



OFTOB ENERGY Solar Panel Description

Solar Module OE-S/PV 690W – 720W (TOPCon, Dual-Glass, Bifacial)



The **OE-S/PV series** represents premium dual-glass solar modules built on advanced **TOPCon 2.0 technology**, designed for high-demand industrial, commercial, and hybrid energy systems where maximum reliability, power output, and long-term stability are essential.



Key Advantages

✓ High Power Output: 690- 720 W

These panels deliver one of the highest power ratings in their class—ideal for industrial facilities, commercial buildings, and hybrid off-grid/on-grid systems.



✓ Dual-Glass Construction (2 mm + 2 mm)

Front and rear 2 mm glass layers ensure:

- Superior resistance to temperature cycles
- No PID degradation
- High moisture resistance
- Salt-mist and ammonia corrosion resistance

Certified according to:

IEC61215 / IEC61730 / IEC61701 / IEC62716



✓ TOPCon 2.0 — Enhanced Efficiency

The upgraded N-type TOPCon cell structure provides:

- Module efficiency up to **23.18%**
- Reduced thermal performance loss
- Greater stability under heat, humidity, and voltage fluctuations
(Performance verified by independent laboratory testing.)



✓ Ultra-Low Degradation

- < 2% in the first year
- ≤ 0.55% annual degradation afterward

Backed by a **30-year linear power-output warranty**.



✓ Bifaciality up to 90%

Thanks to the symmetrical N-type architecture, the rear side of the module generates:

- +10–25% additional energy** from reflected light
- Most effective on concrete, tile, bright gravel, and other reflective surfaces.

Quality Guarantee

23.18% **0-+5W**

Max Module Eff. Positive Tolerance



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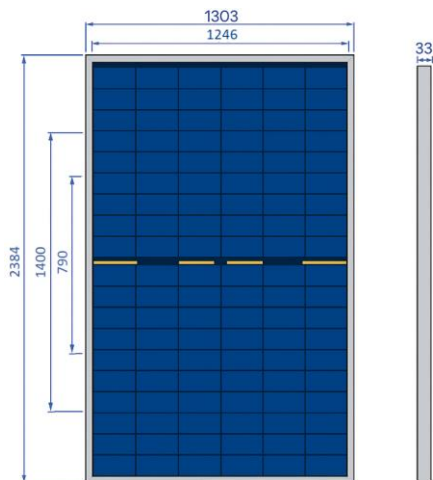
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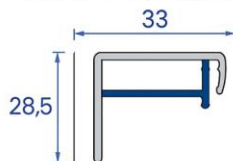
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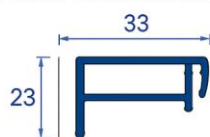
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Frame Cross Section A-A



Frame Cross Section B-B



(Unit: mm)

- **Solar Cells** TOPCon 210mm
- **No. of Cells** 132 (6×22)
- **Dimensions** 2384 × 1303 × 33mm
- **Weight** 37.5 kg
- **Glass Thickness**
 - (F) 2.0mm anti-reflective solar glass
 - (B) 2.0mm solar glass
- **Frame** Anodized aluminum alloy
- **Junction Box** Ip68
- **Output Cables** 4mm², 300mm in length, length can be customized / UV resistant
- **Connectors** MC4 original /MC4 compatible
- **Mechanical Load Test** 5400 Pa
- **Packaging** 31 pcs/box, 558 pcs / 40' HQ



Electrical Parameters (STC*)

Module Type: OE-S/PV 690W – 720W	690	695	700	705	710	715	720
Maximum Power (Pmax/W)	690	695	700	705	710	715	720
Module Efficiency (%)	22.21%	22.37%	22.53%	22.70%	22.86%	23.12%	23.18%
Optimum Operating Voltage (Vmp/V)	39.80	40.00	40.20	40.40	40.60	40.80	41.00
Optimum Operating Current (Imp/A)	17.34	17.38	17.41	17.45	17.49	17.52	17.56
Open Circuit Voltage (Voc/V)	47.80	48.00	48.20	48.40	48.60	48.80	49.00
Short Circuit Current (Isc/A)	18.30	18.40	18.48	18.52	18.57	18.61	18.65

BSTC*

Maximum Power (Pmax/W)	526	530	534	538	541	545	549
Optimum Operating Voltage (Vmp/V)	37.60	37.80	38.00	38.20	38.35	38.55	38.75
Optimum Operating Current (Imp/A)	13.99	45702	45791	45883	45975	14.14	14.17
Open Circuit Voltage (Voc/V)	45.35	45.55	45.75	45.95	46.15	46.35	46.55
Short Circuit Current (Isc/A)	14.70	14.78	14.82	14.86	14.91	14.94	14.97

*STC: Irradiance 1000 W/m², cell temperature 25°C, AM=1.5. Tolerance of Pmax is within +/- 3%.

*BSTC: Front side irradiation 1000W/m², back side reflection irradiation 135W/m², AM=1.5, ambient temperature 25°C.



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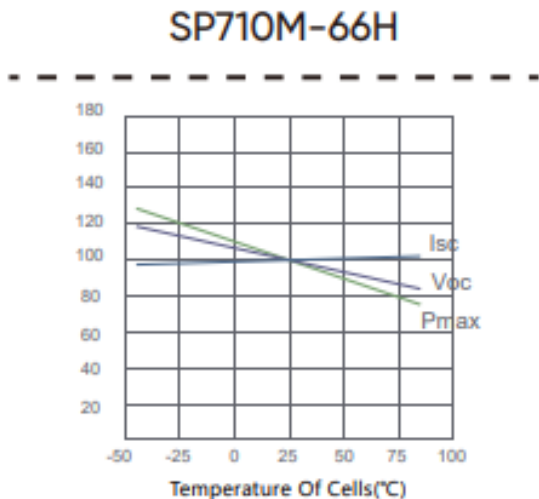
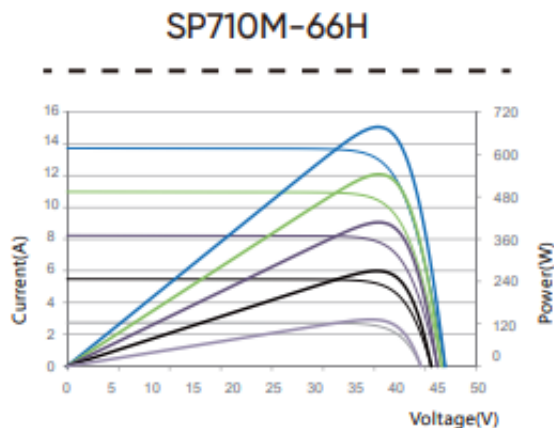


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I-V Curve



Temperature Characteristics

NMOT (Nominal Module Operating Temperature)	44°C (±2°C)
Temperature Coefficient of Voc	-0.25% / °C
Temperature Coefficient of Isc	+0.046% / °C
Temperature Coefficient of Pmax	-0.30% / °C

Operating Characteristics

Operating Module Temperature	-40°C ~ +85°C
Maximum System Voltage	DC 1500 (IEC)
Maximum Series Fuse Rating	30A
Power Tolerance	0 ~ +5W

Quality Management System and Product Certification

- IEC 61215 / IEC 61730 – Design & safety qualification
- IEC 62804 – PID resistance
- IEC 61701 – Salt mist corrosion test
- IEC 62716 – Ammonia corrosion test
- IEC 60068-2-68 – Sand abrasion test
- ISO 9001:2015 – Quality management system
- ISO 14001:2015 – Environmental management system
- ISO 45001:2018 – Occupational health & safety management
- ISO 50001:2011 – Energy management system

