

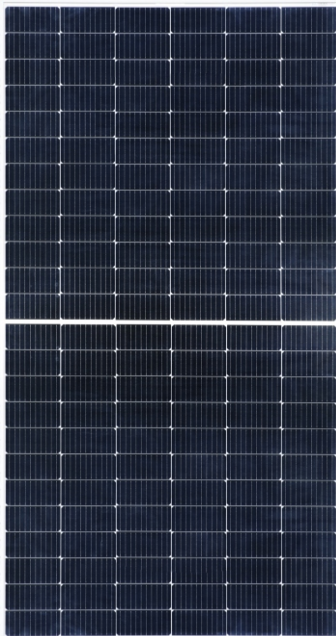


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SUCCESS**

INSOLATION ENERGY LTD.



PLATINUM SERIES

High Efficiency TOPCon N-type Bi-facial
Glass to Glass Module - 144 Half Cut Cell

580 – 600 Wp

580 Wp | 585 Wp | 590 Wp | 595 Wp | 600 Wp



APPLICATION : RESIDENTIAL | COMMERCIAL | INDUSTRIAL | SOLAR PARK

TECHNICAL DATA

*STC: Irradiance 1000 W/m² module temperature 25°C, Am=1.5;

*NOCT: Irradiance 800 W/m², ambient temperature 20°C, Am=1.5, Wind speed 1m/sec. Average power reduction of 4.5% at 200 W/m² as per IEC 60904-1. Measuring Uncertainty +/- 3%

Module Type	Unit	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Peak Power -Pmax	Wp	580	435	585	439	590	443	595	447	600	451
Maximum voltage (Vmpp)	V	44.75	42.03	44.95	42.21	45.15	42.37	45.35	42.53	45.55	42.69
Maximum current (Impp)	A	12.98	10.35	13.03	10.41	13.08	10.46	13.13	10.51	13.18	10.56
Open circuit voltage (Voc)	V	52.2	49.79	52.4	49.98	52.60	50.18	52.80	50.38	53.00	50.58
Short circuit current (Isc)	A	13.71	11.01	13.76	11.04	13.81	11.09	13.86	11.14	13.91	11.19
Module Efficiency	%	22.49		22.67		22.86		23.05		23.24	
Operating Temperature range (°C)	-40 to +85°C			Power Tolerance					Positive Power Tolerance		
Maximum system voltage	DC1500V (IEC)			Nominal operating cell temperature (NOCT)					42 ± 2 °C		
Maximum series fuse rating	30A			Application					Class-A		
Temperature coefficients of Isc (α)	0.0465%/°C			Safety Class					Class II		
Temperature coefficients of Pmax (γ)	-0.3023%/°C			Application Rating					Class A		
Temperature coefficients of Voc (β)	-0.2114%/°C										

BIFACIAL OUTPUT – BACKSIDE POWER GAIN @STC [Bifaciality Factor: 80% ± 10%]

[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 (module currents indicated below)]

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

Bifacial Gain	Measurement	Unit	580	585	590	595	600
5%	Maximum Power (Pmax)	Wp	609	614.25	619.5	624.75	630
	Module Efficiency	%	23.58	23.79	23.98	24.17	24.36
10%	Maximum Power (Pmax)	WP	638	644	649	654	659
	Module Efficiency	%	24.7	24.95	25.13	25.31	25.49
25%	Maximum Power (Pmax)	WP	725	731	737.5	744	750.5
	Module Efficiency	%	28.07	28.32	28.55	28.78	29.01

MECHANICAL SPECIFICATIONS

Cell type	N-type TOPCon Bifacial Solar cells
Dimensions	2278 x 1134 x 30mm (LxWxH)
Weight(kg)	32±0.5 Kg
Front Glass	2.0mm AR-coated heat-strengthened glass
Rear Glass	2.0mm heat-strengthened glass
Junction Box	30A Split Junction Box (3 nos. with individual Bypass Diode) – Weatherproof (IP68)
Solar Cable	4 sq. mm, 300 mm length x 2 Nos.
Connectors	MC4 Compatible Connectors or IEC/UL Certified
Frame Material	Anodized aluminum alloy, silver color
Mechanical Load Test	5400 Pa (Snow load), 2400 Pa (Wind load)
Hail Test	Max. diameter of 25 mm with velocity 23 m/s

CAUTION: READ SAFETY AND DETAIL INSTALLATION MANUAL BEFORE USING THE PRODUCT (Refer to our Website).

