

Australian Solar Radiation Figures

Australian Solar Radiation Figures			Best Average Performance			Seasonally Adjusted			Sun Tracking	
Location	Longitude	Latitude	Tilt	Peak Sun Hrs / Day		Tilt	Peak Sun Hrs / Day		Peak Sun Hrs / Day	
			Angle	Best Month	Worst Month	Angle	Best Month	Worst Month	Best Month	Worst Month
Darwin NT	12°25'S	130°52'E	20°	Aug=7.22	Jan=5.03	15°→50°	Aug=7.64	Jan=5.21	Aug=9.64	Feb=7.56
Cairns Qld	16°54'S	145°48'E	20°	Oct=6.14	May=4.39	15°→50°	Oct=6.14	May=4.69	Dec=8.36	May=5.47
Halls Creek WA	18°14'S	127°40'E	25°	Sep=7.30	Dec=5.99	15°→50°	Jul=7.81	Jan=6.43	Nov=9.94	Feb=8.94
Townsville Qld	19°18'S	146°48'E	25°	Sep=6.47	Jun=4.94	15°→50°	Sep=6.53	May=5.25	Dec=8.97	May=6.19
Tennant Creek NT	19°36'S	134°06'E	25°	Sep=7.03	Jan=5.64	15°→50°	Sep=7.03	Feb=6.25	Dec=9.47	Jun=7.58
Port Hedland WA	20°23'S	118°37'E	25°	Oct=7.61	Jun=5.72	15°→50°	Nov=7.73	Jun=6.47	Nov=11.28	May=8.00
Rockhampton Qld	23°23'S	150°29'E	30°	Oct=6.28	Jun=5.36	15°→50°	Nov=6.59	May=5.81	Nov=9.08	May=6.97
Longreach Qld	23°26'S	144°16'E	30°	Sep=7.25	Jun=6.17	15°→50°	Nov=7.55	May=6.58	Nov=10.81	May=7.94
Alice Springs NT	23°49'S	133°54'E	30°	Mar=7.39	Jun=6.22	15°→50°	Jan=7.43	May=6.64	Jan=10.64	Jun=8.03
Brisbane Qld	27°25'S	153°05'E	30°	Jan=6.22	May=4.50	15°→50°	Jan=6.61	May=4.81	Jan=8.50	May=5.50
Oodnadatta NT	27°34'S	135°25'E	30°	Mar=7.53	Jun=5.42	15°→60°	Dec=8.09	Jun=6.06	Dec=11.50	Jun=7.06
Geraldton WA	28°48'S	114°47'E	30°	Dec=7.64	Jun=4.81	15°→60°	Dec=8.27	Jun=5.36	Dec=11.75	Jun=6.19
Kalgoorlie WA	30°47'S	121°30'E	30°	Dec=7.19	Jul=3.61	15°→60°	Dec=7.74	Aug=3.94	Dec=11.06	Jul=5.14
Forrest WA	30°50'S	128°07'E	30°	Jan=7.47	Jun=4.81	15°→60°	Dec=7.99	Jun=5.50	Dec=11.42	Jun=6.36
Perth WA	31°56'S	115°58'E	30°	Jan=7.61	Jun=3.86	15°→60°	Dec=8.06	Jun=4.39	Dec=11.47	Jun=5.03
Williamtown NSW	32°48'S	151°50'E	35°	Jan=6.03	Jun=3.95	15°→60°	Dec=6.96	Jun=4.31	Dec=9.47	Jun=5.14
Sydney NSW	33°56'S	151°10'E	35°	Dec=6.32	Jul=3.80	15°→60°	Dec=6.93	Jul=4.11	Dec=9.11	Jul=4.56
Mildura Vic	34°15'S	142°05'E	35°	Dec=7.36	Jun=4.14	15°→60°	Dec=8.07	Jun=4.58	Dec=11.56	Jun=5.22
Albany WA	34°57'S	117°48'E	35°	Jan=6.67	Jun=3.57	15°→60°	Dec=7.14	Jun=3.94	Jan=9.56	Jun=4.47
Adelaide SA	34°58'S	138°32'E	35°	Jan=7.86	Jul=3.22	15°→60°	Jan=8.18	Jul=3.56	Jan=10.94	Jul=3.94
Wagga Wagga NSW	35°15'S	147°28'E	35°	Dec=7.14	Jun=3.61	15°→60°	Dec=7.91	Jun=4.75	Dec=11.50	Jun=4.75
Canberra ACT	35°19'S	149°12'E	35°	Jan=7.18	Jul=3.58	15°→60°	Jan=7.65	Jul=3.83	Jan=10.00	Jul=4.28
Mt Gambier SA	37°45'S	140°47'E	35°	Jan=6.71	Jun=2.88	15°→60°	Jan=7.08	Jun=3.14	Jan=9.67	Jun=3.69
Melbourne Vic	37°50'S	144°58'E	35°	Jan=6.50	Jul=3.13	15°→60°	Jan=6.86	Jun=3.39	Jan=9.42	Jun=3.86
Laverton Vic	37°53'S	144°45'E	35°	Jan=7.00	Jun=3.02	15°→60°	Jan=7.11	Jun=3.36	Jan=9.53	Jun=3.75
East Sale Vic	38°06'S	147°06'E	35°	Jan=6.24	Jun=2.81	15°→60°	Jan=6.53	Jun=3.17	Jan=8.72	Jun=3.50
Launceston Tas	41°36'S	147°12'E	40°	Feb=6.58	Jun=2.67	15°→65°	Jan=6.92	Jun=2.94	Jan=9.42	Jun=3.25
Hobart Tas	42°50'S	147°30'E	40°	Jan=6.17	Jun=2.67	20°→70°	Jan=6.53	Jun=2.92	Jan=8.75	Jun=3.36

