

Mono Solar Modules

www.macsun solar.com



MSM-T60X10/FS

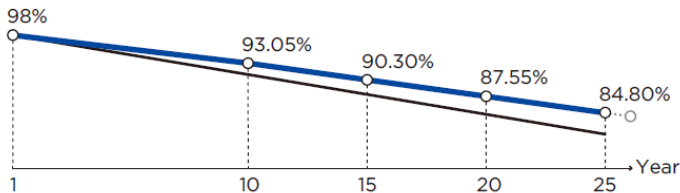
450~470W

Full Screen

No Dust and Dirt on the Surface Increase Power Generation

Quality Guarantee

- 12-year → Material & technology warranty
- 25-year → Linear power output warranty



Macsun Solar Linear power output guarantee Standard
Linear power output guarantee

Comprehensive Products & System Certificates



IEC 61215 / IEC 61730 / CE / FIDE / INMETRO
ISO 45001: 2018/ International standards for occupational health & safety
ISO 14001: 2015/Standards for environmental management system
ISO 9001: 2015/Quality management system



Low current, increase power generation
1/3 design, lower current and lower loss



Increase power generation by 6.15%+
Panel is capable to decrease power generation loss caused by Dust, reduce the hot spot risk.



Curved Surface 128° R Angle Reduce holding pressure by 75%+
Curved Frame with ergonomic Design, optimized Delivery and Installation Experience.



Revolutionary Packaging Technology
Using excellent frame packaging technology, Strong Adhesion, Durable in Use.



Excellent mechanical load capacity Certified by Dust-Sand, Salt-Mist, Ammonia etc. weather resistance tests and enhanced mechanical load: wind load (2400 Pa) and snow load (5400 Pa).

450W~470W

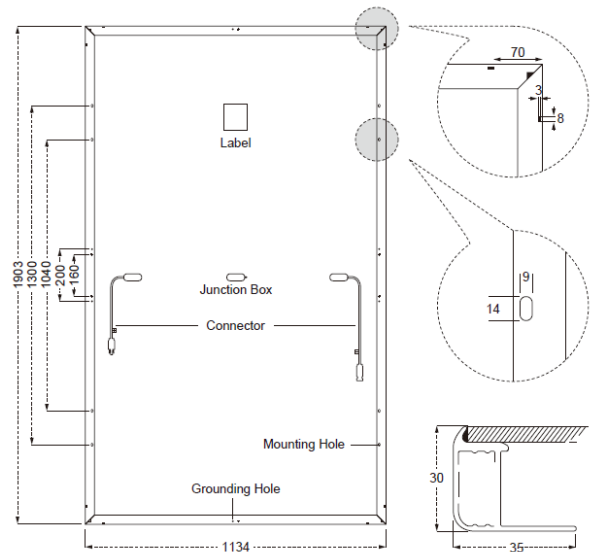
Mechanical Specification

Cable	4.0mm ² , 300/400mm in length,
(Including connector)	length can be customized
No. of Cells	180 (6x30)
Glass	3.2mm High Transmission, Antireflection Coating
Junction box	IP68, 3 Bypass Diodes
Connector	MC4 Compatible
Weight	23.5kg
Cells Type	Mono 182x60.7mm
Dimension (LxWxT)	1903x1134x30mm
Packing	34pcs/pallet, 816pcs/40HQ

Operating Parameters

Maximum system voltage	1500V DC
Operating Temperature	-40 ~ +85°C
Maximum series fuse rating	20A
Snow load, frontside/Wind load, backside	5400Pa/2400Pa
Nominal operating cell temperature	45°C±2°C
Application level	Class A

Design



STC ----- Electrical Characteristics

Module Type	MSM-T60X10/FS				
Maximum Power (Pmax/W)	450	455	460	465	470
Open-circuit Voltage (Voc/V)	62.0	62.2	62.4	62.6	62.8
Maximum Power Voltage (Vmp/V)	52.4	52.6	52.8	53.0	53.2
Short-circuit Current (Isc/A)	9.19	9.25	9.31	9.37	9.43
Maximum Power Current (Imp/A)	8.59	8.65	8.71	8.77	8.83
Module Efficiency (%)	20.9	21.1	21.3	21.6	21.8

Power Tolerance: 0~+5W, Temperature Coefficient of Isc: 0.05%/°C, Temperature Coefficient of Voc: -0.31%/°C, Temperature Coefficient of Pmax: -0.35%/°C

Standard Test Environment : Irradiance 1000W/m², Cell temperature 25°C, Spectrum AM1.5

NOCT ----- Electrical Characteristics

Maximum Power (Pmax/W)	339	342	346	350	354
Open-circuit Voltage (Voc/V)	58.7	58.9	59.1	59.3	59.5
Maximum Power Voltage (Vmp/V)	49.6	49.8	50.0	50.2	50.4
Short-circuit Current (Isc/A)	7.41	7.46	7.51	7.56	7.61
Maximum Power Current (Imp/A)	6.82	6.87	6.92	6.97	7.02

Standard Test Environment : Irradiance 800W/m², Ambient temperature 20°C, Spectrum AM1.5, Wind speed 1m/s

I-V Curve MSM-T60X10/FS-465W

