

Preliminary

Vertex N

N-type i-TOPCon Ultra

BIFACIAL DUAL GLASS MONOCRYSTALLINE MODULE

TSM-NEG21C.20U 715-740W

740_W / MAXIMUM
POWER OUTPUT

23.8% / MAXIMUM
EFFICIENCY



High customer value

- Standardized module size with flagship module power, 35W higher compared with conventional technology
- Low voltage design with higher string power, effectively reducing BOS (Balance of System) and LCOE (Levelized Cost of Energy) by 2%~6%
- Higher container space utilization effectively reduces the freight cost
- The Star of LCOE



High power up to 740W

- Up to 23.8% module efficiency, on 210 innovation platform
- Patented i-TOPCon technology with continuous efficiency improvement, including contact resistance reduction, rear reflection enhancement and edge quality repairment



High reliability

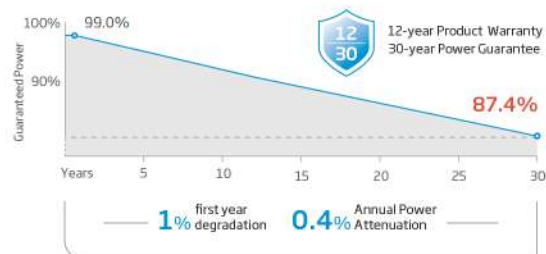
- Minimized micro-cracks with innovative non-destructive cutting technology and high-density packaging
- Reduced risks of hot-spot with half-cut technology
- Certified high resistance against salt, ammonia, sand, PID, LID, LeTID
- Sustainable in harsh environments and extreme weather conditions



High energy yield

- Excellent low irradiation performance, validated by 3rd party
- Lower temperature coefficient (-0.29%/°C)
- Higher bifaciality, with up to 10%~20% additional power gain from back side depending on albedo
- Reliable dual-glass structure with 30-year power guarantee

Performance Warranty



* Please refer to product warranty for details

Comprehensive Products and System Certificates

ISO 9001: Quality Management System
ISO 14001: Environmental Management System
ISO 14064: Greenhouse Gases Emissions Verification
ISO 45001: Occupational Health and Safety Management System



CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.
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ELECTRICAL DATA (STC & NOCT)

Testing Condition	STC		NOCT		STC		NOCT		STC		NOCT		STC		NOCT		STC		NOCT	
Peak Power Watts- $P_{MAX}(W_p)^*$	715	547	720	551	725	555			730	559			735	563			740	566		
Power Selection (W)**	0 ~ +5																			
Maximum Power Voltage- $V_{MPP}(V)$	41.1	38.7	41.3	38.8	41.5	39.0			41.7	39.3			41.9	39.5			42.1	39.7		
Maximum Power Current- $I_{MPP}(A)$	17.40	14.14	17.44	14.19	17.47	14.23			17.51	14.24			17.55	14.25			17.58	14.27		
Open Circuit Voltage- $V_{oc}(V)$	49.2	46.7	49.4	46.9	49.6	47.1			49.9	47.2			50.1	47.5			50.3	47.7		
Short Circuit Current- $I_{sc}(A)$	18.44	14.86	18.49	14.90	18.54	14.94			18.58	14.98			18.62	15.01			18.66	15.04		
Module Efficiency $\eta_m(\%)$	23.0		23.2		23.3		23.5		23.7		23.8									

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5. NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s. *Measuring tolerance: ±3%. **Power selection up to: +3%.**Electrical characteristics with different power bin** (reference to 5% & 10% backside power gain)

Backside Power Gain	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%
Peak Power Watts- $P_{MAX}(W_p)$	751	787	756	792	761	798	767	803	772	809	777	814
Maximum Power Voltage- $V_{MPP}(V)$	41.1	41.1	41.3	41.3	41.5	41.5	41.7	41.7	41.9	41.9	42.1	42.1
Maximum Power Current- $I_{MPP}(A)$	18.27	19.14	18.31	19.18	18.34	19.22	18.39	19.26	18.43	19.31	18.46	19.34
Open Circuit Voltage- $V_{oc}(V)$	49.2	49.2	49.4	49.4	49.6	49.6	49.9	49.9	50.1	50.1	50.3	50.3
Short Circuit Current- $I_{sc}(A)$	19.36	20.28	19.41	20.34	19.47	20.39	19.51	20.44	19.55	20.48	19.59	20.53

Power Bifaciality: 85±5%.

