adani
Solar

Get SUNplugged

Adani Solar is the Solar PV manufacturing arm of Adani Group, a diversified business conglomerate in India, comprising 9 publicly traded companies. It has created world class energy & utilities and transport & logistics infrastructure portfolios with a pan-India presence.

Adani Solar is India's 1st and largest vertically integrated solar company with 4 GW manufacturing capacity, that offers products along with services across the spectrum of photovoltaics manufacturing. The cutting-edge technology, with machines and equipments sourced from the best in class suppliers, aim to help in cost leadership, scale of operations and reliability standards as per global benchmarks.

Now, Adani Solar is building the World's 1st ever Fully Integrated and Comprehensive Solar Manufacturing Ecosystem of 10 GW in Mundra, India, encompassing the production of Metallurgical Grade Silicon, Polysilicon, Ingots, Wafers, Cells, and Modules and including ancillaries like Glass, EVA, Backsheet, Aluminium Frames, Junction Boxes etc.

Entrenched in Nation Building, Adani has aggressively led the technology-intensive manufacturing sector, through its state-of-the-art entities located at one of the largest, Electronics Manufacturing Clusters (EMC) in Mundra, India, spanning an area of about 800 acres.

Spurring India's Growth with Goodness, Adani is well poised to embark on the Industrial Revolution.

PRESENCE	MARKET CAP
across **50+ countries**	worth **USD 200 bn**

Driving the Solar Revolution

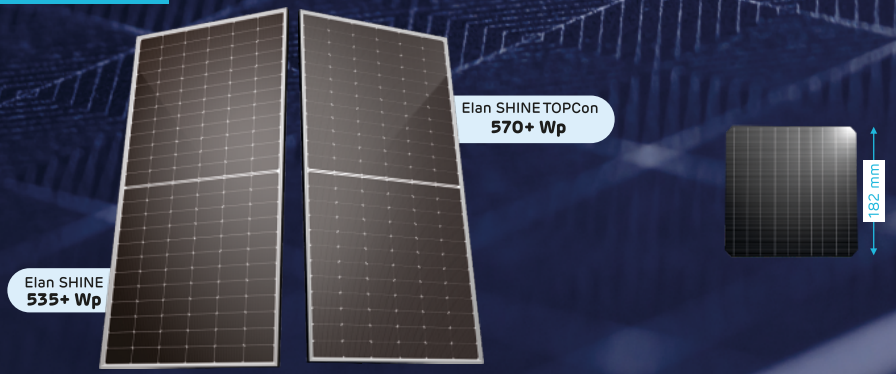
- upto **30** years — Linear warranty assuring optimal performance
- **12** years — Limited product warranty
- expanding to **10** GW — Fully Integrated and Comprehensive Solar Manufacturing Ecosystem

World-Class Solar Modules for you

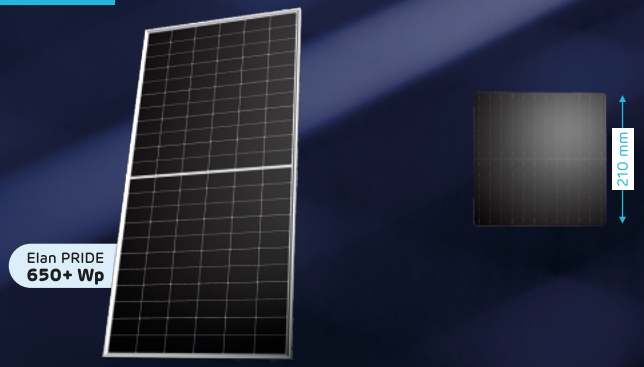
Adani Solar's cutting-edge technology, scale of operations, cost leadership and reliability, sets it apart from all other global competitors and supporting utilities. Adani Solar produces hi-tech solar panel modules using advanced technology and supplies reliable solar modules that are proven to meet the customer's exact requirements.

- G12, M10 Bifacial PERC/ TopCon cells
- Half Cut, Multi Bus Bar Technology
- Ga/B doped Wafer Technology
- Module Efficiency upto 23.4%
- Excellent PID Resistance
- Linear Power Degradation as low as 0.40%
- Bifaciality Factor upto 80%
- Upto 30 Years Warranty

SHINE Series



PRIDE Series



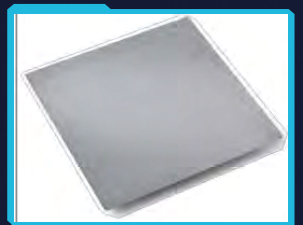
Dawn of a New Era in the Solar Revolution

Building the World's first ever Fully Integrated and Comprehensive Solar manufacturing Ecosystem of 10 GW in Mundra, India

10 GW of Metallurgical Grade Silica

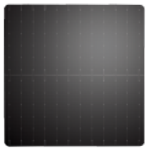
10 GW of Polysilicon

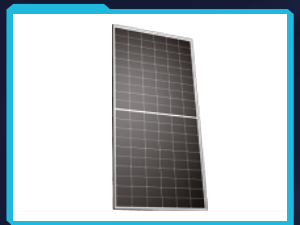
10 GW of Ingots



10 GW of Wafers

10 GW of Solar Cell





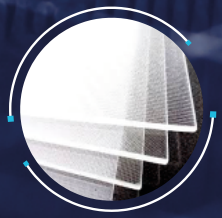
10 GW of Solar Module

Adani's focus is on renewable energy to enable a responsible energy transition with accelerated footprints in the energy sector. Our proactive investment in Clean Energy and technologies validates our commitment to a sustainable future.

