

# Mid-Winter Shadow Length: 26°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	
6:41	63.981°	RISE	243.981°				
6:45	63.543°	0.327°	243.543°	175.253			
7:00	61.849°	3.321°	241.849°	17.231			
7:15	60.068°	6.268°	240.068°	9.105			
7:30	58.189°	9.160°	238.189°	6.201			
7:45	56.204°	11.993°	236.204°	4.707			
8:00	54.102°	14.759°	234.102°	3.796			
8:15	51.872°	17.450°	231.872°	3.181			
8:30	49.503°	20.058°	229.503°	2.739			
8:45	46.983°	22.572°	226.983°	2.406			
9:00	44.300°	24.982°	224.300°	2.146			
9:15	41.445°	27.275°	221.445°	1.940			
9:30	38.405°	29.438°	218.405°	1.772			
9:45	35.174°	31.457°	215.174°	1.635			
10:00	31.746°	33.315°	211.746°	1.521			
10:15	28.120°	34.997°	208.120°	1.428			
10:30	24.299°	36.486°	204.299°	1.352			
10:45	20.294°	37.765°	200.294°	1.291			
11:00	16.122°	38.819°	196.122°	1.243			
11:15	11.807°	39.633°	191.807°	1.207			
11:30	7.382°	40.195°	187.382°	1.184			
11:45	2.886°	40.496°	182.886°	1.171			
12:00	358.361°	40.533°	178.361°	1.169			
12:15	353.853°	40.304°	173.853°	1.179			
12:30	349.404°	39.813°	169.404°	1.200			
12:45	345.056°	39.068°	165.056°	1.232			
13:00	340.841°	38.079°	160.841°	1.276			
13:15	336.788°	36.861°	156.788°	1.334			
13:30	332.915°	35.428°	152.915°	1.406			
13:45	329.234°	33.797°	149.234°	1.494			
14:00	325.752°	31.986°	145.752°	1.601			
14:15	322.467°	30.010°	142.467°	1.731			
14:30	319.375°	27.885°	139.375°	1.890			
14:45	316.470°	25.626°	136.470°	2.085			
15:00	313.741°	23.247°	133.741°	2.328			
15:15	311.177°	20.761°	131.177°	2.638			
15:30	308.767°	18.178°	128.767°	3.046			
15:45	306.500°	15.509°	126.500°	3.604			
16:00	304.364°	12.763°	124.364°	4.415			
16:15	302.348°	9.948°	122.348°	5.702			
16:30	300.441°	7.071°	120.441°	8.062			
16:45	298.634°	4.139°	118.634°	13.820			
17:00	296.917°	1.157°	116.917°	49.516			
17:08	295.927°	SET	115.927°				

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.

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