

Canberra climate summary. Page 1 of 6

Statistics for AUS_ACT.Canberra.949260_IWEC
 Location -- CANBERRA - AUS
 {S 35° 17'} {E 149° 10'} {GMT +10.0 Hours}
 Elevation -- 577m above sea level
 Standard Pressure at Elevation -- 94583Pa
 Data Source -- IWEC Data

WMO Station 949260

- Using Design Conditions from "Climate Design Data 2009 ASHRAE Handbook"

- If the design condition source is ASHRAE, the design conditions are carefully generated
 - from a period of record (typically 30 years) to be representative of that location and
 - be suitable for use in heating/cooling load calculations. If the source is not ASHRAE,
 - please consult the referenced source for the reasoning behind the data.

Design Stat	ColdestMonth	DB996	DB990	DP996	HR_DP996	DB_DP996	DP990	HR_DP990	DB_DP990	WS004c	DB_WS004c	WS010c	DB_WS010c	WS_DB996	WD_DB996
Units	{}	{°C}	{°C}	{°C}	{}	{°C}	{°C}	{}	{°C}	{m/s}	{°C}	{m/s}	{°C}	{m/s}	{deg}
Heating	7	-3.3	-2.1	-6	2.4	6.1	-4.7	2.7	4.1	12.3	8.9	11	8.7	0.4	350

Design Stat	HottestMonth	DBR	DB004	WB_DB004	DB010	WB_DB010	DB020	WB_DB020	WB004	DB_WB004	WB010	DB_WB010	WB020	DB_WB020	WS_DB004	WD_DB004	DP004	HR_DP004	
DB_DP004	DP010	HR_DP010	DB_DP010	DP020	HR_DP020	WB_DP020	EN004	WB_EN004	EN010	DB_EN010	EN020	DB_EN020	#Hrs_8-4_&_DB-12.8/20.6						
Units	{}	{°C}	{°C}	{°C}	{°C}	{°C}	{°C}	{°C}	{°C}	{°C}	{°C}	{°C}	{°C}	{°C}	{m/s}	{deg}	{°C}	{}	{°C}
{°C}	{}	{°C}	{°C}	{}	{°C}	{°C}	{°C}	{kJ/kg}	{°C}	{kJ/kg}	{°C}	{}							
Cooling	1	13.3	33.2	17.8	31.2	17.1	29.1	16.7	20	27.1	19	26.2	18.3	25.3	5.7	300	18	13.9	21.9
16.9	12.9	21.2	16	12.2	20.5	59.8	26.9	56.5	26.2	53.9	25.3	1326							

Design Stat	WS010	WS025	WS050	WBmax	DBmin_mean	DBmax_mean	DBmin_stddev	DBmax_stddev	DBmin05years	DBmax05years	DBmin10years	DBmax10years
DBmin20years		DBmax20years		DBmin50years	DBmax50years							
Units	{m/s}	{m/s}	{m/s}	{°C}	{°C}	{°C}	{°C}	{°C}	{°C}	{°C}	{°C}	{°C}
Extremes	10.6	9.5	8.5	25.2	-5.3	36.6	1.4	2.1	-6.3	38.1	-7.1	39.3
									-7.8	40.5	-8.8	42

- Monthly Statistics for Dry Bulb temperatures °C

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maximum	36.3	35.9	29.2	25.1	21.8	25.8	15.6	16.7	22.9	26.6	32.8	29.8
Day:Hour	31:15	4:15	14:15	12:15	2:15	8:21	2:15	3:15	2:15	14:15	3:13	26:15
Minimum	7.4	7.1	4.9	0.1	-2.6	-4.1	-3.9	-3.0	-6.8	-1.0	4.4	6.3
Day:Hour	14:06	28:06	19:06	20:06	16:06	23:06	15:06	23:06	10:06	18:06	6:06	24:06
Daily Avg	20.3	19.2	16.5	13.2	9.2	7.0	5.8	6.9	9.4	12.1	16.0	17.6

- Maximum Dry Bulb temperature of 36.3°C on Jan 31
 - Minimum Dry Bulb temperature of -6.8°C on Sep 10

