

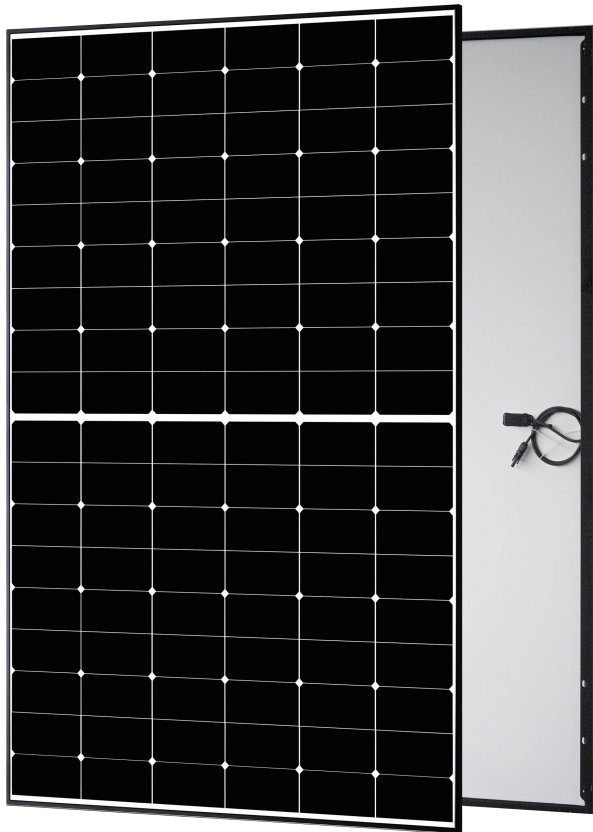
IBC Technology

1/2 Cut

Black Frame 405-450W

MS(405-450)BC-54H
Mono IBC 182mm 108 Cells

Advanced Solar Technology



Better Appearance

Without the visual impact of the welding strips on the front-side, the pure beauty of the solar cells is perfectly presented.



High Power Generation Efficiency

There is no metal welding strips on the front-side of the module. The power generation area of the front-side increases by 2.5%.



No Light Pollution

The light reflectivity of the module is only 1.7% due to no welding strip technology on the front-side. It reduces light pollution to the environment and neighbors.



No Hot Spot Effect When be Blocked

Using unique all back contact technology, the the positive and negative metal electrodes flow normally on the back-side when be blocked, reducing the risk of hot spots.



Long Warranty of 25 Years

The encapsulating materials use TPE backsheets, which is covered with PVF (Tedlar) film and use improved EPE film, ensuring service life of 25 years.



Better Performance in Low Light Scenes

No shield of metal electrodes on the front-side enables a spectral absorption range of 300nm-1200nm, which extends the working time. The maximum power generation gain is 2.01%.

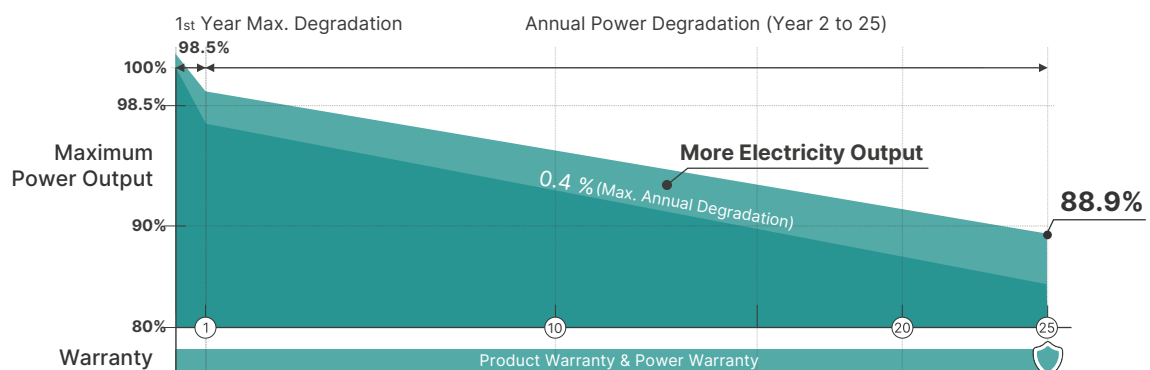


23.00%
Maximum Efficiency

0 ~ +5W
Positive Power Tolerance

25 Years
Product Warranty

25 Years
Power Warranty



Electrical Data(STC)

Test Conditions	STC	STC	STC	STC	STC	STC	STC	STC	STC	STC
Peak Power Watts- P_{MAX} (Wp)*	405	410	415	420	425	430	435	440	445	450
Power Tolerance- P_{MAX} (W)	0 ~ +5									
Maximum Power Voltage- V_{MPP} (V)	31.84	32.04	32.24	32.44	32.64	32.84	33.04	33.24	33.44	33.64
Maximum Power Current- I_{MPP} (A)	12.75	12.81	12.88	12.95	13.03	13.10	13.17	13.25	13.31	13.38
Open Circuit Voltage- V_{OC} (V)	38.13	38.33	38.53	38.73	38.93	39.13	39.33	39.53	39.73	39.93
Short Circuit Current- I_{SC} (A)	13.78	13.85	13.92	14.00	14.07	14.15	14.22	14.29	14.37	14.45
Module Efficiency η_m (%)	20.80	21.00	21.30	21.50	21.80	22.00	22.30	22.50	22.80	23.00

* STC: Air Mass AM1.5, Irradiance at 1000W/m², Cell Temperature 25°C / Measuring tolerance: ±3%.

