

# RUNERGY

MADE IN THAILAND/CHINA

## TIER 1 HY-DH108N12B 425-445W

**22.3%**

Max. Efficiency

**N-Type**

Bifacial & Dual Glass

**108 Pieces**

Half-Cell



### High Conversion Efficiency

Module efficiency up to 22.3% 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



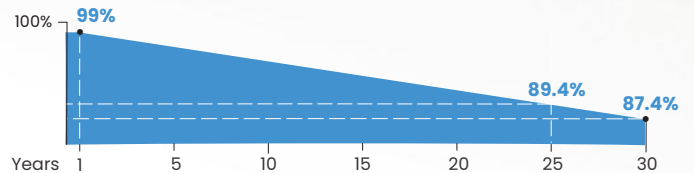
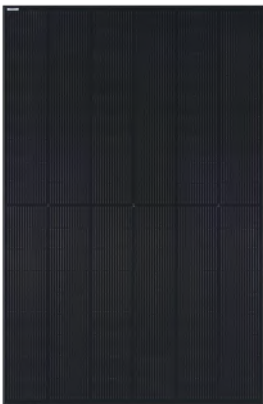
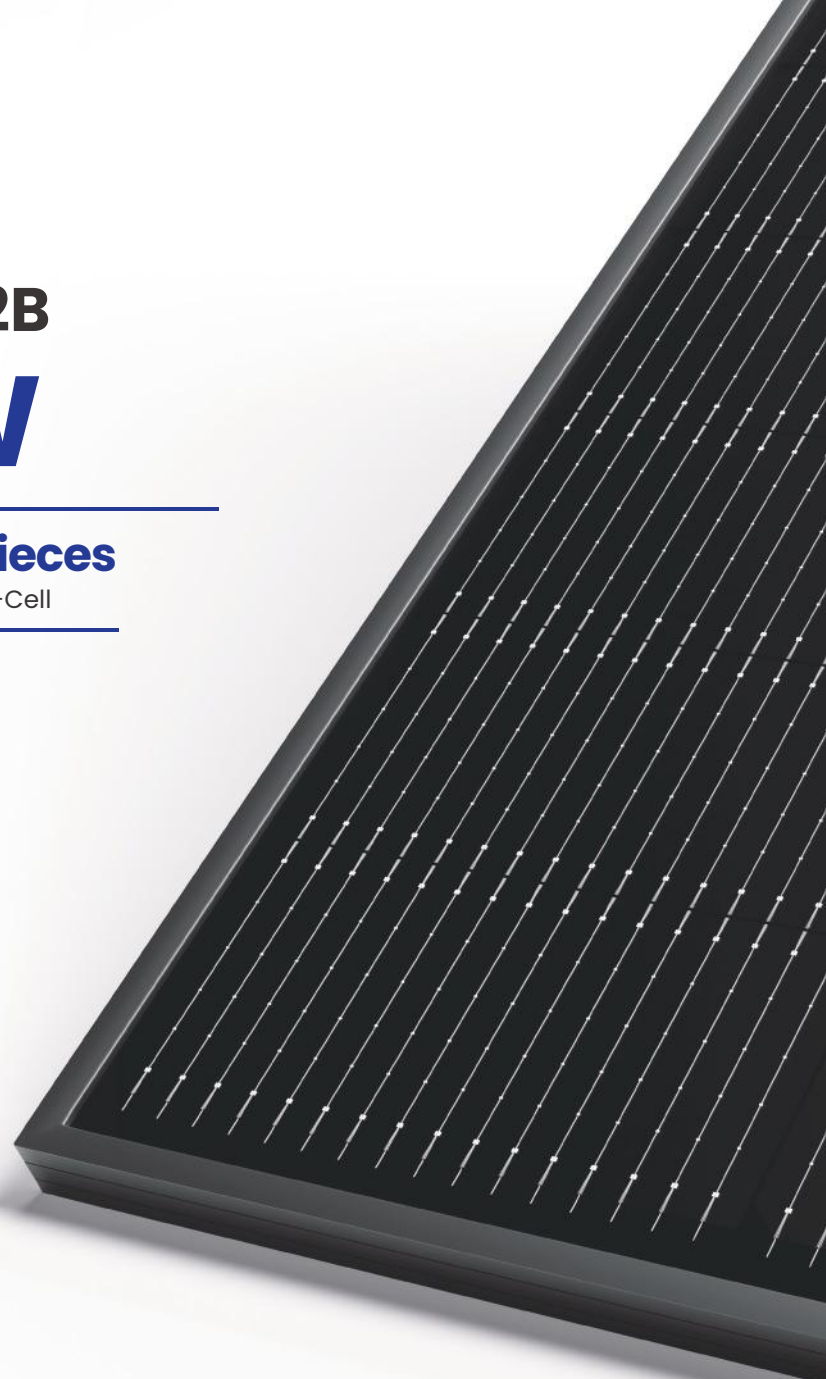
### Outstanding Anti-degradation

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.

