

RUNERGY

TIER 1 HY-DH96N11B **430-450W**

22.5%	N-Type	96 Pieces
Max. Efficiency	Bifacial & Dual Glass	Half-Cell



High Conversion Efficiency

Module efficiency up to 22.5% based on N-Type wafer and advanced N-Type cell technology



Excellent Energy Yield

More power output in field operation due to better thermal behaviors, weak-light performance and bifaciality



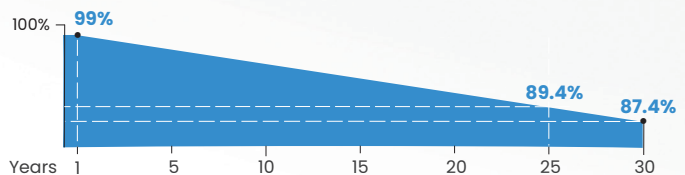
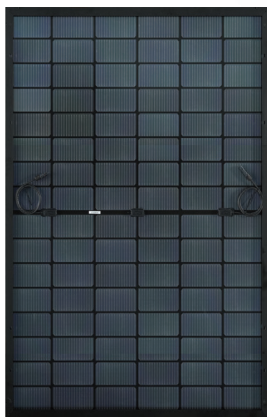
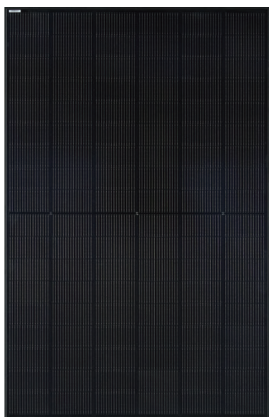
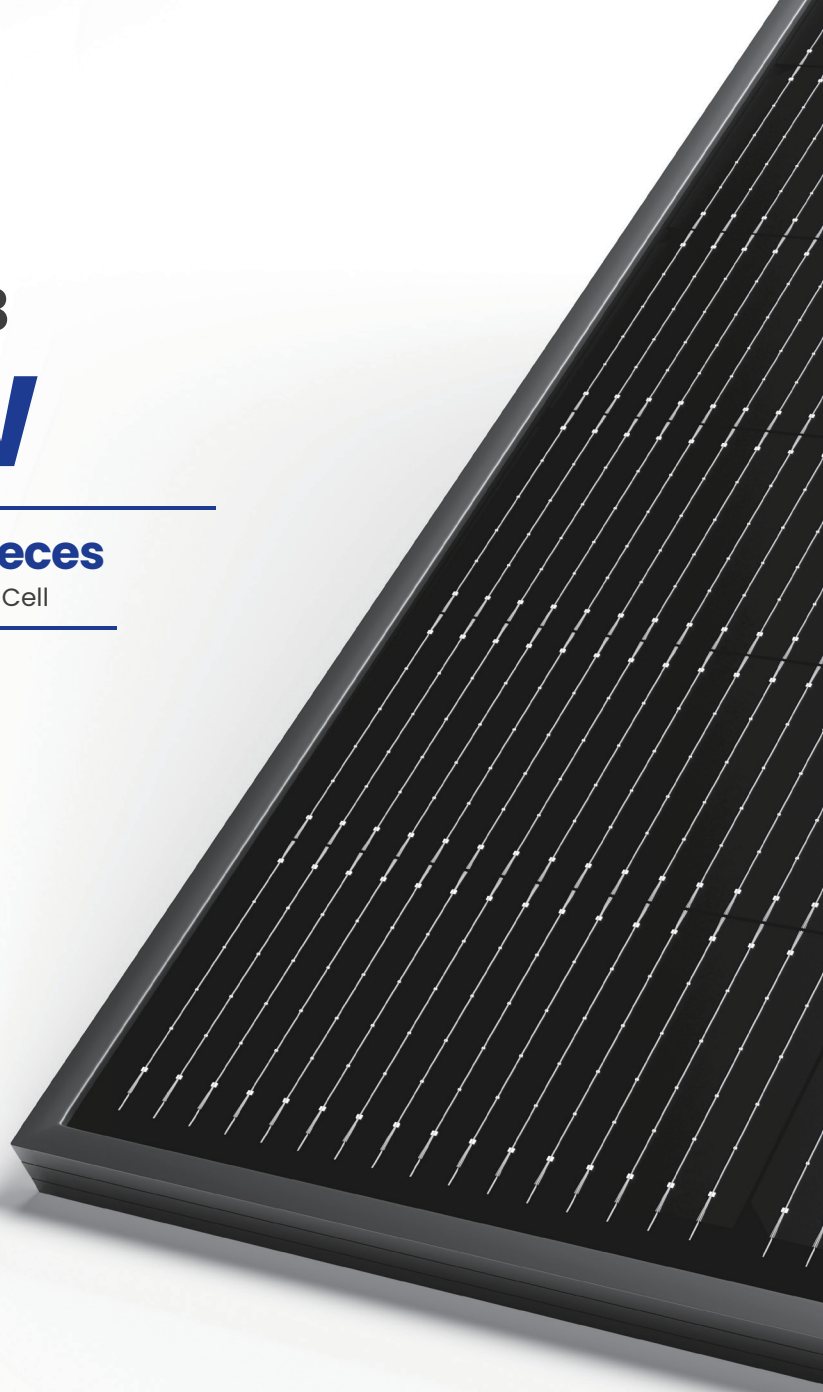
Outstanding Anti-degradation

