GreensunSolar

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Rev: 2024-11

Greensun Solar Energy Tech Co., Limited
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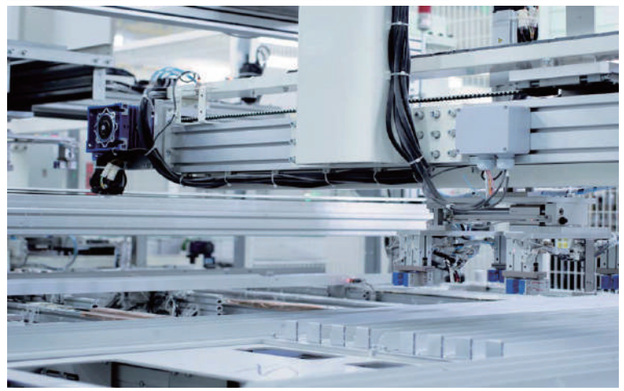
About GREENSUN

Found in 2004, Greensun Solar Energy Tech Co., Limited located in Changzhou, Jiangsu, China has more than 18years experience in solar industry.
We are professional and experienced manufacturer of polycrystalline and monocrystalline silicon solar pv modules and lithium ion batteries and also is the comprehensive desinger and provider of solar solutions and ESS energy storage system solutions.
We are dedicated to PV & Battery products R&D, manufacture and sales; PV projects development, O&M as well as residential and commercial complementary solar systems development and sales all over the world.
Our annual PV production volume is over 8.5GW.
Greensun Solar business footprint extends to more than 100 countries and regions, including Czech Republic, Poland, Germany, Mexico, Australia, South Africa, Haiti, Chile, Dubai, Thailand and Vietnam and America.
Greensun Solar is committed to delivering high quality and realiable solar products and batteries as well as best before-sales and after-sales service to our global partners and customers.



Mission and Philosophy

Build A strong brand and positive corporate image, strenthen our customer mix and product mix with our innovative R&D and comprehensive & high efficiency products;
Take Responsibility to Ensure A Sustainable & Clean Future.

Social Responsibility

Provide a Comprehensive, One Stop Clean Solar Energy Solution for everyone in the world.

Why Greensun Sloar

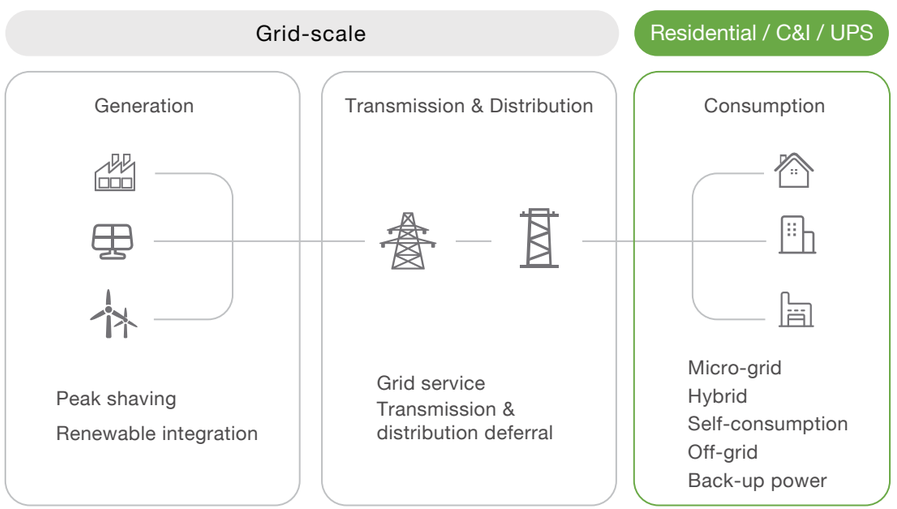
Long History&Experienced

18Years Found in 2004	100+ Countries & Regions	75000+ System Sold Globaly	8.5GW PV Production 3.95GWH ESS

Safety & Reliable Products First

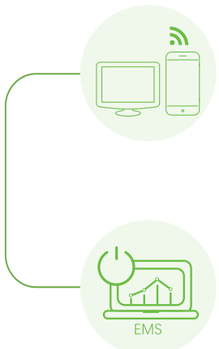
- Strict Quaity Control & Perfect Research&Development
- The safest chemistry LiFePO4 for Lithium ion Battery
- Tier 1 Solar Cells to make Greensun solar panels

