

FENGFA SOLAR



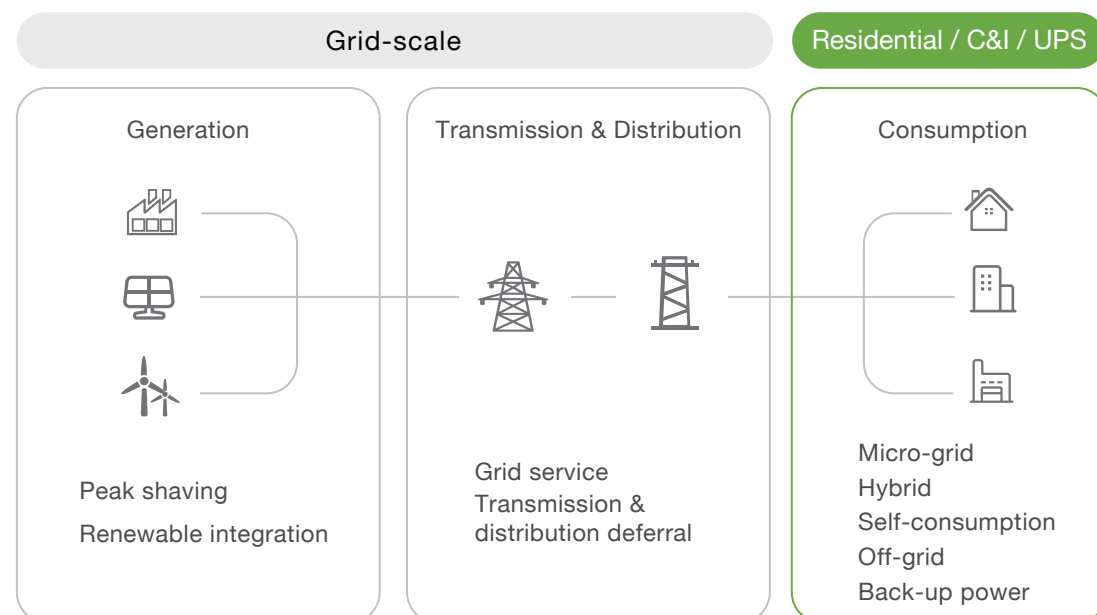
»» Long History&Experienced

18Years Found in 2004	100+ Countries & Regions	60000+ System Sold Globaly	8.5GW PV Production 3.95GWH ESS

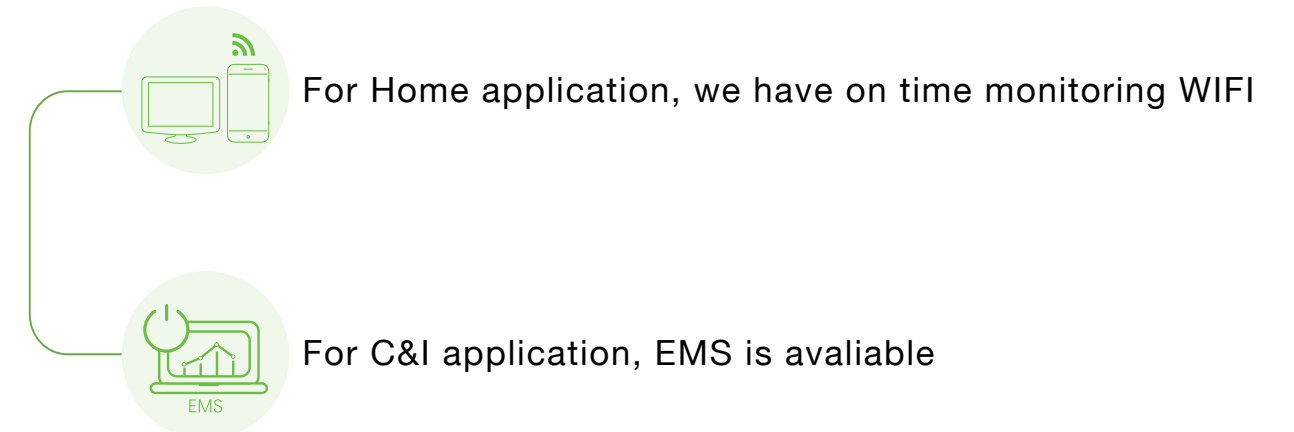
»» Safety & Reliable Products First

- Strict Quaity Control & Perfect Research&Development
- The safest chemistry LiFePO4 for Lithium ion Battery
- Tier 1 Solar Cells to make Greensun solar panels

»» Core Application:Residential ESS C&I Application



»» Smart Energy



Functions:

- PV Power Self-Consumption
- Peak Shaving
- Backup Power Supply, UPS/EPS
- Load Shifting
- Monitor your system 24/7 and upgrade it remotely Set parameters control

»» Global Delivery



N-Type



GSM-M10/108NHBD
415-435W

N-Type TOPCON
Bifacial Dual Glass
MonoSilicon PV Module

435W
Maximum Power Output

22.27%
Maximum Module Efficiency

0~+5W
Power Output Guarantee



LCOE N-type Topcon technology for lower LCOE
The lower temperature coefficient and better low irradiance performance of Topcon technology can effectively reduce LCOE.

Double-sided power generation, higher yield
The dual-glass module has a double-sided ratio of up to 80% and a power generation gain of 7%-25% on the back side.

Ultra-low Degradation, longer warranty, higher output
·First-year degradation 1% and annual degradation at 0.4%
·Up to 25 years product warranty and 30 years power warranty

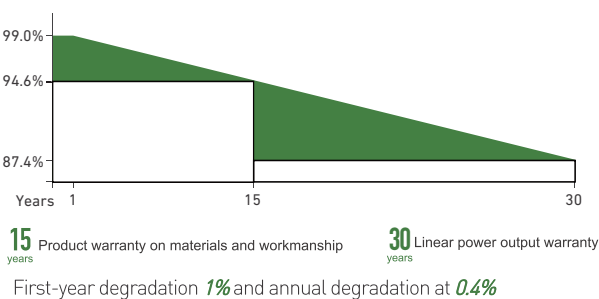
Universal solution for residential and C&I application
·Easy for integration, designed for compatibility with existing mainstream inverters and diverse mounting systems
·Perfect size and low weight for handling and installation
·Most valuable solution on low load capacity rooftops (weight similar to backsheet version)
·Mechanical performance up to 5400 Pa positive load and 4000 Pa negative load

PID Resistance
Excellent Anti-PID performance guarantee via optimized mass-production process and materials control.

Delivers Reliable Performance Over Time

- manufacturer of crystalline silicon photovoltaic modules
- Fully automatic facility and world-class technology
- Rigorous quality control to meet the highest standard: ISO9001:2015, ISO14001: 2015 and OHSAS: 18001 2007
- Tested for harsh environments (salt mist, ammonia corrosion and sand blowing test: IEC 61701, IEC 62716, DIN EN 60068-2- 68)
- Long term reliability tests
- 2x100% EL inspection ensuring defect-free modules

Linear Performance Warranty



Electrical Specification (STC*)

Maximum Power	Pmax[W]	415	420	425	430	435
Maximum Power Voltage	Vmp[V]	31.32	31.51	31.70	31.88	32.07
Maximum Power Current	Imp[A]	13.25	13.33	13.41	13.49	13.57
Open Circuit Voltage	Voc[V]	37.92	38.11	38.30	38.49	38.68
Short Circuit Current	Isc[A]	13.99	14.07	14.15	14.23	14.31
Module Efficiency	[%]	21.25	21.51	21.76	22.02	22.27
Power Output Tolerance	[W]	0~+5				

* Irradiance 1000W/m², Module Temperature 25°C, Air Mass 1.5

Electrical Specification (NOCT*)

Maximum Power	Pmax [W]	312	316	320	323	327
Maximum Power Voltage	Vmp [V]	29.21	29.34	29.50	29.63	29.78
Maximum Power Current	Imp [A]	10.68	10.76	10.83	10.91	10.98
Open Circuit Voltage	Voc[V]	36.02	36.20	36.38	36.56	36.74
Short Circuit Current	Isc [A]	11.29	11.36	11.42	11.49	11.55

* Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Mechanical Data

Number of Cells	108 Cells (6×18)
Dimensions of Module L*W*H (mm)	1722×1134×30mm
Weight (kg)	24.5 kg
Front Side Glass	High transparency solar glass 2.0mm
Back Side Glass	High transparency solar glass 2.0mm
Frame	Silver, anodized aluminium alloy
J-Box	IP68 Rated
Cable	4.0mm² (0.006 inches²), 300mm (11.8 inches)
Number of diodes	3
Wind/ Snow Load	4000Pa/ 5400Pa*
Connector	MC Compatible

* For more details please check the installation manual

Temperature Ratings

Nominal Operating Cell Temperature [NOCT]	45±2°C
Temperature Coefficient of Isc	+0.040%/°C
Temperature Coefficient of Voc	-0.240%/°C
Temperature Coefficient of P _{MAX}	-0.300%/°C

Maximum Ratings

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Max Series Fuse Rating	25A

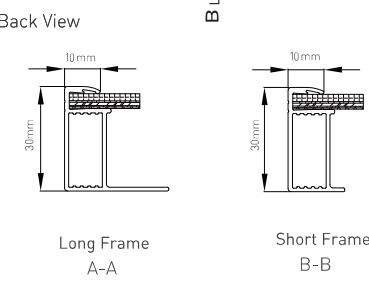
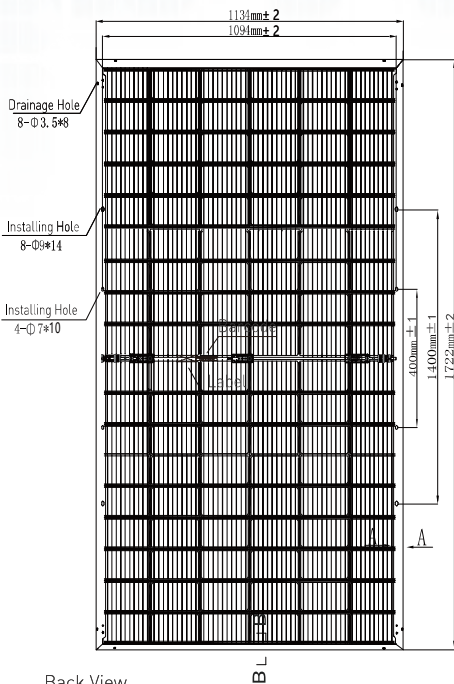
Packaging Configuration

Module per box	37 pieces
Module per 40' container	962 pieces

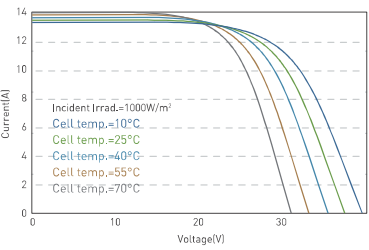
Optional

Connector	MC Original
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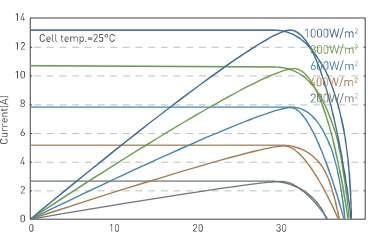
Module Dimension



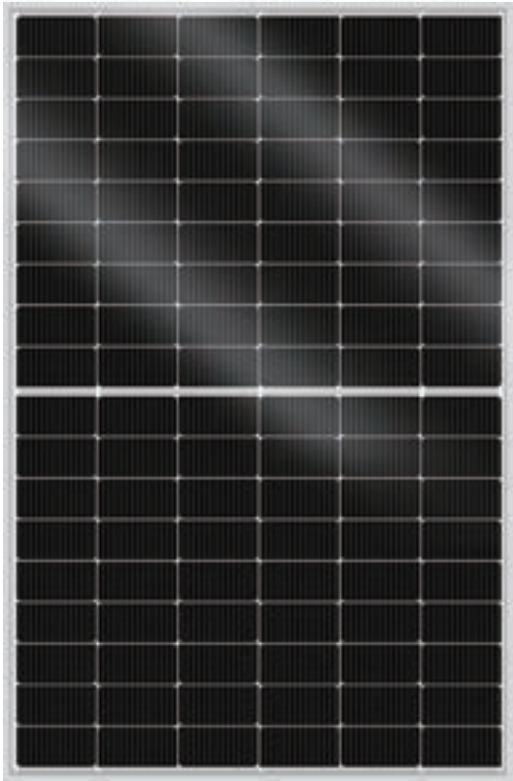
I-V Curve at Different Temperature (420W)



I-V/P-V Curve at Different Irradiation (420W)



N-Type



GSM-M10/108H
420-440W
N-Type TOPCON
High Efficiency
Mono Solar Panel
Half-Cut Technology

440W
Maximum Power Output

22.53%
Maximum Module Efficiency

0~+5W
Power Output Guarantee



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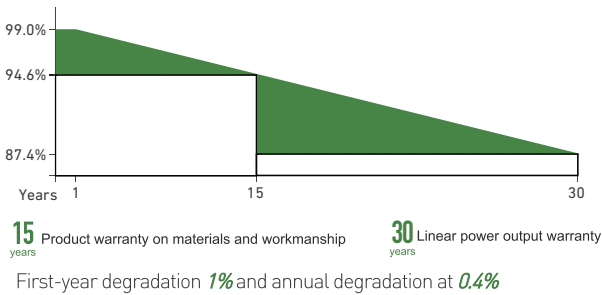


