15.9	19.7	87.7	72.2	84.8	71.5	82.6	70.5	75.5	83.5	73.8	81.6	73.0	123.1	80.8	71.2	115.8	79.1	30.3	23.0	18.9	4693	689
Burkina Faso																									*2 sites, 3 more on CD-ROM*	
BOBO-DIOULASSO	11.17N	4.32W	1509	64.0	66.3	100.4	68.2	98.8	68.3	97.4	68.6	78.4	89.4	77.7	88.6	75.6	141.7	83.7	74.9	138.4	83.1	16.5	14.6	13.2	0	6038
OUAGADOUGOU	12.35N	1.52W	1004	61.0	63.1	105.0	69.1	103.5	69.2	101.9	69.5	79.5	92.0	78.8	91.4	76.8	144.9	83.6	75.5	138.8	82.9	17.1	14.7	13.1	0	6844
Chad																									*1 site, 0 more on CD-ROM*	
NDJAMENA	12.13N	15.03E	968	55.3	58.1	109.3	71.1	107.5	70.4	105.7	69.9	81.9	91.7	80.9	91.2	79.5	158.9	86.0	78.8	154.9	85.5	21.2	18.2	16.1	2	6893
Chile																									*2 sites, 10 more on CD-ROM*	
ANTOFAGASTA	23.43S	70.45W	459	50.1	51.8	76.7	67.8	75.1	66.4	73.7	65.2	69.1	74.5	67.8	73.1	66.6	99.6	72.9	65.7	96.6	72.0	20.9	19.0	17.7	1183	367
PUDAHUEL	33.38S	70.78W	1555	30.0	32.0	89.2	64.4	87.2	64.0	85.5	63.6	67.1	84.2	65.9	83.2	60.5	83.3	74.8	58.9	78.6	73.5	18.7	16.5	14.6	2741	409
China																									*89 sites, 308 more on CD-ROM*	
ANQING	30.53N	117.05E	66	28.6	30.9	96.1	81.1	94.1	80.8	92.0	80.2	83.0	91.4	82.2	90.4	80.9	161.1	88.2	80.0	156.3	87.5	18.1	16.0	14.2	2912	2322
ANYANG	36.05N	114.40E	210	17.5	20.7	95.0	74.3	92.7	75.0	90.5	74.9	81.7	88.7	80.3	87.0	79.8	155.8	86.3	78.4	148.6	84.9	16.9	14.5	12.4	4236	1773
BAODING	38.85N	115.57E	62	14.0	17.1	95.3	72.5	92.5	72.9	90.1	73.3	80.6	87.9	79.0	86.0	78.6	148.7	85.2	77.1	141.2	83.6	14.4	12.1	10.2	4758	1695
BAOJI	34.35N	107.13E	2001	21.3	23.7	94.5	71.1	91.9	70.6	89.2	70.5	76.5	87.2	74.9	85.1	73.5	134.6	82.4	72.0	127.7	80.9	13.8	11.6	9.8	4299	1366
BEIJING	39.93N	116.28E	180	12.5	15.5	94.7	72.0	91.7	72.4	89.4	72.4	80.6	86.9	78.9	84.8	79.0	151.5	84.0	77.2	142.5	82.5	21.4	17.8	14.7	5094	1527
BENGBU	32.95N	117.37E	72	22.8	25.6	96.1	79.9	93.6	79.2	91.2	77.8	82.9	91.2	82.0	90.1	80.9	160.9	87.9	79.8	155.3	87.2	16.2	13.9	12.1	3495	2033
BENXI	41.32N	123.78E	607	-9.1	-4.6	88.6	71.7	86.1	71.8	83.9	71.1	76.6	83.6	75.1	82.1	74.4	131.6	81.3	72.9	124.7	79.4	15.3	12.3	11.0	7374	876
BINHAI	39.12N	117.33E	7	12.3	15.6	93.5	74.3	91.5	74.4	89.4	73.8	81.8	87.0	80.3	85.6	80.6	159.1	85.2	79.0	150.4	83.4	22.8	19.1	16.5	4928	1606
CANGZHOU	38.33N	116.83E	36	13.7	16.7	93.7	73.4	91.6	73.9	89.5	73.9	80.9	87.6	79.4	85.9	79.1	151.2	85.2	77.7	143.9	83.6	20.4	16.6	14.3	4835	1661
CHANGCHUN	43.90N	125.22E	781	-12.6	-8.7	87.2	70.3	84.8	70.0	82.6	69.2	76.2	82.5	74.5	80.4	74.2	131.6	80.4	72.6	124.2	78.6	26.8	22.1	18.5	8681	725
CHANGDE	29.05N	111.68E	115	30.3	32.3	97.0	81.1	94.9	80.8	92.7	80.2	83.6	91.7	82.6	90.8	81.6	165.3	88.8	80.5	159.0	87.8	13.5	11.2	9.4	2768	2302
CHANGSHA	28.23N	112.87E	223	30.2	32.1	96.7	80.3	94.7	79.9	92.7	79.5	82.4	91.4	81.5	90.6	80.2	158.2	87.2	79.2	152.8	86.3	16.1	13.7	11.8	2737	2358
CHAOYANG	41.55N	120.45E	577	-3.5	0.7	92.7	70.5	89.7	70.5	87.3	70.1	77.5	85.9	76.0	83.8	75.1	134.5	82.7	73.5	127.5	81.2	20.9	17.4	15.2	6705	1122
CHENGDE	40.98N	117.95E	1266	-0.2	3.1	91.4	68.9	88.5	68.8	86.0	68.6	75.6	83.9	74.2	82.2	73.3	129.7	80.2	71.8	123.4	78.9	14.3	11.6	9.5	6810	947
CHENGDU	30.67N	104.02E	1667	32.6	34.8	91.6	77.6	89.4	76.7	87.2	75.7	80.6	87.7	79.2	85.8	78.8	159.1	85.5	77.3	151.1	83.5	12.1	9.8	8.0	2619	1662
CHIFENG	42.27N	118.97E	1877	-4.3	-1.2	90.9	67.4	88.0	66.9	85.4	66.2	73.0	84.0	71.4	81.7	69.8	117.4	78.4	68.2	110.9	77.2	18.5	16.0	13.8	7577	772

Meaning of acronyms:
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F* *DP: Dew point temperature, °F* *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCWB: Mean coincident wet bulb temperature, °F *MCDB: Mean coincident dry bulb temperature, °F* *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
CHONGQING	29.58N	106.47E	853	37.7	39.5	98.4	78.1	96.0	78.2	93.6	77.7	81.3	90.8	80.4	90.0	79.0	155.4	86.4	78.0	150.2	85.6	11.5	9.6	8.1	2093	2301
DALIAN	38.90N	121.63E	318	10.1	13.4	88.0	74.1	85.8	73.4	83.2	72.4	78.8	83.6	77.4	81.6	77.3	143.6	81.3	75.9	137.0	80.0	25.1	21.9	19.2	5581	1099
DANDONG	40.05N	124.33E	46	2.5	6.2	85.7	75.2	83.2	73.7	81.1	72.7	78.1	82.6	76.6	80.3	76.8	139.9	80.7	75.5	133.8	78.9	20.1	17.2	15.1	6553	791
DATONG	40.10N	113.33E	3507	-5.6	-1.9	88.8	63.0	85.9	62.5	83.4	62.4	70.1	79.8	68.5	77.9	67.3	114.6	74.1	65.6	107.8	73.2	22.1	18.6	16.1	7645	585
DEZHOU	37.43N	116.32E	72	15.5	18.1	93.5	74.5	91.3	75.3	89.4	74.7	81.6	88.4	80.0	86.6	79.7	154.4	86.4	78.1	146.3	84.8	16.6	14.3	12.3	4576	1720
DIWOPU	43.90N	87.47E	2178	-9.8	-6.1	95.7	64.8	93.3	64.4	91.0	63.7	69.0	86.6	67.4	84.9	64.4	98.2	72.0	62.4	91.4	71.9	16.3	12.5	10.1	7791	1365
FUZHOU	26.08N	119.28E	279	40.0	41.9	96.0	80.5	94.0	80.1	92.0	79.5	82.2	92.5	81.3	91.0	79.3	153.9	88.3	78.6	150.2	86.8	18.6	16.0	13.8	1334	2880
GANYU	34.83N	119.13E	33	19.4	22.3	91.5	79.5	88.9	78.2	86.6	77.6	82.7	88.9	81.5	86.9	81.0	161.2	86.9	79.9	155.6	85.5	16.7	14.5	12.8	4217	1508
GAOYAO	23.05N	112.47E	39	43.6	45.8	95.0	79.9	93.5	79.6	92.0	79.4	81.8	90.1	81.1	89.1	79.8	154.8	85.5	79.2	151.6	84.9	15.5	13.1	11.3	702	3717
GUANGZHOU	23.17N	113.33E	138	42.4	44.5	95.1	79.4	93.3	79.2	91.8	78.9	81.9	88.8	81.3	88.0	80.3	158.2	85.1	79.3	152.9	84.4	15.2	13.1	11.5	724	3664
GUILIN	25.33N	110.30E	545	34.4	36.5	94.4	78.2	92.7	78.0	91.1	77.7	80.9	88.6	80.1	87.6	79.1	154.1	84.3	78.4	150.3	83.6	18.2	15.8	13.7	1916	2671
GUIYANG	26.58N	106.73E	4012	27.9	30.1	86.6	70.3	84.8	70.0	83.1	69.6	73.3	81.9	72.5	80.6	70.9	132.7	77.1	70.1	128.8	76.4	14.5	12.4	11.1	3032	1243
HAIKOU	20.03N	110.35E	79	51.3	53.9	95.0	80.6	93.5	80.5	92.1	80.2	82.5	90.5	81.8	89.4	80.6	159.5	86.1	80.0	156.0	85.4	14.5	12.4	11.0	193	4490
HANGZHOU	30.23N	120.17E	141	28.1	30.2	97.0	80.2	95.1	80.1	92.9	79.7	82.8	91.3	81.8	90.2	80.8	160.9	86.8	79.7	155.1	86.0	16.1	13.7	11.9	2940	2183
HARBIN	45.75N	126.77E	469	-19.1	-14.6	87.9	69.4	85.3	69.2	82.8	68.6	75.5	82.4	73.8	80.3	73.4	126.2	79.7	71.7	119.3	78.2	20.3	16.9	14.8	9558	635
HEFEI	31.87N	117.23E	118	24.5	27.2	95.3	81.4	93.3	80.7	91.1	79.6	83.4	91.8	82.2	90.3	81.0	161.7	88.6	80.0	156.5	87.6	17.1	14.6	12.9	3371	2055
HOHHOT	40.82N	111.68E	3494	-7.4	-2.6	88.9	63.5	86.1	63.0	83.7	62.5	70.1	80.5	68.4	78.0	67.1	113.4	74.2	65.3	106.4	73.7	19.1	16.2	13.6	7972	574
HONG KONG INTERNATI	22.32N	113.92E	26	48.2	51.4	92.8	79.7	91.4	79.3	89.9	79.0	81.8	87.4	81.1	86.9	80.5	158.5	85.9	79.2	151.6	85.1	22.7	20.0	17.9	327	4055
HONG KONG OBSERVATO	22.30N	114.17E	203	49.3	51.6	90.0	79.7	89.0	79.6	88.1	79.4	81.3	86.8	80.9	86.3	79.9	156.2	84.7	79.2	152.9	84.4	19.3	16.6	14.5	426	3556
JIANGLING	30.33N	112.18E	108	29.3	31.1	94.6	81.8	92.9	80.8	91.0	79.9	83.4	91.7	82.5	90.5	81.4	163.6	88.8	80.3	157.9	87.9	15.8	13.5	11.7	2923	2159
JINAN	36.60N	117.05E	554	17.3	20.4	95.0	73.4	92.7	74.2	90.6	73.6	80.5	89.0	79.4	87.5	78.2	149.5	85.5	77.1	143.9	84.9	20.5	17.6	15.3	4111	1953
JINGDEZHEN	29.30N	117.20E	197	28.9	31.4	97.0	80.0	95.1	79.6	93.2	79.0	81.8	92.0	81.1	90.8	79.4	153.7	86.3	78.7	150.1	85.8	13.2	11.2	9.6	2513	2448
JINZHOU	41.13N	121.12E	230	2.5	5.8	88.9	71.8	86.4	71.5	84.2	70.8	78.0	83.6	76.5	81.6	76.4	139.0	81.6	75.0	132.3	79.9	22.7	19.2	16.7	6411	1043
JIXI	45.28N	130.95E	768	-13.3	-9.5	87.0	69.7	83.9	68.6	81.3	67.8	74.3	82.1	72.5	79.4	71.9	121.2	78.5	70.1	113.9	77.2	23.5	20.5	17.6	9431	481
KUNMING	25.02N	102.68E	6207	32.6	35.1	80.8	61.9	79.1	62.3	77.5	62.2	67.9	75.6	67.2	74.3	65.6	119.6	71.4	64.8	116.2	70.4	18.0	15.6	13.5	2248	557
LANZHOU	36.05N	103.88E	4980	11.0	13.7	90.0	64.2	87.3	63.1	84.9	62.2	68.3	82.9	66.8	80.9	63.9	107.2	75.5	62.1	100.7	73.8	9.9	8.1	7.0	5665	739
LINGXIAN	37.33N	116.57E	62	12.2	16.1	95.2	73.9	92.6	75.0	90.2	75.3	81.9	88.2	80.6	86.9	80.2	157.1	86.0	78.8	149.9	84.7	19.3	16.8	14.6	4659	1642
LIUZHOU	24.35N	109.40E	318	38.1	40.3	95.3	78.5	93.7	78.4	92.4	78.1	81.0	90.1	80.4	89.2	78.8	151.3	85.1	78.1	147.9	84.7	12.5	11.0	9.6	1313	3329
MENGJIN	34.82N	112.43E	1093	19.8	22.5	94.5	71.1	91.8	72.0	89.3	72.3	79.9	87.1	78.6	85.3	78.1	151.8	84.3	76.7	145.2	82.5	20.7	16.8	14.2	4077	1602
MUDANJIANG	44.57N	129.60E	794	-15.5	-11.6	88.0	70.9	85.0	69.2	82.3	68.5	74.7	83.7	73.0	80.5	71.9	121.3	80.0	70.5	115.5	78.5	20.9	17.2	14.4	9313	570
NANCHANG	28.60N	115.92E	164	30.6	32.5	96.2	80.6	94.3	80.3	92.4	80.0	82.8	90.8	82.0	90.0	80.9	161.7	87.2	80.0	156.7	86.7	14.4	12.3	10.9	2580	2511
NANJING	32.00N	118.80E	23	23.4	26.3	95.2	80.7	93.1	80.5	90.7	79.4	82.9	90.9	82.0	89.6	80.9	160.7	87.6	80.1	156.1	86.9	17.1	14.9	13.0	3445	1944
NANNING	22.82N	108.35E	413	41.3	43.6	94.9	79.3	93.3	79.2	91.7	78.8	81.9	89.5	81.2	88.5	80.1	158.8	85.5	79.4	154.9	84.8	13.9	11.8	9.9	881	3533
NEIJIANG	29.58N	105.05E	1171	36.1	38.0	95.3	78.7	92.9	77.9	90.6	77.1	81.1	90.7	80.1	89.1	78.8	156.1	86.6	77.7	150.7	85.4	11.9	9.9	8.4	2234	2050
QINGDAO	36.07N	120.33E	253	18.2	21.0	89.7	74.2	87.0	74.2	84.4	73.8	79.9	84.1	78.7	82.3	78.8	150.9	82.3	77.4	144.1	81.0	26.3	22.8	20.1	4551	1319
QINGJIANG	33.60N	119.03E	62	20.9	24.0	92.5	81.0	90.3	79.6	88.1	78.4	82.9	89.8	81.8	88.3	81.1	161.7	87.5	80.0	156.0	86.4	15.7	13.5	11.7	3899	1657
QIQIHAR	47.38N	123.92E	486	-17.8	-14.0	89.1	69.6	86.0	68.5	83.3	67.9	74.9	82.2	72.9	80.6	72.6	123.2	79.5	70.6	114.8	77.5	22.1	18.5	16.0	9766	666
SHANGHAI	31.40N	121.47E	13	28.5	31.0	94.8	80.7	92.6	80.1	90.3	79.6	82.4	90.5	81.5	89.1	80.2	157.1	87.0	79.4	152.7	86.0	17.4	15.4	13.8	2879	2085
SHANGHAI/HONGQIAO	31.17N	121.43E	23	26.5	28.8	95.1	81.3	93.0	81.1	91.0	80.2	83.7	90.8	82.5	89.1	82.3	168.2	87.9	80.7	159.8	86.6	20.2	17.7	15.7	3032	2068
SHANTOU	23.40N	116.68E	10	44.7	47.2	92.2	80.8	90.7	80.4	89.4	79.9	82.8	88.5	81.9	87.3	81.0	161.1	86.0	80.6	159.1	85.5	18.4	16.0	14.0	684	3228
SHAOGUAN	24.80N	113.58E	223	36.7	38.9	95.8	78.9	94.1	78.7	92.5	78.4	81.0	90.3	80.3	89.3	78.8	150.8	84.8	78.1	147.4	84.2	14.9	12.8	11.1	1396	3159
SHENYANG	41.73N	123.52E	141	-7.7	-3.4	88.8	74.0	86.7	72.9	84.6	72.0	78.0	85.0	76.5	83.1	75.9	136.2	82.4	74.5	129.8	80.8	21.8	18.4	15.9	7262	1002
SHENZHEN	22.55N	114.10E	59	44.4	46.9	92.8	79.7	91.5	79.5	90.2	79.4	83.9	87.8	82.7	86.8	82.8	171.2	86.3	82.1	167.4	85.8	18.1	15.9	14.1	490	3854
SHIJIAZHUANG	38.03N	114.42E	266	15.7	18.6	96.3	71.9	93.4	73.0	90.8	73.3	80.6	88.2	79.1	86.4	78.6	150.0	85.6	77.1	142.2	83.9	14.7	11.9	9.9	4471	1775
SIPING	43.18N	124.33E	548	-10.0	-6.2	87.8	71.8	85.5	71.0	83.5	70.1	76.7	83.4	75.2	81.5	74.6	132.1	81.1	73.2	125.9	79.7	20.8	17.6	15.2	8050	835
TAI SHAN	36.25N	117.10E	5039	1.7	5.4	72.4	62.5	70.8	62.8	69.4	63.1	69.1	69.8	67.9	68.6	69.0	128.7	69.5	67.7	122.9	68.3	41.2	36.5	32.6	8148	73
TAIYUAN	37.78N	112.55E	2556	4.8	8.4	91.3	68.9	88.6	68.6	86.2	68.1	75.7	84.2	73.9	82.4	73.4	136.6	80.7	71.5	128.2	78.4	20.7	17.1	14.1	5874	906
TANGSHAN	39.67N	118.15E	95	8.8	12.1	91.7	73.2	89.3	73.4	87.2	72.9	79.8	86.4	78.3	84.5	78.0	145.9	84.1	76.5	138.7	82.6	18.4	15.1	12.5	5380	1369
TAOXIAN	41.63N	123.48E	203	-13.1	-9.0	89.7	73.3	87.6	73.7	85.6	72.8	78.9	85.5	77.3	83.7	76.9	141.3	83.7	75.2	133.3	81.9	24.1	20.6	17.8	7467	1012
TIANJIN	39.10N	117.17E	16	13.6	16.4	93.6	74.2	91.0	74.2	88.8	73.8	80.9	87.4	79.4	85.5	79.1	151.3	85.3	77.6	143.7	83.8	18.8	15.3	12.3	4904	1640
WEIFANG	36.77N	119.18E	72	12.0	14.9	93.7	74.6	91.2	74.7	88.8	74.3	81.1	88.3	79.7	86.1	79.2	151.9	85.4	77.9	145.4	83.8	22.5	19.4	16.8	4922	1430
WENZHOU	28.02N	120.67E	23	34.0	36.2	92.9	81.5	90.9	80.9	89.3	80.2	82.7	90.5	81.8	88.9	80.6	159.3	87.3	79.9	155.2	86.1	14.5	12.3	11.0	2051	2297
WU LU MU QI	43.80N	87.65E	3107	-8.8	-4.4	92.1	61.4	89.3	61.0	86.7	60.3	64.4	83.4	63.2	82.1	59.0	83.6	68.4	57.0	77.9	68.6	17.5	13.6	11.5	8021	918
WUHAN	30.62N	114.13E	75	28.1	30.2	96.3	81.7	94.3	81.1	92.4	80.4	83.7	91.7	82.8	90.7	82.1	167.5	88.6	80.8	160.3	87.8	15.6	13.1	11.2	2965	2311
WUHU	31.33N	118.35E	52	26.1	28.6	96.4	81.4	94.3	80.8	91.9	80.2	83.4	92.1	82.3	91.0	81.1	161.9	88.5	80.0	156.1	87.4	17.6	15.0	13.1	3192	2082
XIAMEN	24.48N	118.08E	456	43.3	45.3	93.3	78.9	91.4	78.8	89.7	78.5	81.6	87.6	80.8	86.9	80.4	160.5	84.5	79.1	153.7	84.0	20.0	17.5	15.6	939	2980
XIAN	34.30N	108.93E	1306	20.7	23.3	96.7	73.9	93.9	73.5	91.3	73.3	79.4	89.6	78.0	87.7	76.9	147.3	85.8	75.3	139.2	84.0	17.5	14.5	12.2	4230	1603

