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TANGER (AERODROME), Morocco

WMO#: **601010**

Lat: **35.73N** Long: **5.90W** Elev: **21** StdP: **101.07** Time Zone: **0.00 (GRW)** 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	4.1	5.8	0.4	3.9	8.1	2.4	4.5	9.1	18.2	13.5	14.9	14.2	2.0	80	(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	9.1	33.2	21.5	31.9	21.3	30.2	21.2	23.2	29.7	22.6	28.7	22.1	27.8	9.3	80	(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)	21.2	15.9	25.7	20.8	15.5	25.5	20.1	14.8	25.1	68.9	30.1	66.7	28.8	64.7	27.9	1543	(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)	16.5	14.0	12.3	25.8	1.8	37.3	2.0	2.3	0.3	38.9	-0.9	40.2	-2.0	41.5	-3.5	43.2	(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		18.1	12.4	13.2	14.7	15.7	18.3	21.7	24.2	24.5	22.8	19.9	15.9	13.6	(5)
(6)		Sd			2.28	2.19	2.21	2.30	2.53	2.73	2.76	2.68	2.61	2.39	2.69	2.33	(6)
(7)		HDD10.0		13	7	3	1	0	0	0	0	0	0	0	1	3	(7)
(8)		HDD18.3		799	185	144	113	84	31	2	0	0	1	12	82	146	(8)
(9)		CDD10.0		2969	80	92	147	172	258	351	440	448	384	306	177	116	(9)
(10)		CDD18.3		714	0	0	1	6	31	103	182	190	134	59	8	1	(10)
(11)		CDH23.3		5003	0	1	11	29	174	688	1522	1567	809	190	12	1	(11)
(12)		CDH26.7		1602	0	0	2	2	32	212	566	557	212	19	1	0	(12)
(13)	Precipitation	PrecAvg		735	97	93	74	66	36	15	1	2	16	67	130	138	(13)
(14)		PrecMax		1476	428	211	203	168	163	62	11	22	67	236	304	456	(14)
(15)		PrecMin		408	0	0	2	1	0	0	0	0	0	0	1	2	(15)
(16)		PrecSD		219.4	83.8	60.5	49.4	37.9	36.7	13.7	2.6	4.5	17.9	64.4	75.8	98.1	(16)
(17)	Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		19.8	21.1	24.5	26.0	29.6	33.3	35.4	35.9	32.9	28.6	24.9	21.0	(17)
(18)			MCWB		15.0	15.7	17.1	16.9	18.7	19.9	21.5	21.5	21.7	19.9	17.9	15.3	(18)
(19)		2%	DB		18.2	19.3	21.9	23.9	27.1	31.0	33.2	33.5	30.8	26.9	22.9	19.3	(19)
(20)			MCWB		14.2	14.9	15.7	16.0	17.8	19.4	21.4	22.0	21.6	20.0	17.3	15.4	(20)
(21)		5%	DB		17.2	18.1	20.2	22.0	25.1	29.1	31.8	31.9	29.1	25.4	21.2	18.2	(21)
(22)			MCWB		13.8	14.4	15.2	15.9	17.7	19.5	21.2	22.0	21.1	19.3	16.9	15.0	(22)
(23)		10%	DB		16.3	17.1	19.0	20.5	23.2	27.2	30.0	30.0	27.4	24.1	20.1	17.4	(23)
(24)			MCWB		13.4	14.0	14.9	15.6	17.2	19.1	21.2	21.8	20.6	18.9	16.3	14.5	(24)
(25)	Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		16.5	16.8	18.3	18.7	20.7	22.1	23.9	24.2	23.4	21.7	19.4	17.7	(25)
(26)			MCDB		18.2	19.3	22.9	23.4	26.4	29.0	31.6	31.3	29.3	25.9	22.2	19.0	(26)
(27)		2%	WB		15.3	15.8	16.7	17.6	19.3	21.2	23.0	23.4	22.5	20.7	18.3	16.6	(27)
(28)			MCDB		17.3	18.3	20.0	21.8	24.5	27.5	29.8	30.1	28.2	24.8	21.4	18.2	(28)
(29)		5%	WB		14.6	15.1	15.9	16.9	18.5	20.6	22.4	22.8	21.9	20.0	17.6	15.7	(29)
(30)			MCDB		16.6	17.5	19.2	20.7	23.4	26.5	28.8	28.8	27.1	24.0	20.5	17.6	(30)
(31)		10%	WB		13.8	14.3	15.2	16.0	17.8	20.0	21.8	22.3	21.2	19.4	16.8	15.0	(31)
(32)			MCDB		16.0	16.8	18.4	19.5	22.2	25.4	27.8	27.8	25.9	23.1	19.5	17.1	(32)
(33)	Mean Daily Temperature Range		MDBR		8.0	7.8	8.3	8.4	8.8	8.9	9.4	9.1	8.4	7.7	7.6	7.4	(33)
(34)		5% DB	MCDBR		8.6	9.2	10.4	10.9	11.4	11.8	12.4	11.8	10.1	9.0	8.4	8.0	(34)
(35)			MCWBR		5.8	6.1	6.4	6.4	5.7	4.9	4.8	4.5	4.3	4.4	5.0	5.3	(35)
(36)		5% WB	MCDBR		7.4	8.4	9.6	9.7	10.2	10.4	10.6	10.1	8.8	8.0	7.5	6.6	(36)
(37)			MCWBR		5.7	6.1	6.5	6.4	5.7	5.1	5.0	4.8	4.2	4.5	5.1	5.1	(37)
(38)	Clear Sky Solar Irradiance	taub			0.368	0.401	0.410	0.392	0.400	0.424	0.428	0.437	0.420	0.411	0.386	0.371	(38)
(39)		taud			2.549	2.411	2.338	2.346	2.292	2.195	2.196	2.209	2.333	2.414	2.523	2.582	(39)
(40)		Ebn,noon			827	833	857	892	885	860	854	839	836	810	798	801	(40)
(41)		Edh,noon			81	102	119	123	132	146	145	140	118	100	82	75	(41)

Nomenclature: See separate page