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- 2×100% EL inspection ensuring defect-free modules

Linear Performance Warranty



Electrical Specification (STC*)

Maximum Power	Pmax[W]	420	425	430	435	440
Maximum Power Voltage	Vmp[V]	31.51	31.70	31.88	32.07	32.26
Maximum Power Current	Imp[A]	13.33	13.41	13.49	13.57	13.65
Open Circuit Voltage	Voc[V]	38.11	38.30	38.49	38.68	38.87
Short Circuit Current	Isc[A]	14.07	14.15	14.23	14.31	14.39
Module Efficiency	[%]	21.51	21.76	22.02	22.27	22.53
Power Output Tolerance	[W]	0~+5				

* Irradiance 1000W/m², Module Temperature 25°C, Air Mass 1.5

Electrical Specification (NOCT*)

Maximum Power	Pmax [W]	316	320	323	327	331
Maximum Power Voltage	Vmp [V]	29.34	29.50	29.63	29.78	29.92
Maximum Power Current	Imp [A]	10.76	10.83	10.91	10.98	11.06
Open Circuit Voltage	Voc[V]	36.20	36.38	36.56	36.74	36.92
Short Circuit Current	Isc [A]	11.36	11.42	11.49	11.55	11.62

* Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Mechanical Data

Number of Cells	108 Cells (6×18)
Dimensions of Module L*W*H (mm)	1722×1134×30mm
Weight [kg]	22.0 kg
Front Side Glass	High transparency solar glass 3.2mm
Backsheet	White
Frame	Silver, anodized aluminium alloy
J-Box	IP68 Rated
Cable	4.0mm² (0.006 inches²), 300mm (11.8 inches)
Number of diodes	3
Wind/ Snow Load	4000Pa/ 5400Pa*
Connector	MC Compatible

* For more details please check the installation manual

Temperature Ratings

Nominal Operating Cell Temperature [NOCT]	45±2°C
Temperature Coefficient of Isc	+0.040%/°C
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Maximum Ratings

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

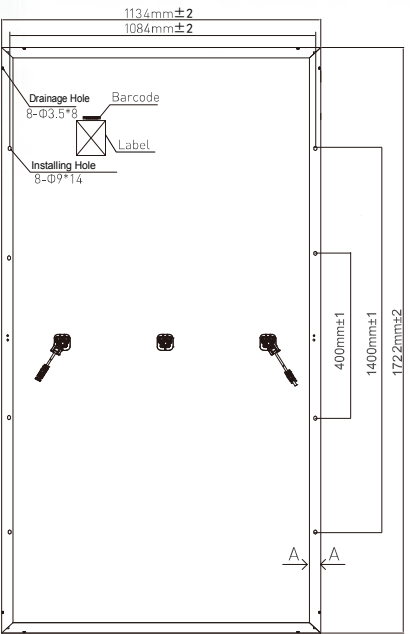
Packaging Configuration

Module per box	37 pieces
Module per 40' container	962 pieces

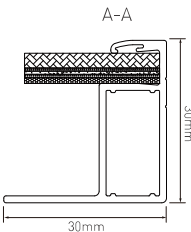
Optional

Connector	MC Original
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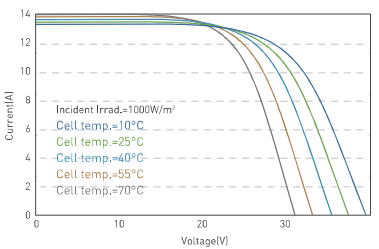
Module Dimension



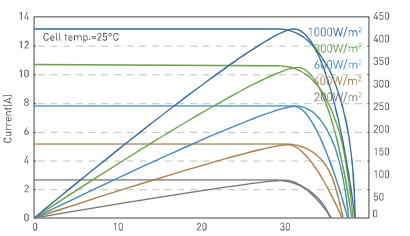
Back View



I-V Curve at Different Temperature (420W)



I-V/P-V Curve at Different Irradiation (420W)



N-Type



GSM-M10/144NHBD
565-585W

N-Type TOPCON
Bifacial Dual Glass
Mono Silicon PV Module

585W 22.64% 0~+5W
Maximum Power Maximum Module Power Output
Output Efficiency Guarantee



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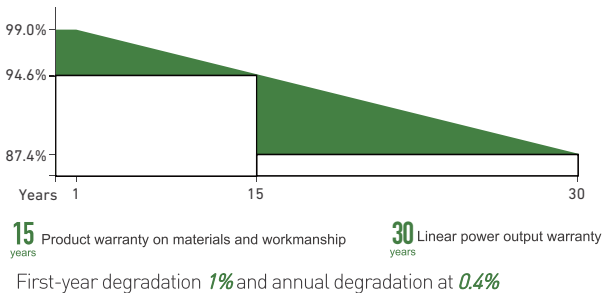


PID Resistance
Excellent Anti-PID performance guarantee via optimized mass-production process and materials control.

Delivers Reliable Performance Over Time

- manufacturer of crystalline silicon photovoltaic modules
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- Long term reliability tests
- 2x100% EL inspection ensuring defect-free modules

Linear Performance Warranty



Electrical Specification (STC*)

Maximum Power	Pmax(W)	565	570	575	580	585
Maximum Power Voltage	Vmp(V)	42.14	42.29	42.44	42.59	42.74
Maximum Power Current	Imp(A)	13.41	13.48	13.55	13.62	13.69
Open Circuit Voltage	Voc(V)	50.87	51.07	51.27	51.47	51.67
Short Circuit Current	Isc(A)	14.19	14.25	14.31	14.37	14.43
Module Efficiency	(%)	21.87	22.07	22.26	22.45	22.64
Power Output Tolerance	(W)	0~+5				

* Irradiance 1000W/m², Module Temperature 25°C, Air Mass 1.5

Electrical Specification (NOCT*)

Maximum Power	Pmax (W)	425	429	432	436	440
Maximum Power Voltage	Vmp (V)	39.52	39.65	39.78	39.87	39.96
Maximum Power Current	Imp (A)	10.75	10.81	10.87	10.94	11.01
Open Circuit Voltage	Voc(V)	48.32	48.51	48.70	48.89	49.08
Short Circuit Current	Isc (A)	11.46	11.50	11.55	11.60	11.65

* Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Mechanical Data

Number of Cells	144 Cells (6×24)
Dimensions of Module L*W*H (mm)	2279×1134×30mm
Weight (kg)	32.0 kg
Front Side Glass	High transparency solar glass 2.0mm
Back Side Glass	High transparency solar glass 2.0mm
Frame	Silver, anodized aluminium alloy
J-Box	IP68 Rated
Cable	4.0mm² (0.006 inches²), 300mm (11.8 inches)
Number of diodes	3
Wind/ Snow Load	4000Pa/ 5400Pa*
Connector	MC Compatible

* For more details please check the installation manual

Temperature Ratings

Nominal Operating Cell Temperature [NOCT]	45±2°C
Temperature Coefficient of Isc	+0.040%/°C
Temperature Coefficient of Voc	-0.240%/°C
Temperature Coefficient of P _{MAX}	-0.300%/°C

Maximum Ratings

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Max Series Fuse Rating	25A

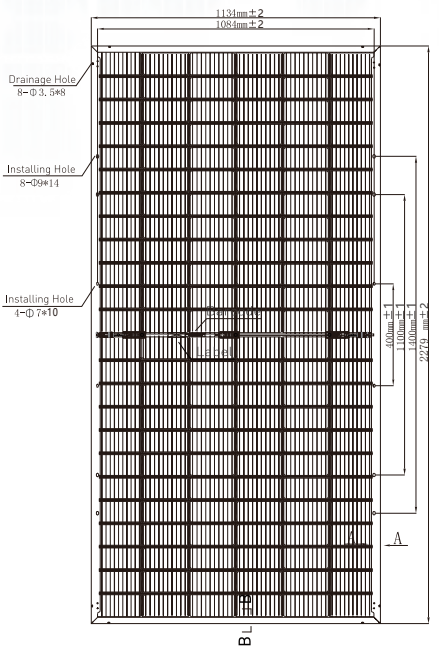
Packaging Configuration

Module per box	36 pieces
Module per 40' container	720 pieces

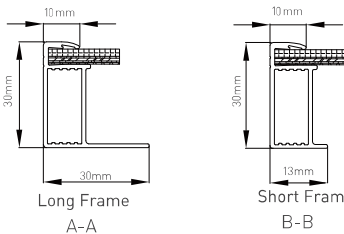
Optional

Connector	MC Original
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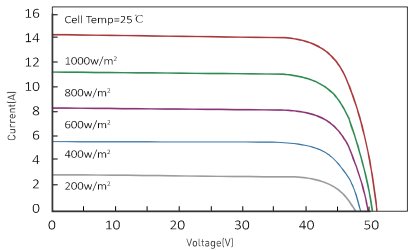
Module Dimension



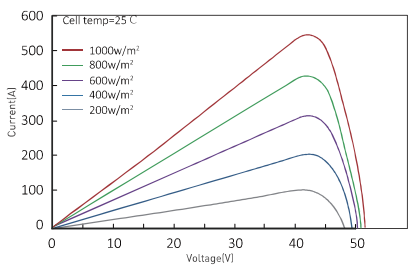
Back View



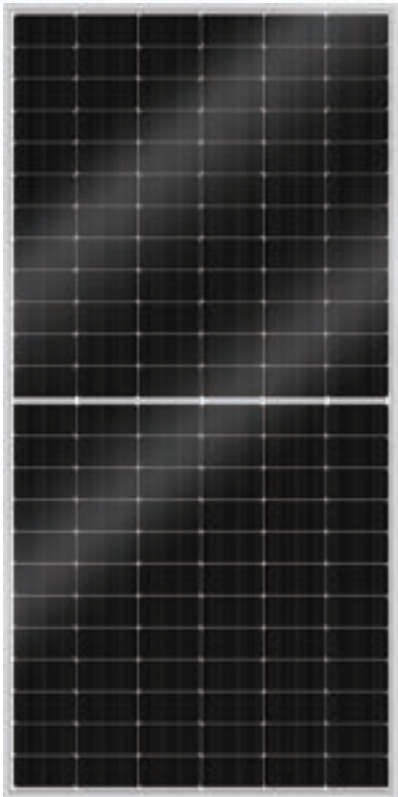
I-V Curve at Different Temperature (565W)



I-V/P-V Curve at Different Irradiation (565W)



N-Type



GSM-M10/144H

570-590W

N-Type TOPCON

High Efficiency

Mono Solar Panel

Half-Cut Technology

590W

Maximum Power
Output

22.84%

Maximum Module
Efficiency

0~+5W

Power Output
Guarantee



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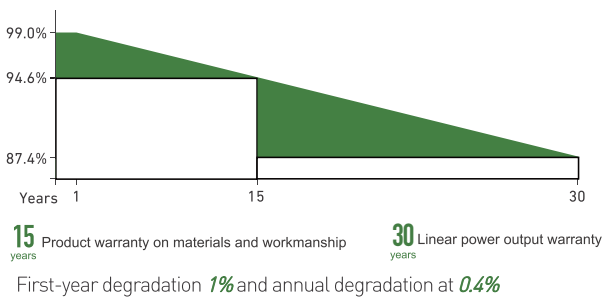
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- 2x100% EL inspection ensuring defect-free modules

Linear Performance Warranty



Electrical Specification (STC*)

Maximum Power	Pmax(W)	570	575	580	585	590
Maximum Power Voltage	Vmp(V)	42.07	42.22	42.37	42.52	42.67
Maximum Power Current	Imp(A)	13.55	13.62	13.69	13.76	13.83
Open Circuit Voltage	Voc(V)	50.74	50.88	51.02	51.16	51.30
Short Circuit Current	Isc(A)	14.31	14.39	14.47	14.55	14.63
Module Efficiency	[%]	22.06	22.25	22.44	22.64	22.84
Power Output Tolerance	[W]	0~+5				

* Irradiance 1000W/m², Module Temperature 25°C, Air Mass 1.5

Electrical Specification (NOCT*)

Maximum Power	Pmax (W)	429	432	436	440	444
Maximum Power Voltage	Vmp (V)	39.51	39.60	39.69	39.81	39.92
Maximum Power Current	Imp (A)	10.85	10.92	10.99	11.05	11.12
Open Circuit Voltage	Voc(V)	48.20	48.33	48.46	48.60	48.73
Short Circuit Current	Isc (A)	11.55	11.62	11.68	11.75	11.82

* Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Mechanical Data

Number of Cells	144 Cells(6x24)
Dimensions of Module L*W*H (mm)	2279x1134x30mm
Weight (kg)	29.4 kg
Glass	High transparency solar glass 3.2mm (0.13 inches)
Backsheet	White
Frame	Silver, anodized aluminium alloy
J-Box	IP68 Rated
Cable	4.0mm ² (0.006 inches ²), 300mm (11.8 inches)
Number of diodes	3
Wind/ Snow Load	4000Pa/ 5400Pa*
Connector	MC Compatible