Canberra climate summary. Page 2 of 6

- Average Hourly Statistics for Dry Bulb temperatures °C

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0:01- 1:00	17.5	16.5	13.6	10.4	6.6	4.9	4.1	5.0	6.3	8.8	13.2	15.0
1:01- 2:00	16.8	15.8	13.0	9.9	6.1	4.4	3.9	4.8	5.8	8.1	12.7	14.3
2:01- 3:00	16.0	15.2	12.6	9.4	5.6	4.0	3.8	4.6	5.2	7.5	12.3	13.6
3:01- 4:00	15.5	14.8	12.2	9.2	5.3	4.0	3.6	4.4	5.0	7.2	12.1	13.4
4:01- 5:00	15.0	14.3	11.8	9.0	4.9	4.0	3.4	4.2	4.7	7.0	11.8	13.0
5:01- 6:00	14.5	13.9	11.5	8.8	4.6	4.1	3.3	4.0	4.4	6.7	11.5	12.6
6:01- 7:00	15.8	14.9	12.4	10.3	5.6	4.8	3.7	4.9	6.1	8.7	13.1	14.1
7:01- 8:00	17.2	15.9	13.4	11.8	6.5	5.5	4.1	5.7	7.8	10.7	14.1	15.6
8:01- 9:00	18.2	16.9	14.4	13.2	7.4	6.1	4.5	6.5	9.5	12.8	15.1	17.1
9:01-10:00	20.1	18.8	16.2	14.6	9.4	7.4	6.0	7.7	11.0	14.2	16.4	18.3
10:01-11:00	22.1	20.8	18.0	16.1	11.5	8.7	7.4	8.8	12.4	15.4	18.0	19.7
11:01-12:00	24.2	22.7	19.8	17.6	13.5	10.0	8.9	10.0	13.8	16.6	19.9	21.2
12:01-13:00	25.0	23.6	20.7	17.5	13.9	10.4	9.2	10.2	14.2	17.0	20.7	21.6
13:01-14:00	25.8	24.4	21.6	17.6	14.4	10.8	9.5	10.3	14.7	17.3	21.0	22.1
14:01-15:00	26.8	25.2	22.6	17.7	14.9	11.1	9.7	10.5	14.9	17.7	21.3	22.5
15:01-16:00	25.8	24.8	22.1	16.9	13.7	10.3	8.8	9.8	13.9	16.6	20.5	21.7
16:01-17:00	24.8	24.4	21.6	16.0	12.5	9.4	7.8	9.0	12.9	15.6	19.4	20.9
17:01-18:00	23.8	23.9	21.1	15.2	11.3	8.6	6.8	8.3	11.7	14.5	18.3	20.1
18:01-19:00	22.8	22.3	19.5	14.3	10.5	7.9	6.1	7.7	10.6	13.5	17.1	19.3
19:01-20:00	21.8	20.8	17.9	13.5	9.7	7.3	5.5	7.1	9.5	12.5	16.3	18.6
20:01-21:00	20.8	19.2	16.4	12.6	8.9	6.6	4.9	6.4	8.4	11.4	15.9	17.8
21:01-22:00	20.1	18.4	15.6	11.9	8.3	6.2	4.7	6.0	7.9	10.8	15.3	17.1
22:01-23:00	19.3	17.6	14.8	11.4	7.7	5.7	4.5	5.6	7.3	10.2	14.6	16.5
23:01-24:00	18.4	16.7	14.0	10.8	7.0	5.2	4.3	5.2	6.7	9.6	13.9	15.8
Max Hour	15	15	15	15	15	15	15	15	15	15	15	15
Min Hour	6	6	6	6	6	3	6	6	6	6	6	6

- Monthly Statistics for Extreme temperatures °C

#Days	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max >= 32	7	4									1	
Max <= 0												
Min <= 0					7	8	8	6	5	1		
Min <=-18												

