

# ZOMEWORKS CORPORATION

## **Passive Energy Products**

*Environmentally and Financially Sustainable: Do not rely on Hydrocarbons or Tax Credits*

## **TRACKERS AND SHADING**

Trackers cast long shadows that may shade others to the east and west at the beginning and end of the day. In the last example, the low corner dipped 110" below the gimbal at the beginning and end of the day, which means the high corner rose the same distance above the gimbal for a total of 220" or 18'4". This elevation difference casts a long shadow from the high point of one towards the low point of another. The sun 15° above the horizon casts a shadow 68.4' long when the elevation difference is 18'4". PV arrays are unduly sensitive to shading. Shading of a few cells may cause the whole array to shut down. For this reason, space Trackers far apart or restrict motion.

The performance of an orchard of trackers that shades itself at the beginning and end of the day can be improved by restricting seasonal tilt or daily rotation or both to reduce shading. Daily rotation can be reduced by expanding the bumper with a radiator hose or by use of chains or ropes from the pole to the canisters.

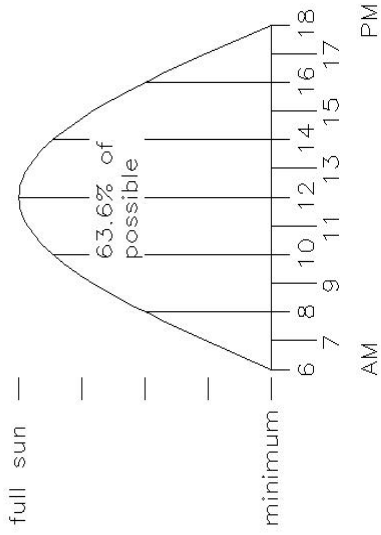
Figures 1 – 5 show the gain from tracking through greater or smaller angles and illustrate diminishing returns as the angle increases.

Zomeworks can do engineering shading studies by special arrangement. Please call for pricing and details (505) 242-5354.

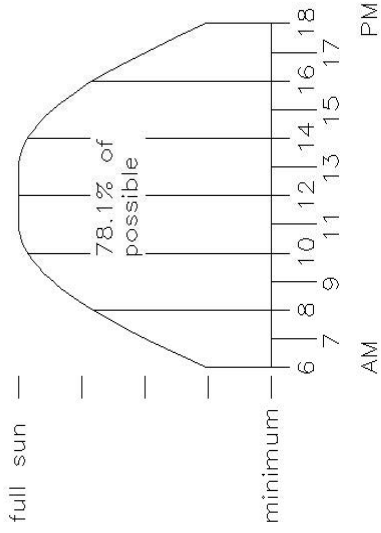
ZOMEWORKS CORPORATION  
Established 1969

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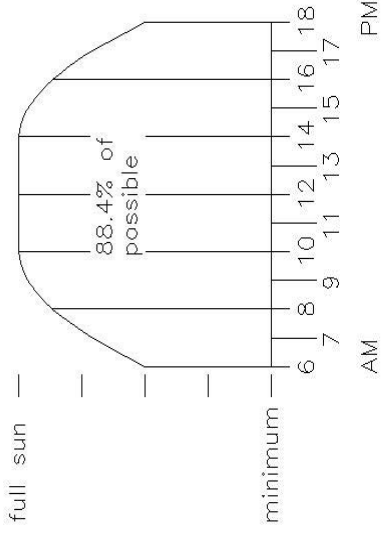
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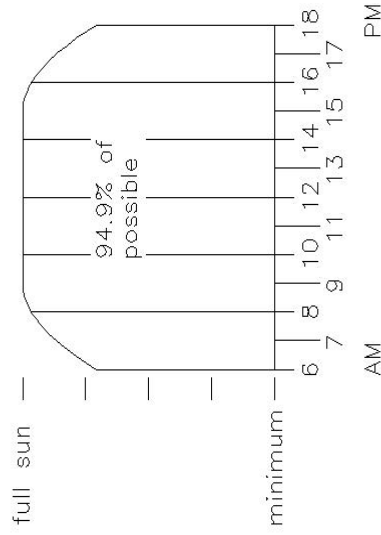
FIXED\_RACK  
(No Tracking)



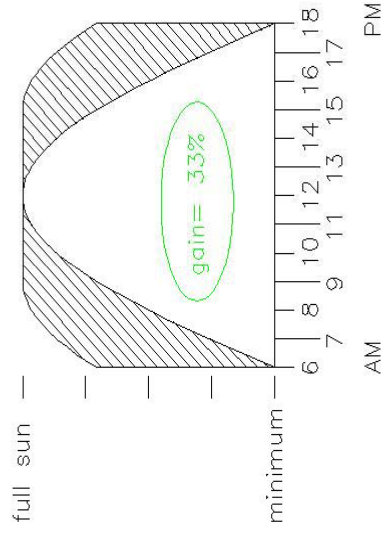
30° of TRACKING  
(2 Hrs. per Day)



60° of TRACKING  
(4 Hrs. per Day)



90° of TRACKING  
(6 Hrs. per Day)



Difference with Tracking

Solar gain estimated for clear day on Equinox.