

# 505 W

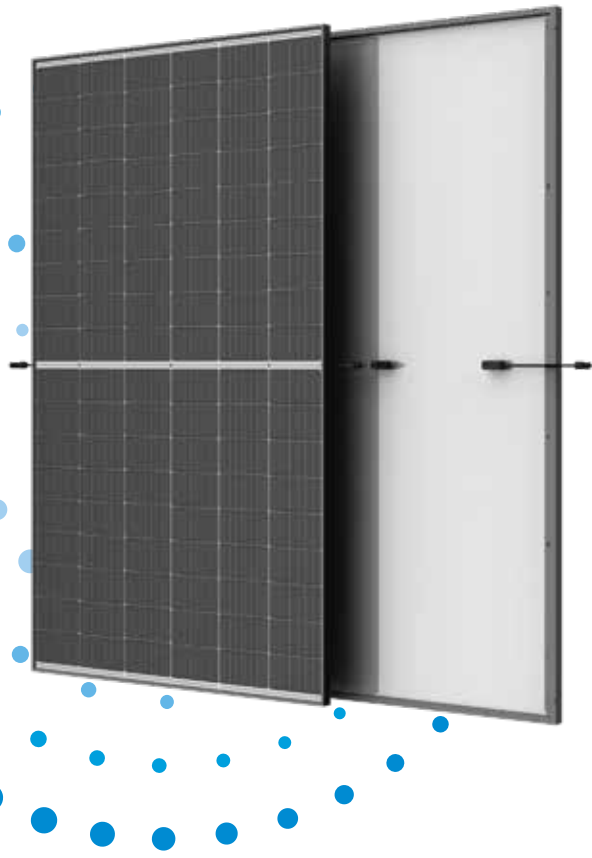
MAXIMUM POWER OUTPUT

# 0/+5 W

POSITIVE POWER TOLERANCE

# 22.7 %

MAXIMUM EFFICIENCY



### Optimal Size for Commercial & Industrial Rooftops

- Compact module design with medium size for lower total system cost and shorter payback time
- Low voltage design for high string power



### Lightweight Dual-glass Design, High Reliability

- Excellent fire resistance; durability in harsh environmental conditions and high temperature or high humidity areas
- Up to 5,400 Pa snow load and 2,400 Pa wind load (test loads)
- 25 years product warranty



### Maximized Energy Harvest

- High module power: Up to 505 W, 22.7 % module efficiency with n type i-TOPCon technology
- Maximum 1 % first-year degradation and 0.4 % annual degradation
- 30 years power warranty



### Universal Solution for Rooftop Systems

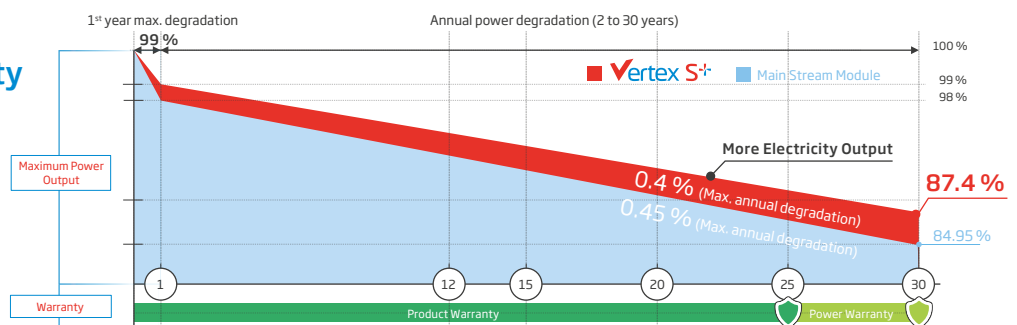
- Designed for compatibility with existing mainstream inverters, optimizers and mounting systems
- Easy to handle (length below 2 meters) and install on roofs with excellent size and light weight
- Flexible installation solutions for system deployment