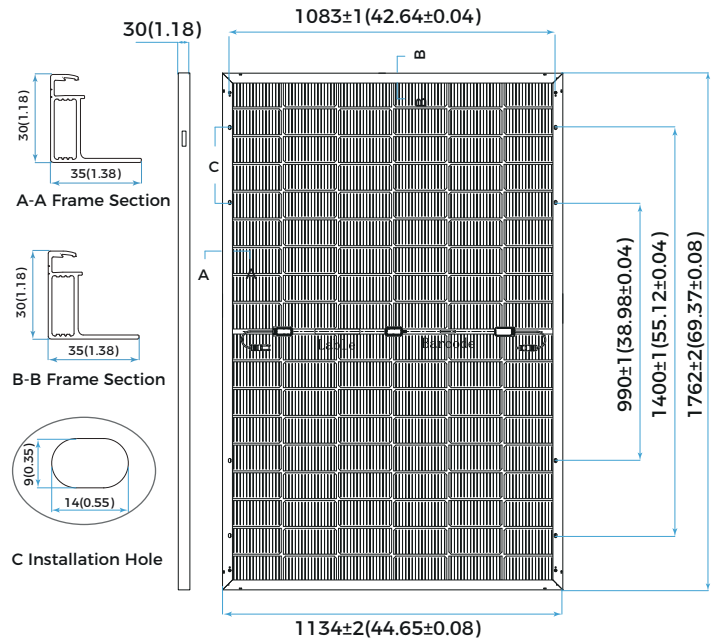
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## Mechanical Parameters

Solar Cell	Mono N-Type 182.2*186.8mm
No. of Cells	108 (6 × 18)
Dimensions	1762 × 1134 × 30mm(69.37 x 44.65 x 1.18in)
Weight	26kg(2.0mm glass)/21kg(1.6mm glass)
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-EVO 2/xy_UR, PV-KBT4-EVO 2/xy_UR
Front Cover	2.0mm/1.6mm semi-tempered AR glass
Back Cover	2.0mm/1.6mm 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%

	445	440	435	430	425
Maximum Power at STC (Pmax/W)	445	440	435	430	425
Power Tolerance (W)			0 ~ +5		
Optimum Operating Voltage (Vmp/V)	33.04	32.81	32.59	32.38	32.18
Optimum Operating Current (Imp/A)	13.47	13.41	13.35	13.28	13.21
Open Circuit Voltage (Voc/V)	39.61	39.38	39.16	38.95	38.75
Short Circuit Current (Isc/A)	13.92	13.86	13.80	13.73	13.66
Module Efficiency	22.3%	22.0%	21.8%	21.5%	21.3%

## Electrical Characteristics - NMOT

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

	340.9	337.0	333.2	329.3	325.6
Maximum Power at NMOT (Pmax/W)	340.9	337.0	333.2	329.3	325.6
Optimum Operating Voltage (Vmp/V)	31.64	31.42	31.20	31.00	30.81
Optimum Operating Current (Imp/A)	10.77	10.73	10.68	10.62	10.57
Open Circuit Voltage (Voc/V)	37.93	37.71	37.50	37.29	37.10
Short Circuit Current (Isc/A)	11.22	11.17	11.12	11.07	11.01

## Rearside Power Gain (Reference to 445W Front)

	5%	15%	25%
Rearside Power Gain	5%	15%	25%
Maximum Power (Pmax/W)	467	512	556
Optimum Operating Voltage (Vmp/V)	33.04	33.14	33.14
Optimum Operating Current (Imp/A)	14.14	15.44	16.78
Open Circuit Voltage (Voc/V)	39.61	39.71	39.71
Short Circuit Current (Isc/A)	14.61	15.97	17.35
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