* For more details please check the installation manual

Temperature Ratings

Nominal Operating Cell Temperature (NOCT)	45±2°C
Temperature Coefficient of Isc	+0.040%/°C
Temperature Coefficient of Voc	-0.240%/°C
Temperature Coefficient of Pmax	-0.300%/°C

Packaging Configuration

Module per box	36 pieces
Module per 40' container	720 pieces

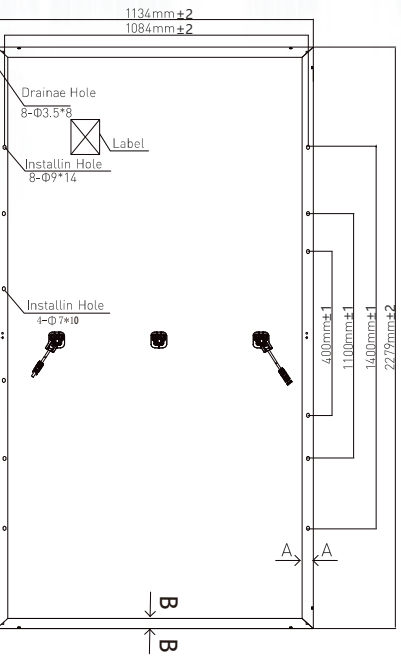
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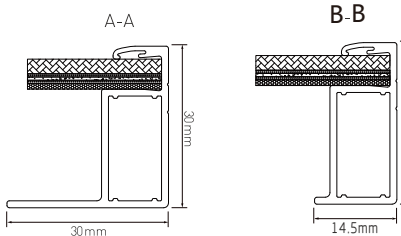
Optional

Connector	MC Original
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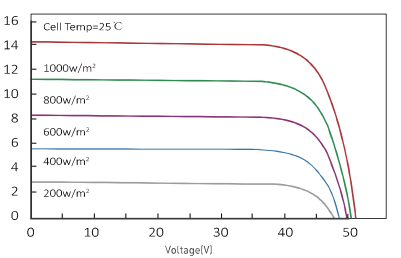
Module Dimension



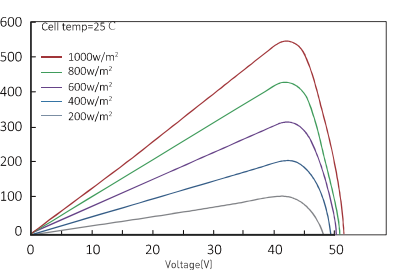
Back View



I-V Curve at Different Temperature (570W)



I-V/P-V Curve at Different Irradiation (570W)



HJT



GSM-M12/132HBD 700-730W

210mm HJT
Bifacial Dual Glass
Monocrystalline Module

730W

Maximum Power
Output

23.5%

Maximum Module
Efficiency

0~+5W

Power Output
Guarantee



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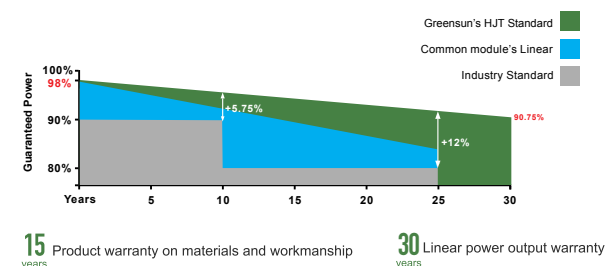
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Linear Performance Warranty



Electrical Specification (STC*)

Maximum Power	Pmax(W)	700	705	710	715	720	725	730
Maximum Power Voltage	Vmp(V)	41.78	41.85	41.92	41.99	42.06	42.13	42.22
Maximum Power Current	Imp(A)	16.77	16.85	16.93	17.02	17.11	17.20	17.29
Open Circuit Voltage	Voc(V)	49.83	49.92	50.01	50.10	50.19	50.28	50.37
Short Circuit Current	Isc(A)	17.82	17.90	17.98	18.06	18.14	18.22	18.30
Module Efficiency	[%]	22.5	22.6	22.8	23.0	23.1	23.3	23.5
Power Output Tolerance	[W]	0~+5						

* Irradiance 1000W/m², Module Temperature 25°C, Air Mass 1.5

Electrical Specification (NOCT*)

Maximum Power	Pmax (W)	534.5	538.1	541.7	545.3	548.9	552.	556.1
Maximum Power Voltage	Vmp (V)	39.07	39.14	39.21	39.28	39.35	39.42	39.49
Maximum Power Current	Imp (A)	13.68	13.75	13.82	13.89	13.96	14.03	14.10
Open Circuit Voltage	Voc(V)	46.69	46.77	46.85	46.93	47.01	47.09	47.17
Short Circuit Current	Isc (A)	14.61	14.67	14.73	14.79	14.85	14.91	14.97

* Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Mechanical Data

Number of Cells	132 Cells(6x22)
Dimensions of Module L*W*H (mm)	2384x1303x35mm
Weight (kg)	38.5 kg
Dual Glass(Front&Back Side)	High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminium Alloy
J-Box	IP68 Rated
Cable	4.0mm2, 300mm (1.18inch) or Customized Length
Number of diodes	3
Wind/ Snow Load	4000Pa/ 5400Pa*
Connector	MC Compatible

* For more details please check the installation manual

Temperature Ratings

Nominal Operating Cell Temperature (NOCT)	43±2°C
Temperature Coefficient of Isc	+0.047%/°C
Temperature Coefficient of Voc	-0.220%/°C
Temperature Coefficient of Pmax	-0.240%/°C

Packaging Configuration

Module per box	31 pieces
Module per 40' container	558 pieces

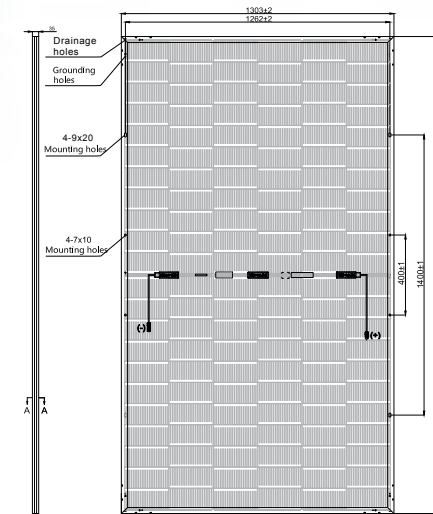
Maximum Ratings

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Max Series Fuse Rating	35A

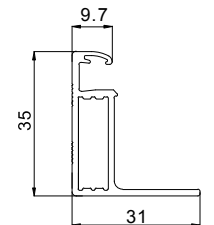
Optional

Connector	MC Original
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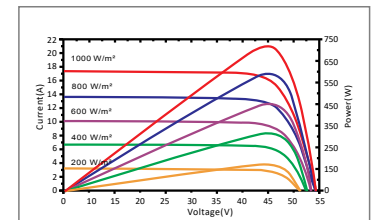
Module Dimension



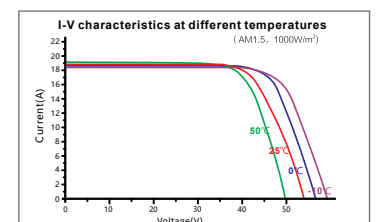
Back View



I-V Curve at Different Temperature (720W)



I-V/P-V Curve at Different Irradiation (720W)



P-Type



GSM-M10/108H
420-440W

High Efficiency
Mono Solar Panel
Half-Cut Technology

420W

Maximum Power
Output

21.5%

Maximum Module
Efficiency

0~+5W

Power Output
Guarantee



Ideal choice for Residential and C&I Installation



Selected encapsulating material and stringent production process control ensure the product is highly PID resistant and snail trails free



Special cutting and soldering technology leads to low hotspot risk



Sand blowing test, salt mist test and ammonia test passed to endure harsh environments



Optimized system performance due to module level current sorting

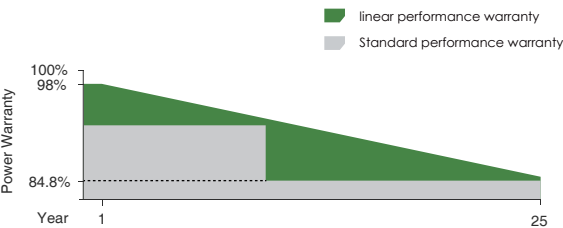


Highly transparent self-cleaning glass brings additional yield and easy maintenance

Delivers Reliable Performance Over Time

- manufacturer of crystalline silicon photovoltaic modules
- Fully automatic facility and world-class technology
- Rigorous quality control to meet the highest standard: ISO9001:2015, ISO14001: 2015 and OHSAS: 18001 2007
- Tested for harsh environments (salt mist, ammonia corrosion and sand blowing test: IEC 61701, IEC 62716, DIN EN 60068-2- 68)
- Long term reliability tests
- 2x100% EL inspection ensuring defect-free modules

Linear Performance Warranty



12 years product material and process warranty, 25 years linear power warranty

* Please refer to standard warranty for details

Electrical Specification (STC*)

Maximum Power	Pmax(W)	400	405	410	415	420
Maximum Power Voltage	Vmp(V)	31.18	31.38	31.59	31.80	32.01
Maximum Power Current	Imp(A)	12.83	12.91	12.98	13.05	13.13
Open Circuit Voltage	Voc(V)	37.04	37.24	37.45	37.66	37.87
Short Circuit Current	Isc(A)	13.73	13.81	13.88	13.95	14.02
Module Efficiency	[%]	20.5	20.7	21.0	21.3	21.5
Power Output Tolerance	(W)	0~+5				

* Irradiance 1000W/m², Module Temperature 25°C, Air Mass 1.5

Electrical Specification (NOCT*)

Maximum Power	Pmax (W)	302	306	310	314	318
Maximum Power Voltage	Vmp (V)	28.80	29.00	29.20	29.40	29.60
Maximum Power Current	Imp (A)	10.50	10.56	10.62	10.68	10.74
Open Circuit Voltage	Voc(V)	34.80	35.00	35.20	35.40	35.60
Short Circuit Current	Isc (A)	11.04	11.10	11.16	11.22	11.28

* Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Mechanical Data

Number of Cells	108 Cells (6×18)
Dimensions of Module L*W*H (mm)	1726×1134×30mm [67.95×44.64×1.18 inches]
Weight (kg)	22.1 kg
Glass	High transparency solar glass 3.2mm [0.13 inches]
Backsheet	White
Frame	Silver, anodized aluminium alloy
J-Box	IP68 Rated
Cable	4.0mm² [0.006 inches²], 300mm [11.8 inches]
Number of diodes	3
Wind/ Snow Load	2400Pa/ 5400Pa*
Connector	MC Compatible

* For more details please check the installation manual

Temperature Ratings

Nominal Operating Cell Temperature [NOCT]	44±2°C
Temperature Coefficient of Isc	+0.048%/°C
Temperature Coefficient of Voc	-0.270%/°C
Temperature Coefficient of Pmax	-0.350%/°C

Maximum Ratings

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Max Series Fuse Rating	25A

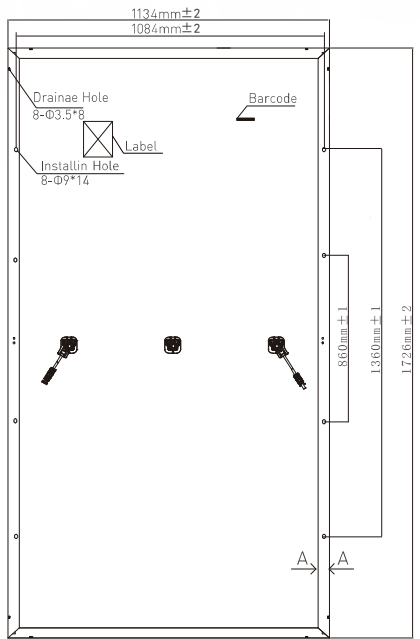
Packaging Configuration

Module per box	37 pieces
Module per 40' container	962 pieces

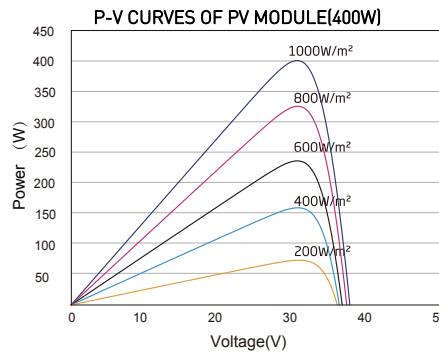
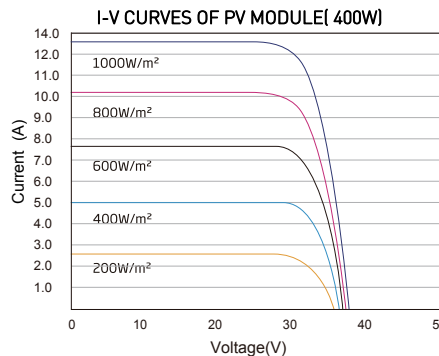
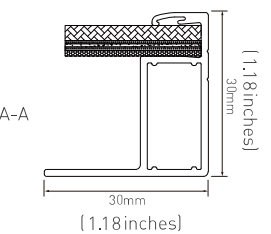
Optional

