

# RUNERGY

MADE IN THAILAND/CHINA

## TIER 1 HY-DH108N8B 420-440W

**22.5%**

Max. Efficiency

**N-Type**

Bifacial & Dual Glass

**108 Pieces**

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



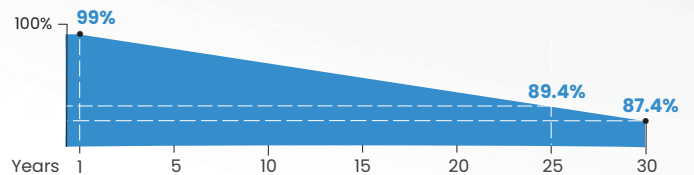
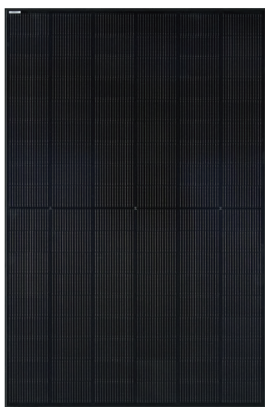
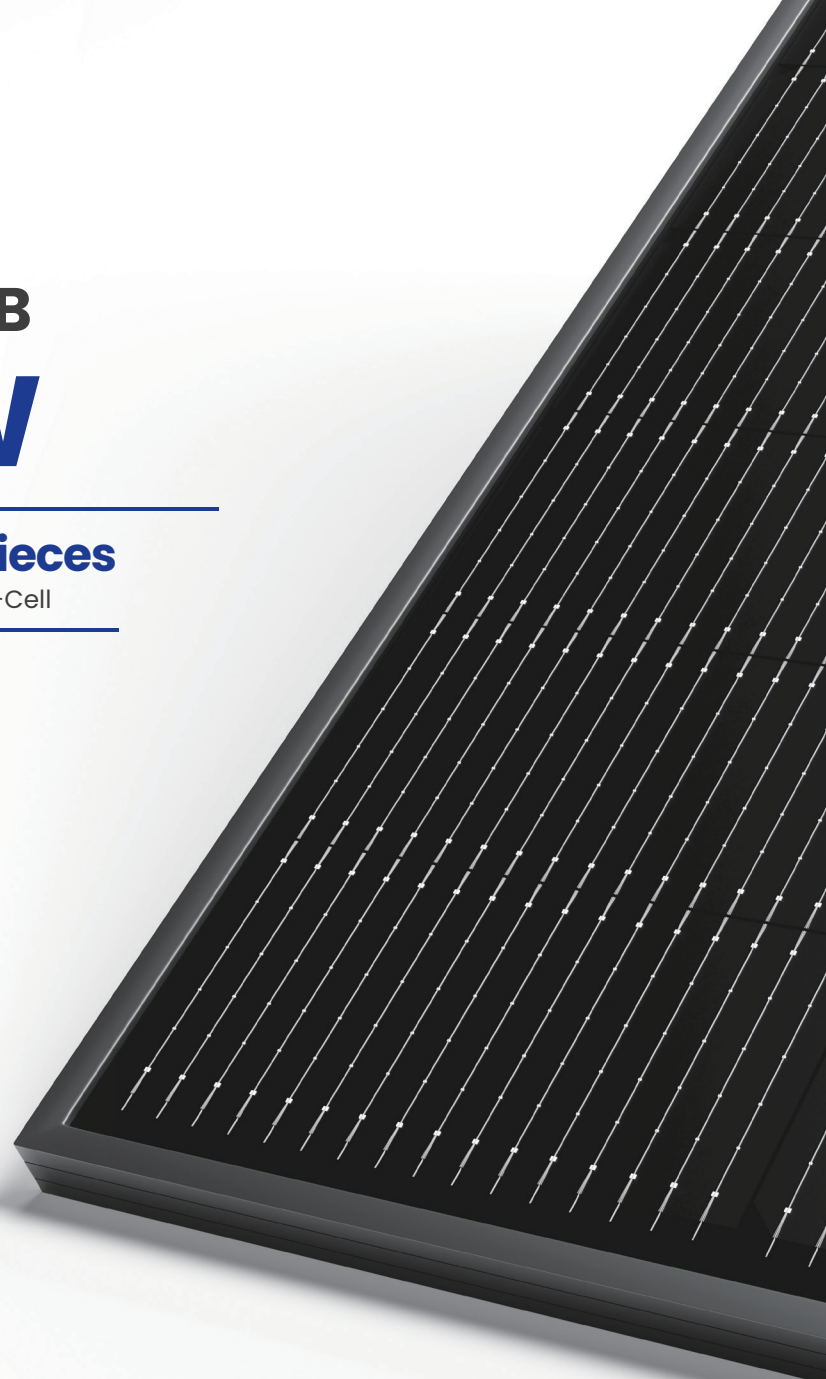
### Outstanding Anti-degradation

Unsusceptible to LID 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

- **25 Years** warranty for materials and workmanship
- **30 Years** warranty for extra linear power output
- 1st year < **1%**, annual degradation < **0.4%**

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



Evidence for IEC61701/62716/60068 is available on request.

