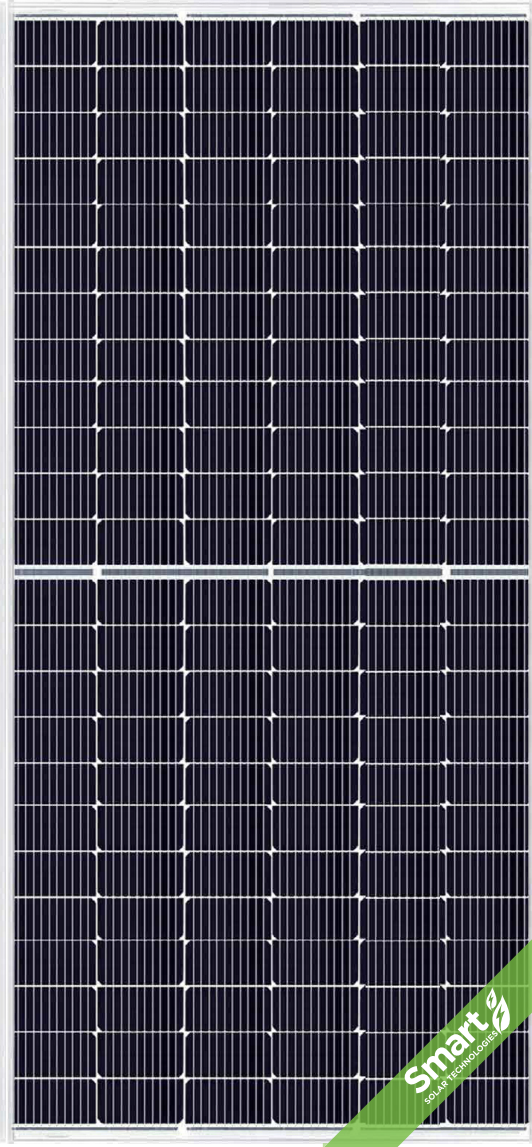



MADE IN TURKEY



## MONOFACIAL HALF-CUT CELL 9BB MODULE 450-460W


MonoPERC

 **Anti - PID**

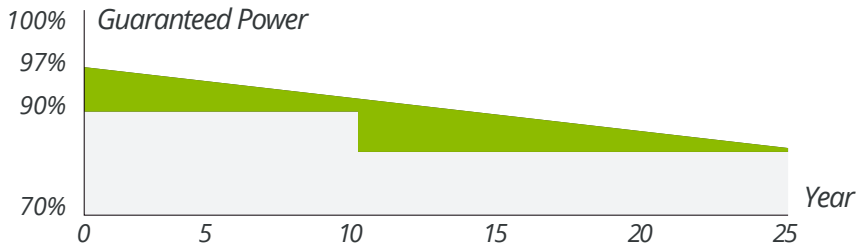
 **Current Classification**  
Increases production power in PV plants

 **Better Shading Tolerance**

 **More Reliable**  
Low hot-spot effect

 **More Power**  
• Low temperature coefficient  
(Pmax): -0.35%/°C

 **25 Year Warranty**  
12 year product warranty  
25 year linear performance warranty



**12** year product warranty

**25** year linear performance warranty

Industry Standard

Smart Solar Technologies



**Tempered Solar Glass**  
Anti-Reflection Coating



**Backsheet Layer**  
320 / 350 Micron 3 Layers



**Junction Box**  
IP68 (Silicon Potting)



**Anodized Aluminium Frame**  
35mm Frame  
15-20 µm Eloxal Surface Coating

### About Smart Solar Technologies

Smart Solar Technologies produces new generation PERC, Black Silicon, Bifacial, MBB and Half-Cut modules with backsheets or glass-glass options in its factory located in Gebze Organized Industrial Zone with a closed area of 23,500 m<sup>2</sup>.