Meaning of acronyms:
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F*
MCWB: Mean coincident wet bulb temperature, °F
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DP: Dew point temperature, °F *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCDB: Mean coincident dry bulb temperature, °F *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
XIHUA	33.78N	114.52E	174	21.4	24.0	95.0	77.5	92.7	78.0	90.3	77.1	83.3	90.5	81.9	88.6	81.5	164.7	88.3	80.1	157.0	86.6	15.0	12.3	10.6	3872	1748
XINGTAI	37.07N	114.50E	256	17.9	20.5	96.0	72.3	93.3	73.1	91.0	73.5	80.9	88.4	79.6	86.7	78.9	151.5	85.4	77.6	144.7	84.6	13.2	11.1	9.4	4283	1842
XINING	36.62N	101.77E	7533	2.8	5.7	81.3	58.7	78.4	57.3	75.7	56.1	62.2	74.1	60.6	71.7	58.7	98.1	66.5	56.8	91.6	64.7	13.8	11.4	9.3	7548	84
XINYANG	32.13N	114.05E	377	23.8	26.3	94.1	79.5	91.9	78.3	89.7	77.3	81.9	90.3	80.9	88.8	79.8	156.8	86.6	78.7	151.3	85.7	18.8	16.1	14.0	3512	1843
XUZHOU	34.28N	117.15E	138	20.2	23.2	94.3	77.8	92.0	77.3	89.7	76.3	82.4	90.2	81.2	88.2	80.4	158.7	87.3	79.2	152.5	86.1	15.4	13.2	11.7	3927	1796
YANGJIANG	21.87N	111.97E	72	44.9	47.1	91.5	79.9	90.0	79.6	88.8	79.4	81.9	87.1	81.5	86.5	80.8	160.3	84.7	80.1	156.8	84.3	18.1	15.2	13.3	518	3640
YANJI	42.87N	129.50E	584	-9.2	-5.7	87.9	71.4	84.9	70.2	82.1	68.9	75.5	84.0	73.6	80.6	72.8	124.3	80.5	71.3	118.1	78.4	22.6	19.1	16.3	8605	518
YICHANG	30.70N	111.30E	440	30.6	32.4	96.0	79.9	93.6	79.0	91.3	77.7	82.5	91.6	81.4	90.0	80.1	158.7	87.7	79.1	153.4	86.6	10.5	9.0	7.6	2730	2141
YINCHUAN	38.47N	106.20E	3648	1.4	5.7	89.8	66.5	87.4	66.1	85.2	65.0	71.9	83.2	70.2	81.2	68.6	120.3	77.9	66.8	113.0	76.8	19.8	15.1	12.1	6422	819
YINGKOU	40.67N	122.20E	13	0.2	3.7	87.0	75.7	85.1	74.5	83.4	73.5	78.4	84.0	77.1	82.7	76.6	138.7	82.5	75.4	132.9	81.1	23.9	20.7	18.1	6599	1082
YUEYANG	29.38N	113.08E	171	30.4	32.2	93.9	81.3	92.5	80.6	91.0	80.0	83.2	91.3	82.0	90.0	81.0	161.9	89.3	79.8	155.9	88.0	16.2	14.0	12.2	2748	2335
YUNCHENG	35.05N	111.05E	1198	17.4	20.6	97.4	72.7	94.7	72.7	92.2	72.4	78.7	90.3	77.4	88.7	75.5	139.8	85.6	74.2	133.6	84.6	21.0	17.8	15.1	4275	1824
ZHANGJIAKOU	40.78N	114.88E	2382	2.0	4.9	90.7	66.0	87.9	65.5	85.3	65.4	72.9	82.6	71.4	80.9	70.1	121.1	78.2	68.4	114.0	77.2	16.2	13.8	11.8	6678	936
ZHANJIANG	21.22N	110.40E	92	46.1	48.5	93.0	80.1	91.5	80.2	90.2	80.1	82.5	88.3	81.9	87.5	81.0	161.6	85.6	80.5	158.7	85.2	17.8	14.9	12.9	401	4027
ZHENGZHOU	34.72N	113.65E	364	19.9	22.5	95.2	74.8	92.8	75.3	90.5	75.1	82.1	88.9	80.7	87.3	80.3	159.6	86.8	78.9	151.9	85.0	18.8	15.4	12.8	4006	1732
ZUNYI	27.70N	106.88E	2772	29.9	31.9	90.6	73.1	88.6	72.7	86.8	72.4	75.6	85.5	74.8	84.3	73.1	136.2	80.1	72.2	132.3	79.2	10.8	8.9	7.5	3029	1509
Colombia																									*5 sites, 0 more on CD-ROM*	
BARRANQUILLA/ERNEST	10.88N	74.78W	98	73.0	73.4	93.5	80.8	91.8	80.4	91.3	80.2	83.4	88.4	82.5	87.6	82.5	169.8	85.7	81.0	161.9	84.8	29.6	24.4	22.2	0	6497
BOGOTA/ELDORADO	4.70N	74.13W	8353	37.1	39.5	70.2	56.4	69.4	56.3	68.1	56.2	59.7	66.1	59.0	65.3	57.5	96.8	62.5	56.9	94.8	62.1	18.8	15.8	13.6	3153	0
CALI/ALFONSO BONILL	3.55N	76.38W	3179	63.9	64.3	89.7	71.8	88.1	71.6	87.4	71.5	74.3	85.1	73.2	84.9	71.2	129.5	80.3	69.9	124.0	78.7	18.9	14.5	12.3	0	3851
CARTAGENA/RAFAEL NU	10.45N	75.52W	39	73.5	74.8	90.2	80.8	89.7	80.6	89.2	80.4	82.6	87.9	81.9	87.2	80.9	160.8	86.4	80.5	158.6	86.1	20.5	17.7	14.6	0	6360
RIONEGRO/J.M.CORDOV	6.13N	75.43W	7028	49.9	51.6	75.1	60.4	73.7	60.2	73.4	60.1	63.7	70.4	62.8	69.8	61.2	105.5	65.3	61.0	104.4	64.7	20.4	17.0	13.2	742	41
Congo																									*1 site, 0 more on CD-ROM*	
BRAZZAVILLE/MAYA-M	4.25S	15.25E	1037	64.4	66.0	93.2	76.5	91.7	76.3	90.8	76.2	78.9	87.9	78.3	87.1	76.9	145.7	82.8	75.6	139.4	82.0	13.1	11.2	9.7	0	5039
Costa Rica																									*1 site, 0 more on CD-ROM*	
JUAN SANTAMARIA INT	9.98N	84.22W	3064	61.8	62.7	87.6	69.9	86.1	69.3	84.6	69.2	75.6	80.5	74.6	79.9	74.8	146.1	78.7	73.2	138.5	77.5	28.3	23.7	22.1	0	3286
Côte d'Ivoire																									*1 site, 0 more on CD-ROM*	
ABIDJAN	5.25N	3.93W	26	69.8	71.3	91.0	81.4	89.8	81.0	89.1	80.8	83.9	87.7	83.1	87.0	82.8	171.3	85.5	82.4	168.9	85.3	16.1	14.4	13.3	0	5755
Croatia																									*2 sites, 7 more on CD-ROM*	
ZAGREB/MAKSIMIR	45.82N	16.03E	420	12.0	16.9	89.0	70.0	86.0	69.4	83.1	68.2	72.0	84.5	70.7	83.0	68.0	104.4	77.4	66.4	98.7	76.5	13.4	11.2	9.4	5171	542
ZAGREB/PLESO	45.73N	16.07E	351	10.0	15.6	89.4	71.6	86.3	70.7	83.8	69.3	73.4	85.8	72.0	83.5	69.6	110.3	79.5	68.0	104.1	77.9	19.0	16.0	13.3	5356	482
Cuba																									*3 sites, 2 more on CD-ROM*	
AEROPUERTO JOSE MAR	22.98N	82.40W	246	51.9	55.4	91.5	77.9	90.1	77.8	89.6	77.7	81.9	86.9	80.9	86.7	80.7	161.0	85.3	79.2	152.9	84.3	23.3	20.7	18.0	37	4304
CAMAGUEY AEROPUERTO	21.42N	77.85W	387	59.4	62.3	92.0	76.0	91.3	76.2	89.9	76.2	80.1	87.5	79.3	86.5	78.5	150.2	84.4	77.3	144.1	83.0	23.3	20.7	18.4	5	4794
SANTIAGO DE CUBA	19.97N	75.85W	180	65.8	67.6	89.4	78.2	88.1	78.3	87.8	78.3	81.4	85.4	80.7	85.5	80.6	159.8	84.3	79.2	152.4	83.9	23.3	21.2	17.9	0	5105
Czech Republic																									*5 sites, 32 more on CD-ROM*	
BRNO/TURANY	49.15N	16.70E	807	7.8	12.9	86.2	67.4	82.9	66.2	79.9	64.8	69.5	81.8	67.9	79.6	65.3	96.2	74.7	63.7	91.0	72.9	22.9	19.8	17.7	6296	291
OSTRAVA/MOSNOV	49.68N	18.12E	853	3.0	9.1	86.0	67.8	82.5	66.3	79.1	64.8	69.3	81.7	67.7	79.4	65.2	96.3	73.9	63.7	91.2	72.1	22.7	20.2	18.2	6560	193
PRAHA/RUZYNE	50.10N	14.25E	1198	5.7	11.5	84.6	65.8	80.8	64.6	77.6	63.3	67.9	79.8	66.3	77.6	63.9	92.9	72.9	62.3	87.9	70.1	27.3	23.0	19.8	6757	160
PRAHA-KBELY	50.12N	14.53E	942	8.6	13.9	85.2	66.4	81.8	65.4	78.8	64.3	69.1	79.7	67.5	77.0	65.7	98.2	72.4	64.3	93.5	71.1	20.4	17.5	15.2	6225	237
PRAHA-LIBUS	50.02N	14.45E	994	7.6	13.3	86.2	66.0	82.6	64.9	79.3	63.5	68.1	80.9	66.5	78.5	64.0	92.6	71.7	62.6	88.1	70.1	19.4	16.2	13.7	6267	239
Denmark																									*4 sites, 27 more on CD-ROM*	
DROGDEN	55.53N	12.72E	0	17.5	21.4	71.7	N/A	69.5	N/A	67.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	40.7	35.4	32.3	6490	42
KOEBENHAVN/KASTRUP	55.62N	12.65E	16	15.4	19.9	77.9	64.3	75.1	63.2	72.0	61.7	66.8	74.1	65.1	72.2	64.3	90.2	69.5	62.5	84.5	68.0	28.4	25.5	23.0	6575	81
ROSKILDE/TUNE	55.58N	12.13E	141	13.8	19.0	78.6	64.5	75.3	63.3	72.2	61.9	67.2	74.1	65.3	72.3	64.6	91.7	70.5	62.6	85.4	68.2	28.0	24.9	22.4	6811	53
VAERLOESE	55.77N	12.33E	102	10.2	16.1	79.2	64.6	76.1	63.8	73.1	62.4	67.3	74.3	65.5	72.9	64.9	92.4	69.4	62.9	86.1	67.5	27.5	23.8	21.1	6877	63
Dominican Republic																									*2 sites, 0 more on CD-ROM*	
LAS AMERICAS	18.43N	69.67W	59	65.3	66.4	90.7	80.0	89.8	79.6	89.3	79.5	82.6	88.1	81.7	87.5	80.9	160.6	87.4	80.0	156.1	86.7	16.4	14.0	12.4	0	5148
SANTO DOMINGO	18.43N	69.88W	46	67.2	68.3	90.6	81.0	89.7	80.9	88.9	80.4	83.3	88.6	82.4	88.0	81.7	165.3	87.7	80.8	160.0	87.0	16.6	12.9	10.6	0	5367
Ecuador																									*2 sites, 1 more on CD-ROM*	
GUAYAQUIL AEROPUERT	2.15S	79.88W	30	65.9	66.5	91.6	76.0	90.0	76.0	89.5	75.9	80.3	86.7	79.2	85.4	78.8	149.8	84.7	77.3	142.3	82.5	16.2	14.4	13.2	0	5004
QUITO AEROPUERTO	0.13S	78.48W	9226	44.3	46.0	71.4	53.9	70.0	53.9	69.1	53.8	58.2	66.0	57.4	65.2	55.5	93.2	60.9	54.5	89.9	59.6	17.3	15.1	13.3	2523	1
Egypt																									*6 sites, 12 more on CD-ROM*	
ALEXANDRIA/NOUZHA	31.20N	29.95E	23	44.4	46.2	91.4	72.0	88.1	73.7	86.3	73.9	77.4	85.3	76.5	84.4	75.2	132.3	82.7	73.8	125.8	82.0	22.9	20.1	18.0	895	2280
ASYUT	27.05N	31.02E	230	39.7	41.6	105.3	68.6	102.7	68.4	100.4	67.8	72.2	96.1	71.0	94.7	65.1	93.5	81.0	63.1	87.1	81.5	23.6	21.1	19.0	970	3670
CAIRO AIRPORT	30.13N	31.40E	243	45.9	47.6	100.6	70.0	98.0	70.3	95.3	70.7	76.7	89.2	75.6	87.7	73.6	126.2	81.1	72.1	119.7	79.9	21.0	18.1	16.1	708	3180
LUXOR	25.67N	32.70E	325	41.0	43.1	109.7	72.5	107.8	72.2	105.9	71.8	75.6	103.6	74.4	102.4	66.2	97.8	92.7	64.5	91.8	91.6	16.1	14.0	12.2	545	4864

Meaning of acronyms:
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F*
MCWB: Mean coincident wet bulb temperature, °F
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DP: Dew point temperature, °F *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCDB: Mean coincident dry bulb temperature, °F *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
PORT SAID	31.27N	32.30E	20	48.7	51.4	89.8	77.2	88.1	77.4	86.4	76.6	80.0	87.0	79.1	86.0	77.4	142.8	85.2	76.9	140.2	84.8	24.2	21.6	20.0	546	2820
PORT SAID/EL GAMIL	31.28N	32.23E	20	49.4	51.3	89.0	77.2	87.4	77.0	86.2	76.4	79.8	86.6	78.7	85.5	77.6	143.7	85.0	76.5	138.3	84.3	26.6	23.2	21.2	587	2668
Estonia																									*1 site, 8 more on CD-ROM*	
TALLINN	59.47N	24.82E	112	-2.3	4.0	78.7	65.1	75.4	63.4	72.5	61.9	67.3	74.8	65.3	72.6	64.5	91.3	70.5	62.6	85.2	68.7	20.6	18.2	16.2	8369	55
Finland																									*2 sites, 46 more on CD-ROM*	
HELSINKI-VANTAA	60.32N	24.97E	184	-9.1	-2.5	80.1	64.2	76.9	62.3	73.7	60.8	66.3	75.3	64.5	73.1	63.0	86.8	68.8	61.1	81.1	67.0	22.3	19.7	17.6	8740	71
ISOSAARI	60.10N	25.07E	16	-4.3	2.5	73.0	66.9	70.8	65.4	68.7	63.5	68.2	71.7	66.1	69.9	66.7	98.4	70.8	64.5	90.9	68.8	35.2	31.3	27.9	8379	52
France																									*14 sites, 125 more on CD-ROM*	
CAP COURONNE	43.33N	5.05E	89	26.8	32.7	87.3	72.7	85.0	72.2	83.0	71.3	76.7	83.7	75.3	82.1	74.5	129.6	81.4	73.1	123.3	79.9	38.3	33.6	29.9	2840	1022
CAP POMEGUES	43.27N	5.30E	230	29.4	35.2	83.5	71.6	81.1	71.5	79.3	70.7	75.5	79.6	74.2	78.3	74.2	128.9	78.0	72.8	122.6	77.0	52.5	46.3	40.0	2741	823
CAPE FERRAT	43.68N	7.33E	472	37.8	40.7	84.3	72.6	82.4	72.5	80.7	72.0	76.2	81.2	75.0	80.0	74.6	131.6	79.7	73.3	125.9	78.6	30.0	23.3	18.7	2436	990
LE BOURGET	48.97N	2.43E	171	24.5	27.1	88.0	68.4	84.3	67.2	80.7	66.2	70.8	83.0	69.1	80.4	66.6	98.6	75.1	64.8	92.6	73.2	22.8	20.0	17.6	4586	316
LYON-BRON	45.72N	4.93E	663	22.3	25.0	92.5	67.6	89.1	67.4	86.0	66.8	70.8	85.2	69.5	83.7	66.2	99.0	76.2	64.7	93.9	74.7	25.8	22.4	19.3	4300	725
LYON-SATOLAS	45.73N	5.08E	787	19.7	23.8	90.4	68.5	87.2	67.9	84.0	66.9	71.1	84.3	69.6	82.5	66.6	100.8	76.2	65.3	96.2	74.4	24.1	20.6	17.7	4658	557
MARIGNANE	43.45N	5.23E	105	26.5	29.4	90.9	70.4	88.1	69.8	86.0	69.1	74.3	83.9	72.7	82.7	71.4	116.5	79.7	69.6	109.1	78.6	36.8	31.9	27.7	3045	1080
NICE	43.65N	7.20E	89	35.3	37.3	85.2	73.2	83.3	72.7	81.9	72.2	77.0	81.9	75.4	80.8	75.3	132.9	80.8	73.5	125.1	79.7	26.2	22.2	18.3	2578	947
PARIS-AEROPORT CHAR	49.02N	2.53E	367	20.9	24.9	87.1	68.3	83.3	67.0	79.9	65.8	70.6	81.9	68.8	79.6	66.6	99.3	75.1	64.8	93.1	73.1	26.0	22.5	19.8	4768	295
PARIS-MONTSOURIS	48.82N	2.33E	253	27.4	29.6	88.8	68.5	85.0	67.4	81.5	66.2	70.9	84.7	68.9	81.1	66.5	98.4	76.2	64.7	92.3	73.9	16.3	14.3	12.7	4146	463
PARIS-ORLY	48.72N	2.38E	295	21.3	25.2	87.7	68.2	84.0	67.1	80.6	65.7	70.6	83.0	68.9	80.1	66.5	98.7	74.8	64.7	92.7	73.3	24.7	21.3	18.7	4755	328
TOULOUSE BLAGNAC	43.63N	1.37E	505	24.2	27.5	91.6	69.9	88.1	69.0	85.0	68.1	72.9	85.5	71.2	83.0	69.0	108.7	78.4	67.5	103.1	76.9	23.4	20.5	18.2	3735	684
TRAPPES	48.77N	2.00E	551	24.7	27.1	86.6	67.0	82.8	65.6	79.4	64.7	69.4	81.1	67.8	78.3	65.9	97.5	73.6	64.2	91.9	71.2	15.6	13.6	12.0	4819	272
VILLACOUBLAY	48.77N	2.20E	587	21.4	25.4	85.7	67.5	82.1	66.4	78.8	65.1	69.7	81.2	68.0	78.4	66.0	97.9	74.6	64.3	92.2	72.6	21.8	19.1	17.2	5016	277
Gabon																									*1 site, 0 more on CD-ROM*	
LIBREVILLE	0.45N	9.42E	49	71.5	72.3	88.5	80.8	87.8	80.6	87.1	80.2	82.5	86.2	81.7	85.5	81.0	161.4	85.0	80.7	159.9	84.7	15.9	14.1	12.7	0	5354
Gambia																									*1 site, 0 more on CD-ROM*	
BANJUL/YUNDUM	13.20N	16.63W	108	61.2	63.0	100.1	68.3	97.0	68.2	95.0	69.7	81.7	88.6	80.9	87.7	79.7	154.6	85.9	79.0	151.3	85.1	20.0	18.0	16.1	1	5604
Georgia																									*1 site, 4 more on CD-ROM*	
TBILISI	41.68N	44.95E	1470	21.8	24.5	93.9	71.3	91.3	70.4	88.3	69.7	73.8	89.1	72.3	87.3	68.7	111.4	81.9	67.3	106.0	80.3	46.6	39.6	33.9	4267	1186
Germany																									*28 sites, 107 more on CD-ROM*	
BERLIN/DAHLEM	52.47N	13.30E	167	10.4	15.6	84.7	66.3	81.1	64.7	78.1	63.4	68.4	79.8	66.7	77.4	64.7	92.0	72.1	62.9	86.2	70.0	16.5	14.5	13.1	6102	213
BERLIN/SCHONEFELD	52.38N	13.52E	154	7.1	12.5	85.3	66.3	81.8	64.9	78.5	63.7	68.4	79.8	66.7	78.3	64.6	91.7	72.7	62.7	85.7	70.4	24.9	21.5	18.8	6315	181
BERLIN/TEGEL (FAFB)	52.57N	13.32E	121	9.7	15.4	86.1	65.6	82.5	64.4	79.2	62.8	68.0	80.4	66.3	78.2	64.2	90.4	71.7	62.4	84.7	69.9	23.3	20.6	18.3	5970	264
BERLIN/TEMPELHOF	52.47N	13.40E	164	10.8	15.4	86.0	66.1	82.3	64.7	79.1	63.4	68.2	80.5	66.6	78.4	64.3	90.9	71.8	62.5	85.0	70.1	23.2	20.4	18.1	5911	265
BREMEN	53.05N	8.80E	10	12.3	16.9	83.2	66.8	79.6	65.2	76.1	63.6	68.6	79.0	66.7	76.3	64.9	92.4	72.4	63.1	86.6	70.5	25.5	22.4	19.8	6255	124
CELLE	52.60N	10.02E	171	10.8	15.9	86.2	66.1	82.6	65.0	79.1	63.4	68.1	82.1	66.4	79.1	63.3	87.5	71.7	61.7	82.8	70.9	20.8	18.0	15.7	6026	205
DRESDEN/KLOTZSCHE	51.13N	13.77E	755	7.5	12.9	85.0	65.7	81.2	64.6	78.2	63.4	67.9	79.9	66.2	77.4	63.6	90.3	71.8	62.1	85.8	70.6	21.5	18.6	16.2	6134	223
DUSSELDORF	51.28N	6.78E	148	14.1	19.7	85.3	67.3	82.1	65.6	78.9	64.2	69.0	81.2	67.4	78.8	64.9	92.5	73.1	63.3	87.4	71.5	23.3	20.5	18.2	5272	251
ESSEN/MULHEIM	51.40N	6.97E	505	14.3	19.5	82.8	66.7	79.8	65.2	76.7	63.7	68.3	79.1	66.6	77.2	64.5	92.4	72.4	62.8	87.0	70.2	21.6	18.8	16.5	5721	186
FRANKFURT MAIN ARPT	50.05N	8.60E	367	13.0	17.9	87.4	66.5	84.0	65.6	80.8	64.6	69.1	81.7	67.5	79.3	65.2	94.5	72.3	63.6	89.1	70.9	22.6	19.5	17.1	5657	299
FUERSTENFELDBRUCK	48.20N	11.27E	1755	4.8	10.2	84.3	66.0	80.7	64.4	77.4	63.0	67.4	81.0	65.8	78.4	62.5	90.4	73.9	60.9	85.2	71.2	24.8	20.7	17.3	6671	147
GUETERSLOH	51.93N	8.32E	236	14.3	19.5	85.8	66.2	82.1	65.2	78.7	64.1	68.7	80.7	67.1	78.2	64.7	92.4	71.7	63.2	87.5	70.3	22.5	19.4	17.0	5611	205
HAMBURG/FUHLSBUTTEL	53.63N	10.00E	52	11.1	16.0	82.1	66.1	78.7	64.5	75.3	62.9	68.0	78.5	66.0	75.5	64.2	90.2	71.7	62.5	84.6	70.1	22.7	20.2	18.2	6325	110
HANNOVER	52.47N	9.70E	180	9.2	14.5	84.0	66.9	80.6	65.3	77.3	63.7	68.7	79.7	67.0	77.3	65.0	93.0	72.0	63.2	87.2	70.8	22.7	20.0	17.8	6063	144
HEIDELBERG (USA-AF)	49.40N	8.65E	358	14.4	20.8	89.6	69.2	86.1	67.9	82.7	66.1	71.1	84.5	69.5	82.2	66.5	98.8	75.8	64.7	92.8	74.6	17.6	14.8	12.8	5036	470
KOLN/BONN (CIV/MIL)	50.87N	7.17E	299	12.9	18.5	85.9	67.0	82.4	65.6	79.1	64.1	69.0	81.4	67.3	78.8	64.8	93.0	73.3	63.2	87.6	71.1	20.1	17.7	15.7	5627	193
LEIPZIG	51.32N	12.42E	495	14.9	19.0	86.7	66.8	83.1	65.2	79.9	64.3	68.8	81.4	67.3	78.5	64.8	93.5	72.0	63.4	89.0	71.0	15.3	13.1	11.5	5577	304
LEIPZIG/SCHKEUDITZ	51.42N	12.23E	436	8.0	13.4	85.7	66.5	81.9	65.3	78.7	63.8	68.4	80.8	66.7	78.2	64.0	90.8	72.9	62.6	86.4	71.2	27.9	24.2	21.1	6108	216
MUNICH	48.13N	11.55E	1706	10.5	15.5	85.2	66.2	81.8	64.6	79.0	63.6	67.5	81.4	66.1	78.9	62.9	91.5	71.0	61.6	87.2	70.0	17.5	14.2	11.9	6006	282
MUNICH/RIEM	48.13N	11.70E	1736	6.5	11.8	85.0	66.0	81.6	64.8	78.7	63.9	67.8	80.3	66.4	78.2	64.1	95.4	71.3	62.5	90.3	70.5	25.8	21.6	18.3	6504	173
NOERVENICH	50.83N	6.67E	443	15.4	20.5	86.4	67.3	82.7	65.7	79.2	64.4	69.2	82.2	67.4	79.6	64.7	93.0	73.7	62.9	87.3	72.0	22.9	19.4	16.7	5420	217
NURNBERG	49.50N	11.08E	1047	6.1	12.3	86.3	65.2	82.9	64.2	79.7	62.6	67.5	80.3	66.1	77.9	63.8	92.0	70.3	62.2	86.9	69.1	20.7	17.6	15.1	6312	231
POTSDAM	52.38N	13.07E	266	8.7	13.5	84.8	66.0	81.3	65.0	78.1	63.8	68.4	79.9	66.8	77.8	64.9	93.0	71.8	62.8	86.2	70.4	24.1	21.1	18.6	6228	194
QUICKBORN	53.73N	9.88E	56	14.6	19.5	83.1	65.8	79.6	65.1	76.3	64.0	68.6	77.9	66.9	75.4	65.6	94.8	71.0	63.9	89.3	69.4	20.0	16.9	14.7	6221	105
ROTH	49.22N	11.10E	1296	6.5	12.0	87.5	66.6	83.7	65.1	80.3	63.9	68.3	82.7	66.7	80.0	63.8	92.9	71.8	62.2	87.8	71.1	18.8	15.9	13.4	6557	180
STUTTGART/ECHTERDI	48.68N	9.22E	1299	9.1	14.1	84.8	66.0	81.7	65.1	78.5	63.9	68.0	81.3	66.5	78.7	63.3	91.3	73.5	62.0	87.0	71.9	20.9	17.8	15.1	6282	191
STUTTGART/SCHNARREN	48.83N	9.20E	1033	11.3	15.8	85.2	67.3	82.0	65.5	79.0	64.3	69.0	81.1	67.4	78.7	64.8	95.5	73.7	63.3	90.5	72.4	20.3	17.2	14.7	5674	288
WUNSTORF	52.47N	9.43E	167	11.8	16.5	86.3	66.5	82.5	65.4	78.8	63.6	68.6	82.0	66.8	79.0	64.1	90.0	72.6	62.4	84.8	71.8	24.1	21.1	18.7	5805	211