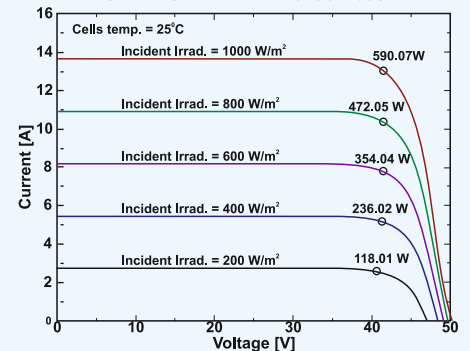
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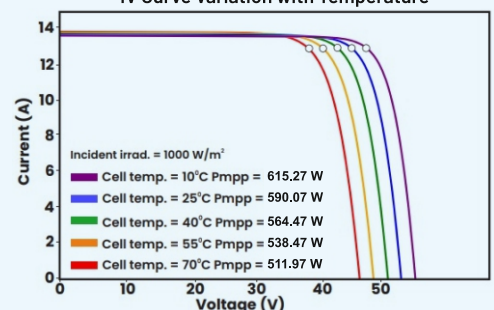
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** Warranty: Please read INA solar warranty documents thoroughly.

I-V CHARACTERISTICS AT DIFFERENT IRRADIANCE
MODEL NO. : INA-144THC-GGF-590

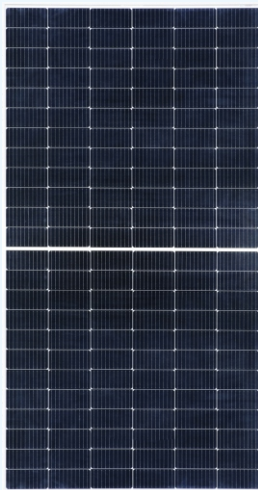


IV Curve Variation with Temperature

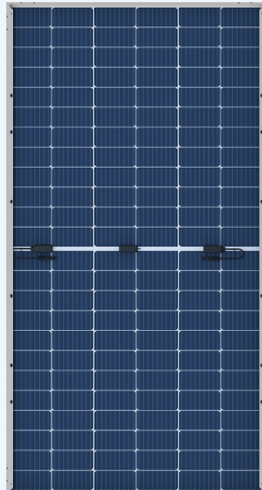


MECHANICAL DRAWING

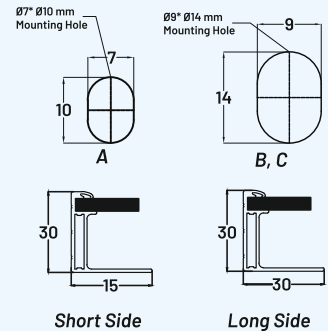
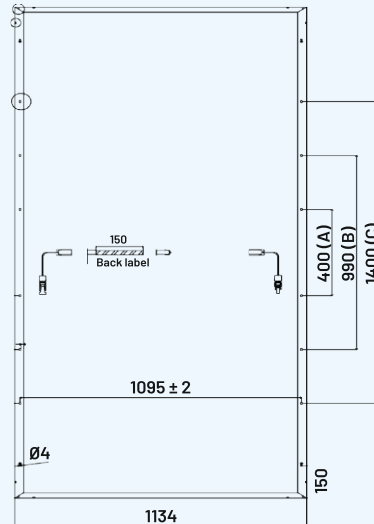
PLATINUM / DIAMOND SERIES