Core Application:Residential ESS C&I Application



www.greensunpv.com

Smart Energy



For Home application, we have on time monitoring WIFI

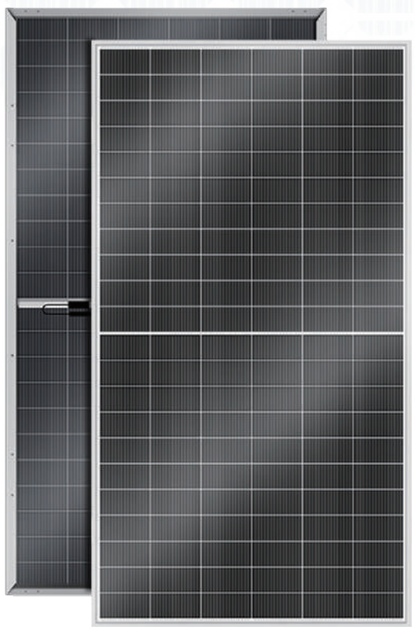
For C&I application, EMS is avaliable

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 TOPCON



GSM-MN12/132HBD
700-730W

N-Type TOPCON
Bifacial Dual Glass
Mono Silicon PV Module

730W	23.50%	0~+5W
Maximum Power Output	Maximum Module Efficiency	Power Output Guarantee

N-type HJT technology for lower LCOE

The lower temperature coefficient and better low irradiance performance of HJT 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)

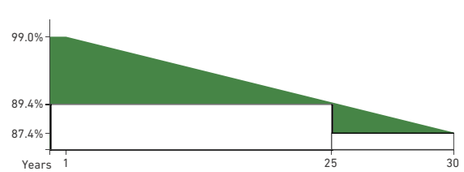
PID Resistance

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

Linear Performance Warranty



15 years Product warranty on materials and workmanship

30 years Linear power output warranty

First-year degradation *1%* and annual degradation at *0.4%*

Electrical Specification (STC*)

Maximum Power	Pmax(W)	700	705	710	715	720	725	730
Maximum Power Voltage	Vmp(V)	40.35	40.52	40.69	40.86	41.03	41.20	41.37
Maximum Power Current	Imp(A)	17.35	17.40	17.45	17.50	17.55	17.60	17.65
Open Circuit Voltage	Voc(V)	48.60	48.77	48.94	49.11	49.28	49.45	49.62
Short Circuit Current	Isc(A)	18.35	18.40	18.45	18.50	18.55	18.60	18.65
Module Efficiency	(%)	22.5	22.7	22.9	23.0	23.2	23.3	23.5
Power Output Tolerance	(W)	0~+5						

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

Electrical Specification (NOCT*)

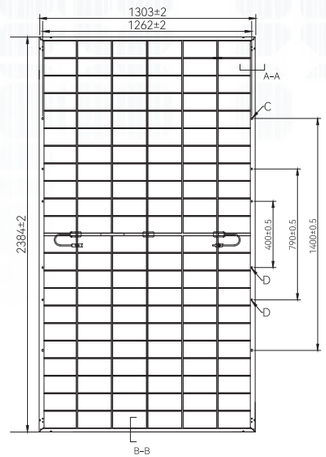
Maximum Power	Pmax (W)	526	530	534	538	541	545	549
Maximum Power Voltage	Vmp (V)	37.55	37.73	37.90	38.08	38.18	38.35	38.52
Maximum Power Current	Imp (A)	14.01	14.05	14.09	14.13	14.17	14.21	14.25
Open Circuit Voltage	Voc(V)	46.17	46.33	46.49	46.65	46.82	46.98	47.14
Short Circuit Current	Isc (A)	14.82	14.86	14.90	14.94	14.98	15.02	15.06

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

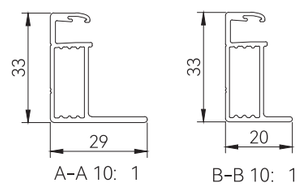
Electrical Specification (Rear Power Gain)

5%	Maximum Power	Pmax(W)	735	740	745	750	756	761	766
	Module Efficiency	(%)	23.7	23.8	24.0	24.1	24.3	24.5	24.7
15%	Maximum Power	Pmax(W)	805	810	816	822	828	834	840
	Module Efficiency	(%)	25.9	26.1	26.3	26.5	26.7	26.8	27.0
25%	Maximum Power	Pmax(W)	875	881	887	893	900	906	912
	Module Efficiency	(%)	28.2	28.4	28.6	28.7	29.0	29.2	29.4

