



FUTURE SOLAR®

FS Green Energies Private Limited

N-type TOPCon

156 Half-Cut TOPCon Cell
Bifacial Dual Glass

Model No: FST-M10.156G-XXX
(where XXX = 610-650)

- Higher Efficiency
- Lower Degradation
- Outstanding Power Generation
- PID Free/Low LID Protection
- Lower Temperature Coefficient
- Less Hot Spot Shading Effects
- Enhanced Bifacial Factor
- Exceptional Mechanical Resistance



23.27% Maximum Efficiency	650 Wp Maximum Power Output
0~+4.99 W Positive Power Tolerance	GRADE A Cells Guaranteed

Certifications



BIS | IEC 61730 | IEC 61215 | UL 61730 | IEC 61701 (salt mist) | IEC 62716 (Ammonia)
IEC 61853-1 & 2 (PAN File) | LeTID | IEC 60068 (sand & dust) | IEC 62804 (PID) | CEC | CE

For more details, please contact:

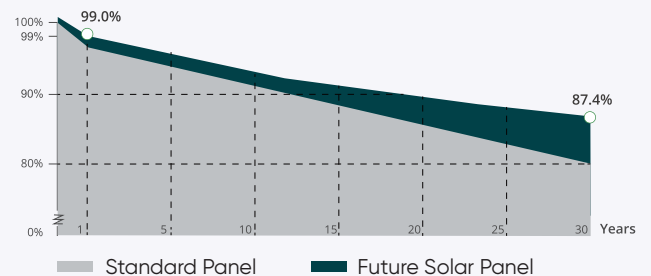
FS Green Energies Pvt. Ltd.

Corporate Office:
Samanway House, Beside Urmi Society, Nr. Alkapuri Haveli, Jetalpur Road,
Alkapuri, Vadodara - 390 007, Gujarat.

73531 61333 | inquiries@futuresolar.net | www.futuresolar.net

LINEAR PERFORMANCE WARRANTY

1st Year Degradation < 1%
2-30th Year Degradation < 0.4% p.a.



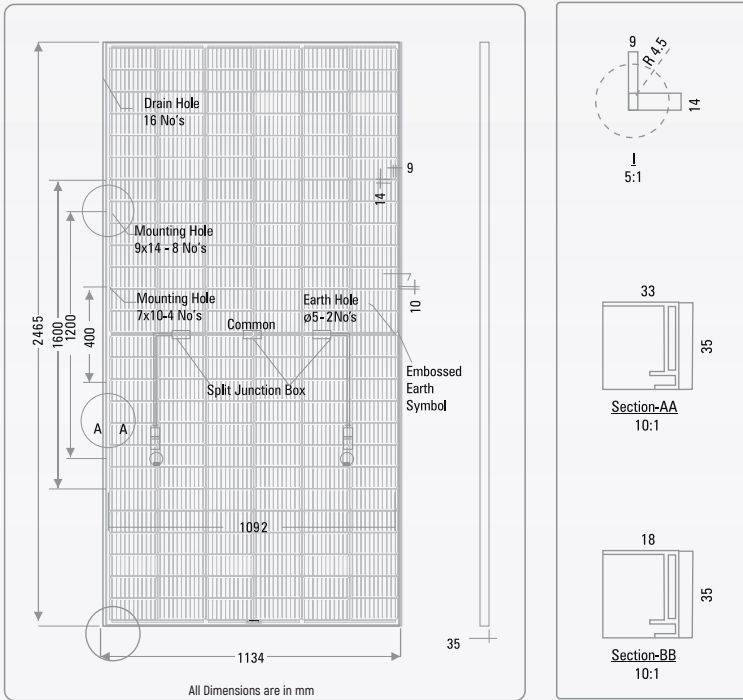
Standard Panel | Future Solar Panel



* T&C Apply

SOLAR PV MODULE

Half-Cut TOPCon CELL
Bifacial Dual Glass 610-650 Wp



MECHANICAL SPECIFICATIONS	
External Dimensions	2465 (±2mm) X 1134 (±2mm) X 35 (±1mm)
Weight	34.5 Kg
Solar Cells	16 BB, TOPCon, 182.2 X 183.75 mm
Front Glass	2.0 mm ARC Heat Strengthened
Rear Cover	2.0 mm Heat Strengthened
Frame	Anodized Aluminium Alloy (Silver)
Junction Box	3 Split, IP 68 Rated
Connector	MC4 Connector
Mechanical Load	5400 Pa for Snow load, 2400 Pa Wind Load
Output Cable	4.0 mm ² / 400 mm length

