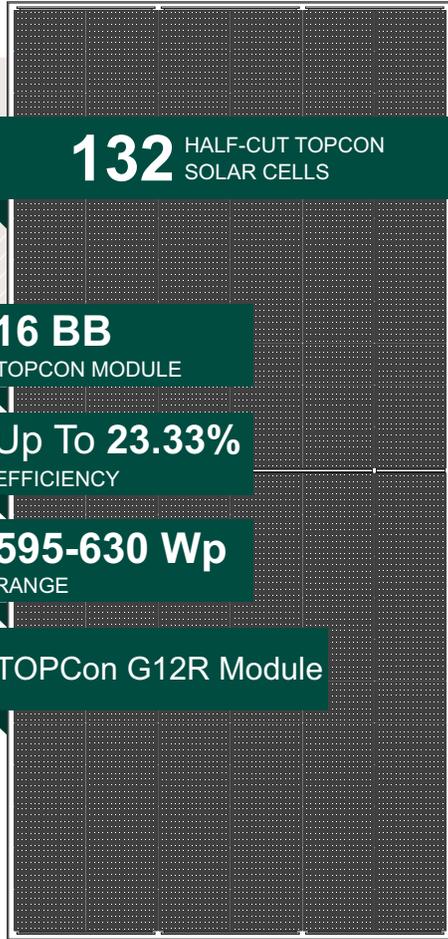


COSMIC PV POWER | TOPCON SOLAR PV MODULES | 132 CELLS | 595-630 WATT



**132** HALF-CUT TOPCON SOLAR CELLS

**16 BB** TOPCON MODULE

**Up To 23.33%** EFFICIENCY

**595-630 Wp** RANGE

TOPCon G12R Module

## N-type TOPCon Dual Glass Modules

MODULE DATASHEET

Cosmic PV Power AI-driven photovoltaic (PV) G12R TOPCon modules set a new industry benchmark in reliable energy production, optimized design, and superior environmental performance. Designed with 100% automatic setup, these modules ensure seamless installation, maximizing efficiency and suitable for roof-top and ground mounted applications.

## PRODUCT | KEY FEATURES



No LID Loss - Higher power generation



Glass with anti-reflective coating to maximize sunlight potential



Excellent low light performance with high module efficiency up to 23.33%



Pre and Post 3 stage EL Checking to ensure defect free modules



Less shading and lower resistive loss



Excellent anti-micro cracking performance more balance interior stress



Durability against extreme environmental



**Better Temperature Coefficient-** Higher power generation under higher ambient temperature conditions



Bifaciality Factor 80 ± 5 %



Better Output In Low Irradiance- Higher power output even under low-light environments like on cloudy or foggy days



### High Reliability

Using tempered glass to glass, which brings higher reliability and better anti-corrosiveness to the module in weak-light conditions



### Best in Class reliability

Cosmic Modules are able to withstand wind load 2400pa and snow load 5400Pa



### Higher Generation

Lower BOS Cost with Excellent temperature coefficient giving higher yields in the long term

### Delivers Reliable Performance Over Time

- ◆ 100% Fully-automatic facility and industry-leading technology
- ◆ Best-in-class durability and reliability

### APPLICATIONS

- ◆ On-Grid large scale utility systems
- ◆ On-Grid Rooftop residential, commercial and industrial rooftop installations
- ◆ Off-Grid Residential systems

For handling & installation instructions refer Cosmic PV Power Installation Manual available on company website. Before placing order conform your requirement with our sales representative. The electrical data given here is for reference purpose only. Dispose-of the product as E-Waste after end of its working life. \*\* Refer to Cosmic PV Power warranty document for terms and conditions. Due to constant product modifications, Cosmic PV Power reserves the right to amend the above specifications without prior notice.

**CAUTION: READ SAFETY AND INSTALLATION MANUAL BEFORE USING THE PRODUCT.**

Electrical data without guarantee. Please conform your exact requirement with the company representative while placing your order.

# ELECTRICAL DATA STC

Module Type	CTOP132 G12R-595	CTOP132 G12R-600	CTOP132 G12R-605	CTOP132 G12R-610	CTOP132 G12R-615	CTOP132 G12R-620	CTOP132 G12R-625	CTOP132 G12R-630
Maximum Voltage $V_{mpp}$ (V)	40.00	40.25	40.40	40.65	40.85	41.05	41.28	41.43
Maximum Current $I_{mpp}$ (A)	14.88	14.93	14.98	15.01	15.06	15.11	15.16	15.21
Open Circuit Voltage $V_{oc}$ (V)	47.55	47.75	47.95	48.15	48.35	48.55	48.75	48.95
Short Circuit Current $I_{sc}$ (A)	15.88	15.93	15.98	16.03	16.08	16.12	16.17	16.23
Module Efficiency $\eta$ (%)	22.03	22.20	22.40	22.60	22.80	23.00	23.10	23.33

\*STC: Irradiance 1000 W/m<sup>2</sup>, cell temperature 25°C, Air mass AM 1.5 according to ENC60904-3. Average efficiency reduction is approx. 3% at 200 W/m<sup>2</sup> according to EN 60904-1. Except Pmpp, all other parameter have tolerance of +/-3%, measurement uncertainty <3%.

