

Mid-Winter Shadow Length: 36° 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	
7:13	60.976°	RISE	240.976°		Sunrise		
7:30	58.449°	2.438°	238.449°	23.483	12.288	20.012	West
7:45	56.138°	4.991°	236.138°	11.451	6.380	9.509	West
8:00	53.743°	7.474°	233.743°	7.623	4.508	6.147	West
8:15	51.257°	9.880°	231.257°	5.741	3.593	4.478	West
8:30	48.672°	12.203°	228.672°	4.624	3.054	3.472	West
8:45	45.981°	14.433°	225.981°	3.885	2.700	2.794	West
9:00	43.177°	16.562°	223.177°	3.362	2.452	2.300	West
9:15	40.255°	18.581°	220.255°	2.975	2.270	1.922	West
9:30	37.212°	20.479°	217.212°	2.678	2.133	1.620	West
9:45	34.043°	22.246°	214.043°	2.445	2.026	1.369	West
10:00	30.748°	23.872°	210.748°	2.260	1.942	1.155	West
10:15	27.328°	25.344°	207.328°	2.111	1.875	0.969	West
10:30	23.789°	26.653°	203.789°	1.992	1.823	0.804	West
10:45	20.137°	27.788°	200.137°	1.898	1.782	0.653	West
11:00	16.384°	28.739°	196.384°	1.824	1.750	0.515	West
11:15	12.543°	29.497°	192.543°	1.768	1.726	0.384	West
11:30	8.633°	30.054°	188.633°	1.728	1.708	0.259	West
11:45	4.672°	30.405°	184.672°	1.704	1.698	0.139	West
12:00	0.684°	30.547°	180.684°	1.694	1.694	0.020	West
12:15	356.692°	30.478°	176.692°	1.699	1.696	0.098	West
12:30	352.720°	30.198°	172.720°	1.718	1.704	0.218	East
12:45	348.790°	29.710°	168.790°	1.752	1.719	0.341	East
13:00	344.923°	29.020°	164.923°	1.803	1.741	0.469	East
13:15	341.138°	28.135°	161.138°	1.870	1.770	0.605	East
13:30	337.450°	27.062°	157.450°	1.957	1.807	0.750	East
13:45	333.871°	25.812°	153.871°	2.068	1.857	0.911	East
14:00	330.410°	24.394°	150.410°	2.205	1.917	1.089	East
14:15	327.072°	22.820°	147.072°	2.377	1.995	1.292	East
14:30	323.860°	21.100°	143.860°	2.592	2.093	1.529	East
14:45	320.774°	19.245°	140.774°	2.864	2.219	1.811	East
15:00	317.811°	17.267°	137.811°	3.217	2.384	2.160	East
15:15	314.967°	15.174°	134.967°	3.687	2.606	2.609	East
15:30	312.238°	12.978°	132.238°	4.339	2.917	3.212	East
15:45	309.618°	10.686°	129.618°	5.300	3.380	4.083	East
16:00	307.098°	8.307°	127.098°	6.849	4.131	5.463	East
16:15	304.673°	5.849°	124.673°	9.761	5.553	8.028	East
16:30	302.335°	3.320°	122.335°	17.239	9.221	14.566	East
16:45	300.075°	0.725°	120.075°	78.981	39.580	68.348	East
16:52:00	298.899°	SET	118.899°		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