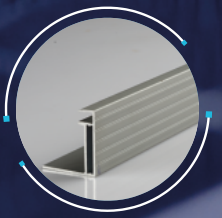
- Just in Time Supplies
- Reduced import dependency
- Seamless supply of key raw materials

EVA Facility

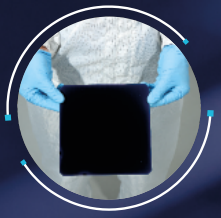
Backsheet Facility



Glass Project

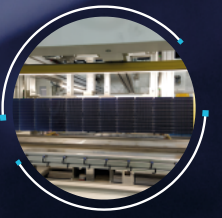


Aluminium Frame Facility



Cell & Module Facility

Warehouse



Training & Testing Lab

Gallery

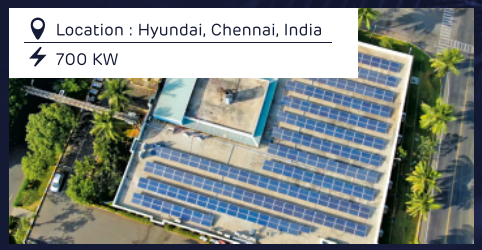

Location : Oklahoma, USA
289 KW


Location : Mundra, Gujarat, India
2 MW


Location : Minnesota, USA
2.8 MW


Location : EESL, India
140 MW


Location : Wadesboro, North Carolina, USA
5 MW


Location : Hyundai, Chennai, India
700 KW


Location : Moranbah, Queensland, Australia
12 MW


Location : Andaman Nicobar, India
3.6 MW


Location : Kamuthi, Tamil Nadu, India
648 MW


Location : Lupin, Goa, India
200 KW

The Brighter Side of Business

- Largest Indian vertically Integrated Cell & Module Manufacturer
- Supreme Product Quality with Fully Integrated Plant
- Top Perfomer at PVEL from 2018 to 2023 (Highest reliability and best performance)
- In house EVA, Backsheet, Glass, Aluminium frames manufacturing with Superior process controls
- Modules Tested for 3 IEC
  Assuring superior reliability & linear warranty of PV Modules
- Audited by PI Berlin, Black & Veatch, TUV Rheinland

adani Solar

ELAN SHINE
TOPCON Series

N-type

Bifacial Transparent Backsheet Modules

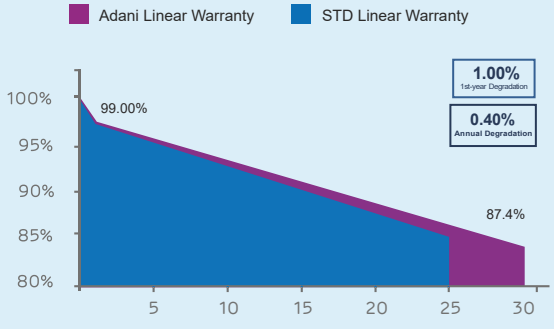
ASB-M10-144-AAA (AAA=550-575)
144 Cells | 550-575 Wp| Gen-I

575+ Wp
Maximum Power Output

22.4%
Maximum Efficiency

0~+5W
Power Tolerance

Linear Performance Warranty



Highlights

Up to 30% Additional Power Generation when compared with conventional P-type module

No LID Loss which means more power generation

Better Output In Low Irradiance
Higher power output even under low-light environments like on cloudy or foggy days

Better Temperature Coefficient
Higher power generation under higher abient temperature conditions

Delivers Reliable Performance Over Time

- Full-automatic facility and industry-leading technology
- Best-in-class durability and reliability

N-type Bifacial 144 Half-cut cell Module

Electrical Properties	STC*					
Testing Condition	Front Side	Front Side	Front Side	Front Side	Front Side	Front Side
Peak Power (Pmax) (W)	550	555	560	565	570	575
MPP Voltage (Vmp) (V)	42.0	42.2	42.4	42.6	42.8	43.0
MPP Current (Imp) (A)	13.10	13.16	13.21	13.27	13.32	13.38
Open Circuit Voltage (Voc) (V)	50.2	50.4	50.6	50.8	51.0	51.2
Short Circuit Current (Isc) (A)	13.87	13.93	13.99	14.05	14.11	14.17
Module Efficiency (%)	21.42	21.62	21.81	22.01	22.20	22.40

