

**DUAL GLASS BIFACIAL**  
ORION nano-tech layer

**400 - 430 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.

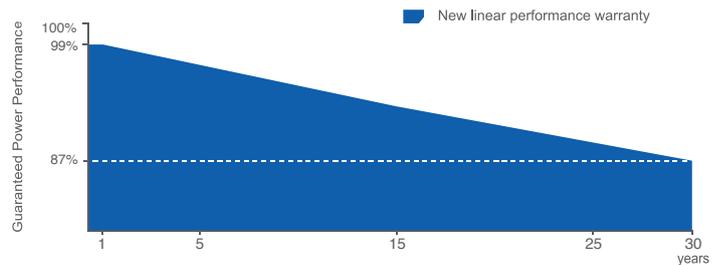
Passed IEC 5400 Pa mechanical loading test. PID Resistance Available.



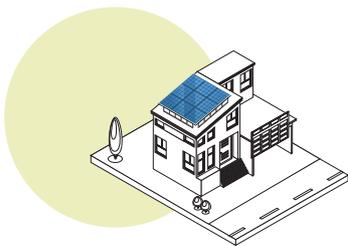
**QUALITY AND SAFETY**

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

**PREMIUM PERFORMANCE WARRANTY**



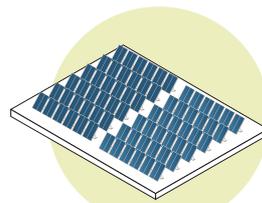
**APPLICATIONS**



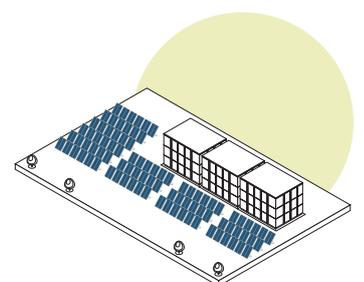
On-grid residential roof-tops



On-grid commercial - industrial roof-tops

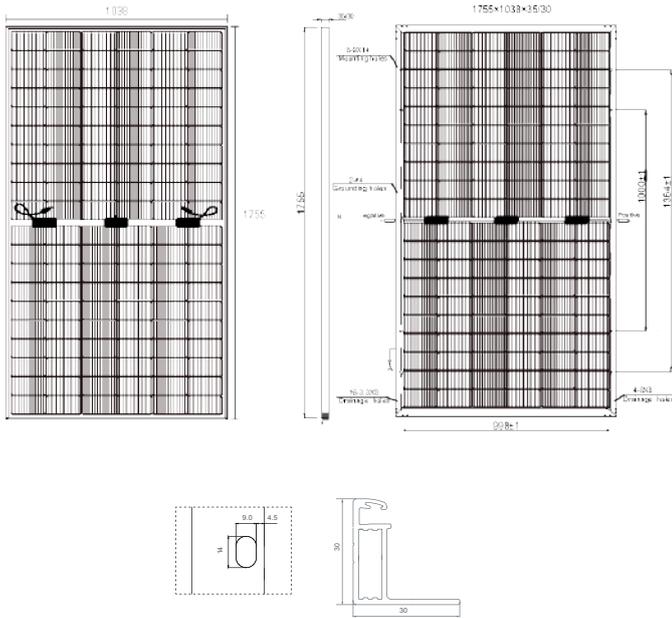


Solar power plants



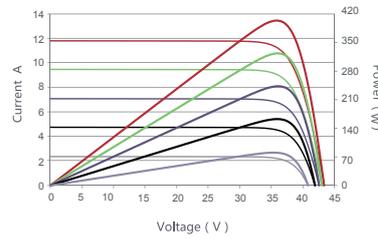
Off-grid systems

## ENGINEERING DRAWINGS

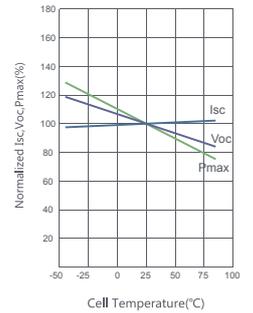


## ELECTRICAL PERFORMANCE & TEMPERATURE DEPENDENCE

Current-Voltage & Power-Voltage Curves (400W)



Temperature Dependence of Isc, Voc, Pmax



## PACKAGING CONFIGURATION

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

## SPECIFICATIONS

Module Type <sup>(1)</sup>	ORION I-400M		ORION I-405M		ORION I-410M		ORION I-415M		ORION I-420M		ORION I-425M		ORION I-430M	
	STC <sup>(2)</sup>	NMOT <sup>(3)</sup>												
Maximum Power (Pmax)	400Wp	289Wp	405Wp	293Wp	410Wp	296Wp	415Wp	300Wp	420Wp	303Wp	425Wp	307Wp	430Wp	310Wp
Maximum Power Voltage (Vmp)	34.7V	31.97V	34.95V	32.02V	35.32V	32.18V	35.40V	32.18V	35.51V	32.27V	35.69V	32.38V	35.78V	32.49V
Maximum Power Current (Imp)	11.53A	9.04A	11.56A	9.17A	11.61A	9.33A	11.70A	9.33A	11.83A	9.40A	11.93A	9.49A	12.02A	9.55A
Open-circuit Voltage (Voc)	41.00V	38.26V	41.03V	38.33V	41.08V	38.38V	41.17V	38.47V	41.23V	38.53V	41.33V	38.63V	41.44V	38.74V
Short-circuit Current (Isc)	12.13A	9.49A	12.16A	9.46A	12.20A	9.50A	12.29A	9.59A	12.35A	9.65A	12.44A	9.74A	12.53A	9.83A
Module Efficiency (%)	22.02%		22.23%		22.51%		22.78%		23.06%		23.33%		23.60%	
Voc and Isc tolerance	±3%													
Operating Temperature(°C)	-40°C~+85°C													
Maximum system voltage	1500V													
Maximum series fuse rating	20A													
Temperature coefficients of Pmax	-0.26%/°C													
Temperature coefficients of Voc	-0.24%/°C													
Temperature coefficients of Isc	0.04%/°C													
Nominal operating cell temperature (NOCT)	45±2 °C													
Refer. Bifacial Factor	70±5%													

## MECHANICAL CHARACTERISTICS

Cell Type	Orion N-Type TOPCon Mono-crystalline (166mm×83mm) Orion Technology Layer Applied*
No. of cells	120 (6×20)
Dimensions	1755×1038×30mm (±2mm)
Weight	23.5kg
Front Glass	2.0mm, AR Coating, High Transmission, Low Iron, Tempered Glass
Back Glass	2.0mm, AR Coating, High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminium Alloy(Silver/Black optional)
Junction Box	IP68 Rated
Output Cables	TÜV 1×4.0mm <sup>2</sup> / UL 12AWG, Length:1100mm

## BIFACIAL OUTPUT-REAR SIDE POWER GAIN

STC ☀ Irradiance 1000W/m<sup>2</sup> 🌡 Module Temperature 25°C ☁ AM=1.5

5%	420Wp	425Wp	431Wp	436Wp	441Wp	446Wp	452Wp
15%	460Wp	466Wp	472Wp	477Wp	483Wp	489Wp	495Wp
25%	500Wp	506Wp	513Wp	519Wp	525Wp	531Wp	538Wp

(1) Measurement Tolerances: Pmax (± 3%), Isc & Voc (± 3%) - Module Type 0/+5W

(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 800W/m<sup>2</sup>, 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.

Specifications included in this datasheet are subject to change without notice. Tenka Solar reserves the right of final interpretation.