

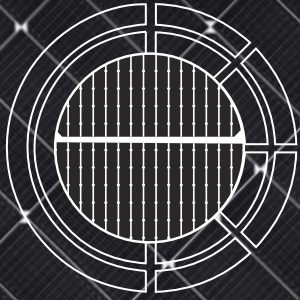


**Own
Your
Power**

N-Type TOPCon Half Cut Bifacial Module

580wp to 600wp

**16bb Bi-Facial
cell technology**



TOPCon 600+Wp

144 Cell | 16 BB Cell

N-Type TOPCon Bifacial Modules

Designed for maximum performance, Citizen's N-Type TOPCon Bifacial Modules combine >23.33% efficiency with advanced bifacial technology to generate more energy from every ray of sunlight.

Built to withstand extreme weather conditions and engineered for low degradation, they deliver reliable, high-performance power generation and greater energy output for over 30 years.

- 23.33%+ Module Efficiency
- 0~+5W Positive Power Tolerance
- 30-Year Performance Warranty
- 12-Year Product Warranty
- Advanced PID Resistance
- MNRE ALMM Approved



Extra
Power



Extra
Life



Double Sided
Power Generation



Anti-LeTID &
Anti-PID Performance



Lower Temperature
Coefficient



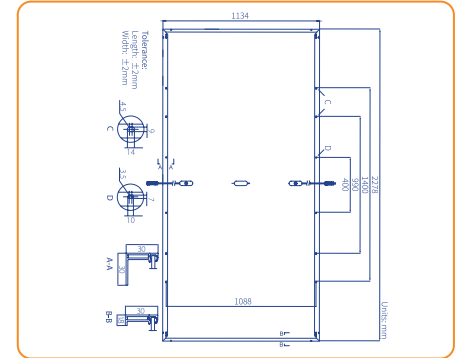
Lower LCOE &
System Cost



TECHNICAL DATA

Electrical Data: All data refers to STC (1000 W/m², AM1.5G, 25°C) and NOCT irradiance 800 W/m², ambient temperature 20°C, wind speed 1 m/sec.

Product Model Number	CSPL-144THC-GF-580		CSPL-144THC-GF-585		CSPL-144THC-GF-590		CSPL-144THC-GF-600	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Nominal Wattage (P _{max}) Wp	580	435	585	439	590	443	600	454
No's of Cut Cells	144	144	144	144	144	144	144	144
Matrix Configuration	12×6 II 12×6		12×6 II 12×6		12×6 II 12×6		12×6 II 12×6	
Maximum Voltage (V _{mp}) V	44.75	42.03	44.94	42.20	45.12	42.37	45.720	41.50
Open Circuit Voltage (V _{oc}) V	52.80	49.79	53.01	49.98	53.21	50.18	51.696	50.20
Maximum Current (I _{mp}) A	12.97	10.35	13.02	10.41	13.08	10.45	13.178	10.94
Short Circuit Current (I _{sc}) A	13.65	11.00	13.71	11.04	13.76	11.09	13.880	11.43
Fill Factor (F.F.) in %	80±5%		80±5%		80±5%		80±5%	
Module Efficiency (%)	22.47		22.67		22.86		23.33	
Power Tolerance	0~+5Wp		0~+5Wp		0~+5Wp		0~+5Wp	



STC: 1000W/m² irradiance, 25°C cell temperature, AM1.5G spectrum according to EN 60904-3
Average relative efficiency reduction of <5% at 200W/m² according to EN 60904-1

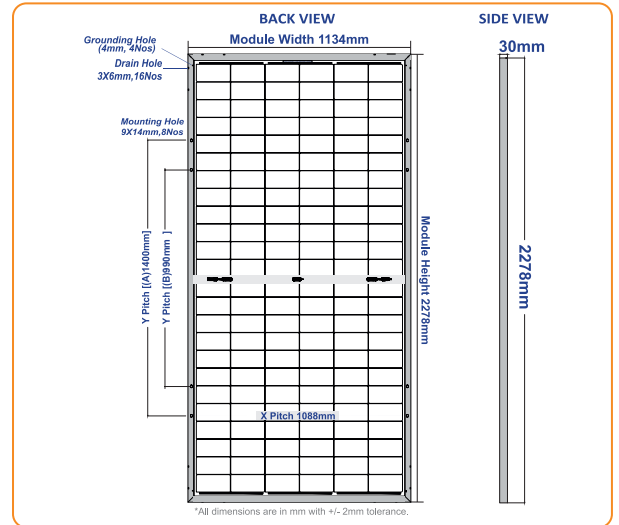
BIFACIAL OUTPUT — BACKSIDE POWER GAIN @STC (Bifaciality Factor: 80% ± 10%)*

5%	Nominal Maximum Power (P _{max}) Module Short Circuit Current / Efficiency	609W 14.33A / 23.60%	614W 14.39A / 23.79%	620W 14.45A / 24.00%
10%	Nominal Maximum Power (P _{max}) Module Short Circuit Current / Efficiency	638W 15.02A / 24.72%	644W 15.08A / 24.95%	649W 15.14A / 25.14%
25%	Nominal Maximum Power (P _{max}) Module Short Circuit Current / Efficiency	725W 17.06A / 28.09%	731W 17.13A / 28.32%	738W 17.20A / 28.57%

[Note]: The bifacial gain depends on the power plant design and site conditions.
Electrical component ratings should be selected as per actual bifacial gain at site.

