



CITIZEN SOLAR

solarising the nation

enlight SERIES

16bb bifacial
cell technology

TOPCon 590+Wp

144 Cell | 16 BB Cell

**N-Type TOPCon Half
Cut Bifacial Module**

580wp to 590wp



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 >22.86% 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) of use compared to PERC panels.

**Module
Efficiency
>22.86%**

**Positive Power
Tolerance upto
0~+5wp**

**30 Years
Performance
Warranty**

**12 Years
Product
Warranty**

**PID
Resistant**

**Outstanding
Aesthetic
Design**



www.citizensolar.com



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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	
	STC	NOCT	STC	NOCT	STC	NOCT
Nominal Wattage (Pmax) Wp	580	435	585	439	590	443
No's of Cut Cells	144	144	144	144	144	144
Matrix Configuration	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
Open Circuit Voltage (Voc) V	52.80	49.79	53.01	49.98	53.21	50.18
Maximum Current (Imp) A	12.97	10.35	13.02	10.41	13.08	10.45
Short Circuit Current (Isc) A	13.65	11.00	13.71	11.04	13.76	11.09
Fill Factor (F.F.) in %	80±5%		80±5%		80±5%	
Module efficiency (%)	22.47		22.67		22.86	
Power Tolerance	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%

MECHANICAL SPECIFICATIONS

Dimensions	2278(L) x 1134(W) x 35(T)
Weight	33 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] 1100, (Holes at 400 mm Y-pitch for tracker can be provided on customer request)
Mounting Holes Pitch (X)-mm	1088

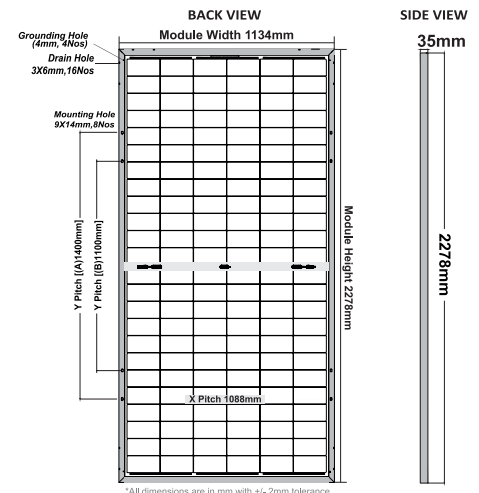
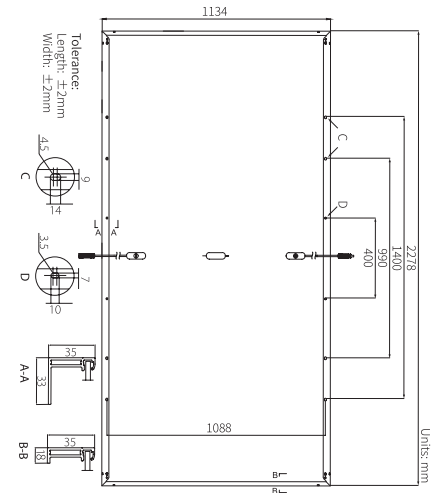
WARRANTY AND CERTIFICATIONS

Performance Warranty**	Linear Power Warranty for 30 years, 90% for 12 years and 80% for 30 years.
Approvals & Certificates	Products: IS:14286 / IEC:61215:2005-ED2, IEC:61730-Ed.1&ED.2

STACKING STANDARD

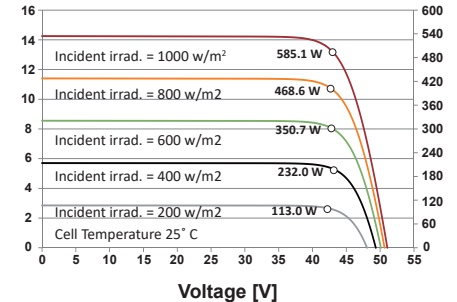
	No. of Modules	No. of Pallets	Modules Per Pallet / Pallet Weight	Pallet Dimensions
19FT	224 Nos.	8 Pallets	28 Nos. / 975 Kgs.	2300 x 1010 x 1300
32FT	336 Nos.	12 Pallets	28 Nos. / 975 Kgs.	2300 x 1010 x 1300
40FT	616 Nos.	22 Pallets	28 Nos. / 975 Kgs.	2300 x 1080 x 1300
20 GP Container	310 Nos.	10 Pallets	31 Nos. / 1075 Kgs.	2300 x 1080 x 1300
40 HC Container	620 Nos.	20 Pallets	31 Nos. / 1075 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.

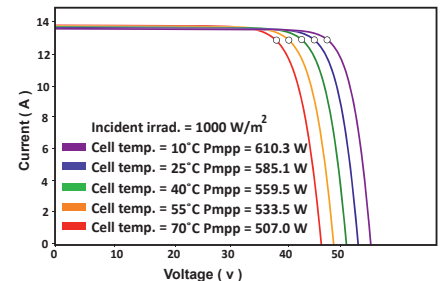


*All dimensions are in mm with +/-2mm tolerance.

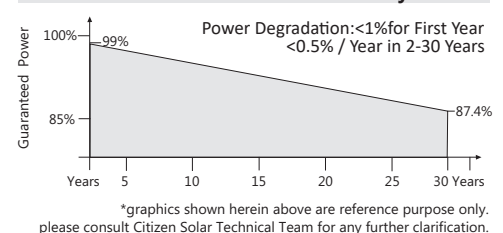
IV Curve Variation with Temperature



IV Curve Variation with Irradiance



Linear Performance Warranty



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