Front View



Rear View



Short Side

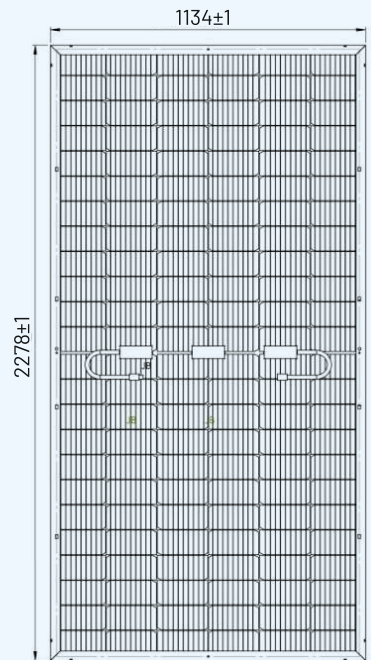
Long Side

(All Dimensions in mm & Tolerance 1.5mm)

KEY FEATURES

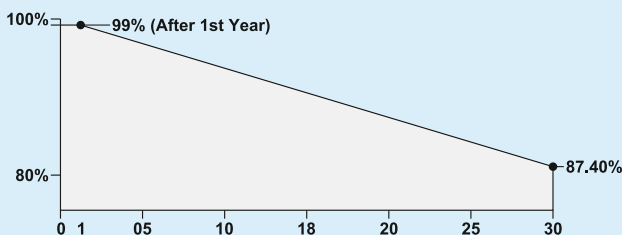
PLATINUM / DIAMOND SERIES

1. LCOE is reduced with lower BOS costs, improving the product's value proposition and ensuring a competitive ROI.
2. Two peak performance periods for the optimal utilization of bifacial generation.
3. Hassle-free installation with the ability to be mounted vertically in the East-West direction, offering improved resistance to soiling.
4. Lower internal resistance boosts module power, helping to minimize power loss.
5. Excellent PID performance guarantees limited power degradation.
6. Reliable quality ensures better sustainability even in harsh environments such as deserts, farms, and coastlines with ammonia exposure.
7. Cylindrical tabbing wire is used to minimize shading on the cell's active area.
8. A higher number of busbars makes PV modules less prone to efficiency loss and increases tolerance to microcracks.
9. Positive Power Tolerance.



Rear View

TOPCON LINEAR PERFORMANCE WARRANTY



- ✓ 12-Year Product Warranty on Materials and Workmanship*
- ✓ 30-Year Warranty for Linear Performance*

CERTIFICATIONS & STANDARDS:

IEC 61215, IEC 61730-1, IEC 61730-2, IS:14286,
*IEC 62716, IEC 62804, IEC 60068-2-68,
IEC 61853, IEC 61701

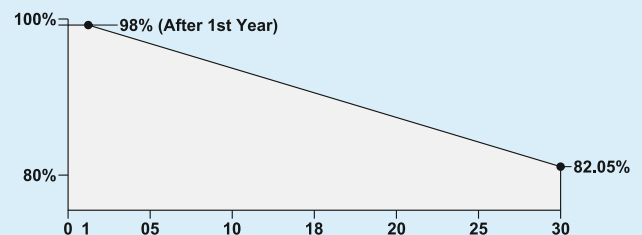
IS 14286: 2010/IEC 61215: 2005
IS/IEC 61730 (PART 1): 2004
IS/IEC 61730 (PART 2): 2004



Caution: Please read safety and installation instructions before using the product.

*Warranty: Linear performance warranty for 30 years, with degradation up to 1% in 1st year and 0.4 %/year from year 2 to year 30. Please read Insulation Energy Ltd. warranty documents thoroughly.

