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BAHRAIN (INT. AIRPORT), Bahrain

WMO#: **411500**

Lat: **26.27N** Long: **50.65E** Elev: **2** StdP: **101.3** Time Zone: **3.00 (AFE)** 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)	1	11.6	12.9	1.8	4.3	17.2	3.9	5.0	18.2	12.5	14.5	11.7	15.0	6.2	300	(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	6.7	40.8	23.9	39.3	25.2	38.2	25.9	31.1	35.5	30.6	35.0	30.0	34.6	4.6	330	(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)	30.1	27.4	34.4	29.4	26.2	34.1	28.9	25.5	34.0	106.4	35.6	103.5	34.8	100.5	34.4	585	(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	10.2	9.3	34.1	9.2	44.2	2.2	1.2	7.6	45.1	6.3	45.8	5.1	46.5	3.4	47.3	(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	27.1	17.0	18.3	21.3	25.9	31.1	33.6	35.0	35.0	33.0	29.8	24.6	19.6	(5)
(6)			Sd		2.42	2.38	2.57	2.64	2.27	1.72	1.49	1.46	1.56	1.75	2.66	2.55	(6)
(7)			HDD10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	(7)
(8)			HDD18.3	101	54	26	4	0	0	0	0	0	0	0	0	17	(8)
(9)			CDD10.0	6227	217	233	350	478	653	708	774	774	690	614	438	297	(9)
(10)			CDD18.3	3284	13	26	95	228	394	458	516	516	440	356	188	55	(10)
(11)			CDH23.3	44776	7	36	309	1913	5478	7239	8419	8444	6798	4696	1352	86	(11)
(12)			CDH26.7	27514	0	4	65	610	3083	4840	5939	5964	4400	2311	294	3	(12)
(13)	Precipitation		PrecAvg	71	15	16	14	10	1	0	0	0	0	1	4	11	(13)
(14)			PrecMax	1555	258	243	231	263	125	99	84	117	324	371	198	375	(14)
(15)			PrecMin	1040	67	21	38	27	11	8	14	17	37	81	51	29	(15)
(16)			PrecSD	200.3	65.4	70.4	63.2	70.4	32.5	33.0	24.4	42.4	92.0	93.7	50.4	107.0	(16)
(17)	Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		24.1	26.8	31.9	36.1	40.2	41.9	42.8	42.1	40.0	37.1	32.2	27.0	(17)
(18)			MCWB		17.7	17.6	18.5	20.6	22.3	21.6	23.1	24.9	24.3	23.5	22.3	20.2	(18)
(19)		2%	DB		22.6	24.1	28.2	33.2	38.1	39.9	40.4	40.1	38.2	35.0	30.5	25.2	(19)
(20)			MCWB		17.8	17.5	18.3	20.9	21.9	22.7	24.5	26.5	25.8	24.1	22.7	20.1	(20)
(21)		5%	DB		21.2	22.7	26.2	31.2	36.2	38.2	39.1	39.0	37.1	34.0	29.2	24.1	(21)
(22)			MCWB		17.3	17.4	18.2	20.7	22.5	24.0	25.4	27.2	26.2	24.6	22.6	19.9	(22)
(23)		10%	DB		20.3	21.2	24.9	29.9	35.0	37.1	38.1	38.0	36.1	33.0	28.2	23.1	(23)
(24)			MCWB		16.5	17.1	18.3	20.6	22.9	24.4	26.0	27.9	26.4	24.7	22.3	19.3	(24)
(25)	Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		20.5	20.5	22.0	24.4	28.3	29.8	31.7	32.1	31.0	28.6	25.9	22.8	(25)
(26)			MCDB		22.0	22.8	25.9	29.8	32.5	34.2	35.6	36.3	35.3	32.4	29.2	24.7	(26)
(27)		2%	WB		19.3	19.5	20.9	23.6	26.9	28.6	30.8	31.5	30.0	27.8	24.8	21.7	(27)
(28)			MCDB		21.5	21.9	24.5	29.0	32.0	33.3	34.9	35.8	34.6	31.5	28.5	23.8	(28)
(29)		5%	WB		18.2	18.7	20.2	22.8	26.1	27.8	30.2	30.9	29.4	27.1	24.0	20.7	(29)
(30)			MCDB		20.7	21.2	23.9	28.3	31.6	32.8	34.4	35.4	34.0	31.1	27.9	23.3	(30)
(31)		10%	WB		17.2	18.0	19.4	22.2	25.2	27.1	29.6	30.4	28.8	26.6	23.2	19.7	(31)
(32)			MCDB		19.7	20.7	23.3	27.6	31.5	33.0	34.1	35.0	33.5	30.7	27.1	22.5	(32)
(33)	Mean Daily Temperature Range		MDBR		5.1	5.4	6.1	6.9	7.6	7.3	7.1	6.7	6.9	6.5	5.4	5.1	(33)
(34)		5% DB	MCDBR		5.9	7.0	8.6	9.4	9.8	9.1	8.6	8.0	7.7	7.7	6.1	5.8	(34)
(35)			MCWBR		3.6	3.6	4.1	4.4	5.2	5.6	5.8	5.2	5.1	4.7	4.1	3.6	(35)
(36)		5% WB	MCDBR		5.1	5.8	7.0	8.1	8.5	8.0	7.3	6.7	6.7	6.9	5.7	5.1	(36)
(37)			MCWBR		3.7	3.8	4.2	4.4	5.2	5.5	5.4	4.5	4.5	4.3	4.2	3.7	(37)
(38)	Clear Sky Solar Irradiance	taub			0.475	0.509	0.550	0.626	0.622	0.575	0.660	0.589	0.513	0.481	0.483	0.458	(38)
(39)		taud			2.092	1.977	1.860	1.666	1.638	1.692	1.572	1.739	1.922	2.055	2.073	2.160	(39)
(40)		Ebn,noon			758	764	757	712	714	744	682	730	777	778	742	756	(40)
(41)		Edh,noon			142	171	202	252	258	244	274	231	187	155	143	128	(41)

Nomenclature: See separate page