Meaning of acronyms:
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F*
MCWB: Mean coincident wet bulb temperature, °F
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DP: Dew point temperature, °F *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCDB: Mean coincident dry bulb temperature, °F *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%			1%	2.5%	5%		
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB						HDD / CDD 65	
Greece																									*3 sites, 21 more on CD-ROM*	
ATHINAI (AIRPORT)	37.90N	23.73E	49	34.8	37.6	95.1	70.0	92.8	69.5	90.3	69.6	75.9	87.9	74.4	86.2	71.9	118.1	83.7	70.2	111.3	82.5	22.4	20.1	18.3	2097	1942
ELEFSIS (AIRPORT)	38.07N	23.55E	102	33.4	35.7	97.1	69.7	94.9	69.0	92.8	68.6	73.6	88.4	72.1	87.6	69.4	108.5	82.3	66.6	98.4	79.6	22.7	20.4	18.5	2279	2042
THESSALONIKI (AIRPORT)	40.52N	22.97E	13	26.2	28.6	93.3	70.9	91.0	70.9	88.2	69.8	74.5	87.7	72.9	85.8	70.0	110.4	82.4	68.3	104.1	80.6	27.8	22.4	18.9	3303	1416
Guatemala																									*1 site, 0 more on CD-ROM*	
GUATEMALA (AEROPUERTO)	14.58N	90.52W	4885	51.4	53.3	82.4	63.7	80.7	63.8	79.1	63.8	68.1	76.3	67.3	75.1	66.1	115.7	70.1	64.8	110.3	69.0	27.4	23.3	21.5	128	1161
Honduras																									*2 sites, 0 more on CD-ROM*	
LA MESA (SAN PEDRO SULA)	15.45N	87.93W	102	63.0	64.8	98.6	78.7	96.7	79.0	95.0	78.8	82.7	92.8	81.6	91.3	80.3	157.8	88.7	79.1	151.4	86.5	19.9	17.7	15.3	0	5827
TEGUCIGALPA	14.05N	87.22W	3304	52.6	55.2	89.7	66.9	87.9	67.6	86.2	67.5	72.5	82.1	71.7	81.4	70.0	124.7	76.1	68.9	120.2	74.7	20.9	18.3	16.0	21	2691
Hungary																									*3 sites, 23 more on CD-ROM*	
BUDAORS	47.45N	18.97E	433	11.8	15.8	87.8	68.2	84.8	67.4	82.0	66.5	70.3	84.0	68.9	81.5	65.5	95.9	75.8	64.3	91.6	74.6	31.2	26.0	20.8	5530	443
BUDAPEST/FERIHEGY I	47.43N	19.27E	607	9.2	14.0	89.9	71.3	87.1	69.9	84.0	68.0	73.4	87.2	71.1	83.2	68.4	106.6	80.3	66.6	100.2	77.2	31.1	24.9	20.3	5739	464
BUDAPEST/PESTSZENTL	47.43N	19.18E	456	12.9	16.6	90.1	68.3	87.0	67.4	84.0	66.2	70.4	84.4	69.0	82.7	66.0	97.4	75.1	64.4	92.2	74.0	17.2	14.6	12.6	5421	598
India																									*36 sites, 15 more on CD-ROM*	
AHMADABAD	23.07N	72.63E	180	51.6	53.9	107.7	73.7	105.7	73.2	103.4	73.5	83.5	93.1	82.5	91.3	81.4	164.2	87.4	80.6	159.8	86.5	14.4	12.3	11.1	19	6183
AKOLA	20.70N	77.07E	1014	55.3	57.3	109.8	71.6	107.7	71.0	105.5	70.7	80.2	93.8	79.1	89.8	77.4	148.3	83.3	76.8	144.8	82.4	12.8	10.7	8.9	5	6087
AURANGABAD CHIKALTH	19.85N	75.40E	1900	50.9	53.4	104.0	72.9	102.3	72.5	100.5	71.5	79.6	95.0	78.0	91.2	76.1	146.3	84.7	75.0	140.9	82.3	20.7	18.1	15.4	12	4872
BANGALORE	12.97N	77.58E	3022	59.2	60.6	93.6	67.8	92.2	67.7	90.7	67.7	74.4	83.9	73.5	82.8	72.1	132.9	77.6	71.1	128.6	76.7	12.8	11.1	9.5	0	3818
BELGAUM/SAMBRA	15.85N	74.62E	2451	56.0	58.2	97.3	66.5	95.6	66.5	93.9	66.6	75.1	84.3	74.3	82.7	72.9	133.8	77.7	72.2	130.5	76.9	18.7	17.3	15.1	0	3963
BHOPAL/BAIRAGARH	23.28N	77.35E	1716	50.3	52.4	107.1	70.6	104.8	70.2	102.6	69.9	79.1	88.9	78.2	87.1	77.0	149.9	82.3	76.3	146.4	81.5	20.5	18.4	16.7	97	4873
BHUBANESWAR	20.25N	85.83E	151	57.2	59.2	101.4	79.6	99.0	79.6	97.1	79.6	84.7	93.1	84.1	92.2	82.9	172.4	88.3	82.2	168.8	87.7	23.1	20.1	17.9	1	6018
BIKANER	28.00N	73.30E	735	42.1	44.6	111.5	70.3	109.2	71.5	106.9	72.2	82.7	93.8	81.7	92.8	80.5	162.8	86.8	79.3	156.4	86.5	15.7	12.3	10.2	352	6048
BOMBAY/SANTACRUZ	19.12N	72.85E	46	61.7	64.0	96.4	73.4	94.3	73.8	92.8	74.3	81.9	88.5	81.2	87.8	80.2	157.1	85.9	79.3	152.5	85.1	15.5	13.8	12.2	0	6048
CALCUTTA/DUM DUM	22.65N	88.45E	20	52.8	55.0	98.9	80.3	97.1	80.2	95.4	80.1	85.1	93.6	84.4	92.6	83.0	172.4	89.5	82.4	169.0	89.2	12.7	11.1	9.4	28	5500
COIMBATORE/PEELAMED	11.03N	77.05E	1309	64.4	66.1	98.0	72.8	96.3	73.0	94.7	73.1	78.8	89.3	77.9	87.8	76.4	144.8	81.7	75.6	140.8	80.8	22.8	19.4	17.8	0	5564
CWC VISHAKHAPATNAM	17.70N	83.30E	217	68.1	69.5	92.7	80.7	91.3	81.5	90.2	81.2	84.5	89.6	83.7	88.9	83.1	174.0	88.5	82.3	169.5	88.0	18.8	16.7	14.9	0	6083
GAUHATI	26.10N	91.58E	177	51.5	53.2	94.0	79.8	92.4	79.8	91.0	79.8	83.7	90.8	82.8	89.5	81.8	166.4	88.0	81.0	162.1	86.7	11.3	9.3	7.7	103	4220
GWALIOR	26.23N	78.25E	679	42.7	44.7	110.6	71.7	108.6	72.1	106.3	72.0	82.8	91.3	82.1	90.0	80.9	164.9	86.8	80.2	160.8	86.0	10.8	8.6	7.3	361	5345
HYDERABAD AIRPORT	17.45N	78.47E	1788	57.1	59.3	104.4	71.7	102.4	71.5	100.4	71.4	78.2	89.0	77.2	87.6	75.6	143.2	82.0	74.8	139.6	81.0	18.4	15.9	13.6	0	5571
INDORE	22.72N	75.80E	1860	48.3	50.7	105.4	67.5	103.4	67.6	101.2	67.5	78.1	86.6	77.2	85.2	76.1	146.0	81.4	75.3	142.3	80.4	25.0	21.5	19.6	83	4637
JABALPUR	23.20N	79.95E	1289	47.1	49.4	108.2	69.2	106.0	69.3	103.5	69.8	80.0	88.5	79.1	86.6	78.0	152.6	83.5	77.3	148.9	82.4	9.4	7.5	6.6	160	4944
JAIPUR/SANGANER	26.82N	75.80E	1280	44.8	47.1	108.3	70.4	105.9	70.3	103.6	70.4	81.0	88.5	80.2	87.6	79.3	159.4	84.3	78.6	155.8	83.5	15.8	12.9	11.2	313	5253
JAMSHEDPUR	22.82N	86.18E	466	50.0	52.1	108.2	72.2	104.9	72.7	101.9	73.4	82.6	91.3	81.8	90.0	80.7	162.2	85.7	79.9	158.1	84.9	8.1	7.0	5.6	48	5539
JODHPUR	26.30N	73.02E	735	48.0	50.2	108.7	70.2	106.3	71.1	104.4	71.4	81.5	90.3	80.7	89.7	79.6	157.9	85.3	78.7	153.1	84.4	13.1	11.1	9.1	125	6059
KOZHIKODE	11.25N	75.78E	16	71.9	73.1	92.7	82.1	91.8	81.4	90.9	80.8	83.6	90.8	82.8	89.8	81.5	164.1	89.3	80.8	160.0	88.3	15.0	13.0	11.2	0	6225
LUCKNOW/AMAUSI	26.75N	80.88E	420	44.3	46.4	107.8	73.5	105.4	73.5	102.5	74.4	84.6	92.7	83.8	91.6	82.7	173.4	88.5	82.2	170.3	88.0	16.6	13.6	11.6	339	4961
MADRAS/MINAMBAKKAM	13.00N	80.18E	52	67.9	69.3	101.3	78.3	99.0	78.1	97.1	78.1	83.0	91.3	82.2	90.1	81.0	161.4	86.9	80.3	157.7	86.3	18.6	16.8	14.5	0	6844
MANGALORE/BAJPE	12.92N	74.88E	335	69.1	70.5	93.8	76.9	92.8	76.8	91.8	76.5	80.8	88.3	80.1	87.4	79.0	152.3	84.0	78.3	148.7	83.4	17.9	15.7	13.9	0	5948
NAGPUR SONEGAON	21.10N	79.05E	1017	53.1	55.3	110.7	71.9	108.5	71.5	106.1	71.1	80.4	89.9	79.6	88.5	78.2	152.4	84.0	77.4	148.3	82.9	17.8	14.5	12.6	11	5797
NELLORE	14.45N	79.98E	66	68.6	69.8	105.1	80.1	102.5	80.5	100.3	80.2	84.1	96.1	83.3	94.6	81.6	164.6	88.6	80.8	160.1	88.2	12.1	9.9	7.9	0	7284
NEW DELHI/PALAM	28.57N	77.12E	764	43.2	44.9	110.8	72.4	107.7	72.3	104.4	72.5	85.4	91.2	84.3	90.1	84.4	185.6	87.6	82.8	176.0	87.1	18.1	15.4	13.4	515	5419
NEW DELHI/SAFDARJUN	28.58N	77.20E	709	43.4	45.1	107.6	72.0	105.1	72.8	102.8	73.2	83.3	92.6	82.5	91.7	81.1	165.9	87.5	80.4	162.2	86.9	15.8	13.3	11.3	486	4972
PATIALA	30.33N	76.47E	823	40.9	42.8	106.5	75.7	103.6	75.6	100.7	76.0	84.8	92.3	84.1	91.9	83.1	178.1	88.9	82.4	173.9	88.5	9.8	7.5	6.4	746	4241
PATNA	25.60N	85.10E	197	46.7	48.8	105.8	74.1	103.1	74.1	100.3	74.8	84.1	92.6	83.4	91.4	82.3	169.6	87.6	81.6	165.6	87.0	14.2	12.5	11.2	232	5117
POONA	18.53N	73.85E	1834	49.5	51.6	100.6	67.5	98.8	67.3	96.9	67.4	76.3	85.6	75.5	84.2	74.1	136.2	79.1	73.4	133.0	78.3	11.6	9.6	7.7	16	4136
RAJKOT	22.30N	70.78E	453	53.3	55.8	105.8	71.8	103.7	72.0	101.7	72.6	82.3	92.3	81.3	90.1	80.1	159.1	85.0	79.4	155.4	84.4	24.5	21.1	18.9	9	6138
SHOLAPUR	17.67N	75.90E	1572	60.7	62.9	105.7	71.5	103.8	71.9	102.0	71.6	79.7	90.8	78.6	89.2	77.3	150.6	83.8	76.2	145.1	82.8	7.6	6.6	5.5	0	6229
SURAT	21.20N	72.83E	39	57.9	60.2	100.0	72.6	97.5	73.2	95.3	73.6	82.6	89.4	81.8	88.6	80.9	160.6	85.7	80.1	156.6	85.3	12.6	11.0	9.1	0	6152
THIRUVANANTHAPURAM	8.48N	76.95E	210	71.8	72.8	92.6	78.3	91.7	78.3	90.8	78.0	81.5	88.7	80.8	88.0	79.5	154.4	85.2	78.9	151.4	84.7	13.6	11.7	9.8	0	6073
TIRUCHCHIRAPALLI	10.77N	78.72E	289	68.0	69.5	102.1	77.7	100.5	77.7	99.0	77.3	81.9	94.3	81.0	92.9	79.2	153.2	86.2	78.4	148.8	85.5	26.0	23.8	20.5	0	7172
Indonesia																									*8 sites, 2 more on CD-ROM*	
DENPASAR/NGURAH RAI	8.75S	115.17E	3	71.2	72.7	90.7	79.9	89.7	79.5	89.0	79.3	81.8	87.4	81.0	86.9	80.4	157.8	85.6	79.2	151.5	84.6	18.0	15.4	13.5	0	6061
JAKARTA/SOEKARNO-HA	6.12S	106.65E	26	71.7	73.0	92.9	78.2	91.6	78.5	91.1	78.5	82.1	88.4	81.4	87.9	80.5	158.7	86.7	79.2	151.8	85.1	21.7	18.7	16.4	0	6116
MEDAN/POLONIA	3.57N	98.68E	82	72.1	73.0	93.5	79.2	92.2	79.2	91.3	79.2	81.6	89.6	80.9	88.8	79.2	152.1	85.9	78.9	150.3	85.4	13.6	11.9	10.8	0	6103
MENADO/ SAM RATULAN	1.53N	124.92E	262	68.5	70.1	91.3	75.3	90.4	75.6	89.6	75.8	79.5	86.3	79.0	85.8	77.5	144.5	82.4	77.2	142.7	82.1	17.0	13.3	10.9	0	5433
PADANG/TABING	0.88S	100.35E	10	70.5	71.6	90.0	78.1	89.4	78.4	88.8	78.3	80.8	87.7	80.1	87.0	78.8	149.7	85.4	78.2	146.3	84.8	12.0	10.3	9.1	0	5642
PEKAN BARU/SIMPANGT	0.47N	101.45E	102	71.0	71.8	94.0	80.2	93.1	80.0	92.3	79.8	82.5	91.1	81.8	90.3	80.0	156.5	88.4	79.3	152.8	87.6	13.4	11.0	9.4	0	6185

Meaning of acronyms:
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F*
MCWB: Mean coincident wet bulb temperature, °F
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DP: Dew point temperature, °F *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCDB: Mean coincident dry bulb temperature, °F *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
SURABAYA/JUANDA	7.37S	112.77E	10	69.6	71.2	93.5	76.1	92.5	76.3	91.5	76.5	80.5	88.0	80.0	87.4	78.8	149.3	83.8	78.1	145.9	83.4	18.5	16.2	13.7	0	6305
UJUNG PANDANG/HASAN	5.07S	119.55E	46	68.8	70.0	93.3	74.1	91.9	75.0	91.3	75.3	80.7	87.0	80.0	86.3	79.1	151.2	83.6	78.6	149.0	83.1	16.3	13.7	11.7	0	5798
Iran, Islamic Republic of																									*17 sites, 7 more on CD-ROM*	
ABADAN	30.37N	48.25E	20	40.8	42.9	117.8	72.6	116.0	72.2	114.3	71.7	83.2	95.7	80.7	96.7	80.4	157.8	91.2	76.6	139.0	89.4	23.5	20.7	18.4	739	5874
AHWAZ	31.33N	48.67E	72	41.0	43.2	117.7	73.0	116.1	72.7	114.3	72.2	82.4	96.7	79.6	99.8	78.9	150.1	91.2	74.3	128.4	91.1	20.8	17.4	15.0	788	5884
ANZALI	37.47N	49.47E	-85	35.5	37.4	86.5	77.5	85.4	77.0	84.2	76.4	80.1	84.6	79.1	83.8	78.8	149.1	83.9	77.5	142.8	83.0	24.8	19.9	15.9	2737	1499
ARAK	34.10N	49.77E	5604	3.8	10.7	97.2	61.6	95.2	60.7	93.2	59.9	66.4	90.3	64.0	89.2	57.3	86.4	80.9	54.1	76.8	77.5	18.8	16.7	14.3	4386	1573
BANDARABBASS	27.22N	56.37E	33	48.8	51.7	107.3	74.6	104.1	77.4	101.9	78.6	88.1	95.2	87.2	94.5	86.4	193.0	92.8	85.7	189.0	92.5	19.1	16.8	15.2	128	5796
ESFAHAN	32.47N	51.67E	5085	19.5	22.9	102.3	63.9	100.3	62.9	98.2	62.2	66.3	97.7	64.6	96.5	53.8	74.5	82.4	51.1	67.2	79.8	22.8	19.3	16.6	3558	1934
HAMEDAN	34.85N	48.53E	5738	1.7	8.8	95.9	64.0	93.8	62.4	91.7	61.4	67.0	91.5	65.2	89.5	58.1	89.4	81.9	55.3	80.6	80.3	23.0	19.0	16.2	5048	992
KASHAN	33.98N	51.45E	3222	27.0	30.1	107.1	68.0	104.9	67.1	102.7	66.3	71.5	101.2	69.8	100.0	60.7	89.4	90.6	58.0	81.0	89.0	13.9	10.2	7.7	2588	3300
KERMAN	30.25N	56.97E	5755	19.7	23.1	100.4	61.3	98.4	60.4	96.5	59.8	64.0	93.9	62.5	93.1	51.9	71.0	72.8	49.4	64.9	72.8	25.8	21.5	17.6	2914	1831
KERMANSHAH	34.27N	47.12E	4337	18.8	22.8	103.2	66.0	101.3	64.8	99.0	63.7	68.8	99.4	66.9	97.7	56.3	79.3	85.7	53.7	72.0	82.4	21.7	18.3	15.9	3726	1803
MASHHAD	36.27N	59.63E	3278	18.4	22.8	98.8	66.4	96.7	65.8	94.6	65.0	71.7	92.5	69.5	91.4	64.3	101.9	87.1	61.2	91.1	82.8	20.4	17.5	15.2	3709	1826
ORUMIEH	37.53N	45.08E	4318	12.7	16.5	91.1	64.2	88.8	63.8	86.5	63.1	67.6	84.8	66.3	83.6	61.7	96.6	77.1	59.8	90.0	76.3	20.1	15.6	12.6	5219	811
SHIRAZ	29.53N	52.53E	4859	28.7	31.7	102.4	64.8	100.5	63.8	98.7	62.9	68.1	95.3	66.6	94.5	58.8	88.8	84.5	55.5	78.6	82.2	22.0	18.4	15.7	2440	2610
TABRIZ	38.08N	46.28E	4465	12.3	16.6	95.4	61.8	93.3	61.1	91.1	60.8	65.1	87.8	64.0	86.0	57.4	82.9	74.2	55.6	77.6	74.5	23.2	20.4	17.6	4801	1443
TEHRAN-MEHRABAD	35.68N	51.32E	3907	26.9	29.7	101.3	66.2	99.0	65.7	97.1	65.0	72.5	91.4	69.8	91.7	66.1	111.3	87.7	62.4	97.4	85.3	25.5	21.8	17.6	2858	2772
ZAHEDAN	29.47N	60.88E	4495	23.8	27.2	102.4	61.6	100.4	60.8	98.4	59.7	66.1	93.3	63.6	94.6	55.2	76.6	77.5	51.5	66.7	69.1	26.8	22.6	19.5	2089	2620
ZANJAN	36.68N	48.48E	5456	8.0	12.8	93.1	60.1	90.8	60.1	88.5	59.2	64.5	85.7	63.0	84.1	56.6	83.7	74.0	55.1	79.3	71.8	22.0	18.0	15.4	5393	764
Ireland																									*2 sites, 13 more on CD-ROM*	
CASEMENT AERODROME	53.30N	6.43W	305	27.4	29.8	73.5	63.4	70.4	62.1	68.1	60.9	65.1	71.0	63.4	68.6	62.8	86.3	67.6	61.1	81.4	66.0	34.0	29.8	26.6	5647	16
DUBLIN AIRPORT	53.43N	6.25W	279	28.5	30.7	71.8	62.8	69.2	61.6	67.1	60.4	64.4	69.5	62.9	67.4	62.3	84.7	66.9	60.8	80.4	65.4	30.0	26.8	23.8	5643	11
Israel																									*2 sites, 4 more on CD-ROM*	
BEN-GURION INT. AIR	32.00N	34.90E	161	41.1	43.1	94.9	69.5	91.5	72.3	89.5	73.1	78.6	87.4	77.2	86.2	75.6	134.6	84.3	74.5	129.7	83.4	22.5	20.0	17.8	1115	2320
SDE-DOV (TEL-AVIV)	32.10N	34.78E	13	44.8	47.1	88.1	74.8	86.4	75.6	85.4	75.4	80.2	84.8	78.8	84.2	78.8	149.7	84.2	77.1	141.1	83.2	26.8	21.8	18.5	934	2277
Italy																									*16 sites, 62 more on CD-ROM*	
BARI/PALESE MACCHIE	41.13N	16.78E	161	33.5	35.5	92.8	73.1	89.5	72.4	86.4	71.5	77.5	85.1	75.8	83.7	75.3	133.5	81.6	73.4	125.0	80.3	21.3	18.5	16.1	2755	1152
BOLOGNA/BORGO PANIG	44.53N	11.30E	161	23.3	26.5	93.3	73.6	91.0	73.2	88.1	71.9	76.8	88.4	75.2	86.3	73.4	124.8	83.1	71.6	117.5	81.3	16.2	13.7	11.7	3983	1178
CATANIA/FONTANAROSS	37.47N	15.05E	56	35.0	37.2	95.0	73.6	91.5	73.9	89.4	73.5	79.5	85.9	78.1	85.1	77.7	144.5	82.6	76.1	136.4	81.6	22.1	18.8	16.3	1983	1547
CATANIA/SIGONELLA	37.40N	14.92E	72	35.6	37.8	96.9	70.7	93.5	71.0	91.1	71.0	78.3	84.3	76.7	83.5	76.9	140.7	80.5	75.1	132.1	79.6	27.1	23.3	20.9	2019	1664
FIRENZE/PERETOLA	43.80N	11.20E	125	26.4	29.5	95.1	73.4	92.5	72.7	89.7	71.2	76.2	89.2	74.7	87.0	73.0	122.9	80.8	71.2	115.8	80.4	19.4	16.3	13.9	3032	1344
GENOVA/SESTRI	44.42N	8.85E	10	33.7	36.9	85.9	73.6	84.0	74.0	82.3	73.7	78.8	81.9	77.3	81.2	77.4	142.7	80.9	75.6	134.1	80.0	26.1	23.3	21.1	2540	1148
GRAZZANISE	41.05N	14.07E	33	30.3	32.3	89.9	72.9	87.9	72.7	86.0	72.8	78.6	84.6	77.0	83.5	76.8	140.0	82.9	75.0	131.6	81.5	22.4	18.8	15.8	2846	1071
MILANO/LINATE	45.43N	9.28E	338	22.9	25.8	91.4	75.4	88.8	73.8	86.4	72.3	77.4	87.7	75.6	85.4	74.3	129.6	83.2	72.6	122.5	81.5	16.4	12.6	10.0	4077	1059
NAPLES	40.90N	14.30E	305	35.6	37.7	92.3	74.5	89.8	73.7	87.8	73.2	78.6	87.6	76.7	86.3	75.5	135.2	84.8	73.6	126.6	83.1	18.3	15.2	12.8	2193	1551
NAPOLI/CAPODICHINO	40.85N	14.30E	236	33.1	35.4	91.6	74.1	89.4	73.9	87.4	73.7	79.3	85.8	77.8	84.5	77.4	143.6	83.3	75.5	134.7	81.8	21.1	17.5	14.7	2462	1336
PALERMO/PUNTA RAISI	38.18N	13.10E	69	44.2	46.0	92.4	72.2	88.9	73.2	86.1	75.2	80.3	84.7	79.1	83.8	79.0	151.1	83.8	77.4	142.7	82.7	29.3	25.4	22.1	1442	1803
PRATICA DI MARE	41.65N	12.45E	69	33.5	35.5	87.5	73.8	85.7	74.2	83.9	74.8	79.1	83.2	77.6	82.3	77.4	142.7	82.4	75.6	134.3	81.1	22.5	19.0	16.5	2471	1073
ROMA FIUMICINO	41.80N	12.23E	10	30.6	33.2	87.8	73.0	86.0	73.3	84.2	73.2	78.7	83.2	77.2	82.2	77.2	141.5	81.7	75.4	133.2	80.5	25.7	21.9	18.8	2745	999
ROMA/CIAMPINO	41.78N	12.58E	344	29.9	31.9	91.8	71.4	89.7	71.1	87.6	70.5	76.5	83.8	75.0	82.7	74.9	132.4	80.0	73.1	124.6	78.8	25.2	20.8	17.4	2960	1139
TORINO/BRIC DELLA C	45.03N	7.73E	2329	24.2	26.4	82.8	68.7	80.7	67.9	78.6	66.9	73.0	78.4	71.4	76.8	71.5	126.7	75.7	69.7	119.0	75.1	19.5	15.6	12.1	4735	500
TORINO/CASELLE	45.22N	7.65E	942	21.2	23.7	87.7	72.5	85.6	71.4	82.9	70.0	75.2	83.6	73.6	81.8	72.9	126.4	79.5	71.3	119.5	78.2	14.0	10.2	8.4	4560	698
Jamaica																									*1 site, 1 more on CD-ROM*	
KINGSTON/NORMAN MAN	17.93N	76.78W	46	71.7	73.1	92.0	78.5	91.4	78.6	90.4	78.3	82.6	86.7	81.7	86.6	81.7	165.1	84.8	80.6	159.4	84.5	32.2	29.5	27.0	0	6420
Japan																									*65 sites, 125 more on CD-ROM*	
AKITA	39.72N	140.10E	69	22.2	24.0	88.8	75.5	86.0	74.6	83.3	73.5	77.2	85.1	76.1	83.4	75.0	131.4	81.3	73.8	126.4	80.4	27.4	23.9	20.8	5164	851
ASAHIKAWA	43.77N	142.37E	381	-1.1	3.2	85.8	73.3	82.6	70.6	79.8	68.9	74.9	83.2	73.1	80.2	72.3	121.2	80.2	70.6	114.5	78.2	16.0	12.9	11.0	7818	407
ASHIYA AB	33.88N	130.65E	108	30.1	32.0	90.0	78.2	88.1	78.3	86.2	77.7	80.0	86.3	79.2	85.2	78.7	149.3	84.1	77.3	142.6	82.6	23.4	20.6	18.2	3118	1461
ATSUGI NAS	35.45N	139.45E	213	29.8	31.7	91.3	77.8	89.2	77.0	86.4	76.0	79.2	86.4	78.4	85.3	77.3	143.0	82.3	76.7	140.2	82.2	23.3	20.4	18.2	3108	1483
CHIBA	35.60N	140.10E	62	32.6	34.0	90.2	78.1	88.3	77.6	86.7	77.1	79.8	86.9	79.0	85.7	77.8	145.0	84.0	77.0	140.9	83.2	27.6	23.6	20.2	2946	1541
FUKUOKA	33.58N	130.38E	49	33.2	34.8	92.1	78.1	90.4	77.8	88.6	77.2	79.8	88.6	78.9	87.5	77.3	142.1	84.9	76.4	137.8	84.1	18.7	16.4	14.4	2652	1837
FUKUOKA AIRPORT	33.58N	130.45E	39	30.7	33.4	93.0	78.1	91.2	77.8	89.3	77.2	79.9	88.2	79.1	87.2	77.3	142.5	84.2	76.9	140.3	83.8	20.8	18.5	16.6	2841	1826
FUKUYAMA	34.45N	133.25E	10	27.2	29.1	92.9	77.6	91.1	77.5	89.5	77.0	79.2	89.6	78.3	88.4	76.3	137.1	84.4	75.5	133.4	83.9	13.6	11.6	9.9	3316	1711
FUSHIKI	36.80N	137.05E	43	27.7	29.3	92.1	76.2	89.2	76.2	86.5	75.4	78.3	86.7	77.3	85.8	76.1	136.5	82.8	75.0	131.5	81.8	16.7	14.3	12.3	3926	1284
FUTENMA	26.27N	127.75E	276	51.5	53.2	89.9	79.8	89.4	79.7	88.0	79.4	82.2	86.9	81.2	85.9	80.8	161.4	85.3	79.2	153.2	83.9	25.1	21.6	19.1	363	3336
GIFU	35.40N	136.77E	56	29.4	31.1	95.2	77.5	92.8	76.9	90.4	76.1	79.3	90.0	78.5	88.4	76.9	140.3	82.9	76.0	136.2	82.6	17.9	15.7	13.9	3154	1853