- Monthly Statistics for Dew Point temperatures °C

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maximum	19.3	19.4	15.9	15.0	10.0	13.8	9.4	8.6	10.4	13.9	16.6	18.1
Day:Hour	2:12	2:18	4:18	14:21	2:24	9:03	2:03	2:20	27:15	14:21	4:21	8:09
Minimum	-11.5	-0.9	-8.7	-1.4	-6.9	-6.3	-5.2	-7.2	-11.0	-5.1	2.3	-0.4
Day:Hour	12:15	26:18	20:18	18:12	25:21	21:11	19:06	23:15	11:13	17:08	16:03	20:15
Daily Avg	7.5	12.1	9.0	8.5	3.0	3.3	2.5	2.2	1.4	5.7	8.9	9.4

- Maximum Dew Point temperature of 19.4°C on Feb 2

- Minimum Dew Point temperature of -11.5°C on Jan 12

- Monthly Statistics for Relative Humidity %

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maximum	96	98	97	100	98	100	100	100	96	98	99	100
Day:Hour	8:06	11:06	29:06	13:05	17:06	3:06	1:04	19:06	27:06	1:06	13:06	5:03
Minimum	6	15	16	34	22	35	42	26	16	19	23	16
Day:Hour	8:15	26:17	20:18	19:15	25:12	21:12	21:15	23:15	11:13	15:15	3:13	20:15
Daily Avg	50	67	65	75	68	79	80	73	61	68	66	62

Canberra climate summary. Page 3 of 6

- Average Hourly Relative Humidity %

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0:01- 1:00	61	79	80	87	78	87	88	81	74	80	79	72
1:01- 2:00	64	81	82	88	79	88	89	82	76	82	82	76
2:01- 3:00	68	84	82	90	80	89	90	83	79	85	84	80
3:01- 4:00	69	85	83	90	81	89	91	83	79	85	84	80
4:01- 5:00	71	86	84	90	82	89	91	84	79	86	85	81
5:01- 6:00	73	87	85	90	82	88	91	84	79	86	85	83
6:01- 7:00	67	84	81	86	81	87	89	81	72	78	78	77
7:01- 8:00	63	81	77	82	80	85	87	78	67	71	74	71
8:01- 9:00	59	77	73	78	79	84	85	76	62	65	70	66
9:01-10:00	50	68	64	70	69	77	79	70	53	59	64	60
10:01-11:00	43	59	57	62	61	72	74	65	46	55	56	54
11:01-12:00	36	52	50	56	53	67	69	61	40	52	49	48
12:01-13:00	32	50	46	56	51	65	66	60	40	50	46	46
13:01-14:00	29	48	42	56	49	64	63	59	40	48	44	45
14:01-15:00	26	46	39	56	47	63	61	58	41	47	43	43
15:01-16:00	28	46	40	60	51	66	66	61	43	50	46	45
16:01-17:00	32	47	42	63	55	69	72	64	46	54	51	48
17:01-18:00	35	48	44	67	59	74	78	68	50	58	56	51
18:01-19:00	39	54	50	71	62	76	80	70	55	63	62	54
19:01-20:00	43	60	58	75	65	79	82	73	59	67	66	57
20:01-21:00	49	66	66	80	69	82	84	76	65	72	69	60
21:01-22:00	51	70	70	82	71	83	84	78	67	74	71	63
22:01-23:00	54	73	74	84	74	84	85	79	69	76	73	66
23:01-24:00	57	77	79	85	76	86	86	81	71	78	76	69
Max Hour	6	6	6	4	6	3	6	6	3	6	6	6
Min Hour	15	15	15	12	15	15	15	15	14	15	15	15

- Monthly Indicators for Precipitation/Moisture (kPa)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	0.8	1.4	1.0	1.1	0.8	0.8	0.7	0.7	0.7	0.9	1.0	1.1

- Monthly Statistics for Wind Chill/Heat Index temperatures °C **

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Minimum WC		2	4	-4	-2	-8	-8	-8	-8	-9	1	10
Day:Hour		22:06	21:03	18:06	26:03	21:09	10:18	25:24	30:06	17:12	16:09	24:07
Average WC		4	7	3	4	2	0	0	1	2	4	10
Avg Del WC		4	1	5	5	5	6	7	5	5	5	-1
# Hours WC		7	26	61	95	221	353	459	221	70	25	1
Maximum HI	28	33										27
Day:Hour	7:16	3:16										8:15
Average HI	27	30										27
Avg Del HI	0	0										0
# Hours HI	2	40										1

