



# ESPHSC(Bifacial)

## Monocrystalline Half-Cut Bifacial Solar Module

### KEY FEATURES

**MBB Half-Cut Solar Cell:**  
144 cells (6X24); 9 busbar solar cell.

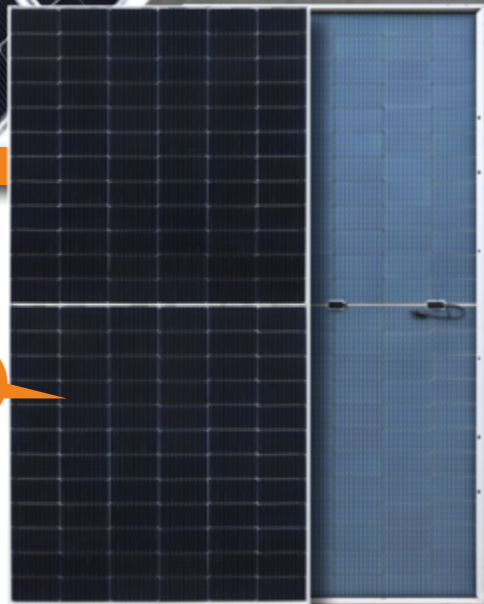
**Higher Module Conversion Efficiency:**  
Higher module output up to 455W with module efficiency up to 20.9%.

**Low-light Performance:**  
Advanced glass and surface texturing allow for excellent performance in low-light environments.

**Light-weight design**  
Light-weight design using transparent backsheets for easy installation and low BOS cost.

**Higher Power Output**  
Module power increases 5-25% generally, bringing significantly lower LCOE and higher IRR.

**166**



**+** WATTS POSITIVE TOLERANCE

**12** YEARS PRODUCT WARRANTY

**25** YEARS LINEAR POWER WARRANTY

### BIFACIAL, 166mm SERIES, 72-CELL HALF-CUT SERIES

#### ELECTRICAL PERFORMANCE

Module type: ESPHSC	440M / 445M / 450M / 455M
Maximum Power(Wp)	440W 445W 450W 455W
Open circuit Voltage(Voc)	48.90V 49.10V 49.30V 49.5V
Short circuit Current(Isc)	11.46A 11.53A 11.60A 11.66A
Maximum Power Voltage(Vm)	41.10V 41.3V 41.50V 41.7V
Maximum Power Current(Im)	10.71A 10.78A 10.85A 10.92A
Module efficiency	20.24% 20.47% 20.70% 20.90%
Maximum Series Fuse	20A
Watts positive tolerance	0~+3%
Number of Diode	3
Standard Test Conditions	1000W/M <sup>2</sup> , 25°C, AM1.5
Maximum System Voltage	1000/1500V/DC
Temperature-Coefficient Isc	+0.049%/°C
Temperature-Coefficient Voc	-0.271%/°C
Temperature-Coefficient Pmpp	-0.352%/°C
Normal Operating Cell Temperature	-40°C...+85°C
Load Capacity for the cover of the module (glass)	5400Pa(IEC61215)(snow)
Load Capacity for the front & back of the module	2400Pa(IEC61215)(wind)

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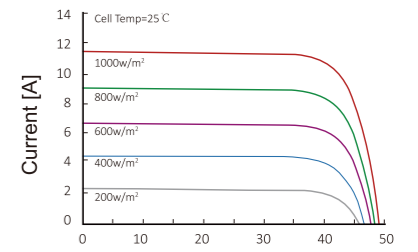
#### MECHANICAL CHARACTERISTICS

Front cover (material / thickness)	low-iron tempered glass / 3.2mm
Backsheet (color)	transparent
Cell (quantity / material / dimensions)	144(6x24) / monocrystalline silicon, bifacial
Frame (material / color)	aluminum hollow-chamber frame on each side anodized aluminum alloy / silver
Junction box (protection degree)	≥IP68
Cables & Plug connectors	4mm <sup>2</sup> , 300mm in length, length can be customized
Module Dimensions (L / W / H)	2094x1038x35mm
Module Weight	24kg
Application class	Class A
Electrical protection class	Class II
Fire safety class	Class C

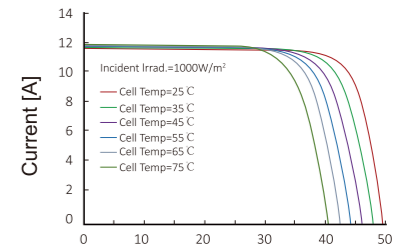
#### PACKING

Container Size	Units/Pallet (PCS)	Weight/Pallet (KG)	Pallet Measurement (mm)	Units/Container (PCS)
20GP	58(31+27)	1422	2150x1130x2220	290
40HQ	31	735	2150x1130x1170	726
	35	855	2150x1130x1345	

#### CURRENT-VOLTAGE CURVES:



Module characteristics at constant module temperatures of 25°C and variable levels of irradiance



Module characteristics at variable module temperatures and constant module irradiance of 1.000 W/m<sup>2</sup>

#### MODULE DIAGRAM:

