



Sudarshan Saur®

TOPCon
N-Type PV MODULE

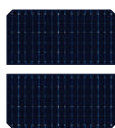
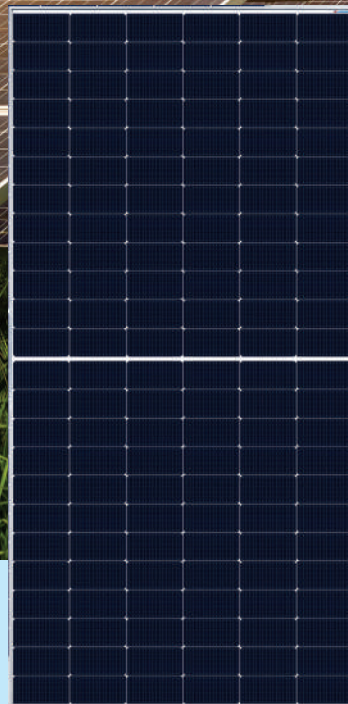
**NEXT GEN BIFACIAL
GLASS TO GLASS**

G12R PV MODULE

600-635 Wp

M10R PV MODULE

505-600 Wp



Industry- Leading Efficiency upto **23 %**
16 BB Technology with Half Cut Cells
Non-Destructive Cell Cutting (NDC)

Key Features of TOPCon Modules



High Savings

Faster return on investment with Levelized Cost of Energy (LCOE)



Superior Efficiency

Excellent module conversion efficiency upto 23% for maximum output



10-30% Additional Power Output

Generates 10-30% more energy compared to regular modules



Built for Harsh Conditions

Specifically designed to withstand India's Climate Challenges-heat, dust, humidity and strong winds



Precision Manufacturing

Produced on a fully automated production line with 100% inline Hi-Pot testing and dual EL inspections for quality assurance



Advanced TOPCon Technology

Offers higher conversion efficiency compared to earlier PERC modules



Lower Degradation Rate

Has lower degradation rate over its lifespan, with a first-year degradation of 1%, compared to 2% for a PERC module



Improved Low-Light Performance

Delivers higher power generation even in low-illumination conditions such as cloudy or foggy weather



Negligible LID (Light Induced Degradation)

Utilizes N-Type technology that minimizes both LID and LeTID, ensures long term performance stability



PID Resistance

Excellent Anti-PID Performance guarantees limited power degradation enhancing overall system yield

TECHNICAL DATA - G12R



132 HALF CUT CELL N-TYPE TOPCon BIFACIAL GLASS TO GLASS MODULE

Electrical Data at 1000 W/m², 25°C & AM 1.5 | STC

Model Name	SUDS-G12R -132-600	SUDS-G12R -132-605	SUDS-G12R -132-610	SUDS-G12R -132-615	SUDS-G12R -132-620	SUDS-G12R -132-625	SUDS-G12R -132-630	SUDS-G12R -132-635
Max. Rated Power @ STC - Pmax (Wp)	600	605	610	615	620	625	630	635
Power Tolerance (Wp)	0~+5	0~+5	0~+5	0~+5	0~+5	0~+5	0~+5	0~+5
Module Efficiency (%)	22.21	22.40	22.58	22.77	22.95	23.14	23.32	23.51
Max. Power Voltage - Vmp (V)	40.12	40.26	40.39	40.52	40.65	40.78	40.91	41.04
Max. Power Current - Imp (A)	14.95	15.03	15.10	15.18	15.25	15.33	15.40	15.47
Open Circuit Voltage - Voc (V)	46.36	46.49	46.63	46.76	46.89	47.02	47.15	47.28
Short Circuit Current - Isc (A)	16.32	16.39	16.47	16.54	16.61	16.68	16.75	16.82

At low irradiance (200W/m² 25°C & AM 1.5) the module yields at least 95% of the STC efficiency.