Meaning of acronyms:
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F* *DP: Dew point temperature, °F* *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCWB: Mean coincident wet bulb temperature, °F *MCDB: Mean coincident dry bulb temperature, °F* *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
GIFU AB	35.38N	136.87E	138	26.2	28.0	93.5	77.5	91.4	76.8	89.3	76.1	79.5	87.7	78.6	86.7	77.3	142.8	82.3	76.7	139.8	82.0	18.0	15.6	13.5	3568	1599
HAMAMATSU	34.72N	137.72E	108	32.2	33.8	90.9	76.8	88.3	76.8	86.5	76.5	79.7	85.6	79.0	84.6	78.3	147.3	82.5	77.4	143.1	82.1	19.9	17.9	16.1	2727	1676
HAMAMATSU AB	34.75N	137.70E	157	30.0	31.8	91.1	77.4	88.0	77.3	86.1	76.6	79.6	85.7	78.8	84.6	78.4	148.6	82.5	77.2	142.3	81.7	21.7	19.6	17.8	2967	1515
HIMEJI	34.83N	134.67E	131	27.9	29.6	92.1	77.9	90.3	77.4	88.6	76.8	79.7	88.4	78.8	87.0	77.3	142.8	84.0	76.4	138.6	83.3	19.2	16.4	14.1	3383	1653
HIROSHIMA	34.40N	132.47E	174	30.0	31.8	92.1	77.8	90.3	77.3	88.5	76.9	79.4	88.3	78.6	87.1	77.1	141.8	83.9	76.3	138.1	83.3	20.9	18.3	16.3	3057	1735
IIZUKA	33.65N	130.70E	125	28.8	30.7	92.4	78.3	90.7	78.0	88.7	77.4	80.0	89.0	79.1	87.6	77.4	143.3	83.9	76.8	140.1	83.3	16.4	14.0	12.2	3096	1693
IRUMA AB	35.83N	139.42E	305	24.7	26.8	93.0	78.2	89.9	77.0	87.7	76.4	79.5	88.5	78.5	86.8	77.2	143.0	83.1	75.6	135.7	81.9	21.8	18.7	16.2	3781	1264
KADENA (USAF\NAVY)	26.35N	127.77E	148	49.9	52.0	91.7	80.6	91.1	80.5	89.7	80.2	83.0	87.9	82.3	87.2	82.1	168.2	86.2	80.8	161.1	85.6	25.9	21.9	19.3	354	3501
KAGOSHIMA	31.55N	130.55E	105	33.4	35.6	91.7	78.1	90.3	77.8	88.9	77.5	80.0	87.6	79.3	86.7	78.0	146.1	84.0	77.3	142.5	83.8	19.9	16.9	14.7	2056	2227
KANAZAWA	36.58N	136.63E	108	28.8	30.4	91.6	76.7	89.5	76.4	87.5	75.9	78.6	87.4	77.6	86.3	76.1	136.9	83.8	75.0	132.0	83.0	26.1	22.1	19.0	3708	1396
KANSAI INTERNATIONA	34.43N	135.25E	26	35.2	35.9	91.4	78.4	89.7	78.1	87.9	78.0	80.3	86.8	79.7	86.0	78.9	149.9	84.2	77.4	142.7	83.5	28.7	24.9	21.7	2727	1947
KOBE	34.70N	135.22E	98	31.1	33.0	91.2	76.9	89.2	76.5	87.4	76.1	79.1	86.4	78.3	85.3	77.2	142.1	83.1	76.4	138.1	82.7	21.1	18.2	15.8	2972	1805
KOCHI	33.57N	133.55E	16	30.2	32.1	90.7	76.9	88.9	76.7	87.3	76.3	79.2	85.9	78.5	85.2	77.5	143.0	82.8	76.6	138.7	82.4	13.0	10.9	9.3	2573	1799
KOMATSU AB	36.40N	136.40E	30	28.0	29.8	91.5	76.4	89.3	76.4	86.3	75.7	79.0	86.6	78.0	85.5	77.0	140.6	83.1	75.5	133.5	81.8	24.7	21.1	18.5	3890	1257
KUMAGAYA	36.15N	139.38E	102	28.1	29.8	95.4	77.7	92.9	76.9	90.2	75.8	79.5	90.4	78.4	88.6	77.0	141.0	82.5	75.9	136.1	82.6	17.8	15.2	13.0	3353	1560
KUMAMOTO	32.82N	130.70E	128	28.5	30.7	93.6	77.4	91.8	77.1	89.9	76.6	79.8	88.3	79.0	87.1	77.7	144.7	83.2	76.9	140.8	82.6	16.0	13.4	11.6	2766	1990
KURE	34.23N	132.55E	16	31.9	33.6	90.2	77.3	88.8	77.0	87.3	76.4	78.7	87.0	78.0	86.0	76.2	137.1	83.3	75.5	133.7	82.8	15.7	13.5	11.7	2872	1768
KYOTO	35.02N	135.73E	151	30.1	31.7	94.2	76.4	92.2	76.0	90.0	75.3	78.3	89.6	77.4	88.1	75.2	133.1	83.2	74.4	129.3	82.9	11.7	10.0	9.1	3195	1831
MATSUYAMA	33.85N	132.78E	112	31.5	33.1	91.5	76.6	90.0	76.3	88.4	75.9	78.2	87.6	77.4	86.5	75.6	134.7	82.2	74.8	130.9	82.0	13.2	11.5	9.9	2899	1744
MIYAZAKI	31.93N	131.42E	49	31.3	33.4	92.6	78.3	90.4	78.1	88.4	77.8	80.4	87.8	79.6	86.8	78.4	147.5	84.0	77.6	144.0	83.5	20.4	17.2	14.8	2288	1938
NAGANO	36.67N	138.20E	1375	19.6	21.8	90.7	74.1	88.2	73.5	85.5	72.4	75.7	86.6	74.6	84.8	72.6	127.3	81.1	71.6	122.6	80.2	17.8	15.6	13.9	4967	1100
NAGASAKI	32.73N	129.87E	115	33.2	35.0	90.6	77.8	88.8	77.7	87.1	77.3	80.1	86.0	79.3	85.1	78.5	148.8	83.7	77.7	144.7	83.1	17.5	14.6	12.5	2495	1852
NAGOYA	35.17N	136.97E	184	29.3	30.9	93.7	76.7	91.4	76.3	89.1	75.6	78.9	88.1	78.0	86.9	76.6	139.7	82.5	75.6	135.1	81.9	19.3	16.9	14.8	3194	1750
NAGOYA AIRPORT	35.25N	136.92E	56	28.0	29.8	94.1	77.0	91.7	76.6	89.6	75.8	79.2	88.0	78.4	86.9	77.1	141.4	82.5	75.6	134.4	82.0	21.9	18.9	16.4	3339	1744
NAHA	26.20N	127.68E	174	53.0	54.5	89.8	79.3	88.8	79.2	87.9	79.0	81.0	86.4	80.6	86.0	79.6	154.7	84.4	79.1	151.8	84.1	29.3	24.6	21.6	292	3460
NAHA AIRPORT	26.20N	127.65E	20	53.6	55.3	89.9	79.6	89.4	79.6	88.0	79.6	81.7	86.2	81.0	85.8	80.5	158.7	85.9	79.2	151.7	84.7	29.8	26.0	23.1	238	3598
NARA	34.70N	135.83E	348	28.1	29.5	93.4	76.4	91.4	76.3	89.3	75.7	78.4	88.8	77.5	87.6	75.6	135.9	82.4	74.7	131.7	81.7	10.2	8.9	7.6	3486	1570
NIIGATA	37.92N	139.05E	20	28.1	29.7	91.1	77.0	88.6	76.4	86.1	75.6	78.6	87.4	77.5	86.0	76.1	136.5	83.9	75.0	131.3	82.8	23.3	20.4	17.8	4097	1256
NYUTABARU AB	32.08N	131.45E	269	28.8	31.8	90.0	77.8	88.0	78.1	86.1	77.7	80.1	85.5	79.2	84.5	78.9	151.7	83.1	77.4	144.1	82.0	22.0	18.5	15.7	2517	1644
OITA	33.23N	131.62E	43	30.8	32.6	91.7	77.6	89.8	77.3	87.8	76.8	79.3	87.6	78.4	86.4	77.2	141.6	83.4	76.3	137.3	82.7	16.1	13.9	12.1	2869	1637
OKAYAMA	34.67N	133.92E	59	29.9	31.7	93.9	77.3	92.1	76.8	90.2	76.3	79.1	89.3	78.3	87.9	76.5	138.5	83.1	75.8	135.0	83.0	22.1	18.6	15.7	3109	1897
ONAHAMA	36.95N	140.90E	16	27.1	28.9	84.0	75.0	81.9	74.7	80.2	73.9	77.0	81.4	76.1	80.1	75.6	134.2	79.5	74.7	130.1	78.7	18.5	16.0	14.0	4004	823
OSAKA	34.68N	135.52E	272	32.6	34.2	93.5	76.7	91.7	76.4	89.9	76.0	78.9	88.8	78.1	87.7	76.3	138.6	84.0	75.4	134.4	83.7	20.6	17.8	15.5	2839	2006
OSAKA INTERNATIONAL	34.78N	135.43E	49	28.7	30.5	93.6	77.5	91.7	77.0	89.8	76.4	79.7	89.1	78.8	87.9	77.2	141.6	83.8	76.0	136.1	83.3	18.8	16.6	14.6	3195	1850
OTARU	43.18N	141.02E	85	14.5	16.8	82.4	72.1	79.5	70.1	76.9	68.9	73.5	80.4	71.9	77.7	71.1	114.9	77.6	69.7	109.7	76.5	18.0	15.5	13.6	6665	367
OZUKI AB	34.05N	131.05E	23	30.4	32.2	89.9	78.2	88.1	78.2	86.4	77.7	80.1	86.5	79.4	85.7	78.7	148.9	85.3	77.3	141.9	83.5	24.6	20.9	18.1	3100	1544
SAPPORO	43.07N	141.33E	85	12.8	15.4	84.6	73.0	81.6	71.3	78.9	69.3	74.7	82.1	73.1	79.8	72.2	119.6	79.8	70.6	113.0	78.1	20.3	17.2	14.8	6612	474
SENDAI	38.27N	140.90E	141	24.5	26.4	87.5	75.5	84.8	74.5	82.3	73.4	77.3	84.0	76.2	82.2	75.4	133.7	80.6	74.4	129.3	79.8	23.1	19.7	16.9	4627	807
SHIMOFUSA AB	35.80N	140.02E	108	26.8	28.8	91.7	77.9	89.7	77.2	87.6	76.8	79.6	87.7	78.8	86.3	77.3	142.6	83.3	76.9	140.5	82.9	23.6	20.0	16.9	3399	1390
SHIMONOSEKI	33.95N	130.93E	62	33.9	35.9	89.3	77.8	87.7	77.4	86.2	76.9	79.3	86.1	78.5	85.2	77.3	142.6	83.8	76.4	138.3	83.1	23.0	19.8	17.1	2655	1689
SHIZUHAMA AB	34.82N	138.30E	33	30.4	32.3	91.1	78.5	88.2	78.2	86.3	77.5	80.4	86.5	79.7	85.5	79.0	150.6	83.6	77.7	144.2	82.8	24.1	21.7	19.5	2688	1591
SHIZUOKA	34.98N	138.40E	49	31.5	33.5	91.4	77.3	88.9	77.0	86.9	76.5	79.5	86.9	78.7	85.5	77.4	142.8	83.3	76.6	138.9	82.8	14.1	12.3	11.2	2618	1652
SUMOTO	34.33N	134.90E	367	31.9	33.5	89.3	77.2	87.5	77.1	85.7	76.6	79.1	85.8	78.3	84.6	77.3	144.1	83.0	76.4	139.8	82.1	16.0	13.7	11.9	3101	1571
TADOTSU	34.28N	133.75E	16	31.9	33.8	92.5	77.0	90.8	76.5	89.0	76.1	78.7	88.6	77.9	87.5	75.9	135.6	83.9	75.1	131.6	83.5	16.7	14.3	12.4	2935	1847
TAKAMATSU	34.32N	134.05E	33	30.4	32.2	93.3	77.2	91.2	77.0	89.2	76.8	79.4	88.4	78.6	87.5	77.0	140.9	83.7	76.2	137.0	83.2	18.1	15.5	13.4	3081	1779
TOKYO	35.68N	139.77E	118	33.0	34.4	91.7	76.9	89.6	76.4	87.7	75.8	78.8	87.5	77.9	86.3	76.3	138.1	83.4	75.5	133.9	83.3	19.3	16.8	14.8	2900	1623
TOKYO INTERNATIONAL	35.55N	139.78E	30	32.1	33.9	91.1	78.5	89.2	77.7	86.7	77.0	79.9	87.1	79.0	85.7	77.4	142.7	83.8	77.0	140.8	83.5	27.9	24.8	22.1	2961	1528
TOYAMA	36.72N	137.20E	56	26.9	28.6	91.8	77.2	89.4	76.6	87.0	75.9	79.0	87.6	78.0	86.3	76.5	138.6	83.6	75.5	134.0	82.5	20.5	17.4	14.7	3971	1301
TSUIKI AB	33.68N	131.05E	66	28.0	29.8	89.8	78.8	87.9	78.8	86.1	78.1	80.8	86.3	79.8	85.3	79.1	151.5	84.3	78.5	148.1	83.8	22.4	19.4	17.2	3421	1414
UTSUNOMIYA	36.55N	139.87E	459	23.9	26.0	91.4	77.4	88.8	76.4	86.3	75.2	78.7	88.0	77.6	86.0	76.2	139.1	82.8	75.2	134.5	82.1	20.5	17.0	14.4	3968	1222
WAKAYAMA	34.23N	135.17E	59	32.7	34.2	91.7	76.5	89.7	76.7	88.0	76.5	79.2	87.3	78.4	86.3	77.0	140.7	84.5	76.1	136.6	83.8	24.2	20.4	17.7	2838	1844
YOKOHAMA	35.43N	139.65E	138	32.6	34.0	89.7	77.2	87.9	76.8	86.0	76.0	79.0	86.4	78.0	85.0	77.0	141.2	83.0	76.0	136.7	82.4	21.2	18.7	16.3	2986	1461
YOKOSUKA	35.28N	139.67E	174	33.6	35.4	91.8	77.8	89.3	77.3	86.3	76.4	79.9	87.7	78.5	85.4	77.4	143.4	83.2	76.8	140.7	82.7	30.1	26.3	22.8	2715	1570
YOKOTA (JASDF/USAF)	35.75N	139.35E	456	24.8	26.7	92.9	78.2	89.8	76.8	87.6	75.9	79.6	88.7	78.4	86.9	77.2	143.8	83.7	75.5	136.0	82.6	20.3	17.6	15.0	3686	1264

Meaning of acronyms:
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F*
MCWB: Mean coincident wet bulb temperature, °F
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DP: Dew point temperature, °F *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCDB: Mean coincident dry bulb temperature, °F *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%			1%	2.5%	5%		
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			HDD / CDD 65				
Jordan																									*3 sites, 4 more on CD-ROM*	
AMMAN AIRPORT	31.98N	35.98E	2556	33.8	35.8	95.6	66.3	93.3	65.8	91.1	65.3	72.3	86.4	70.6	84.7	68.3	114.2	77.7	66.4	106.9	76.0	22.9	19.7	17.2	2324	1866
IRBED	32.55N	35.85E	2021	35.6	38.3	93.8	65.8	91.2	65.7	89.0	65.6	72.4	82.0	71.3	80.7	70.2	120.0	74.5	69.0	115.0	73.6	20.1	17.6	15.6	2064	1865
QUEEN ALIA AIRPORT	31.72N	35.98E	2369	30.6	32.8	98.3	68.6	95.2	67.1	93.1	66.8	73.5	90.2	71.7	88.8	68.4	113.8	80.4	66.3	105.9	79.5	27.2	22.9	20.5	2546	1353
Kazakhstan																									*6 sites, 64 more on CD-ROM*	
ALMATY	43.23N	76.93E	2792	-3.8	1.7	93.0	65.7	89.8	64.8	87.4	64.1	69.0	86.0	67.2	84.2	63.3	96.5	76.2	61.1	89.3	74.5	13.3	10.5	8.7	6530	827
ASTANA	51.13N	71.37E	1148	-23.5	-18.7	89.4	64.0	85.9	63.1	82.6	62.1	67.3	81.0	65.7	79.2	63.0	89.9	71.0	61.2	84.2	70.0	25.6	22.1	19.3	10291	371
KARAGANDA	49.80N	73.15E	1814	-21.0	-15.5	89.6	61.9	85.9	61.1	82.5	59.9	65.1	80.2	63.7	78.5	60.7	84.9	68.7	58.8	79.1	67.8	24.7	21.1	18.2	9966	350
PAVLODAR	52.30N	76.93E	400	-26.2	-21.6	90.7	65.5	87.2	64.9	84.0	63.6	69.1	82.3	67.5	80.6	65.0	93.8	73.8	63.0	87.5	72.5	21.0	18.3	16.1	10274	448
SHYMKENT	42.32N	69.70E	1982	7.1	12.5	98.8	67.2	96.6	66.6	93.9	65.7	70.3	92.4	68.7	90.3	62.9	92.4	79.0	61.1	86.4	78.3	17.8	15.3	13.4	4579	1443
ZHAMBYL	42.85N	71.38E	2149	-3.2	3.0	96.1	64.8	93.2	64.0	90.6	63.4	67.5	88.1	66.2	87.2	61.1	87.0	73.0	59.3	81.6	72.5	25.6	18.9	14.1	5827	1068
Kenya																									*2 sites, 12 more on CD-ROM*	
MOMBASA	4.03S	39.62E	180	67.8	69.1	91.3	77.3	90.0	77.0	89.4	77.0	79.5	86.1	79.0	85.5	77.6	144.4	82.0	77.3	142.9	81.7	19.4	17.8	15.9	0	5251
NAIROBI/KENYATTA AI	1.32S	36.92E	5328	49.7	51.7	84.1	60.3	82.6	60.4	81.1	60.7	65.9	74.1	65.1	73.3	63.8	108.3	67.3	63.0	105.2	66.4	21.8	19.4	17.3	187	942
Korea, Democratic People's Republic of																									*7 sites, 20 more on CD-ROM*	
CHONGJIN	41.78N	129.82E	141	7.9	11.3	81.5	72.1	78.9	70.9	76.8	69.9	74.7	79.1	73.1	77.0	73.2	123.8	77.7	71.7	117.7	76.2	16.4	12.8	10.2	6891	386
HAMHEUNG	39.93N	127.55E	72	7.9	11.2	88.5	74.4	85.5	73.4	82.7	71.9	77.5	85.1	76.1	82.4	75.3	133.1	81.5	74.2	128.0	80.0	18.4	15.3	12.6	5842	709
KAESONG	37.97N	126.57E	230	8.2	11.6	87.7	77.1	85.2	75.1	82.9	73.9	79.0	84.5	77.7	82.4	77.4	144.0	81.7	76.3	138.3	80.3	18.6	15.3	12.6	5573	967
NAMPO	38.72N	125.38E	154	8.8	12.1	86.1	77.0	84.1	75.8	82.2	74.6	79.2	83.9	77.9	82.0	77.8	145.2	82.3	76.5	139.2	80.6	22.4	18.6	15.8	5745	999
PYONGYANG	39.03N	125.78E	118	4.1	8.2	88.1	75.5	85.9	74.7	83.9	73.5	78.4	84.6	77.2	82.7	76.7	139.6	81.8	75.6	134.5	80.6	15.0	12.7	10.7	5937	1034
SINUIJU	40.10N	124.38E	23	3.7	7.3	87.5	75.6	84.7	74.0	82.4	73.2	78.4	84.2	76.9	81.4	76.8	139.8	81.6	75.6	133.9	79.7	17.3	14.5	12.6	6298	904
WONSAN	39.18N	127.43E	118	13.0	16.3	88.8	74.4	85.7	73.1	82.9	72.0	77.8	84.8	76.3	82.5	75.8	135.7	81.5	74.4	129.1	80.2	17.3	14.2	12.0	5330	776
Korea, Republic of																									*28 sites, 23 more on CD-ROM*	
BUSAN	35.10N	129.03E	230	21.9	24.9	88.1	78.4	86.2	77.7	84.2	76.6	79.9	85.5	78.9	84.2	78.3	148.2	83.3	77.2	142.8	82.7	22.8	19.6	16.9	3425	1232
CHEONGJU	36.63N	127.45E	194	10.8	14.7	91.1	76.5	88.7	75.2	86.3	73.8	78.8	86.4	77.6	84.9	76.9	141.0	82.2	75.6	134.9	81.4	14.9	12.5	10.9	4931	1271
CHEONGJU INTL AIRPO	36.72N	127.50E	197	6.8	11.8	91.7	78.5	89.7	77.2	87.5	76.0	80.8	88.5	79.2	86.4	78.9	150.9	85.2	77.2	142.6	83.5	16.1	13.2	11.4	5118	1268
DAEGU	35.88N	128.62E	194	18.3	21.3	93.3	76.4	90.7	75.4	88.2	74.1	78.9	88.0	77.7	86.4	76.4	138.9	83.5	75.3	133.7	82.4	18.8	16.3	14.3	4051	1444
DAEGU INTL AIRPORT	35.90N	128.67E	115	15.7	18.3	95.0	78.2	91.8	76.9	89.5	75.5	80.3	90.3	79.1	88.2	77.4	143.1	84.8	76.8	140.3	84.3	19.1	16.6	14.2	4287	1428
DAEJEON	36.37N	127.37E	236	12.3	15.7	90.8	76.9	88.3	75.8	86.1	74.4	79.3	86.4	78.1	84.7	77.3	143.3	82.9	76.2	138.1	81.7	15.9	13.0	11.1	4895	1212
GIMHAE INTL AIRPORT	35.18N	128.93E	16	19.7	22.8	91.1	78.8	88.2	78.1	86.1	76.9	80.3	87.5	79.3	86.0	78.6	148.8	85.0	77.2	141.6	83.3	20.7	17.9	15.9	3856	1345
GIMPO INTL AIRPORT	37.57N	126.78E	56	7.2	10.8	89.6	77.4	87.5	76.5	84.6	74.1	80.2	85.7	79.0	83.9	78.9	150.4	82.8	77.3	142.4	81.3	18.7	16.2	14.1	5445	1105
GWANGJU	35.17N	126.90E	243	19.7	22.4	90.4	77.3	88.2	76.3	86.1	75.2	79.1	86.4	78.1	85.0	77.2	143.0	82.7	76.2	138.2	81.9	16.9	14.5	12.4	4162	1376
GWANGJU AB	35.12N	126.82E	43	17.9	20.9	93.4	79.7	91.1	78.4	88.2	76.9	81.0	88.9	79.9	87.7	79.0	150.9	85.0	77.4	142.9	83.3	16.5	14.2	12.2	4348	1499
INCHEON	37.47N	126.63E	230	12.7	16.1	88.0	76.4	85.6	75.0	83.4	73.9	78.3	84.4	77.2	82.7	76.7	140.3	81.8	75.6	135.1	80.7	21.1	18.0	15.3	4973	1101
JEJU	33.52N	126.53E	75	32.0	33.7	89.1	77.5	87.3	77.4	85.5	77.1	80.1	85.7	79.0	84.7	78.3	147.6	84.2	77.3	142.3	83.3	24.8	21.2	18.4	3056	1401
JEJU INTL AIRPORT	33.52N	126.50E	79	30.5	32.4	89.5	79.8	87.5	79.9	85.7	79.1	82.7	86.2	81.2	84.8	82.1	167.6	85.7	80.5	159.0	84.2	27.6	24.4	21.9	3239	1352
JEONJU	35.82N	127.15E	180	15.9	19.1	91.6	77.7	89.4	76.4	87.1	74.8	79.6	86.7	78.4	85.5	77.9	145.8	83.1	76.5	139.1	82.1	12.6	11.0	9.6	4465	1393
JINJU	35.20N	128.12E	75	16.6	19.3	91.1	77.0	88.6	76.5	86.3	75.4	79.8	87.0	78.7	85.5	77.8	145.1	83.7	76.8	140.0	82.6	16.1	13.8	11.8	4344	1249
MASAN	35.18N	128.57E	13	23.5	26.5	90.4	77.9	88.1	77.3	85.9	76.2	79.9	86.7	78.9	85.5	78.0	145.7	84.0	76.9	140.1	83.0	15.2	13.2	11.7	3493	1416
OSAN AB	37.10N	127.03E	39	8.3	12.0	91.4	78.9	89.2	77.6	86.2	75.7	81.0	86.8	79.7	85.6	79.2	151.8	83.7	78.5	148.3	83.2	18.3	15.7	13.5	5206	1257
POHANG	36.03N	129.38E	13	20.0	23.0	92.5	76.8	89.7	76.0	87.0	75.2	79.3	87.2	78.3	85.7	77.2	141.8	83.2	76.2	136.8	82.6	18.9	15.8	13.6	3803	1284
POHANG AB	35.98N	129.42E	66	19.2	21.5	93.2	78.6	90.9	77.8	87.8	76.6	80.3	89.7	79.2	87.7	77.4	143.0	84.6	76.9	140.4	84.2	21.5	18.7	16.6	4026	1234
PYONGTAEK (A-511)	36.97N	127.03E	46	8.4	12.1	91.3	78.9	88.5	77.5	86.2	75.8	80.6	87.7	79.2	85.8	78.9	150.3	84.4	77.2	141.9	82.9	17.6	14.9	12.9	5228	1235
SACHON (KOR-AFB)	35.08N	128.08E	26	13.9	16.2	91.6	79.7	89.4	78.4	86.4	76.9	80.7	88.7	79.8	86.9	78.8	149.7	85.6	77.4	142.5	83.8	15.6	13.4	11.7	4411	1260
SEOGWIPO	33.25N	126.57E	167	31.7	33.7	88.4	79.5	86.8	78.9	85.2	78.1	81.1	86.0	80.1	85.0	79.8	155.6	84.6	78.8	150.4	83.7	18.8	16.3	14.3	2584	1527
SEOUL	37.57N	126.97E	282	11.2	14.7	89.7	76.3	87.3	74.6	85.2	73.5	78.7	85.8	77.3	83.9	76.8	141.2	82.1	75.5	134.9	80.9	16.1	13.9	12.1	4897	1258
SEOUL (KOR-AF HQ)	37.50N	126.93E	161	10.8	13.9	91.7	77.3	89.6	76.0	87.4	75.3	79.4	87.9	78.4	86.1	77.2	142.4	83.0	76.5	139.0	82.4	14.1	11.7	10.0	4716	1433
SEOUL AB	37.43N	127.12E	66	5.4	10.3	91.7	77.6	89.5	76.3	86.4	74.4	79.4	88.0	78.2	86.0	77.1	141.5	83.7	75.6	134.2	81.7	13.9	11.8	10.1	5247	1206
SUWON	37.27N	126.98E	115	10.1	13.8	89.7	76.8	87.3	75.4	85.1	74.0	78.7	85.4	77.5	83.9	76.9	140.9	82.2	75.7	135.1	81.2	14.3	12.1	10.5	5123	1191
ULSAN	35.55N	129.32E	118	20.8	23.5	91.6	76.9	89.2	76.3	86.6	75.3	79.2	87.1	78.1	85.5	77.1	141.5	83.4	76.0	136.5	82.5	15.7	13.5	11.9	3814	1252
YEOSU	34.73N	127.75E	220	22.6	25.2	86.9	76.9	85.0	76.3	83.1	75.6	79.1	83.7	78.1	82.6	77.8	145.5	81.8	76.7	140.4	81.0	27.1	23.4	20.7	3684	1217
Kyrgyzstan																									*1 site, 6 more on CD-ROM*	
BISHKEK	42.85N	74.53E	2493	-4.7	2.1	95.4	68.1	92.8	66.3	90.1	65.4	71.3	90.5	68.9	87.9	64.6	100.1	81.0	62.4	92.5	78.1	19.0	16.0	13.4	5793	1072
Latvia																									*2 sites, 8 more on CD-ROM*	
RIGA	56.97N	24.05E	85	-1.4	5.6	81.3	66.4	77.8	64.7	74.7	63.1	68.3	77.3	66.5	74.6	65.3	93.9	72.1	63.5	87.9	70.5	22.3	18.9	16.9	7548	124
RIGA	56.92N	23.97E	36	-0.8	6.7	84.1	68.2	80.8	67.2	78.4	65.5	71.0	80.3	68.7	77.2	67.7	101.9	75.8	65.8	95.4	73.3	20.5	18.2	16.4	7316	172

