

## HY-DH96N11

Transparent

# 440-460W

**23.0%**

Max. Efficiency

**N-Type**

Bifacial & Dual Glass

**96 Pieces**

Half-Cell



### Leading Technology

Based on n-type cell and 210R technology platform; Advanced design and manufacturing process; Industry leading reliability and efficiency of mass production



### High Power

Bifacial higher power output, lower temperature coefficient and better low light performance; Cell gap transparency providing light for the space beneath (Customized gap filming available for higher power output)



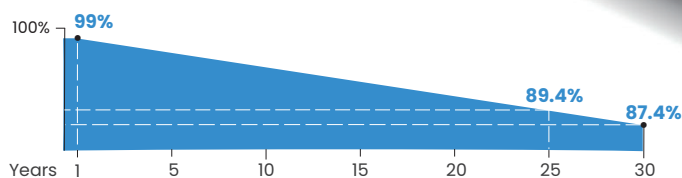
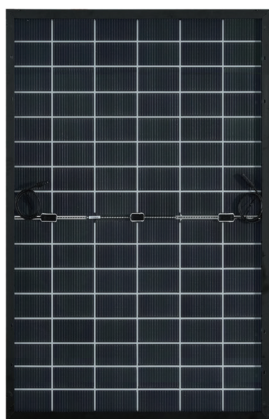
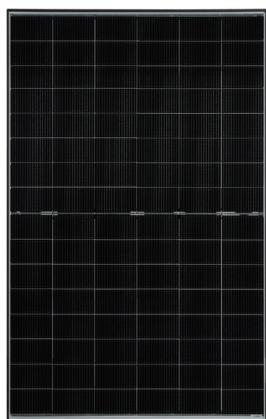
### Long-term Reliability

Unsusceptible to LID, LeTID and lower PID degradation; 5400Pa snow load, 2400Pa wind load, and 35mm hail-resistant with 27.2m/s strike



### Stringent Quality Control

Durable product structure; Stringent quality control system; Guaranteed after-sales service to ensure long-term reliability



Runergy N-Type Dual Glass Product Performance Warranty

• 1st year degradation <1%, annual degradation <0.4%



25-year product warranty



30-year linear power warranty

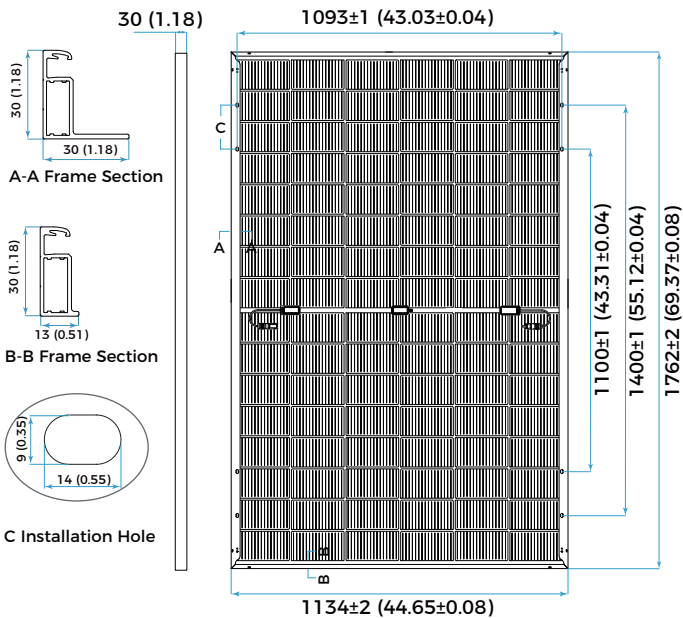
IEC61215 / IEC61730 / UL61730 / IEC61701 / IEC62716 / IEC60068 / ISO9001 / ISO14001 / ISO45001



