

2021 ASHRAE Handbook - Fundamentals (SI)																	
POSADAS, ARGENTINA (WMO: 871780)																	
Lat:27.3911S			Long:55.9669W			Elev:125		StdP: 99.83			Time zone:-3.00 (W03)			Period:94-19		WBAN:99999	
Annual Heating, Humidification, and Ventilation Design Conditions																	
Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB		WSF		
			99.6%			99%			0.4%		1%						
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD			
7	5.2	7.0	-0.8	3.6	9.0	1.0	4.1	10.3	8.6	18.9	7.6	18.4	2.2	140	0.338		
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		
1	10.2	36.1	24.0	35.1	24.0	34.1	23.9	26.6	32.6	26.1	32.0	25.6	31.3	3.9	0		
Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Extreme Max WB		
0.4%			1%			2%			0.4%		1%		2%				
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB			
25.0	20.4	30.0	24.2	19.4	29.2	24.0	19.1	28.9	84.2	32.7	81.8	32.3	79.4	31.6	31.0		
Extreme Annual Design Conditions																	
Extreme Annual WS				Extreme Annual Temperature				n-Year Return Period Values of Extreme Temperature									
				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	
8.0	6.8	5.9	DB	2.2	38.2	1.4	0.9	1.2	38.8	0.4	39.3	-0.3	39.8	-1.3	40.4		
			WB	0.8	28.0	1.5	0.9	-0.2	28.6	-1.1	29.1	-1.9	29.6	-3.0	30.2		
Monthly Climatic Design Conditions																	
			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Temperatures, Degree-Days and Degree-Hours	DBAvg	22.5	27.6	27.1	25.6	22.8	19.1	17.5	17.1	18.9	20.3	22.9	24.6	26.6			
	DBStd	5.20	2.18	2.44	2.72	3.65	3.86	4.52	4.97	5.06	4.42	3.27	2.82	2.60			
	HDD10.0	8	0	0	0	0	1	2	4	2	0	0	0	0			
	HDD18.3	293	0	0	0	8	39	69	87	58	28	3	1	0			
	CDD10.0	4564	546	478	483	384	281	227	223	277	310	402	438	516			
	CDD18.3	1808	287	244	226	142	61	45	47	75	88	146	189	257			
	CDH23.3	16821	3169	2505	2089	1103	333	219	258	593	754	1228	1801	2768			
	CDH26.7	7218	1515	1136	901	412	82	42	54	203	296	492	773	1313			
Wind		WSAvg	2.7	2.6	2.6	2.4	2.5	2.5	2.6	2.8	3.0	3.1	3.1	2.9	2.8		
Precipitation	PrecAvg	1755	166	142	156	166	132	132	96	98	138	210	163	165			
	PrecMax	3025	358	465	462	428	576	388	404	248	393	548	539	465			
	PrecMin	532	4	20	23	0	1	6	5	18	21	15	19	12			
	PrecStd	457	93	88	91	109	103	82	73	59	73	114	111	103			
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB	37.1	37.2	36.1	34.1	31.3	29.8	30.1	33.1	35.2	36.0	36.0	37.2			
		MCWB	24.0	24.4	23.9	24.3	22.9	21.5	20.9	21.4	22.3	24.5	24.0	23.5			
	2%	DB	35.8	35.2	34.2	32.8	29.0	28.0	28.2	31.1	32.9	33.5	34.2	35.7			
		MCWB	24.2	24.3	24.3	23.8	21.8	21.1	20.3	20.7	22.1	23.7	23.2	23.7			
	5%	DB	34.8	33.9	33.0	31.0	26.9	26.0	26.2	29.1	30.1	31.4	32.9	34.2			
		MCWB	24.2	24.4	23.9	23.3	20.9	20.5	19.8	20.2	21.2	22.5	22.6	23.7			
	10%	DB	33.2	32.7	31.4	29.1	24.9	24.0	24.2	26.8	27.7	29.5	31.1	32.9			
		MCWB	24.2	24.2	23.4	22.4	20.1	19.6	19.0	19.4	20.0	21.6	22.1	23.5			
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB	27.2	27.3	26.7	26.2	24.0	22.8	22.5	22.9	24.4	26.0	26.3	27.0			
		MCDB	33.1	32.6	32.8	31.9	29.2	27.3	27.3	30.3	32.0	33.1	32.4	33.3			
	2%	WB	26.5	26.4	25.9	25.1	22.8	21.6	21.2	21.6	23.0	24.7	25.2	26.2			
		MCDB	32.4	32.0	31.9	30.3	27.1	26.3	26.2	29.0	30.3	31.7	31.2	32.4			
	5%	WB	25.9	25.7	25.2	24.3	21.7	20.8	20.3	20.7	21.8	23.6	24.4	25.5			
		MCDB	31.7	31.2	30.6	29.3	25.4	25.1	25.0	27.5	28.0	29.9	30.1	31.3			
	10%	WB	25.2	25.1	24.4	23.4	20.8	19.9	19.4	19.7	20.8	22.6	23.4	24.8			
		MCDB	30.8	30.3	29.5	27.8	24.0	23.4	23.8	25.8	26.2	27.9	28.7	30.2			