*STC: Irradiance 1000 W/m², Cell Temperature 25°C, AM1.5
The data above is for reference only and the actual data is in accordance with the pratical testing
Power Measurement Tolerance ±3%

Electrical Properties	NOCT*					
Testing Condition	Front Side	Front Side	Front Side	Front Side	Front Side	Front Side
Peak Power (Pmax) (W)	417	421	424	428	432	436
MPP Voltage (Vmp) (V)	39.5	39.6	39.8	40.0	40.2	40.4
MPP Current (Imp) (A)	10.56	10.61	10.65	10.70	10.74	10.79
Open Circuit Voltage (Voc) (V)	48.0	48.2	48.4	48.6	48.7	48.9
Short Circuit Current (Isc) (A)	11.18	11.23	11.28	11.33	11.38	11.42

*NOCT: Irradiance 800 W/m², Ambient Temperature 20°C, Wind Speed 1 m/s

Operating Temperature

Operating Temperature (°C)	-40~+85
Maximum System Voltage (V)	1500V DC (IEC)
Maximum Series Fuse Rating (A)	30
Power Tolerance	0~+5W
Bifaciality*	80%

*Bifaciality=Pmaxrear STC/Pmax front STC Bifaciality tolerance:±5%

Temperature Coefficient

Temperature Coefficient of Pmax*	-0.31%/°C
Temperature Coefficient of Voc	-0.260%/°C
Temperature Coefficient of Isc	+0.046%/°C
Nominal Operating Cell Temperature (NOCT)	42±2°C

*Temperature Coefficient of Pmax±0.03%/

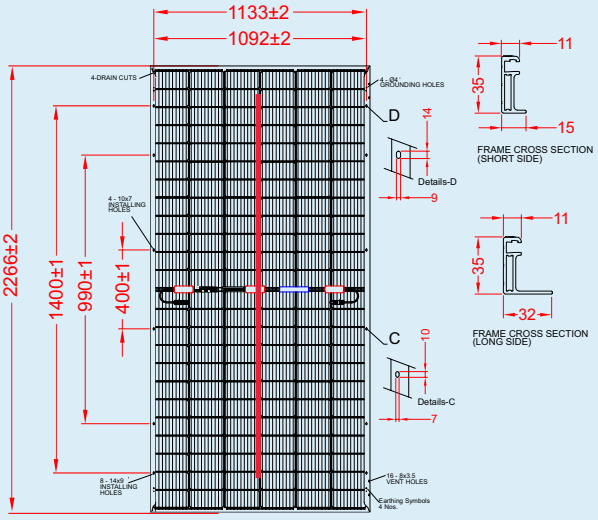
Mechanical Properties

Cell Size	182.00mm*91.00mm
Number of Cells	144 Halfcut
Module Dimension	2266mm*1133mm
Weight	28kg
Front	3.2mm
Rear	Transparent Backsheet
Frame	Anodized Aluminium Alloy
Junction Box	. 3 diodes`
Length of Cable	4.0mm², 300mm (Cable length can be customized)

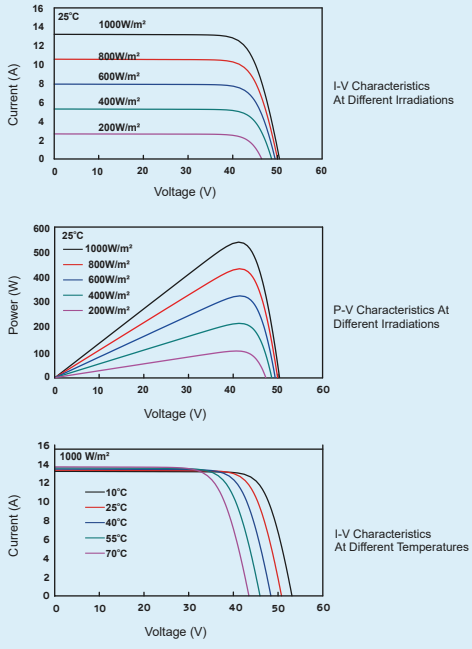
With Different Power Generation Gain regarding 550W as an example

Power Gain (%)	Peak Power (Pmax) (W)	MPP Voltage (Vmp) (V)	MPP Current (Imp) (A)	Open Circuit Voltage (Voc) (V)	Short Circuit Current (Isc) (A)
10	594	42.0	14.13	50.2	14.97
15	616	42.0	14.65	50.2	15.51
20	638	42.1	15.17	50.3	16.06
25	660	42.1	15.69	50.3	16.61
30	682	42.1	16.20	50.3	17.16

Engineering Drawing (Unit : mm)



Characteristic curve of 550Wp



Packaging Configuration

Packing Type	40'HQ
Piece/Pallet	31
Pallet/Container	20
Piece/Container	620

*The specification and key features described in this datasheet may deviate slightly and are not guaranteed. Due to ongoing innovation, R&D enhancement Adani Solar reserves the right to make any adjustment to the information described herein at any time without notice. Please always obtain the most recent version of the datasheet which shall be duly incorporated into the binding contract made by the parties governing all transactions related to the purchase and sale of the products described herein.

