

Mono PERC 182mm 108 Cells

# MS(390-410)MB-54H Full Black

390/395/400/405/410 WP



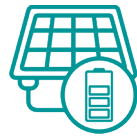
## Better appearance

- Full-black tone makes the modules blend perfectly with the building roof, ideal for residential roofs and BIPVs
- Cleaner and more aesthetic than traditional modules and complements your home's architectural style
- The new layout design is uniform overall, and the vision is extremely beautiful



## 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

## APPLICATIONS >>



On-grid residential roof-tops



On-grid commercial/ industrial roof-tops



## MAXIMUM EFFICIENCY

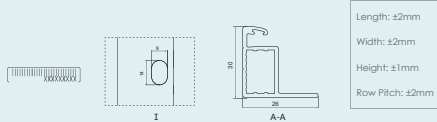
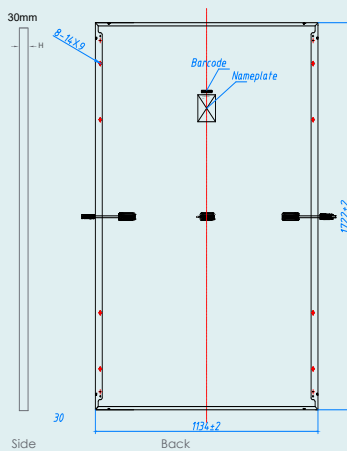
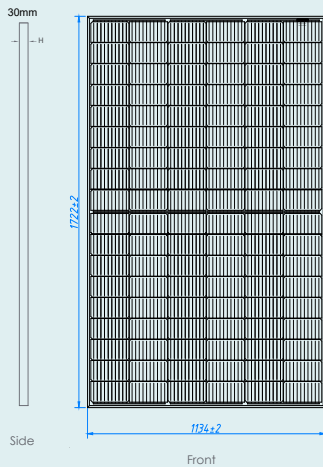
# 21.00%

## POSITIVE POWER TOLERANCE

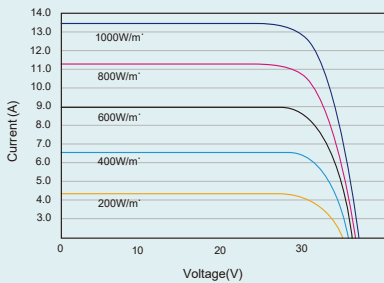
# 0 ~ +5W



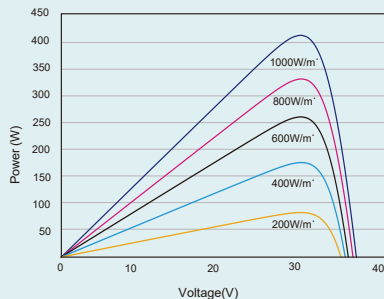
### DIMENSIONS OF PV MODULE(mm)



### I-V CURVES OF PV MODULE(410W)



### P-V CURVES OF PV MODULE(410W)



### ELECTRICAL DATA (STC)

Parameter	390	395	400	405	410
Peak Power Watts- $P_{MAX}$ (Wp)*	390	395	400	405	410
Power Tolerance- $P_{MAX}$ (W)	0 ~ +5				
Maximum Power Voltage- $V_{MPP}$ (V)	30.22	30.32	30.42	30.52	30.62
Maximum Power Current- $I_{MPP}$ (A)	12.91	13.03	13.15	13.27	13.39
Open Circuit Voltage- $V_{OC}$ (V)	36.10	36.18	36.27	36.35	36.42
Short Circuit Current- $I_{SC}$ (A)	13.64	13.71	13.78	13.85	13.92
Module Efficiency $\eta_m$ (%)	20.18	20.23	20.48	20.74	21.00

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

### ELECTRICAL DATA (NOCT)

Parameter	290	294	298	301	305
Maximum Power- $P_{MAX}$ (Wp)	290	294	298	301	305
Maximum Power Voltage- $V_{MPP}$ (V)	28.11	28.26	28.42	28.56	28.72
Maximum Power Current- $I_{MPP}$ (A)	10.33	10.40	10.47	10.55	10.62
Open Circuit Voltage- $V_{OC}$ (V)	34.76	34.83	34.90	34.98	35.05
Short Circuit Current- $I_{SC}$ (A)	11.01	11.07	11.13	11.19	11.24

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

### MECHANICAL DATA

Solar Cells	Monocrystalline
Cell Orientation	108 cells
Module Dimensions	1722×1134×30mm (67.8×44.65×1.18 inches)
Weight	22 kg
Glass	3.2mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass
Encapsulant Material	EVA/POE
Backsheet	Black
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	25A

### 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: 962 pieces



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

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