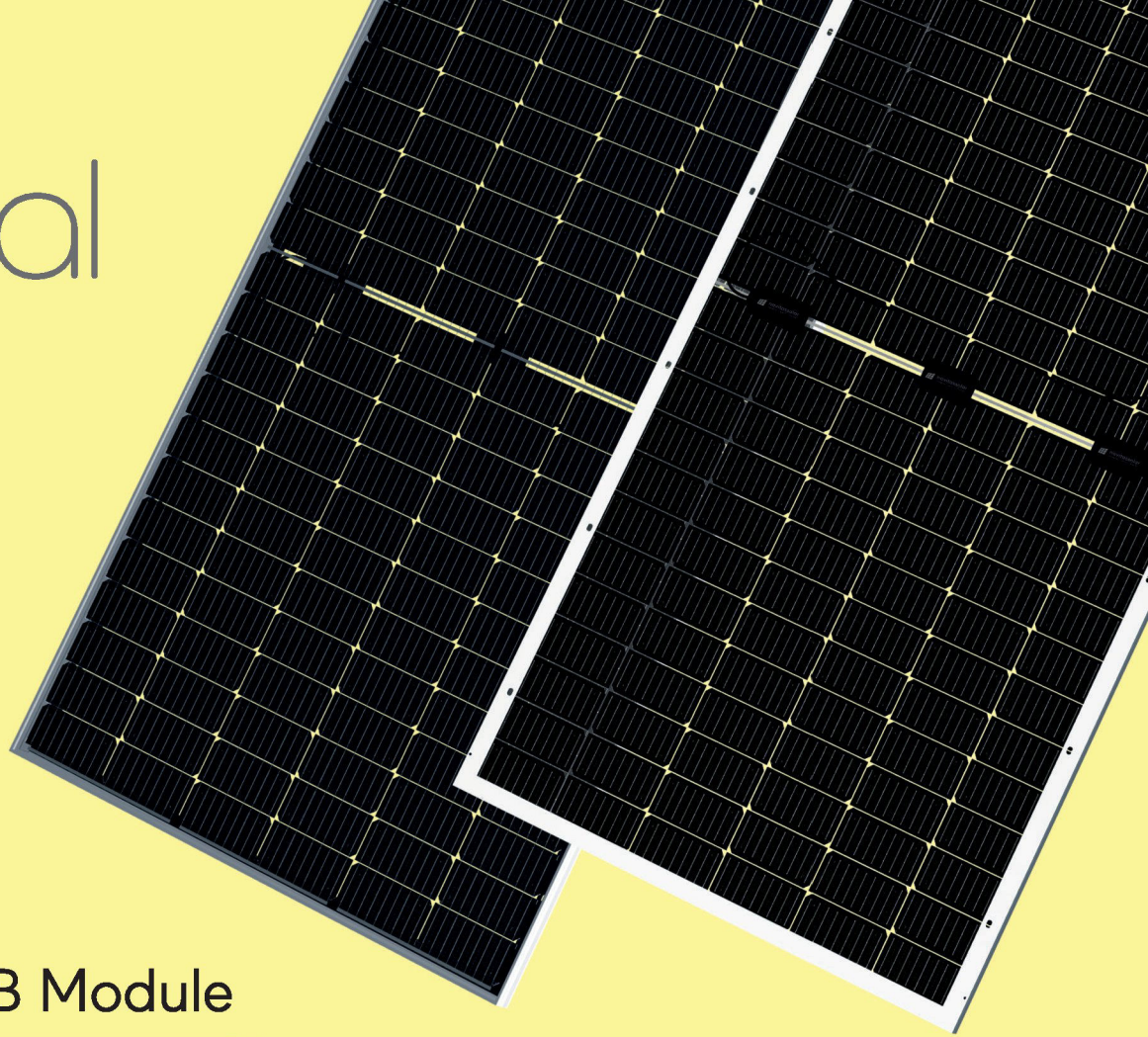


# navitas bifacial



120 Cell | 10 BB Module

**Mono PERC Half Cut  
BIFACIAL Module**

NSM 435W to 455W



**Ideal for large scale installations**



**More power with Bifacial**



**Better shading tolerance**



**Lower LCOE & system cost**



**Excellent temperature performance**



**Non-destructive cutting**

Navitas Bifacial modules produce power from the front & backside. Navitas Bifacial modules can produce up to 30% more power from backside than mono-facial modules.