Module Dimension



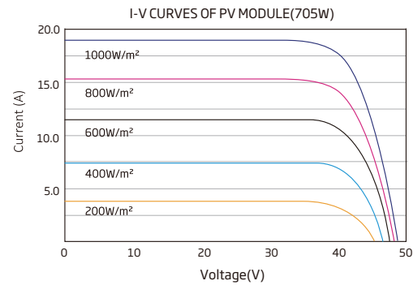
Back View



Mechanical Data

Cells	N-type TOPCON
Number of Cells	132Cells (6x22)
Dimensions of Module L*W*H (mm)	2384x1303x33mm
Weight (kg)	37.9 kg
Front Side Glass	2.0mm AR coated heat strengthened glass
Back Side Glass	2.0mm heat strengthened glass
Frame	Anodized aluminum alloy
J-Box	IP68, 3 diodes
Cable	4.0mm²,
Cable Length	+400mm, -200mm or-1400mm,length can be customized
Wind/ Snow Load	2400Pa/5400Pa*

* For more details please check the installation manual



Temperature Ratings

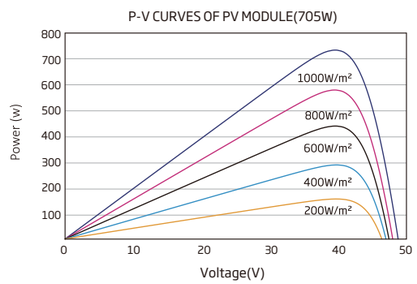
Nominal Operating Cell Temperature (NOCT)	45±2°C
Temperature Coefficient of Isc	+0.040%/°C
Temperature Coefficient of Voc	-0.240%/°C
Temperature Coefficient of Pmax	-0.280%/°C

Maximum Ratings

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

Packaging Configuration

Module per box	33 pieces
Module per 40' container	594 pieces
Connector	MC Compatible



N-Type TOPCON

GSM-MN12R/132HBD
610-635W

N-Type TOPCON
Bifacial Dual Glass
Mono Silicon PV Module

635W	23.50%	0~+5W
Maximum Power Output	Maximum Module Efficiency	Power Output Guarantee

N-type HJT technology for lower LCOE

The lower temperature coefficient and better low irradiance performance of HJT 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 12 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)

PID Resistance

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

Delivers Reliable Performance Over Time

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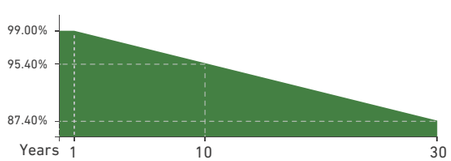
- Rigorous quality control to meet the highest standard: ISO9001:2015, ISO14001: 2015 and OHSAS: 18001 2007
- Tested for harsh environments (salt mist, ammonia corrosion and sand blowing test: IEC 61701, IEC 62716, DIN EN 60068-2- 68)
- Long term reliability tests
- 2×100% EL inspection ensuring defect-free modules

Linear Performance Warranty



12 years Product warranty on materials and workmanship

30 years Linear power output warranty

Electrical Specification (STC*)

Maximum Power	Pmax(W)	610	615	620	625	630	635
Maximum Power Voltage	Vmp(V)	41.15	41.35	41.55	41.75	41.95	42.15
Maximum Power Current	Imp(A)	14.83	14.88	14.93	14.98	15.03	15.08
Open Circuit Voltage	Voc(V)	47.90	48.10	48.30	48.50	48.70	48.90
Short Circuit Current	Isc(A)	15.85	15.90	15.95	16.00	16.05	16.10
Module Efficiency	(%)	22.60	22.80	23.00	23.10	23.30	23.50
Power Output Tolerance	(W)	0~+5					

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

Electrical Specification (NOCT*)

Maximum Power	Pmax (W)	459	462	466	470	474	478
Maximum Power Voltage	Vmp (V)	38.35	38.47	38.68	38.88	39.08	40.27
Maximum Power Current	Imp (A)	11.97	12.01	12.05	12.09	12.13	12.17
Open Circuit Voltage	Voc(V)	45.51	45.70	45.89	46.08	46.27	46.46
Short Circuit Current	Isc (A)	12.80	12.84	12.88	12.92	12.96	13.00

