

# RUNERGY

## TIER 1 HY-WH144P8 540-560W

**21.7%** Max. Efficiency    **P-Type** Single Glass    **144 Pieces** Half-Cell



### High Conversion Efficiency

Module efficiency up to 21.7% achieved through advanced cell technology and manufacturing process



### Excellent weak light performance

More power output in weak light condition, such as cloudy days, morning and sunset



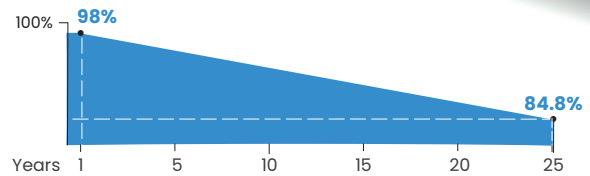
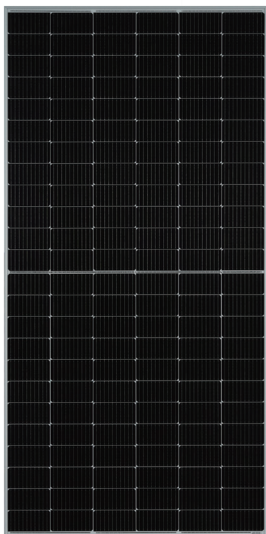
### Extended mechanical performance

Module certified to withstand extreme wind (2400 Pa) and snow loads (5400 Pa)



### Quality Guarantee

High module quality ensures long-term reliability



Runergy P-Type Single Glass Product Performance Warranty

- **12 Years** warranty for materials and workmanship
- **25 Years** warranty for extra linear power output
- 1st year < **2%**, annual degradation < **0.55%**

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



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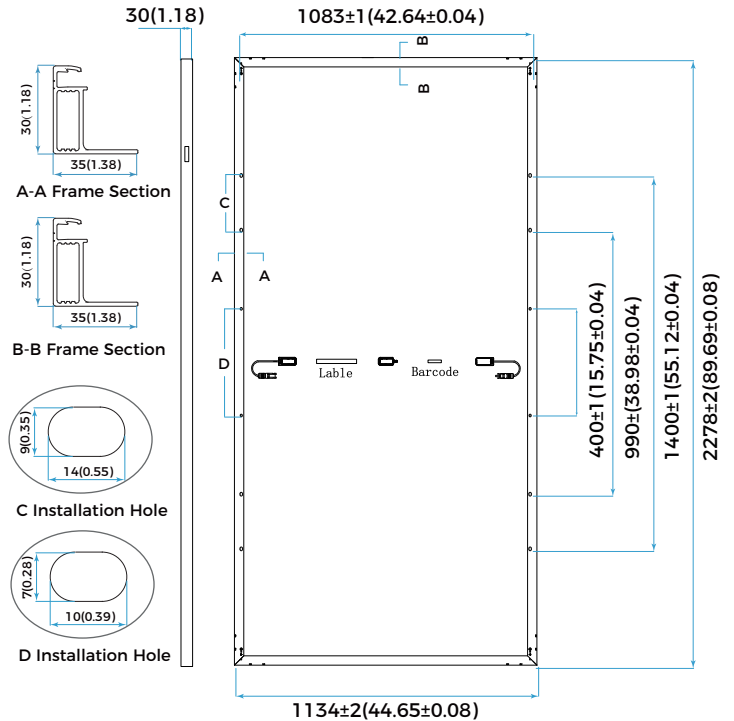
Unit: mm(inch)

## Mechanical Parameters

Solar Cell	Mono PERC 182mm
No. of Cells	144 (6 × 24)
Dimensions	2278 × 1134 × 30mm(89.69 × 44.65 × 1.18in)
Weight	27.6kg(60.85 lbs)
Junction Box	IP68 rated (3 bypass diodes)
Output Cable	4mm <sup>2</sup> (IEC), 12 AWG(UL) +400/-200mm(+15.75/-7.87in.) or customized
Connector	RY01 or similar
Front Cover	3.2mm (0.13in.) AR 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	25A
Frontside Max. Loading	5400Pa(112lb/ft <sup>2</sup> )
Backside Max. Loading	2400Pa(50lb/ft <sup>2</sup> )
Fire Resistance	IEC Class C



## Electrical Characteristics - STC

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

Maximum Power at STC (Pmax/W)	560	555	550	545	540
Power Tolerance (W)	0 ~ +5				
Optimum Operating Voltage (Vmp/V)	42.28	42.12	41.96	41.80	41.64
Optimum Operating Current (Imp/A)	13.25	13.18	13.11	13.04	12.97
Open Circuit Voltage (Voc/V)	50.20	50.05	49.90	49.75	49.60
Short Circuit Current (Isc/A)	14.14	14.07	14.00	13.93	13.86
Module Efficiency	21.7%	21.5%	21.3%	21.1%	20.9%

## 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)	423.7	419.9	416.0	412.2	408.5
Optimum Operating Voltage (Vmp/V)	40.09	39.94	39.79	39.64	39.49
Optimum Operating Current (Imp/A)	10.57	10.51	10.46	10.40	10.34
Open Circuit Voltage (Voc/V)	47.61	47.46	47.32	47.18	47.04
Short Circuit Current (Isc/A)	11.41	11.35	11.30	11.24	11.18

## Warranty

Product Workmanship Warranty	12 Years
Linear Power Output Warranty	25 Years
First Year Degradation	2%
Annual Power Degradation	0.55%

## Temperature Characteristics

Nominal Module Operating Temperature	42 ± 2 °C
Nominal Cell Operating Temperature	45 ± 2 °C
Temperature Coefficient of Pmax	-0.35%/°C
Temperature Coefficient of Voc	-0.26%/°C
Temperature Coefficient of Isc	0.048%/°C