MONOPERC LINEAR PERFORMANCE WARRANTY



- ✓ 12-Year Product Warranty on Materials and Workmanship*
- ✓ 30-Year Warranty for Linear Performance*

CERTIFICATIONS & STANDARDS:

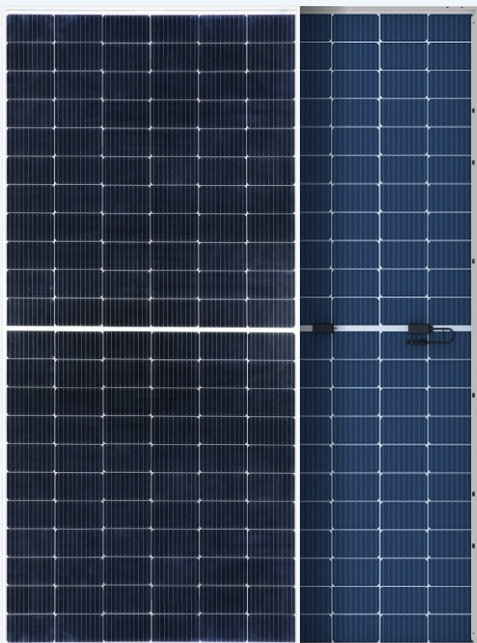
IEC 61215, IEC 61730-1, IEC 61730-2, IS:14286,
IEC 62716, IEC 62804, IEC 60068-2-68,
IEC 61853, IEC 61701

IS 14286: 2010/IEC 61215: 2005
IS/IEC 61730 (PART 1): 2004
IS/IEC 61730 (PART 2): 2004



Caution: Please read safety and installation instructions before using the product.

*Warranty: Linear performance warranty for 30 years, with degradation up to 2% in 1st year and 0.55 %/year from year 2 to year 30. Please read Insulation Energy Ltd. warranty documents thoroughly.



PLATINUM SERIES

High Efficiency N-type TOPCon Bi-facial G12R
Glass to Glass Module

600 - 635 Wp

600 Wp | 605Wp | 610 Wp | 615 Wp
620 Wp | 625 Wp | 630 Wp | 635 Wp
INA132T210RGGFXXX (XXX = 600-635 Wp)



APPLICATION : RESIDENTIAL | COMMERCIAL | INDUSTRIAL
SOLAR PUMP | SOLAR PARK

TECHNICAL DATA

*STC: Irradiance 1000 W/m² module temperature 25°C, Am=1.5;

*NOCT: Irradiance 800 W/m², ambient temperature 20°C, Am=1.5, Wind speed 1m/sec. Average power reduction of 4.5% at 200 W/m² as per IEC 60904-1. Measuring Uncertainty 0~3%

Module Type	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Peak Power -Pmax (Wp)	600	449	605	453	610	457	615	461	620	464	625	468	630	472	635	476
Maximum voltage (Vmpp) (V)	40.44	37.88	40.52	38.04	40.60	38.2	40.68	38.36	40.75	38.52	40.84	38.69	40.92	38.86	41.00	39.03
Maximum current (Impp) (A)	14.84	11.87	14.93	11.92	15.03	11.97	15.12	12.02	15.21	12.07	15.3	12.12	15.40	12.17	15.49	12.22
Open circuit voltage (Voc) (V)	46.81	45.06	46.93	45.24	47.05	45.42	47.06	45.6	47.25	45.78	47.36	45.96	47.47	46.14	47.59	46.32
Short circuit current (Isc) (A)	15.55	12.61	15.61	12.66	15.65	12.71	15.69	12.76	15.73	12.82	15.76	12.87	15.79	12.92	15.82	12.97
Module Efficiency (%)	22.14		22.33		22.60		22.79		22.97		23.16		23.25		23.44	
Operating Temperature range (°C)	-40 to +85°C				Power Tolerance				Positive Power Tolerance							
Maximum system voltage	DC1500V (IEC)				Nominal operating cell temperature (NOCT)				42 ± 2 °C							
Maximum series fuse rating	30A				Application				Class-A							
Temperature coefficients of Isc (α)	0.0265%/°C				Safety Class				Class II							
Temperature coefficients of Pmax (γ)	-0.2909%/°C				Application Rating				Class A							
Temperature coefficients of Voc (β)	-0.2261%/°C															

BIFACIAL OUTPUT – BACKSIDE POWER GAIN @STC [Bifaciality Factor: 80% ± 10%]

[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 (module currents indicated below)]