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

Electrical Specification (Rear Power Gain)

5%	Maximum Power	Pmax(W)	640	645	651	656	661	667
	Module Efficiency	(%)	23.70	23.90	24.10	24.30	24.50	24.70
15%	Maximum Power	Pmax(W)	701	707	713	719	725	730
	Module Efficiency	(%)	26.00	26.20	26.40	26.60	26.80	27.00
25%	Maximum Power	Pmax(W)	762	768	775	781	787	794
	Module Efficiency	(%)	28.20	28.40	28.70	28.90	29.10	29.40

Mechanical Data

Cells	N-Type TOPCON
Number of Cells	132Cells (6x32)
Dimensions of Module L*W*H (mm)	2382x1134x30mm
Weight (kg)	32.5 kg
Front Side Glass	2.0mm AR coated heat strengthened glasss
Back Side Glass	2.0mm heat strengthened glass
Frame	Anodized aluminum alloy frame
J-Box	IP68, 3 diodes
Cable	4.0mm²,
Cable Length	+400mm,-200mm or -1400mm, length can be customized
Wind/ Snow Load	2400Pa/5400Pa*

* 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	-0.280%/°C

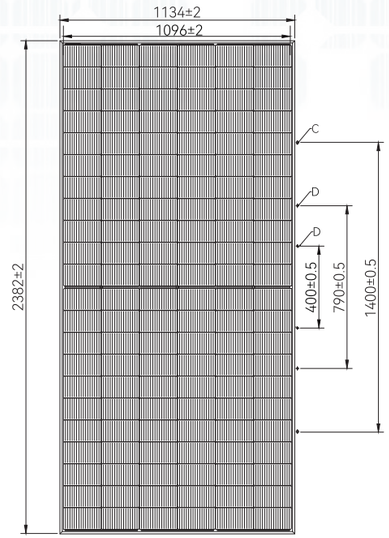
Maximum Ratings

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

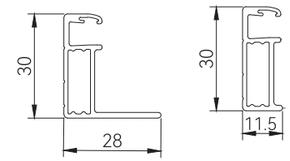
Packaging Configuration

Module per box	36 pieces
Module per 40' container	720 pieces
Connector	MC Compatible

Module Dimension

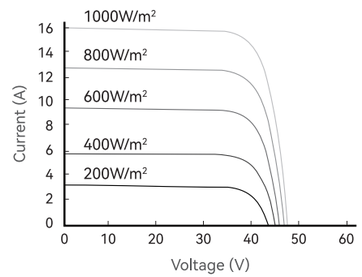


Back View

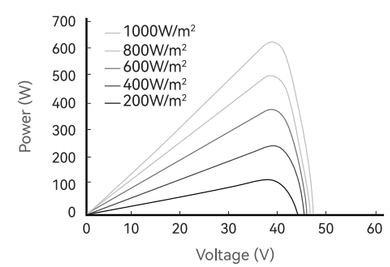


A-A 10: 1 B-B 10: 1

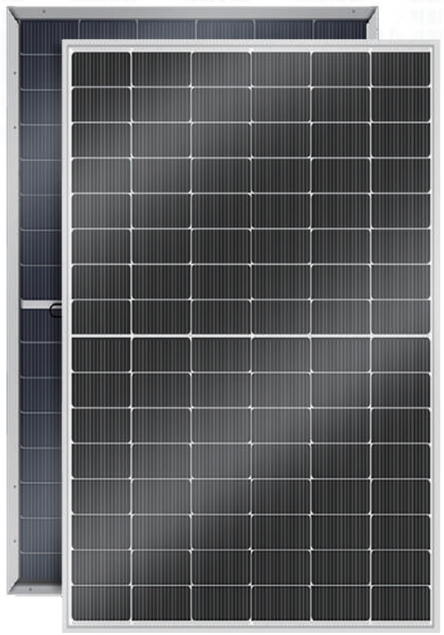
I-V CURVES OF PV MODULE(610W)



P-V CURVES OF PV MODULE(610W)



N-Type TOPCON



GSM-MN12R/96HBD
440-460W

N-Type
Bifacial Dual Glass
Mono Silicon PV Module

460W	23.0%	0~+5W
Maximum Power Output	Maximum Module Efficiency	Power Output Guarantee

