

Mid-Winter Shadow Length: 32°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	
6:55	62.336°	RISE	242.336°				
7:00	61.674°	0.481°	241.674°	119.210			
7:15	59.635°	3.252°	239.635°	17.598			
7:30	57.514°	5.966°	237.514°	9.570			
7:45	55.302°	8.614°	235.302°	6.601			
8:00	52.989°	11.192°	232.989°	5.054			
8:15	50.568°	13.690°	230.568°	4.105			
8:30	48.029°	16.101°	228.029°	3.464			
8:45	45.363°	18.415°	225.363°	3.004			
9:00	42.565°	20.622°	222.565°	2.657			
9:15	39.625°	22.713°	219.625°	2.389			
9:30	36.539°	24.674°	216.539°	2.177			
9:45	33.303°	26.495°	213.303°	2.006			
10:00	29.916°	28.161°	209.916°	1.868			
10:15	26.380°	29.662°	206.380°	1.756			
10:30	22.700°	30.983°	202.700°	1.665			
10:45	18.887°	32.112°	198.887°	1.593			
11:00	14.956°	33.038°	194.956°	1.538			
11:15	10.925°	33.750°	190.925°	1.497			
11:30	6.818°	34.240°	186.818°	1.469			
11:45	2.663°	34.503°	182.663°	1.455			
12:00	358.488°	34.535°	178.488°	1.453			
12:15	354.324°	34.336°	174.324°	1.464			
12:30	350.201°	33.907°	170.201°	1.488			
12:45	346.147°	33.256°	166.147°	1.525			
13:00	342.186°	32.388°	162.186°	1.576			
13:15	338.339°	31.314°	158.339°	1.644			
13:30	334.621°	30.044°	154.621°	1.729			
13:45	331.045°	28.592°	151.045°	1.835			
14:00	327.616°	26.970°	147.616°	1.965			
14:15	324.339°	25.190°	144.339°	2.126			
14:30	321.212°	23.267°	141.212°	2.326			
14:45	318.232°	21.211°	138.232°	2.577			
15:00	315.395°	19.034°	135.395°	2.899			
15:15	312.694°	16.748°	132.694°	3.323			
15:30	310.121°	14.363°	130.121°	3.905			
15:45	307.668°	11.888°	127.668°	4.750			
16:00	305.326°	9.332°	125.326°	6.085			
16:15	303.087°	6.702°	123.087°	8.509			
16:30	300.942°	4.006°	120.942°	14.278			
16:45	298.881°	1.250°	118.881°	45.827			
16:54:00	297.551°	SET	117.551°				

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.

Sunrise West

Sunset East



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