

• YOUR
• SMART
• ENERGY

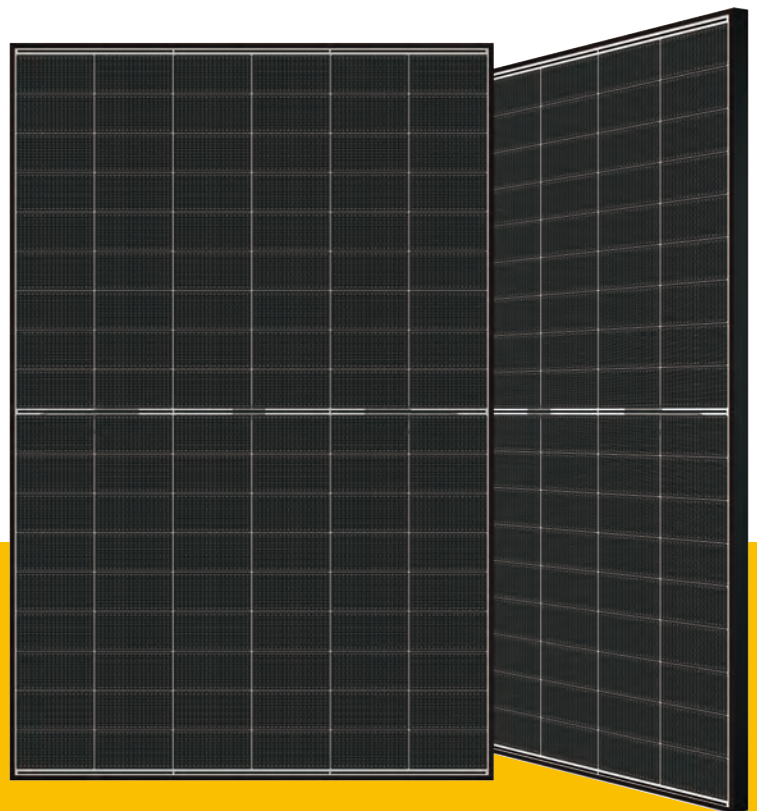


MONTSOL

BLACK SERIES

108-Cell Bifacial Half Cell
Double-Glass PV Panel

POWER
430-450W



HJT Ultra-High-Efficient Output Power

Higher Energy Conversion Efficiency
(Natural Bifacial Symmetrical Structure of HJT Cells)

Superior Low Temperature Coefficient

Unique SMBB Technology

Avoid PID/LID Risks

Outstanding Weak Light Performance

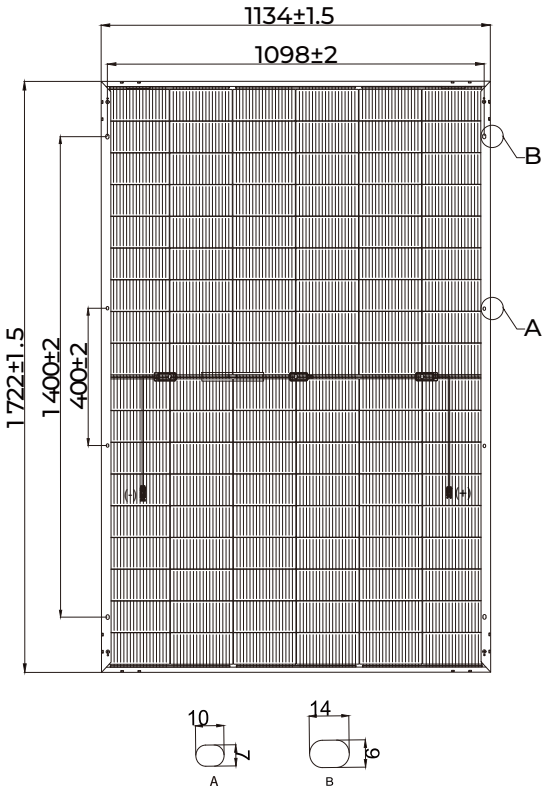
Exceptional 30 Years Product & Performance Warranty