N-type HJT technology for lower LCOE
The lower temperature coefficient and better low irradiance performance of HJT 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)

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

Delivers Reliable Performance Over Time

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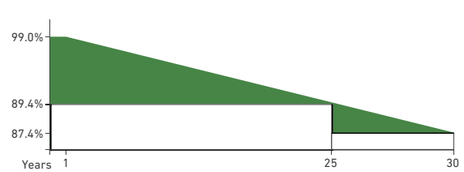
- Fully automatic facility and world-class technology
- Rigorous quality control to meet the highest standard: ISO9001:2015, ISO14001: 2015 and OHSAS: 18001 2007
- Tested for harsh environments (salt mist, ammonia corrosion and sand blowing test: IEC 61701, IEC 62716, DIN EN 60068-2- 68)
- Long term reliability tests
- 2×100% EL inspection ensuring defect-free modules

Linear Performance Warranty



15 years Product warranty on materials and workmanship

30 years Linear power output warranty

First-year degradation *1%* and annual degradation at *0.4%*

Electrical Specification (STC*)

Maximum Power	Pmax(W)	440	445	450	455	460
Maximum Power Voltage	Vmp(V)	29.72	29.90	30.08	30.26	30.44
Maximum Power Current	Imp(A)	14.81	14.89	14.97	15.05	15.13
Open Circuit Voltage	Voc(V)	34.67	34.85	35.03	35.21	35.39
Short Circuit Current	Isc(A)	15.95	16.00	16.05	16.10	16.15
Module Efficiency	(%)	22.00	22.30	22.50	22.80	23.00
Power Output Tolerance	(W)	0~+5				

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

Electrical Specification (NOCT*)

Maximum Power	Pmax (W)	331	335	338	342	346
Maximum Power Voltage	Vmp (V)	27.68	27.88	27.96	28.15	28.31
Maximum Power Current	Imp (A)	11.96	12.02	12.09	12.15	12.22
Open Circuit Voltage	Voc(V)	32.94	33.11	33.28	33.45	33.62
Short Circuit Current	Isc (A)	12.88	12.92	12.96	13.00	13.04

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

Electrical Specification (Rear Power Gain)

5%	Maximum Power	Pmax(W)	462	467	472	478	483
	Module Efficiency	(%)	23.1	23.4	23.6	23.9	24.2
15%	Maximum Power	Pmax(W)	506	511	517	523	529
	Module Efficiency	(%)	25.3	25.6	25.9	26.2	26.5
25%	Maximum Power	Pmax(W)	550	556	562	568	575
	Module Efficiency	(%)	27.5	27.8	28.1	28.4	28.8

Mechanical Data

Cells	N-Type TOPCON
Number of Cells	96Cells (6x16)
Dimensions of Module L*W*H (mm)	1762x1134x30mm
Weight (kg)	20.9 kg
Front Side Glass	1.6mm high transmittance, AR tempered glass
Back Side Glass	1.6mm semi-tempered glass
Frame	Anodized aluminum alloy frame
J-Box	IP68, 3 diodes
Cable	4.0mm²,
Cable Length	300mm, length can be customized
Wind/ Snow Load	2400Pa/5400Pa*

* 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	-0.280%/°C

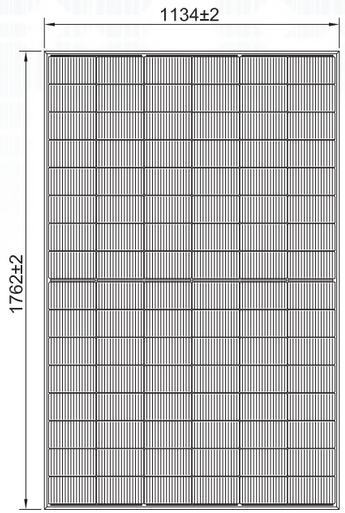
Maximum Ratings

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

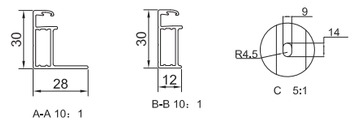
Packaging Configuration

Module per box	36 pieces
Module per 40' container	936 pieces
Connector	MC Compatible

