RUNERGY

Preliminary Version

TIER 1 HY-DH144N9

590-615W

22.8%	N-Type	144 Pieces
Max. Efficiency	**Bifacial** & Dual Glass	Half-Cell

High Conversion Efficiency

Module efficiency up to 22.8% based on N-Type wafer and advanced N-Type cell technology

Excellent Energy Yield

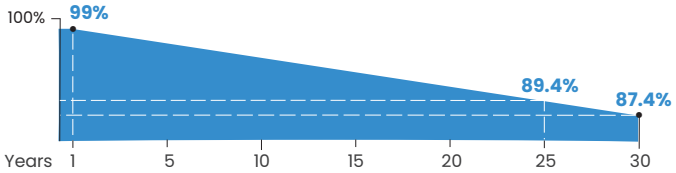
More power output in field operation due to better thermal behaviors, weak-light performance and bifaciality

Outstanding Anti-degradation

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

Quality Guarantee

High module quality ensures long-term reliability



Runergy N-Type Dual Glass Product Performance Warranty

- **12 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

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

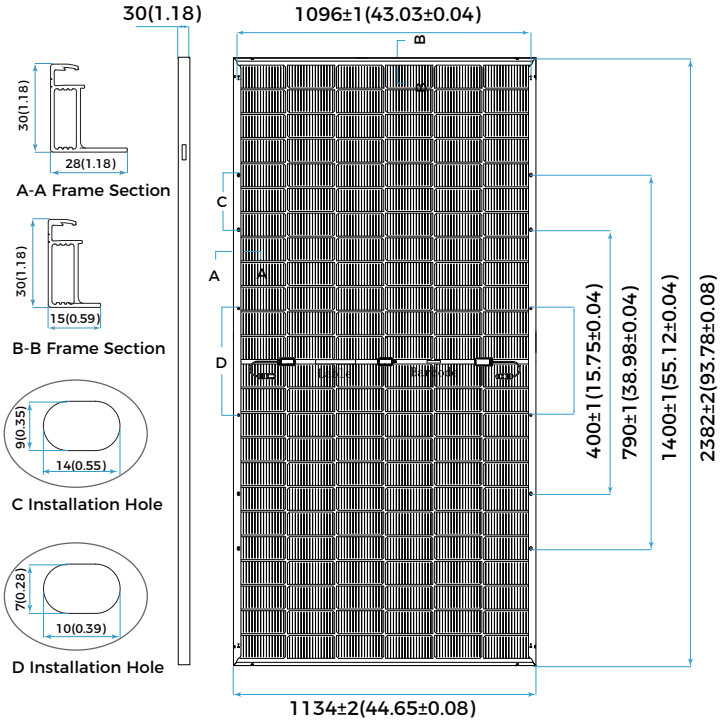
RUNERGY

HY-DH144N9-590/615

Unit: mm(inch)

Mechanical Parameters

Solar Cell	Mono N-Type 182.2*191.6 mm
No. of Cells	144 (6 × 24)
Dimensions	2382 × 1134 × 30mm(93.78 × 44.65 × 1.18in.)
Weight	33kg(72.75lbs)
Junction Box	IP68 rated (3 bypass diodes)
Output Cable	4mm² (IEC), 12 AWG(UL) +400/-200mm (+15.75/-7.87in.) or customized
Connector	RY01 or similar
Front Cover	2.0mm (0.079in.)semi-tempered AR glass
Back Cover	2.0mm (0.079in.)semi-tempered glass
Container	36 pcs/Pallet, 720 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/ft²)
Backside Max. Loading	2400Pa(50lb/ft²)
Bifaciality	80%±10%
Fire Resistance	IEC Class A

Electrical Characteristics - STC

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

Maximum Power at STC (Pmax/W)	615	610	605	600	595	590
Power Tolerance (W)	0 ~ +5					
Optimum Operating Voltage (Vmp/V)	43.01	42.81	42.61	42.41	42.20	42.00
Optimum Operating Current (Imp/A)	14.30	14.25	14.20	14.15	14.10	14.05
Open Circuit Voltage (Voc/V)	51.70	51.50	51.30	51.10	50.89	50.69
Short Circuit Current (Isc/A)	14.80	14.75	14.70	14.65	14.60	14.55
Module Efficiency	22.8%	22.6%	22.4%	22.2%	22.0%	21.8%

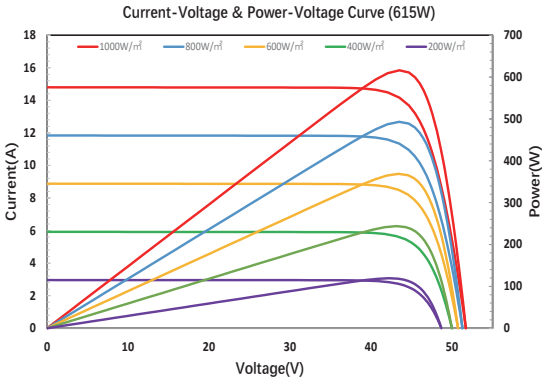
Electrical Characteristics - NMOT

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

Maximum Power at NMOT (Pmax/W)	471.1	467.2	463.4	459.6	455.7	451.9
Optimum Operating Voltage (Vmp/V)	41.18	40.99	40.80	40.61	40.41	40.22
Optimum Operating Current (Imp/A)	11.44	11.40	11.36	11.32	11.28	11.24
Open Circuit Voltage (Voc/V)	49.50	49.31	49.12	48.93	48.73	48.54
Short Circuit Current (Isc/A)	11.93	11.89	11.85	11.81	11.77	11.73

Rearside Power Gain (Reference to 615W Front)

Rearside Power Gain	5%	15%	25%
Maximum Power (Pmax/W)	646	707	769
Optimum Operating Voltage (Vmp/V)	43.01	43.11	43.11
Optimum Operating Current (Imp/A)	15.01	16.41	17.83
Open Circuit Voltage (Voc/V)	51.70	51.80	51.80
Short Circuit Current (Isc/A)	15.54	16.99	18.46
Module Efficiency	23.9%	26.2%	28.5%



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

HY-DH144N9-Global-Ver3.0

Specifications included in this datasheet are subject to change without notice.