Test uncertainty ±3%

Electrical Data - NOCT : Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Max. Rated Power @ STC - Pmax (Wp)	600	605	610	615	620	625	630	635
Power - Pmax (Wp)	451.20	454.96	458.72	462.48	466.24	470.00	473.76	477.52
Module Efficiency (%)	16.71	16.85	16.99	17.13	17.27	17.41	17.55	17.69
Max. Power Voltage - Vmp (V)	38.12	38.24	38.37	38.49	38.62	38.74	38.87	38.99
Max. Power Current - Imp (A)	11.84	11.90	11.96	12.01	12.07	12.13	12.19	12.25
Open Circuit Voltage - Voc (V)	44.04	44.17	44.29	44.42	44.54	44.67	44.79	44.92
Short Circuit Current - Isc (A)	13.16	13.22	13.28	13.34	13.40	13.45	13.51	13.57

Electrical characteristics with different power BNPI (reference to 5% & 10% backside power gain)

Max. Rated Power @ STC - Pmax (Wp)	600	605	610	615	620	625	630	635
Backside Power Gain (%)	5% 10%	5% 10%	5% 10%	5% 10%	5% 10%	5% 10%	5% 10%	5% 10%
Peak Power Watts-Pmax (Wp)*	630 660	635 666	641 671	646 677	651 682	656 688	662 693	667 699
Module Efficiency (%)	23.32 24.44	23.52 24.64	23.71 24.84	23.91 25.05	24.1 25.25	24.3 25.45	24.49 25.66	24.69 25.86

Mechanical Data

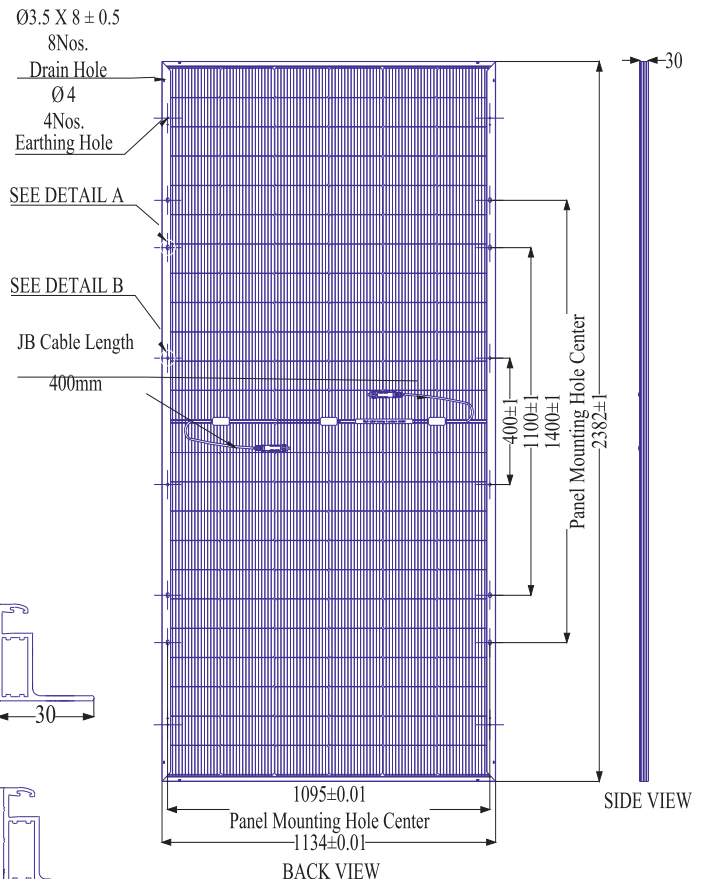
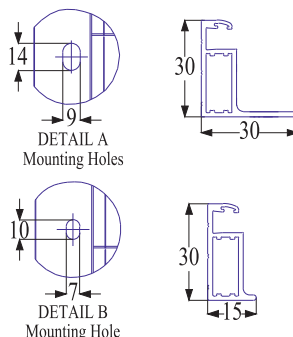
Number of Cells and Cell Type	132 Half Cut TOPCon Solar Cells
Dimensions: (L X W X H)	2382 X 1134 X 30
Weight	34 Kg (±0.5)
Frame	Anodized Aluminum Alloy
Encapsulation	EPE
Front Glass	2 mm HTAR high transmission solar glass
Back Glass	2 mm, Heat Strengthened Solar Glass
Junction Box	30A, Split Junction Box, IP68 Certified
Number of Bypass Diodes	3
Cables	4 mm ² , Cable Length 400mm ± 10 mm
Connectors	MC4 Compatible
Safety Application Class	Class A
Electrical Safety Class	Class II
Fire Safety Class	Class C
Mechanical Load Test	Front - 5400 Pa; Back - 2400 Pa

Permissible Operating Conditions:

Max. System Voltage	1500 V DC
Operating Temperature	-40°C to 85°C
Max. Series Fuse Rating	30 A
Bifaciality Factor	80 ± 5%

Temperature Coefficients:

Power (% / °C)	-0.30
Voltage (% / °C)	-0.25
Current (% / °C)	0.04
NOCT	45 °C ± 2 °C



Note: All dimension are in "mm" unless otherwise Specified.

TECHNICAL DATA - M10R



144 HALF CUT CELL N-TYPE TOPCon BIFACIAL GLASS TO GLASS MODULE

Electrical Data at 1000 W/m², 25°C & AM 1.5 | STC

Model Name	SUDS-M10R -144-505	SUDS-M10R -144-510	SUDS-M10R -144-515	SUDS-M10R -144-520	SUDS-M10R -144-525	SUDS-M10R -144-530	SUDS-M10R -144-535	SUDS-M10R -144-540	SUDS-M10R -144-545	SUDS-M10R -144-550	SUDS-M10R -144-555	SUDS-M10R -144-560
Max. Rated Power @ STC - Pmax (Wp)	505	510	515	520	525	530	535	540	545	550	555	560
Power Tolerance (Wp)	0~+5	0~+5	0~+5	0~+5	0~+5	0~+5	0~+5	0~+5	0~+5	0~+5	0~+5	0~+5
Module Efficiency (%)	19.55	19.74	19.94	20.13	20.32	20.52	20.71	20.90	21.10	21.29	21.48	21.68
Max. Power Voltage - Vmp (V)	41.05	41.34	41.62	41.91	42.20	42.48	42.70	43.20	43.49	43.77	44.06	44.20
Max. Power Current - Imp (A)	12.41	12.42	12.45	12.48	12.50	12.53	12.58	12.59	12.60	12.63	12.66	12.73
Open Circuit Voltage - Voc (V)	49.22	49.50	49.65	49.79	50.15	50.36	50.65	51.01	51.08	51.22	51.51	51.80
Short Circuit Current - Isc (A)	13.36	13.38	13.42	13.46	13.48	13.52	13.55	13.61	13.69	13.75	13.76	13.74

At low irradiance (200W/m² 25°C & AM 1.5) the module yields at least 95% of the STC efficiency.

Test uncertainty ±3%

Electrical Data - NOCT : Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Max. Rated Power @ STC - Pmax (Wp)	505	510	515	520	525	530	535	540	545	550	555	560
Power - Pmax (Wp)	379.76	383.52	387.28	391.04	394.80	398.56	402.32	406.08	409.84	413.60	417.36	421.12
Module Efficiency (%)	14.72	14.87	15.01	15.16	15.30	15.45	15.59	15.74	15.89	16.03	16.18	16.32
Max. Power Voltage - Vmp (V)	39.00	39.27	39.54	39.81	40.09	40.36	40.56	41.04	41.31	41.58	41.86	41.99
Max. Power Current - Imp (A)	9.74	9.77	9.79	9.82	9.85	9.88	9.92	9.89	9.92	9.95	9.97	10.03
Open Circuit Voltage - Voc (V)	46.76	47.03	47.16	47.30	47.64	47.84	48.12	48.46	48.53	48.66	48.93	49.21
Short Circuit Current - Isc (A)	10.78	10.79	10.82	10.86	10.87	10.90	10.93	10.98	11.04	11.09	11.10	11.08

Electrical characteristics with different power BNPI (reference to 5% & 10% backside power gain)

Max. Rated Power @ STC - Pmax (Wp)	505	510	515	520	525	530	535	540	545	550	555	560
Backside Power Gain (%)	5% 10%	5% 10%	5% 10%	5% 10%	5% 10%	5% 10%	5% 10%	5% 10%	5% 10%	5% 10%	5% 10%	5% 10%
Peak Power Watts-Pmax (Wp)*	530 556	536 561	541 567	546 572	551 578	557 583	562 589	567 594	572 600	578 605	583 611	588 616
Module Efficiency (%)	20.55 21.53	20.76 21.74	20.96 21.96	21.16 22.17	21.37 22.38	21.57 22.6	21.77 22.81	21.98 23.02	22.18 23.24	22.38 23.45	22.59 23.66	22.79 23.88

