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ISTANBUL/ATATURK, Turkey

WMO#: **170600**

Lat: **40.97N** Long: **28.82E** Elev: **37** StdP: **100.88** Time Zone: **2.00 (EUE)** Period: **86-10** WBAN: **99999**

Annual Heating and Humidification Design Conditions

	Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB		
				99.6%			99%			0.4%		1%				
		99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	
(1)	2	-2.0	-0.5	-6.8	2.1	1.4	-5.1	2.5	2.1	13.7	2.0	12.2	2.2	5.9	350	(1)

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

	Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB		
			0.4%		1%		2%		0.4%		1%		2%				
			DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	
(2)	8	7.6	31.8	21.5	30.2	21.3	29.1	21.0	24.5	27.9	23.5	27.3	22.7	26.7	5.7	20	(2)

	Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours 8 to 4 & 12.8/20.6	
	0.4%			1%			2%			0.4%		1%		2%			
	DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB		
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	
(3)	23.2	18.1	26.4	22.2	16.9	25.7	21.2	15.9	25.1	74.2	27.8	70.5	27.1	67.3	26.8	909	(3)

Extreme Annual Design Conditions

	Extreme Annual WS			Extreme Max WB	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%		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	
(4)	11.2	10.0	9.1	27.9	-4.7	34.5	3.1	1.7	-6.9	35.7	-8.7	36.8	-10.4	37.7	-12.6	39.0	(4)

Monthly Climatic Design Conditions

				Annual (d)	Jan (e)	Feb (f)	Mar (g)	Apr (h)	May (i)	Jun (j)	Jul (k)	Aug (l)	Sep (m)	Oct (n)	Nov (o)	Dec (p)	
(5)	Temperatures, Degree-Days and Degree-Hours		Tavg	15.1	6.1	6.3	8.1	12.6	17.2	22.2	25.0	25.2	21.1	16.6	11.7	7.9	(5)
(6)			Sd		3.47	3.70	3.73	3.37	3.11	2.65	2.11	2.17	2.61	3.21	3.75	3.75	(6)
(7)			HDD10.0	448	128	112	83	12	1	0	0	0	0	1	26	86	(7)
(8)			HDD18.3	1868	379	337	317	174	58	3	0	0	7	71	200	323	(8)
(9)			CDD10.0	2291	7	8	24	91	224	366	464	472	332	207	76	22	(9)
(10)			CDD18.3	671	0	0	0	2	24	118	206	213	88	18	1	0	(10)
(11)			CDH23.3	4459	0	0	0	9	96	693	1595	1668	362	34	1	0	(11)
(12)			CDH26.7	1151	0	0	0	1	14	155	449	474	54	3	0	0	(12)
(13)	Precipitation		PrecAvg	630	95	71	58	44	30	23	19	16	29	53	90	102	(13)
(14)			PrecMax	976	180	138	139	166	107	265	261	100	162	122	181	256	(14)
(15)			PrecMin	524	27	14	8	19	3	9	1	1	5	2	37	42	(15)
(16)			PrecSD	142.5	45.3	37.1	34.4	41.7	24.3	58.8	65.0	31.4	35.8	35.7	39.8	52.1	(16)
(17)	Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		15.2	16.2	20.1	24.4	28.2	31.9	33.6	33.2	30.1	26.2	21.9	18.2	(17)
(18)			MCWB		10.7	10.6	12.6	16.0	18.2	20.2	20.8	21.9	20.0	19.1	15.3	12.8	(18)
(19)		2%	DB		13.8	14.2	17.2	21.8	25.9	29.9	31.8	31.8	28.1	24.0	19.7	15.8	(19)
(20)			MCWB		10.2	10.2	11.5	14.5	17.3	19.9	21.5	22.0	19.8	18.3	14.9	12.1	(20)
(21)		5%	DB		12.2	12.9	15.2	19.8	24.0	28.2	30.2	30.2	26.9	22.3	18.1	14.2	(21)
(22)			MCWB		9.3	9.5	10.6	13.6	16.8	19.8	21.4	21.8	19.6	17.7	14.4	11.4	(22)
(23)		10%	DB		11.0	11.3	13.2	17.9	22.2	27.0	29.1	29.1	25.2	21.1	16.9	13.1	(23)
(24)			MCWB		8.6	8.6	9.8	12.7	16.2	19.4	21.1	21.5	19.1	17.2	13.8	10.6	(24)
(25)	Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		11.8	11.7	13.5	17.0	20.1	23.1	25.5	25.7	22.6	20.8	17.1	13.8	(25)
(26)			MCDB		14.3	14.6	18.4	22.8	25.3	27.3	28.1	28.7	26.0	24.0	19.6	17.0	(26)
(27)		2%	WB		10.6	10.7	12.1	15.2	18.7	22.0	24.4	24.7	21.6	19.5	15.7	12.5	(27)
(28)			MCDB		12.9	13.4	16.3	19.9	23.4	26.1	27.5	28.3	25.2	22.2	18.2	15.1	(28)
(29)		5%	WB		9.8	9.8	11.0	14.0	17.9	21.3	23.5	23.9	21.0	18.5	14.8	11.7	(29)
(30)			MCDB		11.9	12.3	14.7	18.5	22.3	25.8	27.2	27.7	24.7	21.4	17.4	14.1	(30)
(31)		10%	WB		8.9	8.9	10.1	13.1	17.1	20.6	22.7	23.0	20.3	17.5	13.9	10.8	(31)
(32)			MCDB		11.0	11.4	13.1	17.1	21.2	25.3	26.9	26.9	24.0	20.6	16.6	12.9	(32)
(33)	Mean Daily Temperature Range		MDBR		4.7	5.5	6.1	7.4	7.8	8.0	7.9	7.6	7.3	5.9	5.4	4.6	(33)
(34)		5% DB	MCDBR		5.9	7.0	8.8	10.4	9.9	9.7	9.1	8.6	8.7	7.3	6.8	5.5	(34)
(35)			MCWBR		3.9	4.3	4.8	5.2	4.7	4.3	4.0	3.6	3.8	3.7	3.9	3.8	(35)
(36)		5% WB	MCDBR		5.5	6.8	8.2	9.3	8.7	8.4	7.9	7.7	7.7	6.9	6.1	5.4	(36)
(37)			MCWBR		4.0	4.5	4.9	5.1	4.7	4.4	4.1	3.8	4.1	3.9	3.9	3.9	(37)
(38)	Clear Sky Solar Irradiance	taub			0.360	0.369	0.381	0.407	0.384	0.383	0.387	0.395	0.393	0.385	0.367	0.365	(38)
(39)		taud			2.473	2.395	2.346	2.244	2.333	2.306	2.308	2.320	2.374	2.415	2.484	2.479	(39)
(40)		Ebn,noon			787	835	866	865	892	890	883	866	843	805	771	748	(40)
(41)		Edh,noon			78	97	113	133	125	129	127	122	108	94	77	73	(41)

Nomenclature: See separate page