Connector	MC Original
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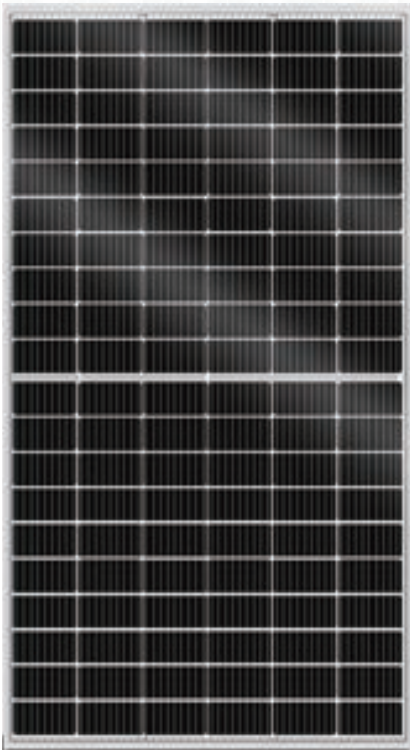
Module Dimension



Back View



P-Type



GSM-M10/120H
440-470W

High Efficiency
Mono Solar Panel
Half-Cut Technology

470W

Maximum Power
Output

21.6%

Maximum Module
Efficiency

0~+5W

Power Output
Guarantee



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Sand blowing test, salt mist test and ammonia test passed to endure harsh environments



Optimized system performance due to module level current sorting

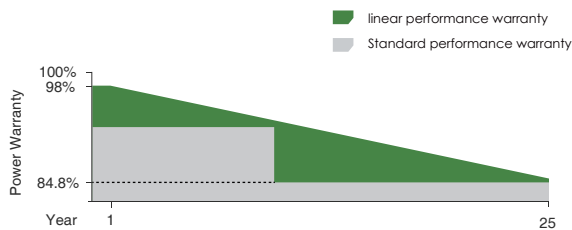


Highly transparent self-cleaning glass brings additional yield and easy maintenance

Delivers Reliable Performance Over Time

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- Tested for harsh environments (salt mist, ammonia corrosion and sand blowing test: IEC 61701, IEC 62716, DIN EN 60068-2- 68)
- Long term reliability tests
- 2×100% EL inspection ensuring defect-free modules

Linear Performance Warranty



12 years product material and process warranty, 25 years linear power warranty

* Please refer to standard warranty for details

Electrical Specification (STC*)

Maximum Power	Pmax(W)	440	445	450	455	460	465	470
Maximum Power Voltage	Vmp(V)	34.21	34.26	34.31	34.36	34.41	34.45	34.50
Maximum Power Current	Imp(A)	12.87	12.99	13.12	13.25	13.38	13.51	13.64
Open Circuit Voltage	Voc(V)	41.44	41.50	41.56	41.62	41.68	41.74	41.80
Short Circuit Current	Isc(A)	13.55	13.67	13.81	13.95	14.09	14.23	14.37
Module Efficiency	(%)	20.4	20.6	20.8	21.0	21.2	21.4	21.6
Power Output Tolerance	(W)	0~+5						

* Irradiance 1000W/m², Module Temperature 25°C, Air Mass 1.5

Electrical Specification (NOCT*)

Maximum Power	Pmax (W)	327	331	335	339	343	347	351
Maximum Power Voltage	Vmp (V)	31.83	31.87	31.92	31.97	32.02	32.07	32.12
Maximum Power Current	Imp (A)	10.29	10.39	10.49	10.60	10.71	10.82	10.93
Open Circuit Voltage	Voc(V)	39.12	39.17	39.23	39.29	39.35	39.41	39.47
Short Circuit Current	Isc (A)	10.94	11.04	11.15	11.26	11.37	11.48	11.59

* Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Mechanical Data

Number of Cells	120 Cells (6×20)
Dimensions of Module L*W*H (mm)	1908×1134×35mm (75.11×44.64×1.38 inches)
Weight (kg)	24.0 kg
Glass	High transparency solar glass 3.2mm (0.13 inches)
Backsheet	White
Frame	Silver, anodized aluminium alloy
J-Box	IP68 Rated
Cable	4.0mm² (0.006 inches²), 300mm (11.8 inches)
Number of diodes	3
Wind/ Snow Load	2400Pa/ 5400Pa*
Connector	MC Compatible

* For more details please check the installation manual

Temperature Ratings

Nominal Operating Cell Temperature (NOCT)	44±2°C
Temperature Coefficient of Isc	+0.048%/°C
Temperature Coefficient of Voc	-0.270%/°C
Temperature Coefficient of Pmax	-0.350%/°C

Packaging Configuration

Module per box	31 pieces
Module per 40' container	744 pieces

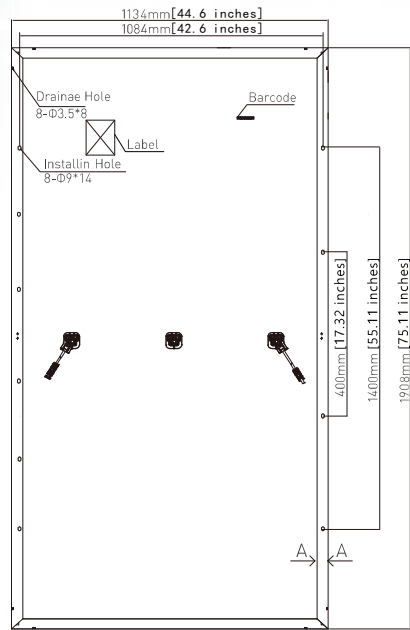
Maximum Ratings

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Max Series Fuse Rating	25A

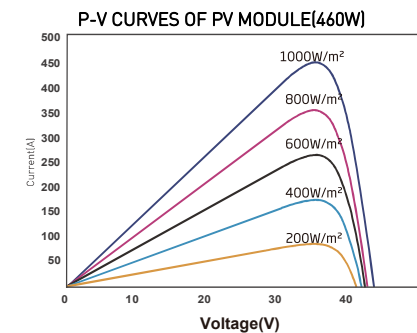
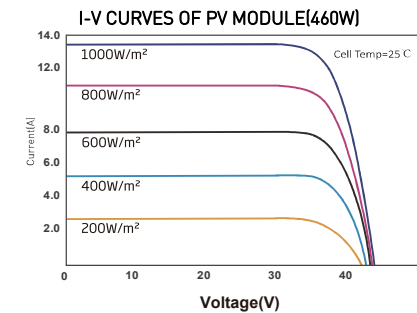
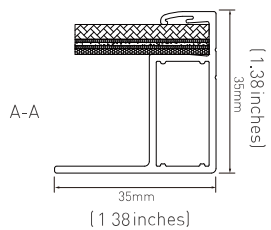
Optional

Connector	MC Original
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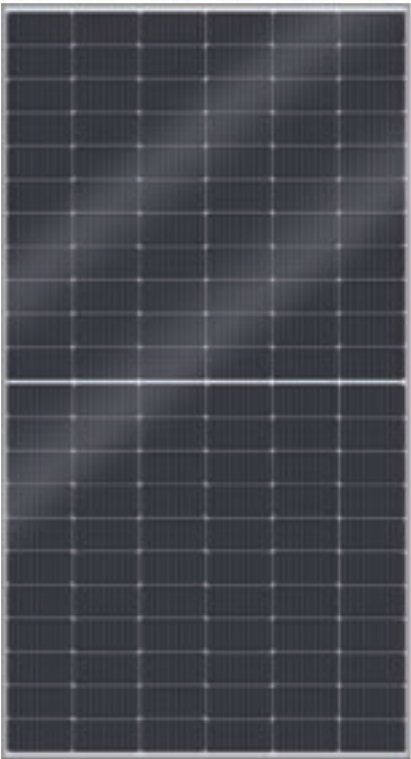
Module Dimension



Back View



P-Type



GSM-M10/132H
490-520W

High Efficiency
Mono Solar Panel
Half-Cut Technology

520W

Maximum Power
Output

21.9%

Maximum Module
Efficiency

0~+5W

Power Output
Guarantee



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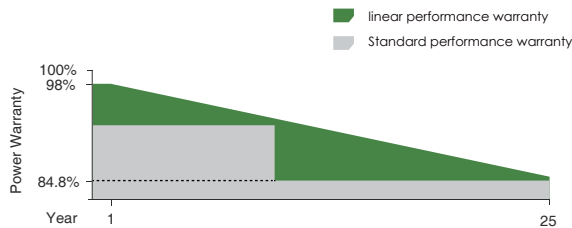


Highly transparent self-cleaning glass brings additional yield and easy maintenance

Delivers Reliable Performance Over Time

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- 2x100% EL inspection ensuring defect-free modules

Linear Performance Warranty



12 years product material and process warranty, 25 years linear power warranty

* Please refer to standard warranty for details

Electrical Specification (STC*)

Maximum Power	Pmax(W)	490	495	500	505	510	515	520
Maximum Power Voltage	Vmp(V)	38.35	38.47	38.55	38.64	38.73	38.82	38.91
Maximum Power Current	Imp(A)	12.78	12.87	12.97	13.07	13.17	13.27	13.37
Open Circuit Voltage	Voc(V)	45.37	45.47	45.55	45.65	45.75	45.85	45.95
Short Circuit Current	Isc(A)	13.63	13.74	13.85	13.96	14.07	14.18	14.29
Module Efficiency	(%)	20.64	20.85	21.06	21.27	21.48	21.69	21.90
Power Output Tolerance	(W)	0~+5						

* Irradiance 1000W/m², Module Temperature 25°C, Air Mass 1.5

Electrical Specification (NOCT*)

Maximum Power	Pmax (W)	364	369	372	376	379	383	387
Maximum Power Voltage	Vmp (V)	35.01	35.10	35.16	35.24	35.30	35.38	35.44
Maximum Power Current	Imp (A)	10.42	10.50	10.59	10.67	10.76	10.84	10.93
Open Circuit Voltage	Voc(V)	42.19	42.28	42.35	42.45	42.50	42.55	42.60
Short Circuit Current	Isc (A)	11.01	11.10	11.19	11.27	11.36	11.45	11.54

* Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Mechanical Data

Number of Cells	132 Cells (6x22)
Dimensions of Module L*W*H (mm)	2094×1134×35mm (82.44×44.64×1.38 inches)
Weight (kg)	26.3 kg
Glass	High transparency solar glass 3.2mm (0.13 inches)
Backsheet	White
Frame	Silver, anodized aluminium alloy
J-Box	IP68 Rated
Cable	4.0mm² (0.006 inches²), 300mm (11.8 inches)
Number of diodes	3
Wind/ Snow Load	2400Pa/ 5400Pa*
Connector	MC Compatible

* For more details please check the installation manual

Temperature Ratings

Nominal Operating Cell Temperature (NOCT)	44±2°C
Temperature Coefficient of Isc	+0.048%/°C
Temperature Coefficient of Voc	-0.270%/°C
Temperature Coefficient of Pmax	-0.350%/°C

Packaging Configuration

Module per box	31 pieces
Module per 40' container	682 pieces

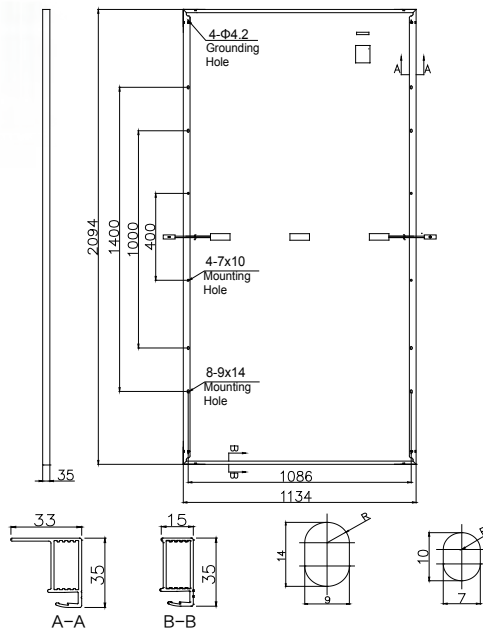
Maximum Ratings

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Max Series Fuse Rating	25A

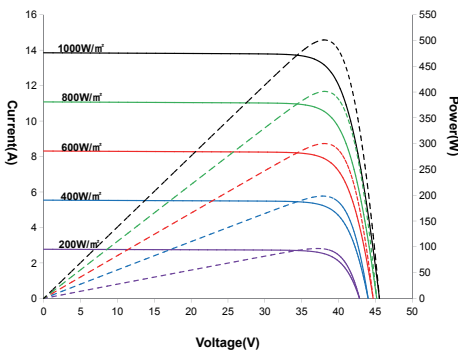
Optional

Connector	MC Original
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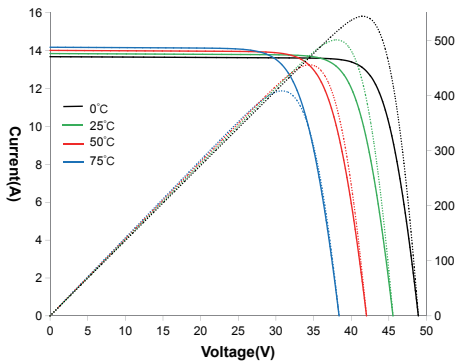
Module Dimension