**Module  
Efficiency  
up to  
21.02%**

**Power  
Tolerance  
up to  
4.99W**

**25 Years  
Performance  
Warranty<sup>1</sup>**

**12 Years  
Product  
Warranty<sup>1</sup>**

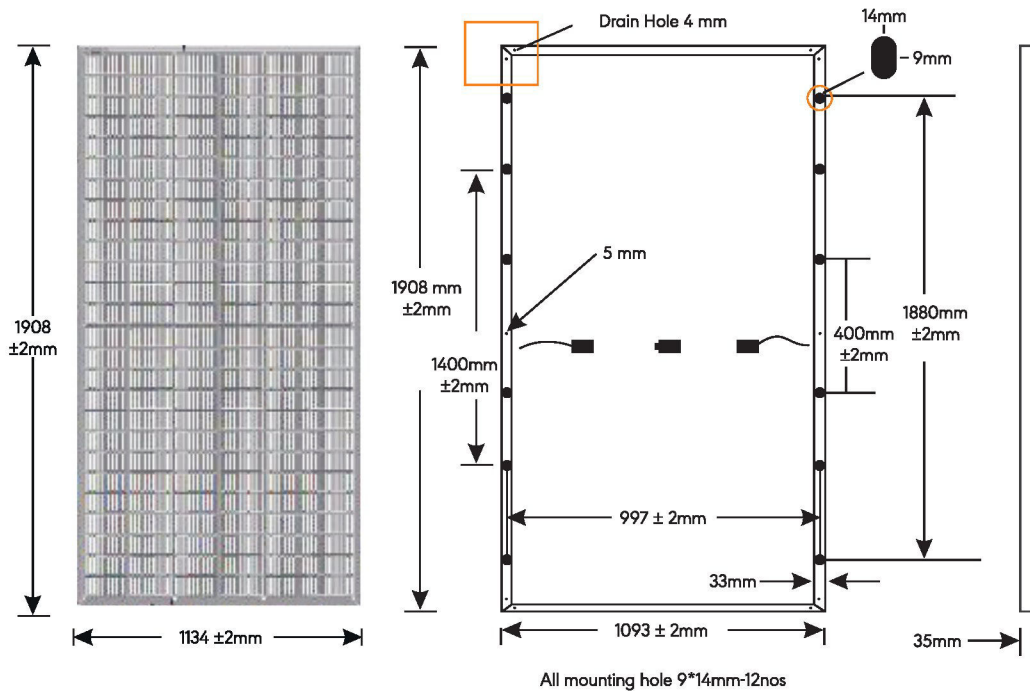
**PID  
Resistant**

## Product Certifications

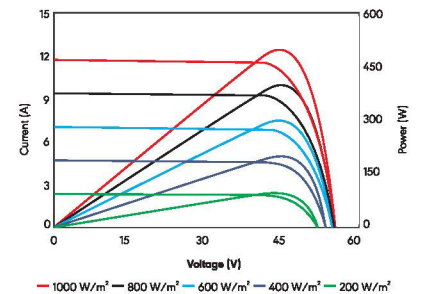
IS 14286\*, IS 61730-1 & 2\*, IS 62804\* IEC 61701\*,  
Fire Rating \*BIS\* ISO 9001, 14001, 45001

\*In Process

## Mechanical Dimensions



I-V Curves of PV Module (for Ref)



