

Mid-Winter Shadow Length: 38° S

When Installing a solar array behind or generally to the south of an object, such as another solar array, you may need to know how far to the south of the object the new solar array may need to be in order to not be shaded. Since mid winter is when the longest shadows occur, the table below gives the direction of the shadow for each 15 minute interval. The horizontal distance of the shadow can then be calculated by multiplying the height of the object (eg solar array) by the shadow length multipliers provided in the table. It is recommended that these calculations be performed for both the eastern and the western end of the obstacle.

Local Time	Sun Azimuth	Sun Altitude	Direction	Length	Cast Shadow		
					South	East/West	
7:35	60.094°	RISE	240.094°		Sunrise		
7:45	58.548°	1.223°	238.548°	46.853	24.447	39.969	West
8:00	56.171°	3.711°	236.171°	15.419	8.584	12.809	West
8:15	53.716°	6.129°	233.716°	9.312	5.511	7.506	West
8:30	51.176°	8.472°	231.176°	6.714	4.209	5.231	West
8:45	48.545°	10.730°	228.545°	5.277	3.494	3.955	West
9:00	45.816°	12.898°	225.816°	4.367	3.044	3.132	West
9:15	42.983°	14.965°	222.983°	3.741	2.737	2.551	West
9:30	40.042°	16.923°	220.042°	3.287	2.516	2.115	West
9:45	36.989°	18.763°	216.989°	2.944	2.352	1.771	West
10:00	33.822°	20.475°	213.822°	2.678	2.225	1.491	West
10:15	30.540°	22.049°	210.540°	2.469	2.126	1.255	West
10:30	27.145°	23.474°	207.145°	2.303	2.049	1.051	West
10:45	23.641°	24.742°	203.641°	2.170	1.988	0.870	West
11:00	20.036°	25.841°	200.036°	2.065	1.940	0.707	West
11:15	16.339°	26.763°	196.339°	1.983	1.903	0.558	West
11:30	12.564°	27.501°	192.564°	1.921	1.875	0.418	West
11:45	8.726°	28.047°	188.726°	1.877	1.855	0.285	West
12:00	4.842°	28.396°	184.842°	1.850	1.843	0.156	West
12:15	0.933°	28.545°	180.933°	1.838	1.838	0.030	West
12:30	357.018°	28.492°	177.018°	1.842	1.840	0.096	East
12:45	353.120°	28.238°	173.120°	1.862	1.849	0.223	East
13:00	349.257°	27.785°	169.257°	1.898	1.865	0.354	East
13:15	345.450°	27.138°	165.450°	1.951	1.888	0.490	East
13:30	341.714°	26.303°	161.714°	2.023	1.921	0.635	East
13:45	338.064°	25.287°	158.064°	2.117	1.964	0.791	East
14:00	334.511°	24.098°	154.511°	2.236	2.018	0.962	East
14:15	331.064°	22.747°	151.064°	2.385	2.087	1.154	East
14:30	327.728°	21.242°	147.728°	2.573	2.176	1.374	East
14:45	324.505°	19.595°	144.505°	2.809	2.287	1.631	East
15:00	321.398°	17.815°	141.398°	3.112	2.432	1.942	East
15:15	318.404°	15.911°	138.404°	3.508	2.623	2.329	East
15:30	315.520°	13.895°	135.520°	4.042	2.884	2.832	East
15:45	312.743°	11.774°	132.743°	4.798	3.256	3.524	East
16:00	310.066°	9.558°	130.066°	5.939	3.823	4.545	East
16:15	307.483°	7.254°	127.483°	7.856	4.781	6.234	East
16:30	304.989°	4.871°	124.989°	11.734	6.729	9.613	East
16:45	302.575°	2.415°	122.575°	23.707	12.764	19.978	East
17:02	299.776°	SET	119.776°		Sunset		

The length is in the direction indicated in the previous column. The shadow length is a multiplier. For example, if the height of the object is 0.75 metres, then multiply the multiplier in each line by 0.75 to give the horizontal shadow length in metres.

The south and east/west components of the shadow show how far south of the object the shadow will be cast and how far east or west of the object the shadow will be cast on a horizontal plane. The south and east/west components are multipliers as for length.



RAINBOW POWER COMPANY LTD

A.B.N. 74 003 323 420

1 Alternative Way, Nimbin, NSW 2480, Australia

phone: (02) 6689 1430
international: phone: +61 2 6689 1088
sales@rpc.com.au

fax: (02) 6689 1109
international: fax: +61 2 6689 1109
www.rpc.com.au