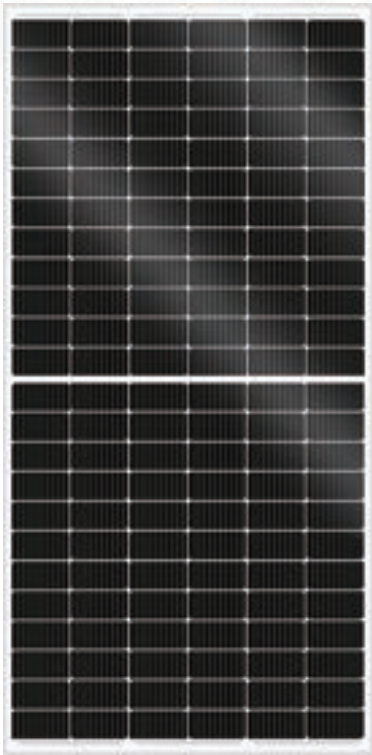
Test temperature 25°C



Irradiance: AM1.5, 1000W/m²



P-Type



GSM-M10/144H
540-560W

High Efficiency
Mono Solar Panel
Half-Cut Technology

560W

Maximum Power
Output

21.8%

Maximum Module
Efficiency

0~+5W

Power Output
Guarantee



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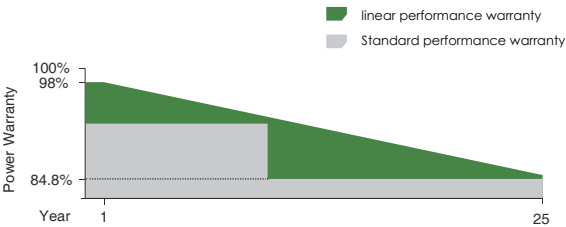


Highly transparent self-cleaning glass brings additional yield and easy maintenance

Delivers Reliable Performance Over Time

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- 2x100% EL inspection ensuring defect-free modules

Linear Performance Warranty



12 years product material and process warranty, 25 years linear power warranty

* Please refer to standard warranty for details

Electrical Specification (STC*)

Maximum Power	Pmax(W)	540	545	550	555	560
Maximum Power Voltage	Vmp(V)	41.01	41.15	41.28	41.41	41.54
Maximum Power Current	Imp(A)	13.17	13.24	13.32	13.40	13.48
Open Circuit Voltage	Voc(V)	49.53	49.67	49.80	49.93	50.06
Short Circuit Current	Isc(A)	13.85	13.93	14.01	14.09	14.17
Module Efficiency	(%)	21.0	21.2	21.4	21.6	21.8
Power Output Tolerance	(W)	0~+5				

* Irradiance 1000W/m², Module Temperature 25°C, Air Mass 1.5

Electrical Specification (NOCT*)

Maximum Power	Pmax (W)	402	406	410	414	418
Maximum Power Voltage	Vmp (V)	38.19	38.32	38.46	38.60	38.74
Maximum Power Current	Imp (A)	10.52	10.58	10.64	10.70	10.76
Open Circuit Voltage	Voc(V)	46.75	46.88	47.00	47.12	47.24
Short Circuit Current	Isc (A)	11.19	11.25	11.32	11.39	11.46

* Irradiance 800W/m², Ambient Temperature 25°C, Wind Speed 1m/s

Mechanical Data

Number of Cells	144 Cells (6×24)
Dimensions of Module L*W*H (mm)	2276×1133×30mm [89.60×44.61×1.18 inches]
Weight (kg)	29.4 kg
Glass	High transparency solar glass 3.2mm [0.13 inches]
Backsheet	White
Frame	Silver, anodized aluminium alloy
J-Box	IP68 Rated
Cable	4.0mm² [0.006 inches²], 300mm [11.8 inches]
Number of diodes	3
Wind/ Snow Load	2400Pa/ 5400Pa*
Connector	MC Compatible

* For more details please check the installation manual

Temperature Ratings

Nominal Operating Cell Temperature [NOCT]	44±2°C
Temperature Coefficient of Isc	+0.048%/°C
Temperature Coefficient of Voc	-0.270%/°C
Temperature Coefficient of Pmax	-0.350%/°C

Maximum Ratings

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Max Series Fuse Rating	25A

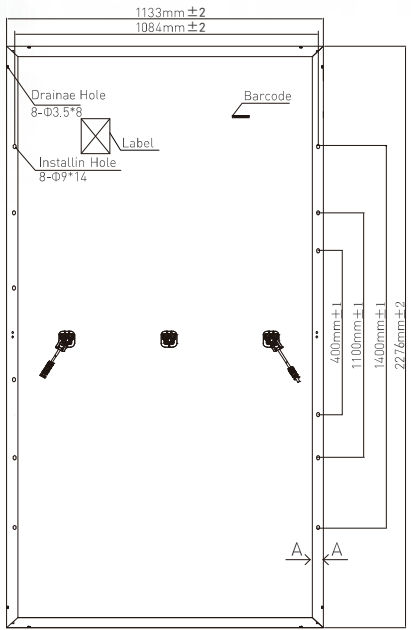
Packaging Configuration

Module per box	36 pieces
Module per 40' container	720 pieces

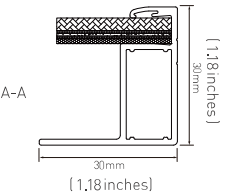
Optional

Connector	MC Original
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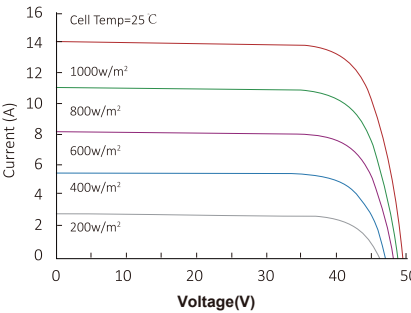
Module Dimension



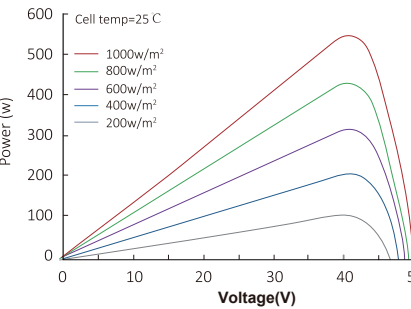
Back View



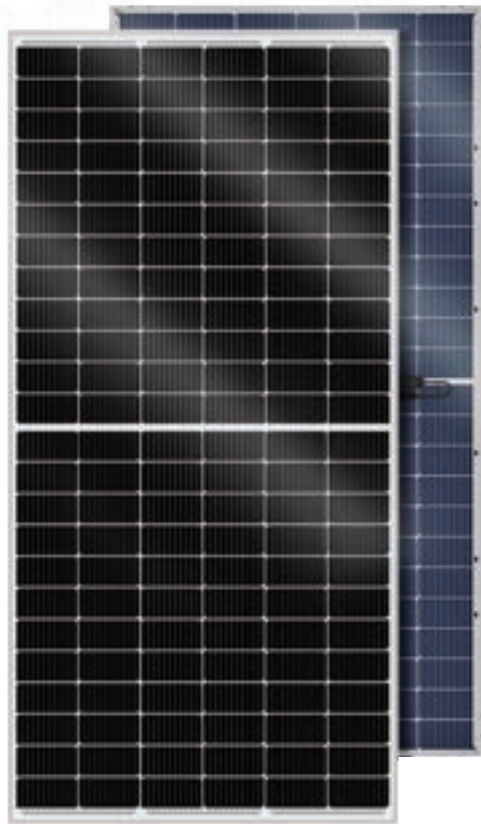
I-V CURVES OF PV MODULE(550W)



P-V CURVES OF PV MODULE(550W)



P-Type



GSM-M10/144PHBD

540-560W

Bifacial Dual Glass
High Efficiency
Monocrystalline Module

560W
Maximum Power Output

21.9%
Maximum Module Efficiency

0~+5W
Power Output Guarantee



High power

- Large 182mm silicon wafer
- high efficiently with high density interconnect technology
- multi busbar technology for better light trapping effect, improved current collection



High reliability

- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance
- Resistant to harsh environments and high humidity areas
- 5400 Pa positive load and 2400 Pa negative load



High customer value

- Lower LCOE, reduced BOS (Balance of System) cost, shorter payback time
- Lowest guaranteed degradation; extended 30-year warranty
- Higher return on Investment



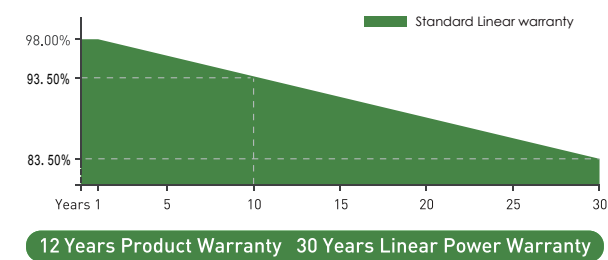
High energy yield

- Bifacial Dual Glass technology brings additional power gain from back side
- The unique design provides optimized energy production under inter-row shading conditions

Delivers Reliable Performance Over Time

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- Long term reliability tests
- 2x100% EL inspection ensuring defect-free modules

Linear Performance Warranty



* Please refer to standard warranty for details

Electrical Specification (STC*)

Maximum Power	Pmax(W)	540	545	550	555	560
Maximum Power Voltage	Vmp(V)	40.70	40.80	40.90	41.00	41.10
Maximum Power Current	Imp(A)	13.27	13.36	13.45	13.54	13.63
Open Circuit Voltage	Voc(V)	49.42	49.52	49.62	49.72	49.82
Short Circuit Current	Isc(A)	13.85	13.94	14.03	14.12	14.51
Module Efficiency	[%]	21.1	21.3	21.5	21.7	21.9
Power Output Tolerance	(W)	0~+5				

* Irradiance 1000W/m², Module Temperature 25°C, Air Mass 1.5

Electrical Specification (NOCT*)

Maximum Power	Pmax (W)	402	406	410	414	418
Maximum Power Voltage	Vmp (V)	38.19	38.32	38.46	38.59	38.73
Maximum Power Current	Imp (A)	10.52	10.58	10.64	10.70	10.76
Open Circuit Voltage	Voc(V)	46.75	46.88	47.00	47.13	47.25
Short Circuit Current	Isc (A)	11.19	11.25	11.32	11.38	11.45

* Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Mechanical Data

Number of Cells	144 Cells (6x24)
Dimensions of Module L*W*H (mm)	2279×1134×30mm [89.72 ×44.64×1.18 inches]
Weight (kg)	33.4 kg
Front Side Glass	High transparency solar glass 2.0mm
Back Side Glass	High transparency solar glass 2.0mm
Frame	Silver, anodized aluminium alloy
J-Box	IP68 Rated
Cable	4.0mm² (0.006 inches²), 300mm (11.8 inches)
Number of diodes	3
Wind/ Snow Load	2400Pa/ 5400Pa*
Connector	MC Compatible

* For more details please check the installation manual

Temperature Ratings

Nominal Operating Cell Temperature (NOCT)	44±2°C
Temperature Coefficient of Isc	+0.048%/°C
Temperature Coefficient of Voc	-0.270%/°C
Temperature Coefficient of Pmax	-0.350%/°C

Packaging Configuration

Module per box	36 pieces
Module per 40' container	720 pieces

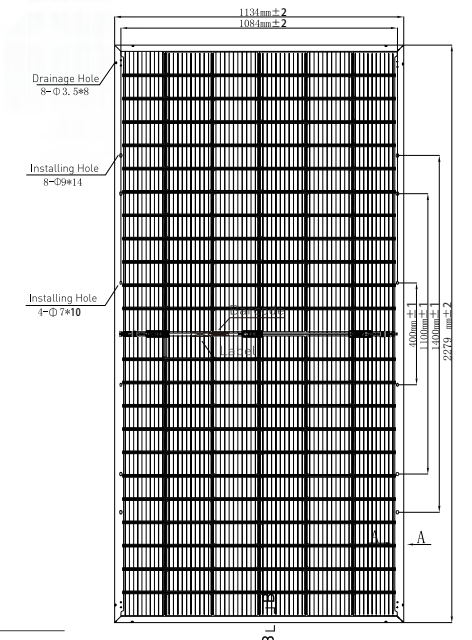
Maximum Ratings

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Max Series Fuse Rating	25A

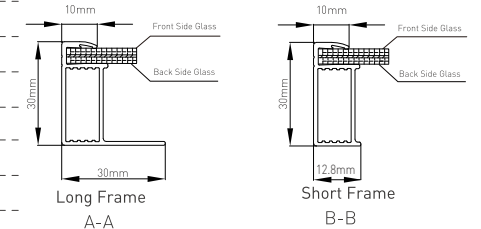
Optional

Connector	MC Original
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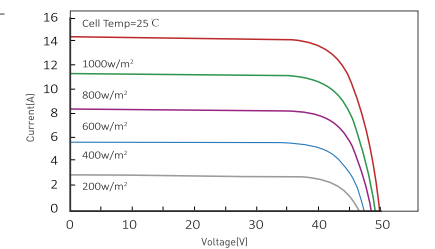
Module Dimension