## Extended Vertex S+ Warranty

**1 %**  
1<sup>st</sup> year max. degradation

**0.4 %**  
Max. annual degradation from year 2 to 30

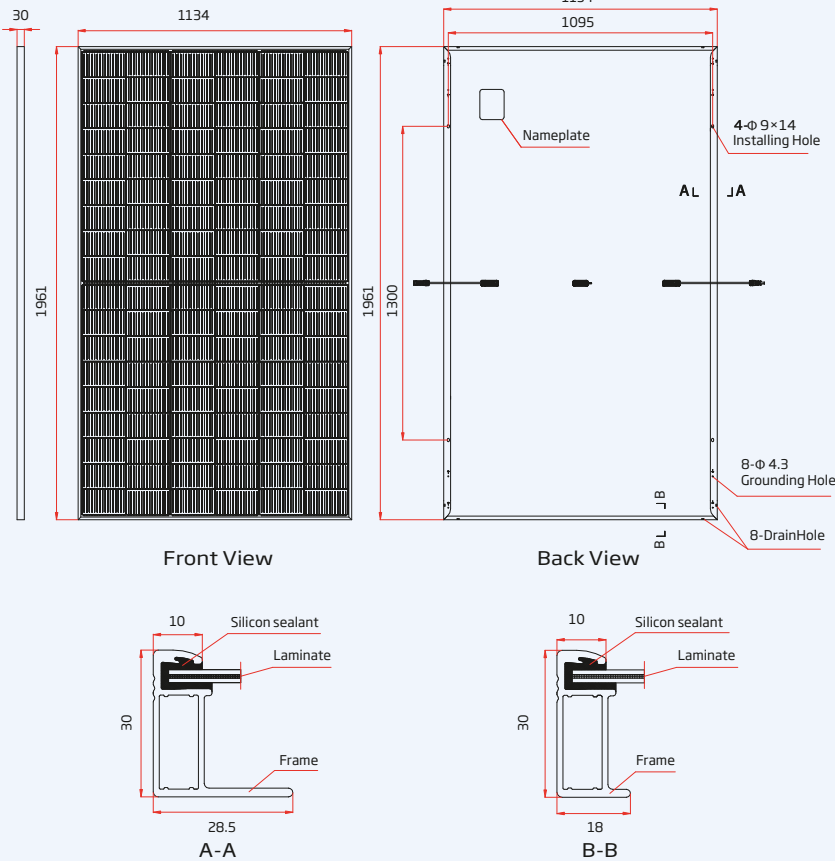
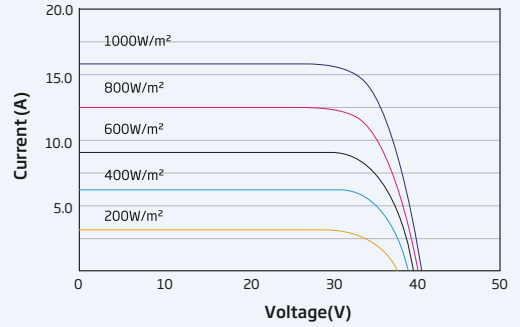
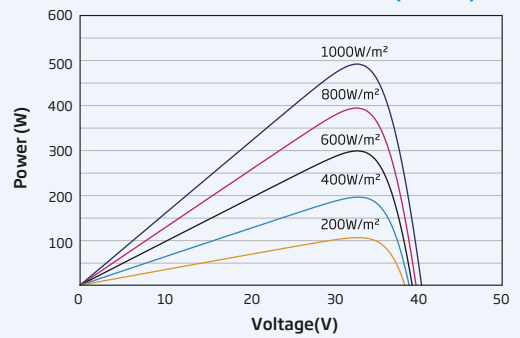
**25 Years**  
Product Workmanship Warranty



## Comprehensive Products and System Certificates



IEC61215/IEC61730/IEC61701/IEC62716  
 ISO 9001: Quality Management System  
 ISO 14001: Environmental Management System  
 ISO14064: Greenhouse Gases Emissions Verification  
 ISO45001: Occupational Health and Safety Management System

