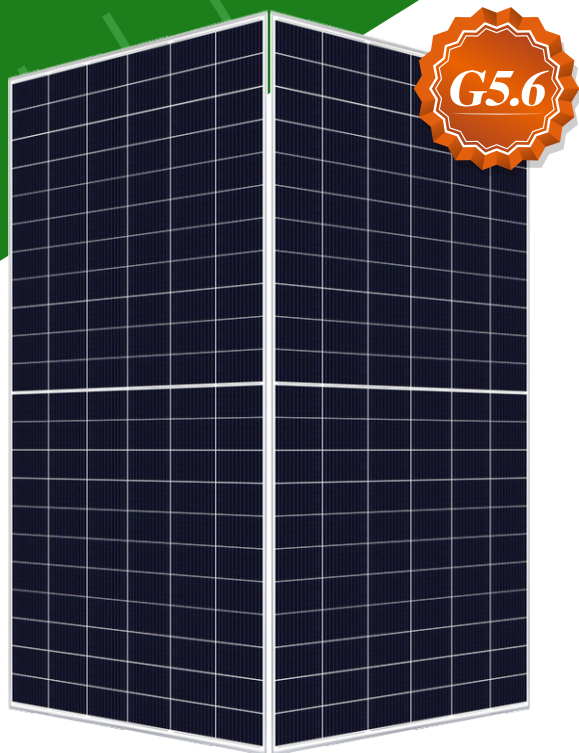


HIGH PERFORMANCE BIFACIAL PERC MONOCRYSTALLINE MODULE

132



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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TSM132-8-640BMDG-665BMDG

132 CELL

Mono PERC Module

640-665Wp

Power Output Range

1500VDC

Maximum System Voltage

21.4%

Maximum Efficiency

KEY SALIENT FEATURES



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



Bifacial technology enables additional energy harvesting from rear side (up to 30%)



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

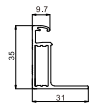
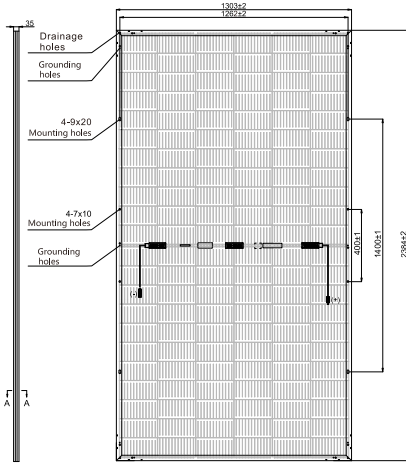
LINEAR PERFORMANCE WARRANTY

12 Year Product Warranty / 25 year Linear Power Warranty



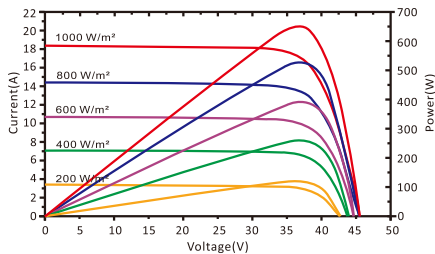
Dimensions of PV Module

Unit: mm



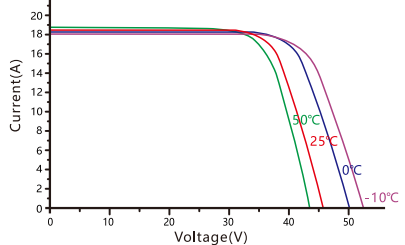
TSM132-8-655BMDG

I-V characteristics at different irradiances



I-V characteristics at different temperatures

(AM1.5, 1000W/m²)



Our Partners:

ELECTRICAL DATA(STC)

Model Number	TSM132-8-640BMDG	TSM132-8-645BMDG	TSM132-8-650BMDG	TSM132-8-655BMDG	TSM132-8-660BMDG	TSM132-8-665BMDG
Rated Power in Watts-Pmax(Wp)	640	645	650	655	660	665
Open Circuit Voltage-Voc(V)	45.09	45.29	45.49	45.69	45.89	46.09
Short Circuit Current-Isc(A)	18.08	18.13	18.18	18.23	18.28	18.33
Maximum Power Voltage-Vmpp(V)	37.51	37.69	37.87	38.05	38.23	38.41
Maximum Power Current-Impp(A)	17.07	17.12	17.17	17.22	17.27	17.32
Module Efficiency (%) ★	20.6	20.8	20.9	21.1	21.2	21.4

STC: Irradiance 1000 W/m², Cell Temperature 25°C, Air Mass AM1.5 according to EN 60904-3.
Bifacial factor: 70%±5 ★ Module Efficiency (%): Round-off to the nearest number

Electrical characteristics with 10% rear side power gain

Total Equivalent power -Pmax (Wp)	704	710	715	721	726	732
Open Circuit Voltage-Voc(V)	45.09	45.29	45.49	45.69	45.89	46.09
Short Circuit Current-Isc(A)	19.89	19.94	20.00	20.05	20.11	20.16
Maximum Power Voltage-Vmpp(V)	37.51	37.69	37.87	38.05	38.23	38.41
Maximum Power Current-Impp(A)	18.78	18.83	18.89	18.94	19.00	19.05

Rear side power gain: The additional gain from the rear side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

ELECTRICAL DATA(NMOT)

Model Number	TSM132-8-640BMDG	TSM132-8-645BMDG	TSM132-8-650BMDG	TSM132-8-655BMDG	TSM132-8-660BMDG	TSM132-8-665BMDG
Maximum Power-Pmax (Wp)	484.9	488.6	492.4	496.2	500.0	503.8
Open Circuit Voltage-Voc (V)	41.93	42.12	42.31	42.49	42.68	42.86
Short Circuit Current-Isc (A)	14.83	14.87	14.91	14.95	14.99	15.03
Maximum Power Voltage-Vmpp (V)	34.81	34.98	35.14	35.31	35.48	35.64
Maximum Power Current-Impp (A)	13.93	13.97	14.01	14.05	14.09	14.13

NMOT: Irradiance at 800 W/m², Ambient Temperature 20°C, Wind Speed 1 m/s.

MECHANICAL DATA

Solar cells	Monocrystalline	
Cell configuration	132 cells (6×11+6×11)	
Module dimensions	2384×1303×35mm	
Cables	4.0mm² (12AWG), Positive(+)350mm, Negative(-)230mm (Connector Included)	
Superstrate	High Transmission, Low Iron, Tempered ARC Glass	
Substrate	Tempered Glass	
Connector	Twinsel PV-SY02, IP68	
J-Box	Potted, IP68, 1500VDC, 3 Schottky bypass diodes	
Weight	38.5kg	41kg
Frame	Anodized Aluminium Alloy type 6005-2T6, Silver Color	High strength alloy steel

TEMPERATURE&MAXIMUM RATINGS

Nominal Module Operating Temperature (NMOT)	44°C±2°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	0.04%/°C
Temperature Coefficient of Pmax	-0.34%/°C
Operational Temperature	-40°C~+85°C
Maximum System Voltage	1500VDC
Max Series Fuse Rating	35A
Limiting Reverse Current	35A

PACKAGING CONFIGURATION

	40ft(HQ)Aluminum Frame	40ft(HQ)Alloy Steel Frame
Number of modules per container	558	558
Number of modules per pallet	31	31
Number of pallets per container	18	18
Packaging box dimensions (LxWxH) in mm	1320×1120×2520	1320×1120×2520
Box gross weight[kg]	1245	1315