TIER 1 BloombergNEF

Deutsche
Qualität
Garantiert

ALPINE
N-TYPE TOPCON TECHNOLOGY

CMD-144BDS-I

575W-595W

Hail-proof. Weather-ready. Solar strong.

23.05%
MAXIMUM EFFICIENCY

144
HALF CELLS

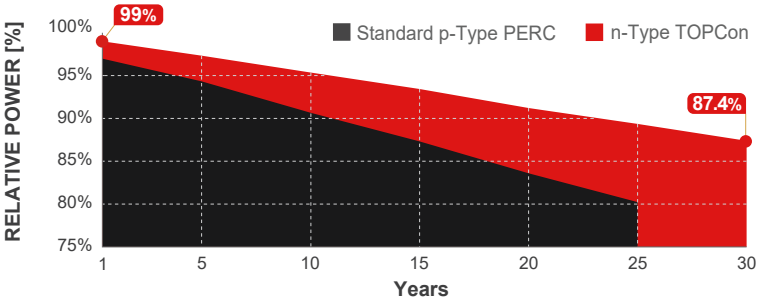
- Certified to endure 40mm hailstones with zero power loss.
- 3.2mm tempered safety glass, offering exceptional durability.
- T6 high-strength anodized aluminum alloy frame, ensuring stability in harsh conditions.
- Reducing maintenance costs, offering long-term reliability for hail-prone regions.

30 YEARS
Performance Warranty

up to 30 YEARS*
Product Warranty

The regular product warranty is 15 years, please refer to the latest version of AESOLAR Limited Warranty for the duration of the product warranty under special conditions. for extensions, please contact AESOLAR staff.

OUR PERFORMANCE WARRANTY



SYSTEM AND PRODUCT CERTIFICATIONS

IEC 61215 IEC 61730
Regular Production Surveillance
www.tuv.com
ID 1111257249

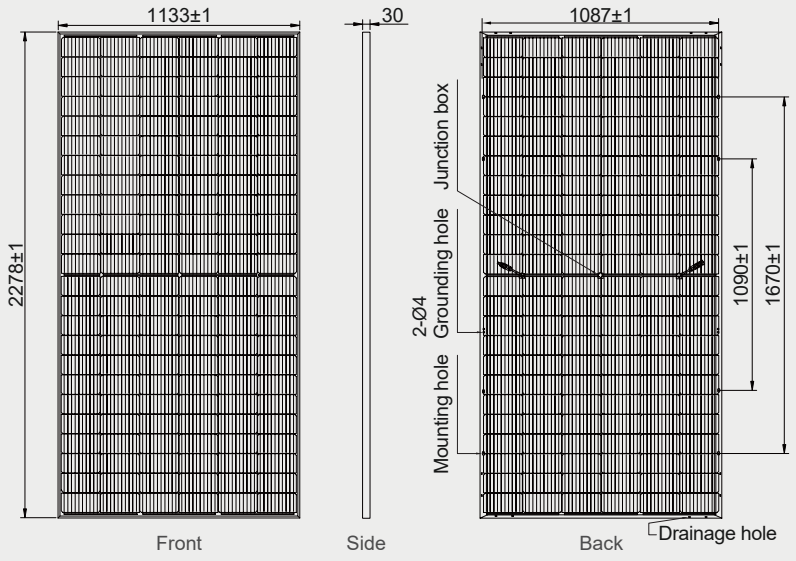
AESOLAR

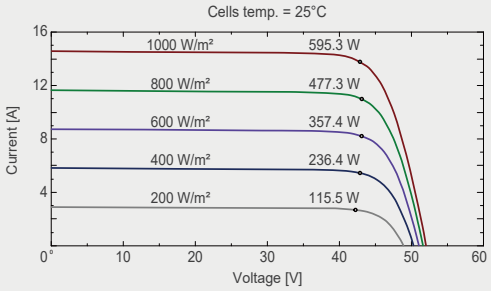
LID RESISTANT
PID RESISTANT
SALT CORROSION RESISTANT
SAND RESISTANT
AMMONIA RESISTANT
HIGHLY STABLE AND TOUGH

