

2021 ASHRAE Handbook - Fundamentals (SI)																	
VILLA REYNOLDS, ARGENTINA (WMO: 874480)																	
Lat:33.7181S			Long:65.3736W			Elev:486		StdP: 95.62			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	-4.8	-2.8	-8.8	1.9	2.7	-7.0	2.2	3.1	12.1	16.5	10.2	15.1	1.1	340	0.492		
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	14.1	35.9	21.6	34.3	21.3	32.9	20.9	24.3	31.5	23.4	30.6	22.5	29.5	6.0	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			
22.4	18.1	27.6	21.3	17.0	26.6	20.4	16.0	25.7	76.6	31.8	72.6	30.6	69.0	29.6	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		
11.9	10.0	8.7	DB	-8.2	39.5	1.7	1.6	-9.5	40.6	-10.5	41.5	-11.5	42.4	-12.7	43.6		
			WB	-8.7	26.1	1.6	1.3	-9.9	27.0	-10.8	27.7	-11.8	28.5	-12.9	29.4		
Monthly Climatic Design Conditions																	
			Annual	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Temperatures, Degree-Days and Degree-Hours	DBAvg	16.3	23.6	22.2	19.9	16.1	12.7	9.2	8.4	10.7	13.6	17.0	19.9	22.5			
	DBStd	6.34	3.06	3.46	3.51	3.78	3.63	3.22	3.79	4.35	4.34	3.94	3.66	3.42			
	HDD10.0	204	0	0	0	3	14	52	76	43	15	2	0	0			
	HDD18.3	1379	2	8	25	86	179	275	310	239	151	73	24	6			
	CDD10.0	2493	421	342	307	185	97	27	25	66	123	218	296	387			
	CDD18.3	625	165	116	73	18	4	0	1	3	9	32	70	134			
	CDH23.3	7963	1896	1246	823	277	74	7	19	111	271	562	1002	1675			
	CDH26.7	3513	936	571	329	71	15	0	3	36	87	215	438	813			
Wind		WSAvg	3.4	3.6	3.5	3.1	2.9	2.6	2.5	2.7	3.3	3.9	4.5	4.4	4.1		
Precipitation	PrecAvg	708	110	100	90	56	29	12	14	17	33	66	89	111			
	PrecMax	1130	222	450	239	184	184	81	202	111	109	230	285	331			
	PrecMin	410	35	14	0	0	0	0	0	0	0	1	8	20			
	PrecStd	179	48	76	57	42	33	16	28	23	30	50	55	64			
Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB	38.2	36.9	34.2	31.2	28.8	24.2	25.6	31.0	32.1	34.8	35.8	37.6			
		MCWB	22.6	22.3	22.1	19.9	18.4	15.5	15.2	16.4	17.6	19.4	19.8	21.5			
	2%	DB	35.7	34.4	32.2	28.7	25.2	21.1	22.3	26.2	29.2	31.7	33.5	35.7			
		MCWB	22.3	22.5	21.2	18.6	17.1	13.4	13.1	14.9	15.8	18.0	19.7	21.3			
	5%	DB	33.8	32.5	30.5	26.8	22.8	19.0	19.6	23.4	26.6	28.9	31.4	33.8			
		MCWB	21.7	21.9	20.7	17.8	15.4	12.2	11.7	13.2	14.7	17.0	19.0	20.9			
	10%	DB	31.8	30.3	28.5	24.4	20.2	16.7	16.9	20.4	23.8	26.4	29.2	31.5			
		MCWB	21.4	21.5	20.0	17.2	14.4	10.9	10.2	12.0	13.8	16.2	18.2	20.2			
Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB	25.2	25.9	24.6	22.2	19.4	16.5	17.1	18.4	19.1	21.7	22.4	24.7			
		MCDB	32.2	32.0	31.5	27.0	25.1	22.2	23.5	28.4	29.5	29.5	31.1	32.5			
	2%	WB	24.1	24.3	23.0	20.2	18.1	14.3	14.3	15.8	17.2	19.7	21.1	23.4			
		MCDB	31.7	30.6	29.2	25.2	24.5	19.5	19.5	24.1	25.1	27.9	30.3	31.4			
	5%	WB	23.1	23.2	21.7	19.1	16.6	12.9	12.5	14.1	15.7	18.5	20.0	22.2			
		MCDB	30.9	29.6	27.6	23.8	21.1	17.3	17.5	21.5	24.1	26.2	28.6	30.0			
	10%	WB	22.2	22.2	20.7	18.0	15.0	11.7	11.1	12.5	14.5	17.2	19.0	21.1			
		MCDB	29.6	28.4	26.5	23.0	18.6	15.6	15.9	19.2	22.2	24.2	27.1	29.1			

Mean Daily Temperature Range		MDBR	14.1	13.7	13.6	13.4	13.4	14.5	15.5	16.1	16.5	14.6	14.7	14.6
	5% DB	MCDBR	17.8	17.6	17.4	18.3	17.5	18.7	20.7	21.1	21.6	19.9	18.9	18.6
		MCWBR	7.0	7.3	7.7	9.2	9.8	11.4	12.2	11.3	10.6	8.9	8.1	7.4
	5% WB	MCDBR	14.6	14.2	14.1	13.4	14.6	16.4	17.3	18.7	17.9	16.2	16.0	14.8
		MCWBR	6.9	7.0	7.0	7.5	8.5	10.3	10.9	10.5	10.6	8.9	8.1	7.4
Clear Sky Solar Irradiance	taub		0.381	0.377	0.363	0.352	0.327	0.310	0.319	0.349	0.397	0.383	0.375	0.380
	taud		2.394	2.408	2.447	2.448	2.464	2.515	2.444	2.345	2.204	2.307	2.361	2.377
	Ebn at noon		956	939	915	867	836	830	835	854	863	922	956	961
	Edn at noon		127	121	108	96	84	74	84	104	135	132	130	130
All-Sky Solar Radiation	RadAvg		7.48	6.49	5.33	3.91	2.85	2.68	2.88	3.80	4.95	5.99	7.14	7.68
	RadStd		0.42	0.47	0.48	0.45	0.33	0.26	0.21	0.31	0.42	0.57	0.45	0.47
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)		N/A	N/A	N/A	+0.56	+0.62	+0.78	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