

# HC MONO

## 430 - 450 Watt

### Total Black



#### Key features

- ✓ Passed IEC 5400 Pa mechanical loading test.
- ✓ The modules can withstand high wind-pressure, snow loads and extreme temperatures.
- ✓ Our high performing modules have an industry low tolerance of  $0\pm 5\%$ .
- ✓ Our solar cells offer high conversion efficiency to ensure the highest quality.
- ✓ Highest quality with our cells.

Highest quality with our cells.  
16MBB Top Con Technology

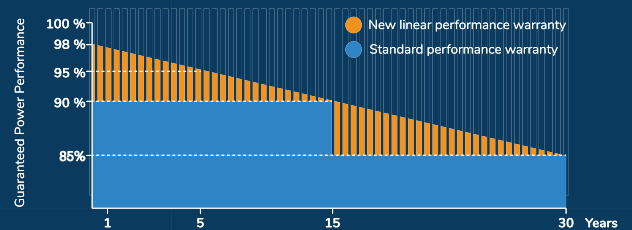


#### Quality and safety

- ✓ Industry leading power output warranty  
15 years / 90%
- 30 years/85.2%
- ✓ 25-year warranty on materials & workmanship
- 🔥 Fire test: Class 1



#### Premium performance warranty



#### Applications



On-grid residential roof-tops



On-grid commercial-industrial roof-tops

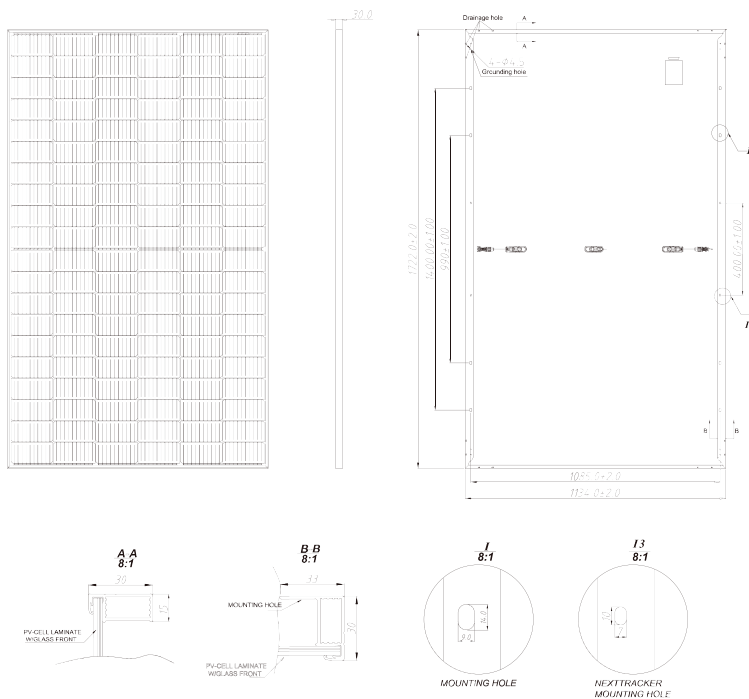


Solar power plants

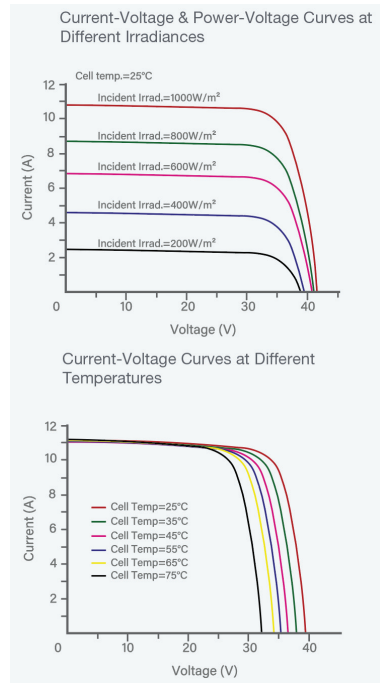


Off-grid systems

## Engineering drawings



## Electrical performance & temperature dependence



## Electrical characteristics

| Module Type                               | SNG430M-108                                 | SNG435M-108                                 | SNG440M-108                                 | SNG445M-108                                 | SNG450M-108                                 |
|---|---|---|---|---|---|
| <b>TESTING CONDITION<sup>(1)</sup></b>    | <b>STC<sup>(2)</sup>/NMOT<sup>(3)</sup></b> | <b>STC<sup>(2)</sup>/NMOT<sup>(3)</sup></b> | <b>STC<sup>(2)</sup>/NMOT<sup>(3)</sup></b> | <b>STC<sup>(2)</sup>/NMOT<sup>(3)</sup></b> | <b>STC<sup>(2)</sup>/NMOT<sup>(3)</sup></b> |
| Maximum Power (Pmax)                      | 430Wp/325Wp                                 | 435Wp/329Wp                                 | 440Wp/333Wp                                 | 445Wp/337Wp                                 | 450Wp/341Wp                                 |
| Maximum Power Voltage (Vmp)               | 32.86V/30.84V                               | 33.05V/31.02V                               | 33.24V/31.20V                               | 33.43V/31.38V                               | 33.62V/31.55V                               |
| Maximum Power Current (Imp)               | 13.09A/10.56A                               | 13.17A/10.62A                               | 13.24A/10.68A                               | 13.32A/10.74A                               | 13.39A/10.80A                               |
| Open-circuit Voltage (Voc)                | 39.77V/37.99V                               | 40.00V/38.21V                               | 40.23V/38.42V                               | 40.46V/38.64V                               | 40.69V/38.86V                               |
