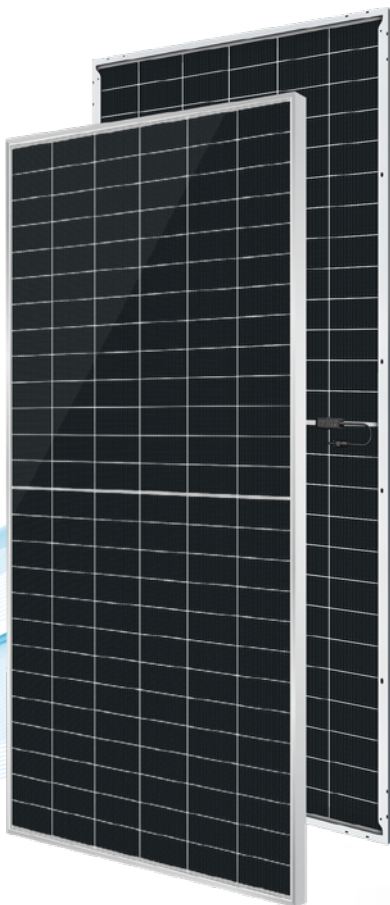


# HD HYUNDAI SOLAR MODULE

## NJ Series

### Premium N-Type TOPCon Module

HiS-T635NJ | HiS-T640NJ | HiS-T645NJ



23.07%  
High Efficiency



High-End  
TOPCon  
Technology



Higher  
Bifaciality



Long-Term  
Reliability



Rooftop  
Applications



For Commercial  
& Utility  
Applications

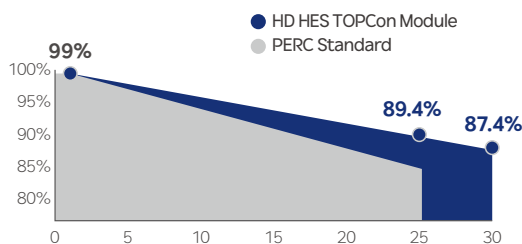
#### HD Hyundai's Warranty Provisions

**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



PHOTOVOLTAIC MODULES OVER 600 VOLTS  
ALSO CLASSIFIED IN ACCORDANCE WITH  
E325005



- 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

| HiS-TxxxNJ                      |      | HiS-T635NJ |       | HiS-T640NJ |       | HiS-T645NJ |       |
|---------------------------------|------|------------|-------|------------|-------|------------|-------|
| Item                            | Unit | BNPI       |       | BNPI       |       | BNPI       |       |
| Nominal output (Pmax)           | W    | 635        | 701   | 640        | 706   | 645        | 711   |
| Open circuit voltage (Voc)      | V    | 57.56      | 57.78 | 57.77      | 57.99 | 57.97      | 58.19 |
| Short circuit current (Isc)     | A    | 13.98      | 15.49 | 14.06      | 15.58 | 14.14      | 15.67 |
| Voltage at Pmax (Vmpp)          | V    | 47.57      | 47.70 | 47.74      | 47.81 | 47.90      | 47.95 |
| Current at Pmax (Impp)          | A    | 13.35      | 14.70 | 13.41      | 14.77 | 13.47      | 14.83 |
| Module efficiency               | %    | 22.72      |       | 22.90      |       | 23.07      |       |
| Power Class Sorting             | W    | 0 ~ +5     |       |            |       |            |       |
| Temperature coefficient of Pmax | %/°C | -0.290     |       |            |       |            |       |
| Temperature coefficient of Voc  | %/°C | -0.250     |       |            |       |            |       |
| Temperature coefficient of Isc  | %/°C | 0.043      |       |            |       |            |       |
| Bifaciality                     | %    | 80±5       |       |            |       |            |       |

\*STC : Irradiance 1,000 W/m<sup>2</sup>, cell temperature 25°C, AM=1.5 / Test uncertainty for Pmax ±3%; Isc±5%; Voc±5%  
 \*\*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%                                   | 672     | 47.74   | 14.08   | 57.77  | 14.77  |
| 15%                                  | 736     | 47.74   | 15.42   | 57.77  | 16.17  |
| 25%                                  | 800     | 47.74   | 16.76   | 57.77  | 17.58  |

\*Electrical characteristics with different rear power gain (reference to 640W)

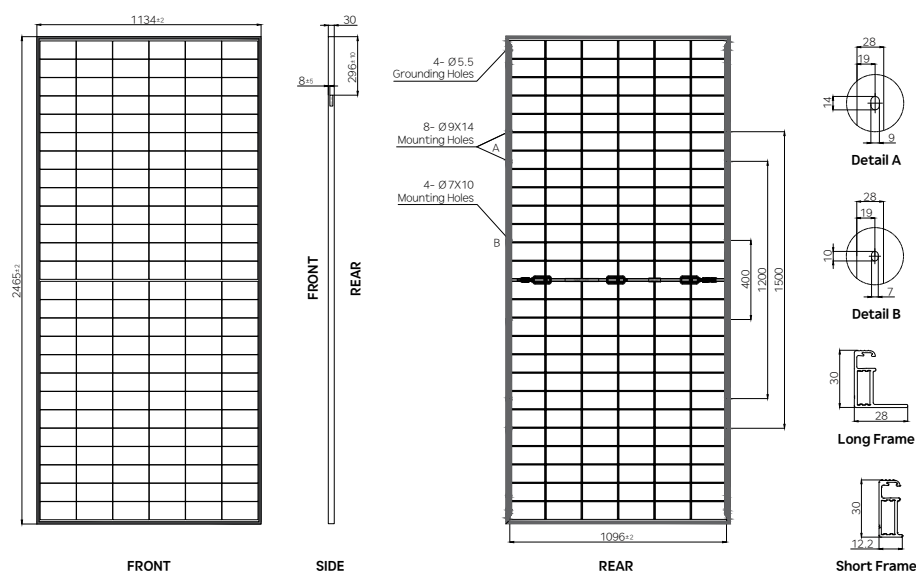
## Mechanical Characteristics

|               |                                                                                                                                                       |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dimensions    | 2,465mm (L) x 1,134mm (W) x 30mm (H)<br>(97.0in x 44.6in x 1.2in)                                                                                     |
| Weight        | 34.7 kg (76.5lbs)                                                                                                                                     |
| Solar Cells   | N-Type TOPCon, 156 (6x26) monocrystalline 16BB half-cut bifacial cells                                                                                |
| Output Cables | Cable : (+) 1,400mm(55.1in), (-) 1,400mm(55.1in)<br>Connector : Stäubli MC4 genuine Connector / 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

|                   |             |                          |     |
|-------------------|-------------|--------------------------|-----|
| Truck Type        | 53' Dry Van | Modules Per Pallet (pcs) | 36  |
| Pallets Per Truck | 14          | Modules Per Truck (pcs)  | 504 |

## 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 | 41°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 (HiS-T640NJ)

