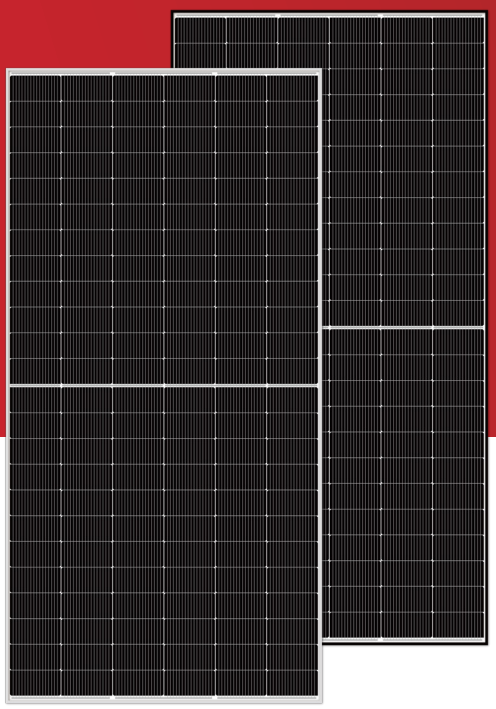
THORNOVA solar SUNOVA SOLAR | TIER 1 BloombergNEF

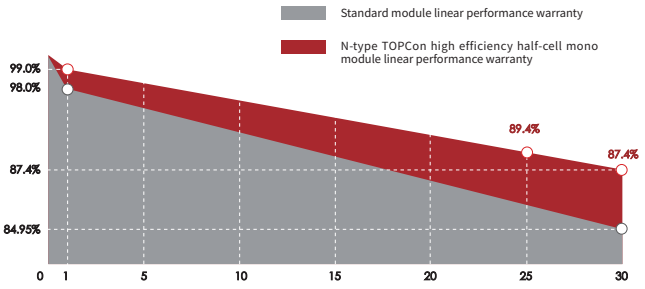
Tangra™ M Pro 565-585W

N-type TOPCon bifacial double glass mono module



- Bifacial technology enables additional energy harvesting from rear side (up to 30%)
- 30-year lifespan delivers 10-30% more power compared with conventional P-type modules
- The natural lack of LID in the N-type solar cell can increase power generation
- Excellent low irradiance performance
- Better light trapping and current collection to improve module power output and reliability
- Industry-leading, lowest thermal coefficient
- Optimized electrical design and lower operating current for reduced hot spot loss and better temperature
- Certified to withstand 2400 Pa of wind load and 5400 Pa of snow load
- 100% triple EL test, which greatly reduces the hidden cracks rate

LINEAR PERFORMANCE WARRANTY



15 years
Product quality & process guarantee

30 years
Linear power guarantee

0.40 %
Annual degradation

COMPREHENSIVE CERTIFICATES

ISO 9001: Quality Management System

ISO 14001: Environmental Management System Standard

ISO 45001: International Occupational Health and Safety Assessment System Standard

SA 8000: 2014 Social Accountability Management System

* Different markets have different certification requirements. Also, the products are under rapid innovation. Please confirm the certification status with regional sales representatives.

WARRANTY INSURANCE

Ariel Re | LLOYD'S Underwriters | Munich RE | 中国平安 PING AN P&C INSURANCE CO CN SZN

* Optional performance warranty insurance. Please contact our local sales staff for more information.

ELECTRICAL CHARACTERISTICS

144 cells

Model of modules	SS-BG565-72MDH(T)		SS-BG570-72MDH(T)		SS-BG575-72MDH(T)		SS-BG580-72MDH(T)		SS-BG585-72MDH(T)	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum power — P_{mp} (W)	565	433	570	436	575	440	580	444	585	448
Open-circuit voltage — V_{oc} (V)	51.30	49.12	51.52	49.33	51.74	49.54	51.97	49.76	52.16	49.94
Short-circuit current — I_{sc} (A)	13.65	11.00	13.70	11.04	13.75	11.08	13.80	11.12	13.85	11.16
Maximum power voltage — V_{mp} (V)	43.41	41.57	43.62	41.77	43.83	41.97	44.04	42.17	44.22	42.34
Maximum power current — I_{mp} (A)	13.02	10.41	13.07	10.45	13.12	10.49	13.17	10.53	13.23	10.58
Module efficiency — η_m (%)	21.9		22.1		22.3		22.5		22.6	

