

ONYX ALL BLACK BIFACIAL MODULE WITH DUAL GLASS

430/435/440/445/450



Bifacial technology enables additional energy harvesting from rear side (up to 30%)



30 years lifespan brings 10-30% additional power generation comparing with conventional P-type module



N-type solar cell has no LID naturally which can increase power generation



Excellent low irradiance performance.



Industry leading lowest thermal co-efficient of power.

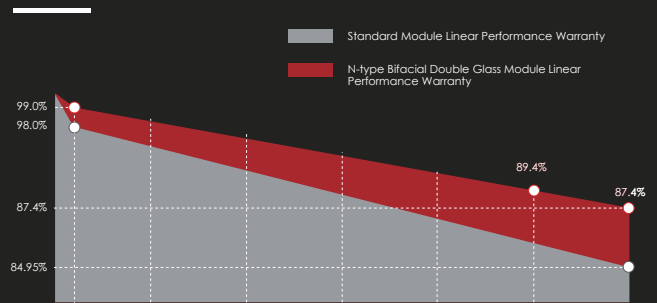


Certified to withstand: wind load (2400 Pa) and snow load (5400 Pa).



100% triple EL test enabling remarkable reduction of hidden crack rate of modules

LINEAR PERFORMANCE WARRANTY



30 years
Product Workmanship Warranty

30 years
Output Power Warranty

- IEC61215(2016), IEC61730(2016)
- ISO9001:2015: Quality Management System
- ISO45001:2018 Occupational health and safety management systems



ESXXM54 - BF430 - 450 Watt

Mechanical Characteristics

Cell Type	N- type Mono-crystalline
No. of cells	108
Dimensions	1762×1134×30 mm
Weight	24.5 kg
Front Glass	2.0 mm, Anti-reflection Coating
Back Glass	2.0 mm, Heat Strengthened Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP68 Rated
Protection Class	Class II
IEC Fire Type	Class A
Connector Type	MC4 Compatible/MC4
Output Cables	4.0 mm ² (+): 1100mm , (-): 1100mm or Customized Length

Packaging Configuration

Pallet Dimensions	1792×1140×1249 mm
Packing Detail (Two pallets = One stack)	36pcs/pallets, 72 pcs/stack, 936 pcs/ 40'HQ Container

Specifications (STC)

Maximum Power - Pmax [Wp]	430	435	440	445	450
Maximum Power Voltage - Vmp [V]	33.08	33.26	33.44	33.61	33.79
Maximum Power Current - Imp [A]	13.00	13.08	13.16	13.24	13.32
Open-circuit Voltage - Voc [V]	39.43	39.63	39.83	40.03	40.23
Short-circuit Current - Isc [A]	13.84	13.91	13.98	14.05	14.12
Module Efficiency STC [%]	21.52	21.77	22.02	22.27	22.52
Power Tolerance	0 ~ + 3 %				
Temperature Coefficients of Pmax	-0.29 %/°C				
Temperature Coefficients of Voc	-0.25 %/°C				
Temperature Coefficients of Isc	0.045 %/°C				

STC: Irradiance 1000W/m², Cell Temperature 25°C, AM=1.5

Specifications (BNPI)

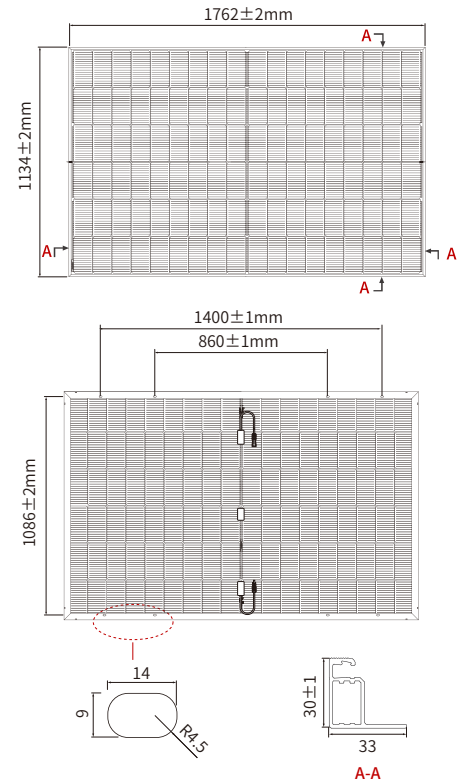
Maximum Power - Pmax [Wp]	474	480	485	491	496
Maximum Power Voltage - Vmp [V]	33.06	33.26	33.41	33.61	33.76
Maximum Power Current - Imp [A]	14.34	14.43	14.52	14.60	14.69
Open-circuit Voltage - Voc [V]	39.43	39.63	39.83	40.03	40.23
Short-circuit Current - Isc [A]	15.24	15.32	15.40	15.48	15.56

BNPI: Irradiance: front 1000W/m², rear 135W/m², Cell Temperature 25°C, AM=1.5

Application Conditions

Operating Temperature	-40 °C ~ +85 °C
Maximum System Voltage	1500 VDC (IEC)
Maximum Series Fuse Rating	30 A

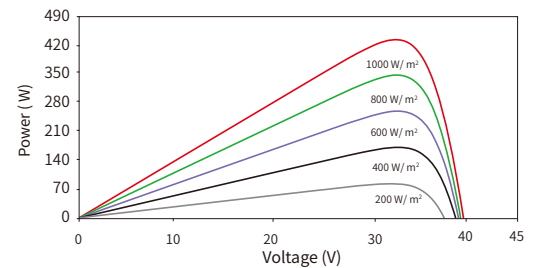
Engineering Drawings



*Note: For specific dimensions and tolerance ranges, please refer to the corresponding detailed module drawings.

Electrical Performance

Power-Voltage Curves (440W)



Current-Voltage Curves (440W)

