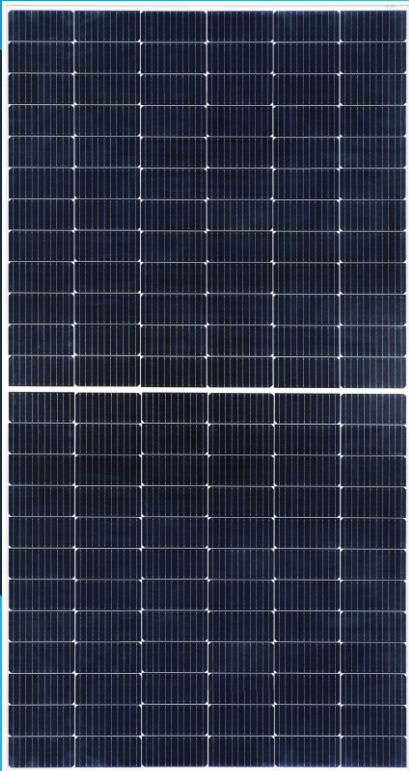




DIAMOND SERIES

144 Half Cut MONO PERC

520 - 550 Wp
MONOFACIAL & BIFACIAL

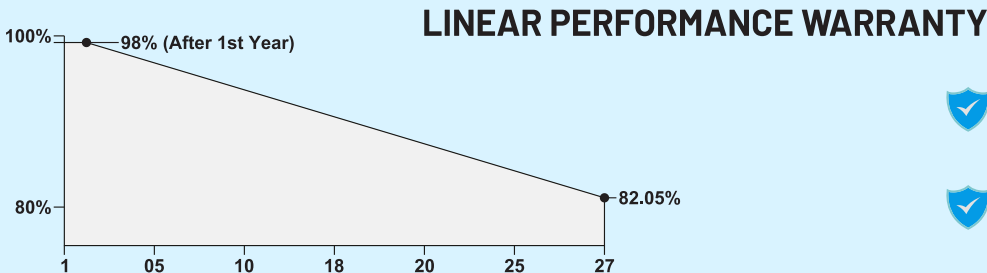
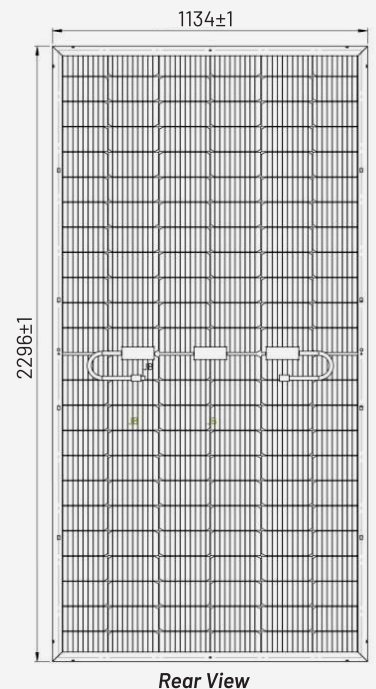
520 Wp | 525 Wp | 530 Wp | 535 Wp
540 Wp | 545 Wp | 550 Wp
INA-144MHC-WF-XXX (XXX = 520-550 Wp)
INA-144MHC-TF-XXX (XXX = 520-550 Wp)



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

KEY FEATURES

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.



12-Year Product Warranty on Materials and Workmanship*



30-Year Warranty for Linear Performance*

CERTIFICATIONS & STANDARDS:

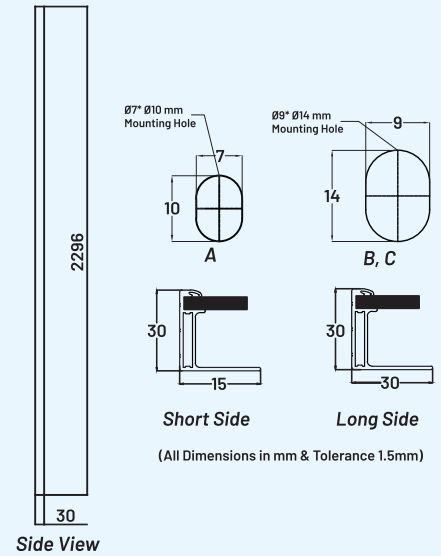
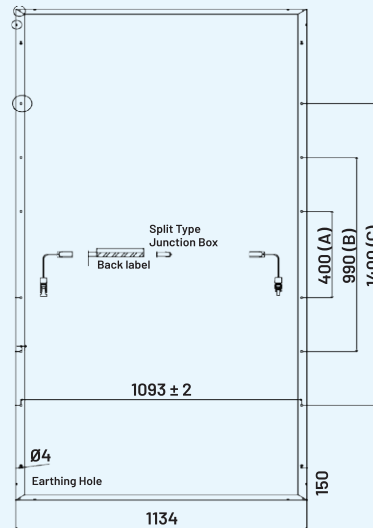
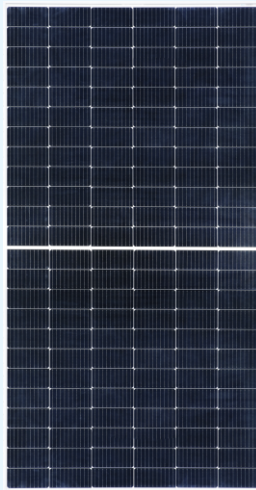
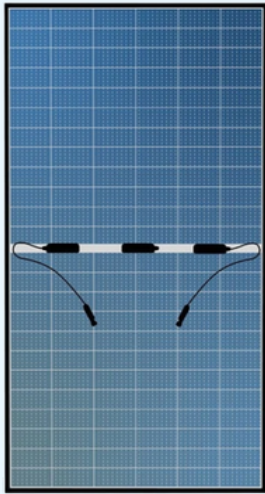
IS: 14286/IEC 61215, IEC 61730-1 and IEC 61730-2, IEC 62716, IEC 62804, IEC 60068-2-68, IEC 61853, IEC 61701