Warranty and certifications

Product warranty** 12 years of product warranty
Performance guarantee** Power degradation <1.00% in first year <0.40% / year in 2-30 years **Approvals and certificates*:** IEC 61215 Ed2, IEC 61730, IEC 61701, UL 61730, MCS, JET, CEC, CEC-Aus, IEC 62716, IEC 62782, IEC 60068-2-68, IEC 61853, BIS

*All certifications are under process

Preliminary Datasheet

Recyclable packaging

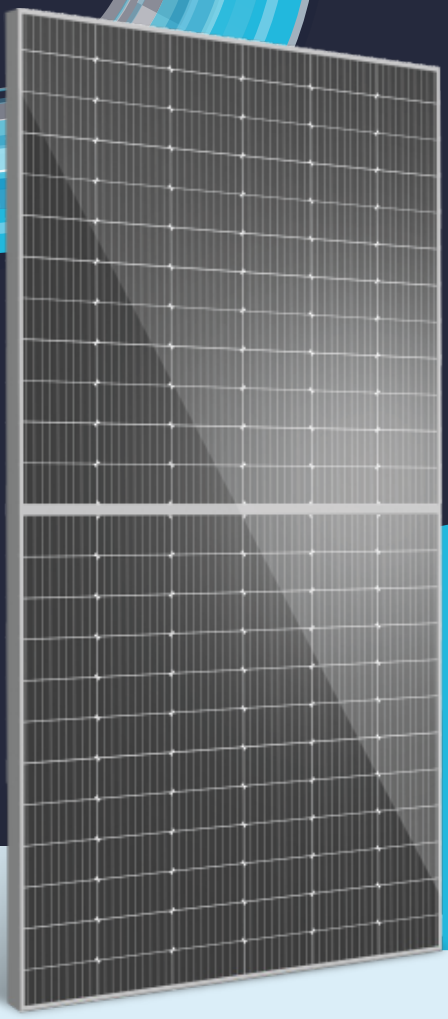
EU-28 WEEE COMPLIANT

adani Solar

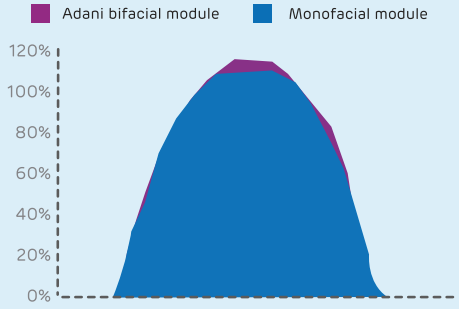
ELAN SHINE Series

Bifacial PV Modules with Dual Glass, MBB P-Type PERC Half-cut

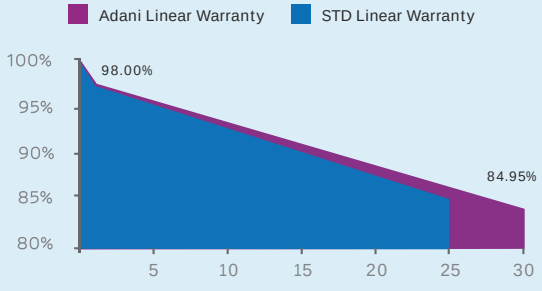
ASB-M10-144-AAA (AAA=520-545)
144 Cells | 520-545 Wp



Higher generation due to bifacial technology



Warranty based on Power



Highlights

- MBB cell technology - excellent anti-microcracking performance with more balanced interior stress: grid pattern current path, lower cost
- Up to 70 ± 5 % bifaciality Factor
- Longer Product life and performance -0.45% year over year degradation with 30 years warranty on power
- HIGH BIFACIALITY FACTOR — Least degradation for LID & LeTID
- Modules made with Ga doped wafer with Smart soldering
- Excellent PID resistance

