

SUDBURY A, ON, Canada

WMO#: 717300

Lat: **46.62N** Long: **80.80W** Elev: **1142** StdP: **14.1** Time Zone: **-5 (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	-17.8	-12.5	-27.8	1.2	-17.0	-22.6	1.6	-11.6	26.4	15.2	24.1	15.4	7.1	330

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)
7	18.5	84.7	68.4	81.3	66.3	78.3	64.6	70.9	80.6	69.0	77.3	67.2	74.7	10.5	240

Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours 8 to 4 & 55/69
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)
67.9	106.8	74.4	66.0	100.1	73.0	64.4	94.4	71.4	35.5	80.8	33.8	77.4	32.4	74.6	702

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)
22.7	20.1	18.0	77.2	-23.9	89.8	5.3	3.9	-27.7	92.6	-30.8	94.8	-33.8	97.0	-37.7	99.8

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	39.8	10.0	12.4	23.7	39.0	52.4	62.0	66.3	64.3	55.6	42.8	30.3	17.3
	Sd	13.22	11.09	11.58	9.57	8.76	7.40	5.78	6.19	7.81	8.13	9.40	11.98	
	HDD50	5439	1240	1054	816	352	76	6	0	34	254	592	1015	
	HDD65	9433	1705	1474	1281	780	403	142	53	89	295	690	1041	1480
	CDD50	1719	0	0	0	22	149	366	507	443	201	30	1	0
	CDD65	238	0	0	0	1	11	52	94	67	12	1	0	0
	CDH74	1834	0	0	0	17	127	444	707	459	78	2	0	0
(13) Precipitation	CDH80	425	0	0	0	2	28	104	179	100	12	0	0	0
	PrecAvg	36.1	2.5	2.1	2.6	2.7	3.0	3.5	3.1	3.6	4.2	3.0	3.2	2.8
	PrecMax	44.1	5.0	4.6	5.0	7.1	5.7	7.7	7.9	7.9	9.6	6.0	6.9	4.1
	PrecMin	26.4	0.7	0.5	1.0	0.7	0.9	1.5	1.1	0.9	1.0	0.4	0.6	1.2
(17) Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	PrecSD	4.5	1.0	1.1	1.2	1.3	1.3	1.7	1.7	1.7	2.0	1.1	1.3	0.8
	0.4%	DB	40.3	40.8	55.3	75.6	83.8	87.2	90.1	87.7	81.3	70.4	55.7	42.6
		MCWB	39.3	37.4	45.2	59.3	65.1	68.8	70.8	71.1	66.7	60.1	50.0	40.2
	2%	DB	35.5	35.8	48.3	66.5	77.3	83.1	84.8	82.7	75.5	63.9	50.9	38.2
		MCWB	34.1	33.4	41.2	51.4	60.1	67.2	69.0	68.0	64.0	56.6	48.6	36.9
	5%	DB	32.5	32.8	43.5	59.4	72.3	79.2	80.8	79.0	71.9	59.1	47.0	35.6
		MCWB	31.5	30.8	38.4	47.6	57.9	64.4	66.2	65.8	62.3	54.4	44.8	34.1
	10%	DB	29.8	29.7	39.4	54.0	67.7	75.4	77.7	75.6	68.1	55.1	43.2	33.0
		MCWB	28.6	27.7	34.9	44.6	55.6	62.7	64.8	64.0	60.2	51.1	40.8	31.7
(25) Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB	39.7	38.6	47.0	60.5	68.2	72.2	73.9	73.1	68.9	62.4	52.8	41.1
		MCDB	40.2	40.1	52.3	75.0	79.3	84.5	84.3	82.6	76.8	66.9	54.9	42.0
	2%	WB	34.5	33.9	42.4	54.2	63.6	69.1	71.1	70.3	66.3	58.2	49.1	37.2
		MCDB	35.3	35.6	46.5	62.7	72.1	78.7	80.7	78.7	71.8	62.1	50.4	37.9
	5%	WB	31.6	31.0	38.8	49.4	60.6	67.0	69.1	68.3	64.3	54.8	45.2	34.2
		MCDB	32.5	32.8	43.0	57.8	69.1	75.5	77.3	75.7	69.4	58.5	46.9	35.4
	10%	WB	28.6	27.7	35.3	45.1	57.1	64.7	67.1	66.3	62.0	51.5	40.9	31.9
		MCDB	29.8	29.6	38.9	52.9	65.7	72.3	74.5	73.0	67.5	54.7	42.8	32.8
(33) Mean Daily Temperature Range	5% DB	MCDBR	16.2	17.9	17.8	18.1	19.8	19.0	18.5	18.1	17.1	13.9	12.0	13.4
		MCWBR	15.0	15.5	20.0	26.6	25.3	23.2	22.6	21.2	20.8	19.7	16.2	12.7
		MCWBR	14.9	13.8	14.3	15.6	13.0	11.1	9.8	9.2	10.8	13.2	14.2	12.2
	5% WB	MCDBR	15.3	15.1	18.1	23.9	22.6	20.0	19.0	18.7	18.3	18.2	15.4	12.7
		MCWBR	15.3	14.0	13.9	15.8	12.7	10.9	10.0	9.7	11.8	13.5	14.5	12.4
		MCWBR	15.3	14.0	13.9	15.8	12.7	10.9	10.0	9.7	11.8	13.5	14.5	12.4
(38) Clear Sky Solar Irradiance	taub		0.273	0.280	0.302	0.310	0.335	0.366	0.356	0.361	0.343	0.318	0.287	0.278
	taud		2.546	2.435	2.389	2.457	2.405	2.320	2.381	2.394	2.471	2.566	2.630	2.577
	Ebn,noon		268	286	294	301	295	285	286	280	277	270	262	253
	Edh,noon		19	26	32	33	36	39	37	35	29	23	18	17

Nomenclature:

See separate page