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| Mechanical Parameters |                                                                         |
|-----------------------|-------------------------------------------------------------------------|
| Solar Cell            | Mono N-Type 182*210mm                                                   |
| No. of Cells          | 96 (6 × 16)                                                             |
| Dimensions            | 1762 × 1134 × 30mm (69.37 × 44.65 × 1.18in)                             |
| Weight                | 25kg (55.12lbs)                                                         |
| Junction Box          | IP68 rated (3 bypass diodes)                                            |
| Output Cable          | 4mm <sup>2</sup> (IEC), 12 AWG (UL)<br>±1200mm (47.24in.) or customized |
| Connector             | MC4-EVO2 or similar                                                     |
| Front Cover           | 2.0mm AR coated heat-strengthened glass                                 |
| Back Cover            | 2.0mm heat-strengthened glass                                           |
| Frame                 | Black-anodized aluminum                                                 |
| Container             | 36 pcs/pallet,<br>936 pcs/40' HQ (Global) ,756 pcs/40' HQ (US)          |

| Operating Parameters    |                                                                  |
|-------------------------|------------------------------------------------------------------|
| Max. System Voltage     | DC 1500V (IEC/UL)                                                |
| Operating Temperature   | -40℃ ~ +85℃(-40°F ~ +185°F)                                      |
| Max. Fuse Rating        | 35A                                                              |
| Front/Back Max. Loading | 5400Pa (112lb/ft <sup>2</sup> ) / 2400Pa (50lb/ft <sup>2</sup> ) |
| Bifaciality             | 80%±5%                                                           |
| Hail Test               | 35mm, 27.2m/s                                                    |
| Fire Resistance         | IEC Class A/ UL type 29                                          |



| Electrical Characteristics - STC  | Irradiance 1000 W/m², cell temperature 25 °C, AM-1.5, Test uncertainty for Pmax: ±3% |       |       |       |       |
|-----------------------------------|--------------------------------------------------------------------------------------|-------|-------|-------|-------|
| Maximum Power at STC (Pmax/W)     | 460                                                                                  | 455   | 450   | 445   | 440   |
| Power Tolerance (W)               | 0 ~ +5                                                                               |       |       |       |       |
| Optimum Operating Voltage (Vmp/V) | 29.70                                                                                | 29.57 | 29.44 | 29.30 | 29.16 |
| Optimum Operating Current (Imp/A) | 15.49                                                                                | 15.39 | 15.29 | 15.19 | 15.09 |
| Open Circuit Voltage (Voc/V)      | 35.52                                                                                | 35.39 | 35.26 | 35.12 | 34.98 |
| Short Circuit Current (Isc/A)     | 16.23                                                                                | 16.15 | 16.07 | 15.99 | 15.91 |
| Module Efficiency                 | 23.0%                                                                                | 22.8% | 22.5% | 22.3% | 22.0% |

| Electrical Characteristics - BNPI | Irradiance: front 1000W/m², rear 135W/m², Cell temperature 25 °C, AM-1.5. |       |       |       |       |
|-----------------------------------|---------------------------------------------------------------------------|-------|-------|-------|-------|
| Maximum Power at BNPI (Pmax/W)    | 506                                                                       | 501   | 496   | 490   | 484   |
| Optimum Operating Voltage (Vmp/V) | 29.70                                                                     | 29.57 | 29.44 | 29.30 | 29.16 |
| Optimum Operating Current (Imp/A) | 17.05                                                                     | 16.94 | 16.83 | 16.72 | 16.61 |
| Open Circuit Voltage (Voc/V)      | 35.61                                                                     | 35.48 | 35.35 | 35.21 | 35.07 |
| Short Circuit Current (Isc/A)     | 17.89                                                                     | 17.80 | 17.72 | 17.63 | 17.54 |

| Rearside Power Gain (Reference to 445W Front) |       |       |       |
|-----------------------------------------------|-------|-------|-------|
| Rearside Power Gain                           | 5%    | 15%   | 25%   |
| Maximum Power (Pmax/W)                        | 467   | 512   | 556   |
| Optimum Operating Voltage (Vmp/V)             | 29.30 | 29.40 | 29.40 |
| Optimum Operating Current (Imp/A)             | 15.95 | 17.41 | 18.92 |
| Open Circuit Voltage (Voc/V)                  | 35.12 | 35.22 | 35.22 |
| Short Circuit Current (Isc/A)                 | 16.79 | 18.33 | 19.93 |
| 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 |