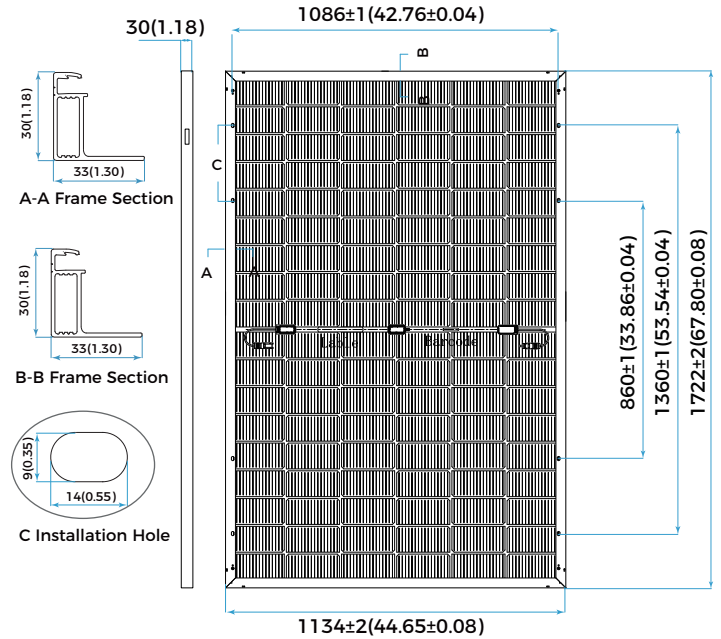
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## Mechanical Parameters

Solar Cell	Mono N-Type 182mm
No. of Cells	108 (6 × 18)
Dimensions	1722 × 1134 × 30mm(67.80 x 44.65 x 1.18in)
Weight	20.5kg(45.19lbs)
Junction Box	IP68 rated (3 bypass diodes)
Output Cable	4mm <sup>2</sup> (IEC), 12 AWG(UL) ±1200mm(47.24in.) or customized
Connector	PV-KST4-EVO2/xy_UR, PV-KBT4-EVO2/xy_UR
Front Cover	1.6mm (0.062in.)semi-tempered AR glass
Back Cover	1.6mm (0.062in.)semi-tempered glass
Container	36 pcs/Pallet, 936 pcs/40' HQ

## Operating Parameters

Max. System Voltage	DC 1500V (IEC/UL)
Operating Temperature	-40°C ~ +85°C(-40°F ~ +185°F)
Max. Fuse Rating	30A
Frontside Max. Loading	5400Pa(112lb/ft <sup>2</sup> )
Backside Max. Loading	2400Pa(50lb/ft <sup>2</sup> )
Bifaciality	80%±10% (Pmax) 98%±2%(Voc) 80%±10%(Isc)
Fire Resistance	IEC Class A



## Electrical Characteristics - STC

Irradiance 1000 W/m<sup>2</sup>, cell temperature 25 °C, AM1.5, Test uncertainty for Pmax: ±3%, Isc: ±4%, Voc: ±3%

Maximum Power at STC (Pmax/W)	440	435	430	425	420
Power Tolerance (W)	0 ~ +5				
Optimum Operating Voltage (Vmp/V)	33.21	33.03	32.85	32.67	32.49
Optimum Operating Current (Imp/A)	13.25	13.17	13.09	13.01	12.93
Open Circuit Voltage (Voc/V)	39.16	38.97	38.78	38.59	38.40
Short Circuit Current (Isc/A)	13.88	13.80	13.72	13.64	13.56
Module Efficiency	22.5%	22.3%	22.0%	21.8%	21.5%

## Electrical Characteristics - NMOT

Irradiance 800 W/m<sup>2</sup>, ambient temperature 20 °C, AM1.5, wind speed 1 m/s.

Maximum Power at NMOT (Pmax/W)	337.0	333.2	329.3	325.5	321.7
Optimum Operating Voltage (Vmp/V)	31.80	31.63	31.45	31.28	31.11
Optimum Operating Current (Imp/A)	10.60	10.53	10.47	10.41	10.34
Open Circuit Voltage (Voc/V)	37.50	37.31	37.13	36.95	36.77
Short Circuit Current (Isc/A)	11.19	11.12	11.06	11.00	10.93

## Rearside Power Gain (Reference to 440W Front)

Rearside Power Gain	5%	15%	25%
Maximum Power (Pmax/W)	462	506	550
Optimum Operating Voltage (Vmp/V)	33.21	33.31	33.31
Optimum Operating Current (Imp/A)	13.91	15.19	16.51
Open Circuit Voltage (Voc/V)	39.16	39.26	39.26
Short Circuit Current (Isc/A)	14.57	15.92	17.30
Module Efficiency	23.7%	25.9%	28.2%

## 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