Electrical Data(NOCT)

Test Conditions	NOCT	NOCT	NOCT	NOCT	NOCT	NOCT	NOCT	NOCT	NOCT	NOCT
Peak Power Watts- P_{MAX} (Wp)*	302	306	310	314	318	321	325	329	332	336
Power Tolerance- P_{MAX} (W)	0 ~ +5									
Maximum Power Voltage- V_{MPP} (V)	29.06	29.24	29.42	29.60	29.78	29.97	30.15	30.33	30.51	30.70
Maximum Power Current- I_{MPP} (A)	10.47	10.52	10.57	10.62	10.67	10.72	10.78	10.85	10.90	10.95
Open Circuit Voltage- V_{OC} (V)	35.79	35.98	36.17	36.36	36.55	36.74	36.93	37.12	37.30	37.49
Short Circuit Current- I_{SC} (A)	11.12	11.18	11.24	11.30	11.36	11.43	11.49	11.54	11.61	11.64
Module Efficiency η_m (%)	20.80	21.00	21.30	21.50	21.80	22.00	22.30	22.50	22.80	23.00

* NOCT: Irradiance at 800W/m², Cell Temperature 20°C, Wind Speed 1m/s / Measuring tolerance: ±3%.

Mechanical Data

Solar Cells	Monocrystalline
Cell Orientation	108 cells
Module Dimensions	1722mm × 1134mm × 30mm
Weight	20.80kg
Front Glass	3.2mm, High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	EVA
Backsheet	White
Frame	30mm, Black, Anodized Aluminium Alloy
J-Box	IP 68 Rated(3 Bypass Diodes)
Cables	Photovoltaic Technology Cable 4.0mm ² Portrait: N 200mm / P 400mm Length Can be Customized
Connector	MC4 Compatible

* Please refer to regional datasheet for specific connector.

Temperature Ratings

NOCT(Nominal Operating Cell Temperature)	45°C (±2°C)
Temperature Coefficient of P_{MAX}	-0.29% / °C
Temperature Coefficient of V_{OC}	-0.23% / °C
Temperature Coefficient of I_{SC}	0.05% / °C

* Do not connect fuse in combiner box with two or more strings in parallel connection.

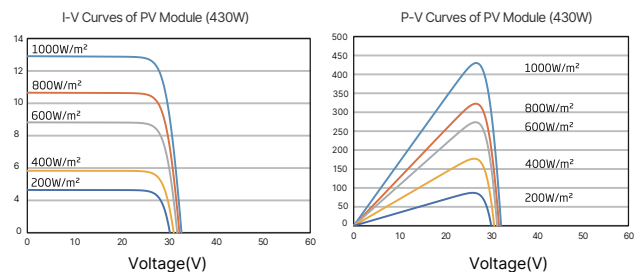
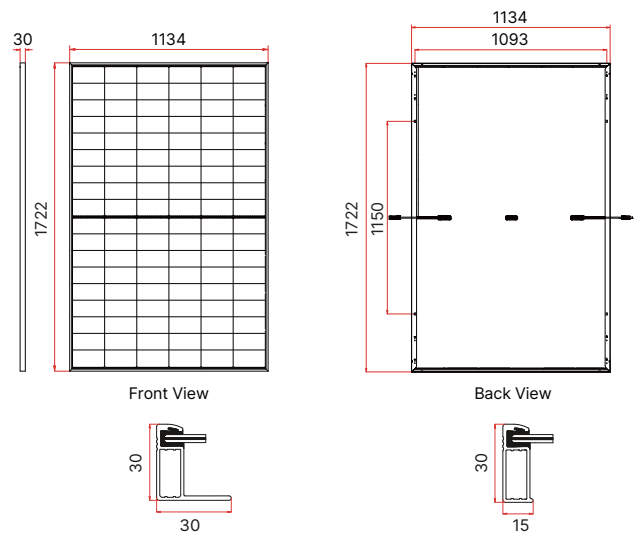
Application Environment

Operational Temperature	-40 ~ +85°C
Maximum System Voltage	1500VDC(IEC)
Max Series Fuse Rating	25A
Mechanical Performance	P 5400Pa / N 2400Pa

Packaging Configuration

Modules Per Pallet:	36 Pieces
Modules Per 40' Container:	936 Pieces

Dimensions of PV Module (mm)



Warranty

25 Years Product Warranty

25 Years Power Warranty

1.5% First Year Degradation

0.4% Annual Power Degradation

* Please refer to product warranty for details.