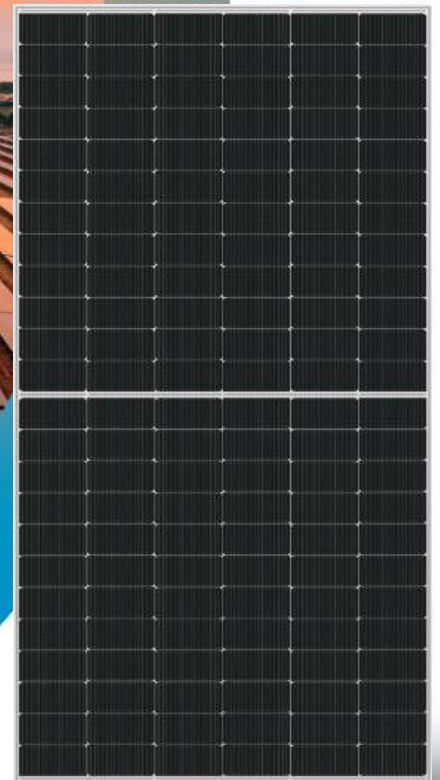




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EMMVEE CRAFTING SMART AND ADVANCED SOLAR ENERGY SOLUTIONS



TITANIUM DUO

G12R N-TYPE TOPCon BIFACIAL GLASS TO GLASS MODULE



Committed to Quality, Punctuality, and Customer Support since 1992.



Over 15 Years of Sustainable Power with Photovoltaic Modules, New High WP Modules United with Quality and Efficiency



With presence in Green Energy Projects Across the Globe



Our Mission: Delivering Clean, Reliable Energy while Reducing Carbon Footprint through wide range of Residential and Commercial Solar Offerings.

132 CUT CELL G12R N-TYPE TOPCON BIFACIAL GLASS TO GLASS MODULE

TECHNICAL SPECIFICATION

Electrical data at 1000W/m², 25°C and A.M1.5 (STC in accordance with IEC 60904-3)

Model Name	E610HCBG132-T	E615HCBG132-T	E620HCBG132-T	E625HCBG132-T	E630HCBG132-T	E635HCBG132-T
Rated Power at STC*	610	615	620	625	630	635
Power Tolerance	0 - +5Wp	0 - +5Wp	0 - +5Wp	0 - +5Wp	0 - +5Wp	0 - +5Wp
Module Efficiency at STC	22.58%	22.77%	22.95%	23.14%	23.32%	23.51%
Open Circuit Voltage-VOC (Volts)*	48.88	49.01	49.14	49.30	49.43	49.56
Short Circuit Current-ISC (AMPS)*	15.89	15.96	16.04	16.11	16.19	16.26
Max Power Voltage-VPM(Volts)	40.59	40.69	40.82	40.95	41.05	41.18
Max Power Current-IPM (AMPS)	15.05	15.13	15.19	15.27	15.35	15.42

At low irradiance (200W/M² 25°C and AM15) the module yields at least 95% of the STC efficiency.

*Test Uncertainty ±3%

Electrical data at NOCT at 800 W/m², 20 °C ambient temperature, 1 m/s Wind Velocity

Model Name	E610HCBG132-T	E615HCBG132-T	E620HCBG132-T	E625HCBG132-T	E630HCBG132-T	E635HCBG132-T
Rated Power at STC*	463.25	466.80	470.15	474.00	477.80	481.50
Module Efficiency at STC	17.15%	17.28%	17.41%	17.55%	17.69%	17.83%
Open Circuit Voltage-VOC (Volts)*	46.68	46.80	46.93	47.08	47.21	47.33
Short Circuit Current-ISC (AMPS)*	12.81	12.87	12.93	12.99	13.05	13.11
Max Power Voltage-VPM(Volts)	38.47	38.57	38.69	38.81	38.91	39.03
Max Power Current-IPM (AMPS)	12.04	12.10	12.15	12.21	12.28	12.34

At low irradiance (200W/M² 25°C and AM15) the module yields at least 95% of the STC efficiency.