Meaning of acronyms:
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F*
MCWB: Mean coincident wet bulb temperature, °F
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DP: Dew point temperature, °F *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCDB: Mean coincident dry bulb temperature, °F *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%			1%	2.5%	5%		
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB						HDD / CDD 65	
Lebanon																									*1 site, 0 more on CD-ROM*	
BEYROUTH (AEROPORT)	33.82N	35.48E	62	45.7	48.0	89.2	71.5	87.4	75.0	86.2	75.9	80.0	85.5	79.0	84.8	78.6	148.8	84.9	77.2	141.7	84.2	25.0	20.5	17.0	835	2490
Libyan Arab Jamahiriya																									*3 sites, 3 more on CD-ROM*	
BENINA	32.10N	20.27E	433	44.3	46.0	98.9	71.2	95.4	70.8	92.8	70.1	77.7	88.1	76.3	85.6	75.2	134.5	81.4	73.7	127.6	80.6	32.5	28.8	23.4	1146	2419
MISURATA	32.42N	15.05E	105	46.4	48.1	97.7	70.6	93.6	70.5	90.0	70.7	79.2	84.8	78.1	83.9	77.8	145.0	82.9	76.4	138.3	82.0	29.4	24.1	21.3	908	2363
TRIPOLI INTERNATION	32.70N	13.08E	207	39.6	41.4	107.5	75.2	103.9	74.4	100.4	73.5	81.2	98.4	78.8	93.3	77.1	141.9	87.3	75.1	132.7	85.5	23.3	21.4	19.0	1202	2940
Lithuania																									*2 sites, 5 more on CD-ROM*	
KAUNAS	54.88N	23.83E	2526	-3.4	3.3	82.0	66.2	78.9	64.9	75.9	63.1	68.8	78.4	66.9	75.6	65.6	103.9	73.3	63.7	97.1	71.3	22.0	19.4	17.3	7574	121
VILNIUS	54.63N	25.28E	512	-4.3	1.7	82.4	65.4	79.0	64.3	75.9	62.8	68.4	77.7	66.5	75.2	65.3	95.3	71.6	63.3	88.7	69.7	23.0	20.2	17.7	7849	130
Macao																									*1 site, 0 more on CD-ROM*	
TAIPA GRANDE	22.15N	113.60E	20	45.0	47.8	91.3	81.2	89.8	80.9	88.5	80.5	82.7	87.7	82.0	86.7	81.1	161.8	85.5	80.8	159.9	85.3	24.5	21.5	19.2	556	3577
Macedonia, the former Yugoslav Republic of																									*1 site, 3 more on CD-ROM*	
SKOPJE- AIRPORT	41.97N	21.65E	784	9.2	15.8	96.0	69.1	92.9	68.4	89.7	67.5	71.4	90.0	70.1	87.8	65.8	98.0	76.6	64.4	93.1	75.4	19.9	17.0	13.9	4776	900
Madagascar																									*1 site, 2 more on CD-ROM*	
ANTANANARIVO/IVATO	18.80S	47.48E	4186	46.2	48.0	84.5	66.0	82.8	66.0	81.6	65.8	70.8	79.3	69.7	78.2	68.3	121.7	74.1	67.4	117.8	72.9	18.2	16.1	14.3	594	1158
Malaysia																									*6 sites, 8 more on CD-ROM*	
KOTA KINABALU	5.93N	116.05E	10	72.9	73.3	91.9	81.8	91.4	81.5	90.4	80.9	83.8	90.3	82.8	89.6	82.1	167.1	89.7	80.8	160.1	88.7	15.6	12.4	10.5	0	6178
KUALA LUMPUR SUBANG	3.12N	101.55E	72	71.6	72.8	93.6	78.1	93.0	78.2	91.8	78.1	81.5	88.6	80.8	88.1	79.2	152.1	84.7	79.0	150.8	84.5	14.4	12.4	11.0	0	6407
KUANTAN	3.78N	103.22E	52	70.3	71.3	92.9	79.1	91.7	79.0	91.0	78.9	81.4	88.7	80.8	88.1	79.3	152.3	84.8	79.0	150.5	84.4	14.7	12.9	11.6	0	5863
KUCHING	1.48N	110.33E	89	71.4	72.0	93.0	78.5	91.7	78.4	91.1	78.4	81.0	88.7	80.2	87.6	79.0	151.1	85.3	78.4	147.9	84.3	11.9	10.1	9.0	0	5825
SANDAKAN	5.90N	118.07E	43	73.2	73.9	92.3	79.3	91.3	79.2	90.2	79.2	81.5	88.3	80.9	87.7	79.4	152.8	85.2	79.1	151.0	84.8	15.8	13.8	12.1	0	6191
TAWAU	4.27N	117.88E	66	71.6	72.5	90.2	78.3	89.6	78.4	88.9	78.5	81.4	87.0	80.8	86.7	79.6	154.2	85.5	79.0	151.1	85.0	13.4	11.7	10.2	0	5763
Mali																									*1 site, 0 more on CD-ROM*	
BAMAKO/SENOU	12.53N	7.95W	1250	59.4	62.3	104.2	68.2	102.6	68.6	101.4	68.6	80.7	88.8	79.3	88.1	79.0	157.7	83.8	77.3	149.0	82.4	19.0	16.4	14.3	0	6354
Mauritania																									*1 site, 1 more on CD-ROM*	
NOUAKCHOTT	18.10N	15.95W	10	55.2	57.2	106.2	69.6	102.9	69.2	99.9	68.8	82.6	87.2	81.4	86.4	82.0	166.4	84.6	80.4	158.0	84.1	22.7	20.4	18.3	4	5327
Mexico																									*18 sites, 4 more on CD-ROM*	
AEROP. INTERNACIONA	19.43N	99.13W	7333	39.3	42.1	84.2	56.9	82.2	56.7	80.4	56.5	61.9	74.1	60.9	73.3	58.7	97.3	64.7	57.4	92.9	63.3	47.3	21.5	17.7	1014	342
AEROP.INTERNACIONAL	20.98N	89.65W	30	56.7	59.7	100.7	75.9	98.8	76.0	97.0	76.0	82.4	89.5	81.0	88.9	80.8	160.3	84.1	79.2	151.8	83.5	23.5	21.5	18.6	5	5785
CANCUN INTL	21.03N	86.87W	20	56.8	59.1	93.4	80.8	92.8	80.7	91.6	80.4	83.2	90.5	82.5	89.9	80.9	160.8	87.6	80.6	159.1	87.5	23.4	21.8	18.1	2	5352
DE GUANAJUATO INTL	20.98N	101.48W	6106	39.2	42.5	93.2	58.8	91.0	59.6	88.1	59.6	67.8	81.0	66.7	79.4	64.5	114.4	68.9	63.0	108.5	68.3	28.2	22.6	19.4	491	1360
DON MIGUEL Y HIDALG	20.52N	103.30W	5138	35.5	37.8	92.5	61.0	90.0	60.3	88.2	59.8	68.2	80.2	67.5	79.2	64.8	111.3	71.2	64.3	109.6	70.9	23.1	18.9	17.0	589	1337
GENERAL ABELARDO L	32.53N	116.97W	512	42.6	44.4	89.7	70.0	86.2	69.3	83.8	68.2	73.7	85.1	72.0	82.5	70.0	112.5	80.3	68.2	105.8	77.8	18.9	15.9	13.9	1212	928
GENERAL FRANCISCO J	22.28N	97.87W	82	50.2	53.5	93.4	80.1	91.8	79.9	91.4	79.8	83.5	89.9	82.0	88.7	82.0	167.0	89.1	80.5	158.6	87.4	33.3	26.6	22.5	142	4642
GENERAL HERIBERTO J	19.13N	96.18W	108	58.8	60.9	95.3	80.6	93.5	80.5	91.8	80.1	82.7	92.0	81.8	90.4	80.5	159.2	87.5	79.2	152.1	85.9	44.9	34.1	28.1	6	5004
GENERAL JUAN N ALVA	16.75N	99.75W	16	67.6	69.4	92.7	80.2	91.6	79.9	91.2	79.7	82.3	90.4	81.5	89.4	80.4	158.0	88.4	79.1	151.2	86.9	19.5	17.4	14.4	0	5961
GENERAL MARIANO ESC	25.77N	100.10W	1309	37.7	41.2	102.0	74.4	100.1	74.1	98.4	74.5	79.7	94.7	78.8	93.0	75.6	140.8	85.2	75.2	138.9	84.9	31.5	23.8	21.8	643	3897
GENERAL RAFAEL BUEL	23.15N	106.27W	39	48.0	50.2	93.3	77.8	91.8	77.5	91.3	77.3	81.9	89.2	80.9	88.1	80.3	157.5	87.4	79.0	150.5	85.9	20.3	17.1	14.7	42	3945
LICENCIADO ADOLFO L	19.33N	99.57W	8671	28.3	30.5	79.2	55.6	77.2	55.4	75.3	55.0	61.1	70.2	60.0	69.3	58.7	102.7	63.7	57.4	97.6	62.7	20.3	17.1	14.0	3176	5
LICENCIADO BENITO J	19.43N	99.07W	7500	37.4	40.6	84.5	55.1	82.6	54.7	80.7	54.5	61.0	73.1	60.3	72.1	57.5	93.7	62.9	57.1	92.2	62.8	25.9	21.9	18.5	1081	341
MAZATLAN/G.BUELNA I	23.15N	106.25W	16	51.6	53.6	93.9	80.0	93.1	79.8	91.7	79.3	83.4	90.9	82.4	89.0	81.0	161.3	87.3	80.7	159.5	87.0	23.2	15.6	12.8	19	4315
MONTERREY (CITY)	25.73N	100.30W	1690	39.8	42.7	100.7	74.0	98.7	73.9	97.0	74.3	80.1	93.3	78.6	91.9	76.4	146.9	88.9	74.9	139.4	86.2	12.4	10.0	8.9	605	3856
SAN LUIS POTOSI	22.18N	100.98W	6178	31.6	35.4	90.1	60.2	87.6	60.1	85.3	60.0	65.8	78.5	64.7	77.2	62.7	107.7	68.0	61.3	102.3	67.1	22.3	19.2	17.0	1272	735
TAMPICO/GEN FJ MINA	22.28N	97.85W	79	50.1	53.3	91.5	80.3	90.0	79.7	89.7	79.5	83.4	88.3	81.8	87.3	82.2	168.1	87.8	80.5	158.6	86.2	33.3	24.0	21.3	167	4306
VERACRUZ/GEN JARA	19.15N	96.18W	95	57.3	59.4	93.6	80.4	91.8	80.0	91.0	79.8	82.0	90.9	81.0	89.3	79.2	152.2	86.0	79.0	150.9	85.7	46.4	34.1	28.9	13	4627
Moldova, Republic of																									*1 site, 0 more on CD-ROM*	
KISINEV	47.02N	28.98E	568	6.3	10.5	88.0	68.1	85.1	66.9	82.4	65.9	70.7	83.1	69.0	80.8	66.5	99.8	75.9	65.0	94.5	74.4	14.4	12.3	10.8	6006	585
Mongolia																									*1 site, 39 more on CD-ROM*	
ULAANBAATAR	47.92N	106.87E	4285	-29.5	-24.0	85.8	60.4	81.5	58.9	77.9	58.1	63.6	77.6	61.9	75.2	59.2	88.1	67.5	57.3	82.2	66.7	23.1	20.1	16.9	12536	142
Morocco																									*11 sites, 9 more on CD-ROM*	
AGADIR	30.38N	9.57W	75	41.0	43.6	95.3	66.9	89.3	65.9	84.1	65.1	72.4	83.7	71.3	79.9	69.7	109.6	75.2	68.4	104.7	73.8	23.6	19.5	16.2	937	1167
AGADIR AL MASSIRA	30.32N	9.40W	75	41.2	44.0	99.6	67.3	93.4	66.5	89.2	66.2	72.7	86.8	71.8	84.7	68.4	104.7	75.9	67.9	103.0	75.5	21.2	18.2	15.9	693	1631
CASABLANCA	33.57N	7.67W	187	42.8	44.8	85.1	71.5	81.2	71.7	79.1	71.5	75.3	80.2	74.1	78.7	73.6	126.1	77.9	72.6	121.7	76.8	17.4	14.7	12.5	1249	1064
FES-SAIS	33.93N	4.98W	1900	33.4	35.5	102.3	68.4	98.7	68.3	95.3	67.5	72.7	93.0	70.9	91.2	66.2	103.7	82.1	64.4	97.1	79.0	22.2	18.1	15.1	2252	1458
MARRAKECH	31.62N	8.03W	1529	39.4	41.4	106.1	69.5	102.6	69.1	99.0	68.7	74.6	95.3	72.5	93.5	68.2	109.5	85.3	66.1	101.9	81.0	18.8	15.3	12.7	1169	2452
MEKNES	33.88N	5.53W	1837	35.9	38.3	101.4	71.4	97.3	70.9	93.6	70.2	75.7	93.6	73.7	91.1	70.0	118.2	87.6	67.9	109.8	84.1	18.8	16.2	14.0	2005	1483
NOUASSEUR	33.37N	7.58W	676	37.7	40.1	95.4	71.2	91.1	70.8	87.4	70.1	74.6	88.7	73.0	85.8	70.5	115.0	79.3	69.4	110.8	77.8	22.2	19.4	17.2	1520	1300

Meaning of acronyms:
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F* *Lat: Latitude, °* *Long: Longitude, °* *Elev: Elevation, ft*
DP: Dew point temperature, °F *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCWB: Mean coincident wet bulb temperature, °F *MCDB: Mean coincident dry bulb temperature, °F* *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
OUJDA	34.78N	1.93W	1542	32.4	35.5	98.9	69.5	95.3	69.1	91.9	68.4	74.4	89.7	72.9	87.2	70.0	117.0	80.5	68.5	111.1	78.8	27.0	23.1	20.5	2123	1444
RABAT-SALE	34.05N	6.77W	259	40.9	42.8	90.0	71.6	85.6	71.1	82.0	71.2	76.2	84.0	74.3	81.1	73.7	126.6	80.4	71.9	119.3	78.0	18.4	15.7	13.7	1440	960
TANGER (AERODROME)	35.73N	5.90W	69	39.4	42.4	91.6	70.8	89.2	70.4	86.1	70.1	73.8	85.4	72.8	83.4	70.2	111.4	78.5	69.5	108.8	77.9	39.9	33.0	29.1	1481	1229
TETUAN/SANIA RAMEL	35.58N	5.33W	33	43.3	45.8	91.0	69.2	87.6	69.0	84.7	69.0	75.5	81.3	74.5	80.1	73.8	126.0	78.3	72.9	122.1	77.6	28.1	24.4	22.0	1159	1440
Mozambique																									*1 site, 0 more on CD-ROM*	
MAPUTO/MAVALANE	25.92S	32.57E	144	53.5	55.4	95.3	75.2	91.9	75.1	89.5	75.2	79.9	87.9	79.0	86.6	77.9	145.7	83.7	77.0	141.3	82.8	35.8	31.0	26.5	39	3488
Netherlands																									*6 sites, 24 more on CD-ROM*	
AMSTERDAM AP SCHIPH	52.30N	4.77E	-13	18.9	23.3	82.0	67.5	78.1	66.2	74.6	64.4	69.2	78.4	67.4	75.4	66.1	96.2	72.7	64.5	90.8	70.5	30.4	26.6	23.3	5468	117
HOEK VAN HOLLAND	51.98N	4.10E	46	20.7	25.2	80.9	66.9	76.4	65.3	72.9	64.5	69.2	76.6	67.5	73.7	66.8	98.8	71.9	65.2	93.4	69.9	36.5	32.8	29.7	5087	122
IJMUIDEN	52.47N	4.57E	43	19.8	23.9	77.9	65.7	74.3	64.3	71.0	63.6	67.9	73.9	66.4	70.7	66.0	96.0	70.0	64.8	92.0	68.3	41.5	36.5	33.2	5349	91
ROTTERDAM AP ZESTIE	51.95N	4.45E	-13	18.8	23.3	82.3	67.9	78.5	66.8	75.1	64.7	69.6	79.0	67.8	75.9	66.5	97.4	73.6	64.8	91.7	71.4	28.6	25.4	22.5	5416	122
VALKENBURG	52.18N	4.42E	7	19.0	23.3	80.8	67.1	76.8	65.7	73.3	64.1	68.8	77.2	67.0	74.2	66.0	95.9	72.3	64.2	90.0	70.1	30.9	27.4	24.3	5474	99
WOENSDRECHT	51.45N	4.33E	56	19.0	22.8	85.4	68.2	81.5	67.1	77.5	65.5	70.1	80.5	68.4	77.8	66.6	98.3	73.3	64.9	92.4	72.0	21.8	18.8	16.6	5356	163
New Zealand																									*4 sites, 34 more on CD-ROM*	
AUCKLAND AERO AWS	37.00S	174.80E	23	40.1	42.1	77.5	68.0	75.7	66.7	74.2	65.8	70.1	74.8	68.9	73.3	68.4	104.3	72.7	67.1	99.9	71.7	29.1	25.3	22.4	2218	280
AUCKLAND AIRPORT	37.02S	174.80E	20	35.3	37.2	77.3	67.5	75.6	66.5	74.0	65.6	70.1	74.5	68.9	73.3	68.4	104.3	72.4	67.2	100.0	71.4	29.2	25.9	23.2	2386	271
CHRISTCHURCH	43.48S	172.55E	98	27.2	28.9	82.4	62.2	78.7	60.9	75.2	59.9	65.1	75.9	63.5	73.1	61.4	81.6	67.4	60.2	78.2	66.2	25.6	22.8	20.4	4688	107
CHRISTCHURCH AERO A	43.48S	172.52E	121	27.4	29.2	81.8	61.7	78.0	60.3	74.4	59.4	64.7	75.1	63.1	72.6	61.2	81.2	67.1	59.8	77.0	65.3	25.6	22.8	20.3	4701	92
Nicaragua																									*1 site, 0 more on CD-ROM*	
MANAGUA A.C.SANDINO	12.15N	86.17W	184	67.6	68.8	96.8	75.5	95.2	75.4	94.1	75.2	79.8	88.5	79.2	87.9	77.4	143.3	83.0	77.1	142.0	82.8	17.7	15.5	13.7	0	6148
Niger																									*1 site, 11 more on CD-ROM*	
NIAMEY-AERO	13.48N	2.17E	745	60.3	62.3	107.9	70.2	106.5	70.1	105.0	70.0	80.8	91.9	79.9	91.3	78.7	153.1	84.9	77.2	145.8	84.6	21.8	18.7	16.3	0	7471
Norway																									*2 sites, 43 more on CD-ROM*	
OSLO/FORNEBU	59.90N	10.62E	56	1.0	6.0	80.3	64.1	77.0	62.6	73.7	60.6	66.6	75.4	64.7	73.6	63.8	88.9	69.1	61.2	80.8	66.8	18.9	16.4	14.3	7819	91
OSLO-BLINDERN	59.95N	10.72E	315	7.0	11.1	79.4	63.6	76.5	62.0	73.7	60.5	65.6	74.7	64.0	73.2	62.4	85.3	68.8	60.5	79.6	67.2	18.0	15.4	13.4	7535	101
Oman																									*1 site, 7 more on CD-ROM*	
BURAIMI	24.23N	55.78E	981	48.9	51.6	113.7	72.0	111.8	71.0	110.1	70.7	82.4	92.1	80.8	93.2	80.3	162.9	87.4	78.0	150.9	88.1	18.7	16.3	14.3	139	6706
Pakistan																									*3 sites, 0 more on CD-ROM*	
ISLAMABAD AIRPORT	33.62N	73.10E	1667	35.9	37.9	105.9	72.3	102.6	72.8	100.3	72.9	82.6	93.3	81.5	91.8	80.1	166.2	88.4	79.0	160.0	87.5	26.9	22.1	19.2	1174	3568
KARACHI AIRPORT	24.90N	67.13E	72	50.0	52.9	101.9	72.7	98.7	73.6	96.6	74.5	82.8	91.9	82.0	90.8	80.8	160.3	87.5	79.9	155.7	87.1	20.3	18.1	16.3	41	5724
LAHORE AIRPORT	31.52N	74.40E	712	39.0	41.1	109.7	73.8	107.3	74.3	104.1	74.4	84.7	93.6	83.7	92.4	82.7	174.9	89.8	82.1	171.7	89.4	18.0	14.2	12.1	740	4629
Palestinian Territory, Occupied																									*1 site, 0 more on CD-ROM*	
JERUSALEM AIRPORT	31.87N	35.22E	2490	33.5	35.5	91.1	65.6	88.2	65.2	86.1	64.8	71.2	83.6	69.7	81.0	67.8	112.1	75.9	66.3	106.3	73.5	22.2	19.5	17.8	2520	1258
Panama																									*2 sites, 0 more on CD-ROM*	
MARCOS A GELABERT I	8.97N	79.55W	33	73.0	73.3	94.7	77.6	93.3	77.3	91.8	77.3	81.8	88.5	81.0	87.8	80.2	156.9	86.5	79.1	151.1	85.7	17.4	15.4	13.7	0	6443
TOCUMEN	9.05N	79.37W	148	68.1	69.6	93.3	78.3	91.8	77.7	91.4	77.6	81.6	88.2	80.8	87.7	80.2	157.7	85.3	79.0	151.6	84.3	16.9	14.5	12.6	0	5834
Paraguay																									*1 site, 1 more on CD-ROM*	
ASUNCION/AEROPUERTO	25.25S	57.52W	331	41.1	44.7	98.4	74.8	96.5	75.1	94.7	75.2	80.0	90.2	79.2	89.4	77.3	143.7	85.0	76.5	139.9	84.3	23.3	21.1	18.9	457	3688
Peru																									*8 sites, 5 more on CD-ROM*	
AREQUIPA	16.33S	71.57W	8268	42.5	43.8	75.4	53.0	74.5	52.5	73.5	52.1	59.0	70.3	58.0	69.3	55.2	88.6	62.9	53.8	84.1	61.4	22.7	18.4	16.2	1977	4
CHICLAYO	6.78S	79.82W	98	59.1	60.0	90.0	76.1	89.2	75.8	87.4	74.7	78.6	86.7	77.5	84.9	76.0	136.5	82.9	75.3	132.9	82.9	23.4	21.8	20.0	5	2929
CUZCO	13.53S	71.93W	10659	31.9	33.9	73.3	51.7	71.7	51.4	70.2	50.8	54.9	68.4	53.9	67.3	50.0	80.1	59.6	48.6	76.0	58.2	20.5	16.1	13.0	3765	0
IQUITOS	3.78S	73.30W	413	66.2	68.3	93.4	79.9	91.8	79.8	91.3	79.7	81.4	90.6	80.9	89.8	78.9	152.6	87.5	78.4	149.8	87.2	13.9	10.7	8.6	0	5464
LIMA-CALLAO/AEROP.	12.00S	77.12W	43	57.1	58.2	84.8	74.5	82.7	73.0	80.9	72.0	75.6	81.9	74.6	80.5	73.5	125.0	80.2	72.3	119.6	79.6	21.0	18.1	16.0	297	1480
PIURA	5.20S	80.60W	180	60.6	61.5	93.4	77.4	92.0	76.8	91.0	76.4	79.8	89.3	78.9	88.4	77.3	143.1	83.7	76.5	139.1	83.5	19.8	18.0	15.8	0	4367
PUCALLPA	8.37S	74.57W	489	63.7	66.1	94.6	79.3	93.3	79.2	91.9	78.8	80.6	91.6	80.0	90.7	77.4	145.0	86.2	77.1	143.4	86.2	14.8	12.2	10.0	0	5524
TRUJILLO	8.08S	79.10W	98	58.4	58.9	84.1	76.3	82.7	75.7	81.8	75.3	77.7	82.2	77.1	81.3	75.7	134.8	81.2	75.3	133.3	81.0	19.3	18.0	16.4	175	1543
Philippines																									*10 sites, 24 more on CD-ROM*	
CAGAYAN DE ORO	8.48N	124.63E	20	71.6	72.8	94.2	81.5	93.2	81.3	92.3	81.1	83.8	91.5	83.2	90.9	81.7	165.3	90.0	81.0	160.9	89.6	11.0	8.7	6.8	0	6431
DAVAO AIRPORT	7.12N	125.65E	59	72.3	73.1	92.7	79.2	91.6	79.4	90.9	79.4	81.8	89.0	81.3	88.5	79.8	154.9	86.5	79.1	151.6	86.0	17.9	13.7	11.6	0	6222
GEN. SANTOS	6.12N	125.18E	49	72.6	73.5	95.2	81.0	93.9	80.8	92.9	80.7	82.9	91.5	82.5	91.0	80.7	159.7	89.0	80.0	156.2	88.5	13.3	11.7	10.3	0	6466
ILOILO	10.70N	122.57E	26	73.0	73.9	94.5	81.3	93.2	81.2	92.0	81.0	83.5	91.1	82.8	90.4	81.5	163.9	88.8	80.8	160.0	88.4	17.0	14.6	13.1	0	6468
MACTAN	10.30N	123.97E	79	73.4	74.7	91.9	80.8	91.3	80.7	90.2	80.5	83.4	87.8	82.7	87.6	82.2	168.3	86.3	81.5	164.1	85.9	18.4	15.7	13.6	0	6363
MANILA	14.58N	120.98E	43	73.6	74.8	94.1	79.3	92.8	79.3	91.7	79.1	82.8	89.5	81.9	88.7	81.0	161.0	87.5	80.1	156.4	86.7	22.1	17.5	14.0	0	6651
NINOY AQUINO INTERN	14.52N	121.00E	49	69.6	71.4	94.9	79.2	93.4	78.8	92.1	78.7	82.7	89.1	81.9	88.2	81.0	161.2	86.0	80.5	158.8	85.6	36.4	30.8	23.2	0	6221
SANGLEY POINT	14.50N	120.92E	7	73.6	74.9	94.5	82.2	93.3	81.8	92.2	81.4	83.7	92.0	83.0	91.1	81.5	163.9	89.7	80.8	160.1	89.1	20.8	16.6	14.2	0	6797