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 0.6 %/year from year 2 to year 30. Please read Insolation Energy Ltd. warranty documents thoroughly.

Doc No. - IGEPL/TDS/M10, Issue No./Date - 00/12.10.25, Rev No./Date - 02/17.06.2026

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





ELECTRICAL DATA PERFORMANCE

Module Type	Unit	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Peak Power -Pmax	Wp	520	388.20	525	393.20	530	397.50	535	401.30	540	405.00	545	408.80	550	410.96
Maximum voltage (Vmpp)	V	40.96	38.09	41.12	38.29	41.39	38.48	41.61	38.68	41.81	38.79	41.9	38.8	41.93	38.92
Maximum current (Impp)	A	12.72	10.15	12.77	10.27	12.82	10.33	12.86	10.39	12.92	10.46	13.02	10.46	13.12	10.56
Open circuit voltage (Voc)	V	48.49	45.75	48.82	45.94	49.15	46.17	49.48	46.41	49.81	46.54	49.76	46.56	49.9	46.95
Short circuit current (Isc)	A	13.35	10.68	13.39	10.78	13.43	10.85	13.47	10.91	13.51	10.98	13.9	11.08	13.98	11.09
Module Efficiency	%	19.97		20.16		20.36		20.55		20.74		20.93		21.12	
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														

Bifacial Gain	Measurement	Unit	520	525	530	535	540	545	550
5%	Maximum Power (Pmax)	Wp	545	550	555	560	565	570	575
	Module Efficiency	%	20.93	21.12	21.32	21.51	21.7	21.89	22.08
10%	Maximum Power (Pmax)	WP	570	575	580	585	590	595	600
	Module Efficiency	%	21.89	22.08	22.28	22.47	22.66	22.85	23.04
15%	Maximum Power (Pmax)	WP	595	600	605	610	615	620	625
	Module Efficiency	%	22.85	23.04	23.24	23.43	23.62	23.81	24.00

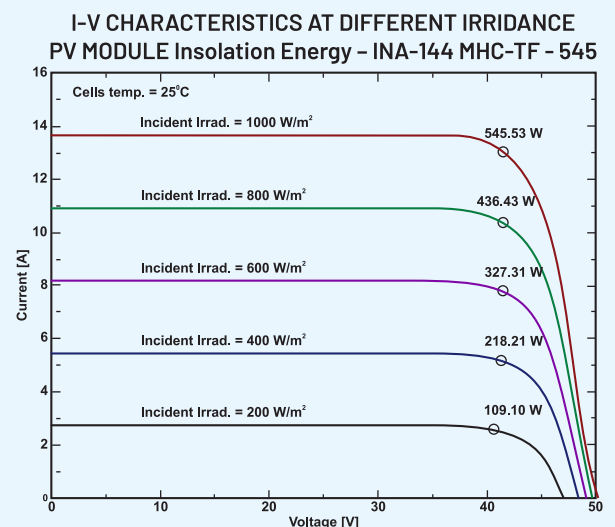
*STC: Irradiance 1000 W/m² module temperature 25°C, Am=1.5;

*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%

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

MODULE MECHANICAL DATA

SPECIFICATION	DATA
Cell Type	Type 72 Mono PERC (144 half cut cells)
Dimensions	2296X1134X30mm (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/Transparent 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 Nos./Pallet



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

Note: • The specifications included in this datasheet are subject to change without notice.

• The electrical data given here is for reference purpose only.

• Please confirm your exact requirements with the sales representative while placing your order. All models sold will betas per INA QAP.

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

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