

# TWINSEL

Electronic Technology

HIGH PERFORMANCE

MONOCRYSTALLINE PERC MODULE

56



## TSM56-4-190M-200M

**56CELL**

Mono PERC Module

**190M-200Wp**

Power Output Range

**1000VDC**

Maximum System Voltage

**18.1 %**

Maximum Efficiency

## KEY SALIENT FEATURES



Global, Tier 1 manufacturer brand, with independently certified state-of-the-art automated manufacturing



Industry leading lowest thermal co-efficient of power



Excellent low irradiance performance



Excellent PID resistance



Dual stage 100% EL Inspection warranting defect-free product



Module Imp binning radically reduces string mismatch losses



Excellent wind load 2400Pa & snow load 5400Pa under certain installation method



Comprehensive product and system certification

- ♦ IEC61215:2016; IEC61730-1/-2:2016;
- ♦ ISO 9001:2015 Quality Management System
- ♦ ISO 14001:2015 Environmental Management System
- ♦ ISO 45001:2018 Occupational Health and Safety Management System

## About Twinsel

Founded in 2002, Twinsel is a leading, excellent manufacturer of solar modules and solar off-grid systems. In 2022 its annual production capacity of solar modules reaches 2GW, Twinsel is committed to providing our customers with a wide range of services from consulting, scouting the site, design construction, financing to smart transportation. Our dream is to turn the desert into an oasis and the night into light, Bring our customers better price, more stable quality and better use experience.

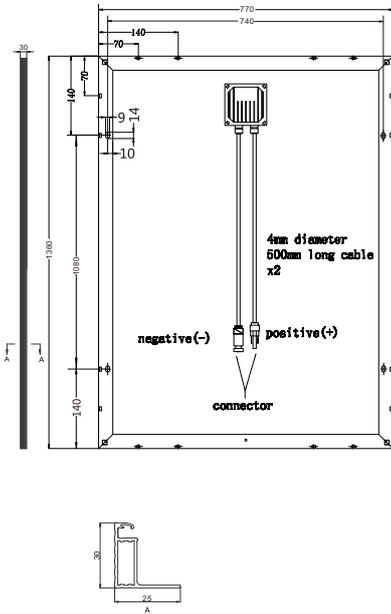
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## LINEAR PERFORMANCE WARRANTY

12 Year Product Warranty / 25 year Linear Power Warranty



### Dimensions of PV Module Unit: mm



### ELECTRICAL DATA(STC)

Model Number	TSM56-4-190M	TSM56-4-195M	TSM56-4-200M
Rated Power in Watts-Pmax(Wp)	190	195	200
Open Circuit Voltage-Voc(V)	20.55	20.8	21.03
Short Circuit Current-Isc(A)	11.46	11.59	11.72
Maximum Power Voltage-Vmpp(V)	17.43	17.68	17.91
Maximum Power Current-Impp(A)	10.91	11.04	11.17
Module Efficiency(%)★	18.1	18.6	19.1

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25℃, Air Mass AM 1.5 according to EN 60904-3.

★Module Efficiency(%):Round-off to the nearest number

### ELECTRICAL DATA(NMOT)

Model Number	TSM56-4-190M	TSM56-4-195M	TSM56-4-200M
Maximum Power Pmax(Wp)	144	147.8	151.6
Open Circuit Voltage-Voc(V)	19.11	19.3	19.56
Short Circuit Current-Isc(A)	9.4	9.5	9.60
Maximum Power Voltage-Vmpp(V)	16.18	16.4	16.63
Maximum Power Current-Impp(A)	8.9	9.01	9.12

NMOT:Irradiance at 800W/m<sup>2</sup>, Ambient Temperature 20℃, Wind Speed 1 m/s.

### MECHANICAL DATA

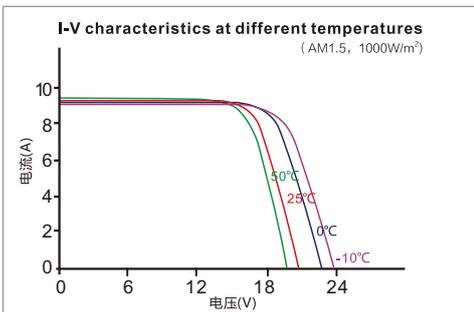
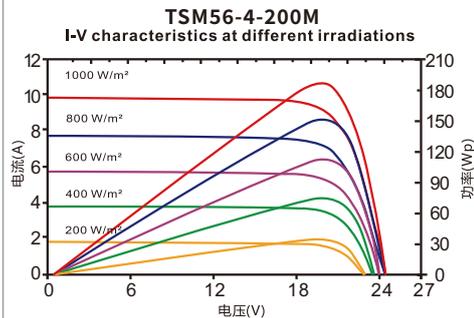
Solar cells	Monocrystalline
Cell configuration	56 cells (4x14)
Module dimensions	1360x770x30mm
Cables	4.0mm <sup>2</sup> (12AWG) ,Positive (+) ,Negative (-) 500mm (Connector Included)
Substrate	White Back-sheet
Connector	Twinsel PV-SY02, IP68
J-Box	SY012,IP68,1000VDC, 2 Schottky bypass diodes
Weight	10kg
Frame	Anodized Aluminium Alloy type 6005-2T6

### TEMPERATURE&MAXIMUM RATINGS

Nominal Module Operating Temperatue(NMOT)	44℃ ± 2℃
Temperature Coefficient of Voc	-0.25%/℃
Temperature Coefficient of Isc	0.04%/℃
Temperature Coefficient of Pmax	-0.34%/℃
Operational Temperature	-40℃ ~ +85℃
Maximum System Voltage	1000VDC
Max Series Fuse Rating	20A
Limiting Reverse Current	20A

### PACKAGING CONFIGURATION

	40ft(HQ)Aluminum Frame
Number of modules per container	1552
Number of modules per pallet	2
Number of modules per container	776
Packaging box dimensions(L × W × H) in mm	1380x80x795
Box gross weight [kg]	21



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