Meaning of acronyms:
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F* *Lat: Latitude, °* *DP: Dew point temperature, °F* *Long: Longitude, °* *HR: Humidity ratio, grains of moisture per lb of dry air* *Elev: Elevation, ft* *WS: Wind speed, mph*
MCWB: Mean coincident wet bulb temperature, °F *MCDB: Mean coincident dry bulb temperature, °F* *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
SCIENCE GARDEN	14.63N	121.02E	151	68.4	69.9	95.4	79.1	94.2	79.1	92.9	79.0	81.9	90.3	81.4	89.5	79.8	155.7	86.5	79.2	152.2	85.7	13.3	11.2	9.4	0	6116
ZAMBOANGA	6.90N	122.07E	20	72.3	73.4	93.3	81.3	92.3	81.0	91.5	80.8	82.6	90.7	81.9	90.0	80.4	157.8	88.2	79.8	154.5	87.7	13.0	11.5	10.0	0	6454
Poland																									*13 sites, 47 more on CD-ROM*	
GDANSK-REBIECHOWO	54.38N	18.47E	453	3.0	9.2	80.7	65.8	77.2	64.1	73.8	62.7	67.8	76.7	66.1	74.5	64.7	92.9	71.4	62.8	87.0	69.5	28.4	23.8	20.7	7306	75
GDANSK-SWIBNO	54.33N	18.93E	23	1.4	9.1	78.5	67.0	74.6	65.0	71.5	63.7	68.5	75.9	66.5	72.5	65.9	95.4	71.7	63.9	89.0	70.1	22.9	19.4	16.7	7003	62
HEL	54.60N	18.82E	10	14.7	18.8	77.4	68.0	74.5	66.4	71.9	64.9	69.3	75.2	67.6	72.8	67.1	99.5	72.6	65.5	94.2	70.9	23.0	20.0	17.4	6616	83
KATOWICE	50.23N	19.03E	932	4.3	9.9	84.4	67.5	80.9	65.6	77.9	64.2	69.0	80.3	67.3	78.1	65.1	96.2	73.3	63.6	91.0	71.2	18.6	16.3	14.2	6702	166
KRAKOW	50.08N	19.80E	778	1.6	7.2	85.5	68.5	82.0	67.3	78.6	65.4	70.2	82.0	68.4	79.0	66.2	99.4	75.3	64.6	94.0	72.7	20.8	18.3	16.3	6690	201
LODZ	51.73N	19.40E	623	3.5	9.5	85.0	66.5	81.4	65.2	78.2	63.7	68.9	79.7	67.1	77.4	65.4	96.0	72.5	63.6	90.1	70.7	20.5	17.9	15.8	6802	198
LUBLIN RADAWIEC	51.22N	22.40E	787	0.2	6.6	83.1	68.0	79.8	66.6	76.8	64.8	70.0	79.6	67.9	77.0	66.6	100.7	75.1	64.6	93.9	72.3	19.2	16.9	14.9	7173	146
POZNAN	52.42N	16.85E	276	6.2	12.0	86.0	66.6	82.4	65.0	79.1	63.7	69.0	81.1	67.2	78.5	64.8	92.8	72.3	63.2	87.7	71.0	21.9	18.8	16.6	6517	205
RACIBORZ	50.05N	18.20E	676	3.2	9.6	85.2	68.2	81.6	66.8	78.2	65.3	70.0	80.6	68.2	78.7	66.2	98.9	75.4	64.4	93.0	73.0	22.5	19.3	16.7	6469	187
SZCZECIN	53.40N	14.62E	23	8.8	14.6	84.1	67.9	80.5	66.4	77.3	64.9	70.1	80.1	68.1	77.3	66.6	98.1	74.8	64.8	91.8	72.1	21.3	18.9	16.8	6300	171
TERESPOL	52.07N	23.62E	449	-3.0	4.1	84.5	67.7	81.0	66.7	77.8	64.9	70.3	79.7	68.2	78.0	66.9	100.5	75.6	64.9	93.7	72.6	16.6	14.6	13.2	7100	179
WARSZAWA-OKECIE	52.17N	20.97E	348	2.1	8.5	85.2	68.0	81.6	66.6	78.5	64.6	70.1	80.9	68.4	78.3	66.5	98.7	74.8	64.7	92.8	72.6	23.1	20.5	18.2	6787	201
WROCLAW II	51.10N	16.88E	407	4.6	11.2	85.7	67.6	82.2	66.1	79.0	64.7	69.3	81.3	67.6	78.7	65.3	95.0	73.7	63.8	89.8	71.9	20.0	17.4	15.5	6370	204
Portugal																									*1 site, 23 more on CD-ROM*	
LISBOA/PORTELA	38.77N	9.13W	374	39.6	42.5	93.5	68.1	89.8	67.4	86.1	66.9	72.0	84.5	70.6	81.6	69.4	109.5	74.2	67.9	104.0	72.8	23.2	20.8	18.7	1822	1079
Puerto Rico																									*2 sites, 2 more on CD-ROM*	
SAN JUAN INTL ARPT	18.42N	66.00W	62	69.1	70.2	91.4	77.4	89.6	77.8	88.7	77.7	80.6	86.9	79.9	86.5	78.6	149.0	84.2	78.0	145.8	83.7	19.0	17.8	16.3	0	5612
SAN JUAN L M MARIN INTL AP	18.43N	66.00W	10	69.5	70.5	91.1	77.6	89.4	78.1	88.5	78.0	81.0	86.7	80.4	86.3	79.2	151.5	84.2	78.5	148.0	83.8	20.6	18.9	17.5	0	5595
Qatar																									*1 site, 0 more on CD-ROM*	
DOHA INTERNATIONAL	25.25N	51.57E	33	52.0	54.6	110.6	71.8	108.1	72.3	106.1	72.9	87.9	95.3	86.9	94.7	86.2	191.8	93.3	84.8	183.4	92.7	24.2	21.3	18.9	132	6349
Romania																									*8 sites, 44 more on CD-ROM*	
BUCURESTI AFUMATI	44.48N	26.18E	295	6.8	12.2	91.7	71.2	89.3	70.2	86.1	68.7	73.7	86.1	71.9	84.7	70.1	112.1	76.8	68.2	104.6	75.4	23.1	18.4	16.0	5525	687
BUCURESTI INMH-BANE	44.48N	26.12E	299	8.7	13.9	92.8	70.3	89.6	69.8	86.3	68.4	73.8	85.9	72.0	83.9	70.2	112.4	77.0	68.3	105.2	75.0	19.8	17.1	14.8	5499	677
CLUJ-NAPOCA	46.78N	23.57E	1355	4.3	8.9	86.1	68.8	82.9	67.2	80.3	66.1	71.0	82.0	69.0	79.3	67.7	106.9	75.6	65.8	100.0	73.3	18.6	15.3	12.4	6513	267
CONSTANTA	44.22N	28.65E	46	15.2	19.2	85.4	74.7	82.8	73.3	80.8	72.0	77.7	82.3	75.4	80.3	76.4	138.0	80.6	73.8	126.1	78.6	30.0	25.9	22.5	4865	726
CRAIOVA	44.32N	23.87E	640	9.8	14.8	92.2	72.6	89.2	71.6	86.1	70.3	75.7	87.3	73.6	84.7	72.1	121.8	81.1	70.1	113.6	78.5	30.5	22.5	18.9	5286	779
IASI	47.17N	27.63E	341	3.3	8.7	89.6	70.3	86.3	69.0	83.8	67.8	73.0	84.4	71.1	82.2	69.6	110.1	78.2	67.6	102.8	75.4	22.0	18.3	16.2	5969	554
KOGALNICEANU	44.33N	28.43E	335	11.7	15.6	89.4	71.6	86.1	71.3	83.9	70.3	78.0	81.7	75.3	80.1	77.0	142.3	79.7	73.7	127.3	77.1	25.3	21.1	19.1	5321	643
TIMISOARA	45.77N	21.25E	289	9.9	15.0	92.2	70.1	89.3	69.2	85.9	68.0	72.6	86.0	71.0	83.8	69.4	109.3	75.4	67.5	102.2	74.3	19.0	16.0	13.4	5264	625
Russian Federation																									*62 sites, 497 more on CD-ROM*	
ADLER	43.43N	39.90E	43	27.9	30.3	85.4	75.0	83.3	74.0	81.3	73.0	77.4	83.0	75.7	81.3	75.4	133.2	81.8	73.7	125.7	79.8	17.7	15.2	13.6	3743	740
ARHANGELSK	64.55N	40.58E	13	-28.9	-22.3	80.6	66.4	76.7	64.0	72.9	62.1	68.3	77.4	66.1	74.1	64.8	91.8	72.5	62.7	85.3	70.6	18.0	15.7	13.9	11430	73
ASTRAHAN	46.28N	48.05E	-75	-1.0	4.6	94.6	70.8	91.7	69.9	89.1	68.9	74.4	87.3	72.7	85.5	70.8	113.0	79.3	68.8	105.6	77.8	23.1	20.1	18.2	6187	1156
BARNAUL	53.43N	83.52E	604	-25.9	-19.8	85.8	66.1	82.6	65.1	79.7	63.9	69.5	80.5	67.6	78.3	65.9	97.5	74.7	63.8	90.7	73.0	25.2	20.8	18.2	10562	275
BRJANSK	53.25N	34.32E	709	-8.6	-2.9	82.6	66.4	79.7	65.2	76.8	63.9	68.8	78.8	67.1	76.4	65.3	95.9	73.1	63.6	90.2	71.4	21.1	18.5	16.5	8299	192
CEREPOVEC	59.25N	37.97E	374	-23.7	-16.9	81.2	67.5	77.6	65.6	74.5	63.6	69.3	78.2	67.2	75.1	66.1	97.7	74.1	64.2	91.2	71.4	20.9	17.6	14.7	10198	72
CHELJABINSK-BALANDI	55.30N	61.53E	745	-20.3	-15.0	86.2	67.3	82.8	65.9	79.7	64.5	69.6	81.7	67.9	79.4	65.6	97.3	73.8	63.9	91.3	72.6	25.1	21.4	18.6	10137	257
CHITA	52.08N	113.48E	2201	-33.9	-30.1	86.7	66.9	82.9	64.8	79.2	63.0	69.6	82.4	67.3	78.5	65.6	102.6	74.6	63.3	94.6	72.2	22.8	19.9	17.5	12632	155
EKATERINBURG	56.83N	60.63E	928	-22.4	-17.1	84.3	66.7	81.0	65.0	77.9	63.6	69.4	80.6	67.5	77.6	65.7	98.0	74.7	63.8	91.8	72.4	20.0	17.7	15.8	10695	165
ELABUGA	55.77N	52.07E	630	-20.3	-14.0	85.3	67.5	82.1	66.2	78.9	64.5	69.9	81.1	68.2	78.8	66.2	98.8	75.0	64.3	92.5	73.2	30.0	26.6	22.0	9844	263
GOR'KIJ	56.22N	43.82E	269	-17.2	-11.0	83.2	67.1	80.1	65.8	77.0	64.1	69.7	79.4	67.6	76.6	66.3	97.8	74.3	64.3	91.1	71.9	20.9	18.5	16.4	9331	169
HABAROVSK	48.52N	135.17E	249	-22.1	-18.8	86.4	71.7	83.5	70.4	80.6	68.7	74.6	81.9	72.7	80.0	72.7	122.2	77.9	70.2	112.1	76.5	23.3	20.5	18.4	11014	386
IRKUTSK	52.27N	104.32E	1539	-31.1	-25.3	82.6	64.3	79.4	63.2	76.5	62.2	67.6	77.9	65.7	75.4	64.2	95.1	71.8	62.3	89.0	69.7	22.7	20.0	17.4	12065	80
IZHEVSK	56.83N	53.45E	522	-22.1	-16.0	84.7	67.3	81.4	65.7	78.2	64.2	69.4	80.7	67.7	78.2	65.6	96.2	74.7	63.8	90.3	72.6	22.7	19.7	16.7	10349	202
KALININGRAD	54.72N	20.55E	69	-0.8	7.0	81.8	66.8	78.4	65.0	75.2	63.4	69.1	78.0	67.1	75.4	66.0	96.0	72.9	64.1	89.7	71.0	19.0	16.8	14.9	7016	108
KALUGA	54.57N	36.40E	659	-13.4	-7.5	81.7	67.0	78.7	65.7	75.8	64.1	69.4	78.0	67.4	75.7	66.1	98.6	74.3	64.3	92.4	72.1	20.7	17.4	15.2	8899	116
KAZAN`	55.60N	49.28E	381	-19.2	-13.2	85.4	67.5	82.0	66.6	78.8	64.7	70.1	81.2	68.4	78.5	66.3	98.3	75.6	64.6	92.5	73.5	25.6	22.7	20.8	9651	266
KEMEROVO	55.23N	86.12E	853	-27.2	-21.2	83.7	66.4	80.4	64.8	77.2	63.3	69.2	78.4	67.2	76.5	66.1	99.2	73.9	64.0	92.0	71.7	24.4	21.4	19.4	11209	197
KIROV	58.65N	49.62E	538	-27.0	-18.8	82.0	67.6	78.2	65.1	75.0	63.3	69.3	78.7	67.2	75.6	65.9	97.3	74.8	63.8	90.5	71.6	22.1	19.5	17.5	10678	112
KIROV	58.60N	49.63E	518	-21.4	-15.7	84.4	68.4	81.3	66.2	78.1	64.6	69.8	80.8	68.3	78.7	65.9	97.5	75.5	64.4	92.1	73.0	14.1	12.3	11.4	10134	215
KRASNODAR	45.03N	39.15E	112	5.2	11.2	92.4	72.7	89.1	71.5	86.0	69.8	75.2	87.4	73.4	84.8	71.6	117.1	81.3	69.7	109.7	79.1	23.2	20.6	18.5	5305	829
KRASNOJARSK	56.00N	92.88E	909	-28.6	-23.9	83.1	65.0	79.9	63.7	76.6	62.3	68.0	78.2	66.2	75.7	64.5	94.1	72.3	62.6	87.9	70.4	22.7	18.8	15.8	11257	122
KRASNOJARSK OPYTNOE	56.03N	92.75E	906	-35.5	-30.1	84.6	66.7	81.1	65.9	77.8	64.1	69.8	80.0	67.6	77.1	66.2	100.0	75.5	64.3	93.4	72.2	16.4	14.1	12.2	11038	206
KURGAN	55.47N	65.40E	259	-26.5	-20.3	87.7	67.1	84.2	66.5	80.9	65.2	70.2	82.9	68.6	80.5	66.0	96.7	75.1	64.4	91.5	73.5	25.7	21.5	18.6	10684	286