Mechanical Data

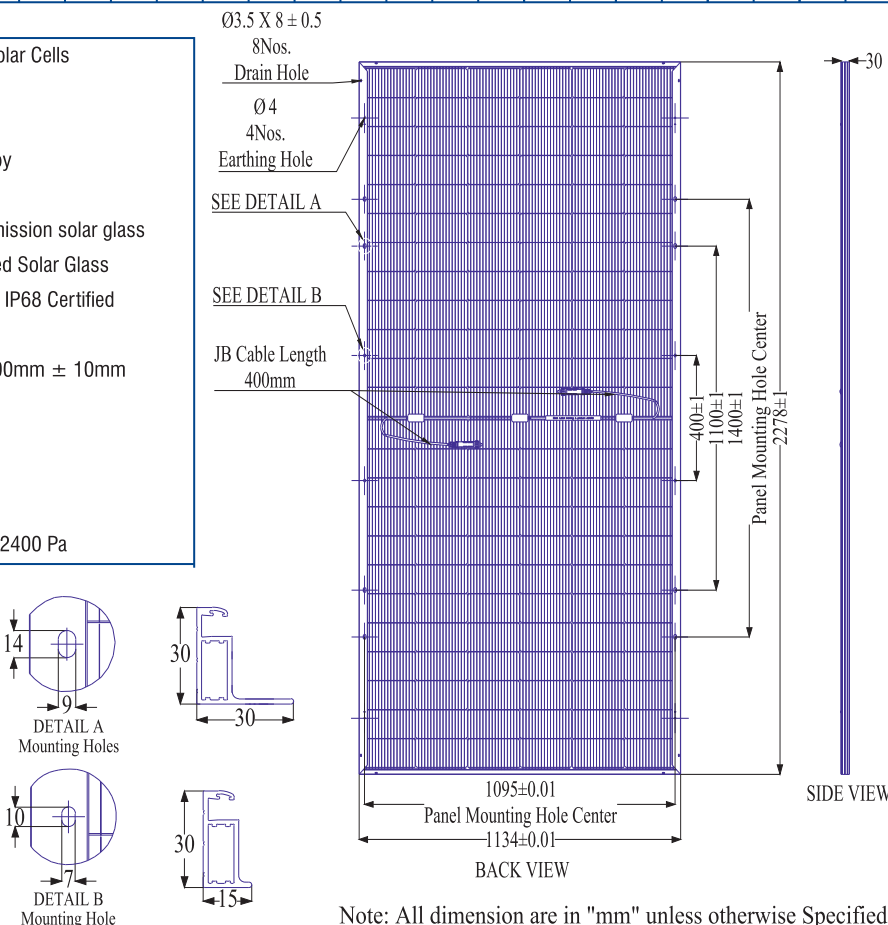
Number of Cells and Cell Type	144 Half Cut TOPCon Solar Cells
Dimensions: (L X W X H)	2278 X 1134 X 30
Weight	32 kg (± 0.5)
Frame	Anodized Aluminum Alloy
Encapsulation	EPE
Front Glass	2 mm HTAR high transmission solar glass
Back Glass	2 mm, Heat Strengthened Solar Glass
Junction Box	30A, Split Junction Box, IP68 Certified
Number of Bypass Diodes	3
Cables	4 mm ² , Cable Length 400mm ± 10mm
Connectors	MC4 Compatible
Safety Application Class	Class A
Electrical Safety Class	Class II
Fire Safety Class	Class C
Mechanical Load Test	Front - 5400 Pa; Back - 2400 Pa

Permissible Operating Conditions:

Max. System Voltage	1500 V DC
Operating Temperature	-40°C to 85°C
Max. Series Fuse Rating	30 A
Bifaciality Factor	80 ± 5%

Temperature Coefficients:

Power (% / °C)	-0.30
Voltage (% / °C)	-0.25
Current (% / °C)	0.04
NOCT	45 °C ± 2 °C



Note: All dimension are in "mm" unless otherwise Specified.