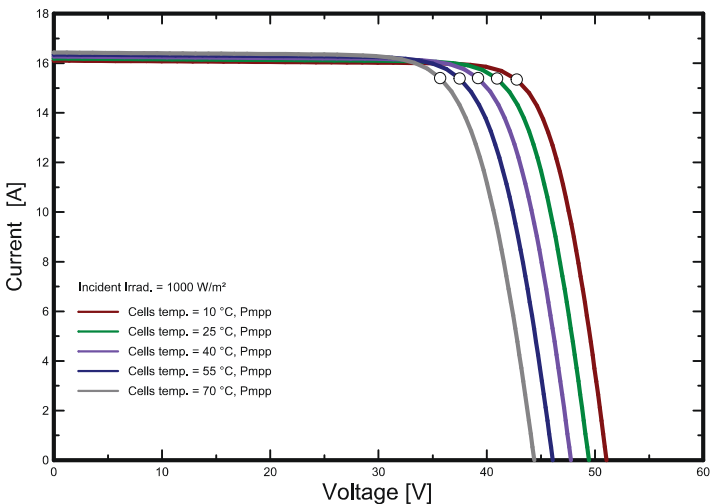
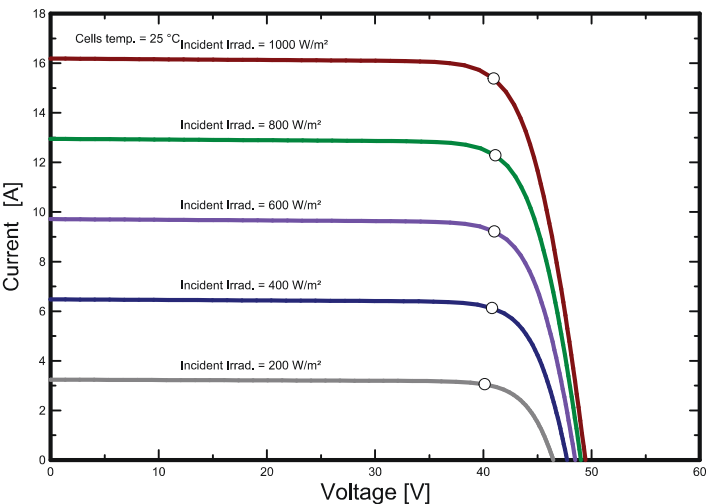
*Test Uncertainty ±3%

Bifacial Gain**

Model Name	E610HCBG132-T		E615HCBG132-T		E620HCBG132-T		E625HCBG132-T		E630HCBG132-T		E635HCBG132-T	
% Power Gain	Pmax	Eff %	Pmax	Eff %	Pmax	Eff %	Pmax	Eff %	Pmax	Eff %	Pmax	Eff %
5%	640.50	23.71%	645.75	23.91%	651.00	24.10%	656.25	24.29%	661.50	24.49%	666.75	24.68%
10%	671.00	24.84%	676.50	25.04%	682.00	25.25%	687.50	25.45%	693.00	25.66%	698.50	25.86%
15%	701.50	25.97%	707.25	26.18%	713.00	26.40%	718.75	26.61%	724.50	26.82%	730.25	27.03%
20%	732.00	27.10%	738.00	27.32%	744.00	27.54%	750.00	27.77%	756.00	27.99%	762.00	28.21%
25%	762.50	28.23%	768.75	28.46%	775.00	28.69%	781.25	28.92%	787.50	29.15%	793.75	29.39%

**Note: Bifacial power gain will depend on plant design, tilt angle, structure height, Rear Surface condition, GCR, array shadow and Albedo.