Meaning of acronyms:
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F* *DP: Dew point temperature, °F* *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCWB: Mean coincident wet bulb temperature, °F *MCDB: Mean coincident dry bulb temperature, °F* *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
KURSK	51.77N	36.17E	810	-9.2	-3.4	84.2	66.4	81.2	65.6	78.4	64.5	69.4	79.7	67.8	77.6	65.9	98.3	74.3	64.2	92.6	72.7	22.7	18.7	16.7	8146	258
MAGNITOGORSK	53.35N	59.08E	1253	-20.9	-15.7	86.1	65.5	82.7	64.0	79.6	62.9	68.1	80.9	66.3	78.5	63.6	92.3	73.5	61.8	86.4	72.0	22.7	19.8	16.7	10513	226
MAHACKALA	43.02N	47.48E	105	12.1	17.4	88.1	74.2	85.5	73.4	83.4	72.5	77.3	84.2	75.7	82.6	75.2	132.7	82.6	73.4	124.9	81.1	25.0	21.3	18.4	4994	991
MOSKVA	55.83N	37.62E	512	-9.6	-3.6	83.1	68.3	79.9	67.1	77.0	65.3	70.2	79.5	68.4	77.4	66.8	100.6	75.2	65.1	94.6	73.0	15.1	12.6	9.8	8545	193
MURMANSK	68.97N	33.05E	167	-25.4	-18.2	75.4	60.6	70.9	58.5	66.6	56.5	62.3	71.1	59.8	68.6	58.5	73.6	66.3	55.7	66.3	63.3	25.0	21.8	18.9	11943	18
NIZHNYJ TAGIL	57.88N	60.07E	846	-25.9	-20.7	83.1	66.2	80.1	65.1	76.9	63.6	68.9	78.9	67.0	76.6	65.4	96.8	72.9	63.5	90.5	71.0	16.5	14.7	12.7	11211	117
NIZNIJ NOVGOROD	56.27N	44.00E	515	-16.8	-10.2	84.7	68.0	82.1	67.2	78.9	65.7	70.2	80.6	68.6	78.7	66.6	99.8	74.5	64.8	93.7	72.6	16.1	14.0	12.2	9117	242
NOVOKUZNETSK	53.82N	86.88E	1010	-25.5	-20.0	84.2	66.6	81.0	65.2	77.9	64.0	69.3	79.5	67.4	77.3	65.9	99.1	74.3	63.8	92.0	72.2	27.1	22.5	19.0	10760	176
NOVOSIBIRSK	55.08N	82.90E	577	-29.9	-23.4	84.5	66.2	81.4	64.8	78.6	63.6	69.3	79.3	67.5	77.1	66.2	98.6	72.9	64.2	91.8	71.3	23.9	20.7	17.9	11097	210
OMSK	55.02N	73.38E	400	-26.8	-21.1	87.8	65.8	84.3	64.7	81.1	63.7	69.1	82.1	67.4	79.9	64.7	92.8	73.8	62.9	87.0	72.3	23.7	20.5	17.9	10940	301
OREL	52.93N	36.00E	666	-11.5	-5.1	83.5	67.3	80.8	66.0	77.8	64.9	69.8	79.8	68.1	77.6	66.3	99.2	75.6	64.5	93.2	72.9	23.6	21.2	18.5	8332	217
ORENBURG	51.68N	55.10E	384	-20.5	-14.4	92.9	67.4	88.9	66.0	85.6	65.0	70.3	85.8	68.5	83.7	65.3	94.8	75.8	63.4	88.5	74.1	24.2	21.1	18.7	9262	535
PENZA	53.12N	45.02E	571	-16.7	-10.7	86.7	67.4	83.4	65.8	80.3	64.5	70.1	81.9	68.3	79.3	66.1	98.4	75.6	64.4	92.6	73.3	23.4	21.1	19.3	9078	275
PERM	57.95N	56.20E	558	-23.5	-17.2	85.0	68.1	81.8	66.6	78.3	64.8	70.1	81.5	68.1	79.2	66.0	97.9	77.3	64.1	91.3	74.0	22.3	19.7	17.3	10540	194
RJAZAN'	54.62N	39.72E	525	-10.3	-5.5	83.1	67.4	79.7	65.6	76.8	64.1	69.4	79.3	67.5	76.9	65.8	96.9	74.3	64.1	91.2	71.7	21.7	18.0	15.2	8812	213
RJAZAN`	54.63N	39.70E	518	-14.1	-7.1	84.3	66.8	81.3	65.8	78.5	64.9	69.9	79.5	68.2	77.4	66.7	100.2	74.5	64.9	93.9	72.1	14.9	13.2	11.7	8706	236
ROSTOV-NA-DONU	47.25N	39.82E	253	1.3	5.7	91.6	71.7	88.1	69.9	85.3	68.6	73.7	87.2	72.0	84.1	69.7	110.3	79.7	67.9	103.4	77.8	28.5	24.7	21.4	6347	769
SAMARA	53.25N	50.45E	131	-17.0	-12.0	88.7	68.2	85.2	67.2	82.0	66.0	71.3	83.4	69.5	81.4	67.4	101.1	76.4	65.4	94.4	74.7	23.6	21.0	18.5	9158	359
SARATOV	51.57N	46.03E	512	-9.5	-4.8	89.0	67.3	85.4	66.2	82.4	65.0	70.0	83.0	68.4	80.9	65.8	97.0	74.8	64.2	91.6	73.8	23.8	21.0	18.4	8312	548
SHEREMETYEVO	55.97N	37.42E	646	-13.3	-7.4	82.7	66.3	79.2	65.3	76.7	64.2	69.0	78.1	67.1	76.2	65.9	97.8	74.2	64.0	91.5	71.8	20.8	18.3	16.4	9053	141
SMOLENSK	54.75N	32.07E	784	-9.5	-3.6	80.5	67.0	77.6	65.6	74.9	64.0	68.9	77.3	67.1	75.1	65.9	98.4	73.4	64.1	92.1	71.3	16.6	14.4	12.5	8666	114
ST.PETERSBURG	59.97N	30.30E	20	-9.8	-3.6	81.1	66.5	77.8	64.7	74.9	63.2	68.4	77.6	66.5	75.2	64.8	92.0	72.4	63.0	86.1	70.6	19.7	16.7	14.5	8663	111
STAVROPOL	45.12N	42.08E	1483	1.2	7.2	91.8	68.1	88.1	67.5	84.6	66.4	71.0	85.4	69.6	82.9	66.4	102.6	77.3	64.7	96.8	75.5	28.9	24.6	21.3	6060	678
SURGUT	61.25N	73.50E	184	-41.4	-36.3	83.0	65.4	80.1	63.9	76.3	63.0	68.0	78.6	66.1	75.9	64.3	90.7	72.4	62.5	85.0	70.8	22.8	20.3	18.0	13400	151
TJUMEN	57.12N	65.43E	341	-26.3	-20.7	84.9	66.9	81.7	65.6	78.6	64.6	69.8	80.5	68.1	78.2	65.9	96.8	74.6	64.2	91.1	73.3	14.6	13.0	11.6	10955	209
TOMSK	56.50N	84.92E	456	-33.2	-26.1	83.0	67.2	80.0	65.2	77.0	64.0	69.7	78.7	67.8	76.5	66.6	99.4	73.9	64.6	92.7	72.2	22.3	18.6	15.8	11615	152
TULA	54.23N	37.62E	669	-13.1	-6.6	84.2	67.7	81.1	66.1	78.0	65.0	70.0	80.2	68.2	77.5	66.5	99.9	75.2	64.7	93.9	73.2	16.4	14.1	12.2	8637	195
TVER	56.90N	35.88E	479	-15.2	-9.0	83.0	67.5	79.6	65.9	76.6	64.3	69.8	79.0	67.7	76.4	66.4	99.1	74.5	64.5	92.5	71.9	21.0	17.7	15.6	9034	144
UFA	54.72N	55.83E	341	-24.7	-18.5	87.4	69.0	84.1	67.2	80.7	65.9	71.3	83.3	69.5	80.7	67.1	100.9	77.2	65.3	94.6	75.4	23.1	20.0	17.4	9981	262
ULAN-UDE	51.83N	107.60E	1690	-32.9	-28.2	87.4	64.8	83.5	63.6	80.0	62.3	68.0	81.3	66.2	78.2	63.6	93.6	72.8	61.9	88.1	71.3	26.3	21.7	18.2	12553	198
ULYANOVSK	54.32N	48.33E	417	-19.1	-12.9	86.5	68.6	83.3	66.6	80.3	65.4	70.5	82.0	69.1	80.2	66.7	99.8	75.7	65.0	93.9	74.1	25.2	22.3	20.1	9244	285
VLADIMIR	56.12N	40.35E	558	-16.0	-9.5	82.8	68.2	79.6	67.0	76.5	65.1	70.2	79.2	68.3	77.1	67.1	101.9	74.9	65.0	94.3	72.9	20.8	18.4	16.4	9222	175
VLADIVOSTOK	43.12N	131.93E	600	-12.1	-7.6	82.5	70.3	79.0	68.7	75.8	67.5	73.6	78.9	71.6	75.7	71.8	120.2	75.8	70.1	113.4	73.7	30.6	26.5	23.1	8981	261
VNUKOVO	55.58N	37.25E	702	-11.4	-5.9	82.5	66.5	79.1	65.4	76.7	64.4	69.2	78.4	67.2	76.1	66.0	98.2	74.0	64.1	91.9	72.3	22.1	19.4	17.7	8920	155
VOLGOGRAD	48.78N	44.37E	440	-7.3	-2.3	92.8	66.6	89.3	65.6	86.1	65.0	69.3	85.2	68.0	83.1	64.6	92.8	73.4	63.1	87.9	73.0	28.7	25.1	22.3	7532	719
VORONEZ	51.65N	39.25E	341	-11.0	-5.5	84.8	66.7	82.0	65.1	79.0	63.9	69.2	80.3	67.6	77.9	65.3	94.5	73.5	63.9	90.2	71.9	24.5	20.7	17.2	8267	246
VORONEZ	51.70N	39.22E	489	-10.6	-4.5	87.7	68.0	84.4	66.6	81.5	65.3	70.3	82.7	68.8	80.0	66.4	99.0	74.2	65.0	94.3	73.6	18.2	15.9	14.0	7819	411
WLADIKAVKAZ	43.05N	44.65E	2306	6.4	11.1	85.9	68.5	82.7	67.5	79.8	66.3	71.4	81.6	69.7	79.2	68.2	112.7	76.8	66.4	106.1	75.0	11.5	9.3	7.7	6330	377
Saudi Arabia																									*9 sites, 17 more on CD-ROM*	
ABHA	18.23N	42.65E	6867	42.6	44.8	87.7	55.5	86.2	55.6	84.7	55.9	67.3	75.3	66.2	74.4	64.8	119.0	71.3	64.0	115.7	71.0	21.8	19.2	17.3	1008	1282
AL-MADINAH	24.55N	39.70E	2087	48.2	51.2	113.0	66.2	111.3	65.6	109.6	65.1	71.4	98.2	69.4	99.1	62.9	92.9	78.9	60.8	86.1	77.2	20.8	18.4	16.2	165	6591
DHAHRAN	26.27N	50.17E	56	46.1	48.2	111.6	73.6	109.6	73.3	107.8	73.4	87.1	96.1	85.6	95.2	84.8	183.5	92.8	83.8	177.1	92.4	24.9	22.0	19.9	369	5911
GASSIM	26.30N	43.77E	2126	37.7	40.8	111.6	66.0	110.0	65.3	109.0	64.9	71.8	95.4	69.0	98.5	64.8	99.3	79.8	61.2	87.4	73.4	20.5	18.0	15.7	840	5051
JEDDAH (KING ABDUL AZIZ INTL)	21.70N	39.18E	56	59.2	61.2	105.6	74.4	103.2	75.3	101.1	76.2	85.6	95.0	84.3	93.8	83.8	177.4	92.4	82.2	168.0	90.9	22.3	19.9	18.1	2	6654
KHAMIS MUSHAIT	18.30N	42.80E	6745	42.4	45.5	89.3	59.2	87.9	58.7	86.5	58.1	67.0	76.5	65.8	75.1	64.4	116.9	72.1	62.8	110.2	71.3	21.0	18.7	16.5	703	1684
MAKKAH	21.43N	39.77E	787	60.9	63.0	113.2	76.2	111.3	75.9	109.5	75.8	84.0	101.5	82.4	100.3	79.2	156.3	95.6	77.5	147.1	94.1	14.1	11.9	10.4	1	8462
RIYADH OBS. (O.A.P.)	24.70N	46.73E	2034	42.7	45.0	111.6	65.6	110.8	65.3	109.3	64.8	69.6	97.5	68.1	97.9	63.0	92.8	72.2	61.0	86.3	71.0	21.3	18.7	16.4	541	5875
TABUK	28.38N	36.60E	2520	35.2	37.3	105.5	65.9	102.6	64.6	100.8	63.9	69.4	97.3	67.8	95.6	59.3	82.7	79.8	57.3	77.0	79.8	23.4	19.6	16.1	1274	3646
Senegal																									*1 site, 6 more on CD-ROM*	
DAKAR/YOFF	14.73N	17.50W	79	61.7	62.5	89.9	74.2	88.1	77.1	87.2	77.5	82.3	85.4	81.2	84.7	81.0	161.7	83.9	80.6	159.4	83.5	22.1	20.1	18.3	1	4180
Serbia																									*2 sites, 31 more on CD-ROM*	
BEOGRAD	44.80N	20.47E	433	15.9	20.0	92.7	70.2	89.7	69.5	86.7	68.2	72.2	87.3	70.8	85.4	67.4	102.4	78.0	66.0	97.3	76.3	16.5	14.0	11.9	4605	897
BEOGRAD/SURCIN	44.82N	20.28E	325	12.2	17.1	92.8	71.2	89.6	70.6	86.3	69.4	73.4	87.6	71.9	85.4	69.0	107.8	79.8	67.7	102.8	78.2	23.2	19.7	16.9	4959	713
Singapore																									*1 site, 0 more on CD-ROM*	
SINGAPORE/CHANGI AI	1.37N	103.98E	52	73.4	74.3	91.7	79.4	91.1	79.4	89.9	79.2	81.9	87.2	81.4	86.7	80.6	159.3	85.0	79.9	155.2	84.4	16.7	14.7	13.1	0	6367
Slovakia																									*1 site, 18 more on CD-ROM*	
BRATISLAVA-LETISKO	48.20N	17.20E	440	10.6	15.7	89.6	68.9	86.2	68.1	83.3	66.6	70.8	84.7	69.3	82.9	66.2	98.0	76.4	64.6	92.7	74.7	22.3	19.1	16.8	5579	477

Meaning of acronyms:
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F* *DP: Dew point temperature, °F* *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCWB: Mean coincident wet bulb temperature, °F *MCDB: Mean coincident dry bulb temperature, °F* *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
South Africa																									*8 sites, 14 more on CD-ROM*	
BLOEMFONTEIN AIRPOR	29.10S	26.30E	4442	23.7	26.3	93.1	59.9	91.0	59.7	88.4	59.8	67.3	79.5	66.1	78.8	64.1	105.7	70.9	62.6	100.4	69.8	20.9	18.4	16.1	2456	975
CAPE TOWN INTNL. AI	33.97S	18.60E	138	38.8	41.0	87.8	66.8	84.4	66.1	81.6	65.4	69.9	81.4	68.7	79.2	66.4	97.7	72.7	65.1	93.2	71.8	31.2	28.0	25.2	1622	658
DURBAN INTNL. AIRPO	29.97S	30.95E	46	49.0	51.3	86.4	74.9	84.6	74.6	83.4	74.1	77.8	83.4	76.8	82.2	75.9	135.7	81.0	75.2	132.4	80.5	25.2	22.5	20.2	232	2037
EAST LONDON	33.03S	27.83E	410	46.5	48.3	86.4	68.2	83.5	68.9	80.9	69.2	74.8	81.0	73.6	79.1	73.0	124.3	78.2	71.7	119.1	76.7	28.7	25.1	22.2	755	1036
JOHANNESBURG INTNL.	26.15S	28.23E	5643	32.4	35.8	84.1	59.8	82.1	59.8	80.3	60.0	66.9	75.2	65.6	74.3	64.4	112.0	70.5	62.8	105.9	69.0	20.7	18.5	16.5	1979	483
PORT ELIZABETH	33.98S	25.62E	207	41.7	44.2	84.6	66.1	81.1	67.2	78.9	67.5	72.8	78.2	71.7	76.8	71.4	116.6	75.7	69.9	111.0	74.5	32.4	28.7	25.5	1161	743
PRETORIA (IRENE)	25.92S	28.22E	4997	36.8	39.1	87.1	61.0	84.7	61.5	82.8	61.5	68.4	78.8	67.4	77.4	65.3	112.8	72.0	64.5	109.6	71.0	19.9	16.9	14.8	1459	852
PRETORIA-EENDRACHT	25.73S	28.18E	4350	37.4	39.6	89.8	63.6	87.8	63.3	86.0	63.4	69.8	80.6	68.7	79.5	66.9	116.7	72.9	65.9	112.3	72.4	12.7	10.8	9.2	1061	1524
Spain																									*14 sites, 22 more on CD-ROM*	
ALICANTE/EL ALTET	38.28N	0.55W	102	37.9	40.7	91.0	70.9	88.2	71.8	86.4	72.0	77.8	83.7	76.6	83.0	75.9	135.9	81.0	74.8	131.0	80.6	22.8	19.9	17.3	1562	1604
BARCELONA/AEROPUERT	41.28N	2.07E	20	33.6	35.8	86.3	74.8	84.5	74.4	82.7	73.5	77.8	83.7	76.3	82.3	75.5	133.6	82.1	73.9	126.7	80.8	21.2	18.3	16.1	2500	1032
BILBAO/SONDICA	43.30N	2.90W	128	31.7	33.9	90.8	69.8	85.9	68.4	82.1	66.9	73.4	83.5	71.3	80.0	70.4	112.3	75.8	68.5	105.2	73.7	22.0	18.6	16.0	2689	674
LAS PALMAS DE GRAN	27.93N	15.38W	154	55.8	57.3	86.3	68.4	83.0	68.8	80.9	69.3	75.9	79.9	74.4	78.6	74.7	130.6	78.7	73.1	123.5	77.5	32.2	30.1	28.5	131	1846
MADRID/BARAJAS RS	40.45N	3.55W	1909	24.7	26.9	97.1	67.2	94.9	66.7	91.9	65.6	71.0	92.9	69.2	90.3	62.9	92.2	79.9	61.1	86.3	78.8	21.6	18.8	16.4	3641	1102
MADRID/TORREJON	40.48N	3.45W	2005	24.4	26.5	98.2	68.0	95.1	67.2	92.8	66.0	71.3	93.8	69.3	90.4	62.8	92.1	82.0	61.1	86.5	79.7	20.6	17.8	15.5	3840	1032
MALAGA/AEROPUERTO	36.67N	4.48W	23	39.0	41.1	94.7	68.8	90.4	68.2	87.4	68.1	75.1	82.4	74.0	81.4	73.0	122.4	79.3	71.6	116.8	78.8	25.2	21.9	19.0	1528	1473
MURCIA	38.00N	1.17W	203	36.2	38.9	96.4	70.5	94.1	70.3	91.8	70.0	75.9	87.1	74.6	85.4	73.0	123.6	79.4	71.7	117.9	79.1	17.9	15.6	13.5	1605	1947
PALMA DE MALLORCA/S	39.55N	2.73E	23	31.9	34.0	91.7	73.3	89.4	73.4	87.1	73.1	78.5	85.1	77.1	84.1	76.7	139.4	82.6	75.0	131.4	81.7	22.8	20.1	17.8	2374	1231
SEVILLA/SAN PABLO	37.42N	5.90W	102	34.3	37.2	103.8	74.9	100.4	72.7	97.1	71.4	77.2	97.8	74.9	94.4	71.6	117.0	84.0	69.7	109.5	81.4	19.8	17.4	15.1	1644	2052
VALENCIA/AEROPUERTO	39.50N	0.47W	203	33.7	36.0	91.6	70.5	89.0	71.4	86.4	71.8	77.0	84.7	75.8	83.4	74.8	131.3	81.5	73.4	125.3	81.0	25.5	21.5	18.1	1958	1442
VALLADOLID	41.65N	4.77W	2411	24.5	27.0	93.8	64.7	91.0	64.1	87.8	63.2	67.2	87.5	65.7	85.5	60.8	87.0	72.1	59.2	82.2	70.4	18.6	15.8	13.4	4343	646
ZARAGOZA (USAFB)	41.67N	1.05W	863	28.1	30.4	96.9	69.2	93.3	68.6	89.9	68.1	72.3	89.9	70.9	87.7	66.6	101.3	77.6	65.9	98.6	77.4	27.9	24.2	21.4	3133	1201
ZARAGOZA/AEROPUERTO	41.67N	1.00W	846	26.8	30.0	97.0	70.8	93.6	69.6	91.0	68.7	73.0	91.6	71.3	88.4	67.7	105.2	79.2	65.9	98.7	78.1	29.9	26.8	24.0	3122	1233
Sri Lanka																									*1 site, 0 more on CD-ROM*	
KATUNAYAKE	7.17N	79.88E	26	69.7	71.5	91.7	77.4	90.6	77.8	89.7	78.1	81.9	87.7	81.4	87.2	80.5	158.4	86.4	79.5	153.4	85.5	20.1	18.4	16.8	0	6142
Sweden																									*4 sites, 93 more on CD-ROM*	
GOTEBORG	57.72N	12.00E	7	10.9	16.0	80.0	64.8	77.3	63.7	74.4	62.3	67.5	75.7	65.8	73.5	64.5	91.0	71.4	62.9	85.7	69.5	20.2	16.8	14.4	6540	112
GOTEBORG/LANDVETTER	57.67N	12.30E	554	6.6	12.3	78.8	62.3	75.4	61.1	72.1	59.4	65.0	73.8	63.1	71.6	62.3	85.8	67.6	60.5	80.4	65.4	25.1	22.3	19.8	7547	51
GOTEBORG/SAVE	57.78N	11.88E	52	5.3	11.7	78.4	64.0	75.2	62.8	71.9	61.4	67.2	73.7	65.2	71.7	64.7	91.6	69.7	62.7	85.5	67.7	25.3	22.4	19.9	7202	43
STOCKHOLM/BROMMA	59.37N	17.90E	46	1.1	7.0	80.6	64.2	77.1	62.4	73.8	60.9	66.6	75.3	64.9	72.9	63.7	88.6	69.3	61.8	82.7	68.0	20.2	17.8	15.9	7714	89
Switzerland																									*3 sites, 32 more on CD-ROM*	
LAEGERN	47.48N	8.40E	2766	11.0	15.4	79.0	64.3	76.0	63.0	73.2	62.0	66.9	74.3	64.9	72.6	64.4	100.3	70.1	62.2	92.7	68.2	28.2	24.4	21.2	7051	127
ZUERICH METEOSCHWEI	47.38N	8.57E	1867	15.3	19.3	83.8	66.3	80.6	65.2	77.7	63.9	67.9	80.1	66.5	77.7	63.8	95.1	71.9	62.7	91.2	70.3	20.0	16.3	13.1	5932	250
ZURICH-KLOTEN	47.48N	8.53E	1417	13.9	18.3	86.1	67.8	82.7	66.3	79.7	65.3	69.3	82.2	67.7	79.8	64.7	96.5	73.5	63.5	92.3	72.0	18.9	15.9	13.3	5945	238
Syrian Arab Republic																									*5 sites, 4 more on CD-ROM*	
ALEPPO INT. AEROPOR	36.18N	37.20E	1260	28.4	31.0	101.9	68.3	98.9	67.9	96.6	67.5	73.0	91.3	71.8	90.0	67.5	106.0	81.4	66.2	101.1	80.4	23.1	20.5	18.0	2759	2381
DAMASCUS INT. AIRPO	33.42N	36.52E	1998	25.8	28.6	102.3	65.3	100.0	64.7	97.2	64.2	69.9	87.0	68.6	85.8	66.1	103.7	73.0	64.5	97.8	72.5	27.1	23.4	21.0	2748	1908
DARAA	32.60N	36.10E	1781	33.9	36.5	96.4	66.6	93.6	66.9	91.2	66.9	72.5	87.5	71.2	84.9	68.7	112.5	75.9	67.5	107.8	75.6	18.5	15.4	12.4	2115	1839
HAMA	35.12N	36.75E	994	29.5	32.3	102.0	68.8	99.2	68.1	96.8	67.7	72.7	93.1	71.4	91.7	66.3	100.7	82.3	64.7	95.0	80.5	15.9	12.8	10.7	2429	2383
LATTAKIA	35.53N	35.77E	23	39.4	42.0	90.0	72.0	87.9	74.9	86.3	75.2	79.2	85.7	78.4	84.9	77.2	141.6	84.5	76.2	136.7	83.9	22.1	17.9	14.6	1340	2068
Taiwan, Province of China																									*19 sites, 17 more on CD-ROM*	
CHIANG KAI SHEK	25.08N	121.22E	108	48.0	50.0	93.5	80.7	92.4	80.5	91.2	80.2	83.3	89.8	82.3	88.7	81.1	162.5	86.9	80.7	159.9	86.4	28.7	26.1	24.1	540	3373
CHILUNG	25.15N	121.80E	10	50.3	52.0	92.8	79.0	91.2	78.8	89.8	78.8	81.0	87.9	80.6	87.5	79.4	152.6	84.7	78.7	149.3	84.6	20.8	17.8	15.7	459	3282
CHINMEM/SHATOU(AFB)	24.43N	118.37E	30	44.4	46.2	91.5	83.1	90.0	82.5	89.3	82.3	84.8	89.5	83.9	88.9	83.8	177.2	88.6	82.5	169.6	87.9	21.8	19.0	17.4	969	2860
HSINCHU (TW-AFB)	24.82N	120.93E	26	48.2	50.1	91.6	82.0	90.5	81.6	89.7	81.2	83.8	89.4	82.8	88.7	82.3	168.4	88.6	80.9	160.8	87.6	29.8	26.6	23.9	527	3315
HSINCHU CITY	24.83N	120.93E	89	47.8	49.9	93.0	81.0	91.7	80.7	90.5	80.3	82.5	90.7	81.7	89.7	80.1	156.7	88.1	79.3	152.5	87.2	22.0	19.1	16.6	537	3316
KANGSHAN (TW-AFB)	22.78N	120.27E	33	50.0	52.1	91.7	81.1	91.0	80.9	89.8	80.5	82.8	88.7	82.4	88.2	81.0	161.3	86.7	80.7	159.8	86.5	18.8	16.1	14.2	144	4027
KAOHSIUNG	22.63N	120.28E	95	54.2	56.5	91.1	80.9	90.0	80.7	89.2	80.5	82.5	88.8	81.8	88.1	80.8	160.7	86.6	80.1	156.6	86.2	16.8	14.4	12.6	68	4486
KAOHSIUNG INTL ARPT	22.58N	120.35E	30	53.3	55.3	91.8	79.7	91.2	79.5	89.9	79.2	81.6	87.8	80.9	87.6	80.0	156.1	85.1	79.1	151.0	85.1	19.8	16.6	14.3	77	4455
PINGTUNG NORTH(AFB)	22.70N	120.48E	95	51.9	54.1	93.6	81.0	93.1	80.9	91.7	80.4	82.7	90.7	81.9	89.8	80.8	160.5	86.9	80.2	157.1	86.3	16.2	13.5	11.4	74	4480
PINGTUNG SOUTH(AFB)	22.68N	120.47E	79	53.2	55.1	94.8	81.1	93.3	80.7	92.0	80.2	82.8	91.1	82.1	90.1	80.8	160.6	87.1	80.2	157.3	86.4	16.3	13.7	11.6	61	4639
SUNGSHAN/TAIPEI	25.07N	121.55E	20	48.3	50.6	94.9	80.3	93.3	80.4	91.7	80.0	82.5	90.8	81.7	89.6	80.5	158.6	86.9	79.2	151.7	85.8	19.8	17.4	15.8	435	3639
TAIBEI	25.03N	121.52E	30	49.3	51.4	94.8	80.1	93.3	79.9	92.0	79.5	82.0	91.1	81.2	90.0	79.8	154.8	86.4	79.0	150.6	86.0	17.7	15.7	14.0	426	3680
TAICHUNG (TW-AFB)	24.18N	120.65E	367	46.2	48.4	93.6	82.2	92.9	82.0	91.6	81.5	84.1	91.8	83.1	90.9	82.1	169.6	90.3	80.8	162.4	89.2	20.5	17.9	16.1	349	3697
TAINAN	23.00N	120.22E	46	51.2	53.4	92.2	81.1	91.3	80.9	90.4	80.5	82.8	89.0	82.2	88.6	81.4	163.4	86.6	80.6	159.0	86.2	19.0	16.5	14.5	151	4357
TAINAN (TW-AFB)	22.95N	120.20E	62	50.4	53.2	91.9	81.8	91.4	81.6	90.0	80.9	83.5	89.8	82.7	88.9	81.9	166.3	88.3	80.9	160.7	87.3	20.5	18.0	16.1	138	4220