TECHNICAL DATA - M10R

144 HALF CUT CELL N-TYPE TOPCon BIFACIAL GLASS TO GLASS MODULE

Electrical Data at 1000 W/m², 25°C & AM 1.5 | STC

Model Name	SUDS-M10R -144-565	SUDS-M10R -144-570	SUDS-M10R -144-575	SUDS-M10R -144-580	SUDS-M10R -144-585	SUDS-M10R -144-590	SUDS-M10R -144-595	SUDS-M10R -144-600
Max. Rated Power @ STC - Pmax (Wp)	565	570	575	580	585	590	595	600
Power Tolerance (Wp)	0~+5	0~+5	0~+5	0~+5	0~+5	0~+5	0~+5	0~+5
Module Efficiency (%)	21.90	22.09	22.29	22.48	22.67	22.87	23.06	23.26
Max. Power Voltage - Vmp (V)	44.49	44.99	45.21	45.49	45.78	45.99	46.24	46.49
Max. Power Current - Imp (A)	12.74	12.75	12.80	12.82	12.83	12.88	12.91	12.94
Open Circuit Voltage - Voc (V)	52.01	52.37	52.58	52.87	53.16	53.44	53.73	54.02
Short Circuit Current - Isc (A)	13.77	13.80	13.81	13.83	13.85	13.87	13.88	13.89

At low irradiance (200W/m² 25°C & AM 1.5) the module yields at least 95% of the STC efficiency.

Test uncertainty ±3%

Electrical Data - NOCT : Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Max. Rated Power @ STC - Pmax (Wp)	565	570	575	580	585	590	595	600
Power - Pmax (Wp)	424.88	428.64	432.40	436.16	439.92	443.68	447.44	451.20
Module Efficiency (%)	16.47	16.61	16.76	16.91	17.05	17.20	17.34	17.49
Max. Power Voltage - Vmp (V)	42.26	42.74	42.94	43.22	43.49	43.69	43.93	44.16
Max. Power Current - Imp (A)	10.05	10.03	10.07	10.09	10.12	10.15	10.18	10.22
Open Circuit Voltage - Voc (V)	49.41	49.75	49.95	50.23	50.50	50.77	51.04	51.32
Short Circuit Current - Isc (A)	11.11	11.13	11.14	11.15	11.17	11.19	11.20	11.21

Electrical characteristics with different power BNPI (reference to 5% & 10% backside power gain)

Max. Rated Power @ STC - Pmax (Wp)	565	570	575	580	585	590	595	600
Backside Power Gain (%)	5% 10%	5% 10%	5% 10%	5% 10%	5% 10%	5% 10%	5% 10%	5% 10%
Peak Power Watts-Pmax (Wp)*	593.25 621.50	598.50 627.00	603.75 632.50	609.00 638.00	614.25 643.50	619.50 649.00	624.75 654.50	630.00 660.00
Module Efficiency (%)	22.99 24.09	23.20 24.30	23.40 24.52	23.60 24.73	23.81 24.94	24.01 25.16	24.22 25.37	24.42 25.58

