

# HC MONO

## 430 - 455 Watt

### Black Frame



#### 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±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

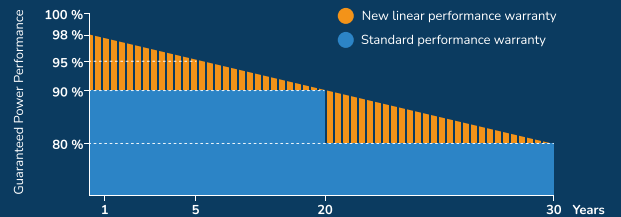


#### Quality and safety

- ✓ Industry leading power output warranty  
**20 years / 90%**  
**30 years / 80%**
- ✓ 30-year warranty on materials & workmanship
- ✓ Fire test: Class 1



#### Premium performance warranty



#### Applications



On-grid residential roof-tops



On-grid commercial-industrial roof-tops

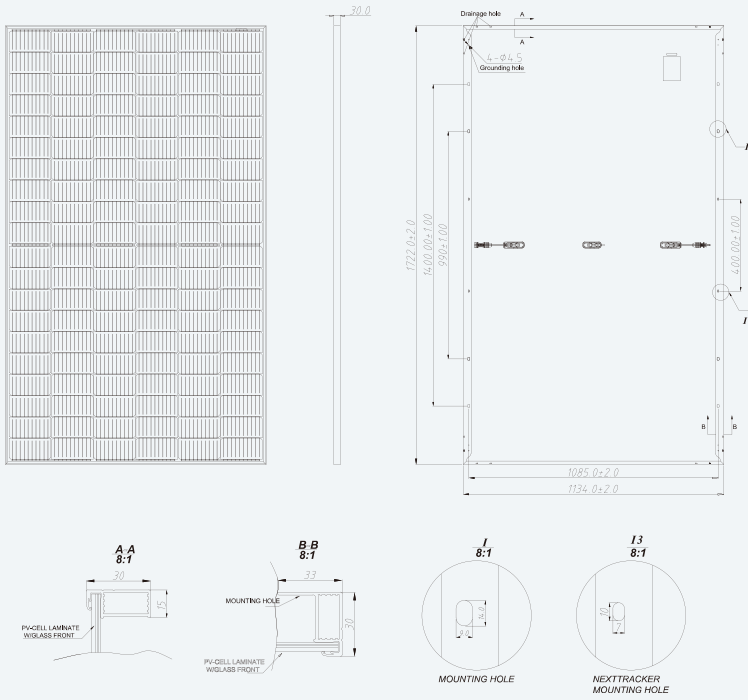


Solar power plants



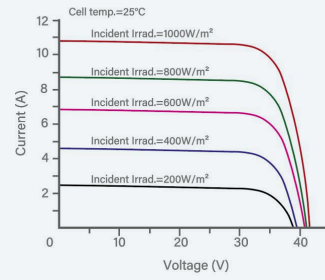
Off-grid systems

# Engineering drawings

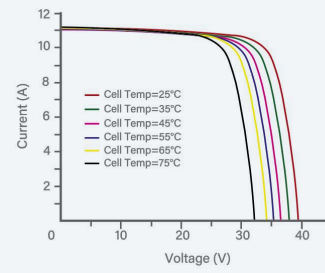


# Electrical performance & temperature dependence

Current-Voltage & Power-Voltage Curves at Different Irradiances



Current-Voltage Curves at Different Temperatures



## Electrical characteristics

Module Type	SNG430M-108	SNG435M-108	SNG440M-108	SNG445M-108	SNG450M-108	SNG455M-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>	<b>STC<sup>(2)</sup>/NMOT<sup>(3)</sup></b>
Maximum Power (P <sub>max</sub> )	430Wp/323Wp	435Wp/327Wp	440Wp/331Wp	445Wp/335Wp	450Wp/339Wp	455Wp/343Wp
Maximum Power Voltage (V <sub>mp</sub> )	32.72V/30.10V	32.96V/30.34V	33.20V/30.57V	33.44V/30.79V	33.66V/31.02V	33.90V/32.24V
Maximum Power Current (I <sub>mp</sub> )	13.15A/10.73A	13.21A/10.78A	13.27A/10.83A	13.33A/10.88A	13.39A/10.93A	13.45A/10.98A
Open-circuit Voltage (V <sub>oc</sub> )	38.62V/37.00V	38.86V/37.20V	39.00V/37.40V	39.14V/37.60V	39.28V/37.80V	39.42V/38.00V
Short-circuit Current (I <sub>sc</sub> )	13.90A/11.09A	13.96A/11.14A	14.02A/11.19A	14.08A/11.24A	14.14A/11.29A	14.20A/11.34A
Module Efficiency (%)	21.99%	22.25%	22.51%	22.76%	23.02%	23.27%
Operating Temperature (°C)	-40°C ± ~ +85°C					
Maximum system voltage	1500V					
Maximum series fuse rating	25A					
Power tolerance	0±5%					
Temperature coefficients of P <sub>max</sub>	-0.43%/°C					
Temperature coefficients of V <sub>oc</sub>	-0.30°C					
Temperature coefficients of I <sub>sc</sub>	0.04%/°C					
Nominal operating cell temperature (NOCT)	45±2°C					

## Mechanical data

Cell type	Topcon Mono-crystalline (182mmx91mm)
No. of cells	108 (2x54)
Dimensions	1722x1134x30mm 1722x1134x35mm
Weight	30mm : 23 kg 35mm : 23.5 kg
Front Glass	3.2mm anti-reflective
Frame	Anodized Aluminium Alloy Black Frame
Junction Box	IP68 Rated
Output Cables	TUV: 1x4.0mm <sup>2</sup> UL 12AWG Length: 1100mm or customized length <sup>*</sup> 3-2 mm transmission low 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: P<sub>max</sub> (+/- 5%), I<sub>sc</sub> & V<sub>oc</sub> (+/- 5%) - Power Classification 0/+5%

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

(3) NMOT (Nominal Operating Module Temperature): Irradiance 800/m<sup>2</sup>, NMOT, Ambient Temperature 20°C, AM 1.5, Wind Speed 1m/s

STC/NMOT



Irradiance 1000W/m<sup>2</sup> / 800W/m<sup>2</sup>



Module Temperature 25°C



AM = 1.5