**Power gain from rear side depends upon the ground reflectance (Albedo) 8 Bifaciality factor.

Bifacial Gain	Measurement	Unit	600	605	610	615	620	625	630	635
5%	Maximum Power (Pmax)	Wp	630	635	641	646	651	656	662	667
	Module Efficiency	%	23.26	23.45	23.64	23.84	24.03	24.22	24.42	24.61
10%	Maximum Power (Pmax)	WP	660	666	671	677	682	688	693	699
	Module Efficiency	%	24.36	24.57	24.77	24.97	25.18	25.38	25.58	25.78
15%	Maximum Power (Pmax)	WP	690	696	702	707	713	719	725	730
	Module Efficiency	%	25.47	25.68	25.90	26.11	26.32	26.53	26.74	26.96

MECHANICAL SPECIFICATIONS

Cell type / No Of Cell	132 Half-cut N-type TOPCon Bifacial G12R Solar cells
Dimensions	2382×1134×30mm (LxWxH)
Weight(kg)	33.5±0.5 Kg
Front Glass	2.0mm AR-coated heat-strengthened glass
Encapsulate	PID resistant and UV resistant polymeric film
Rear Glass	2.0mm heat-strengthened glass
Junction Box	30A Split Junction Box (3nos. with individual Bypass Diode) Weatherproof (IP68)
Solar Cable	4 sq. mm, 300 mm length x 2 Nos.
Connectors	MC4 Compatible Connector IEC/UL Certified
Frame Material	Anodized aluminum alloy, silver color
Mechanical Load Test	5400 Pa (Snow load), 2400 Pa (Wind load)
Hail Test	Max. diameter of 25 mm with velocity 23 m/s
Standard Packaging	37 Pieces/Pallet

CAUTION: READ SAFETY AND DETAIL INSTALLATION MANUAL BEFORE USING THE PRODUCT (Refer Our Website).

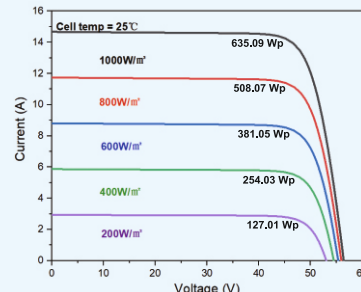
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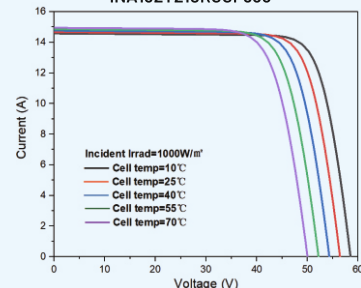
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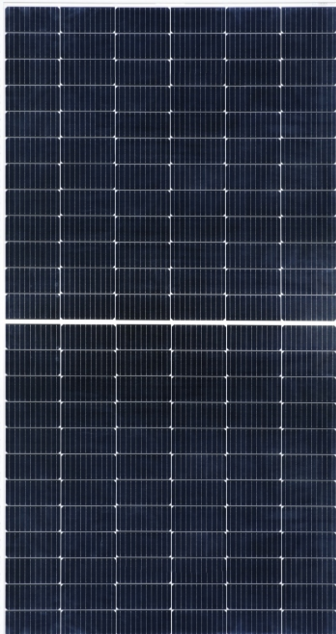
** Warranty: Please read INA solar warranty documents thoroughly.

I-V CHARACTERISTICS AT DIFFERENT IRRIDANCE
INA132T210RGGF635



I-V CHARACTERISTICS AT DIFFERENT TEMPERATURES
INA132T210RGGF635





DIAMOND SERIES

High Efficiency MonoPERC Bi-facial
144 Half Cut Cell Module

540 - 560 Wp
MONOFACIAL / BI-FACIAL

540 WP | 545 WP | 550 WP | 555 WP | 560 WP



APPLICATION : RESIDENTIAL | COMMERCIAL | INDUSTRIAL
SOLAR PUMP | SOLAR PARK

TECHNICAL DATA

*STC: Irradiance 1000 W/m² module temperature 25°C, Am=1.5;