Mechanical Data

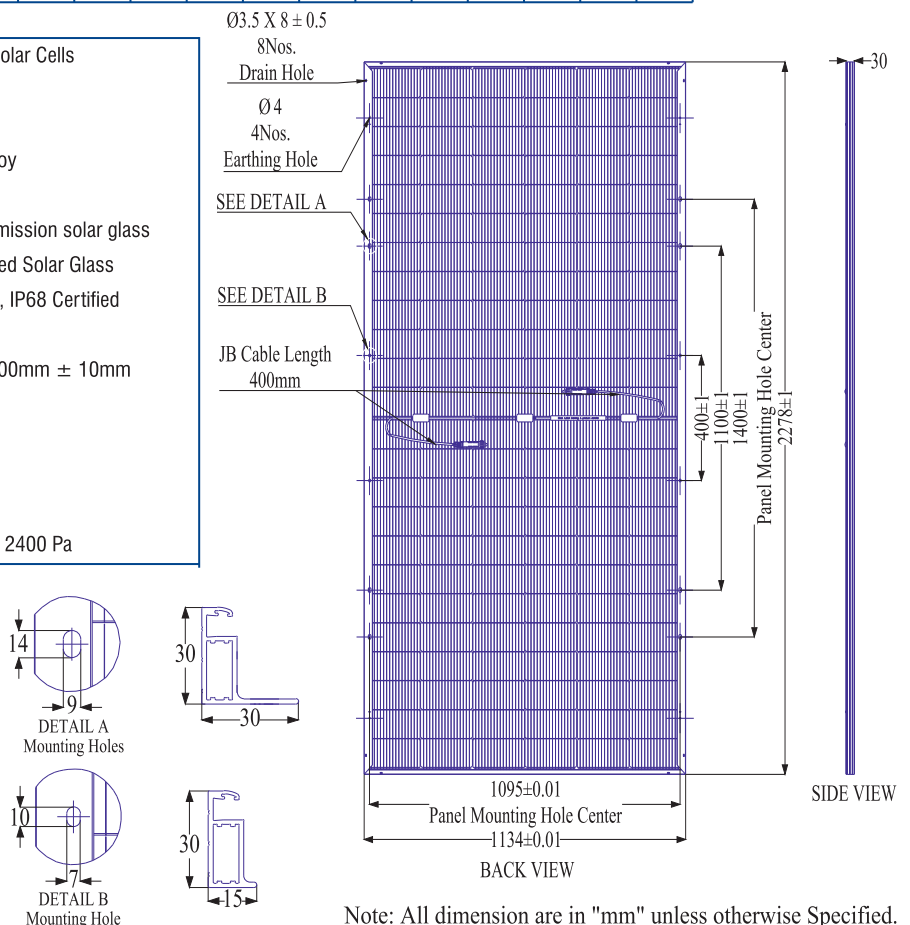
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Dimensions: (L X W X H)	2278 X 1134 X 30
Weight	32 kg (± 0.5)
Frame	Anodized Aluminum Alloy
Encapsulation	EPE
Front Glass	2 mm HTAR high transmission solar glass
Back Glass	2 mm, Heat Strengthened Solar Glass
Junction Box	30A, Split Junction Box, IP68 Certified
Number of Bypass Diodes	3
Cables	4 mm ² , Cable Length 400mm ± 10mm
Connectors	MC4 Compatible
Safety Application Class	Class A
Electrical Safety Class	Class II
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Mechanical Load Test	Front - 5400 Pa; Back - 2400 Pa

Permissible Operating Conditions:

Max. System Voltage	1500 V DC
Operating Temperature	-40°C to 85°C
Max. Series Fuse Rating	30 A
Bifaciality Factor	80 ± 5%

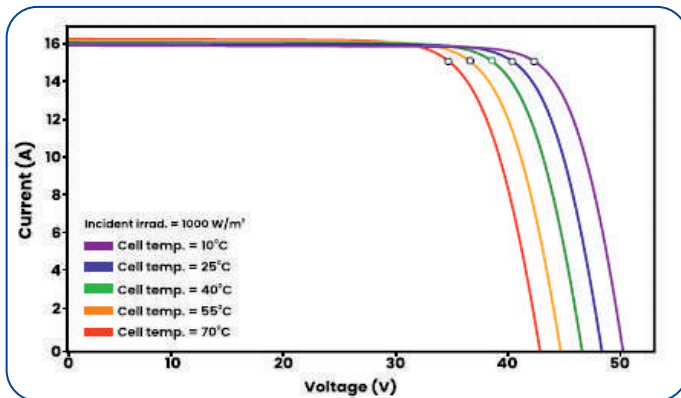
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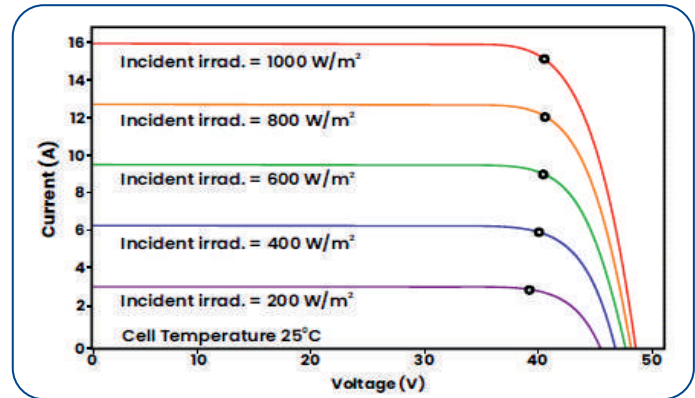


