TIER 1 BloombergNEF

Deutsche
Qualität
Garantiert

ALPINE
N-TYPE TOPCON TECHNOLOGY

CMER-96BDE-I

430W-450W

Hail-proof. Weather-ready. Solar strong.

22.54%
MAXIMUM EFFICIENCY

96
HALF CELLS

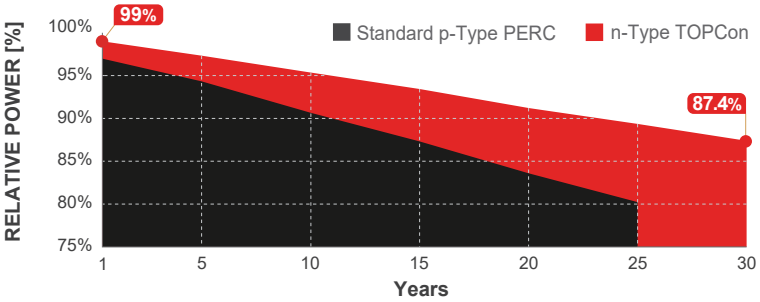
- Certified to endure 40mm hailstones with zero power loss.
- 3.2mm tempered safety glass, offering exceptional durability.
- T6 high-strength anodized aluminum alloy frame, ensuring stability in harsh conditions.
- Reducing maintenance costs, offering long-term reliability for hail-prone regions.

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

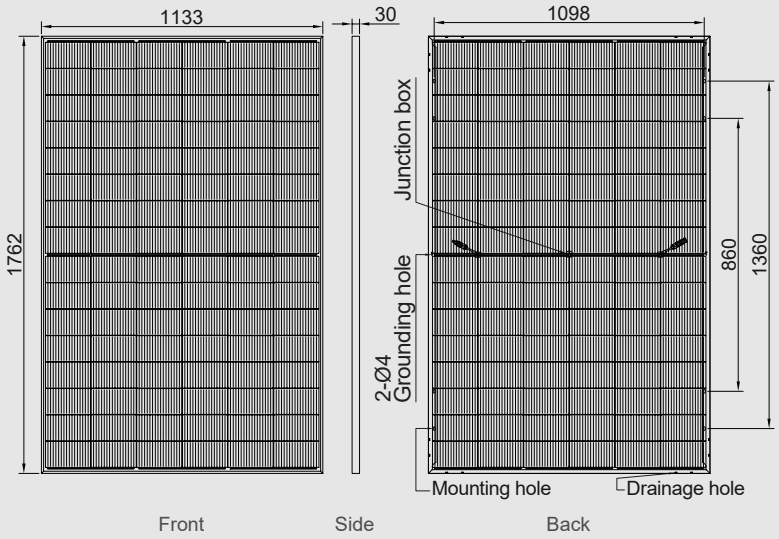
AESOLAR

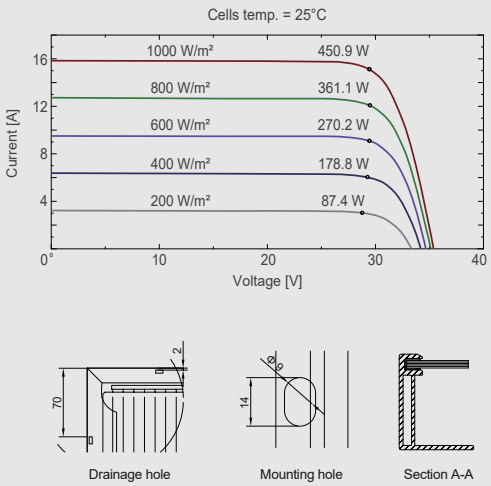
LID RESISTANT
PID RESISTANT
SALT CORROSION RESISTANT
SAND RESISTANT
AMMONIA RESISTANT
HIGHLY STABLE AND TOUGH

AE CMER-96BDE-I 430W-450W

N-TYPE TOPCON TECHNOLOGY PV MODULE

BLACK • DOUBLE-GLASS





Electrical specifications (STC*):

Nominal max. power	P_{max} (Wp)	430	435	440	445	450
Maximum operating voltage	V_{MPP} (V)	28.94	29.22	29.50	29.78	30.06
Maximum operating current	I_{MPP} (A)	14.86	14.89	14.92	14.95	14.98
Open-circuit voltage	V_{oc} (V)	34.49	34.77	35.05	35.33	35.61
Short-circuit current	I_{sc} (A)	15.72	15.76	15.89	15.93	15.96
Module efficiency	η (%)	21.54	21.79	22.04	22.29	22.54
Power tolerance	(W)			0~+5		
Maximum system voltage	(V)			1500		
Maximum series fuse rating	(A)			30		

*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)	323	327	331	335	338
Maximum operating voltage	V_{MPP} (V)	26.80	27.08	27.36	27.64	27.92
Maximum operating current	I_{MPP} (A)	12.05	12.08	12.12	12.18	12.23
Open-circuit voltage	V_{oc} (V)	32.15	32.43	32.71	32.99	33.27
Short-circuit current	I_{sc} (A)	12.67	12.70	12.79	12.85	12.88

*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)	430		435		440		445		450	
Backside Power Gain	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%
Total equivalent power $P_{max\ equ}$ (Wp)	452	473	457	479	462	484	467	490	473	495
Module efficiency η (%)	22.62	23.70	22.88	23.97	23.15	24.25	23.42	24.53	23.67	24.79

*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	96
Bifaciality	80 ± 5%
Front cover	3.2 mm glass, high transmission, AR coated, tempered
Encapsulation	POE
Back cover	1.8 mm black 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	1762 mm x 1133 mm x 30 mm
Weight	30 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}	-0.24 %/°C
Temp. coefficient of I_{sc}	0.040 %/°C
Nom. operating cell temp. NOCT	43 ± 2°C

Packaging information

Packaging configuration	36 pcs / pallet
Loading capacity	936 pcs / 40 HQ
Size / Pallet	2125 mm x 1140 mm x 1245 mm
Weight	1115 kg / pallet

The specifications and characteristics contained in this datasheet may deviate slightly from our actual products due to the product developments and uncertainty of measurement devices. The specifications included in the datasheet are subject to change without prior notice.

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