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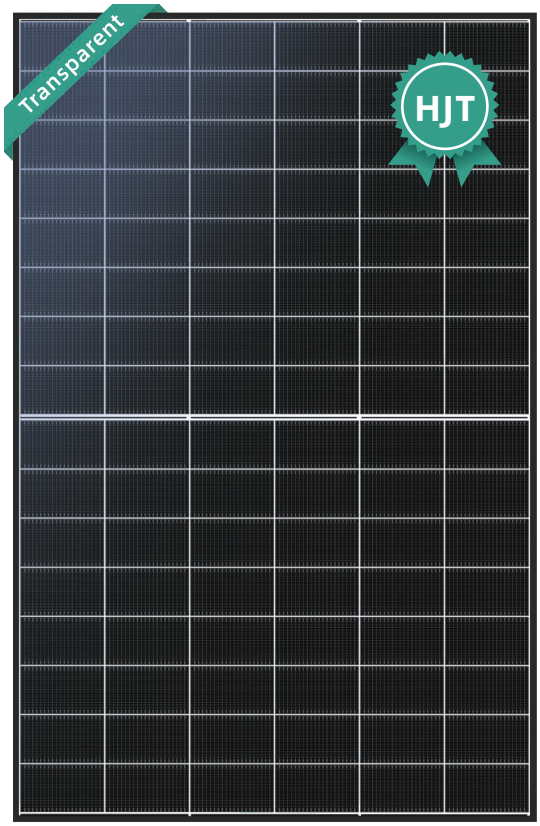


440-460w

Helios Module Series

N-HJT HIGH EFFICIENCY MONO 96-0BB-B-TG

Bloomberg NEW ENERGY FINANCE Tier1 TOP PERFORMER 2025 kiwa PV MODULE RELIABILITY SCORECARD

HJT-0BB Technology

- Minimizing current transmission reduces internal power loss, increasing module efficiency

Excellent Power Generation Performance

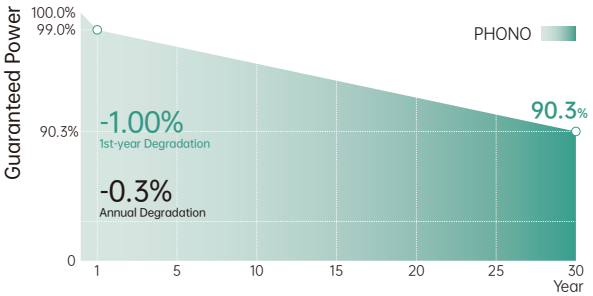
- Optimized cell size brings higher power
- Up to 95% bifaciality
- Competitive high-temperature performance with ameliorated temperature coefficient (-0.24%/℃)

Higher Quality Reliability

- N-type with lower LID and LeTID
- Industry-leading cell technology of TCO thin film contributes to excellent anti-PID characteristic
- Sealing with PIB based sealant to achieve stronger water resistance, greater air impermeability and longer module lifespan

More Environmentally Friendly

- Low temperature welding technology & shorter manufacturing process contributes to lower carbon emissions



30-year* Product Warranty

30-year Linear Performance Warranty

*The 30-year warranty applies only to systems with a capacity of less than 300 kW.

MANAGEMENT SYSTEM CERTIFICATES

IEC 61215, IEC 61730

ISO 9001
2015 / Quality management system

ISO 14001
2015 / Standards for environmental management system

ISO 45001
2018 / International standards for occupational health & safety

www.phonosolar.com / info@phonosolar.com

Electrical Typical Values

Model	PS440L14GFH-16/QSH		PS445L14GFH-16/QSH		PS450L14GFH-16/QSH		PS455L14GFH-16/QSH		PS460L14GFH-16/QSH	
Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Rated Power (Pmpp)	440	337	445	341	450	345	455	349	460	352
Rated Current (Impp)	14.49	11.59	14.59	11.67	14.68	11.74	14.77	11.82	14.86	11.89
Rated Voltage (Vmpp)	30.37	29.08	30.52	29.20	30.66	29.35	30.81	29.50	30.96	29.64
Short Circuit Current (Isc)	15.19	12.15	15.29	12.23	15.38	12.30	15.47	12.38	15.57	12.46
Open Circuit Voltage (Voc)	36.18	34.66	36.34	34.81	36.50	34.97	36.66	35.12	36.82	35.27
Module Efficiency (%)	22.02		22.27		22.52		22.77		23.02	

