

# SHADESTAR

SMART HOT-SPOT FREE  
SHADING RESISTANT TECHNOLOGY



Deutsche  
Qualität  
Garantiert

## 420W-440W

**SME-80E**

**22.04%**  
MAXIMUM EFFICIENCY

**80**  
HALF CELLS

- ◆ Shade-resistivity through segmented-cell technology
- ◆ Highest shade-tolerability toward shading of different sizes and directions
- ◆ Smart electrical design
- ◆ Highest energy (kWh) under shading conditions
- ◆ Low LCOE under shading conditions



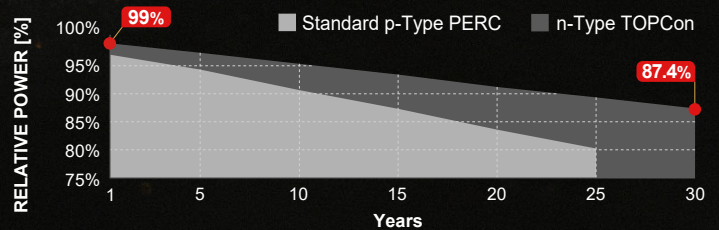
Ver. 26.3.1

**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



**AESOLAR**  
Since 2003



SHADING  
RESISTANT



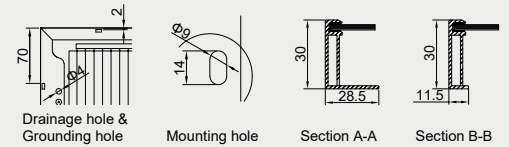
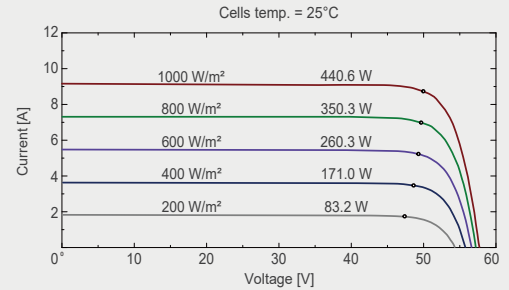
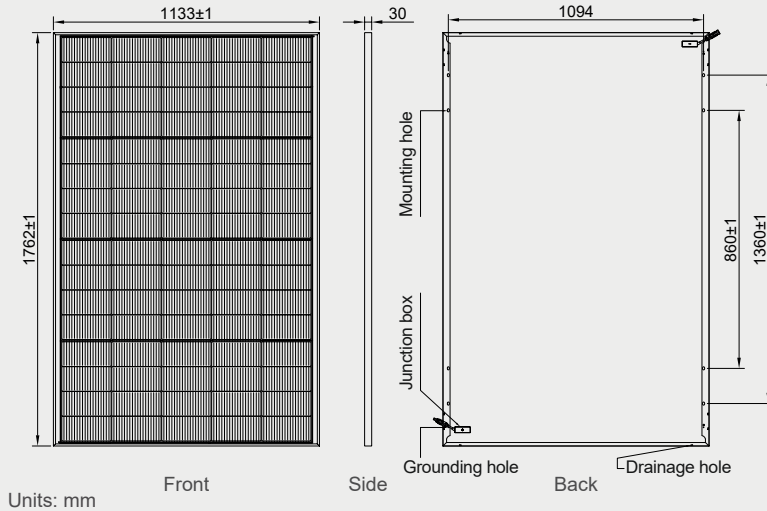
HOT SPOT  
RESISTANT



LID  
RESISTANT



HIGHLY STABLE  
AND TOUGH



### Electrical specifications (STC\*):

Parameter	Symbol	420	425	430	435	440
Nominal max. power	$P_{max}$ (Wp)	420	425	430	435	440
Maximum operating voltage	$V_{MPP}$ (V)	50.08	50.24	50.40	50.56	50.72
Maximum operating current	$I_{MPP}$ (A)	8.39	8.46	8.53	8.60	8.68
Open-circuit voltage	$V_{oc}$ (V)	57.28	57.44	57.60	57.76	57.92
Short-circuit current	$I_{sc}$ (A)	8.83	8.91	8.99	9.07	9.15
Module efficiency	$\eta$ (%)	21.04	21.29	21.54	21.79	22.04
Power tolerance	(W)	0~+5				
Maximum system voltage	(V)	1500				
Maximum series fuse rating	(A)	35				

\*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\*):

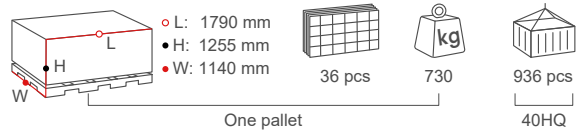
Parameter	Symbol	319.2	323.0	326.8	330.6	334.4
Nominal max. power	$P_{max}$ (Wp)	319.2	323.0	326.8	330.6	334.4
Maximum operating voltage	$V_{MPP}$ (V)	47.58	47.73	47.88	48.03	48.18
Maximum operating current	$I_{MPP}$ (A)	6.71	6.77	6.83	6.88	6.94
Open-circuit voltage	$V_{oc}$ (V)	54.42	54.57	54.72	54.87	55.02
Short-circuit current	$I_{sc}$ (A)	7.07	7.13	7.20	7.26	7.32

\*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	n-Type TOPCon technology, half-cut cells
No. of cells	80
Front cover	3.2 mm glass, high transmission, AR coated, tempered
Encapsulation	POE
Back cover	Front-side black, rear-side white backsheet
Junction box	IP68 rated
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	19 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

### Packaging information



### 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

### SYSTEM AND PRODUCT CERTIFICATIONS



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.