## Electrical Data

| Module Type                     | NSM435-120      |       | NSM440-120 |       | NSM445-120 |       | NSM450-120 |       | NSM455-120 |       |
|---------------------------------|-----------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|
|                                 | STC             | NOCT  | STC        | NOCT  | STC        | NOCT  | STC        | NOCT  | STC        | NOCT  |
| Peak Power Watts (Pmax)         | 435             | 327.7 | 440        | 331.5 | 445        | 335.2 | 450        | 339   | 455        | 342.8 |
| Maximum Power Voltage (vmp)     | 34.6            | 32.11 | 34.8       | 32.3  | 34.98      | 32.41 | 35.16      | 32.53 | 35.3       | 32.65 |
| Maximum Power Current (imp)     | 12.61           | 10.21 | 12.69      | 10.26 | 12.73      | 10.34 | 12.78      | 10.42 | 12.88      | 10.5  |
| Open-circuit voltage (Voc)      | 40.61           | 38.17 | 40.75      | 38.31 | 40.88      | 38.45 | 41.01      | 38.59 | 41.12      | 38.73 |
| Short-circuit current (isc) (A) | 13.27           | 10.77 | 13.33      | 10.82 | 13.37      | 10.91 | 13.41      | 10.9  | 13.5       | 11.07 |
| Module Efficiency STC (%)       | 20.01           |       | 20.33      |       | 20.56      |       | 20.79      |       | 21.02      |       |
| Operating Temperature (°C)      | -40°C ~ +85°C   |       |            |       |            |       |            |       |            |       |
| Maximum System Voltage          | 1500 V DC (IEC) |       |            |       |            |       |            |       |            |       |
| Maximum series fuse rating      | 15A             |       |            |       |            |       |            |       |            |       |

## Bifacial Output - Backside Power Gain

| Module Type | NSM435-120 | NSM440-120 | NSM445-120 | NSM450-120 | NSM455-120 |
|-------------|------------|------------|------------|------------|------------|
| 10 % Gain   | 478.5      | 484.0      | 489.5      | 495.0      | 500.5      |
| 15 % Gain   | 500.3      | 506.0      | 511.8      | 517.5      | 523.3      |
| 20 % Gain   | 522.0      | 528.0      | 534.0      | 540.0      | 546.0      |
| 25 % Gain   | 543.8      | 550.0      | 556.3      | 562.5      | 568.8      |
| 30 % Gain   | 565.5      | 572.0      | 578.5      | 585.0      | 591.5      |

- **STC** Irradiance 1000 W/m² Cell Temperature 25°C AM = 1.5
- **NOCT** Irradiance 800 W/m² Ambient Temperature 20°C AM = 1.5 Wind Speed = 1 m/s

## Mechanical Data

| Specification    | Data                                                       |
|------------------|------------------------------------------------------------|
| Cell type        | Half cut MONO PERC                                         |
| Cell arrangement | 60 Mono PERC - 120 Half cells                              |
| Dimensions       | 1908*1134*35 MM                                            |
| Mounting Hole    | 1400*400/1093                                              |
| Weight           | 24.3 Kgs                                                   |
| Front Cover      | 3.2 mm ARC Glass                                           |
| Frame Material   | Anodized Aluminium Alloy                                   |
| Junction Box     | IP68 Split JB                                              |
| cable            | 4 mm2 (IEC) - Length 0.35 mtr (Potrait)/1.4mtr (Landscape) |
| Connectors       | MC4 Compatible                                             |
| By-Pass Diodes   | 3 Pcs                                                      |
| Backsheet        | Transparent                                                |

## Temperature Characteristic

| Specification                      | Data       |
|------------------------------------|------------|
| Temperature Co-efficient (Pmax)    | -0.36% /°C |
| Temperature Co-efficient (Voc)     | -0.36% /°C |
| Temperature Co-efficient (Isc)     | +0.06% /°C |
| Nominal Operating Cell Temperature | 42 ± 2°C   |

\*The above data is liable to change without prior notice  
\*Warranty applicable as per standard warranty terms as available on [www.navitassolar.com](http://www.navitassolar.com)

## How a Bifacial Solar Panel Works