STC (Standard Testing Conditions): Irradiance 1000W/m², AM 1.5, Cell Temperature 25°C

NOCT (Nominal Operation Cell Temperature): Irradiance 800W/m², Ambient Temperature 20°C , Spectra at AM1.5, Wind at 1m/s

BNPI

Maximum Power (Pmax)	490	496	501	507	512
Optimum Operating Current (Impp)	16.10	16.20	16.30	16.41	16.50
Optimum Operating Voltage (Vmpp)	30.47	30.62	30.77	30.92	31.07
Short Circuit Current (Isc)	16.94	17.04	17.15	17.25	17.35
Open Circuit Voltage (Voc)	36.31	36.47	36.63	36.79	36.95

BNPI:Front Side Irradiation 1000W/m², Back Side Reflection Irradiation 135W/m² , AM 1.5, Ambient Temperature 25℃

Mechanical Characteristics

Cell Type	HJT Monocrystalline
Dimension (L × W × H)	Length: 1762mm (69.37 inch) Width: 1134mm (44.65 inch) Height: 30mm (1.18 inch)
Weight	21.6kg (47.62 lbs)
Glass	1.6mm/1.6mm Heat Strengthened Glass
Frame	Anodized Aluminium Alloy
Cable (Including Connector)	4mm² (IEC), 1250mm or Customized Length
Junction Box	IP 68 Rated

Temperature Ratings

Voltage Temperature Coefficient	-0.22%/°C
Current Temperature Coefficient	+0.04%/°C
Power Temperature Coefficient	-0.24%/°C
Power Tolerance	0~+3%
NOCT	44±2°C
Bifaciality	90±5%

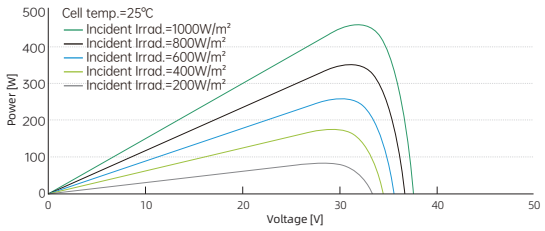
Absolute Maximum Rating

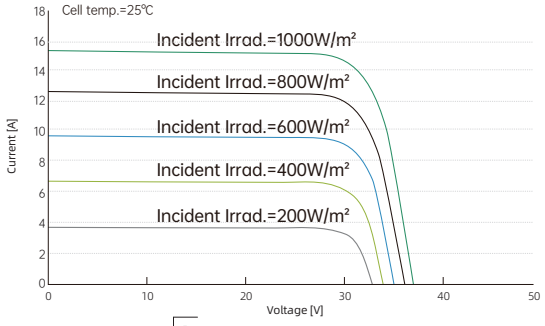
Operating Temperature	From -40 to + 85°C
Hail Diameter @ 80km/h	Up to 25mm
Front Side Maximum Static Loading	5400Pa
Rear Side Maximum Static Loading	2400Pa
Maximum Series Fuse Rating	30A
PV Module Classification	Class II
Fire Rating (IEC 61730)	C
Maximum System Voltage	DC 1500V

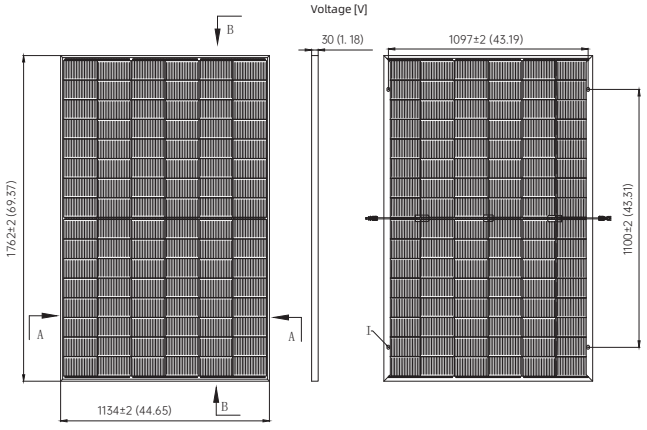
Packing Configuration

Container	40' HQ
Pcs/Container	936
Pcs/Pallet	36
Pallets/Container	26

Electrical Characteristics







Note:mm (inch)

PHONO