Meaning of acronyms:
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F* *Lat: Latitude, °* *DP: Dew point temperature, °F* *Long: Longitude, °* *HR: Humidity ratio, grains of moisture per lb of dry air* *Elev: Elevation, ft* *WS: Wind speed, mph*
MCWB: Mean coincident wet bulb temperature, °F *MCDB: Mean coincident dry bulb temperature, °F* *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
TAIZHONG	24.15N	120.68E	256	49.1	51.5	92.1	79.3	91.1	79.1	90.2	78.8	80.9	89.4	80.1	88.5	78.5	149.3	85.1	77.9	146.5	84.8	11.2	9.7	8.8	273	3847
TAOYUAN AB (=589650)	25.07N	121.23E	148	47.4	49.6	93.0	82.4	91.5	81.8	90.0	81.1	84.2	90.7	82.8	89.7	82.4	169.7	89.8	80.9	161.2	88.4	26.6	23.4	21.3	616	3237
WU-CHI OBSERVATORY	24.25N	120.52E	16	49.8	51.7	91.1	81.0	90.2	80.8	89.3	80.5	82.6	89.0	81.9	88.4	80.8	160.0	87.4	80.0	155.6	87.0	35.7	31.7	28.3	404	3517
WUCHIA OBSERVATORY	24.27N	120.62E	16	46.2	48.1	90.0	80.9	89.4	80.7	88.1	80.4	82.8	87.8	81.9	87.2	81.4	163.1	86.9	80.5	158.3	86.4	26.7	22.9	20.3	581	3003
Tajikistan																									*1 site, 2 more on CD-ROM*	
DUSHANBE	38.55N	68.78E	2625	19.3	23.3	99.4	67.6	97.2	67.0	95.1	66.4	72.8	92.6	70.6	90.8	66.0	105.8	86.2	63.5	96.7	83.4	14.2	11.4	9.3	3493	1713
Tanzania, United Republic of																									*1 site, 0 more on CD-ROM*	
DAR ES SALAAM AIRPO	6.87S	39.20E	174	63.8	65.0	91.7	78.0	90.7	77.7	89.7	77.4	80.1	87.2	79.5	86.4	78.6	149.2	82.9	77.7	144.8	82.3	19.3	17.5	15.7	0	5056
Thailand																									*2 sites, 60 more on CD-ROM*	
BANGKOK METROPOLIS	13.73N	100.57E	13	66.3	69.1	96.5	79.8	95.2	79.5	94.1	79.2	82.6	91.5	81.8	90.4	80.4	157.6	86.8	79.8	154.5	86.3	14.1	12.3	11.0	0	6972
DON MUANG	13.92N	100.60E	39	66.2	68.7	98.9	80.0	97.5	80.0	96.3	79.9	85.4	93.5	84.4	92.2	83.6	176.2	89.8	82.6	170.0	88.8	18.0	15.7	13.8	0	7035
Togo																									*1 site, 0 more on CD-ROM*	
LOME	6.17N	1.25E	82	69.8	71.4	91.7	79.1	90.9	79.5	89.9	79.6	82.8	87.6	82.4	87.1	82.1	167.6	85.3	81.0	161.5	84.8	18.5	16.6	14.9	0	5966
Tunisia																									*1 site, 13 more on CD-ROM*	
TUNIS-CARTHAGE	36.83N	10.23E	13	40.9	42.8	99.2	73.0	95.3	73.0	92.5	72.6	78.5	88.4	77.1	86.8	75.7	134.3	82.5	74.7	130.0	82.1	26.4	23.3	20.8	1466	2135
Turkey																									*19 sites, 28 more on CD-ROM*	
ADANA	36.98N	35.30E	66	34.1	37.3	98.0	71.8	95.1	73.4	93.3	74.3	79.7	89.9	78.8	88.6	77.1	141.4	83.8	75.6	134.4	82.9	17.8	15.2	13.5	1693	2673
ADANA/INCIRLIK AB	37.00N	35.43E	240	31.9	34.2	98.3	72.4	95.1	72.7	93.1	73.4	79.9	89.8	78.9	88.6	77.2	142.9	84.2	75.6	135.3	83.7	18.7	16.1	13.9	1990	2330
ADANA/INCIRLIK AFB	37.00N	35.42E	249	32.3	35.3	97.1	71.5	94.7	71.9	92.4	72.8	79.4	88.9	78.3	87.2	76.9	141.6	84.1	75.5	135.0	83.0	18.9	16.4	14.2	1946	2304
ANTALYA	36.87N	30.73E	177	34.5	37.1	100.3	69.8	97.0	69.6	93.9	69.5	79.1	86.8	78.2	86.0	77.0	141.4	84.8	75.5	134.3	84.0	23.5	20.1	17.1	1937	2160
BURSA	40.18N	29.07E	328	25.1	28.1	93.4	71.8	90.7	71.1	88.1	70.2	74.5	88.6	73.0	86.9	69.9	111.2	83.0	68.2	104.9	81.0	16.5	14.0	12.0	3577	1085
DIYARBAKIR	37.88N	40.18E	2221	15.8	21.3	104.2	68.6	102.1	68.3	100.0	68.1	74.2	96.5	72.0	95.8	66.4	105.7	90.1	63.8	96.1	87.3	20.0	17.2	14.8	3939	2116
ERZURUM	39.95N	41.17E	5768	-21.2	-15.5	86.0	60.2	82.8	59.6	80.4	58.7	63.7	80.1	61.9	78.5	57.2	86.6	73.4	55.2	80.6	71.3	23.2	21.2	19.0	9146	114
ESENBOGA	40.12N	33.00E	3114	3.8	10.5	91.5	63.7	88.1	63.2	85.7	62.3	66.6	84.9	65.0	83.3	59.4	85.0	74.6	57.6	79.4	73.3	20.0	17.2	15.1	5939	409
ESKISEHIR	39.78N	30.57E	2579	12.3	16.5	91.4	68.1	88.2	67.2	85.8	66.2	71.2	86.6	69.4	83.9	66.2	106.4	78.8	64.4	99.5	77.7	19.6	17.6	15.7	5217	577
ETIMESGUT	39.95N	32.68E	2644	11.8	15.8	93.3	65.2	90.0	64.7	87.6	63.6	68.4	86.8	66.8	84.9	62.2	92.3	77.5	60.0	85.1	75.5	20.6	17.9	15.1	5180	688
GAZIANTEP	37.08N	37.37E	2300	23.4	26.5	101.7	71.9	98.8	70.5	96.6	69.7	74.3	97.1	72.6	95.5	66.5	106.2	89.8	64.4	98.5	88.3	18.2	15.7	13.5	3563	2050
ISTANBUL/ATATURK	40.97N	28.82E	121	27.3	30.3	88.1	70.5	86.0	70.3	84.0	69.5	75.7	81.6	74.0	80.6	73.7	126.0	79.2	71.8	117.8	77.8	24.7	22.2	20.4	3469	1109
IZMIR/A. MENDERES	38.27N	27.15E	394	27.0	30.0	98.5	69.6	95.8	68.7	93.5	68.2	72.5	92.0	71.0	90.1	66.3	98.1	78.9	64.6	92.4	78.5	26.9	24.5	22.6	2853	1795
IZMIR/CIGLI	38.52N	27.02E	16	28.8	31.6	97.1	71.3	94.9	70.8	92.8	70.2	74.3	91.6	72.9	89.9	68.4	104.3	82.9	67.0	99.3	81.7	24.4	21.7	19.5	2535	1770
KAYSERI/ERKILET	38.82N	35.43E	3458	3.2	9.4	92.8	64.0	89.6	63.1	86.4	62.1	66.6	86.1	65.0	84.5	59.4	86.2	74.4	57.5	80.2	73.4	20.9	16.5	12.6	5647	475
KONYA	37.97N	32.55E	3383	8.7	13.9	92.8	62.7	89.7	62.2	87.0	61.6	66.4	85.8	64.3	83.9	58.9	84.3	77.3	56.3	76.6	74.3	25.6	22.0	19.4	5254	790
MALATYA/ERHAC	38.43N	38.08E	2785	11.3	16.4	99.0	67.7	96.9	66.8	94.6	66.2	72.4	94.7	69.9	92.2	64.2	99.6	91.2	61.0	88.7	86.3	22.7	20.0	17.1	4770	1414
SAMSUN	41.28N	36.30E	13	29.7	32.1	82.5	72.3	80.8	71.9	79.4	71.3	74.8	80.3	73.6	79.3	72.9	122.0	79.3	71.5	116.5	78.4	18.5	15.6	13.2	3531	691
VAN	38.45N	43.32E	5453	6.9	10.5	84.2	66.4	82.1	66.2	80.4	65.5	71.4	80.5	69.3	79.3	68.2	127.5	78.9	65.8	116.8	78.1	18.4	14.6	11.8	6368	416
Turkmenistan																									*1 site, 17 more on CD-ROM*	
ASHGABAT KESHI	37.92N	58.33E	1024	20.0	23.7	104.2	67.6	101.8	67.3	99.5	67.0	73.5	94.5	71.9	92.5	66.3	100.6	85.8	64.5	94.5	85.3	21.0	18.4	16.0	3436	2617
Ukraine																									*15 sites, 29 more on CD-ROM*	
CHERNIHIV	51.47N	31.25E	463	-5.3	0.9	85.3	67.5	82.1	66.4	79.2	65.2	70.1	80.9	68.4	78.6	66.3	98.7	75.0	64.8	93.3	73.1	20.5	18.2	16.4	7503	265
DNIPROPETROVSK	48.37N	35.08E	469	-0.1	4.7	89.4	69.1	86.3	67.8	83.3	66.7	71.9	85.1	70.1	82.2	67.6	103.2	77.5	66.0	97.6	75.4	26.0	22.2	20.0	6773	562
DONETSK	48.07N	37.77E	738	-2.0	3.1	88.3	67.4	85.1	66.5	82.1	65.4	70.2	83.1	68.7	80.8	66.0	98.6	74.6	64.6	93.7	73.2	27.8	23.2	20.2	7087	455
KHARKIV	49.97N	36.13E	509	-3.2	1.8	87.5	67.3	84.3	66.2	81.4	65.3	70.0	82.3	68.6	79.7	66.1	98.1	74.2	64.7	93.1	73.5	21.5	18.8	17.4	7305	416
KHERSON	46.63N	32.57E	177	3.6	8.4	90.9	69.3	87.7	68.4	84.6	66.8	72.0	85.0	70.4	82.7	68.2	104.1	75.9	66.5	98.2	75.1	22.0	18.9	16.5	6069	627
KRYVYI RIH	48.03N	33.22E	407	-0.4	4.3	89.0	68.1	86.1	66.9	83.2	65.8	71.0	83.4	69.3	81.3	66.9	100.3	76.2	65.2	94.6	74.3	26.0	22.4	19.2	6741	488
KYIV	50.40N	30.57E	548	-0.6	4.9	85.0	68.0	82.1	66.8	79.2	65.5	70.4	80.7	68.7	78.6	66.7	100.1	75.0	65.1	94.9	73.4	19.8	16.9	14.7	7033	324
LUHANSK	48.57N	39.25E	203	-5.0	0.6	91.3	68.6	87.6	67.3	84.4	66.1	71.2	84.9	69.6	83.5	66.8	99.4	76.5	65.2	94.0	74.7	26.4	21.0	17.0	6962	535
LVIV	49.82N	23.95E	1060	0.8	6.4	82.7	67.1	79.9	65.9	77.0	64.5	69.2	79.3	67.4	76.8	65.5	98.1	73.9	64.0	92.8	72.1	21.7	18.6	16.3	7122	157
MARIUPOL	47.03N	37.50E	230	4.2	8.6	86.7	71.8	83.8	70.6	81.5	69.4	74.4	82.7	72.7	81.0	71.8	118.4	78.8	69.9	110.9	77.8	32.3	28.7	26.1	6472	600
ODESA	46.43N	30.77E	138	6.9	12.1	88.1	68.3	85.6	67.9	82.5	66.9	72.6	80.9	71.0	79.5	69.9	110.7	76.7	68.1	103.8	75.2	25.2	21.6	18.8	5848	611
POLTAVA	49.60N	34.55E	525	-2.8	2.6	86.7	67.8	83.6	66.5	80.8	65.4	70.7	82.3	69.0	79.8	66.7	100.1	76.1	65.1	94.7	74.2	22.6	19.0	16.2	7200	390
SIMFEROPOL	45.02N	33.98E	594	9.1	13.7	90.0	68.2	86.5	67.0	83.8	66.0	71.0	82.6	69.4	81.2	67.8	104.3	74.6	66.0	97.8	73.3	27.5	23.9	21.1	5572	571
VINNYTSIA	49.23N	28.60E	978	-2.3	3.1	83.2	66.7	80.6	65.4	78.0	64.5	69.1	79.4	67.4	77.0	65.4	97.3	74.1	63.9	92.2	71.9	25.6	21.1	18.4	7350	211
ZAPORIZHZHIA	47.80N	35.02E	367	0.1	5.3	90.1	68.1	86.9	67.1	84.0	66.0	71.1	84.0	69.6	82.3	67.1	101.1	76.0	65.6	95.6	74.4	22.6	19.7	17.4	6584	574
United Arab Emirates																									*5 sites, 2 more on CD-ROM*	
ABU DHABI BATEEN AI	24.43N	54.47E	10	55.5	57.4	109.4	75.0	106.9	75.2	104.3	75.9	87.5	94.2	86.5	93.7	86.0	190.8	92.1	84.7	182.5	91.7	21.2	18.8	16.8	38	6262
ABU DHABI INTER. AI	24.43N	54.65E	89	52.8	55.1	112.8	73.8	109.9	74.3	107.7	74.7	87.1	95.5	86.0	94.6	85.0	184.7	92.2	84.1	179.4	91.8	21.0	18.7	16.8	54	6417
AL AIN INTERNATIONA	24.27N	55.60E	860	51.9	53.7	114.7	72.2	113.1	72.4	111.4	72.3	83.4	96.0	81.8	95.9	80.8	165.2	89.9	78.7	154.0	88.8	23.3	20.5	18.2	66	7090

Meaning of acronyms:
Lat: Latitude, ° *Long: Longitude, °* *Elev: Elevation, ft*
DB: Dry bulb temperature, °F *WB: Wet bulb temperature, °F* *DP: Dew point temperature, °F* *HR: Humidity ratio, grains of moisture per lb of dry air* *WS: Wind speed, mph*
MCWB: Mean coincident wet bulb temperature, °F *MCDB: Mean coincident dry bulb temperature, °F* *HDD and CDD 65: Annual heating and cooling degree-days, base 65°F, °F-day*

Station	Lat	Long	Elev	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB				Dehumidification DP/HR/MCDB						Extreme Annual WS			Heat./Cool. Degree-Days	
						0.4%		1%		2%		0.4%		1%		0.4%			1%							
				99.6%	99%	DB / MCWB		DB / MCWB		DB / MCWB		WB / MCDB		WB / MCDB		DP / HR / MCDB			DP / HR / MCDB			1%	2.5%	5%	HDD / CDD 65	
DUBAI INTERNATIONAL	25.25N	55.33E	16	54.9	56.5	109.0	74.8	106.1	75.3	104.0	76.0	86.6	94.9	85.6	94.2	84.5	181.5	91.8	83.8	177.3	91.7	20.6	18.3	16.5	43	6196
SHARJAH INTER. AIRP	25.33N	55.52E	108	49.9	51.9	111.1	75.0	109.0	75.1	106.4	75.8	86.1	97.5	84.8	96.3	83.9	178.1	91.6	82.4	169.5	91.0	18.6	16.2	14.3	100	5920
United Kingdom																									*26 sites, 172 more on CD-ROM*	
AUGHTON	53.55N	2.92W	184	26.0	28.6	76.0	63.8	72.3	62.3	69.2	60.8	65.3	73.6	63.6	70.4	62.3	84.6	67.6	60.9	80.3	66.2	25.8	22.9	20.4	5769	35
BINGLEY NO.2	53.82N	1.87W	876	24.6	26.7	74.8	63.1	71.0	61.3	67.9	59.7	64.5	71.4	62.5	69.0	61.8	85.2	67.2	59.9	79.6	65.1	28.3	24.5	21.5	6616	18
BIRMINGHAM AIRPORT	52.45N	1.73W	325	22.7	25.9	80.0	64.3	76.1	62.7	73.0	61.6	66.1	75.9	64.4	73.1	62.7	86.1	69.0	61.1	81.3	67.5	22.4	19.9	17.9	5701	56
BRISTOL	51.38N	2.72W	636	26.3	28.5	78.5	64.0	73.8	62.4	71.3	61.4	65.9	73.9	64.0	71.1	62.9	88.0	67.5	62.2	85.7	66.6	27.0	23.8	21.5	5434	51
BRISTOL WEA CENTER	51.47N	2.60W	36	27.0	30.1	79.9	65.2	76.5	63.4	73.4	62.1	66.9	76.2	65.0	73.0	63.4	87.4	70.0	61.8	82.7	68.2	23.2	20.2	17.7	4786	104
CARDIFF WEATHER CEN	51.48N	3.18W	171	30.2	32.2	79.2	64.8	75.7	63.4	72.8	61.9	66.6	76.0	64.8	72.8	63.2	87.3	69.5	61.8	83.1	67.8	26.1	22.9	20.1	4555	103
CARDIFF-WALES ARPT	51.40N	3.35W	220	26.6	29.3	76.6	64.2	73.0	62.7	69.9	61.4	65.7	73.0	64.2	70.1	63.0	86.9	67.8	62.1	84.1	66.6	29.7	26.1	23.1	5325	44
CHURCH LAWFORD	52.37N	1.33W	348	23.6	26.4	79.8	65.7	75.9	63.7	72.7	62.2	67.4	75.6	65.2	73.3	64.9	93.3	68.9	62.2	84.8	67.5	22.5	19.3	17.0	5732	54
CILFYNYDD	51.63N	3.30W	636	23.7	26.7	78.1	65.0	74.4	62.9	71.2	61.4	66.6	75.0	64.4	71.6	63.6	90.2	69.5	61.7	84.2	66.9	25.8	22.2	19.2	5906	46
CROSBY	53.50N	3.07W	30	25.9	28.7	76.1	64.9	72.1	63.3	69.1	62.1	66.5	73.0	64.7	70.0	64.4	90.7	68.5	62.7	85.3	67.0	39.4	33.7	30.0	5359	36
EAST MIDLANDS	52.83N	1.32W	315	24.8	28.0	80.2	65.0	75.6	62.8	73.0	61.8	66.5	76.3	64.8	73.3	62.9	86.8	69.6	61.1	81.5	67.8	28.7	24.7	22.0	5605	70
EDINBURGH AIRPORT	55.95N	3.35W	135	22.5	25.9	72.4	61.9	69.5	60.8	66.8	59.1	63.8	69.9	62.1	67.4	61.2	81.1	66.0	59.7	76.9	64.6	27.8	24.2	21.4	6237	6
EMLEY MOOR	53.62N	1.67W	850	26.3	28.1	75.2	63.7	71.6	62.0	68.7	60.5	65.2	72.2	63.2	69.6	62.4	86.9	68.0	60.6	81.5	66.0	33.1	28.9	24.3	6273	28
GLASGOW AIRPORT	55.87N	4.43W	26	21.4	25.0	74.7	63.0	71.0	61.2	67.8	59.8	64.6	71.8	62.8	68.6	62.0	83.1	67.6	60.4	78.4	66.0	29.3	25.4	22.3	6183	14
GRAVESEND-BROADNESS	51.47N	0.30E	10	28.9	30.8	83.1	68.6	79.3	66.7	75.9	64.9	70.1	80.2	68.2	76.9	66.6	97.9	73.5	64.8	91.9	72.1	24.8	22.0	19.6	4594	170
HAWARDEN	53.17N	2.98W	30	24.3	27.3	77.6	65.1	73.9	63.7	70.8	62.2	67.0	74.2	65.1	71.8	64.4	90.7	69.9	62.4	84.4	68.1	23.3	20.5	18.2	5492	35
KENLEY AIRFIELD	51.30N	0.08W	558	27.2	29.2	80.0	64.5	76.5	63.0	73.4	61.7	66.4	76.0	64.7	73.3	63.0	87.8	69.2	61.5	83.3	67.7	24.5	21.2	18.7	5295	88
LECONFIELD	53.87N	0.43W	23	25.3	27.9	76.9	64.8	73.7	63.0	70.9	61.6	66.1	73.9	64.4	71.6	63.1	86.6	69.2	61.5	81.6	67.3	28.1	24.7	21.8	5812	31
LEEDS BRADFORD	53.87N	1.65W	699	26.6	28.5	75.6	63.9	71.9	61.8	69.2	60.9	65.2	72.2	63.4	70.1	62.6	87.2	68.4	60.9	81.8	66.1	28.8	24.9	21.8	6115	30
LEEDS WEATHER CTR	53.80N	1.55W	154	27.9	30.0	79.1	64.3	75.4	62.5	72.3	61.0	65.7	75.7	63.9	73.0	62.0	83.6	69.4	60.3	78.6	67.3	29.0	24.5	21.0	5298	71
LIVERPOOL	53.33N	2.85W	82	26.3	28.7	77.4	64.3	73.7	62.5	71.3	61.6	65.7	74.5	64.1	71.7	62.6	85.3	69.3	61.0	80.3	67.7	29.7	25.7	22.6	5369	54
LONDON WEA CENTER	51.52N	0.12W	75	27.3	30.2	80.9	66.0	78.1	64.4	75.3	63.4	67.8	78.5	66.0	75.0	63.6	88.1	72.2	62.3	84.1	70.8	26.2	23.1	21.0	4547	181
LONDON WEATHER CENT	51.52N	0.10W	141	30.9	32.8	83.2	65.2	79.6	63.8	76.3	62.4	67.1	78.5	65.6	75.8	63.0	86.6	71.2	61.6	82.3	70.0	20.7	18.5	16.5	4219	232
LONDON/HEATHROW AIR	51.48N	0.45W	82	26.5	29.0	83.0	65.6	79.3	64.2	76.2	63.0	67.6	79.2	66.0	75.8	63.5	88.0	70.9	62.2	83.8	69.7	22.5	19.8	17.7	4790	169
MANCHESTER AIRPORT	53.35N	2.28W	226	25.3	28.0	78.5	64.1	74.7	62.6	71.4	61.0	65.6	74.7	64.0	71.9	62.5	85.2	68.7	60.9	80.5	66.9	24.8	22.0	19.6	5608	56
NORTHOLT	51.55N	0.42W	128	24.6	27.2	82.9	65.7	79.2	64.4	75.9	63.1	67.7	78.8	66.0	75.7	63.7	88.8	71.1	62.2	84.2	69.9	23.3	20.7	18.5	5087	135
Uruguay																									*2 sites, 7 more on CD-ROM*	
CARRASCO	34.83S	56.00W	105	34.5	37.3	88.3	71.1	85.7	70.6	82.6	69.7	75.3	82.7	73.8	80.4	73.3	124.5	78.4	71.8	117.9	76.7	29.5	24.9	22.2	2198	829
PRADO	34.85S	56.20W	52	37.4	39.8	88.8	72.5	86.2	71.6	83.9	71.0	75.6	84.3	74.3	82.1	72.9	122.5	79.7	71.8	117.6	78.7	22.8	19.3	17.0	1987	1032
Uzbekistan																									*3 sites, 16 more on CD-ROM*	
NAMANGAN	40.98N	71.58E	1555	18.7	22.5	97.5	70.8	95.3	70.1	93.2	69.4	74.0	91.5	72.4	90.6	68.1	109.2	86.3	66.0	101.4	84.4	16.5	12.6	9.9	4051	1916
SAMARKAND	39.57N	66.95E	2375	14.4	19.1	96.8	66.6	94.7	65.8	92.5	65.2	69.6	91.3	67.9	89.4	62.2	91.4	79.1	60.2	85.1	76.9	23.2	20.4	17.7	4083	1473
TASHKENT	41.27N	69.27E	1529	15.1	19.4	100.8	69.0	98.6	68.4	96.4	67.8	74.5	94.3	72.0	92.1	67.7	107.8	89.1	64.7	96.8	84.4	13.8	11.8	10.0	3892	1835
Venezuela																									*2 sites, 1 more on CD-ROM*	
CARACAS/MAIQUETIA A	10.60N	66.98W	157	69.3	70.1	92.2	82.3	91.3	82.1	89.9	81.6	85.6	89.4	84.5	88.6	84.6	182.5	88.1	83.8	178.0	87.6	11.6	9.6	7.8	0	5836
SAN ANTONIO DEL TAC	7.85N	72.45W	1240	67.9	69.4	94.9	74.5	93.5	74.2	92.8	74.1	79.3	88.8	78.2	88.1	77.1	147.6	83.9	75.5	140.0	82.1	27.4	24.2	22.1	0	5897
Viet Nam																									*4 sites, 16 more on CD-ROM*	
DA NANG	16.07N	108.35E	23	61.7	63.4	96.8	79.2	95.1	79.4	93.4	79.4	82.6	90.4	81.8	89.4	80.7	159.7	87.1	79.9	155.2	86.2	16.6	13.9	11.7	7	5232
HA NOI	21.03N	105.80E	20	50.1	51.9	96.3	81.5	94.4	81.6	92.8	81.5	84.7	90.7	83.7	89.8	83.8	177.0	88.1	82.5	169.3	87.2	15.5	13.2	11.4	302	4227
PHU LIEN	20.80N	106.63E	381	49.6	51.9	93.2	84.0	91.5	83.6	90.1	82.9	86.1	90.7	84.9	89.5	84.9	186.0	89.8	83.7	179.2	88.4	15.6	12.4	10.6	294	3943
TAN SON HOA	10.82N	106.67E	16	68.1	70.0	95.4	78.4	94.4	78.4	93.2	78.4	82.4	89.2	81.7	88.6	80.7	159.7	85.9	80.0	155.8	85.4	25.7	17.6	14.9	0	6470
Zimbabwe																									*1 site, 1 more on CD-ROM*	
HARARE (KUTSAGA)	17.92S	31.13E	4856	44.1	46.0	87.2	61.4	85.4	61.2	83.8	61.1	68.2	76.7	67.4	75.6	66.2	115.7	69.9	65.2	111.8	69.5	20.2	17.8	15.8	627	1316