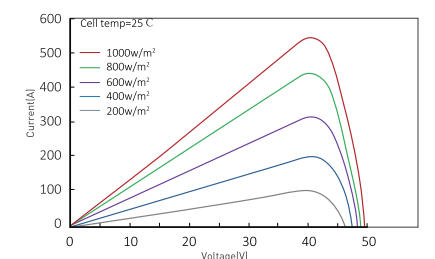
Back View



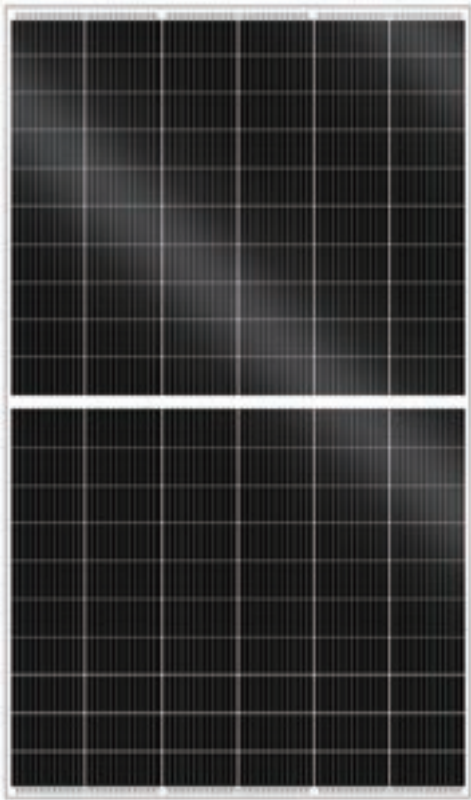
I-V Curve at Different Temperature (550W)



I-V/P-V Curve at Different Irradiation (550W)



P-Type



GSM-M12/120H
600-625W

High Efficiency
Mono Solar Panel
Half-Cut Technology

625W

Maximum Power
Output

22.2%

Maximum Module
Efficiency

0~+5W

Power Output
Guarantee



Ideal choice for Residential and C&I Installation



Selected encapsulating material and stringent production process control ensure the product is highly PID resistant and snail trails free



Special cutting and soldering technology leads to low hotspot risk



Sand blowing test, salt mist test and ammonia test passed to endure harsh environments



Optimized system performance due to module level current sorting

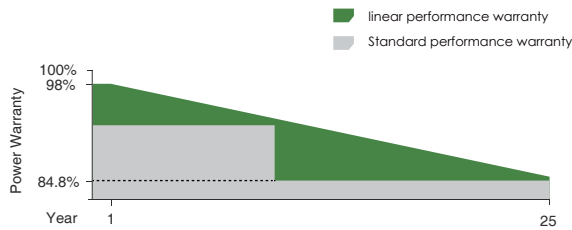


Highly transparent self-cleaning glass brings additional yield and easy maintenance

Delivers Reliable Performance Over Time

- manufacturer of crystalline silicon photovoltaic modules
- Fully automatic facility and world-class technology
- Rigorous quality control to meet the highest standard: ISO9001:2015, ISO14001: 2015 and OHSAS: 18001 2007
- Tested for harsh environments (salt mist, ammonia corrosion and sand blowing test: IEC 61701, IEC 62716, DIN EN 60068-2- 68)
- Long term reliability tests
- 2x100% EL inspection ensuring defect-free modules

Linear Performance Warranty



12 years product material and process warranty, 25 years linear power warranty

* Please refer to standard warranty for details

Electrical Specification (STC*)

Maximum Power	Pmax(W)	600	605	610	615	620	625
Maximum Power Voltage	Vmp(V)	34.4	34.6	34.8	35.0	35.2	35.4
Maximum Power Current	Imp(A)	17.44	17.49	17.54	17.59	17.64	17.69
Open Circuit Voltage	Voc(V)	41.5	41.7	41.9	42.1	42.3	42.5
Short Circuit Current	Isc(A)	18.52	18.57	18.62	18.67	18.72	18.77
Module Efficiency	(%)	21.2	21.4	21.6	21.8	22.0	22.2
Power Output Tolerance	(W)	0~+5					

* Irradiance 1000W/m², Module Temperature 25°C, Air Mass 1.5

Electrical Specification (NOCT*)

Maximum Power	Pmax (W)	454	458	462	466	470	474
Maximum Power Voltage	Vmp (V)	32.0	32.2	32.4	32.6	32.8	33.0
Maximum Power Current	Imp (A)	14.18	14.22	14.26	14.30	14.34	14.38
Open Circuit Voltage	Voc(V)	39.1	39.3	39.5	39.7	39.9	40.1
Short Circuit Current	Isc (A)	14.92	14.96	14.98	15.00	15.02	15.04

* Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Mechanical Data

Number of Cells	120 Cells (6×20)
Dimensions of Module L*W*H (mm)	2172×1303×35mm [85.51×51.29×1.38inches]
Weight (kg)	30.9 kg
Glass	High transparency solar glass 3.2mm [0.13 inches]
Backsheet	White
Frame	Silver, anodized aluminium alloy
J-Box	IP68 Rated
Cable	4.0mm² [0.006 inches²], 300mm [11.8 inches]
Number of diodes	3
Wind/ Snow Load	2400Pa/ 5400Pa*
Connector	MC Compatible

* For more details please check the installation manual

Temperature Ratings

Nominal Operating Cell Temperature (NOCT)	43±2°C
Temperature Coefficient of Isc	+0.040%/°C
Temperature Coefficient of Voc	-0.250%/°C
Temperature Coefficient of Pmax	-0.340%/°C

Packaging Configuration

Module per box	31 pieces
Module per 40' container	558 pieces

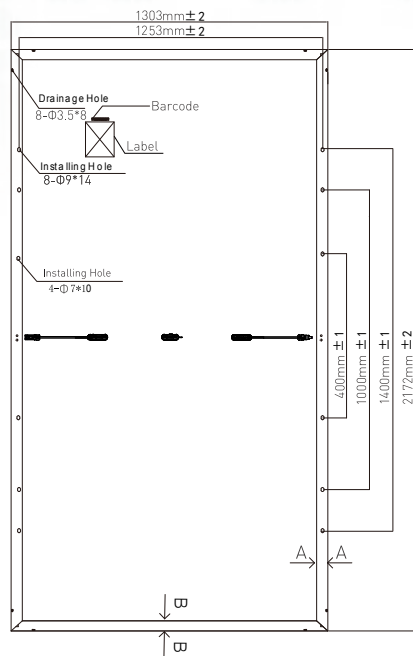
Maximum Ratings

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Max Series Fuse Rating	30A

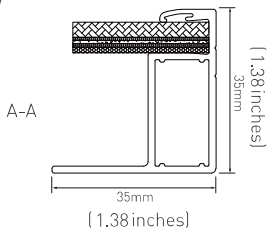
Optional

Connector	■ MC Original
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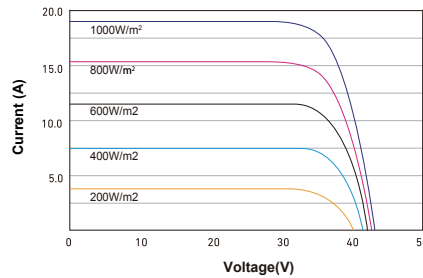
Module Dimension



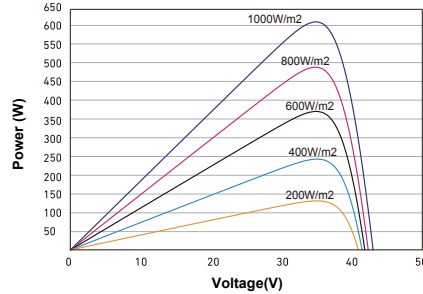
Back View



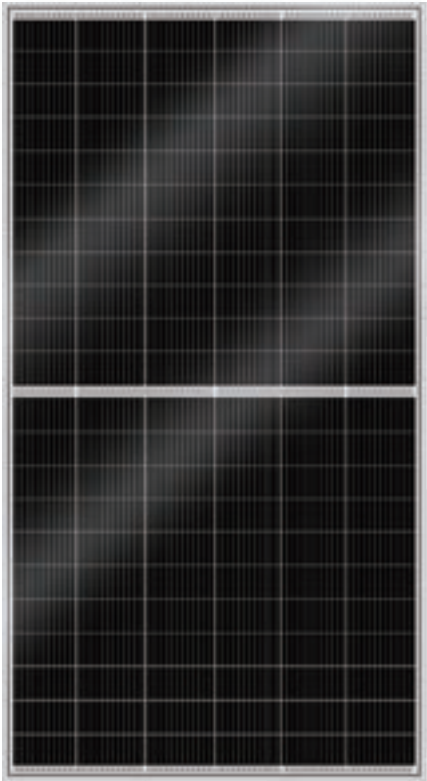
I-V CURVES OF PV MODULE(610W)



P-V CURVES OF PV MODULE(610W)



P-Type



GSM-M12/132H
655-685W

High Efficiency
Mono Solar Panel
Half-Cut Technology

685W

Maximum Power
Output

22.1%

Maximum Module
Efficiency

0~+5W

Power Output
Guarantee



Ideal choice for Residential and C&I Installation



Selected encapsulating material and stringent production process control ensure the product is highly PID resistant and snail trails free



Special cutting and soldering technology leads to low hotspot risk



Sand blowing test, salt mist test and ammonia test passed to endure harsh environments



Optimized system performance due to module level current sorting

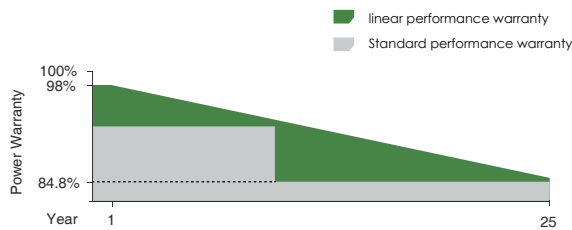


Highly transparent self-cleaning glass brings additional yield and easy maintenance

Delivers Reliable Performance Over Time

- manufacturer of crystalline silicon photovoltaic modules
- Fully automatic facility and world-class technology
- Rigorous quality control to meet the highest standard: ISO9001:2015, ISO14001: 2015 and OHSAS: 18001 2007
- Tested for harsh environments (salt mist, ammonia corrosion and sand blowing test: IEC 61701, IEC 62716, DIN EN 60068-2- 68)
- Long term reliability tests
- 2x100% EL inspection ensuring defect-free modules

Linear Performance Warranty



12 years product material and process warranty, 25 years linear power warranty

* Please refer to standard warranty for details

Electrical Specification (STC*)

Maximum Power	Pmax(W)	655	660	665	670	675	680	685
Maximum Power Voltage	Vmp(V)	37.60	37.80	38.00	38.20	38.40	38.60	38.80
Maximum Power Current	Imp(A)	17.40	17.44	17.49	17.54	17.58	17.62	17.66
Open Circuit Voltage	Voc(V)	41.40	41.60	41.80	42.00	42.20	42.40	42.60
Short Circuit Current	Isc(A)	18.47	18.52	18.57	18.62	18.67	18.72	18.74
Module Efficiency	(%)	21.0	21.2	21.4	21.5	21.7	21.9	22.1
Power Output Tolerance	(W)	0~+5						

* Irradiance 1000W/m², Module Temperature 25°C, Air Mass 1.5

Electrical Specification (NOCT*)

Maximum Power	Pmax (W)	496	500	504	509	513	517	520
Maximum Power Voltage	Vmp (V)	35.10	35.30	35.50	35.70	35.90	36.10	36.30
Maximum Power Current	Imp (A)	14.13	14.18	14.22	14.27	14.31	14.35	14.39
Open Circuit Voltage	Voc(V)	42.8	43.0	43.2	43.4	43.6	43.8	44.0
Short Circuit Current	Isc (A)	14.83	14.92	14.96	15.00	15.04	15.08	15.12

* Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Mechanical Data

Number of Cells	132 Cells (6x22)
Dimensions of Module L*W*H (mm)	2385x1303x35mm (93.85x51.29x1.38 inches)
Weight (kg)	35.7 kg
Glass	High transparency solar glass 3.2mm (0.13 inches)
Backsheet	White
Frame	Silver, anodized aluminium alloy
J-Box	IP68 Rated
Cable	4.0mm² (0.006 inches²), 300mm (11.8 inches)
Number of diodes	3
Wind/ Snow Load	2400Pa/ 5400Pa*
Connector	MC Compatible

* For more details please check the installation manual

Temperature Ratings

Nominal Operating Cell Temperature (NOCT)	43±2°C
Temperature Coefficient of Isc	+0.040%/°C
Temperature Coefficient of Voc	-0.250%/°C
Temperature Coefficient of Pmax	-0.340%/°C

