

RUNERGY

HY-DH96N11 **Turbo** **Bifacial**

450-470W

23.5% Max. Efficiency **N-Type** Bifacial & Dual Glass **96 Pieces** Half-Cell

Leading Technology

Based on n-type cell and 210R technology platform; Advanced design and manufacturing process; Industry leading reliability and efficiency of mass production

High Power

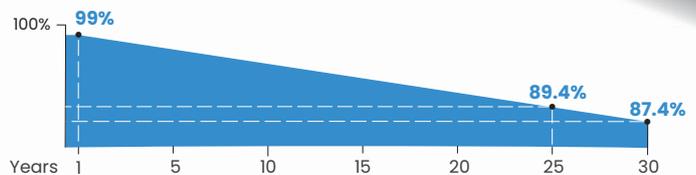
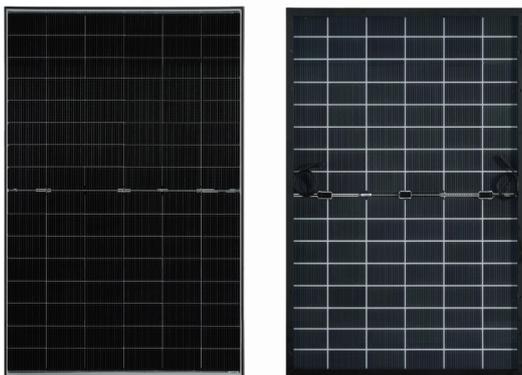
Bifacial higher power output, lower temperature coefficient and better low light performance; Significantly enhanced power output and lower LCOE

Long-term Reliability

Unsusceptible to LID, LeTID and lower PID degradation; 5400Pa snow load, 2400Pa wind load, and 35mm hail-resistant with 27.2m/s strike

Stringent Quality Control

Durable product structure; Stringent quality control system; Guaranteed after-sales service to ensure long-term reliability



Runergy N-Type Dual Glass Product Performance Warranty

• 1st year degradation **<1%**, annual degradation **<0.4%**

12 12-year product warranty

30 30-year linear power warranty

IEC61215 / IEC61730 / UL61730 / IEC61701 / IEC62716 / IEC60068 / ISO9001 / ISO14001 / ISO45001

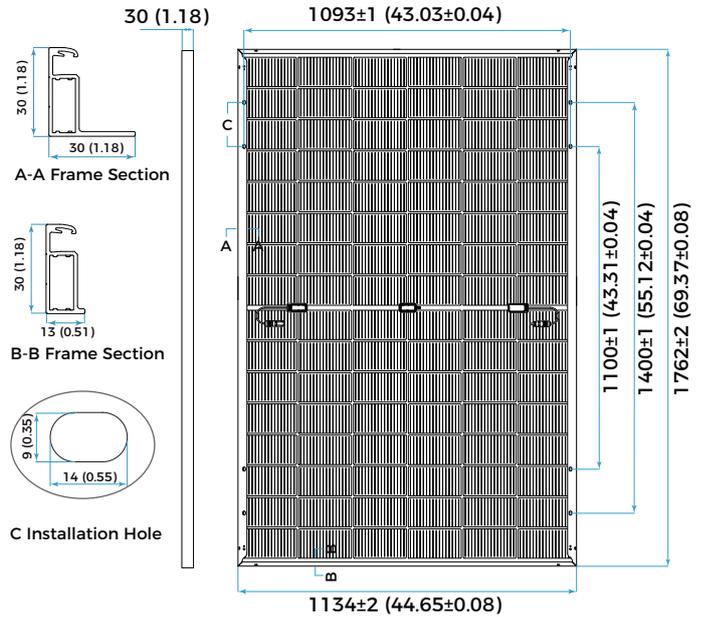


www.runergy.com
sales-inform@runergy.com

Unit: mm (inch)

