

RUNERGY

TIER 1 HY-DH96N11 Trans

440-460W

23.0% Max. Efficiency **N-Type** Bifacial & Dual Glass **96 Pieces** Half-Cell

Advanced Technology

Embracing N - type Cells and a Novel product technology platform. The mass production efficiency and reliability are leading in the industry.

Exceptional Performance

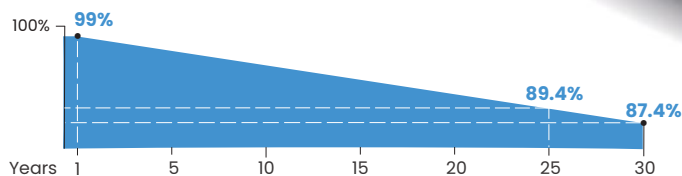
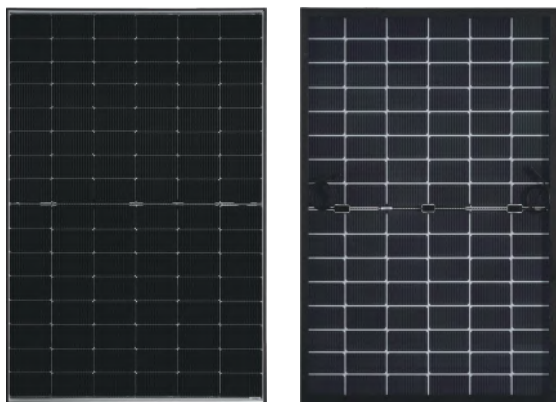
Double - sided Design, When Paired with a Tracker System, Significantly increases Energy Yield.

Aesthetics

Black Frames with White Gaps, Presenting a Tech - Savvy Exterior, with an Area of 2 Square meter.

Solid Quality, Steady Reliability

Dual glass Design, Exhibiting Strong Resistance to Water Vapor and Guaranteeing Long - term Reliability.



Runergy N-Type Dual Glass Product Performance Warranty

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

15 15-year product warranty
25 25-year product warranty
(special for rooftop market within 500kw only)

30 30-year linear power warranty

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



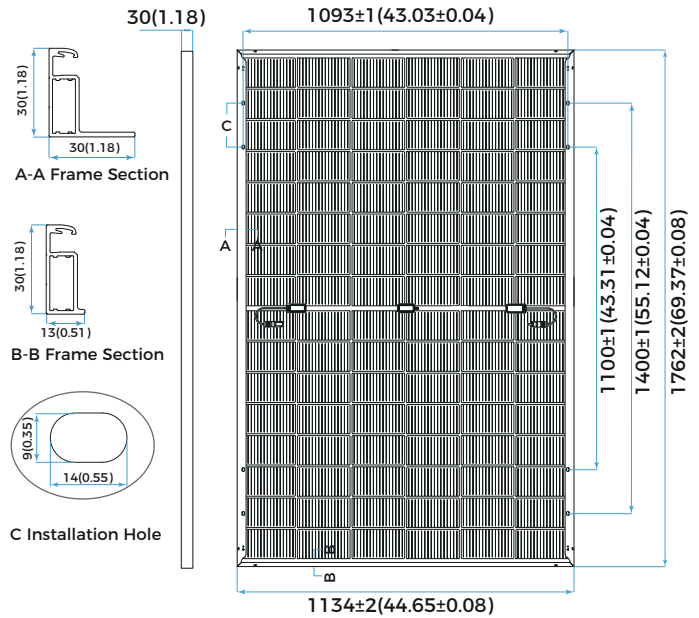
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Mechanical Parameters

Solar Cell	Mono N-Type 182*210mm
No. of Cells	96 (6 × 16)
Dimensions	1762 × 1134 × 30mm(69.37 × 44.65 × 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	EVO2 or similar
Front Cover	2.0mm AR coated heat strengthened glass
Back Cover	2.0mm heat strengthened glass
Frame	Aluminum, black anodized
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
Frontside Max. Loading	5400Pa(112lb/ft ²)
Backside Max. Loading	2400Pa(50lb/ft ²)
Bifaciality	80%±5%
Fire Resistance	IEC Class A/ UL type 29



Electrical Characteristics - STC

Irradiance 1000 W/m², cell temperature 25 °C, AM1.5, Test uncertainty for Pmax: ±3%

Maximum Power at STC (Pmax/W)	460	455	450	445	440
Power Tolerance (W)	0 ~ +5				
Optimum Operating Voltage (Vmp/V)	29.70	29.57	29.44	29.30	29.16
Optimum Operating Current (Imp/A)	15.49	15.39	15.29	15.19	15.09
Open Circuit Voltage (Voc/V)	35.52	35.39	35.26	35.12	34.98
Short Circuit Current (Isc/A)	16.23	16.15	16.07	15.99	15.91
Module Efficiency	23.0%	22.8%	22.5%	22.3%	22.0%

Electrical Characteristics - BNPI

Irradiance: front 1000W/m², rear 135W/m², Cell temperature 20 °C, AM1.5.

Maximum Power at BNPI(Pmax/W)	506.4	500.9	495.5	489.9	484.3
Optimum Operating Voltage (Vmp/V)	29.70	29.57	29.44	29.30	29.16
Optimum Operating Current (Imp/A)	17.05	16.94	16.83	16.72	16.61
Open Circuit Voltage (Voc/V)	35.61	35.48	35.35	35.21	35.07
Short Circuit Current (Isc/A)	17.89	17.80	17.72	17.63	17.54

Rearside Power Gain (Reference to 445W Front)

Rearside Power Gain	5%	15%	25%
Maximum Power (Pmax/W)	467	512	556
Optimum Operating Voltage (Vmp/V)	29.30	29.40	29.40
Optimum Operating Current (Imp/A)	15.95	17.41	18.92
Open Circuit Voltage (Voc/V)	35.12	35.22	35.22
Short Circuit Current (Isc/A)	16.79	18.33	19.93
Module Efficiency	23.4%	25.6%	27.8%

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