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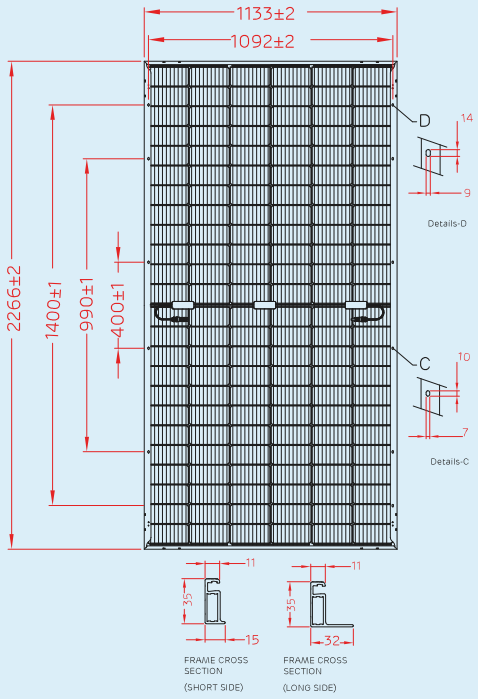
Dimensions in mm

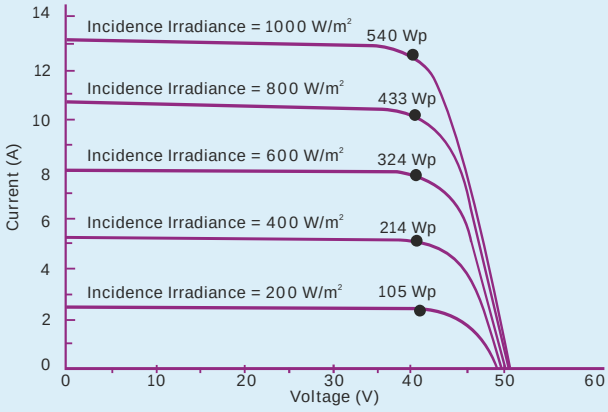


Technical Data

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	12.72	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 of 4.5 % at 200 W/m² according to EN 60904-1. Except Pmpp, all other parameters have a 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)	41.35	41.35	41.36	41.36
Maximum current, Impp (A)	13.89	14.50	15.25	15.75
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

Temperature co-efficients (Tc) and permissible operating conditions

T_c of open circuit voltage (β)	-0.30% /°C
T_c of short circuit current (α)	0.050% /°C
T_c of power (γ)	-0.38% /°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	33.5 kg
Junction box	IP68; Junction box
Cable and connectors	300 mm length cable, MC4 compatible connectors
Application class	Class A (Safety class II)
Superstrate	High Transmission ARC, Heat Strengthened Glass 2.0 mm
Cells	144 Half-cut mono-crystalline P-type PERC bifacial solar cells; Multi bus bar
Encapsulation	High volume resistivity and low MVTR
Substrate	Semi Tempered Glass -2.0 mm
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

Note:

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

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

MSEL/MDL/PM/Rev06

Warranty and certifications

Product warranty** 12 years of product warranty
Performance guarantee** Power degradation <2.0% in first year <0.45% / year in 2-30 years
Approvals and certificates* : IEC 61215, IEC 61730, BIS, UL 61730, IEC 61853,IEC 62716,
IEC 60068-2-68, IEC 61701, IEC 62716, IEC 61853-2
Certifications are under process

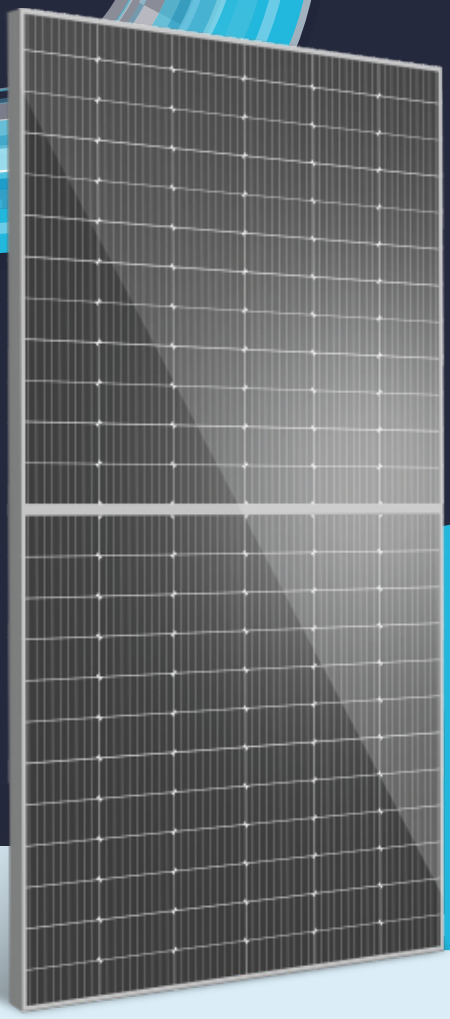
EU-28 WEEE COMPLIANT
Recyclable packaging

