

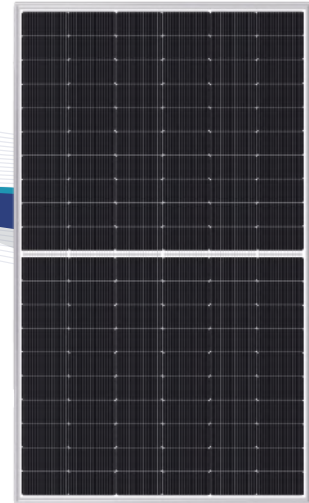
HY-DH120N8

460-480W

120 Pieces | HALF-CELL | N-Type

RUNERGY

MADE IN THAILAND/CHINA



22.2%
Max. Efficiency
N-Type
Bifacial & Dual Glass



High Conversion Efficiency

Module efficiency up to 22.2% 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

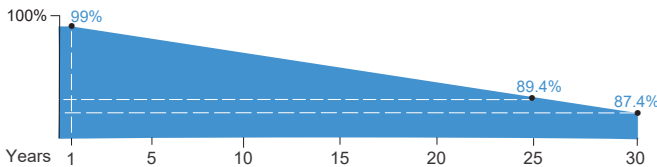
High module quality ensures long-term reliability



Munich RE 

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

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



Runergy N-Type Dual Glass Product Performance Warranty

15 Years Product Warranty

30 Years Linear Power Warranty

1% First Year Degradation

0.4% Annual Power Degradation

Jiangsu Runergy New Energy Technology Co., Ltd.
58 Xiangjiang Road, Economic Development Zone,
Yancheng City, Jiangsu Province, 224000, China

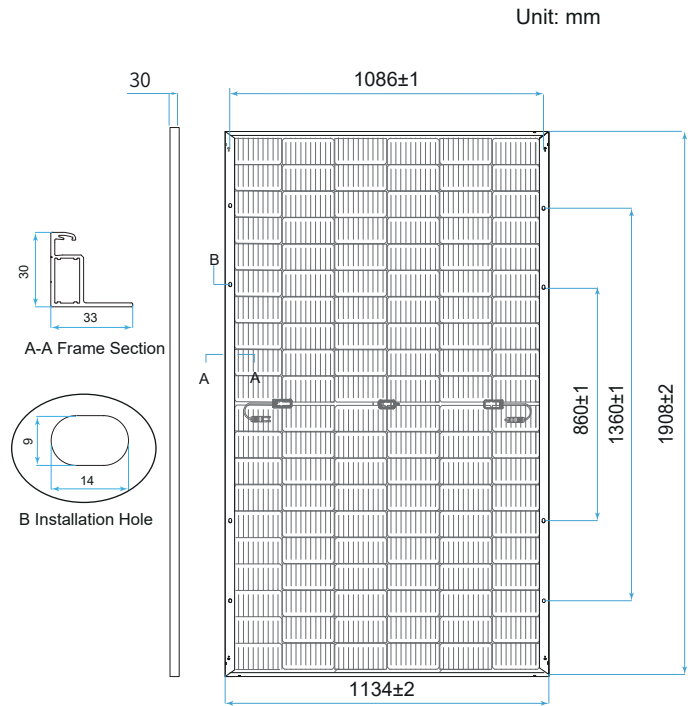
sales-inform@runergy.cn
www.runergy-solar.com

Mechanical Parameters

| | |
|--------------|---|
| Solar Cell | Mono N-Type 182 mm |
| No. of Cells | 120(6 × 20) |
| Dimensions | 1908 × 1134 × 30mm |
| Weight | 26.5kg |
| Junction Box | IP68 rated (3 bypass diodes) |
| Output Cable | 4mm ² (IEC), 12 AWG(UL) ±1200mm or customized |
| Connector | RY01, QC4.10, GT4, PV-KST4-EVO 2/xy_UR, PV-KBT4-EVO 2/xy_UR |
| Front Cover | 2.0mm semi-tempered AR glass |
| Back Cover | 2.0mm semi-tempered glass |
| Container | 36 pcs/Pallet, 792 pcs/40' HC |

Operating Parameters

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



Electrical Characteristics - STC

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

| | | | | | |
|-----------------------------------|-------|-------|--------|-------|-------|
| Maximum Power at STC (Pmax/W) | 480 | 475 | 470 | 465 | 460 |
| Power Tolerance (W) | | | 0 ~ +5 | | |
| Optimum Operating Voltage (Vmp/V) | 35.38 | 35.12 | 35.05 | 34.89 | 34.72 |
| Optimum Operating Current (Imp/A) | 13.57 | 13.49 | 13.41 | 13.33 | 13.25 |
| Open Circuit Voltage (Voc/V) | 42.71 | 42.54 | 42.38 | 42.22 | 42.05 |
| Short Circuit Current (Isc/A) | 14.31 | 14.23 | 14.15 | 14.07 | 13.99 |
| Module Efficiency | 22.2% | 21.9% | 21.7% | 21.5% | 21.3% |

Electrical Characteristics - BNPI

| | | | | | |
|-----------------------------------|-------|-------|-------|-------|-------|
| Maximum Power at NMOT (Pmax/W) | 525 | 520 | 515 | 510 | 505 |
| Optimum Operating Voltage (Vmp/V) | 35.25 | 35.05 | 34.97 | 34.89 | 34.72 |
| Optimum Operating Current (Imp/A) | 14.98 | 14.84 | 14.80 | 14.75 | 14.67 |
| Open Circuit Voltage (Voc/V) | 42.73 | 42.48 | 42.40 | 42.32 | 42.15 |
| Short Circuit Current (Isc/A) | 15.83 | 15.69 | 15.65 | 15.60 | 15.51 |

Rearside Power Gain (Reference to 480W Front)

| | | | |
|-----------------------------------|-------|-------|-------|
| Rearside Power Gain | 5% | 15% | 25% |
| Maximum Power (Pmax/W) | 504 | 552 | 600 |
| Optimum Operating Voltage (Vmp/V) | 35.38 | 35.48 | 35.48 |
| Optimum Operating Current (Imp/A) | 14.25 | 15.56 | 16.91 |
| Open Circuit Voltage (Voc/V) | 42.71 | 42.81 | 42.81 |
| Short Circuit Current (Isc/A) | 15.03 | 16.42 | 17.85 |
| Module Efficiency | 23.3% | 25.5% | 27.7% |

Temperature Characteristics

| | |
|--------------------------------------|-----------|
| Nominal Module Operating Temperature | 42 ± 2 °C |
| Nominal Cell Operating Temperature | 45 ± 2 °C |
| Temperature Coefficient of Pmax | -0.31%/°C |
| Temperature Coefficient of Voc | -0.26%/°C |
| Temperature Coefficient of Isc | 0.05%/°C |