Mean Daily Temperature Range		MDBR	10.2	10.0	10.0	9.7	8.9	8.7	9.6	10.6	10.4	10.1	10.9	10.6
	5% DB	MCDBR	12.0	11.5	11.9	11.5	10.9	10.0	10.8	12.6	13.4	12.9	13.3	12.6
		MCWBR	4.4	4.2	4.6	4.9	5.2	5.0	5.4	5.7	6.0	6.0	5.7	5.0
	5% WB	MCDBR	10.0	9.8	10.1	10.2	9.0	9.2	10.1	11.5	11.4	11.2	10.8	10.4
		MCWBR	4.4	4.4	4.6	4.8	4.8	5.1	5.7	5.8	6.0	6.0	5.7	5.0
Clear Sky Solar Irradiance	taub		0.409	0.407	0.398	0.394	0.371	0.393	0.392	0.490	0.553	0.467	0.406	0.411
	taud		2.407	2.414	2.422	2.404	2.434	2.372	2.352	2.025	1.876	2.183	2.366	2.380
	Ebn at noon		935	920	897	850	823	774	791	741	742	855	932	935
	Edn at noon		127	122	115	107	94	96	101	154	196	153	131	130
All-Sky Solar Radiation	RadAvg		6.61	6.12	5.31	4.22	3.14	2.64	3.04	3.67	4.37	5.24	6.39	6.71
	RadStd		0.50	0.45	0.36	0.41	0.41	0.22	0.33	0.29	0.47	0.70	0.64	0.61
Historical Trends														
	DBAvg	Heating		Cooling			Degree-Days							
		99% DB	99% DP	1% DB	1% WB	1% DP	HDD10.0	HDD18.3	CDD10.0	CDD18.3				
	Station Only	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	+74		
Regional (0 neighbors)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	+74			

CDDn	Cooling degree-days base n°C, °C-day	Lat	Latitude, °		Period	Years used to calculate the design conditions	
CDHn	Cooling degree-hours base n°C, °C-hour	Long	Longitude, °		Sd	Standard deviation of daily average temperature, °C	
DB	Dry bulb temperature, °C	MCDB	Mean coincident dry bulb temperature, °C		StdP	Standard pressure at station elevation, kPa	
DP	Dew point temperature, °C	MCDBR	Mean coincident dry bulb temp. range, °C		taub	Clear sky optical depth for beam irradiance	
Ebn,noon	Clear sky beam normal and diffuse horizontal irradiances at solar noon, W/m2	MCDP	Mean coincident dew point temperature, °C		taud	Clear sky optical depth for diffuse irradiance	
Edh,noon		MCWB	Mean coincident wet bulb temperature, °C		Tavg	Average temperature, °C	
Elev	Elevation, m	MCWBR	Mean coincident wet bulb temp. range, °C		Time Zone	Hours ahead or behind UTC	
Enth	Enthalpy, kJ/kg	MCWS	Mean coincident wind speed, m/s		WB	Wet bulb temperature, °C	
HDDn	Heating degree-days base n°C, °C-day	MDBR	Mean dry bulb temp. range, °C		Hours 8/4 & 12.8/20.6	Number of hours between 8 a.m. and 4 p.m with DB between 12.8 and 20.6 °C	
PCWD	Prevailing coincident wind direction, °,0 = North, 90 = East	WS	Wind speed, m/s		HR	Humidity ratio, g of moisture per kg of dry air	