TIER 1 BloombergNEF

Deutsche Qualität Garantiert

TOP PERFORMER 2023 PVEL kiwa PV MODULE RELIABILITY SCORECARD

HALO
P-TYPE PERC TECHNOLOGY

MD-120E
440W-460W

High in energy yield, reliability and durability

21.35%
MAXIMUM EFFICIENCY

120
HALF CELLS

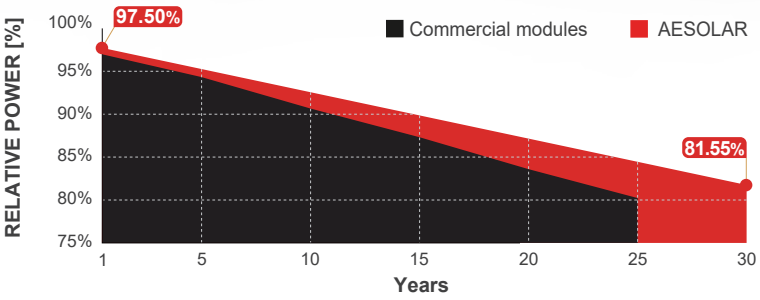
30 YEARS
Performance Warranty

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.

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

OUR PERFORMANCE WARRANTY



SYSTEM AND PRODUCT CERTIFICATIONS

IEC 61215 IEC 61730
Regular Production Surveillance
www.tuv.com
ID 1111251295

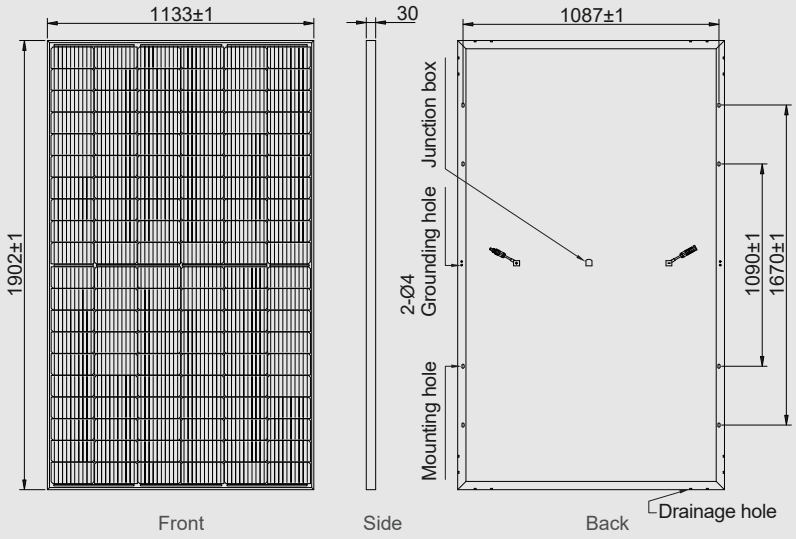
DEUTSUN®

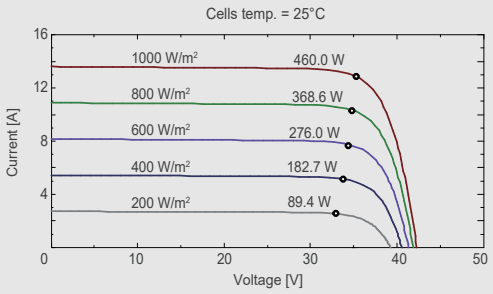
www.deutsun.com

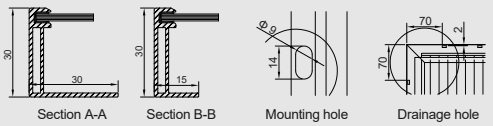
D S **MD-120E 440W-460W**

P-TYPE PERC TECHNOLOGY PV MODULE

MONO-FACIAL • BLACK







Electrical specifications (STC*):

Nominal max. power	P_{max} (Wp)	440	445	450	455	460
Maximum operating voltage	V_{MPP} (V)	34.62	34.87	35.13	35.38	35.60
Maximum operating current	I_{MPP} (A)	12.71	12.76	12.81	12.86	12.92
Open-circuit voltage	V_{oc} (V)	41.35	41.66	41.98	42.29	42.60
Short-circuit current	I_{sc} (A)	13.47	13.52	13.57	13.62	13.67
Module efficiency	η (%)	20.42	20.65	20.88	21.11	21.35
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 P_{max}: ±3%

Electrical specifications (NMOT*):

Nominal max. power	P_{max} (Wp)	331	335	338	342	345
Maximum operating voltage	V_{MPP} (V)	32.60	32.80	33.00	33.20	33.40
Maximum operating current	I_{MPP} (A)	10.17	10.21	10.25	10.29	10.34
Open-circuit voltage	V_{oc} (V)	38.80	39.00	39.20	39.40	39.60
Short-circuit current	I_{sc} (A)	10.78	10.82	10.86	10.90	10.94

*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)

Mechanical and design specification

Cell type	Gallium-doped mono c-Si PERC, half-cut cells
No. of cells	120
Front cover	3.2 mm glass, high transmission, AR coated, tempered
Encapsulation	EVA
Back cover	EVA-side black, rear-side white backsheet
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	1902 mm x 1133 mm x 30 mm
Weight	22.5 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

Temperature ratings

Operating temperature	-40 to +85°C
Temp. coefficient of P_{max}	-0.35 %/°C
Temp. coefficient of V_{oc}	-0.275 %/°C
Temp. coefficient of I_{sc}	0.045 %/°C
Nom. operating cell temp. NOCT	45 ± 2°C

Packaging information

Packaging configuration	36 pcs / pallet
Loading capacity	864 pcs / 40 HQ
Size / Pallet	1945 mm x 1140 mm x 1245 mm
Weight	847 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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