adani Solar

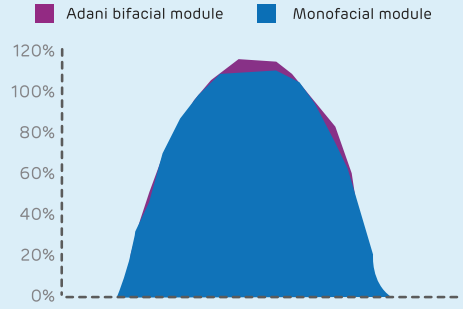
ELAN SHINE Series

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

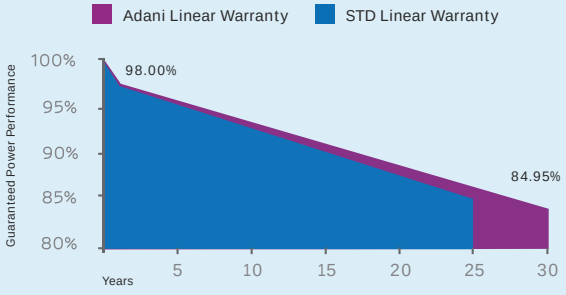
ASB-M10-144-AAA (AAA=520-545)
144 Cells | 520-545 Wp



Higher generation due to bifacial technology



Warranty based on Power



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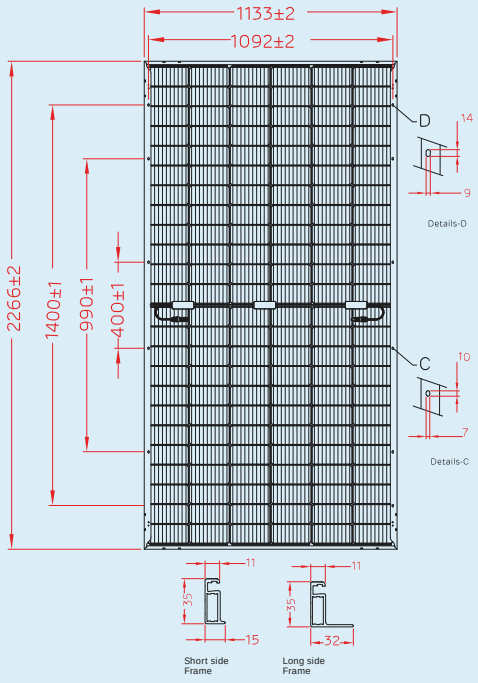
Dimensions in mm



Technical Data

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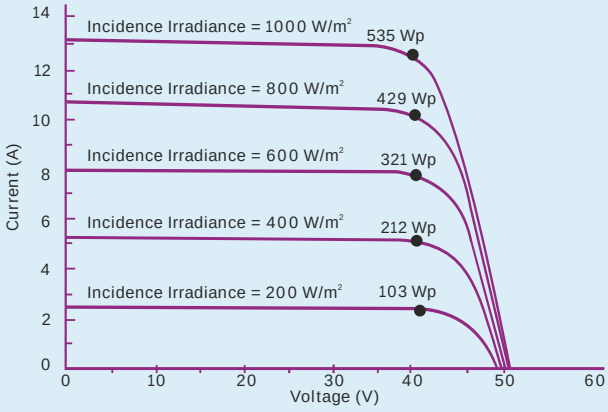
Bifacial M10-144 HC Cell Module

Cell temp: 25°C



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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
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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

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Packaging Configuration

Container	40'HC		
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Temperature co-efficients (Tc) and permissible operating conditions

T_c of open circuit voltage (β)	-0.26% /°C
T_c of short circuit current (α)	0.054% /°C
T_c 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	28.0 kg
Junction box	IP68; Junction box
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 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

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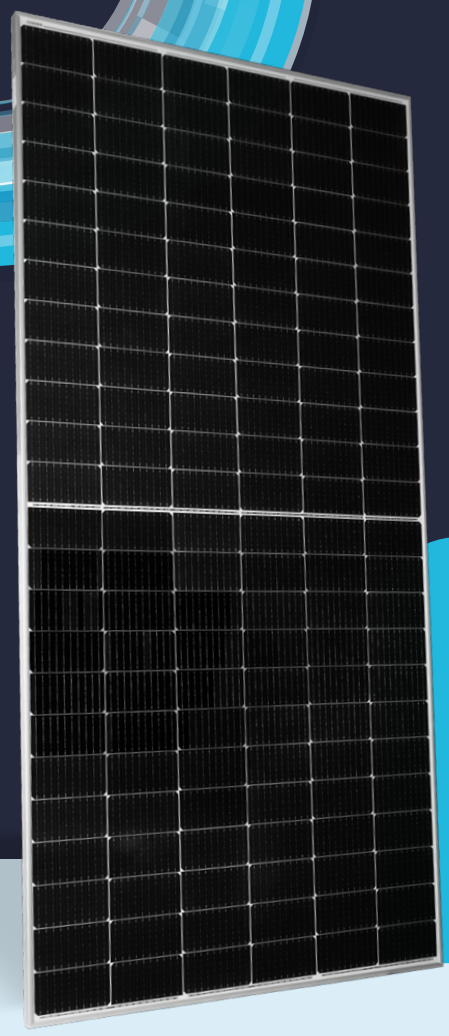
EU-28 WEEE COMPLIANT
Recyclable packaging

