

General Specialties Recommendations for Pole Height and Dimension.

We can not guarantee a standard 1.67 safety factor if these recommendations are not observed. Since we can not assess each customer's individual site and conditions, a professional installer and the local building department should be consulted for the safest and most effective installation.

UPM Model	Post Size (Sch = Schedule, or thickness of pipe wall)	Array Surface Max Sq Footage	Max Pole Height Above Concrete Base W/ Array @ 45° Tilt	Clearance Between top of Concrete and Lowest Point on Array @ 45° Tilt	Max Pole Height Above Concrete Base W/ Array @ 60° Tilt	Clearance Between top of Concrete and Lowest Point on Array @ 60° Tilt	Max Pole Height Above Concrete Base W/ Array @ 90° Tilt See Footnote 2	Clearance Between top of Concrete and Lowest Point on Array @ 90° Tilt See Footnote 2
UPM 3X Standard stock Tee socket size 4"	4" Sch 40 4½"OD 4" Sch 80 4½"OD	36 Sq Ft	10' 13' 6"	8' 11' 6"	8' 11'	5' 5" 8' 5"	7' 9' 6"	3' 10" 6' 4"
UPM 4X Standard stock Tee socket size 4"	4" Sch 40 4½"OD 4" Sch 80 4½"OD	46 Sq Ft	7' 6" 10'	4' 8" 7' 2"	6' 8'	2' 6" 4' 6"	5' 3" 6' 9"	1' 1" 2' 9"
UPM 6X Standard stock Tee socket size 5"	5" Sch 40 5 9/16"OD 5" Sch 80 5 9/16"OD	71 Sq Ft	8' 6" 11' 9"	6' 6" 9' 9"	7' 9' 6"	4' 5" 6' 11"	5' 9" 8' 3"	2' 7" 5' 1"
UPM 8X Standard stock Tee socket size 6"	6" Sch 40 6⅝" OD 6" Sch 80 6⅝" OD	87 Sq Ft	10' 14' 6"	7' 2" 11' 8"	8' 11' 9"	4' 6" 8' 3"	6' 9" 10' 3'	2' 7" 6' 1"
UPM 10X Standard stock Tee socket size 6"	6" Sch 40 6⅝" OD 6" Sch 80 6⅝" OD	110 Sq Ft	8' 11' 6"	4' 8" 8' 2"	6' 3" 9' 3"	1' 11" 4' 11"	See Footnote 1 8'	See Footnote 1 2' 8"

Weight
150 lbs

Each Pole will have 6 panels

UPM 10XHD Standard stock Tee socket size 6", optional upgrade to 8" available	6" Sch 40 6 $\frac{5}{8}$ " OD	142 Sq Ft	6' 8' 9"	1' 9" 4' 6"	See Footnote 1 7' 3"	See Footnote 1 1' 11"	See Footnote 1 See Footnote 1	See Footnote 1 See Footnote 1
	8" Sch 40 8 $\frac{5}{8}$ " OD 8" Sch 80 8 $\frac{5}{8}$ " OD	142 Sq Ft	12' 6" 18' 3"	8' 3" 14'	10' 15'	4' 8" 9' 8"	8' 9" 12' 9"	3' 5" 7' 5"
UPM 12X HD Standard stock Tee socket size 8", optional upgrade to 10" available	8" Sch 80 8 $\frac{5}{8}$ " OD no sch 40 for 8"	170 Sq Ft	15'	11' 8"	12' 3"	7' 11"	10' 6"	5' 2"
	10" Sch 40 10 $\frac{3}{4}$ " OD 10" Sch 80 10 $\frac{3}{4}$ " OD	170 Sq Ft	18' 6" 21'	15' 2" 17' 8"	15' 21'	10' 8" 16' 8"	12' 9" 20'	7' 5" 14' 10"
UPM 15X Standard stock Tee socket size 8", optional upgrade to 10" available	8" Sch 80 8 $\frac{5}{8}$ " OD no sch 40 for 8"	212 Sq Ft	12'	7' 9"	9' 6"	4' 2"	8' 3"	1' 10"
	10" Sch 40 10 $\frac{3}{4}$ " OD 10" Sch 80 10 $\frac{3}{4}$ " OD	212 Sq Ft	14' 9" 21'	10' 6" 16' 9"	11' 9" 18' 3"	6' 5" 12' 11"	10' 3" 16'	3' 10" 16'
UPM 18X Standard stock Tee socket size 8", optional upgrade to 10" available	8" Sch 80 8 $\frac{5}{8}$ " OD no sch 40 for 8"	265 Sq Ft	10'	4' 7"	8'	1' 7"	See Footnote 1	See Footnote 1
	10" Sch 40 10 $\frac{3}{4}$ " OD 10" Sch 80 10 $\frac{3}{4}$ " OD	265 Sq Ft	12' 3" 18' 9"	7' 13' 6"	9' 9" 15' 3"	3' 4" 8' 10"	See Footnote 1 13'	See Footnote 1 5' 4"

