

2021 ASHRAE Handbook - Fundamentals (SI)																	
LA PLATA, ARGENTINA (WMO: 875930)																	
Lat: 34.9661S			Long: 57.8961W			Elev: 19		StdP: 101.10			Time zone: -3.00 (W03)			Period: 96-19		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	0.9	2.3	-2.1	3.2	5.0	-0.6	3.6	5.0	12.1	8.7	10.2	11.5	1.6	270	0.424		
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	9.7	31.9	22.8	30.5	22.4	29.2	22.1	24.8	29.1	24.0	28.1	23.3	27.3	3.8	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			
23.5	18.3	27.1	22.7	17.5	26.4	22.0	16.7	25.7	75.5	29.3	72.3	28.0	69.4	27.5	28.6		
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	Min	Max		
9.8	8.4	7.3	DB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
			WB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Monthly Climatic Design Conditions																	
			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Temperatures, Degree-Days and Degree-Hours	DBAvg	16.5	23.1	22.4	20.0	17.2	13.4	11.1	10.3	11.6	12.9	15.8	18.4	21.6			
	DBStd	5.58	2.97	3.20	3.20	3.69	3.51	3.36	3.63	3.56	3.23	3.39	3.38	3.48			
	HDD10.0	109	0	0	0	1	8	24	41	23	11	2	0	0			
	HDD18.3	1232	2	4	19	62	158	218	251	209	163	93	41	12			
	CDD10.0	2472	407	347	311	218	113	58	50	74	98	181	252	361			
	CDD18.3	552	151	119	72	29	5	1	1	2	2	14	42	114			
	CDH23.3	3869	1169	858	402	102	8	1	2	7	5	76	284	957			
	CDH26.7	1099	356	249	86	19	0	0	0	1	0	13	56	318			
Wind		WSAvg	3.2	3.3	3.3	3.0	2.9	2.8	2.9	3.2	3.3	3.7	3.7	3.4	3.2		
Precipitation	PrecAvg	1003	101	102	113	77	77	61	58	69	71	114	96	85			
	PrecMax	1575	260	295	300	180	257	153	186	212	205	326	336	194			
	PrecMin	582	19	17	14	4	0	1	8	0	4	13	14	15			
	PrecStd	241	64	79	68	49	70	47	32	51	50	70	69	55			
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB	33.9	32.8	30.9	29.1	24.7	22.0	22.5	24.1	23.8	28.3	30.4	33.6			
		MCWB	23.5	24.3	22.7	23.0	19.0	19.3	18.2	18.9	17.8	20.3	20.7	20.9			
	2%	DB	31.7	31.1	29.0	26.2	22.2	19.7	19.5	21.2	21.5	25.3	28.1	31.6			
		MCWB	23.3	23.6	21.9	21.1	18.2	17.4	16.7	17.0	16.0	19.0	20.1	21.5			
	5%	DB	30.1	29.7	27.2	24.1	20.2	18.0	17.3	19.1	19.9	23.1	26.4	30.0			
		MCWB	22.6	23.2	21.0	19.9	17.4	15.8	15.2	15.3	15.2	17.4	19.1	21.2			
	10%	DB	28.7	28.2	25.5	22.7	18.7	16.2	15.6	17.3	18.3	21.4	24.8	28.3			
		MCWB	22.3	22.5	20.7	19.4	16.5	14.1	13.7	14.1	14.2	17.0	18.6	20.8			
	Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB	25.6	26.0	25.3	23.8	20.1	20.0	18.3	19.6	19.6	21.6	22.4	24.7		
			MCDB	30.5	30.7	28.5	28.5	23.4	21.6	21.6	22.9	22.2	26.6	27.2	29.3		
		2%	WB	24.6	24.9	23.3	22.1	19.0	18.3	17.0	17.9	17.4	19.9	21.2	23.6		
			MCDB	29.2	29.2	26.4	24.9	21.4	19.5	19.1	20.7	19.9	23.6	26.4	28.3		
5%		WB	23.9	24.0	22.3	21.0	18.0	16.3	15.8	16.4	16.2	18.8	20.3	22.5			
		MCDB	28.2	27.9	25.5	23.2	19.7	17.6	17.2	18.2	18.4	21.7	24.7	27.4			
10%		WB	23.2	23.1	21.4	20.1	17.0	14.9	14.1	14.9	15.1	17.8	19.5	21.7			
		MCDB	27.4	26.8	24.6	22.1	18.5	15.8	15.3	16.7	17.4	20.6	23.4	26.2			

Mean Daily Temperature Range		MDBR	9.7	9.4	9.6	8.8	8.2	7.9	7.5	8.5	8.8	9.0	9.9	10.8
	5% DB	MCDBR	11.3	10.2	10.9	9.6	8.8	8.1	8.1	10.3	10.4	11.0	11.9	12.4
		MCWBR	4.9	4.4	4.5	4.9	5.0	5.7	5.6	6.1	6.0	5.7	5.5	4.9
	5% WB	MCDBR	9.7	9.4	9.1	8.0	7.3	7.0	7.5	9.4	8.4	9.1	10.2	10.8
		MCWBR	4.9	4.8	4.9	4.5	4.6	5.8	5.8	6.6	6.0	5.7	5.5	4.9
Clear Sky Solar Irradiance	taub		0.410	0.398	0.380	0.377	0.371	0.360	0.358	0.428	0.451	0.422	0.399	0.396
	taud		2.360	2.411	2.445	2.395	2.377	2.412	2.392	2.147	2.095	2.244	2.339	2.373
	Ebn at noon		927	916	895	833	775	757	782	762	806	883	931	944
	Edn at noon		131	120	108	101	90	82	87	127	150	140	133	130
All-Sky Solar Radiation	RadAvg		7.18	6.25	5.19	3.79	2.64	2.22	2.31	3.12	4.30	5.50	6.70	7.49
	RadStd		0.40	0.56	0.46	0.41	0.21	0.21	0.25	0.31	0.29	0.52	0.46	0.36
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				
Regional (0 neighbors)	+0.32	N/A	N/A	+0.65	+0.38	N/A	N/A	N/A	N/A	+106	+57			

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