



144 Cell | 16 BB Cell
N-Type TOPCon Half
Cut Bifacial Module
580wp to 600wp



**16bb bifacial
cell technology**

TOPCon 600+Wp



enlight
SERIES



Extra Power



Extra Life



Double-Sided Power Generation



Excellent anti-LeTID & anti-PID performance



Lower temperature coefficient



Lower LCOE & system cost

N-type Citizen TOPCON Bifacial Modules have the best efficiency >23.20% with higher power generation and reliable characteristic resistance. These panels provide efficient production under extreme weather conditions along with bifaciality with lower degradation. N-type Citizen TOPCON Bifacial Modules generate significantly more power per watt(kwh/kw) over 30 years(Long life)

Module Efficiency
>23.20%

Positive Power Tolerance upto
0~+5wp

30 Years Performance Warranty

12 Years Product Warranty

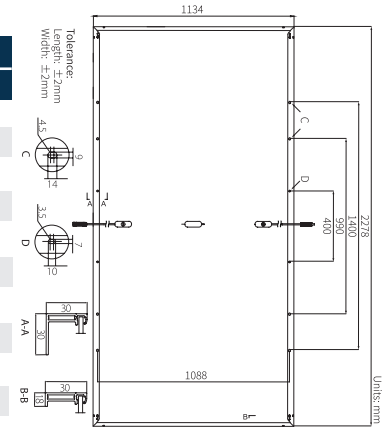
PID Resistant

ALMM Approved List by MNRE*

TECHNICAL DATA

Electrical Data : All Data refers to STC (1000W/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 (Pmax) Wp	580	435	585	439	590	443	600	454
No's of Cut Cells	144	144	144	144	144	144	144	144
Matrix Configuration	12x6 II 12x6		12x6 II 12x6		12x6 II 12x6		12x6 II 12x6	
Maximum Voltage (Vmp) V	44.75	42.03	44.94	42.2	45.12	42.37	43.09	41.5
Open Circuit Voltage (Voc) V	52.80	49.79	53.01	49.98	53.21	50.18	53	50.20
Maximum Current (Imp) A	12.97	10.35	13.02	10.41	13.08	10.45	13.68	10.94
Short Circuit Current (Isc) A	13.65	11.00	13.71	11.04	13.76	11.09	14.63	11.43
Fill Factor (F.F.) in %	80±5%		80±5%		80±5%		80±5%	
Module efficiency (%)	22.47		22.67		22.86		23.20	
Power Tolerance	0~+5wp		0~+5wp		0~+5wp		0~+5wp	

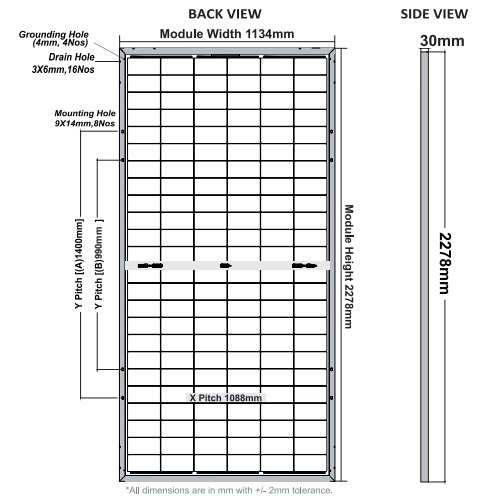


STC : 1000W/m² irradiance, 25°C cell temperature, AM1.5G spectrum according to EN 60904-3
Average relative efficiency reduction of <5% at 200W/m² according to EN 60904-1

BIFACIAL OUTPUT - BACKSIDE POWER GAIN @STC*[Bifaciality Factor: 80%±10%]

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

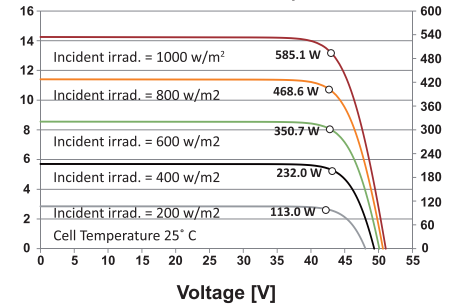
[Note: The bifacial gain depends on the power plant design and site conditions. Electrical component ratings should be selected as per actual Bifacial gain at site.]



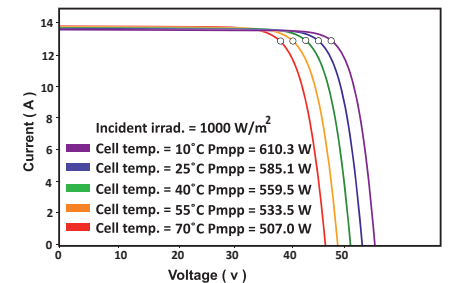
Temperature Coefficients (Tc) permissible operating conditions

Operating Temperature (°C)	-40°C to +85°C
Maximum system voltage	1500 V
Maximum series fuse rating	30A
Temperature coefficients of Pmax	-0.2909%/°C
Temperature coefficients of Voc	-0.2261%/°C
Temperature coefficients of Isc	0.0265%/°C
Nominal operating cell temperature (NOCT)	45±2°C
Refer. Bifacial Factor	80±5%

IV Curve Variation with Temperature



IV Curve Variation with Irradiance



MECHANICAL SPECIFICATIONS

Dimensions	2278(L) x 1134(W) x 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

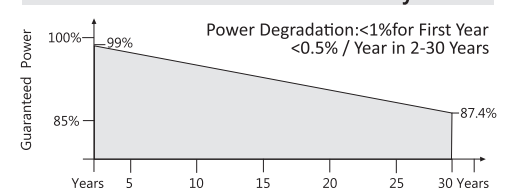
Performance Warranty**	Linear Power Warranty for 30 years, 90% for 12 years and 87.4% for 30 years
Approvals & Certificates	Products: IS:14286 / IEC:61215:2005-ED2, IEC:61730-Ed.1&ED.2

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 x 1010 x 1300
32FT	384 Nos.	12 Pallets	32 Nos. / 1050 Kgs.	2300 x 1010 x 1300
40FT	704 Nos.	22 Pallets	32 Nos. / 1050 Kgs.	2300 x 1080 x 1300
20 GP Container	320 Nos.	10 Pallets	32 Nos. / 1050 Kgs.	2300 x 1080 x 1300
40 HC Container	640 Nos.	20 Pallets	32 Nos. / 1050 Kgs.	2300 x 1080 x 1300

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

Linear Performance Warranty



*graphics shown herein above are reference purpose only. please consult Citizen Solar Technical Team for any further clarification.