

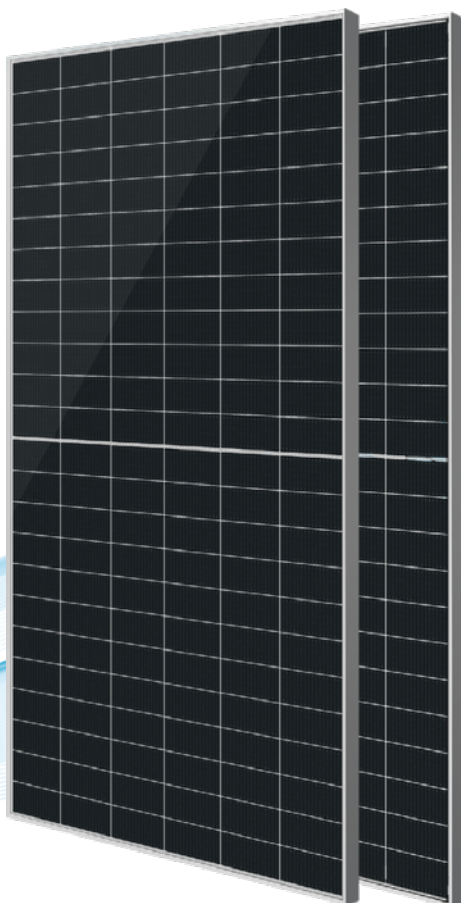
PRELIMINARY

# HD HYUNDAI SOLAR MODULE

## NI Series

### Premium N-Type TOPCon Module

HiN-T575NI | HiN-T580NI | HiN-T585NI | HiN-T590NI | HiN-T595NI



23.03%  
High Efficiency



High-End  
TOPCon  
Technology



Higher  
Bifaciality



Long-Term  
Reliability



For Commercial  
& Utility  
Applications

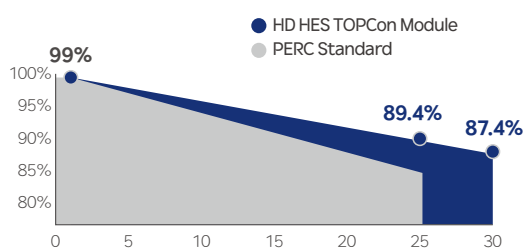
#### HD Hyundai's Warranty Provisions

12  
YEARS

- 12-Year Product Warranty
- Materials and workmanship

30  
YEARS

- 30-Year Performance Warranty
- First year degradation: 1%
- Linear warranty after initial year: with 0.4%p annual degradation, 87.4% is guaranteed up to 30years



\*Refer to HD HES standard warranty for details.

#### Certification

- UL 61215 / UL 61730 / IEC 61215 / IEC 61730 Certified
- ISO 9001 : Quality management systems
- ISO 14001 : Environmental management systems
- ISO 45001 : Occupational health and safety management systems

## Electrical Characteristics

| HiN-TxxxNI                      |      | HiN-T575NI |       | HiN-T580NI |       | HiN-T585NI |       | HiN-T590NI |       | HiN-T595NI |       |
|---------------------------------|------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|
| Item                            | Unit | BNPI**     |       | BNPI       |       | BNPI       |       | BNPI       |       | BNPI       |       |
| Nominal output (Pmax)           | W    | 575        | 637   | 580        | 643   | 585        | 648   | 590        | 654   | 595        | 659   |
| Open circuit voltage (Voc)      | V    | 51.3       | 51.3  | 51.5       | 51.5  | 51.7       | 51.7  | 51.9       | 51.9  | 52.1       | 52.1  |
| Short circuit current (Isc)     | A    | 14.29      | 15.83 | 14.35      | 15.90 | 14.41      | 15.97 | 14.47      | 16.03 | 14.53      | 16.10 |
| Voltage at Pmax (Vmpp)          | V    | 42.6       | 42.6  | 42.8       | 42.8  | 43.0       | 43.0  | 43.2       | 43.2  | 43.4       | 43.4  |
| Current at Pmax (Impp)          | A    | 13.50      | 14.96 | 13.56      | 15.02 | 13.62      | 15.09 | 13.68      | 15.16 | 13.74      | 15.22 |
| Module efficiency               | %    | 22.26      | 24.66 | 22.45      | 24.89 | 22.65      | 25.08 | 22.84      | 25.32 | 23.03      | 25.51 |
| Power Class Sorting             | W    | 0 ~ +5     |       |            |       |            |       |            |       |            |       |
| Temperature coefficient of Pmax | %/K  | -0.30      |       |            |       |            |       |            |       |            |       |
| Temperature coefficient of Voc  | %/K  | -0.25      |       |            |       |            |       |            |       |            |       |
| Temperature coefficient of Isc  | %/K  | 0.046      |       |            |       |            |       |            |       |            |       |
| Bifaciality                     | %    | 80±10      |       |            |       |            |       |            |       |            |       |