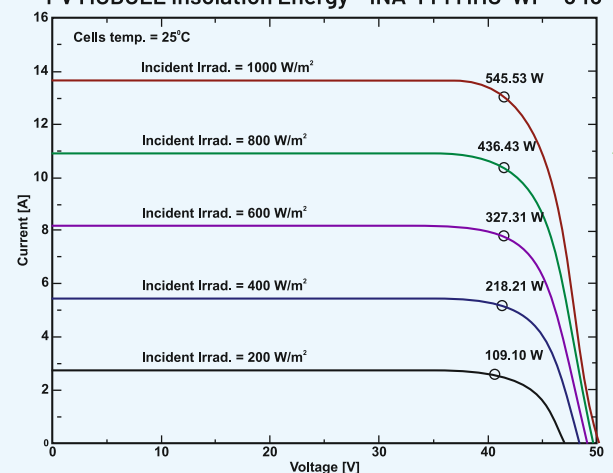
*NOCT: Irradiance 800 W/m², ambient temperature 20°C, Am=1.5, Wind speed 1m/sec. Average power reduction of 4.5% at 200 W/m² as per IEC 60904-1. Measuring Uncertainty +/- 3%

Module Type	Unit	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Peak Power -Pmax	Wp	540	405.0	545	408.8	550	410.96	555	413.81	560	416.67
Maximum voltage (Vmpp)	V	41.81	38.79	41.90	38.80	41.93	38.92	42.05	39.04	41.77	38.80
Maximum current (Impp)	A	12.92	10.46	13.02	10.46	13.12	10.56	13.20	10.59	13.41	10.62
Open circuit voltage (Voc)	V	49.81	46.54	49.76	46.56	49.90	46.95	50.01	46.56	50.45	46.56
Short circuit current (Isc)	A	13.51	10.98	13.90	11.08	13.98	11.09	14.05	11.16	14.15	11.08
Module Efficiency	%	20.92		21.12		21.29		21.48		21.98	
Operating Temperature range (°C)	-40°C to +85°C		Power Tolerance						Positive Power Tolerance		
Maximum system voltage	1500 VDC		Nominal operating cell temperature (NOCT)						45 ± 2 °C		
Maximum series fuse rating	25A		Fire Safety						Class-C (Type 1)		
Temperature coefficients of Isc (α)	0.048%/°C ± 0.01		Application						Class-A		
Temperature coefficients of Pmax (γ)	-0.32%/°C ± 0.02		Safety Class						Class II		
Temperature coefficients of Voc (β)	-0.28%/°C ± 0.02										

MECHANICAL SPECIFICATIONS

Cell Type	P Type Mono PERC Bifacial Solar Cell
Dimensions	2278X1134X30mm (LxWxH) ± 2 mm
Weight	28.00 kgs ± 0.5 kg
Front Cover	3.2 mm High Transmission, Low iron, Tempered Glass, AR coated
Cell Encapsulant	EVA (Ethylene Vinyl Acetate)-FC/UFC
Back sheet	Composite Film White Back sheet
J-Box	IP68 Split type Junction box with individual bypass diodes
Cable	300mmx2nos solar cable, 4mm ²
Connectors	MC4 Compatible Connector IEC/UL Certified
Frame Material	Silver Anodized Aluminium frame with twin wall profile
Mechanical Load Test	5400 Pa (Snow load), 2400 Pa (Wind load)
Hail resistance	Max. diameter of 25 mm with velocity 23 m/s
Standard Packaging	37 Pieces/Pallet

I-V CHARACTERISTICS AT DIFFERENT IRRIDANCE
PV MODULE Insolation Energy - INA-144 MHC-WF - 545



CAUTION: READ SAFETY AND DETAIL INSTALLATION MANUAL BEFORE USING THE PRODUCT (Refer to our Website).

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INA 3 - Factory, Sawarda, Ajmer Expressway, Jaipur, Rajasthan - 303348

INA 4 & 5 - Factory, Mohasa-Babai, Narmadapuram, Bhopal, Madhya Pradesh - 411661

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