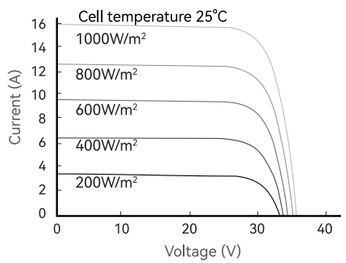
Module Dimension



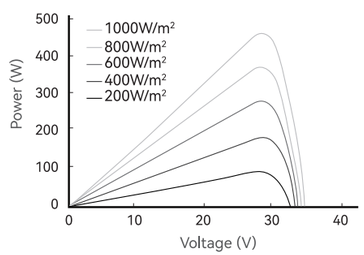
Back View



I-V Curve at Different Temperature (450W)



I-V/P-V Curve at Different Irradiation (450W)



N-Type TOPCON

GSM-M10/144NHBD
575-595W

N-Type TOPCON
Bifacial Dual Glass
Mono Silicon PV Module

595W	23.03%	0~+5W
Maximum Power Output	Maximum Module Efficiency	Power Output Guarantee

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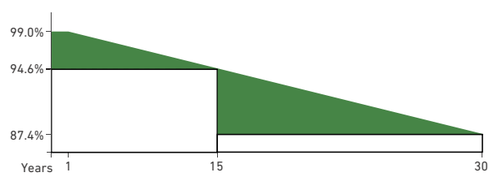
Linear Performance Warranty



15 years Product warranty on materials and workmanship

30 years Linear power output warranty

First-year degradation *1%* and annual degradation at *0.4%*

Electrical Specification (STC*)

Maximum Power	Pmax(W)	575	580	585	590	595
Maximum Power Voltage	Vmp(V)	42.44	42.59	42.74	42.89	43.04
Maximum Power Current	Imp(A)	13.55	13.62	13.69	13.76	13.83
Open Circuit Voltage	Voc(V)	51.27	51.47	51.67	51.87	52.07
Short Circuit Current	Isc(A)	14.31	14.37	14.43	14.49	14.55
Module Efficiency	(%)	22.26	22.45	22.64	22.83	23.03
Power Output Tolerance	(W)			0~+5		

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

Electrical Specification (NOCT*)

Maximum Power	Pmax (W)	432	436	440	444	448
Maximum Power Voltage	Vmp (V)	39.78	39.87	39.96	40.05	40.22
Maximum Power Current	Imp (A)	10.87	10.94	11.01	11.08	11.14
Open Circuit Voltage	Voc(V)	48.70	48.89	49.08	49.27	49.46
Short Circuit Current	Isc (A)	11.55	11.60	11.65	11.70	11.75

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

Mechanical Data

Cells	N-Type TOPCON
Number of Cells	144 Cells (6×24)
Dimensions of Module L*W*H (mm)	2278×1134×30mm
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 Pmax	-0.300%/°C