\*STC : Irradiance 1,000 W/m<sup>2</sup>, cell temperature 25°C, AM=1.5 / Test uncertainty for Pmax ±3%; Voc ±3%; Isc ±3%  
 \*\*The electrical properties of BNPI are measured under the irradiance corresponding to 1000 W/m<sup>2</sup> on the module front and 135 W/m<sup>2</sup> on the module rear.

| Additional Power Gain from rear side |          |          |          |         |         |
|--------------------------------------|----------|----------|----------|---------|---------|
| Pmpp gain                            | Pmpp [W] | Vmpp [V] | Impp [A] | Voc [V] | Isc [A] |
| 5%                                   | 614      | 43.00    | 14.30    | 51.70   | 15.13   |
| 15%                                  | 673      | 43.00    | 15.66    | 51.70   | 16.57   |
| 25%                                  | 731      | 43.00    | 17.03    | 51.70   | 18.01   |

\*Electrical characteristics with different rear power gain (reference to 585W)

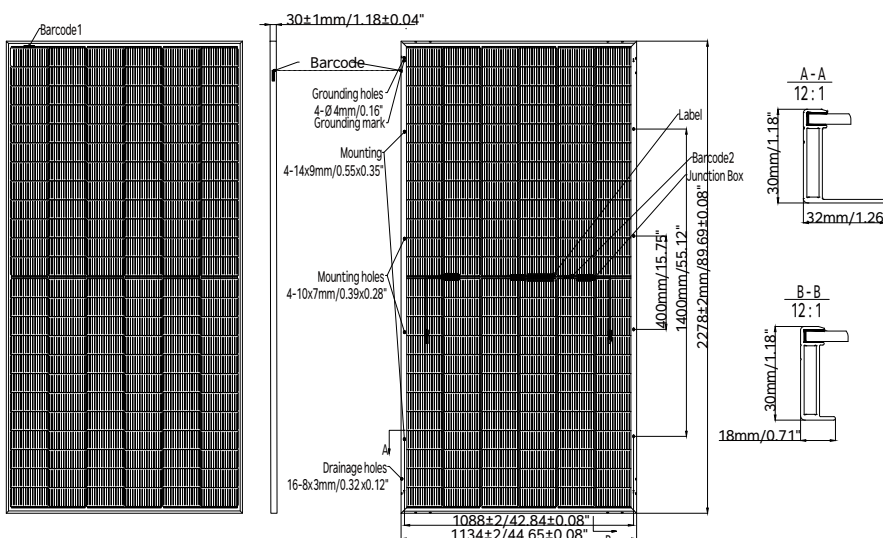
## Mechanical Characteristics

|               |                                                                                                                                                       |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dimensions    | 2,278mm (L) x 1,134mm (W) x 30mm (H)<br>(89.7in x 44.6in x 1.2in)                                                                                     |
| Weight        | 31.5 kg (69.5bs)                                                                                                                                      |
| Solar Cells   | N-Type TOPCon, 144 (6x24) monocrystalline 16BB half-cut bifacial cells                                                                                |
| Output Cables | Cable : (+)350mm(13.8in), (-)350mm(13.8in) / Customized length available<br>Connector : MC4 Compatible, IP68                                          |
| Junction Box  | 3-part, 3 bypass diodes, IP68 rated                                                                                                                   |
| Construction  | Front : 2.0mm(0.08in) semi-tempered solar glass with high transmittance and anti-reflective coating<br>Rear : 2.0mm(0.08in) semi-tempered solar glass |
| Frame         | Anodized aluminum alloy                                                                                                                               |

## Shipping Configurations

|                       |     |                             |     |
|-----------------------|-----|-----------------------------|-----|
| Container Size (HC)   | 40' | Modules Per Pallet (pcs)    | 36  |
| Pallets Per Container | 20  | Modules Per Container (pcs) | 720 |

## Module Diagram (unit : mm)



## Installation Safety Guide

- Only qualified personnel should install or perform maintenance.
- Be aware of dangerous high DC voltage.
- Do not handle or install modules when they are wet.

|                                      |                               |
|--------------------------------------|-------------------------------|
| Nominal Module Operation Temperature | 44°C ± 2°C                    |
| Operating Temperature                | -40°C~+85°C                   |
| Maximum System Voltage               | DC 1,500 V                    |
| Maximum Reverse Current              | 30A                           |
| Maximum Test Load                    | Front 5,400Pa<br>Rear 2,400Pa |
| Fire Performance                     | Type 29                       |

## I-V Curves (HiN-T585NI)

