

2021 ASHRAE Handbook - Fundamentals (SI)																	
VIEDMA, ARGENTINA (WMO: 877910)																	
Lat:40.8633S			Long:63.0069W			Elev:7		StdP: 101.24			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	-2.7	-1.3	-8.1	1.9	9.9	-6.3	2.2	8.8	16.0	11.6	13.9	10.1	2.6	320	0.636		
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	13.5	34.4	19.1	32.4	18.3	30.6	17.8	21.5	28.8	20.5	27.8	19.6	26.7	7.8	320		
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			
19.3	14.1	23.9	18.2	13.1	22.9	17.2	12.3	22.3	62.5	28.9	59.1	27.4	56.0	26.8	27.6		
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		
14.1	12.5	11.2	DB	-5.2	38.3	1.3	1.2	-6.2	39.2	-6.9	39.9	-7.7	40.6	-8.6	41.5		
			WB	-5.8	23.6	1.4	1.6	-6.7	24.7	-7.5	25.6	-8.3	26.5	-9.3	27.6		
Monthly Climatic Design Conditions																	
			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Temperatures, Degree-Days and Degree-Hours	DBAvg	14.4	21.7	20.8	18.7	14.4	10.7	8.1	7.5	9.0	10.8	14.1	17.2	20.0			
	DBStd	6.13	3.53	3.99	4.00	3.59	3.24	2.86	3.21	3.36	3.60	3.83	4.00	3.81			
	HDD10.0	294	0	0	0	3	30	71	91	59	31	7	1	0			
	HDD18.3	1828	9	19	46	128	237	307	335	288	227	141	67	26			
	CDD10.0	1902	364	303	271	135	52	14	14	30	56	135	218	310			
	CDD18.3	394	115	89	58	9	1	0	0	0	2	9	33	77			
	CDH23.3	4360	1258	916	542	89	5	0	0	1	26	148	466	909			
	CDH26.7	1704	538	384	191	16	1	0	0	0	3	40	172	360			
Wind		WSAvg	5.2	6.1	5.7	5.2	4.7	4.4	4.8	4.9	4.9	5.2	5.4	5.6	5.9		
Precipitation	PrecAvg	363	23	43	47	35	32	24	28	25	26	30	24	26			
	PrecMax	606	115	187	177	105	96	166	119	116	102	80	83	92			
	PrecMin	196	0	0	1	0	0	0	0	0	0	1	0	0			
	PrecStd	103	24	39	43	26	21	26	26	28	24	23	19	26			
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB	37.2	36.4	34.0	28.8	23.5	18.7	19.5	22.4	26.7	30.9	34.7	36.0			
		MCWB	19.5	19.3	19.6	17.4	15.5	11.1	12.0	12.7	14.7	16.9	18.3	18.9			
	2%	DB	34.2	33.4	31.1	25.7	20.7	16.4	17.0	19.4	22.9	27.0	30.9	33.0			
		MCWB	18.9	19.3	19.1	15.8	14.1	10.6	10.8	11.5	13.0	14.6	16.7	18.2			
	5%	DB	31.9	31.1	28.7	23.6	18.4	14.7	15.1	17.4	20.3	24.3	28.2	30.8			
		MCWB	18.2	18.4	18.0	14.8	12.7	9.9	9.6	10.3	11.4	13.5	15.5	17.3			
	10%	DB	29.7	28.9	26.2	21.3	16.6	13.2	13.5	15.5	18.2	21.9	25.8	28.4			
		MCWB	17.4	18.0	17.0	13.9	11.8	9.5	8.8	9.4	10.7	12.7	14.5	16.5			
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB	22.7	23.0	22.2	19.5	17.3	13.2	14.0	14.6	16.4	18.2	20.2	21.4			
		MCDB	30.9	30.2	29.4	24.5	21.3	15.8	16.9	19.6	23.3	25.5	30.0	31.2			
	2%	WB	21.1	21.6	20.5	17.7	15.2	12.1	11.9	12.5	14.2	16.1	18.2	19.8			
		MCDB	28.7	27.9	27.7	23.2	18.4	14.1	15.0	17.4	20.0	23.1	26.6	28.8			
	5%	WB	20.0	20.6	19.5	16.1	13.8	11.0	10.6	11.2	12.6	14.8	16.9	18.7			
		MCDB	27.4	27.0	25.7	21.5	17.4	13.6	14.1	15.7	18.4	21.9	25.1	26.9			
	10%	WB	18.9	19.5	18.3	14.8	12.5	10.0	9.3	10.1	11.4	13.6	15.6	17.6			
		MCDB	26.5	26.0	23.9	19.8	15.9	12.8	12.9	14.4	16.9	20.2	23.4	26.1			

Mean Daily Temperature Range		MDBR	13.5	12.8	12.3	12.0	10.4	10.0	10.7	11.3	12.1	12.7	13.5	13.7
	5% DB	MCDBR	17.5	16.4	15.3	14.9	12.8	11.9	12.6	13.7	15.8	16.8	17.4	17.6
		MCWBR	6.0	6.0	6.3	7.3	7.3	7.3	7.6	7.6	7.8	7.6	6.6	6.3
	5% WB	MCDBR	13.7	12.8	13.0	12.4	10.5	9.4	10.6	11.7	13.3	14.2	14.7	14.8
		MCWBR	6.1	5.7	6.4	7.1	6.6	6.5	7.2	7.0	7.8	7.6	6.6	6.3
Clear Sky Solar Irradiance	taub		0.388	0.376	0.358	0.342	0.327	0.314	0.320	0.342	0.371	0.360	0.367	0.380
	taud		2.354	2.400	2.455	2.470	2.479	2.505	2.474	2.407	2.316	2.384	2.383	2.367
	Ebn at noon		939	924	897	841	784	764	783	825	866	930	954	953
	Edn at noon		129	118	102	86	73	65	72	90	115	118	125	129
All-Sky Solar Radiation	RadAvg		7.85	6.62	5.11	3.50	2.18	1.74	1.95	2.78	4.16	5.70	7.18	8.01
	RadStd		0.32	0.28	0.24	0.22	0.16	0.12	0.16	0.27	0.30	0.35	0.34	0.43
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		+0.28	N/A	N/A	+0.60	+0.66	+0.56	N/A	N/A	N/A	N/A			
Regional (0 neighbors)		+0.28	N/A	N/A	+0.60	+0.66	+0.56	N/A	N/A	N/A	N/A			

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