

Monocrystalline 120 cells

# MARS



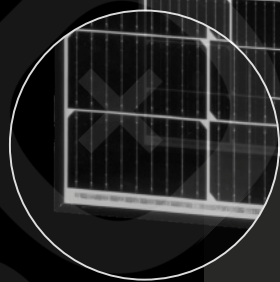
**M10 182**  
10BB



Guaranteed positive output selection 0 ~ +5 Wp by single measuring



3.2 mm anti-reflective glass



BLACK | WHITE

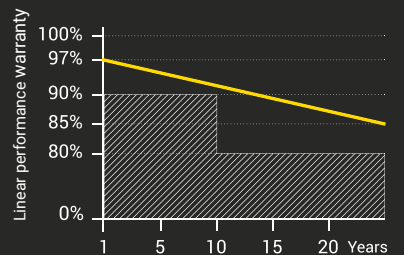


Maximum stability through aluminium soft grip frame



Maximum 5400 Pa snow load

✓ 15 years manufacturer's warranty  
25 years linear performance guarantee



## OUTPUT: 440 - 460 WATT

MARS monocrystalline 120 halfcut cell series with multibusbar M10 cells is the newest top efficiency series. Halfcut cells are split in two halves to improve the performance and they are arranged in two parallel strings for a better management of shading. Featuring a 35 mm black anodized aluminium frame, MARS series can combine visual attractiveness to conversion efficiency over 21 %.



power for a better world

STC	A-HCM440/120	A-HCM450/120	A-HCM455/120	A-HCM460/120
Maximum Power (Pmax) (W)	440	450	455	460
Open Circuit Voltage (Voc) (V)	41.00	41.40	41.60	41.80
Short Circuit Current (Isc) (A)	13.58	13.68	13.73	13.78
Voltage at Maximum Power (Vmpp) (V)	34.20	34.60	34.80	35.00
Current at Maximum Power (Impp) (A)	12.84	12.96	13.02	13.08
Module Efficiency (%)	20.32	20.78	21.01	21.24

STC (Standard Testing Condition): Irradiance 1000 W/m<sup>2</sup>, Cell Temperature 25 °C, Spectra at AM 1.5; Test uncertainty tolerance for Pmax, Voc and Isc: ±3 %

Electrical Parameters at NOCT	A-HCM440/120	A-HCM450/120	A-HCM455/120	A-HCM460/120
Maximum Power (Pmax) (W)	324	331	335	339
Open Circuit Voltage (Voc) (V)	38.28	36.68	38.88	39.08
Short Circuit Current (Isc) (A)	10.68	10.78	10.83	10.88
Voltage at Maximum Power (Vmpp) (V)	31.94	32.34	32.54	32.74
Current at Maximum Power (Impp) (A)	10.14	10.24	10.30	10.35

NOCT (Nominal Operating Cell Temperature): Irradiance 800 W/m<sup>2</sup>, Ambient Temperature 20 °C, Spectra at AM 1.5, Wind at 1 m/s

### Temperature Characteristics

Pmax Temperature Coefficients (W / °C)	-0.36 % / °C
Voc Temperature Coefficients (V / °C)	-0.28 % / °C
Isc Temperature Coefficients (A / °C)	+0.05 % / °C
NMOT Nominal Operating Cell Temperature (°C)	45 ±2 °C

### Operating Conditions

Operating Module Temperature	-40 °C ~ +85 °C
Maximum System Voltage	1500 V
Maximum Series Fuse Rating	25 A
Selection	0 ~ +5 W
Nominal Front Load	5400 Pa
Nominal Rear Load	2400 Pa
Class of Protection	II

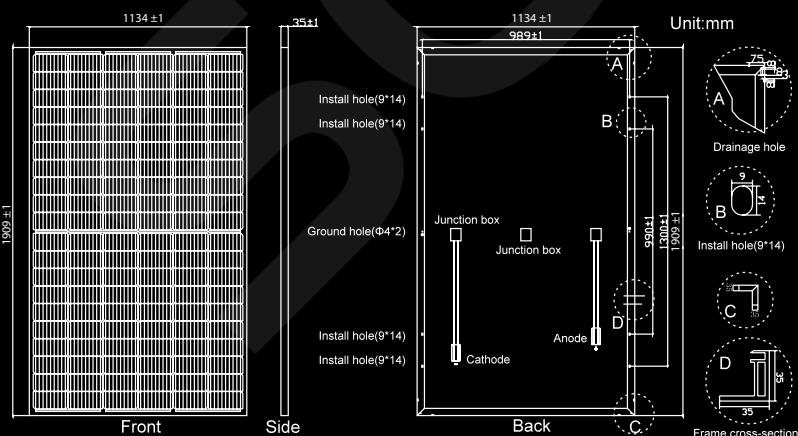
### Specifications

Cell Type	Mono M10 182 10BB
Weight	23 kg ±3 %
Dimensions	1909x1134x35 mm (±0.7 %)
Cable Cross Section Size	4 mm <sup>2</sup> , cable approx 130 cm, QC4 compatible
No. of cells	120 (6x20)
Junction Box	IP68, 3 diodes
Frame	Black anodized aluminium
Front glass	3.2 mm high transmission, low iron, tempered glass

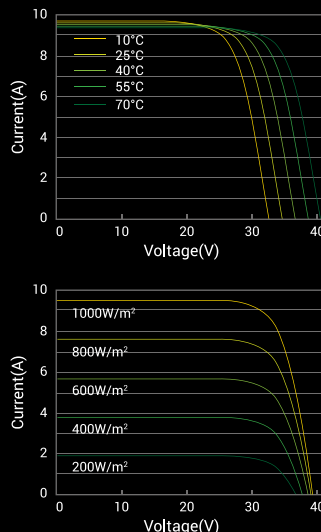
### Packing Details

Container Type	40'HC
No. of Pallets	24
Pieces per Pallet	31
Total quantity of modules	744

(1909x1134x35)



I-V Curve: (A-HCM450)



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