| Short-circuit Current (Isc)               | 13.83A/11.16A                               | 13.91A/11.23A                               | 13.99A/11.29A                               | 14.06A/11.35A                               | 14.14A/11.41A                               |
| Module Efficiency (%)                     | 22%   | 22.3%                                       | 22.5%                                       | 22.8%                                       | 23%   |
| Operating Temperature (°C)                | -40°C ~ +85°C                               |   |   |   |   |
| Maximum system voltage                    | 1500V                                       |   |   |   |   |
| Maximum series fuse rating                | 25A   |   |   |   |   |
| Power tolerance                           | ±5%   |   |   |   |   |
| Temperature coefficients of Pmax          | -0.29%/°C                                   |   |   |   |   |
| Temperature coefficients of Voc           | -0.26%/°C                                   |   |   |   |   |
| Temperature coefficients of Isc           | 0.045%/°C                                   |   |   |   |   |
| Nominal operating cell temperature (NOCT) | 45±2°C                                      |   |   |   |   |

## Mechanical data

|               |   |
|---------------|---|
| Cell type     | Topcon Mono-crystalline (182mmx91mm)  |
| No. of cells  | 108 (2x54)  |
| Dimensions    | 1722x1134x30mm<br>1722x1134x35mm  |
| Weight        | 30mm : 23 kg<br>35mm : 23.5 kg  |
| Front Glass   | 3.2mm anti-reflective   |
| Frame         | Anodized Aluminium Alloy Total Black  |
| Junction Box  | IP68 Rated  |
| Output Cables | TUV: 1x4.0mm²<br>UL 12AWG Length: 1100mm<br>or customized length<br>*3-2 mm transmission loss iron Ar Coating Glass |
| Connectors    | Copper, Silver Plated, MC 4   |

## Packaging configuration

|   |      |      |
|---|------|------|
| Dimensions                              | 30mm | 35mm |
| No. of pieces per pallet                | 36   | 31   |
| Total number of pallets                 | 26   | 28   |
| Module quantity per 40' container (pcs) | 936  | 868  |

(1) Measurement Tolerances: Pmax (+/- 5%), Isc & Voc (+/- 5%) - Power Classification 0/+5%

(2) STC (Standard Testing Condition): Irradiance 1000W/m², Cell Temperature 25°C, AM 1.5

(3) NMOT (Nominal Operating Module Temperature): Irradiance 800W/m², NMOT. Ambient Temperature 20°C, AM 1.5, Wind Speed 1m/s

STC/NMOT



Irradiance 1000W/m² / 800W/m²



Module Temperature 25°C



AM = 1.5