IV CURVE



132 CUT CELL G12R N-TYPE TOPCON BIFACIAL GLASS TO GLASS MODULE

TECHNICAL SPECIFICATION

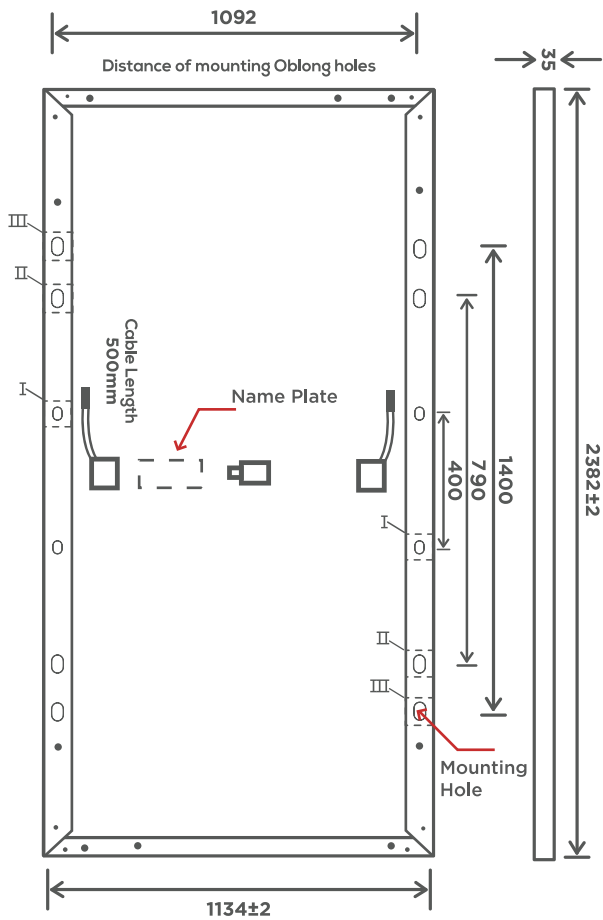
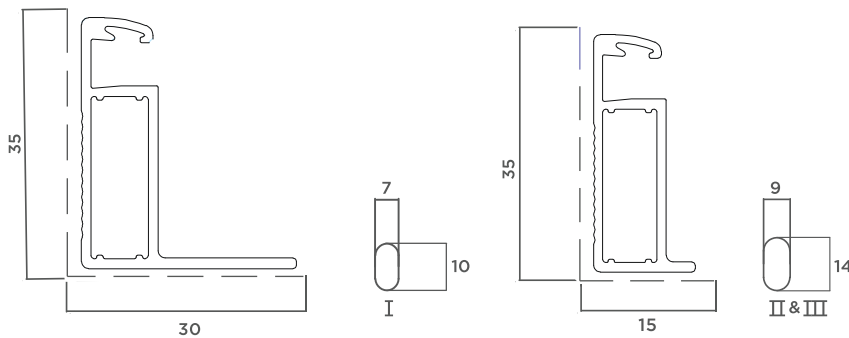
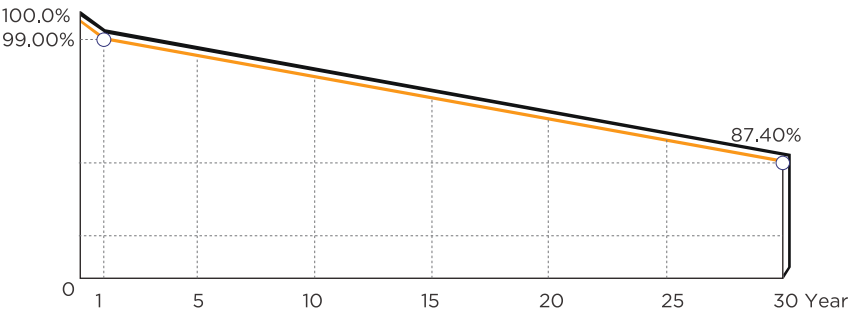
Permissible Operating Conditions	
Operating Temperature Range	-40° C to 85° C
Max.system Voltage	1500V DC
Maximun Snow Load Capacity	5400Pa Snow Load and 2400Pa Wind Load
Resistance Against Hail	Max 24mm with impact Speed of 83km/h (52Mph)
Protection Class Against Electrical Shock	II
Application Class	A
Fire Safety Class	Class C
Maximum Reverse Current/Series fuse rating	30A
Bifaciality	80 ± 5%

Thermal Data	
Temp. Coefficient Open-circuit Voltage	-0.25% /°C
Temp. Coefficient Short circuit current	0.045%/°C
Temp. Coefficient Rated Power	-0.29% /°C
NOCT (Normal operating cell temperature)	45°C ± 2 °C

Mechanical Data	
Number of Cells and Cell Type	N Type TopCon132 Cut cell 105 X 182mm (4.13 X 7.16inch)
Dimensions:(LXWXH)	2382mm X 1134mm X 35mm (93.86inch X 44.65inch 1.37inch)
Weight	33.5 kg
Front Glass	2mm AR Coated Semi Tempered Glass
Embedding	EVA/POE/EPE
Back Glass	2mm Semi Tempered Glass
Junction Box	3 Split Junction Box IP68
Number of Bypass Diodes	3
Cables	4mm²(12AWG) length 500 ±10mm(19.68 ±0.5inch)
Connectors	MC4 Compatible

Warranty	
Product Warranty	12 Years
Performance Warranty	30 Years

MODULE DEGRADATION CURVE

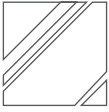


1ST YEAR DEGRADATION 1.0%

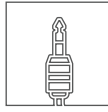
YEAR 2-30 POWER DEGRADATION 0.40%

END OF 30 YEARS 87.40%

FEATURES



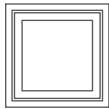
AR Coated High
Transmission
Glass



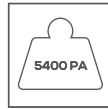
MC4
Compatible
Connectors



PID
Resistance



Anodised
Aluminium
Frame

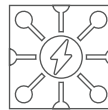


Snow Load
Resistance
upto 5400 Pa

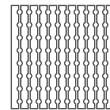
BENEFITS



Low LCOE,
Faster Payback
Period



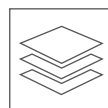
Best In Class
Efficiency
upto 23%



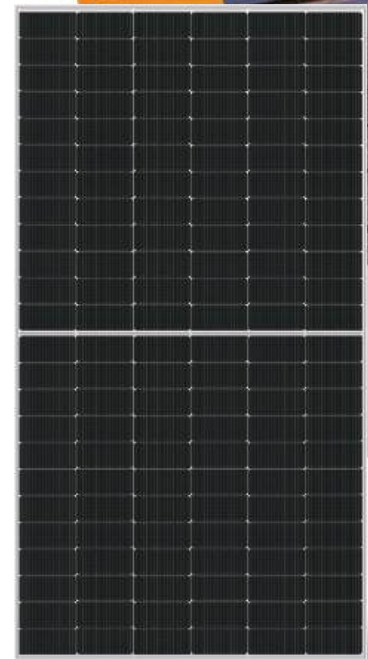
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Degradation



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