Mechanical Parameters

Solar Cell	Mono N-Type 182*210mm
No. of Cells	96 (6 × 16)
Dimensions	1762 × 1134 × 30mm (69.37 x 44.65 x 1.18in)
Weight	25kg (55.12lbs)
Junction Box	IP68 rated (3 bypass diodes)
Output Cable	4mm ² (IEC), 12 AWG (UL) ±1200mm (47.24in.) or customized
Connector	MC4-EVO2 or similar
Front Cover	2.0mm AR coated heat-strengthened glass
Back Cover	2.0mm heat-strengthened glass
Frame	Black-anodized aluminum
Container	36 pcs/pallet, 936 pcs/40' HQ (Global) ,756 pcs/40' HQ (US)



Operating Parameters

Max. System Voltage	DC 1500V (IEC/UL)
Operating Temperature	-40°C ~ +85°C (-40°F ~ +185°F)
Max. Fuse Rating	35A
Front/Back Max. Loading	5400Pa (112lb/ft ²)/2400Pa (50lb/ft ²)
Bifaciality	80%±5%
Hail Test	35mm, 27.2 m/s.
Fire Resistance	IEC Class A/ UL Type 29

Electrical Characteristics - STC

Irradiance 1000 W/m², cell temperature 25 °C, AM-1.5, Test uncertainty for Pmax: ±3%

Maximum Power at STC (Pmax/W)	470	465	460	455	450
Power Tolerance (W)	0 ~ +5				
Optimum Operating Voltage (Vmp/V)	29.96	29.83	29.70	29.57	29.44
Optimum Operating Current (Imp/A)	15.69	15.59	15.49	15.39	15.29
Open Circuit Voltage (Voc/V)	35.78	35.65	35.52	35.39	35.26
Short Circuit Current (Isc/A)	16.39	16.31	16.23	16.15	16.07
Module Efficiency	23.5%	23.2%	23.0%	22.8%	22.5%

Electrical Characteristics - BNPI

Irradiance: front 1000W/m², rear 135W/m², Cell temperature 25 °C, AM-1.5.

Maximum Power at BNPI (Pmax/W)	517	512	506	501	496
Optimum Operating Voltage (Vmp/V)	29.96	29.83	29.70	29.57	29.44
Optimum Operating Current (Imp/A)	17.27	17.16	17.05	16.94	16.83
Open Circuit Voltage (Voc/V)	35.87	35.74	35.61	35.48	35.35
Short Circuit Current (Isc/A)	18.07	17.98	17.89	17.80	17.72

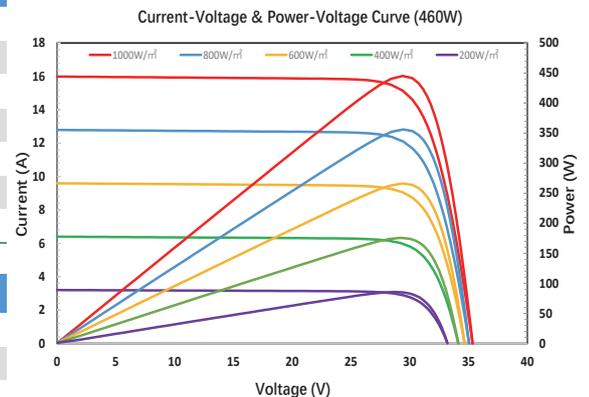
Rearside Power Gain

(Reference to 460W Front)

Rearside Power Gain	5%	15%	25%
Maximum Power (Pmax/W)	483	529	575
Optimum Operating Voltage (Vmp/V)	29.76	29.80	29.83
Optimum Operating Current (Imp/A)	16.23	17.75	19.28
Open Circuit Voltage (Voc/V)	35.58	35.62	35.65
Short Circuit Current (Isc/A)	17.01	18.61	20.21
Module Efficiency	24.6%	26.9%	29.3%

Temperature Characteristics

Nominal Module Operating Temperature	42 ± 2 °C
Nominal Cell Operating Temperature	45 ± 2 °C
Temperature Coefficient of Pmax	-0.29%/°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	0.045%/°C



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