

# Orion

## P-Type 210MM Bifacial Double Glass 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 back sheet, excels in hail resistance, ensuring unparalleled durability for small to medium-sized solar projects



#### Maximized Power Generation

With our advanced bi-facial glass technology, it achieves a significant increase in power generation up to 670W

Pmax:

**670W**

Power range:

**640-670W**

Efficiency:

**21.6%**

Warranty:

**30 years**

Annual degradation:

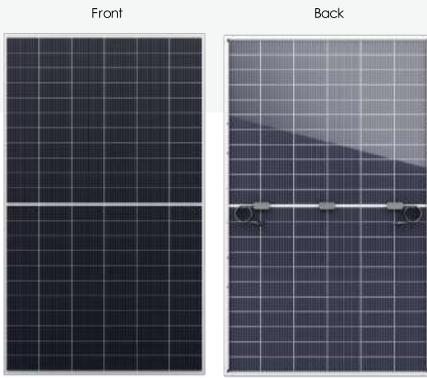
**0.45%**

#### 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

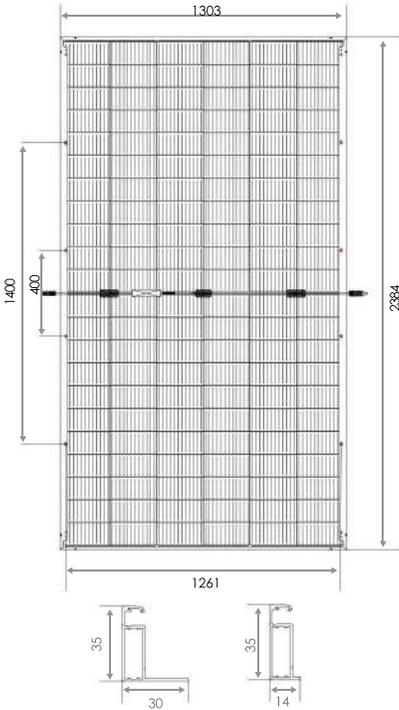
**30 Year**

Power Output Warranty

**12 Year**

Product Warranty

Engineering Drawing



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

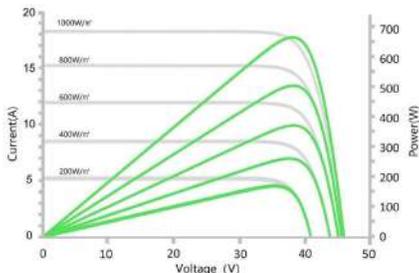


Optimized system performance due to module level current sorting



Highly transparent self-cleaning glass brings additional yield and easy maintenance

I-V Curves Of PV Module



Item	Unit	ISM8-TPSB132-640/M ISM8-TPSB132-645/M ISM8-TPSB132-650/M ISM8-TPSB132-655/M ISM8-TPSB132-660/M ISM8-TPSB132-665/M ISM8-TPSB132-670/M															
		STC	NOTC	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/m², Module temperature 25°C, AM 1.5															
NOTC		Irradiance 800W/m², 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	38.5±0.5kg
Module composition	132 (6*22)
Front glass thickness	2.0mm+2.0mm, High Transmission, AR Coated Heat Strengthened Glass
Frame material	Anodized aluminum alloy
J-Box	IP68, 3 diodes
Cable	Portrait: 300 mm; Landscape: 1400mm, 4mm² / 12 AWG
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 200/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	



Warranty