[www.smartsolar.com.tr](http://www.smartsolar.com.tr) smartgunesteknolojileri / 

**ELECTRICAL TYPICAL VALUES**

Model	SS450M4-24/TH		SS455M4-24/TH		SS460M4-24/TH	
	SS450M4H-24/TH		SS455M4H-24/TH		SS460M4H-24/TH	
Type	Monocrystalline 166 x 83mm					
Testing Condition	STC	NOTC	STC	NOTC	STC	NOTC
Rated Power ( $P_{mpp}$ )	450	335	455	339	460	345
Tolerance	0~+5w					
Rated Current ( $I_{mpp}$ )	10.87	8.78	10.94	8.84	11.01	8.89
Rated Voltage ( $V_{mpp}$ )	41.40	38.12	41.60	38.30	41.79	38.80
Short Circuit Current ( $I_{sc}$ )	11.44	9.24	11.52	9.31	11.60	9.37
Open Circuit Voltage ( $V_{oc}$ )	49.79	47.00	50.01	47.21	50.21	47.30
Module Efficiency (%)	20.58		20.80		21.03	
NOCT (Nominal Operating Cell Temperature)	43±2°C					
Voltage Temperature Coefficient	-0.28%/°C					
Current Temperature Coefficient	+0.05%/°C					
Power Temperature Coefficient	-0.35%/°C					

**MECHANICAL CHARACTERISTICS**

Dimension (LxWxH)	Length: 2103mm (82,80 inch) Width: 1040mm (40,94 inch) Height: 35mm (1,38 inch)
Weight	25kg (55,12 lbs)
Front Glass	3.2mm tempered glass
Frame	Anodized aluminium alloy
Cable	4mm <sup>2</sup> (IEC), 450mm (v) 250mm (h) or customized length
Junction Box	IP 68 Rated

**ABSOLUTE MAXIMUM RATING**

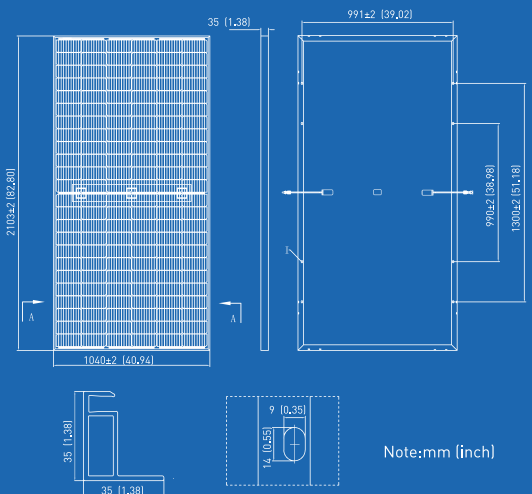
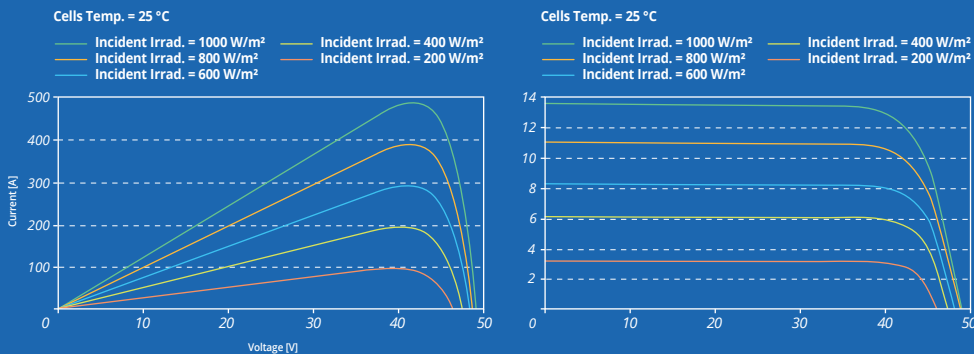
Operating Temperature	From -40 to +85°C
Hail Diameter @ 80km/h	Up to 25mm
Front Side Maximum Static Loading	5400Pa
Rear Side Maximum Static Loading	2400Pa
Maximum Series Fuse Rating	20A
PV Module Classification	II
Fire Rating (IEC 61730)	C
Maximum System Voltage	DC 1000V/1500V

**PACKING CONFIGURATION**

Container	40HQ	20GP
Pieces/Container	682	255

- In compliance with our warranty terms and conditions.
- Measurement conditions under irradiance level of standard test conditions (STC): 1000W/m<sup>2</sup>, air mass 1.5, AM spectrum, cell temperature of 25°C

**ELECTRICAL CHARACTERISTICS**



Note:mm (inch)