

Mono PERC 210mm 120 Cells

## MS(390-410)MDG-40H Full Black Bifacial

390/395/400/405/410 WP



### Lightweight Double-Glass Tailored for European Distribution

# Twisun

- Full Black



## APPLICATIONS >>



On-grid residential  
roof-tops



On-grid commercial/  
industrial roof-tops



### 30-year Lifespan

Wide range of applications for severe weather with a service life of over 30 years.



### Lightweight

Ultra-thin dual-glass design, tailored for European distribution and easy installation.



### Elegance

Full-black aesthetics, the best choice for BAPV. More excellent for snowy environments.



### Adaptability

1/3-cut low-current cell technology adaptable to mainstream European inverters.



### Safety

Higher fire safety, more suitable for high density residential areas.



### High Power

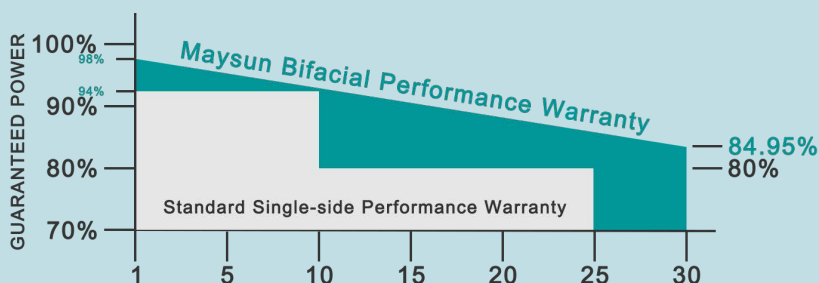
Bifacial power generation with 5%-25% increase in output for different conditions.

## MAXIMUM EFFICIENCY

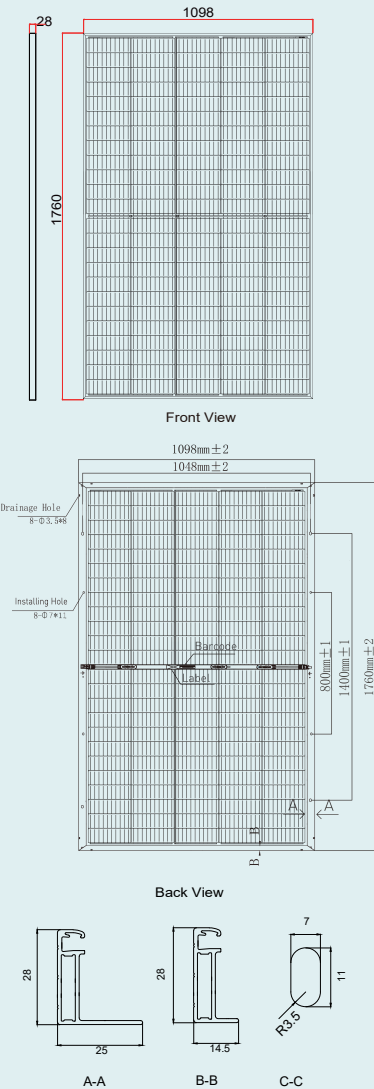
# 21.2%

## POSITIVE POWER TOLERANCE

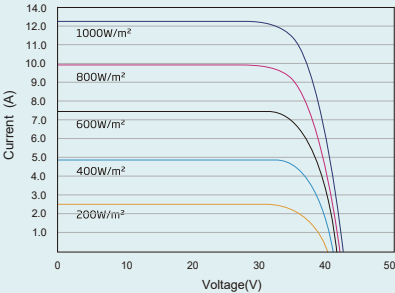
# 0 ~+5W



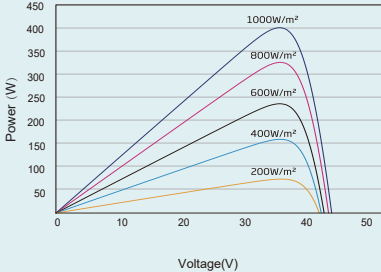
DIMENSIONS OF PV MODULE(mm)



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)	33.8	34.0	34.2	34.4	34.6
Maximum Power Current- $I_{MPP}$ (A)	11.54	11.62	11.70	11.77	11.84
Open Circuit Voltage- $V_{OC}$ (V)	40.8	41.0	41.2	41.4	41.6
Short Circuit Current- $I_{SC}$ (A)	12.14	12.21	12.28	12.34	12.41
Module Efficiency $\eta_m$ (%)	20.3	20.5	20.8	21.1	21.2

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

Electrical characteristics with different rear side power gain

5% Maximum Power- $P_{MAX}$ (Wp)	409.5	414.75	420.0	425.25	430.5
5% Module Efficiency $\eta_m$ (%)	21.32	21.52	21.84	22.15	22.26
15% Maximum Power- $P_{MAX}$ (Wp)	448.5	454.25	460	465.75	471.5
15% Module Efficiency $\eta_m$ (%)	23.35	23.58	23.92	24.26	24.38
25% Maximum Power- $P_{MAX}$ (Wp)	487.5	493.75	500.0	506.25	512.5
25% Module Efficiency $\eta_m$ (%)	25.38	25.63	26.0	26.38	26.5

Power Bifaciality: 70±5%.

ELECTRICAL DATA (NOCT)

Maximum Power- $P_{MAX}$ (Wp)	295	298	302	306	310
Maximum Power Voltage- $V_{MPP}$ (V)	31.8	32.0	32.2	32.5	32.8
Maximum Power Current- $I_{MPP}$ (A)	9.26	9.32	9.38	9.41	9.45
Open Circuit Voltage- $V_{OC}$ (V)	38.4	38.6	38.8	38.9	39.1
Short Circuit Current- $I_{SC}$ (A)	9.78	9.84	9.90	9.95	9.99

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

MECHANICAL DATA

Solar Cells	Monocrystalline
Cell Orientation	120 cells (5 x 24)
Module Dimensions	1760×1098×28 mm (69.29×43.22×1.10 inches)
Weight	19.5 kg
Front Glass	1.6 mm (0.063 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	POE
Back Glass	1.6 mm (0.063 inches), High Transmission, AR Coated Heat Strengthened Glass
Frame	28 mm(1.10 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(11.81/11.81 inches) Length can be customized
Connector	MC4 Compatible

\*Please refer to regional datasheet for specific connector.

TEMPERATURE RATINGS

NOCT(Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of $P_{MAX}$	- 0.35%/°C
Temperature Coefficient of $V_{OC}$	- 0.27%/°C
Temperature Coefficient of $I_{SC}$	0.048%/°C

(Do not connect Fuse in Combiner Box with two or more strings in parallel connection)

WARRANTY

30 years Product Warranty
30 years Power Warranty
2% First Year Degradation
0.45% Annual Power Degradation

(Please refer to product warranty for details)

APPLICATION ENVIRONMENT

Operational Temperature	-40~+85°C
Maximum System Voltage	1500VDC
Max Series Fuse Rating	(IEC) 25A
Mechanical Performance	P 3600 Pa/N 1600Pa

PACKAGING CONFIGURATION

Modules per pallet: 39 pieces
Modules per 40' container: 1014 pieces



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

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