- **WindChill/HeatIndex Temps -- statistics...only those different from Air Temps

- Monthly Wind Direction % {N=0 or 360,E=90,S=180,W=270}

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
North	36	52	25	52	52	51	51	31	32	45	46	43
NorthEast	7	4	5	3	4	2	4	1	4	8	9	7
East	13	12	16	8	1	2	2	0	5	7	4	3
SouthEast	5	4	19	11	2	3	2	1	9	4	4	2
South	3	3	7	6	3	9	7	13	9	1	10	1
SouthWest	2	1	1	1	0	0	1	1	2	0	2	2
West	15	5	7	5	11	3	1	9	10	8	2	6
NorthWest	19	19	20	13	27	31	32	46	29	26	23	36

Canberra climate summary. Page 4 of 6

- Monthly Statistics for Wind Speed m/s

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maximum	13.3	11.3	12.9	11.3	13.9	10.3	13.9	13.4	12.9	11.3	9.8	15.4
Day:Hour	10:15	22:15	16:15	18:15	27:06	21:12	29:09	5:15	3:12	9:15	3:12	9:10
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Day:Hour	1:06	1:01	1:06	1:01	1:01	1:01	1:01	3:03	1:21	1:03	1:06	2:03
Daily Avg	3.2	2.0	3.1	1.8	2.5	2.4	3.2	4.4	4.0	2.8	2.5	2.6

- Maximum Wind Speed of 15.4 m/s on Dec 9

- Minimum Wind Speed of 0.0 m/s on Jan 1

- Monthly Statistics for Solar Radiation (Direct Normal, Diffuse, Global Horizontal) Wh/m²

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Direct Avg	7285	5919	5782	3997	3371	2829	2892	3986	4437	5525	6187	6116
Direct Max	9991	9555	9287	7385	6349	5451	6096	7610	7626	9917	10743	11412
Day	5	7	6	20	2	21	30	28	24	31	13	20
Diffuse Avg	2379	2325	1917	1706	1165	1045	1110	1346	1803	2225	2640	2965
Global Avg	7826	6447	5508	3862	2709	2220	2354	3338	4546	5919	7051	7221

- Maximum Direct Normal Solar of 11412 Wh/m² on Dec 20

- Average Hourly Statistics for Direct Normal Solar Radiation Wh/m²

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0:01- 1:00	0	0	0	0	0	0	0	0	0	0	0	0
1:01- 2:00	0	0	0	0	0	0	0	0	0	0	0	0
2:01- 3:00	0	0	0	0	0	0	0	0	0	0	0	0
3:01- 4:00	0	0	0	0	0	0	0	0	0	0	0	0
4:01- 5:00	0	0	0	0	0	0	0	0	0	0	0	0
5:01- 6:00	4	0	0	0	0	0	0	0	0	6	83	137
6:01- 7:00	217	111	62	0	0	0	0	0	18	195	282	366
7:01- 8:00	434	325	271	212	79	7	19	157	193	424	434	485
8:01- 9:00	573	446	501	360	235	152	158	330	353	521	500	518
9:01-10:00	673	545	593	456	376	327	323	445	472	551	571	525
10:01-11:00	715	591	614	483	437	389	383	508	535	560	613	534
11:01-12:00	749	599	602	463	461	422	407	510	584	546	655	520
12:01-13:00	781	602	613	491	478	426	418	501	584	561	613	499
13:01-14:00	767	584	615	470	463	422	408	467	559	566	581	500
14:01-15:00	703	557	604	406	426	364	375	412	488	542	534	479
15:01-16:00	648	602	578	392	331	274	304	396	411	501	523	509
16:01-17:00	568	561	488	261	85	45	98	260	238	396	450	489
17:01-18:00	363	366	241	4	0	0	0	0	3	155	322	400
18:01-19:00	90	32	0	0	0	0	0	0	0	0	25	155
19:01-20:00	0	0	0	0	0	0	0	0	0	0	0	0
20:01-21:00	0	0	0	0	0	0	0	0	0	0	0	0
21:01-22:00	0	0	0	0	0	0	0	0	0	0	0	0
22:01-23:00	0	0	0	0	0	0	0	0	0	0	0	0
23:01-24:00	0	0	0	0	0	0	0	0	0	0	0	0
Max Hour*	13	16*	14	13	13	13	13	12	12	14	12	11*
Min Hour	1	1	1	1	1	1	1	1	1	1	1	1

