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CHICAGO/O'HARE ARPT, IL, USA

WMO#: **725300**

Lat: **41.99N** Long: **87.91W** Elev: **205** StdP: **98.89** Time Zone: **-6.00 (NAC)** Period: **86-10** WBAN: **94846**

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	-18.6	-15.7	-24.0	0.4	-17.8	-21.1	0.6	-14.8	12.1	-0.5	11.1	-0.6	4.9	270	(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	10.2	33.0	23.5	31.5	22.9	30.0	22.1	25.4	31.0	24.4	29.4	23.5	28.0	5.1	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)	23.7	19.0	28.7	22.8	18.0	27.6	22.0	17.0	26.5	78.8	31.1	74.8	29.4	70.8	28.1	619	(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)	11.0	9.4	8.5	28.5	-22.2	35.6	3.2	2.0	-24.5	37.0	-26.4	38.1	-28.2	39.2	-30.5	40.7	(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		10.2	-3.9	-2.1	3.5	9.6	15.2	20.7	23.4	22.5	18.3	11.5	4.8	-1.9	(5)
(6)		Sd			6.35	5.86	5.90	5.24	4.81	4.24	3.23	3.29	4.19	4.92	5.25	5.89	(6)
(7)		HDD10.0		1648	432	341	216	68	7	0	0	0	1	42	170	372	(7)
(8)		HDD18.3		3449	691	573	459	267	123	24	2	5	52	219	406	628	(8)
(9)		CDD10.0		1723	1	1	16	57	169	322	417	388	250	87	14	1	(9)
(10)		CDD18.3		480	0	0	1	5	27	97	160	134	51	6	0	0	(10)
(11)		CDH23.3		4353	0	0	6	59	281	961	1512	1085	396	54	0	0	(11)
(12)		CDH26.7		1476	0	0	1	13	79	343	572	354	104	9	0	0	(12)
(13)	Precipitation	PrecAvg		910	39	35	68	93	84	96	93	107	97	61	74	63	(13)
(14)		PrecMax		1159	104	80	150	140	181	222	193	217	360	119	128	136	(14)
(15)		PrecMin		528	7	6	26	25	35	40	30	17	1	5	16	8	(15)
(16)		PrecSD		177.5	30.2	19.4	31.2	32.7	37.7	47.1	46.6	67.5	89.3	29.3	28.2	34.6	(16)
(17)	Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		13.6	15.3	23.5	28.4	31.3	34.1	35.7	34.7	32.0	28.0	20.8	15.2	(17)
(18)			MCWB		11.7	10.7	16.3	18.1	21.2	22.5	24.3	25.1	22.1	19.6	14.3	13.7	(18)
(19)		2%	DB		9.1	11.2	19.8	24.7	28.9	32.3	33.4	32.2	29.4	24.5	17.7	11.1	(19)
(20)			MCWB		6.8	7.8	14.1	16.4	20.3	22.3	24.3	24.0	20.8	17.4	13.6	8.6	(20)
(21)		5%	DB		6.2	7.6	16.2	22.0	26.7	30.4	31.5	30.2	27.5	22.2	15.7	8.0	(21)
(22)			MCWB		4.2	4.8	11.5	14.6	18.8	21.7	23.3	23.1	19.7	16.0	12.4	5.8	(22)
(23)		10%	DB		3.9	5.3	12.8	18.8	24.0	28.5	29.9	28.4	25.7	19.6	13.0	5.5	(23)
(24)			MCWB		2.4	3.2	8.9	12.7	17.4	21.0	22.5	21.9	18.9	14.9	9.7	3.6	(24)
(25)	Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		12.0	11.8	17.6	19.3	23.5	25.2	26.9	26.5	23.9	21.1	16.4	13.9	(25)
(26)			MCDB		13.0	12.9	22.5	26.0	29.1	31.0	32.7	32.4	28.7	25.7	18.4	15.0	(26)
(27)		2%	WB		7.6	8.0	15.0	17.5	21.8	24.0	25.6	25.4	22.4	18.9	14.7	9.3	(27)
(28)			MCDB		8.7	10.4	18.6	22.4	26.6	29.9	31.2	30.8	26.7	22.8	17.2	10.3	(28)
(29)		5%	WB		4.5	5.2	12.1	15.5	20.2	23.0	24.7	24.2	21.4	17.1	12.6	5.9	(29)
(30)			MCDB		5.9	7.4	15.9	21.2	24.7	28.2	29.8	28.4	25.4	21.0	15.2	7.7	(30)
(31)		10%	WB		2.6	3.2	9.0	13.3	18.5	21.9	23.6	23.2	20.3	15.3	10.3	3.7	(31)
(32)			MCDB		3.9	5.1	12.7	18.2	23.0	27.0	28.3	26.9	24.1	18.8	12.8	5.3	(32)
(33)	Mean Daily Temperature Range		MDBR		7.4	7.7	9.1	10.4	11.1	11.1	10.2	9.5	10.4	9.9	8.0	7.1	(33)
(34)		5% DB	MCDBR		9.2	10.9	13.8	14.9	13.9	13.0	11.8	11.1	12.4	13.3	11.0	9.4	(34)
(35)			MCWBR		7.9	8.3	9.4	8.6	7.2	6.0	5.3	4.9	5.6	7.4	8.4	7.7	(35)
(36)		5% WB	MCDBR		8.9	10.1	13.1	13.2	12.2	11.5	10.7	9.6	10.2	11.3	10.0	8.9	(36)
(37)			MCWBR		8.1	8.2	9.7	8.6	7.4	6.3	5.6	5.0	5.5	7.4	8.6	7.9	(37)
(38)	Clear Sky Solar Irradiance	taub			0.288	0.305	0.325	0.359	0.369	0.383	0.415	0.416	0.392	0.344	0.306	0.294	(38)
(39)		taud			2.524	2.474	2.473	2.343	2.310	2.285	2.209	2.242	2.343	2.487	2.629	2.584	(39)
(40)		Ebn,noon			871	906	924	909	905	889	855	843	838	847	848	836	(40)
(41)		Edh,noon			70	87	98	120	127	131	140	131	111	85	64	62	(41)

Nomenclature: See separate page