Unsusceptible to LID, LeTID and less annual degradation due to special characteristics of N-Type



Quality Guarantee

High module quality ensures long-term reliability



Runergy N-Type Dual Glass Product Performance Warranty

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



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



30-year linear power warranty

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



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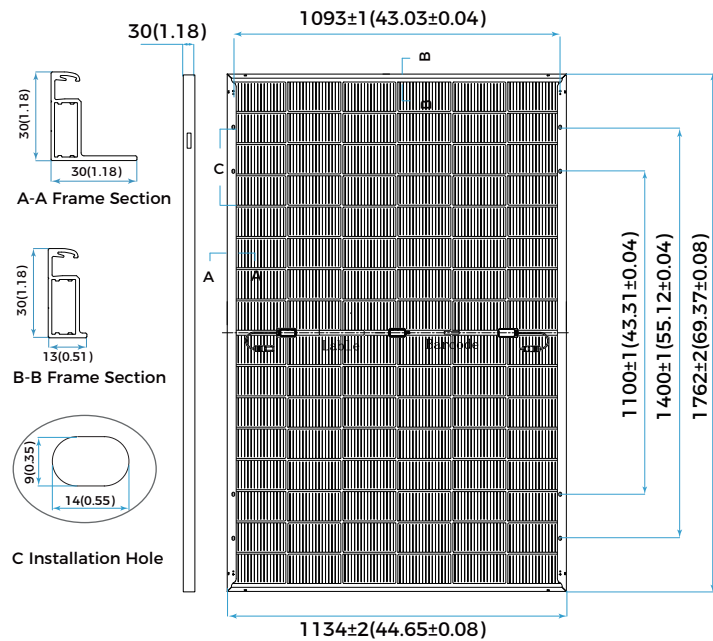
Unit: mm(inch)

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	4mm² (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

Operating Parameters

Max. System Voltage	DC 1500V (IEC/UL)
Operating Temperature	-40℃ ~ +85℃ (-40°F ~ +185°F)
Max. Fuse Rating	30A
Frontside Max. Loading	5400Pa(112lb/ft²)
Backside Max. Loading	2400Pa(50lb/ft²)
Bifaciality	80%±10%
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)	450	445	440	435	430
Power Tolerance (W)	0 ~ +5				
Optimum Operating Voltage (Vmp/V)	29.44	29.30	29.16	29.02	28.88
Optimum Operating Current (Imp/A)	15.29	15.19	15.09	14.99	14.89
Open Circuit Voltage (Voc/V)	35.26	35.12	34.98	34.84	34.70
Short Circuit Current (Isc/A)	16.07	15.99	15.91	15.83	15.75
Module Efficiency	22.5%	22.3%	22.0%	21.8%	21.5%

Electrical Characteristics - NMOT

Irradiance 800 W/m², ambient temperature 20 °C, AM1.5, wind speed 1 m/s.

Maximum Power at NMOT (Pmax/W)	344.8	340.9	337.0	333.2	329.3
Optimum Operating Voltage (Vmp/V)	28.19	28.05	27.92	27.79	27.65
Optimum Operating Current (Imp/A)	12.23	12.15	12.07	11.99	11.91
Open Circuit Voltage (Voc/V)	33.76	33.63	33.49	33.36	33.23
Short Circuit Current (Isc/A)	12.95	12.89	12.83	12.76	12.70

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