Footnote 1: There is not adequate clearance for these arrays with this size pipe. Use heavier schedule pipe or larger pipe diameter

Footnote 2: For UPMs 12X HD, 15X and 18X, we do not recommend tilting past 60° without using the optional 90° Bracket Kit. This kit fastens the array to the pole below the tee top which is the safest and strongest possible attachment for the 90° vertical position. Most mounts do not need to be tilted past 70° unless they are in far north latitudes or in areas with extreme snow loads.

If you are installing a mount not listed here, please contact us for information on ground clearance and pole height.

Dimension of Post Hole for Standard Installation
(Non Flat Base Foundation)

UPM Model	PV Array Surface Area	Depth of Hole	Width of Square Hole
3X	36 Sq Ft	48"	16"
4X	46 Sq Ft	50"	18"
6X	71 Sq Ft	54"	24"
8X	87 Sq Ft	58"	32"
10X	110 Sq Ft	68"	36"
10X HD	142 Sq Ft	80"	40"
12X HD	175 Sq Ft	85"	42"
15X	212 Sq Ft	90"	46"
18X	265 Sq Ft	96"	46"

Again, your building department may require the foundation for a PV array to be designed by a structural engineer licensed in the state where the PV array is to be erected. This is required because failure of a PV array foundation may be a threat to the safety of nearby people. At a minimum, failure will result in costly damage to the PV modules. The foundation described here is suitable for most soil types, but no warranty of it's suitability for you soil or wind conditions is offered or implied.

If you are unable to dig holes of these dimensions because you encounter bed rock or if you have very loamy or loose sandy soil, (get the recommendation of a soil engineer or building department), then refer to the accompanying Chart for Flat Base Foundation for alternative foundation construction dimensions.

For type and size of pole to install in concrete foundation, refer to General Specialties Pole Height and Dimension chart.

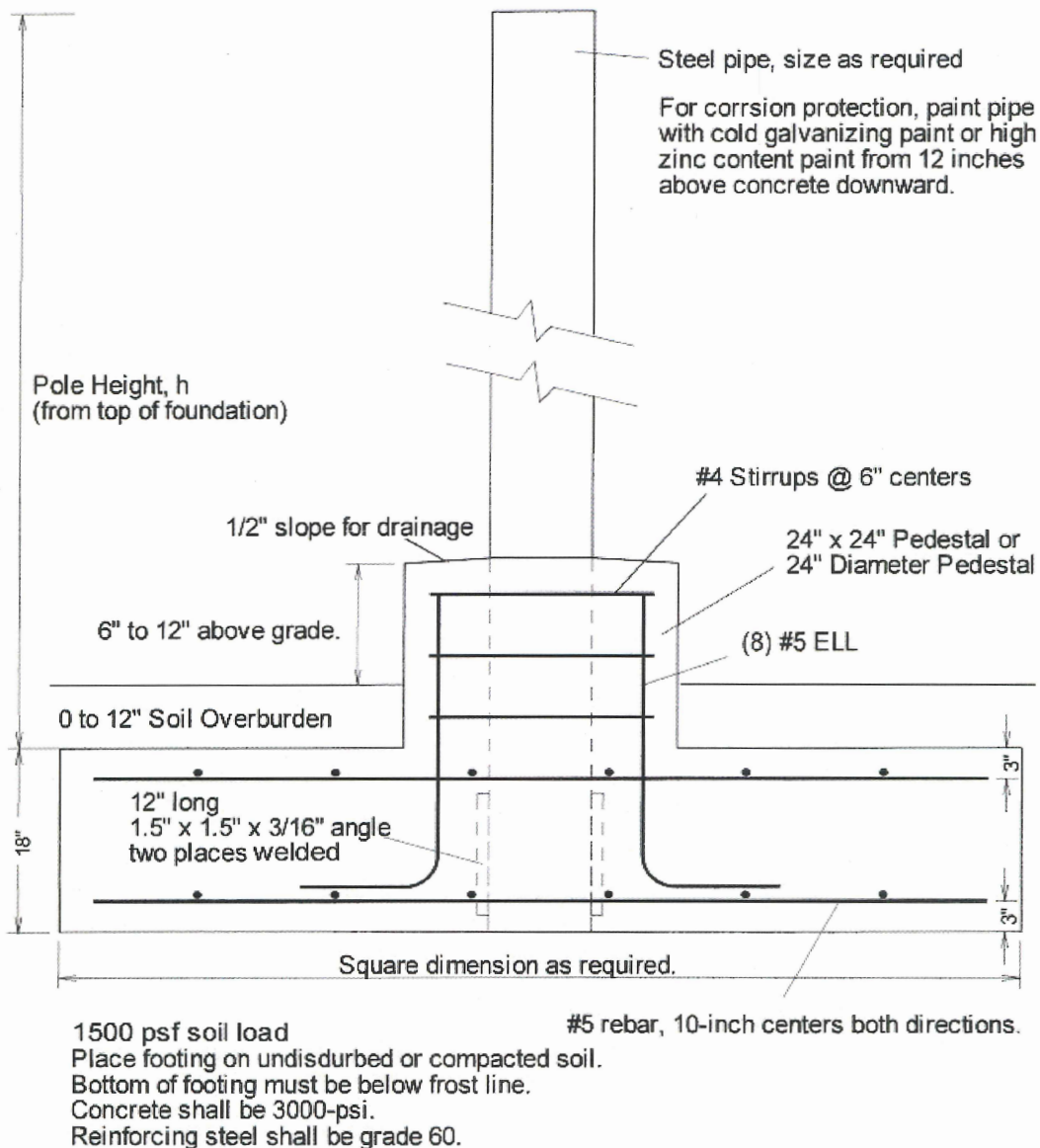
Square Dimension as Required for a Flat Base Foundation For a PV Array

