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OTTAWA MACDONALD-CARTIER INT', ON, Canada

WMO#: **716280**

Lat: **45.32N** Long: **75.67W** Elev: **114** StdP: **99.96** Time Zone: **-5.00 (NAE)** 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	-24.2	-21.5	-30.9	0.2	-23.5	-28.2	0.3	-21.1	11.5	-6.8	10.4	-8.5	3.6	280	(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)	7	9.9	30.6	21.9	28.9	20.8	27.3	20.0	23.2	28.3	22.2	26.8	21.2	25.6	4.4	220	(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)	21.6	16.5	25.9	20.7	15.5	24.8	19.6	14.6	23.9	69.7	28.4	65.7	26.8	62.2	25.5	703	(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)	10.0	8.8	7.8	27.3	-27.0	33.3	3.1	1.8	-29.2	34.6	-31.0	35.7	-32.8	36.7	-35.0	38.0	(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		6.6	-9.6	-8.3	-2.1	6.5	13.4	18.6	21.0	19.9	15.1	8.1	1.6	-6.0	(5)
(6)		Sd			7.13	5.94	6.16	5.03	4.41	3.85	2.94	3.26	4.09	4.35	4.89	6.30	(6)
(7)		HDD10.0		2487	607	513	374	129	16	0	0	0	6	92	254	496	(7)
(8)		HDD18.3		4523	866	746	632	357	163	42	8	21	113	319	502	754	(8)
(9)		CDD10.0		1242	0	0	1	23	122	259	339	306	158	31	2	0	(9)
(10)		CDD18.3		238	0	0	0	1	11	51	90	69	15	1	0	0	(10)
(11)		CDH23.3		1808	0	0	0	18	114	428	656	474	113	4	0	0	(11)
(12)		CDH26.7		478	0	0	0	3	26	121	179	123	27	0	0	0	(12)
(13)	Precipitation	PrecAvg		905	62	57	61	67	74	84	87	85	83	79	86	80	(13)
(14)		PrecMax		1091	101	145	124	122	124	171	120	198	137	130	150	131	(14)
(15)		PrecMin		672	14	2	13	26	28	28	49	11	40	24	43	47	(15)
(16)		PrecSD		113.2	24.7	33.1	34.2	26.5	25.4	36.7	23.7	40.2	31.8	29.9	28.4	24.2	(16)
(17)	Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		8.2	6.4	15.9	25.9	29.6	32.4	33.0	32.2	29.9	23.6	16.5	9.2	(17)
(18)			MCWB		7.2	4.2	10.4	16.8	19.4	22.3	23.8	22.7	20.8	17.5	13.0	7.6	(18)
(19)		2%	DB		4.3	4.3	11.9	21.2	26.4	29.8	30.5	29.7	26.3	20.1	14.0	5.9	(19)
(20)			MCWB		3.0	2.3	7.5	13.3	17.6	21.2	22.2	21.4	19.8	15.3	11.7	4.6	(20)
(21)		5%	DB		2.4	2.5	8.7	17.7	23.9	27.7	28.6	27.7	24.0	17.3	11.0	3.7	(21)
(22)			MCWB		1.3	0.9	5.3	11.1	15.7	20.0	21.1	20.6	18.6	13.6	8.9	2.3	(22)
(23)		10%	DB		0.7	0.8	6.2	14.8	21.4	25.7	26.9	26.0	22.0	15.0	8.4	2.0	(23)
(24)			MCWB		-0.2	-0.5	3.2	9.1	14.6	18.9	20.1	19.7	17.4	11.9	6.5	0.8	(24)
(25)	Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		7.5	5.0	11.6	17.8	21.4	24.0	25.1	24.2	22.6	18.5	14.0	8.1	(25)
(26)			MCDB		7.9	5.6	15.0	24.9	27.2	30.1	30.9	30.2	26.9	22.2	15.7	8.6	(26)
(27)		2%	WB		3.3	2.5	8.3	14.8	18.9	22.4	23.4	22.7	20.7	15.9	11.8	4.8	(27)
(28)			MCDB		4.1	4.0	11.2	19.3	24.1	27.7	28.3	27.4	24.7	18.9	13.6	5.6	(28)
(29)		5%	WB		1.5	1.1	5.6	12.2	17.2	21.2	22.3	21.7	19.4	14.2	9.3	2.5	(29)
(30)			MCDB		2.3	2.3	8.4	16.6	22.1	26.0	26.9	25.9	23.1	17.1	10.8	3.5	(30)
(31)		10%	WB		-0.2	-0.4	3.5	9.6	15.7	19.9	21.2	20.7	18.1	12.3	6.7	1.0	(31)
(32)			MCDB		0.7	0.8	6.0	14.0	20.2	24.3	25.5	24.5	21.1	14.6	8.2	1.9	(32)
(33)	Mean Daily Temperature Range		MDBR		8.1	8.8	8.7	9.8	10.5	10.2	9.9	10.0	9.8	8.5	7.1	7.1	(33)
(34)		5% DB	MCDBR		9.5	9.4	11.6	15.0	14.2	12.8	11.9	11.9	12.7	12.0	11.0	8.3	(34)
(35)			MCWBR		9.3	8.4	8.3	8.8	7.4	6.3	5.7	5.7	7.0	7.9	9.3	7.8	(35)
(36)		5% WB	MCDBR		9.4	8.8	11.4	13.9	12.0	11.1	10.6	10.6	11.1	11.2	10.7	8.4	(36)
(37)			MCWBR		9.4	8.3	9.0	9.3	7.2	6.2	5.9	5.7	7.0	8.3	9.6	8.1	(37)
(38)	Clear Sky Solar Irradiance	taub			0.270	0.283	0.323	0.344	0.375	0.390	0.365	0.390	0.385	0.321	0.300	0.279	(38)
(39)		taud			2.462	2.353	2.321	2.353	2.282	2.244	2.336	2.294	2.331	2.559	2.614	2.517	(39)
(40)		Ebn,noon			856	904	908	916	892	877	896	858	829	855	820	809	(40)
(41)		Edh,noon			68	91	109	116	129	135	121	122	108	75	60	59	(41)

Nomenclature: See separate page