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature) 43°C (±2°C)

Temperature Coefficient of P_{MAX} -0.29% /°CTemperature Coefficient of V_{oc} -0.24% /°CTemperature Coefficient of I_{sc} 0.04% /°C**APPLICATION CONDITIONS**

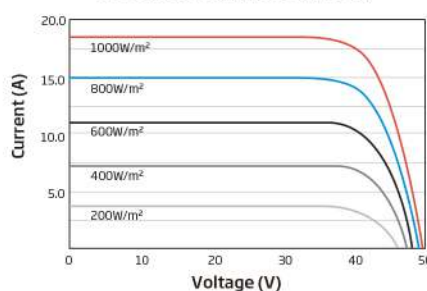
Operating Temperature -40~+70°C

Maximum System Voltage 1500V DC (IEC)

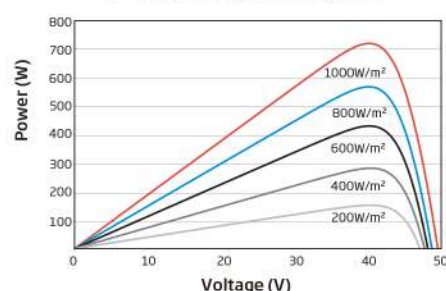
Max Series Fuse Rating 35A

CURVES OF PV MODULE**Preliminary**

I-V CURVES OF PV MODULE (725W)

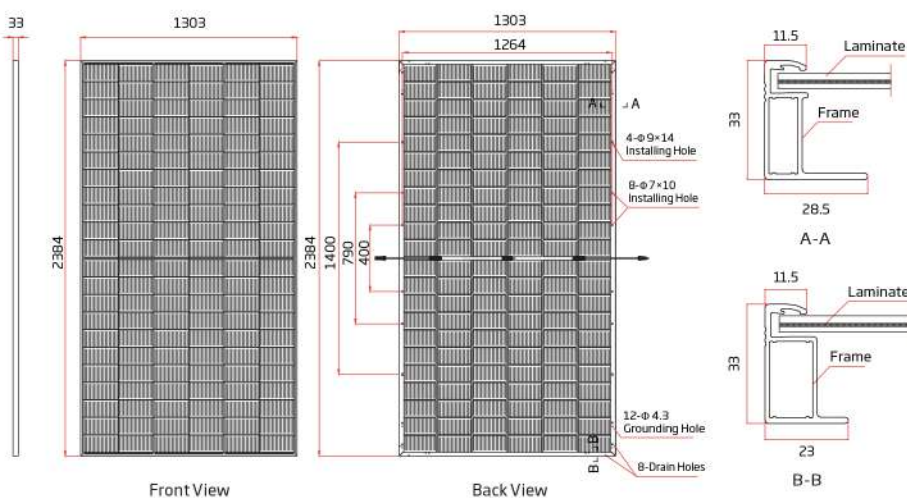


P-V CURVES OF PV MODULE (725W)

**MECHANICAL DATA**

Solar Cells	N-type i-TOPCon Monocrystalline
No. of cells	132 cells
Module Dimensions	2384×1303×33 mm (93.86×51.30×1.30 inches)
Weight	38.3 kg (84.4 lb)
Front Glass	2.0 mm (0.08 inches), AR Coating Heat Strengthened Glass
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass
Frame	33mm (1.30 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm ² (0.006 inches ²) Portrait: 370/230 mm (14.57/9.06 inches) Length can be customized
Connector	MC4 EVO2 / TS4 Plus / TS4*
Packaging	Modules per box: 33 pieces Modules per 40' container: 594 pieces

*Please refer to regional datasheet for specified connector.



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