## BI-FACIAL: Pmax WITH REAR SIDE POWER GAIN

Module Type	Pmax gain from rear side*							
	CTOP132 G12R-595	CTOP132 G12R-600	CTOP132 G12R-605	CTOP132 G12R-610	CTOP132 G12R-615	CTOP132 G12R-620	CTOP132 G12R-625	CTOP132 G12R-630
5% Gain	625	630	635	641	646	651	656	661
10% Gain	655	660	666	671	677	682	687	693
15% Gain	684	690	696	701	707	713	719	724
20% Gain	714	720	726	732	738	744	750	756
25% Gain	744	750	756	762	769	775	781	787
30% Gain	774	780	787	793	800	806	812	819

\* Power gain from rear side depends upon the ground reflectance (Albedo) & Bifaciality factor.

## THERMAL CHARACTERISTICS

$T_c$ of open circuit voltage ( $\beta$ )	-0.24% /°C
$T_c$ of short circuit current ( $\alpha$ )	0.028% /°C
$T_c$ of power ( $\gamma$ )	-0.32% /°C
Maximum system voltage	1500 VDC (IEC & UL)
NOCT	45°C ± 2°C
Temperature range	-40°C to + 85°C

## MECHANICAL CHARACTERISTICS

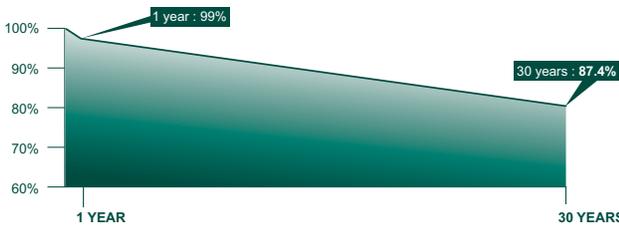
Length	2382 mm
Width	1134 mm
Height	30 mm
Weight	34 kg
Junction box	IP68
Solar Cells	N type Mono Crystalline silicon, TOPCON
No. of Cells	132 Half-cut (11x6    11x6)
Front Glass	2.0mm, High Transmission, ARC Tempered Glass
Back Side	2.0mm, Heat strengthened patterned Glass
Frame	Silver Anodized Aluminium Alloy
Cable	Solar cable 400 mm length or customized length, 4 mm <sup>2</sup>
Connectors	Compatible with MC4 connectors
Application Class	Class A
Electrical Safety	Class II
Fire Safety	Class C (Type 1)
Surface load	Snow load 5400 Pa, wind load 2400 Pa

Under Standard Test Conditions (STC) of irradiance 1000 W/m<sup>2</sup>, spectrum AM 1.5 and cell temperature of 25°C. Except Pmax, all other parameters have a tolerance of ±3%.

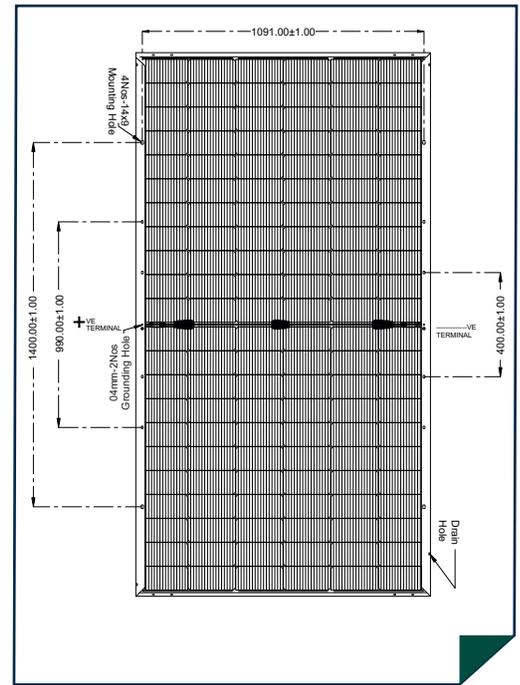
## PACKAGING CONFIGURATION

Container	40'HC		
Pallets / Container	22	Pieces / Container	704

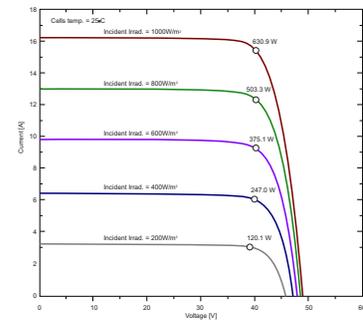
### Cosmic PV Performance Warranty



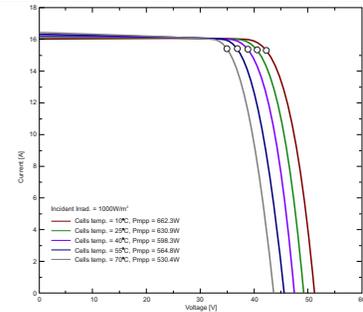
12 Years Product Warranty - 30 Years Linear Power Warranty



### I-V Curve Variation With Temperature (630W)



### I-V Curve Variation With Temperature (630W)



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national portal of india

\*All dimensions are in mm with +/-1% tolerance.

# COSMIC PV POWER LIMITED

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Udhna, Surat, Gujarat - 394210

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2098/1/B, 2098/1/B/2  
Village: Tarkeshwar,  
Taluka: Mandvi, Dist: Surat,  
Gujarat - 394170

**Factory Unit**  
Block No. 178, 194B, 194A,  
Mandvi, Tadkeshwar,  
Surat, Gujarat, 394170