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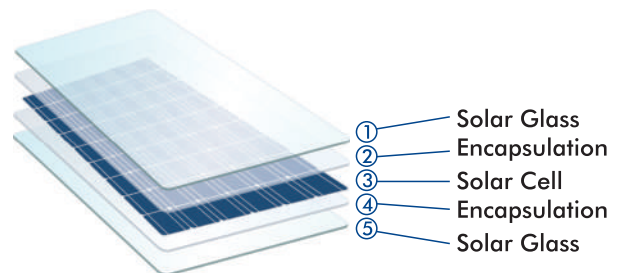
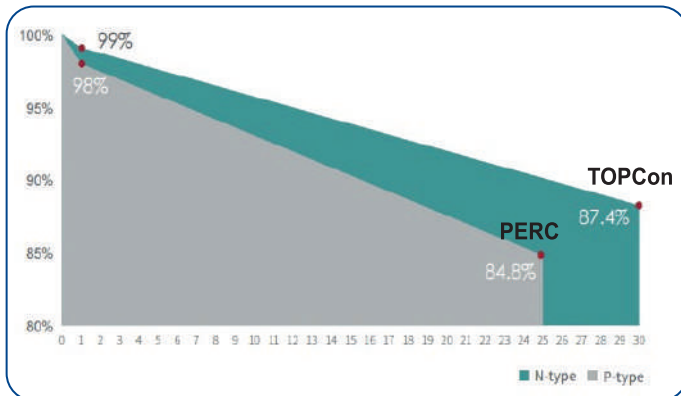
Effect of Temperature on I-V Profile



Effect of Irradiance on I-V Profile



Module Degradation Curve



1ST YEAR DEGRADATION **1%**

YEAR 2-30 DEGRADATION **0.40%**

END OF 30 YEARS **87.40%**

Product Certifications:

As Per New BIS Standard-2023

IS 14286 (PART 1/SEC 1): 2023 / IEC 61215-1-1: 2021 &

IS/IEC 61730-1: 2023 & IS/IEC 61730-2: 2023

ISO 9001:2015

ISO 14001:2015

ISO 45001:2018

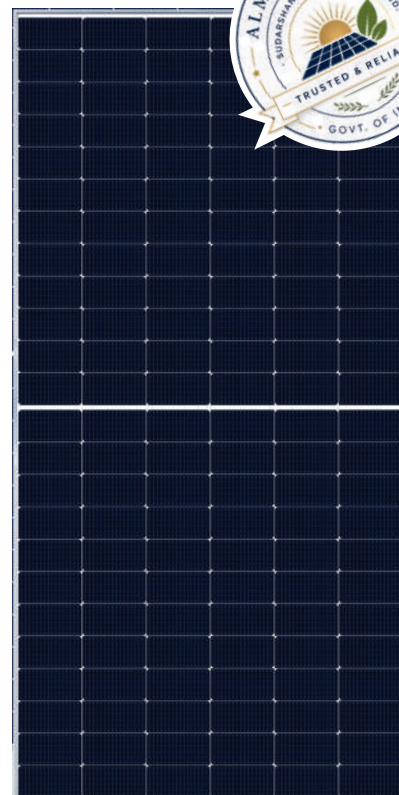


Warranty

Product Warranty	12 Years *
Performance Warranty	30 Years *

Packaging Information:

Container	40 Ft
No. of Modules per Pallet	31
No. of Pallets/Container	20
Modules per Container	620



*T&C Apply



SOLAR MEANS SUDARSHAN SAUR

TRUSTED FOR LAST 35 YEARS



Superior Quality
Topcon Panels



Fully Automated
Ultra-Modern plant



Complete Solar System
Installation with
Top Quality Components



**SUBSIDY
AVAILABLE***



Sudarshan Saur Shakti Pvt. Ltd.

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SPV/EN/S/A/REV02