IMPORTANT NOTE: These values are valid ONLY for the pole heights listed! If any pole lengths taller than the ones listed are used for a given array at a 90° tilt, then these values are invalid and constitute a dangerous situation.

UPM Model	Post Size (Sch = Schedule, or thickness of pipe wall)	Max Pole Height Above Concrete Base W/ Array @ 90° Tilt	Square Dimension As Required for Flat Base
UPM 3X	4" Sch 40 4½"OD	7'	5' 5"
	4" Sch 80 4½"OD	9' 6"	5' 10"
UPM 4X	4" Sch 40 4½"OD	5' 3"	5' 5"
	4" Sch 80 4½"OD	6' 9"	5' 8"
UPM 6X	5" Sch 40 5⅝"OD	5' 9"	6' 2"
	5" Sch 80 5⅝"OD	8' 3"	6' 11"
UPM 8X	6" Sch 40 6⅝" OD	6' 9"	7' 2"
	6" Sch 80 6⅝" OD	10' 3"	8' 3"
UPM 10X	6" Sch 40 6⅝" OD 6" Sch 80 6⅝" OD	See Footnote 1 8'	See Footnote 1 8' 2"
UPM 10X HD (Comes with Tee Socket to fit a 6" post. 8" Tee Socket upgrade available on request)	6" Sch 40 6⅝" OD 6" Sch 80 6⅝" OD	See Footnote 1 See Footnote 1	See Footnote 1 See Footnote 1
	8" Sch 40 8⅝" OD 8" Sch 80 8⅝" OD	8' 9" 12' 9"	10' 6" 11' 3"
UPM 12X HD (Comes with Tee Socket to fit an 8" post. 10" Tee Socket upgrade available on request)	8" Sch 80 8⅝" OD	10' 6"	10' 6"
	10" Sch 40 10¾"OD 10" Sch 80 10¾"OD	12' 9" 20'	11' 2" 13'
UPM 15X (Comes with Tee Socket to fit an 8" post. 10" Tee Socket upgrade available on request)	8" Sch 80 8⅝" OD	See Footnote 1	See Footnote 1
	10" Sch 40 10¾"OD 10" Sch 80 10¾"OD	10' 3" 16'	11' 2" 13'
UPM 18X (Comes with Tee Socket to fit an 8" post. 10" Tee Socket upgrade available on request)	8" Sch 80 8⅝" OD	See Footnote 1	See Footnote 1
	10" Sch 40 10¾"OD 10" Sch 80 10¾"OD	See Footnote 1 13'	See Footnote 1 12' 11"

Footnote 1: There is not adequate clearance for these arrays with this size pipe. Use heavier schedule pipe or larger pipe diameter.

PV Array Flat Base Foundation



Your building department may require the foundation for a PV array to be designed by a structural engineer licensed in the state where the PV array is to be erected. This is required because failure of a PV array foundation may be a threat to the safety of nearby people. At a minimum, failure will result in costly damage to the PV modules. The foundation described here is suitable for most soil types, but no warranty of its suitability for your soil or wind conditions is offered or implied.