- Monthly Calculated "undisturbed" Ground Temperatures** °C

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.5 m	13.4	16.6	18.7	19.3	18.3	15.6	12.3	9.0	6.8	6.2	7.4	9.9
2.0 m	12.0	14.6	16.5	17.4	17.4	15.9	13.6	11.1	8.9	7.9	8.2	9.6
4.0 m	11.5	13.2	14.7	15.6	16.1	15.5	14.1	12.4	10.7	9.7	9.4	10.1

- **These ground temperatures should NOT BE USED in the GroundTemperatures object to compute building floor losses.

- The temperatures for 0.5 m depth can be used for GroundTemperatures:Surface.

- The temperatures for 4.0 m depth can be used for GroundTemperatures:Deep.

- Calculations use a standard soil diffusivity of 2.3225760E-03 {m**2/day}

Canberra climate summary. Page 5 of 6

- Monthly Heating/Cooling Degree Days/Hours

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
HDD base 10C		0	0	0	8	45	105	134	98	42	12	1	0
HDD base 18C		16	22	52	145	274	331	379	343	259	183	76	40
CDD base 10C		321	259	202	103	19	14	3	3	23	77	181	235
CDD base 18C		88	57	6	0	0	0	0	0	0	0	17	27
CDH base 20C		1813	1279	497	94	4	14	0	0	11	103	535	632
CDH base 23C		991	642	137	8	0	4	0	0	0	16	229	197
CDH base 27C		370	224	5	0	0	0	0	0	0	0	46	10

- 1441 annual cooling degree-days (10°C baseline)

- 446 annual heating degree-days (10°C baseline)

- 195 annual cooling degree-days (18°C baseline)

- 2120 annual heating degree-days (18°C baseline)

- Climate type "Cfb" (Köppen classification)**

- Marine west coastal (warm summer, mild winter, rain all year, lat. 35-60°S)

- **Note that the Köppen classification shown here is derived algorithmically from the source weather data.

- It may not be indicative of the long term climate for this location.

- Climate type "4A" (ASHRAE Standards 90.1-2004 and 90.2-2004 Climate Zone)**

- Mixed - Humid, Probable Köppen classification=Cfa/Dfa, Humid Subtropical/Humid Continental (Warm Summer)

- **Note that the ASHRAE classification shown here is derived algorithmically from the source weather data.

- It may not be indicative of the long term climate for this location.

- Typical/Extreme Period Determination

- Summer is Dec:Feb

Extreme Summer Week (nearest maximum temperature for summer)

Extreme Hot Week Period selected: Jan 27:Feb 2, Maximum Temp= 36.30°C, Deviation=|12.498|°C

Typical Summer Week (nearest average temperature for summer)

Typical Week Period selected: Dec 15:Dec 21, Average Temp= 19.05°C, Deviation=| 0.019|°C

- Winter is Jun:Aug

Extreme Winter Week (nearest minimum temperature for winter)

Extreme Cold Week Period selected: Jul 13:Jul 19, Minimum Temp= -4.10°C, Deviation=| 7.381|°C

Typical Winter Week (nearest average temperature for winter)

Typical Week Period selected: Aug 10:Aug 16, Average Temp= 6.56°C, Deviation=| 0.087|°C

- Autumn is Mar:May

Typical Autumn Week (nearest average temperature for autumn)

Typical Week Period selected: Apr 12:Apr 18, Average Temp= 12.94°C, Deviation=| 0.241|°C

- Spring is Sep:Nov

Typical Spring Week (nearest average temperature for spring)

Typical Week Period selected: Oct 6:Oct 12, Average Temp= 12.50°C, Deviation=| 0.563|°C