Maximum Ratings

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

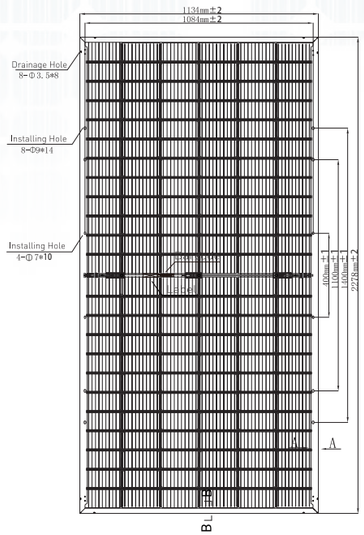
Packaging Configuration

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

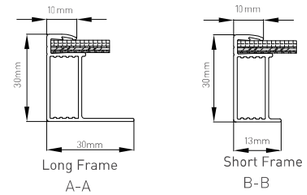
Optional

Connector	MC Original

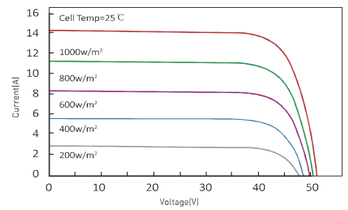
Module Dimension



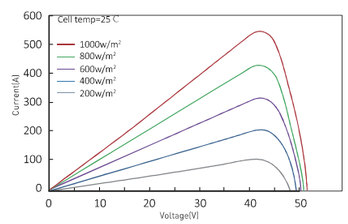
Back View



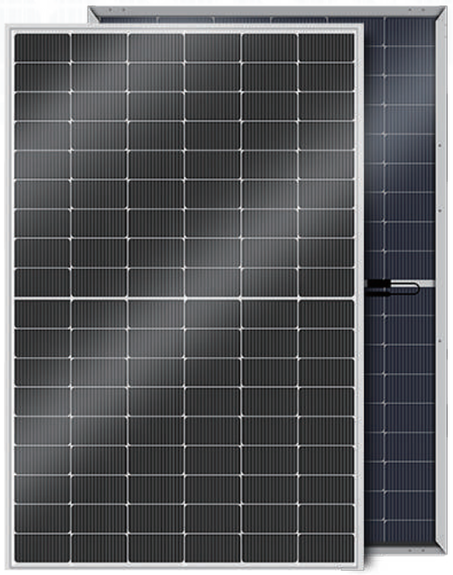
I-V Curve at Different Temperature (570W)



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



N-Type TOPCON



GSM-M10/108NHBD
430-455W

N-Type TOPCON
Bifacial Dual Glass
Mono Silicon PV Module

455W	23.30%	0~+5W
Maximum Power Output	Maximum Module Efficiency	Power Output Guarantee

N-type HJT technology for lower LCOE

The lower temperature coefficient and better low irradiance performance of HJT 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)
·Excellent wind load 2400Pa & snow load 5400Pa under certain installation method

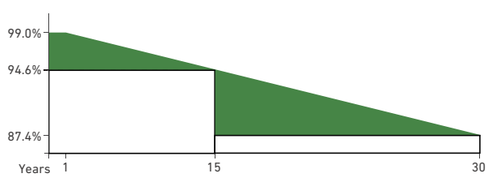
PID Resistance

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

Linear Performance Warranty



15 years Product warranty on materials and workmanship

30 years Linear power output warranty

First-year degradation *1%* and annual degradation at *0.4%*

Electrical Specification (STC*)

Maximum Power	Pmax(W)	430	435	440	445	450	455
Maximum Power Voltage	Vmp(V)	31.88	32.07	32.26	32.45	32.64	32.83
Maximum Power Current	Imp(A)	13.49	13.57	13.65	13.73	13.81	13.89
Open Circuit Voltage	Voc(V)	38.49	38.68	38.87	39.06	39.25	39.44
Short Circuit Current	Isc(A)	14.23	14.31	14.39	14.47	14.55	14.63
Module Efficiency	(%)	22.02	22.27	22.53	22.78	23.04	23.30
Power Output Tolerance	(W)	0~+5					

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

Electrical Specification (NOCT*)

Maximum Power	Pmax (W)	323	327	331	335	339	343
Maximum Power Voltage	Vmp (V)	29.63	29.78	29.93	30.10	30.24	30.41
Maximum Power Current	Imp (A)	10.91	10.98	11.06	11.13	11.21	11.28
Open Circuit Voltage	Voc(V)	36.56	36.74	36.92	37.10	37.28	37.46
Short Circuit Current	Isc (A)	11.49	11.55	11.62	11.68	11.75	11.81

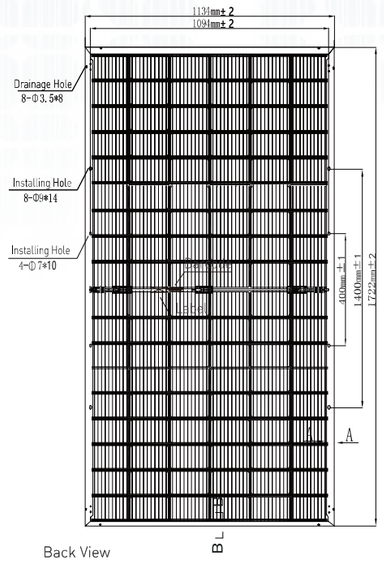
* Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Mechanical Data

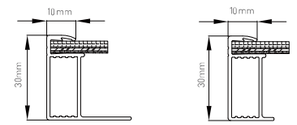
Cells	N-Type TOPCON
Number of Cells	108 Cells (6x18)
Dimensions of Module L*W*H (mm)	1722 x 1134 x 30mm
Weight (kg)	24.5 kg
Front Side Glass	High transparency solar glass 2.0mm
Back Side Glass	High transparency solar glass 2.0mm
Frame	Silver, anodized aluminium alloy
J-Box	IP68 Rated
Cable	4.0mm²(0.006 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

