

Orion

P-Type 210MM
Bifacial Transparent
Backsheet Module
640-670W



Larger PV Cell Technology

Revolutionizing solar technology with large silicon wafers, our modules are the prime choice for major projects



High Efficiency, Low LOCE

Low LOCE ensures optimal performance and minimal costs through durable, high-yield, and easy maintenance energy solutions



Superior Hail Resistance

Our 210mm series, equipped with a transparent backsheet, excels in hail resistance, ensuring unparalleled durability



Lighter Weight

Unburden your distributed solar projects with transparent back sheets for lighter, more efficient solutions

Pmax:

670W

Power range:

640-670W

Efficiency:

21.6%

Warranty:

25 years

Annual degradation:

0.55%

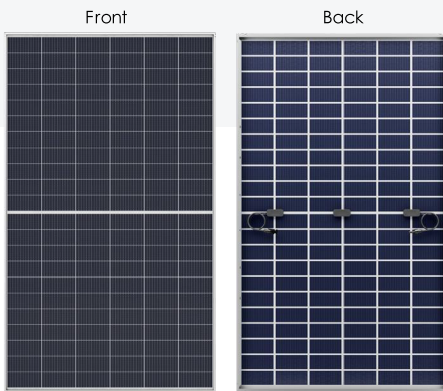
Product Certification



Reliably Built.

Imperial Star is a solar manufacturer committed to empowering PV excellence in America. With a rich, 10-year manufacturing legacy, Imperial Star delivers 6 GW of PV module capacity through its integrated and dependable supply chain by 2024.





670W

Maximum Power Output

21.6%

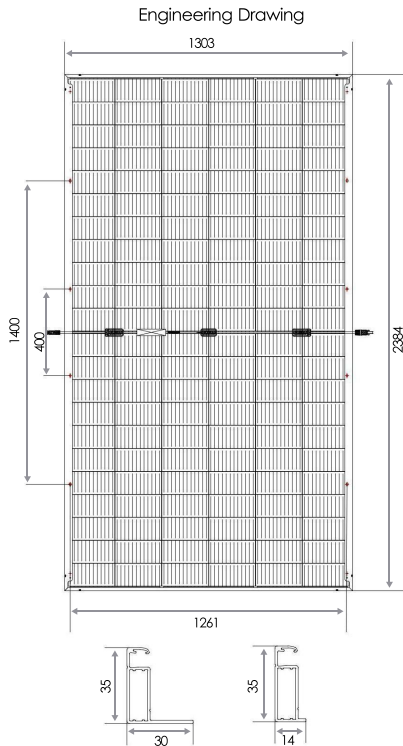
Module Efficiency

25 Year

Power Output Warranty

12 Year

Product Warranty



Item		SM8 TPDB132-640/M		SM8 TPDB132-645/M		SM8 TPDB132-650/M		SM8 TPDB132-655/M		SM8 TPDB132-660/M		SM8 TPDB132-665/M		SM8 TPDB132-670/M	
		STC	NOTC	STC	NOTC	STC	NOTC	STC	NOTC	STC	NOTC	STC	NOTC	STC	NOTC
Max. Power (Pmax)	W	640	485	645	488.6	650	492.4	655	496.2	660	500	665	503.8	670	507.6
Opt. Operating Current (Imp)	A	17.17	14.01	17.21	14.04	17.25	14.08	17.29	14.11	17.33	14.14	17.37	14.17	17.41	14.21
Opt. Operating Voltage (Vmp)	V	37.30	34.60	37.50	34.80	37.70	34.98	37.90	35.17	38.10	35.35	38.30	35.54	38.50	35.72
Short Circuit Current (Isc)	A	18.17	14.90	18.22	14.94	18.27	14.98	18.32	15.02	18.37	15.07	18.42	15.11	18.47	15.15
Open Circuit Voltage (Voc)	V	44.80	41.70	45.00	41.85	45.20	42.04	45.40	42.23	45.60	42.41	45.80	42.60	46.00	42.78
Module Efficiency		20.6%		20.8%		20.9%		21.1%		21.2%		21.4%		21.6%	
Module Power Tolerance		0~+3%													
Operating Temperature		-40°C~+85°C													
Max. System Voltage		1500VDC (IEC)													
Max. Nominal Fuse Current		35A													
Application Level		A													
STC		Irradiance 1000W/m ² , Module temperature 25°C, AM 1.5													
NOTC		Irradiance 800W/m ² , Module temperature 20°C, AM 1.5, Wind speed 1m/s													

Temperature Characteristics	
Nominal Operating Cell Temperature	45±2°C
Temperature Coefficient (Pmax)	-0.35%/°C
Temperature Coefficient (Voc)	-0.27%/°C
Temperature Coefficient (Isc)	+0.045%/°C

Mechanical Data	
Dimensions	2384 x 1303 x 35 mm
Weight	33.5±0.5kg
Module composition	132 (6*22)
Front glass thickness	3.2 mm high transparency, AR coating, thermal-reinforced glass
Frame material	Anodized aluminum alloy
J-Box	IP68, 3 diodes
Cable	Portrait: 300 mm; Landscape: 1400mm, 4mm ² / 12AWG
Connector	MC Compatible / MC4-EV02 (optional)

Packaging Specifications	
Container	40HQ
Module quantity per pallet	31
Pallet quantity per container	18
Module quantity per container	558

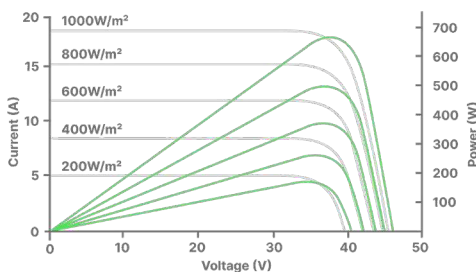
Performance under low irradiation
Industry-leading performance under low irradiance conditions. The module efficiency of irradiance 200W/m² is above 96.5% of the irradiance 1000W/m² module efficiency.

Product Certification	
ISO 9001: Quality management system certification	CEC
ISO 14001: Environmental management system certificate	TUV
ISO 45001: International standards for occupational health and safety	CE
IEC 61215: Standards for durability	UL
IEC 61730: Standards for safety operation	



- Anti-reflection coating and self-cleaning glass
- Special cutting and soldering technology leads to low hotspot risk
- Selected encapsulating material and stringent production process control ensure the product is highly PID resistant and snail-trail free
- Optimized system performance due to module level current sorting
- Highly transparent self-cleaning glass brings additional yield and easy maintenance

I-V Curves Of PV Module



Warranty