adani Solar



ETERNAL SHINE Series

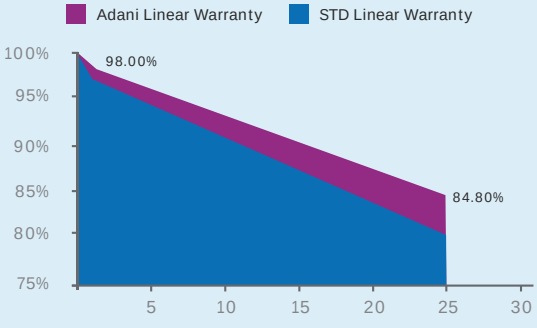
Monofacial PV Modules
MBB P-Type PERC Half-cut

ASM-M10-144-AAA (AAA=520-545)
144 Cells | 520-545 Wp

Highlights

- MBB cell technology with 10BB, smart soldering
- High module conversion efficiency upto 21.22%
- Excellent low light performance
- Least degradation for LID & LeTID with Ga Doped wafer technology
- Excellent anti-micro cracking performance with more balanced interior stress: grid pattern current path
- Excellent PID resistance

Warranty based on Power



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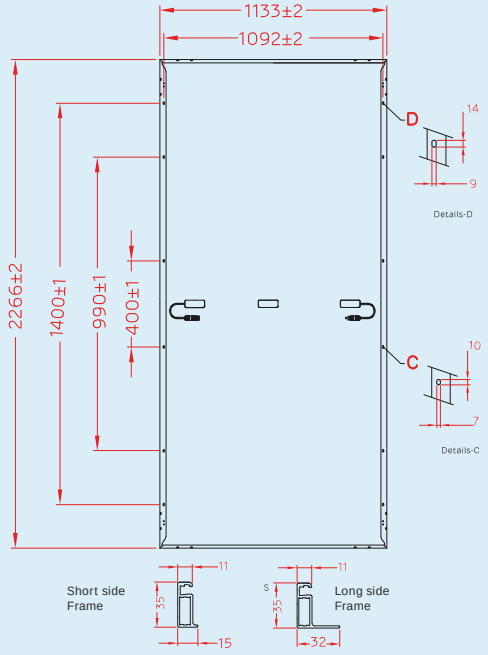
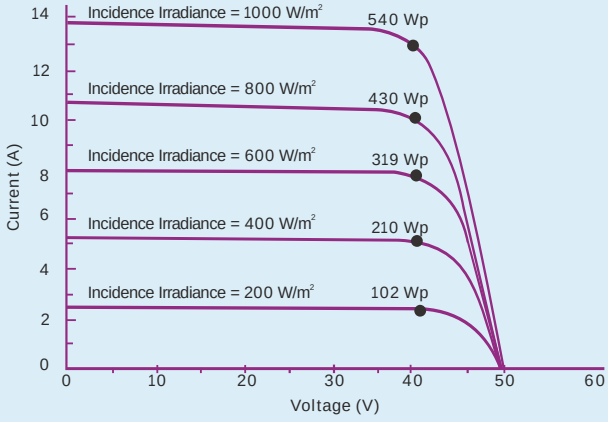
Dimensions in mm



Technical Data

Multi irradiance curve
Monofacial 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	12.72	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/m² according to EN 60904-1. Expect Pmpp, all other parameter have tolerance of +/-3%, measurement uncertainty <3%.

Electrical Characteristics at NOCT**

Electrical Specification	Pmax gain from rear side*					
Pmax(Wp)-NOCT	390	393	397	401	405	408
Maximum voltage, Vmpp (V)	38.39	38.54	38.68	38.82	38.98	39.10
Maximum current, Impp (A)	10.16	10.22	10.27	10.33	10.38	10.46
Open circuit voltage, Voc (V)	45.43	45.76	45.92	46.09	46.28	46.42
Short circuit current, Isc (A)	10.90	10.96	11.02	11.08	11.13	11.22

**NOCT irradiance 800 W/m², ambient temperature 20°C, wind speed 1 m/sec
All parameter have a tolerance of +/-3 %, measurement uncertainty <3 %

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

T_c of open circuit voltage (β)	-0.28% /°C
T_c of short circuit current (α)	0.048% /°C
T_c of power (γ)	-0.37% /°C
Maximum system voltage	1500 V (IEC & UL)
NOCT	45°C ± 2°C
Temperature range	-40°C to + 85°C

