

# ELAN SHINE Series

Bifacial PV Modules with Transparent Backsheet, MBB P-Type PERC Half-cut

ASB-M10-144-AAA (AAA=520-545)  
144 Cells | 520-545 Wp | Gen-I

## Highlights



MBB cell technology - excellent anti-microcracking performance with more balanced interior stress: grid pattern current path, lower cost



Up to  $70 \pm 5\%$  Bifaciality Factor



Longer Product life and performance -0.45% year over year degradation with 30 years warranty on power



Least degradation for LID & LeTID

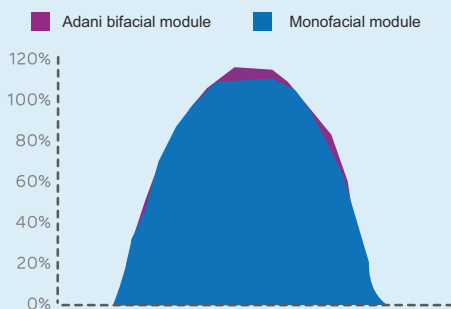


Modules made with Ga doped wafer with Smart soldering

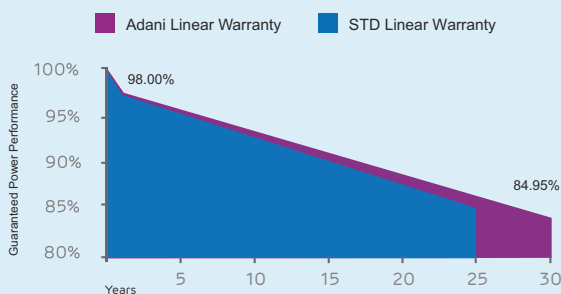


Excellent PID resistance

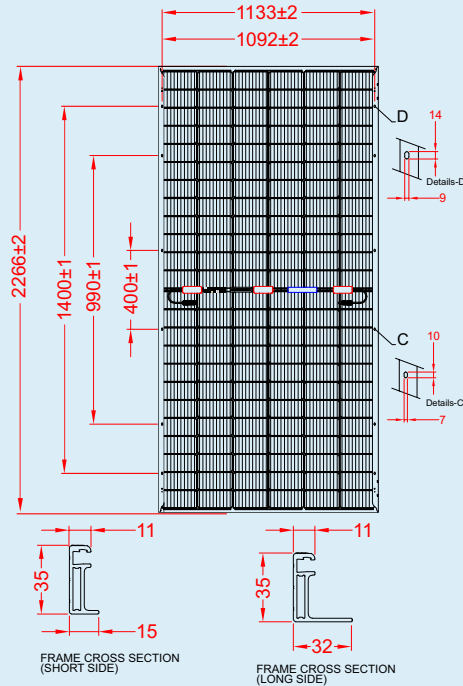
### Higher generation due to bifacial technology



### Warranty based on Power



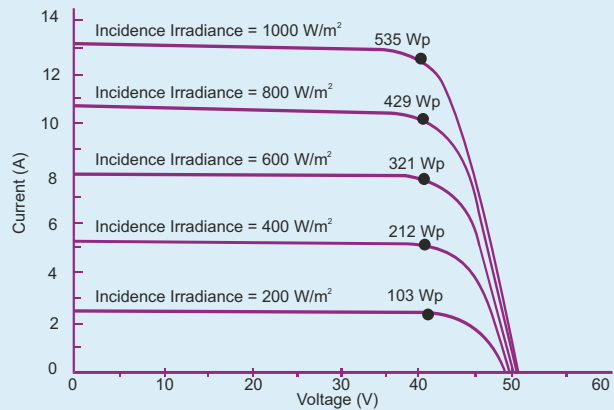
Dimensions in mm



# Technical Data

## Multi Irradiance Curve Bifacial M10-144 HC Cell Module

Cell temp: 25°C



### Electrical data - All data measured to STC\*

Electrical Specification	Only front (STC)					
Peak power, (0 → 4.99 Wp)						
Pmax(Wp)	520	525	530	535	540	545
Maximum voltage, Vmpp (V)	41.18	41.34	41.49	41.64	41.80	41.94
Maximum current, Impp (A)	12.65	12.73	12.79	12.86	12.93	13.01
Open circuit voltage, Voc (V)	48.60	48.78	48.95	49.12	49.32	49.48
Short circuit current, Isc (A)	13.41	13.48	13.55	13.63	13.71	13.79
Module efficiency (%)	20.25	20.44	20.64	20.83	21.03	21.22

\*STC: Irradiance 1000 W/m², cell temperature 25°C, Air Mass AM 1.5 according to EN 60904-3. Average efficiency reduction is approx 3% at 200 W/m according to EN 60904-1. Except Pmp, all other parameters have tolerance of +/-3%, measurement uncertainty <3%.

### Electrical Characteristics with different rear side power gain (Reference 525 Wp Front)

Electrical Specification	Pmax gain from rear side*			
Bifaciality Gain	10%	15%	20%	25%
Peak power, (0 → 4.99 Wp) Pmax(Wp)	575	600	630	650
Maximum voltage, Vmpp (V)	41.34	41.35	41.36	41.37
Maximum current, Impp (A)	13.89	14.51	15.24	15.72
Open circuit voltage, Voc (V)	48.36	48.36	48.36	48.36
Short circuit current, Isc (A)	15.01	15.66	16.47	17.01
Module efficiency (%)	22.39	23.37	24.54	25.32

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

### Packaging Configuration

Container	40'HC	
Pallets / Container	20	Pieces / Container 620

**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.

**\*Caution:**

Please read safety and installation instructions before using the product.

### Temperature co-efficients (Tc) and permissible operating conditions

Tc of open circuit voltage (β)	-0.26% /°C
Tc of short circuit current (α)	0.054% /°C
Tc of power (γ)	-0.32% /°C
Maximum system voltage	1500 VDC (IEC & UL)
NOCT	45°C ± 2°C
Temperature range	-40°C to + 85°C

### Mechanical data

Length	2266 mm
Width	1133 mm
Height	35 mm
Weight	28 kg
Junction box	IP68
Cable and connectors	300 mm length cable, MC4 compatible connectors
Application class	Class A (Safety class II)
Superstrate	High Transmission ARC glass 3.2 mm
Cells	144 Half-cut mono-crystalline P-type PERC bifacial solar cells; Multi bus bar
Encapsulation	High volume resistivity and low MVTR
Substrate	Transparent / Patterned Backsheet
Frame	Anodized Frame
Design Mechanical load	3600 Pa-downward; 1600 Pa-Upward
Safety Factor for Mechanical load	1.5
Maximum series fuse rating	30 A

**\*\* Warranty:**

Please read Adani solar warranty documents thoroughly.

MSEL/MDL/PM/Gen-IR/Rev08

## Warranty and certifications

**Product warranty\*\*** 12 years of product warranty

**Performance warranty\*\*** Power degradation <2.0% in first year <0.45% / year in 2-30 years

**Approvals and certificates\*:** IEC 61215, IEC 61730, UL 61730, BIS, IEC 61853-1, IEC 62782, IEC 61853-2, IEC 61701, IEC 60068-2-68, IEC 62716