STC (Standard Testing Conditions): Irradiance 1000W/m^2, Cell Temperature 25 °C , Spectra at AM1.5
NOCT (Nominal Operating Cell Temperature): Irradiance 800W/m^2, Ambient Temperature 20°C , Spectra at AM1.5, Wind at 1m/s

ELECTRICAL CHARACTERISTICS WITH DIFFERENT POWER BIN (REFERENCE TO 13.5% IRRADIANCE RATIO)

Peak power (P_{max}) (W)	626	632	637	643	648
Open circuit voltage (V_{oc}) (V)	51.30	51.52	51.74	51.97	52.16
Short circuit current (I_{sc}) (A)	15.12	15.18	15.24	15.29	15.35
MPP voltage — V_{mp} (V)	43.41	43.62	43.83	44.04	44.22
MPP current — I_{mp} (A)	14.42	14.48	14.54	14.59	14.66

STRUCTURAL CHARACTERISTICS

Module dimensions (L*W*H)	2278 x 1134 x 30 mm
Weight	32.3 kg
Cell	144 cells, N-type TOPCon monocrystalline
Front glass	2.0mm, anti-reflection coating
Back glass	2.0mm, heat strengthened glass
Frame	Anodized aluminum alloy (Silver/Black)
Junction box	IP68, 3 bypass diodes
Output wire	4.0 mm^2
Wire length	300mm/1200mm/customized length
Connector	MC4 Compatible
Packaging specification	36 pcs/Pallet; 720 pcs/40'HQ

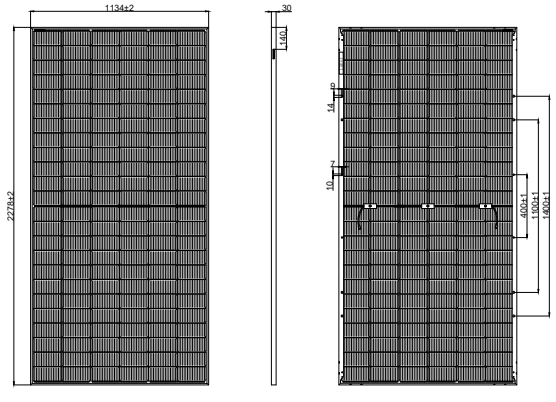
OPERATING PARAMETERS

Power tolerance (W)	(0,+5)
Maximum system voltage (V)	1500
Maximum rated fuse current (A)	30
Current operating temperature (°C)	-40~+85 °C
Mechanical load	5400 Pa ❄/ 2400 Pa

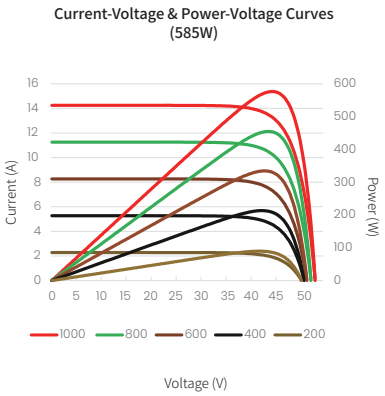
TEMPERATURE PERFORMANCE RATINGS

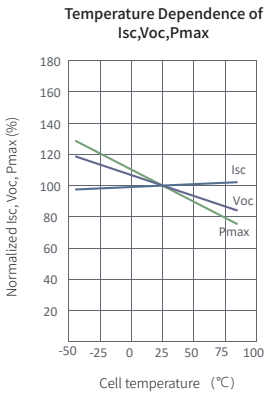
TANGRA temperature coefficient (P_{max})	-0.30 %/°C
Temperature coefficient (V_{oc})	-0.28 %/°C
Temperature coefficient (I_{sc})	+0.04 %/°C
Nominal operating cell temperature	43±2 °C

MODULE DIMENSIONS (MM)



* The unmarked tolerance is ±1 mm
Length shown in mm





THORNOVA SOLAR SUNOVA SOLAR

Web: www.sunovathornova.com E-mail: info@sunova-solar.com