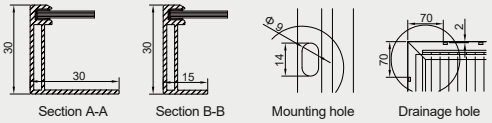
AE CMD-144BDS-I 575W-595W

N-TYPE TOPCON TECHNOLOGY PV MODULE

BIFACIAL • DOUBLE-GLASS







Electrical specifications (STC*):

Nominal max. power	P_{max} (Wp)	575	580	585	590	595
Maximum operating voltage	V_{MPP} (V)	42.88	43.04	43.14	43.29	43.46
Maximum operating current	I_{MPP} (A)	13.41	13.49	13.56	13.63	13.69
Open-circuit voltage	V_{oc} (V)	50.73	50.86	51.83	52.02	52.21
Short-circuit current	I_{sc} (A)	14.33	14.40	14.47	14.54	14.61
Module efficiency	η (%)	22.28	22.47	22.67	22.86	23.05
Power tolerance	(W)			0~+5		
Maximum system voltage	(V)			1500		
Maximum series fuse rating	(A)			25		

*STC: Standard Test Conditions (irradiance 1000 W/m², cell temperature 25°C and air mass of AM1.5), measurement tolerance Pmax: ±3%

Electrical specifications (NMOT*):

Nominal max. power	P_{max} (Wp)	437.4	440.0	445.0	448.0	452.0
Maximum operating voltage	V_{MPP} (V)	39.80	39.90	40.13	40.22	40.39
Maximum operating current	I_{MPP} (A)	10.99	11.04	11.09	11.14	11.19
Open-circuit voltage	V_{oc} (V)	48.00	48.20	48.40	48.60	48.80
Short-circuit current	I_{sc} (A)	11.55	11.60	11.65	11.70	11.75

*NMOT: Normal Module Operating Temperature (irradiance 800 W/m², ambient temperature 20°C, air mass of AM1.5 and wind speed of 1 m/s)

Bifacial electrical specifications

Max.power front-side $P_{max\ front}$ (Wp)	575		580		585		590		595	
Backside Power Gain	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%
Total equivalent power $P_{max\ equ}$ (Wp)	604	633	610	639	614	644	620	649	625	655
Module efficiency η (%)	23.39	24.51	23.62	24.75	23.80	24.93	24.00	25.15	24.20	25.36

*Bifacial Gain: The additional gain from the back side compared to the power of the front side at the standard test condition. It depends on the mounting (structure, height, tilt angle, etc.) and albedo of the ground.

Mechanical and design specification

Cell type	n-Type TOPCon technology, half-cut cells
No. of cells	144
Bifaciality	80 ± 5%
Front cover	3.2 mm glass, high transmission, AR coated, tempered
Encapsulation	POE
Back cover	2.0 mm white glazed glass, tempered
Junction box	IP68 rated, 3 bypass diodes
Frame	30 mm anodized aluminium alloy
Cable (Including Connector)	1 x 4 mm², 350 mm length or customized
Connectors	MC 4 / MC 4 compatible
Dimension	2278 mm x 1133 mm x 30 mm
Weight	38.5 kg
Hail resistance	Max. Ø 25 mm at 23 m/s
Wind load	2400 Pa or 244 kg/m²
Snow load	5400 Pa or 550 kg/m²
Fire rating	Class A (according to UL 790)

Temperature ratings

Operating temperature	-40 to +85°C
Temp. coefficient of P_{max}	-0.29 %/°C
Temp. coefficient of V_{oc}	-0.25 %/°C
Temp. coefficient of I_{sc}	0.046 %/°C
Nom. operating cell temp. NOCT	42 ± 2°C

Packaging information

Packaging configuration	36 pcs / pallet
Loading capacity	720 pcs / 40 HQ
Size / Pallet	2310 mm x 1140 mm x 1245 mm
Weight	1430 kg / pallet

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