

Mono PERC 210mm 80 Cells

# MS(390-410)MB-40H Black Frame

390/395/400/405/410 WP



## APPLICATIONS >>



On-grid residential roof-tops



On-grid commercial/ industrial roof-tops



## High customer value

- Lower LCOE (Levelized Cost Of Energy), reduced BOS (Balance Of System) cost, shorter payback time
- Lower guaranteed first year and annual degradation
- Designed for compatibility with existing mainstream system components
- Higher return on Investment



## High energy yield

- Excellent IAM (Incident Angle Modifier) and low irradiation performance, validated by 3rd party certifications
- The unique design provides optimized energy production under inter-row shading conditions



## High reliability

- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Resistant to harsh environments such as salt, ammonia, sand, high temperature and high humidity areas
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load
- Class-C fire safety test passed



## High power up to 410W

- Large area cells based on 210mm silicon wafers and 1/2-cut cell technology
- Up to 21.2% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping effect lower series resistance and improved current collection

## MAXIMUM EFFICIENCY

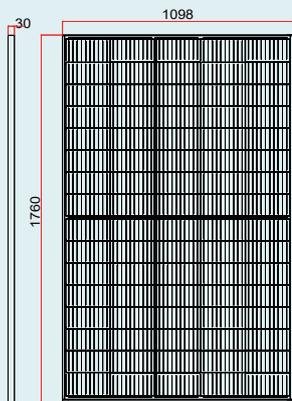
# 21.2%

## POSITIVE POWER TOLERANCE

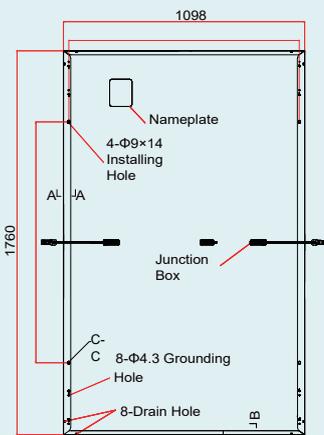
# 0 ~ +5W



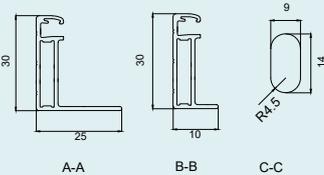
### DIMENSIONS OF PV MODULE(mm)



Front View



Back View

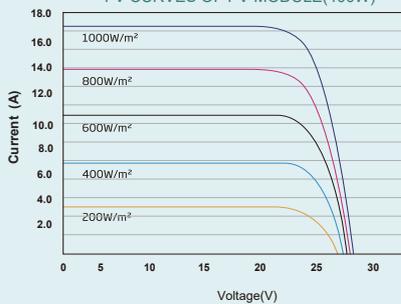


A-A

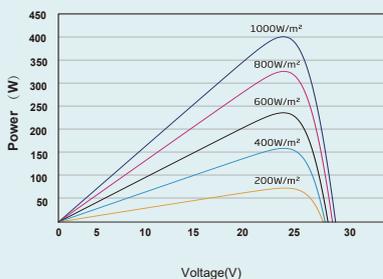
B-B

C-C

### I-V CURVES OF PV MODULE(400W)



### P-V CURVES OF PV MODULE(400W)



### ELECTRICAL DATA (STC)

Peak Power Watts- $P_{MAX}$ (Wp)*	390	395	400	405	410
Power Tolerance- $P_{MAX}$ (W)	0 ~ +5				
Maximum Power Voltage- $V_{MPP}$ (V)	24.0	24.2	24.4	24.6	24.8
Maximum Power Current- $I_{MPP}$ (A)	16.26	16.32	16.39	16.45	16.54
Open Circuit Voltage- $V_{OC}$ (V)	28.9	29.1	29.4	29.6	29.8
Short Circuit Current- $I_{SC}$ (A)	17.26	17.33	17.40	17.47	17.51
Module Efficiency $\eta_m$ (%)	20.2	20.5	20.7	21.0	21.2

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5. \*Measuring tolerance: ±3%.

### ELECTRICAL DATA (NOCT)

Maximum Power- $P_{MAX}$ (Wp)	295	299	302	306	309
Maximum Power Voltage- $V_{MPP}$ (V)	22.3	22.5	22.7	22.9	23.1
Maximum Power Current- $I_{MPP}$ (A)	13.22	13.27	13.33	13.37	13.38
Open Circuit Voltage- $V_{OC}$ (V)	27.2	27.5	27.7	27.9	28.1
Short Circuit Current- $I_{SC}$ (A)	13.91	13.96	14.02	14.07	14.13

NOCT: Irradiance at 800W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1m/s.

### MECHANICAL DATA

Solar Cells	Monocrystalline
Cell Orientation	80 cells
Module Dimensions	1760x1098x30 mm (69.88x43.22x1.18 inches)
Weight	21.5 kg
Glass	3.2 mm (0.13 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant Material	EVA
Backsheet	White
Frame	30 mm(1.18 inches) Black, anodized aluminium alloy
J-Box	IP 68 rated (3 bypass diodes)
Cables	Photovoltaic Technology Cable 4.0mm <sup>2</sup> (0.006 inches <sup>2</sup> ) Portrait: N 300mm/P 300mm(11.8/11.8 inches) Length can be customized
Connector	MC4 Compatible

\*Please refer to regional datasheet for specified connector.

### TEMPERATURE RATINGS

NOCT(Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of $P_{MAX}$	- 0.34%/°C
Temperature Coefficient of $V_{OC}$	- 0.25%/°C
Temperature Coefficient of $I_{SC}$	0.04%/°C

### MAXIMUM RATINGS

Operational Temperature	- 40 ~ +85°C
Maximum System Voltage	1500V DC (IEC)
	1000V DC (IEC)
Max Series Fuse Rating	20A

### WARRANTY

- 15 year Product Workmanship Warranty
- 25 year Power Warranty
- 2.5% first year degradation
- 0.5% Annual Power Attenuation

\*Please refer to product warranty for details.

### PACKAGING CONFIGURATION

- Modules per pallet: 37 pieces
- Modules per 40' container: 988 pieces



CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

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