



Design study of SunOyster PVmover

Data Sheet

SunOyster PVmover

Note: Preliminary data sheet data only. SunOyster Systems reserves the right to change specifications.



Introduction:

The **SunOyster PVmover** follows the sun bi-axially throughout the day to optimally convert sunlight into electricity. The tracking system carries 9 photovoltaic modules with an output of up to 3.6 kW of electric power.

In case of strong wind, the PVmover automatically tracks into a secured position.

Peak power output of the PVmover:

Type	Electricity output ¹
PVmover	3.6 kW _p

¹ Electricity output depends on the type of PV modules used.

Installation:

The PVmover does not require a horizontal surface or platform for installation. It can be installed on any tilted surfaces including slanted roofs. The sub-structure of the PVmover can be e.g. naked earth or gravel, a concrete or asphalt surface, concrete plates, ground anchors or steel beams, garages, pergolas, tile, brick or metal roofs.

Tracking: Two-axis in Azimuth and Elevation:

360° azimuth tracking from East to West realized by a slewing drive. Elevation angles from 0° to 60°, realized by linear actuator.

Space demand, mechanics and weight:

- For the azimuth tracking the required area would be approx. 32 m² and 6.3 m in diameter. Total height of the PVmover is under 1.8 m in stowing position and maximum height is under 3 m in operation mode.
- A tripod is used as the base for the PVmover.
- Metal parts: hot-dip-galvanized steel parts and anodized aluminum profiles.
- 9 PV modules with the following parameters can be mounted to the PVmover: approx. 1.75 m (height) x 1.1 m (width) and 21 kg per module.
- Area of PV-Modules approx. 17.5 m² (3.3 x 5.3 m).
- The total weight of the PVmover is approx. 550 kg.

Due to its size, no building permit or building notification is required to install the PVmover on roofs or in gardens in most federal states in Germany. Other countries need to be examined.

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Electrical data (DC):

Peak Power at STC*	3645 W _p
Voltage at MPP	309 V
Current at MPP	11.8 A
Start voltage	80 V
No. of MPP trackers	1
No. of PV modules	9
Module efficiency	21.1 %

Electrical data (AC):

AC nominal power	3300 W
Max. AC apparent power	3300 VA
Nominal AC voltage (range)	230 V (180 – 280 V)
AC grid frequency (range)	50/60 Hz (45-55 Hz / 55-65 Hz)
Max. output current	14.3 A
Adjustable power factor	0.8 leading ... 0.8 lagging
THD	< 3 %
AC grid connection	Single Phase (L/N/PE)
Grid standard	VDE-AR-N 4105, VDE 0126-1-1, CEI 0-21, PO 12.2, G98, UTE C 15-712-1

Efficiency Power Conversion:

Max. efficiency	97.6 %
European efficiency	97.1 %
MPPT efficiency	99.9 %

General Data:

Dimensions module area	5262 x 3288 mm
Total weight	approx. 500 kg
Operation temperature range	-25°C ... +45°C
Nighttime power consumption	< 10 W
AC connection	Clamp terminal, max. 4 mm ²
Display	OLED + LED
Interfaces	RS485 / LAN
Protection devices	DC switch, DC surge protection Type III, AC surge protection Type III, Insulation resistance monitoring, AC Short circuit protection, Ground fault monitoring, Grid monitoring, Antiislanding protection, Residual-current monitoring unit

*STC: Irradiance 1000W/m², Ambient Temperature 25°C, Air Mass AM1.5 / Measuring Tolerance: +/- 3%