TEMPERATURE COEFFICIENTS (TC) PERMISSIBLE OPERATING CONDITIONS

Operating Temperature (°C)	-40°C to +85°C
Maximum System Voltage	1500 V
Maximum Series Fuse Rating	30A
Temperature Coefficients of P _{max}	-0.2909%/°C
Temperature Coefficients of V _{oc}	-0.2261%/°C
Temperature Coefficients of I _{sc}	0.0265%/°C
Nominal Operating Cell Temperature (NOCT)	45 ± 2°C
Refer. Bifacial Factor	80 ± 5%



MECHANICAL SPECIFICATIONS

Dimensions	2278(L) × 1134(W) × 30(T)
Weight	31.5 Kg
Cell Type / No Of Cell	144 Half-cut N-type TOPCon Bifacial Solar cells
Frame	Anodized Aluminum Alloy (6005, Temper T6, Silver colour)
Front Cover	Low Iron semi-Tempered AR coated Glass (2 mm thick)
Encapsulate	PID resistant and UV resistant Polymeric Film
Back Cover	Low Iron semi-Tempered Glass (2 mm thick)
Junction Box	30A Split Junction Box (3 nos. with individual Bypass Diode) — Weatherproof (IP68)
Bypass Diode	50 A, 45 V, 200°C max. junction temperature
Cable	4 sq. mm, 300 mm length (Customised cable length available on request)
Connectors	MC4 compatible (MC4 original available on request)
Application Class Rating	Class A
Safety Class Rating	Class II
Mechanical Load Test	5400 Pa — Front; 2400 Pa — Back (as per IEC & UL)
Mounting Holes Pitch (Y)-mm	[A] 1400, [B] 990 (Holes at 400 mm Y-pitch for tracker can be provided on customer request)
Mounting Holes Pitch (X)-mm	1088

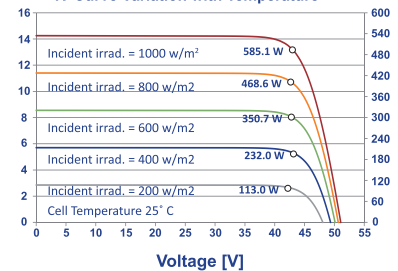
WARRANTY AND CERTIFICATIONS

Performance Warranty**	Linear Power Warranty for 30 years, 90% for 12 years and 87.4% for 30 years
Approvals & Certificates	Products: IS:14286 / IEC:61215:2005-ED2, IEC:61730-Ed.1 & ED.2

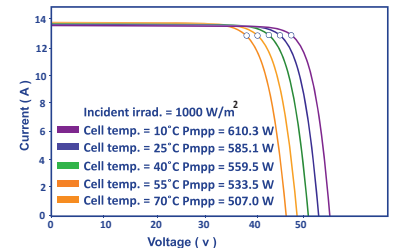
STACKING STANDARD

	No. of Modules	No. of Pallets	Modules Per Pallet / Pallet Weight	Pallet Dimensions
19FT	256 Nos.	8 Pallets	32 Nos. / 1050 Kgs.	2300 × 1010 × 1300
32FT	384 Nos.	12 Pallets	32 Nos. / 1050 Kgs.	2300 × 1010 × 1300
40FT	704 Nos.	22 Pallets	32 Nos. / 1050 Kgs.	2300 × 1010 × 1300
20 GP Container	320 Nos.	10 Pallets	32 Nos. / 1050 Kgs.	2300 × 1010 × 1300
40 HC Container	640 Nos.	20 Pallets	32 Nos. / 1050 Kgs.	2300 × 1010 × 1300

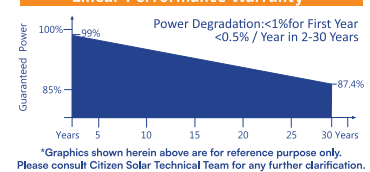
IV Curve Variation with Temperature



IV Curve Variation with Irradiance



Linear Performance Warranty



Declaration: With the technical progress and product updates, there exists a deviation between the technical parameters of the CITIZEN SOLAR future products and the technical parameters in this specification. CITIZEN SOLAR reserves the right to adjust the technical parameters at any time without notifying customers. CITIZEN SOLAR reserves the final right of interpretation.



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