TENKA solar

ORION
Serie III

HC MONO TOTAL BLACK

ORION nano-tech layer

430 - 450 Watt

KEY FEATURES

Our solar cells offer high conversion efficiency to ensure the highest quality.

Our high performing modules enable cost savings in mounting, cabling and labour of up to 15%.

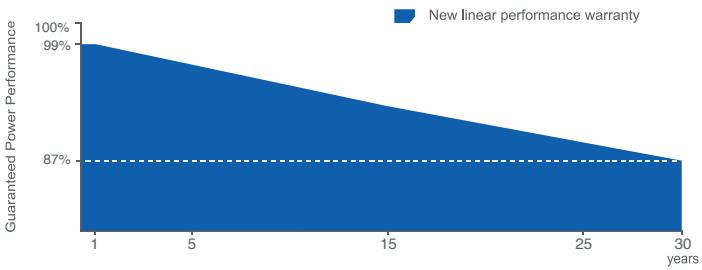
The modules can withstand high wind-pressure, snow loads and extreme temperatures.

Passed IEC 5400 Pa mechanical loading test.
PID Resistance Available.

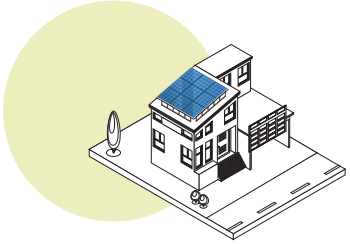
QUALITY AND SAFETY

- Industry leading power output warranty
  30 years/87,4%
- 30-year warranty on materials & workmanship
- Fire Rating: Class 1

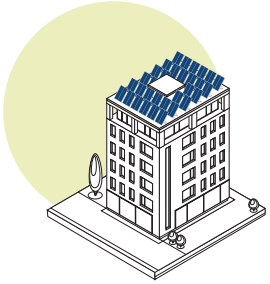
PREMIUM PERFORMANCE WARRANTY



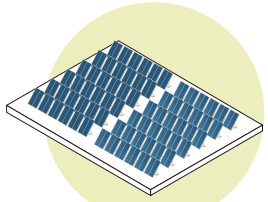
APPLICATIONS



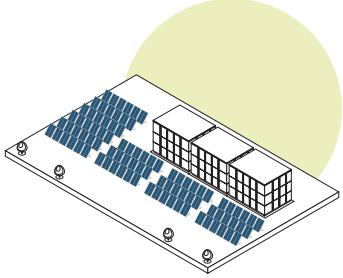
On-grid residential roof-tops



On-grid commercial - industrial roof-tops



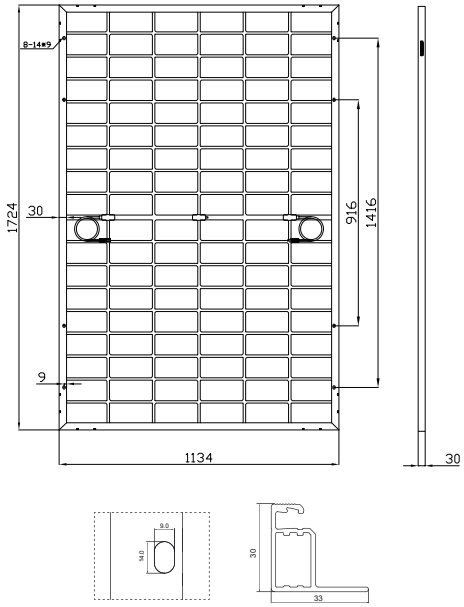
Solar power plants



Off-grid systems

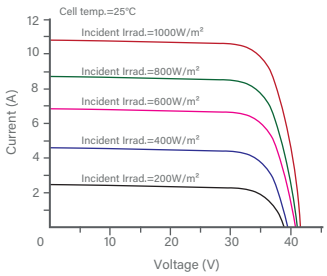
ISO9001:2015; ISO14001:2015; OH SAS18001 certitied factory; IEC61215; IEC61730 certified products

ENGINEERING DRAWINGS

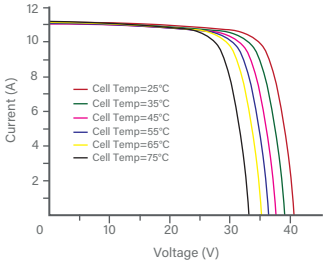


ELECTRICAL PERFORMANCE & TEMPERATURE DEPENDENCE

Current-Voltage & Power-Voltage Curves at Different Irradiances



Current-Voltage Curves at Different Temperatures



MECHANICAL CHARACTERISTICS

Cell Type	Orion N-Type TOPCon Mono-crystalline (182x91mm) Orion Technology Layer Applied*
No.of cells	108(6x18)
Dimensions	1724×1134×30mm (±2mm)
Weight	20.5 kg
Front Glass	3.2mm, Anti-Reflecting Coating
Junction Box	Anodized Aluminium Alloy / IP68 Rated
Output Cables	TÜV 1×4.0mm²/UL 12AWG, Length:1100mm

PACKAGING CONFIGURATION

Standard packaging	36 pcs / pallet
Module quantity per 40'container	936 pcs
Pallets per container	26

SPECIFICATIONS

STC Irradiance 1000W/m² Module Temperature 25°C AM=1.5

Module Type (1)	ORION III-430M		ORION III-435M		ORION III-440M		ORION III-445M		ORION III-450M	
	STC (2)	NMOT (3)	STC (2)	NMOT (3)	STC (2)	NMOT (3)	STC (2)	NMOT (3)	STC (2)	NMOT (3)
Maximum Power (Pmax)	430Wp	321Wp	435Wp	325Wp	440Wp	329Wp	445Wp	333Wp	450Wp	337Wp
Maximum Power Voltage (Vmp)	33.16V	30.26V	33.36V	30.44V	33.56V	30.62V	33.76V	33.81V	33.96V	30.95V
Maximum Power Current (Imp)	12.97A	10.61A	13.05A	10.68A	13.12A	10.75A	13.19A	10.82A	13.25A	10.89A
Open-circuit Voltage (Voc)	39.43V	37.02V	39.63V	37.21V	39.83V	37.40V	40.03V	37.58V	40.23V	37.76V
Short-circuit Current (Isc)	14.01A	11.31A	14.08A	11.37A	14.15A	11.43A	14.23A	11.49A	14.31A	11.55A
Module Efficiency (%)	22.02%		22.28%		22.53%		22.79%		23.04%	
Voc and isc tolerance	±3%									
Operating Temperature(°C)	-40°C~+85°C									
Maximum system voltage	1500V									
Maximum series fuse rating	25A									
Power tolerance	0 ~ +5W									
Temperature coefficients of Pmax	-0.29%/°C									
Temperature coefficients of Voc	-0.25%/°C									
Temperature coefficients of Isc	0.045%/°C									
Nominal operating cell temperature (NOCT)	45±2 °C									

TENKA solar

(1) Measurement Tolerances: Pmax (± 3%). Isc & Voc (± 3%) - Module Type 0/+5W
(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
**The application of our layer adds 15/20 more watts compared to the standard cell.*