Maximum Ratings

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Max Series Fuse Rating	25A

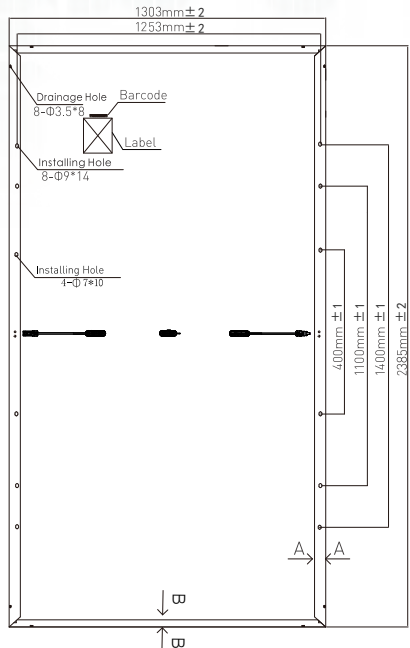
Packaging Configuration

Module per box	31 pieces
Module per 40' container	682 pieces

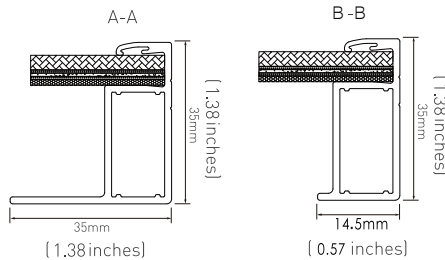
Optional

Connector	■ MC Original
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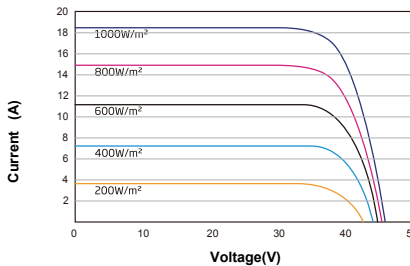
Module Dimension



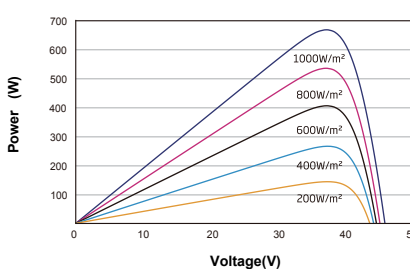
Back View



I-V CURVES OF PV MODULE(670W)



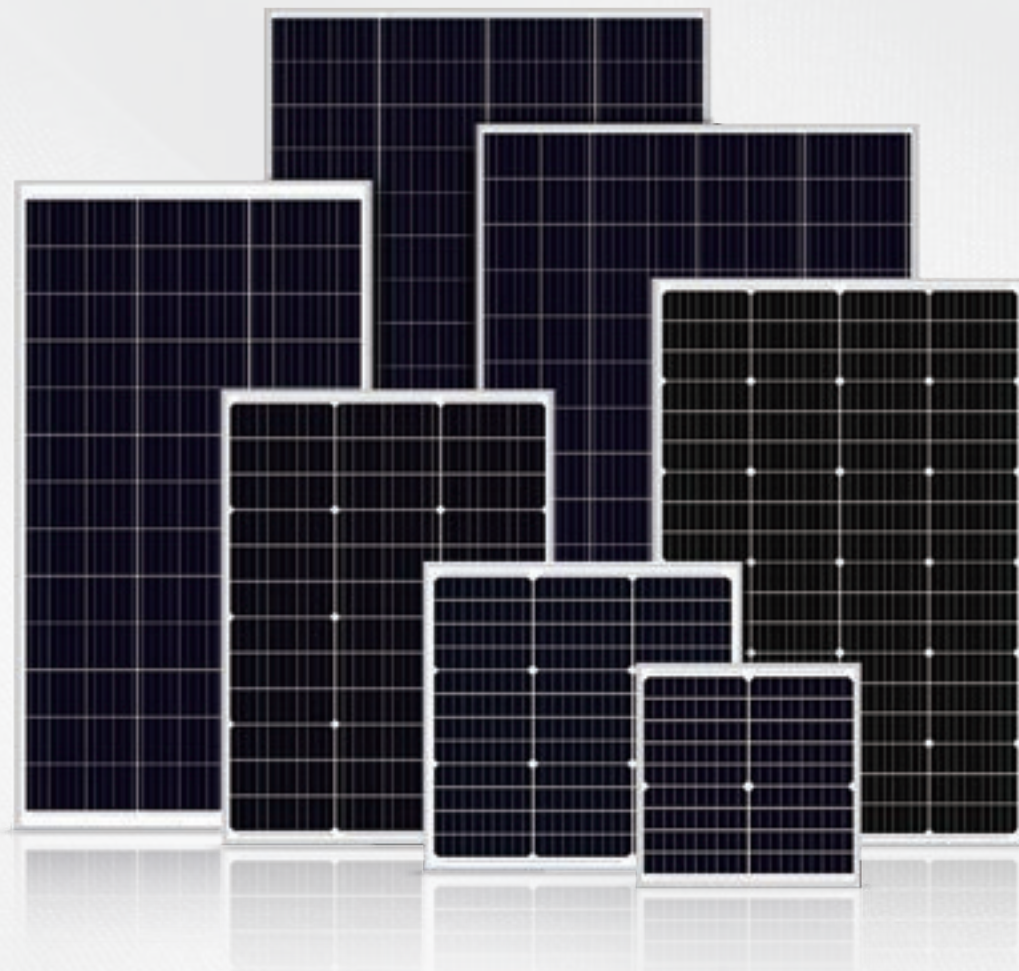
P-V CURVES OF PV MODULE(670W)



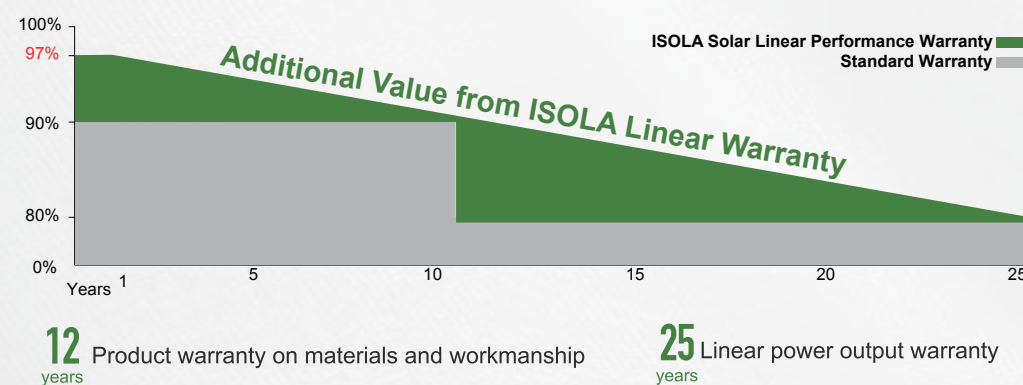
Small

20W-380W

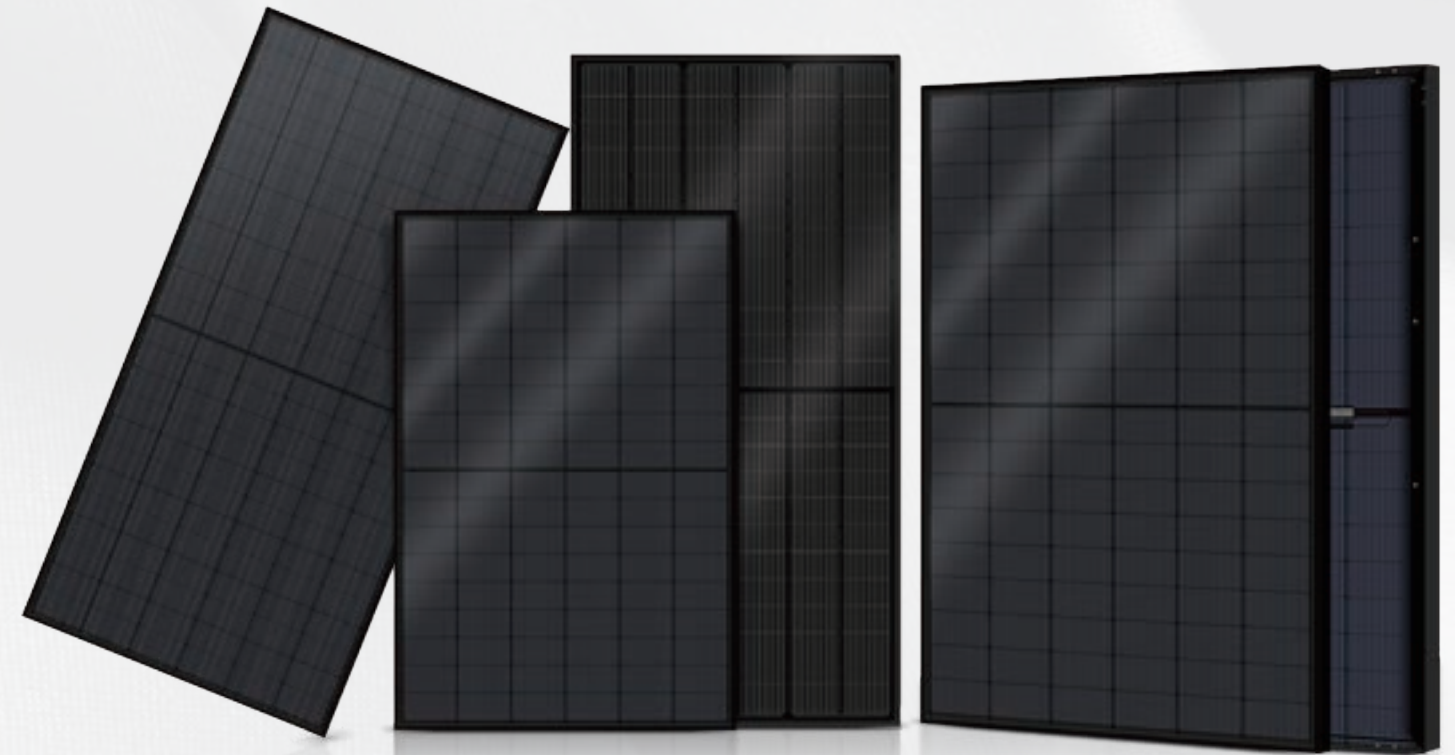
CUSTOMIZED MONO SOLAR PANEL



Linear Performance Warranty



All Black



P-Type

GSM-M10/108H-400-420W
GSM-M10/144H-540-560W
GSM-M10/108PHBD-400-420W
GSM-M10/144PHBD-540-560W

N-Type

GSM-M10/108H-420-440W
GSM-M10/108NHBD-415-435W
GSM-M10/144NHBD-565-585W
GSM-M10/144H-570-590W



One-Stop Solar Solution

*Expert of Complete Solar Power System
& Energy Storage System*

Residential / Commercial & Industrial(1KW-MW)

Hybrid Solar System ○

On Grid Solar System ○

Off Grid Solar System ○



Hybrid Solar System

Fulfill your needs in every way

- 1.EU/US Standard
- 2.Single phase/Split Phase/Three Phase Output
- 3.Residential Application(3KW-30KW)/C&I Application(30KW-MW)

- All-in-one Multi-Functional Smart Hybrid Solar System
Inverter, Battery, load, grid/generator solar connection all supported

- Touchscreen LCD
More convenient for parameter setting and maintenance

- Programmable working mode
Peak-shaving, back-up, UPS, use the system however you want it

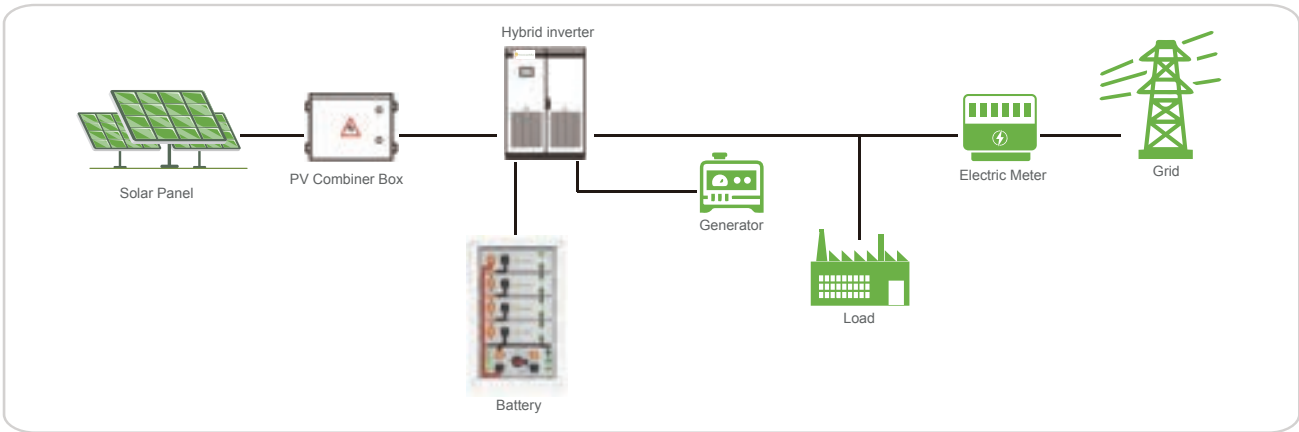
- Seamless transfer
Uninterruptable power supply guaranteed