PACKING CONFIGURATION	
Container	40' HQ
Pieces per Pallet	31
Pallet per Container	16
Pieces per Container	496

ELECTRICAL CHARACTERISTICS (STC)

FST-M10.156G-XXX	610	615	620	625	630	635	640	645	650
Maximum Power, P Max (Wp)	610	615	620	625	630	635	640	645	650
Maximum Voltage, Vmp (V)	45.90	46.07	46.20	46.33	46.49	46.66	46.83	46.98	47.14
Maximum Current, Imp (A)	13.29	13.35	13.42	13.49	13.55	13.61	13.67	13.73	13.79
Open Circuit Voltage, Voc (V)	55.96	56.10	56.24	56.41	56.56	56.69	56.72	56.78	56.90
Short Circuit Current, Isc (A)	13.75	13.81	13.87	13.93	13.99	14.06	14.17	14.26	14.32
Module Efficiency (%)	21.84%	22.02%	22.20%	22.38%	22.56%	22.74%	22.91%	23.09%	23.27%
Fill Factor (%)	79.28%	79.38%	79.48%	79.54%	79.62%	79.67%	79.65%	79.66%	79.77%
Power Tolerance	0 to +4.99 W								
Maximum System Voltage	1500 V (IEC & UL)								
Maximum Series Fuse Rating	30 A								

* STC - Irradiance = 1000 W/m², Module Temperature = 25 °C and AM = 1.5 Measuring Tolerance = ±3%

ELECTRICAL CHARACTERISTICS (NOCT)

FST-M10.156G-XXX	610	615	620	625	630	635	640	645	650
Maximum Power (W)	455	459	462	467	470	472	476	479	483
Maximum Voltage, Vmp (V)	42.01	42.17	42.25	42.38	42.54	42.64	42.79	42.91	43.06
Maximum Current, Imp (A)	10.82	10.86	10.93	11.00	11.03	11.06	11.10	11.16	11.21
Open Circuit Voltage, Voc (V)	52.05	52.19	52.29	52.46	52.59	52.70	52.76	52.75	52.86
Short Circuit Current, Isc (A)	11.23	11.26	11.33	11.38	11.44	11.50	11.59	11.68	11.72

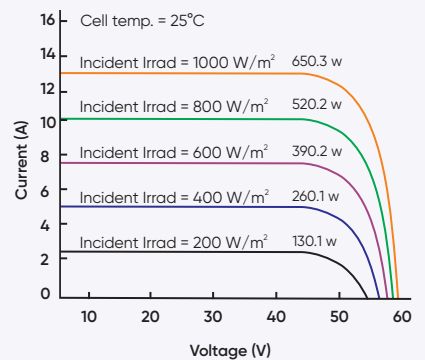
* NOCT - Irradiance = 800 W/m², AM = 1.5, Ambient Temperature = 20° C, Wind Speed = 1 m/s, Measuring Tolerance = ±3%

Gain	FST-M10.156G-XXX	610	615	620	625	630	635	640	645	650
5%	Max. Power (P max)	640.50	645.75	651.00	656.25	661.50	666.75	672.00	677.25	682.50
10%	Max. Power (P max)	671.00	676.50	682.00	687.50	693.00	698.50	704.00	709.50	715.00
20%	Max. Power (P max)	732.00	738.00	744.00	750.00	756.00	762.00	768.00	774.00	780.00
30%	Max. Power (P max)	793.00	799.50	806.00	812.50	819.00	825.50	832.00	838.50	845.00

* Bifacial Gain :The additional gain from the backside compared to the power of the front side at STC, It depends on mounting structure, Height, angle, Ground surface etc.

TEMPERATURE CHARACTERISTICS

Pmax Temp. Coefficient (%/°C)	-0.28
Voc Temp. Coefficient (%/°C)	-0.23
Isc Temp. Coefficient (%/°C)	0.03
Operating Temp. (°C)	-40 to + 85
Nominal Operating Cell Temp. (°C)	45±2



FS Green Energies Pvt. Ltd.

Manufacturing Unit:
Survey No 160, Karjan Sadhli Road,
Juni Jithardi Village, Karjan - 391 240
Gujarat.

73531 61333
inquiries@futuresolar.net
www.futuresolar.net