MONTSOL BLACK SERIES 430-450W

108-Cell Bifacial HJT Solar Half Cell Module

Engineering Drawings Unit: mm



Electrical Characteristics (STC*)

AL-182-B108	DS430	DS435	DS440	DS445	DS450
Maximum Power (P _{max})	430W	435W	440W	445W	450W
Module Efficiency (%)	22.02%	22.28%	22.53%	22.79%	23.04%
Optimum Operating Voltage (V _{mp})	33.49V	33.75V	34.01V	34.26V	34.51V
Optimum Operating Current (I _{mp})	12.84A	12.89A	12.94A	12.99A	13.04A
Open Circuit Voltage (V _{oc})	40.30V	40.56V	40.83V	41.09V	41.34V
Short Circuit Current (I _{sc})	13.60A	13.35A	13.40A	13.45A	13.50A
Operating Module Temperature	-40 to +85°C				
Maximum System Voltage	DC 1500V (IEC)				
Maximum Series Fuse	25A				
Power Tolerance	0~+5W				
Bifaciality	85%± 5%				

*STC: Irradiance 1000 W/m², cell temperature 25°C, AM=1.5. Test uncertainty for P_{max}±3%

BSTC**

Maximum Power (P _{max})	475W	480W	485W	490W	495W
Optimum Operating Voltage (V _{mp})	33.49V	33.75V	34.01V	34.26V	34.51V
Optimum Operating Current (I _{mp})	14.18A	14.23A	14.27A	14.31A	14.35A
Open Circuit Voltage (V _{oc})	40.30V	40.56V	40.83V	41.09V	41.34V
Short Circuit Current (I _{sc})	14.69A	14.73A	14.77A	14.81A	14.85A

**BSTC: Front side irradiation 1000W/m², back side reflection irradiation 135W/m², AM=1.5, ambient temperature 25°C.

Temperature Characteristics

Nominal Operating Cell Temp. (NOCT)	44°C± 2 °C
Temperature Coefficient of P _{max}	-0.26%/ °C
Temperature Coefficient of V _{oc}	-0.24%/ °C
Temperature Coefficient of I _{sc}	0.04%/ °C

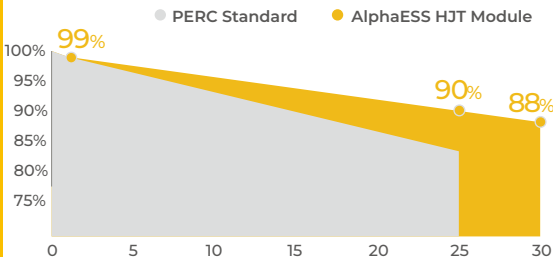
Mechanical Characteristics

Cell Type	HJT Mono 182 × 91.75mm
Cell Connection	108 (6×18)
Module Dimension	1722 × 1134 × 30 mm
Weight	22kg
Junction Box	IP68
Output Cable	4mm², 1200mm in length, length can be customized / UV resistant
Connectors Type	MC4 original
Frame	Anodised aluminum alloy (Black)
Front Load	5400 Pa
Rear Load	2400 Pa
Glass Thickness	(F) 1.6mm anti-reflective solar glass (B) 1.6mm solar glass

Safety & Warranty

Safety Class	Class II
Product Warranty	30 yrs Workmanship
Performance Warranty	30 yrs Linear Warranty*

* Less than 1% attenuation in the 1st year, the annual attenuation from the 2nd year is no more than 0.375%, and the power is no less than 88% until the 30th year.



* Refer to AlphaESS standard warranty for details

Shipping Configurations

Container Size	HC'40
Pallets Per Container	26
Modules Per Pallet (pcs)	36
Modules Per Container (pcs)	936

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