**DIMENSIONS OF PV MODULE(mm)**

**I-V CURVES OF PV MODULE (490 W)**

**P-V CURVES OF PV MODULE (490 W)**

**ELECTRICAL DATA (STC)**
**TSM-475 TSM-480 TSM-485 TSM-490 TSM-495 TSM-500 TSM-505**  
NEG18R.28 NEG18R.28 NEG18R.28 NEG18R.28 NEG18R.28 NEG18R.28 NEG18R.28

Peak Power Watts- $P_{MAX}$ (Wp)*	475	480	485	490	495	500	505
Power Tolerance- $P_{MAX}$ (W)	0/+5						
Maximum Power Voltage- $V_{MPP}$ (V)	32.3	32.5	32.7	32.9	33.1	33.3	33.5
Maximum Power Current- $I_{MPP}$ (A)	14.72	14.77	14.84	14.91	14.97	15.03	15.09
Open Circuit Voltage- $V_{OC}$ (V)	39.0	39.2	39.4	39.6	39.8	40.1	40.3
Short Circuit Current- $I_{SC}$ (A)	15.68	15.72	15.76	15.80	15.83	15.86	15.89
Module Efficiency $\eta_m$ (%)	21.4	21.6	21.8	22.0	22.3	22.5	22.7

 STC: Irradiance 1000 W/m<sup>2</sup>, Cell Temperature 25 °C, Air Mass AM 1.5. \*Measuring tolerance: ±3 %.

**ELECTRICAL DATA (NOCT)**
**TSM-475 TSM-480 TSM-485 TSM-490 TSM-495 TSM-500 TSM-505**  
NEG18R.28 NEG18R.28 NEG18R.28 NEG18R.28 NEG18R.28 NEG18R.28 NEG18R.28

Maximum Power- $P_{MAX}$ (Wp)	363	367	371	375	378	382	386
Maximum Power Voltage- $V_{MPP}$ (V)	30.4	30.6	30.8	31.0	31.3	31.5	31.8
Maximum Power Current- $I_{MPP}$ (A)	11.94	11.98	12.02	12.06	12.08	12.11	12.15
Open Circuit Voltage- $V_{OC}$ (V)	36.9	37.2	37.4	37.6	37.7	38.0	38.3
Short Circuit Current- $I_{SC}$ (A)	12.64	12.67	12.70	12.74	12.76	12.78	12.81

 NOCT: Irradiance at 800 W/m<sup>2</sup>, Ambient Temperature 20 °C, Wind Speed 1 m/s.

**MECHANICAL DATA**

Solar Cells	Monocrystalline
No. of cells	108 cells
Module Dimensions	1961×1134×30 mm
Weight	23.5 kg
Front Glass	1.6 mm, High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	POE/EVA
Back Glass	1.6 mm, Heat Strengthened Glass
Frame	30 mm Anodized Aluminium Alloy, Black
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0 mm <sup>2</sup> Landscape: 1100/1100 mm Portrait: 280/350 mm*
Connector	TS4 / MC4 EVO2*

\*Special order only.

**TEMPERATURE RATINGS**

NOCT (Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of $P_{MAX}$	-0.29%/°C
Temperature Coefficient of $V_{OC}$	-0.24%/°C
Temperature Coefficient of $I_{SC}$	0.04%/°C

**MAXIMUM RATINGS**

Operational Temperature	-40 to +85 °C
Maximum System Voltage	1500 V DC (IEC)
Max Series Fuse Rating	30 A

**WARRANTY**

 25 year Product Workmanship Warranty  
 30 year Power Warranty  
 1% first year degradation  
 0.4% Annual Power Attenuation  
 (Please refer to product warranty for details)

**PACKAGING CONFIGURATION**

Modules per box:	36 pieces
Modules per 40' container:	864 pieces