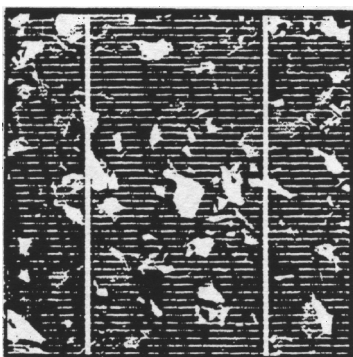
These figures are derived from the *Australian Solar Radiation Handbook*, April 1995 (Energy Research and Development Corporation). The above solar radiation figures (Peak Sun Hours per day) do not take into account system losses such as transmission cable, battery and inverter losses. Nor do they account for any shading from hills, trees etc or from dust or dirt accumulated on the solar panels.

Following is a simple calculation for working out how many solar panels are required for a 12V power system using the above solar radiation figures:

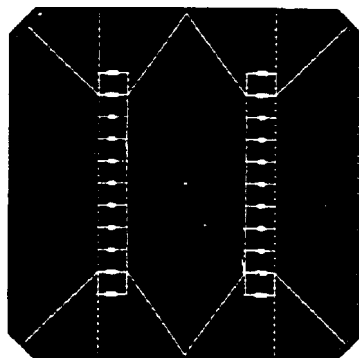
$$\text{Number of Solar Panels} = \frac{\text{Daily AmpHours (of loads)} \times 21.8}{\text{Peak Rating of Solar Panel (Watts)} \times \text{Peak Sun Hours per day (from above Table)}}$$

$$\text{Battery Size} = \text{Daily AmpHours} \times 13$$

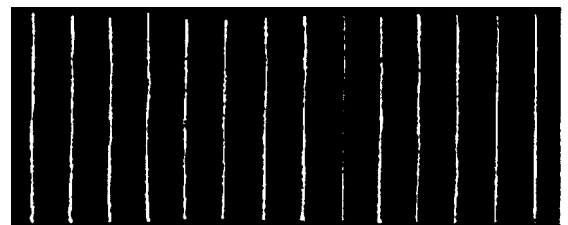
The above calculations take into account average cable, battery and inverter losses.



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Monocrystalline



Amorphous