



TPS105S

Photovoltaic
Module

130W/135W/140W



Plus power tolerance (0-3%) to ensure the high reliability of power output



Modules certified by TÜV to withstand high level of wind loads (2400 Pa) and snow loads (5400 Pa)*



Proprietary PV glass design improves oblique irradiance performance and enhances module yield in low-light and medium-angle-light condition



Easy installation and minimal maintenance with compatibility to industry standard inverters and mounting systems



Special PV Module Insurances by world leading insurance company guarantees the benefit of PV investors and PV module users



Junction box and bypass diodes guarantee the modules free of overheating and "hot spot effect"

Topray Solar manufactures high quality crystalline modules through rigorous quality control in every procedure of our vertical integration. TPS105S module series ensures a guaranteed power performance in solar arrays for residential and commercial installations.

Guaranteed Performance**

5 Years
Manufacturing Warranty

10 Years Warranty,
90% Power Output

25 Years Warranty,
80% Power Output

Free module recycling through
membership in the PV Cycle Association.

Choosing Topray Solar

- The most vertically integrated solar manufacturer in the industry with production of ingots, wafer, solar cells and modules using both mono crystalline and multi crystalline technology.
- Manufacturing with international quality standards and environment management system: ISO 9001 and ISO 14001.
- Modules certified by global testing facilities: IEC61215, IEC61730, CE, ROHS.
- Global distribution with local warehousing, delivery and after sales services.



- Minimal wiring effort required as the module has high reverse current resistance.
- Most updated design with drainage holes in the frame ensures the modules to withstand various weather conditions.



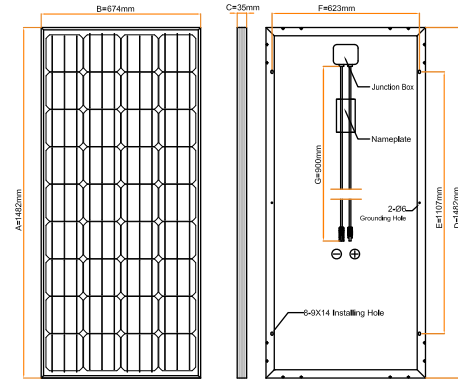
* Please refer to Topray Safety and Installation Manual for details.
** Please refer to Topray Limited Product Warranty for details.

TPS105S 130W/135W/140W Photovoltaic Module

MECHANICAL SPECIFICATION

Cell Type	Monocrystalline 156×156 mm (6 inches)
Number of cells	36 (4×9)
Dimensions (A×B×C)	1482×674×35mm
Weights	12kg
Front Glass	3.2 mm Low iron tempered glass
Frame	Anodized aluminum
Junction Box	IP 65, with bypass diodes
Connector	MC4 compatible
Output Cables	TÜV, ±length 900mm, 4.0mm ²

MECHANICAL DRAWINGS



ELECTRICAL CHARACTERISTICS

PERFORMANCE AT STANDARD TEST CONDITIONS (STC: 1000 W/m², 25 °C, AM 1.5)

Maximum Power at STC (Pmax)	130W	135W	140W
Short Circuit Current (Isc)	8.08A	8.24A	8.34A
Open Circuit Voltage (Voc)	21.70V	21.90V	22.00V
Maximum Power Current (Impp)	7.75A	7.86A	7.89A
Maximum Power Voltage (Vmpp)	16.80V	17.20V	17.70V
Encapsulated Cell Efficiency	15.1%	15.5%	16.3%
Module Efficiency	13.0%	13.5%	14.0%
Power Tolerance	0/+3%	0/+3%	0/+3%

PERFORMANCE AT NORMAL OPERATING CELL TEMPERATURE (NOCT: 800W/m², 47±3 °C, AM 1.5)

Maximum Power (Pmax)	95W	99W	102W
Short Circuit Current (Isc)	6.81A	6.95A	7.03A
Open Circuit Voltage (Voc)	20.12V	20.31V	20.40V
Maximum Power Current (Impp)	6.37A	6.46A	6.48A
Maximum Power Voltage (Vmpp)	14.96V	15.31V	15.76V

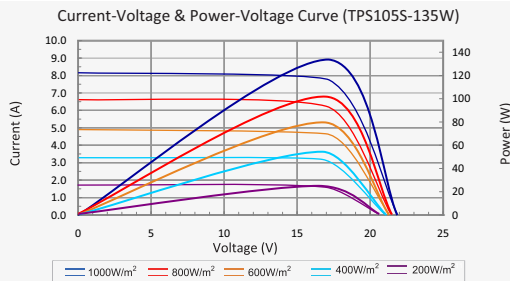
The typical relative change in module efficiency at an irradiance of 200W/m² in relation to 1000W/m² (both at 25 °C and AM 1.5 spectrum) is less than 6%.

TEMPERATURE CHARACTERISTICS

Nominal Operating Cell Temperature (NOCT)	47±3 °C
Temperature Coefficient of Pmax (γ)	-0.47%/K
Temperature Coefficient of Voc (β)	-0.36%/K
Temperature Coefficient of Isc (α)	0.05%/K

PACKING CONFIGURATION

Container	20' GP	40' GP
Pieces per pallet	25	25
Pallets per container	16	32
Pieces per container	458	896



SYSTEM INTEGRATION PARAMETERS

Maximum system voltage	DC 1000V
Maximum Series Fuse	16A
Maximum reverse current	21.5A
Increased snowload acc. to IEC 61215	5400Pa/m ²
Operating Temperature	-40~+85 °C
Number of bypass diodes	4

QUALIFICATIONS AND CERTIFICATES

CE-Compliant, IEC 61215 (Ed.2), IEC 61730 (Ed.1) application class A, TÜV Safety Class II



DEALER INFORMATION BOX