- Scalable design
Quadruple capacity by paralleling 4 units

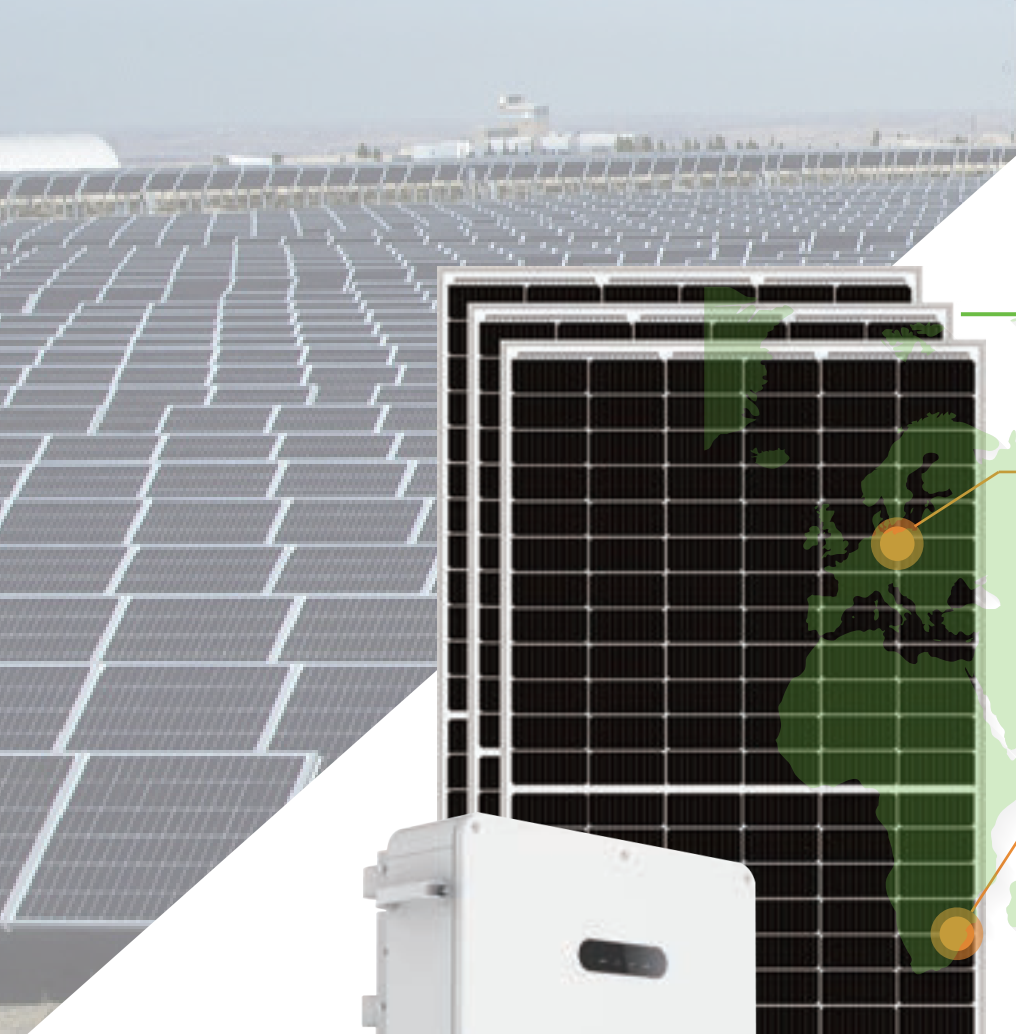
- Dry contact output
Supports remote control of DG

Hybrid Solar System

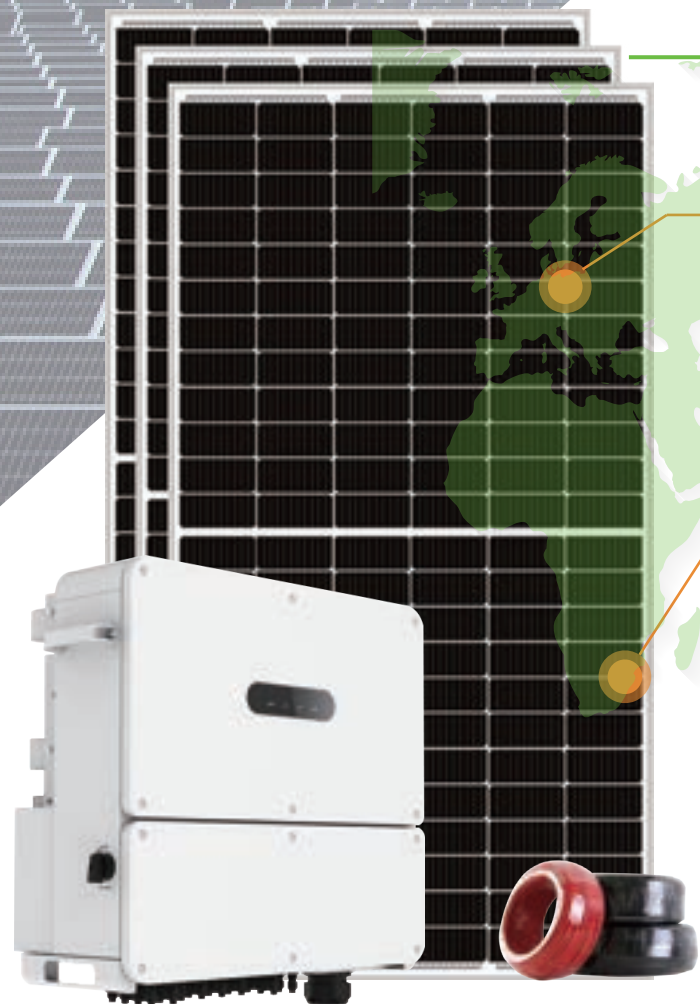
▼ Configuration of All-in-one Hybrid Solar System



Model	GSM-5KW-HY	GSM-10KW-HY	GSM-20KW-HY	GSM-50KW-HY	GSM-100KW-HY	GSM-150KW-HY	GSM-500KW-HY	GSM-1MW-HY
AC Voltage	Single Phase (220-240Vac) / Split Phase (120/240Vac) / Three Phase (360-480Vac)							
Solar Panel	5KW	10KW	20KW	50KW	100KW	150KW	500KW	1000KW
Hybrid Inverter	5KW	10KW	20KW	50KW	100KW	150KW	500KW	2*500KW
Battery	Lead Acid / Lithium Battery Optional, Customoized							
PV Combiner Box	Customized & Optional							
PV Cable 4mm²	100m	200m	400m	1000m	2000m	3000m	10000m	20000m
MC4 Connector	6Pairs	12Pairs	24Pairs	60Pairs	120Pairs	180Pairs	600Pairs	1000Pairs
Mounting Bracket	Customized (Roof type/Ground type/Carport type)							



On Grid Solar System



Fulfill your needs in every way

1.EU/US Standard

2.Single phase/Split Phase/Three Phase Output

3.Residential Application(3KW-30KW)/C&I Application(30KW-MW)

- Save your electricity bills greatly/Do Investment to earn money

Self consumption and Selling or Not Selling to Grid
- High Yields

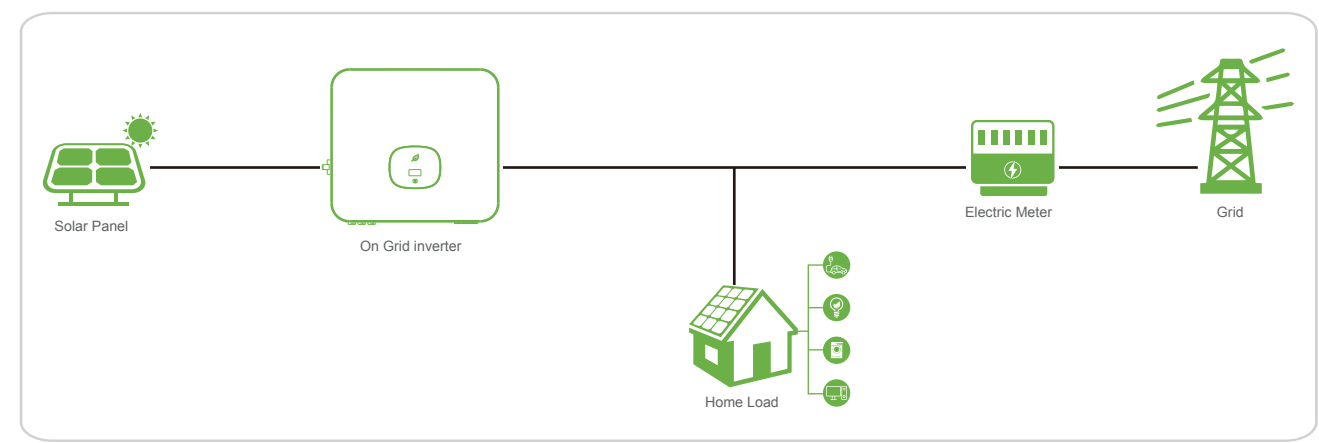
Composed of high efficiency solar modules and high efficiency on grid inverters
- Smart monitoring and control

- Multiple dataloggers with kinds of communication methods
 - 24h self-consumption monitoring
 - Local commissioning with smart APP
 - Support export limitation function
- Safety and reliability

- Type II SPD
 - Optional AFCI function
 - IP65 and ip66

On Grid Solar System

▼ Configuration of On Grid Solar System



Model	GSM-5KW-ON	GSM-10KW-ON	GSM-20KW-ON	GSM-50KW-ON	GSM-100KW-ON	GSM-150KW-ON	GSM-500KW-ON	GSM-1MW-ON
AC Voltage	Single Phase (220-240Vac) / Split Phase (120/240Vac) / Three Phase (360-480Vac)							
Solar Panel	5KW	10KW	20KW	50KW	100KW	150KW	500KW	1000KW
ON Grid Inverter	5KW	10KW	20KW	50KW	100KW	150KW	4*125KW	8*125KW
PV Combiner Box	Customized & Optional							
PV Cable 4mm²	100m	200m	400m	1000m	2000m	3000m	10000m	20000m
MC4 Connector	6Pairs	12Pairs	24Pairs	60Pairs	120Pairs	180Pairs	600Pairs	800Pairs
Mounting Bracket	Customized (Roof type/Ground type/Carport type)							



Off Grid Solar System

30KW-MW

Commercial & Industrial

3KW-30KW

Residential

Fulfill your needs
in every way

- 1.EU/US Standard
- 2.Single phase/Split Phase/Three Phase Output
- 3.Residential Application(3KW-30KW)/C&I Application(30KW-MW)

- Very suitable for the area where there is no grid or grid is unstable

- Stand Alone Solar System or can have grid bypass

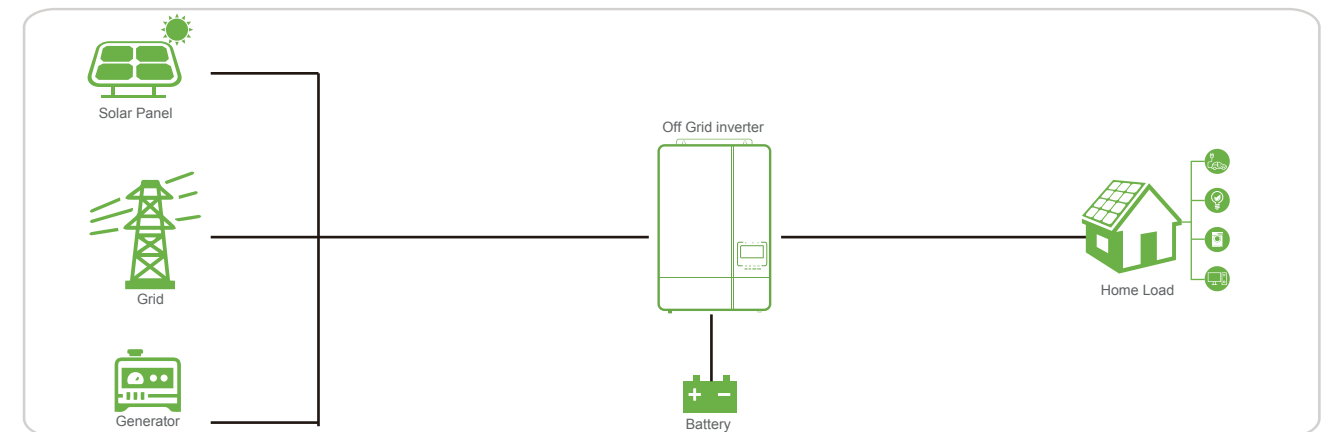
- Battery Backup for Night or Rainy Days

- Save your electricity bills

- Outage protection in 24/7

Off Grid Solar System

▼ Configuration of Off Grid Solar System



Model	GSM-5KW-OFF	GSM-10KW-OFF	GSM-20KW-OFF	GSM-50KW-OFF	GSM-100KW-OFF	GSM-150KW-OFF	GSM-500KW-OFF
AC Voltage	Single Phase [220-240Vac] / Three Phase [360-480Vac]						
Solar Panel	5KW	10KW	20KW	50KW	100KW	150KW	500KW
Off Grid Inverter	5KW	10KW	20KW	50KW	100KW	150KW	500KW
Battery	Lead Acid/Lithium Battery Optional						
PV Combiner Box	Customized & Optional						
PV Cable4mm ²	100m	200m	400m	1000m	2000m	3000m	10000m
MC4 Connector	6Pairs	12Pairs	24Pairs	60Pairs	120Pairs	180Pairs	600Pairs
Mounting Bracket	Customized [Roof type/Ground type/Carport type]						

Project Case

Global Delivery



Project Case

Global Delivery