Mechanical data

Length	2266 mm
Width	1133mm
Height	35 mm
Weight	28.0 kg
Junction box	IP68; Junction box
Cable and connectors	300 mm length cable, MC4 compatible connectors
Application class	Class A (Safety class II)
Superstrate	High transmittance ARC glass-3.2 mm
Cells	144 Half-cut mono-crystalline P-type PERC solar cells; Multi bus bar
Encapsulation	High volume resistivity and low MVTR
Substrate	White Backsheet
Frame	Anodized Frame
Design Mechanical load	3600 Pa-downward; 1600 Pa-upward
Safety Factor for Mechanical load	1.5
Maximum series fuse rating	25 A

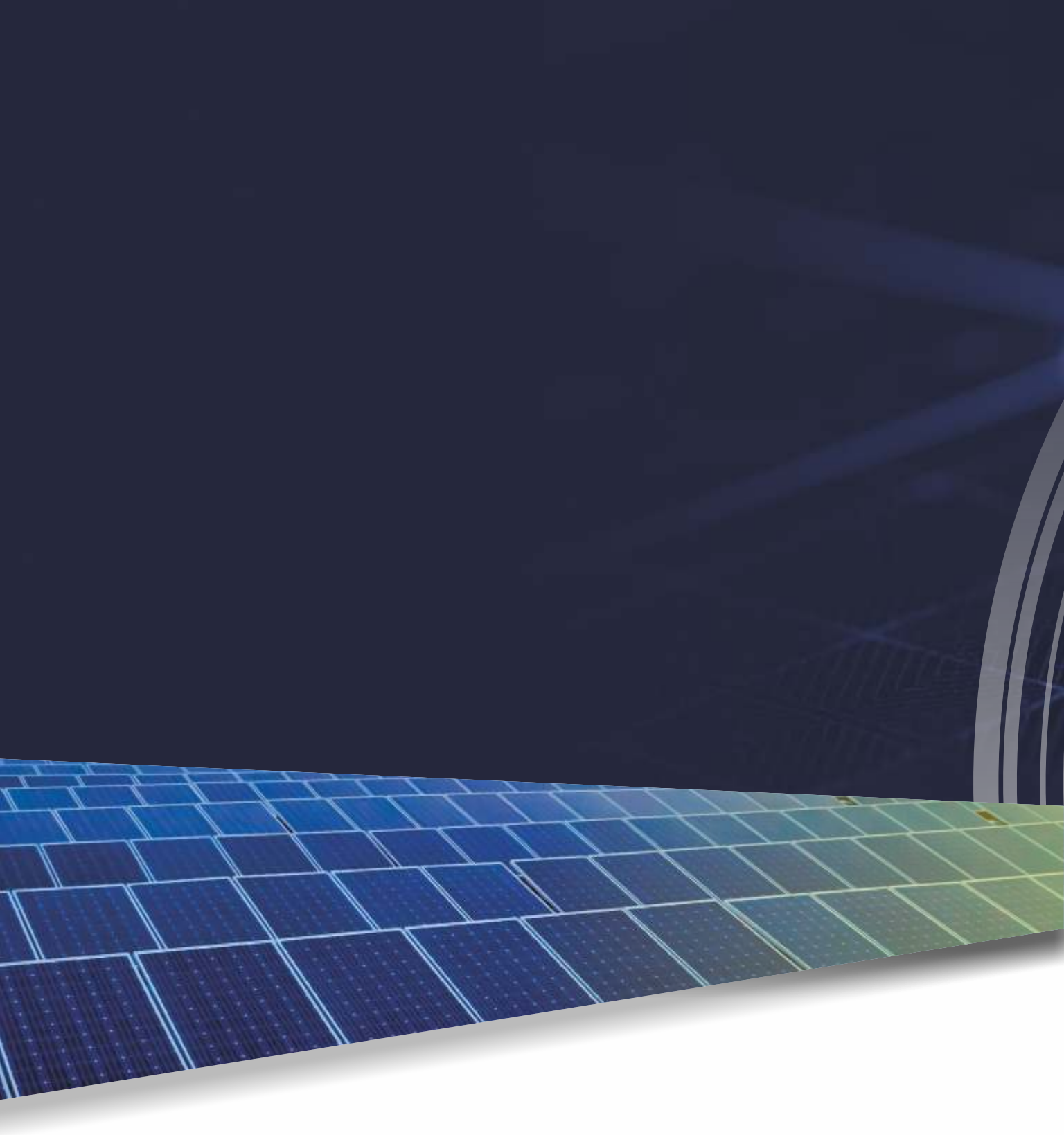
** Warranty:
Please read Adani solar warranty documents thoroughly.

Warranty and certifications

Product warranty** 12 years of product warranty
Performance warranty** Power degradation <2.0% in first year and <0.55% / year in 2-25 years
Approvals and certificates :
IEC 61215, IEC 61730, UL 61215, UL 61730, BIS, IEC 61853-1,IEC 62782,IEC 61701, IEC 61853-2
IEC 60068-2-68, IEC 62716

EU-28 WEEE COMPLIANT
Recyclable packaging

MSEL/MDL/PM/Rev02



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