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CHANGJIN, Korea, Democratic People's Republic of

WMO#: **470310**

Lat: **40.37N** Long: **127.25E** Elev: **1080** StdP: **89.01** Time Zone: **9.00 (JPN)** 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	-26.9	-24.7	-28.9	0.3	-25.9	-26.7	0.4	-24.1	9.4	-16.7	8.9	-15.5	0.8	320	(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	7.8	25.4	19.4	23.9	18.7	22.6	17.8	21.2	23.7	20.2	22.5	19.3	21.4	2.4	180	(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)	20.4	17.2	22.7	19.5	16.2	21.5	18.6	15.3	20.6	67.1	23.9	63.5	22.5	60.2	21.5	826	(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)	8.8	7.8	6.8	24.5	-30.4	28.1	2.3	1.2	-32.0	28.9	-33.4	29.6	-34.7	30.2	-36.3	31.1	(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		3.1	-14.6	-11.6	-4.9	3.1	9.6	14.5	17.8	17.8	12.0	5.3	-3.0	-10.4	(5)
(6)		Sd			4.63	4.99	4.80	3.82	3.33	2.52	2.44	2.46	3.04	3.71	4.84	4.99	(6)
(7)		HDD10.0		3274	764	605	461	209	47	2	0	0	14	149	391	633	(7)
(8)		HDD18.3		5627	1022	838	719	458	271	118	39	38	189	403	641	891	(8)
(9)		CDD10.0		737	0	0	0	1	36	136	243	243	76	4	0	0	(9)
(10)		CDD18.3		49	0	0	0	0	0	2	23	23	1	0	0	0	(10)
(11)		CDH23.3		182	0	0	0	0	8	28	71	74	2	0	0	0	(11)
(12)		CDH26.7		12	0	0	0	0	0	1	4	7	0	0	0	0	(12)
(13)	Precipitation	PrecAvg		857	11	11	21	48	63	105	211	191	87	33	27	13	(13)
(14)		PrecMax		1368	54	41	70	153	155	208	441	492	250	92	80	52	(14)
(15)		PrecMin		768	2	3	7	9	26	48	118	72	33	9	8	4	(15)
(16)		PrecSD		143.0	12.7	9.8	13.6	28.3	28.2	43.8	79.2	97.0	45.2	18.5	19.5	10.0	(16)
(17)	Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB		0.8	4.8	10.0	19.4	24.2	26.3	27.2	27.5	22.9	18.8	10.6	4.1	(17)
(18)			MCWB		-0.8	2.0	4.3	10.1	13.3	16.7	20.7	20.6	16.3	10.6	5.5	1.7	(18)
(19)		2%	DB		-2.4	1.3	6.7	16.2	21.7	23.8	25.3	25.2	20.8	15.8	7.6	1.6	(19)
(20)			MCWB		-4.0	-1.0	2.6	8.6	11.9	15.6	20.5	20.0	15.2	9.3	4.3	-0.1	(20)
(21)		5%	DB		-4.5	-0.7	4.3	13.7	19.7	22.0	23.9	23.7	19.3	13.6	5.6	-0.5	(21)
(22)			MCWB		-5.8	-2.7	0.9	7.0	11.4	15.5	19.8	19.4	14.5	8.2	3.2	-1.8	(22)
(23)		10%	DB		-6.2	-2.6	2.5	10.9	17.2	20.4	22.5	22.3	17.7	11.7	3.8	-2.5	(23)
(24)			MCWB		-7.3	-4.4	-0.3	5.8	10.5	15.2	19.0	18.6	13.9	7.6	2.1	-3.8	(24)
(25)	Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB		-0.6	2.1	5.2	12.1	15.7	19.5	22.7	22.4	18.9	12.6	7.1	1.9	(25)
(26)			MCDB		0.5	4.6	8.9	17.6	21.0	23.2	25.5	25.0	21.3	16.1	8.8	3.1	(26)
(27)		2%	WB		-3.9	-0.6	3.0	9.2	14.0	18.1	21.5	21.1	16.9	10.7	5.2	0.2	(27)
(28)			MCDB		-2.6	1.1	6.1	14.7	18.8	21.5	24.1	23.6	18.8	13.6	6.8	1.3	(28)
(29)		5%	WB		-5.7	-2.6	1.3	7.6	12.5	17.1	20.5	20.3	15.6	9.3	3.8	-1.9	(29)
(30)			MCDB		-4.6	-0.9	3.8	12.7	17.0	20.2	22.9	22.5	17.7	12.2	5.1	-0.7	(30)
(31)		10%	WB		-7.3	-4.3	-0.1	6.1	11.2	16.1	19.6	19.4	14.4	8.2	2.1	-3.8	(31)
(32)			MCDB		-6.2	-2.7	2.2	10.6	15.7	18.9	21.7	21.4	16.9	10.9	3.6	-2.5	(32)
(33)	Mean Daily Temperature Range		MDBR		13.4	14.0	11.4	11.8	12.6	10.4	7.8	8.5	10.5	12.1	10.1	11.6	(33)
(34)		5% DB	MCDBR		14.3	15.2	13.0	17.3	17.5	14.3	10.2	10.4	12.1	15.4	12.1	11.6	(34)
(35)			MCWBR		12.7	12.5	9.1	10.4	8.7	7.7	5.8	5.7	7.0	8.8	8.6	9.7	(35)
(36)		5% WB	MCDBR		13.7	14.2	11.7	15.7	14.2	11.0	8.6	8.8	9.9	12.9	9.9	11.1	(36)
(37)			MCWBR		12.3	12.0	8.5	10.4	8.6	7.0	5.6	5.7	6.8	8.3	7.9	9.7	(37)
(38)	Clear Sky Solar Irradiance	taub			0.313	0.360	0.414	0.456	0.469	0.447	0.413	0.367	0.350	0.339	0.306	0.303	(38)
(39)		taud			2.370	2.204	2.021	1.938	1.930	2.044	2.248	2.407	2.472	2.473	2.479	2.455	(39)
(40)		Ebn,noon			841	838	826	818	815	834	860	894	891	862	850	829	(40)
(41)		Edh,noon			85	116	156	181	187	167	135	112	98	88	76	73	(41)

Nomenclature: See separate page