Module Dimension



Back View



Long Frame A-A

Short Frame B-B

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

Maximum Ratings

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

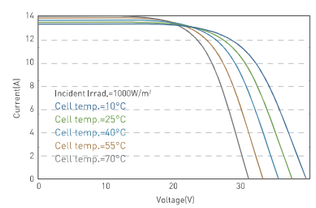
Packaging Configuration

Module per box	36 pieces
Module per 40' container	936 pieces

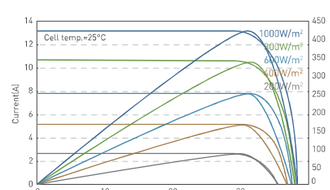
Optional

Connector	MC Original

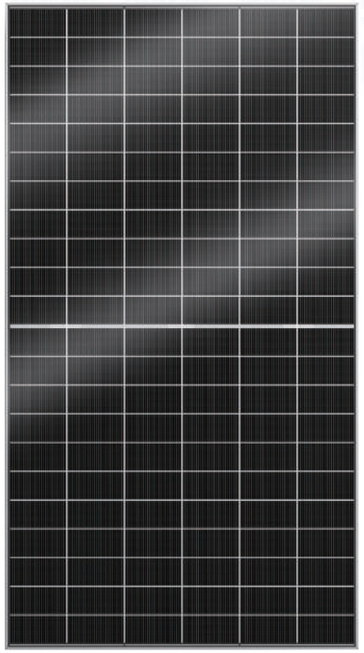
I-V Curve at Different Temperature (440W)



I-V/P-V Curve at Different Irradiation (440W)



HJT



GSM-MH12/132HBD

700-730W

210mm HJT
Bifacial Dual Glass
Monocrystalline Module

730W	23.5%	0~+5W
Maximum Power Output	Maximum Module Efficiency	Power Output Guarantee

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

Double-sided power generation, higher yield
Bifacial technology enables additional energy harvesting from rear side

Ultra-low Degradation, longer warranty, higher output
·First-year degradation 1% and annual degradation at 0.3%
·Up to 25 years product warranty and 30 years power warranty

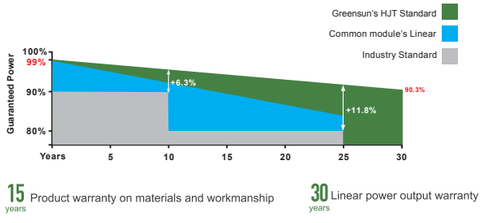
Universal solution for residential and C&I application
·Easy for integration, designed for compatibility with existing mainstream inverters and diverse mounting systems
·Perfect size and low weight for handling and installation
·Most valuable solution on low load capacity rooftops (weight similar to backsheet version)
·Excellent wind load 2400Pa & snow load 5400Pa under certain installation method

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

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

Cells	HJT
Number of Cells	132Cells(6×22)
Dimensions of Module L*W*H (mm)	2384x1303x33mm
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	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	+0.047%/°C
Temperature Coefficient of Voc	-0.220%/°C
Temperature Coefficient of Pmax	-0.240%/°C

Maximum Ratings

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

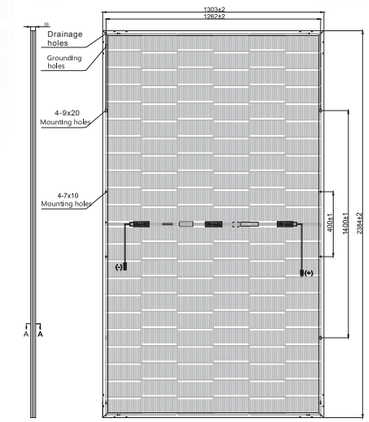
Packaging Configuration

Module per box	33 pieces
Module per 40' container	594 pieces

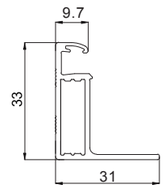
Optional

Connector	MC Original

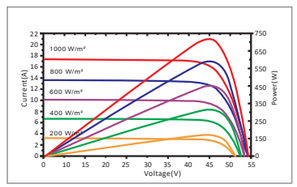
Module Dimension



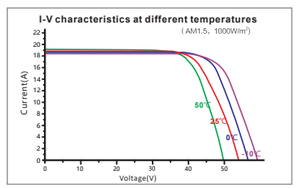
Back View



I-V Curve at Different Temperature (720W)



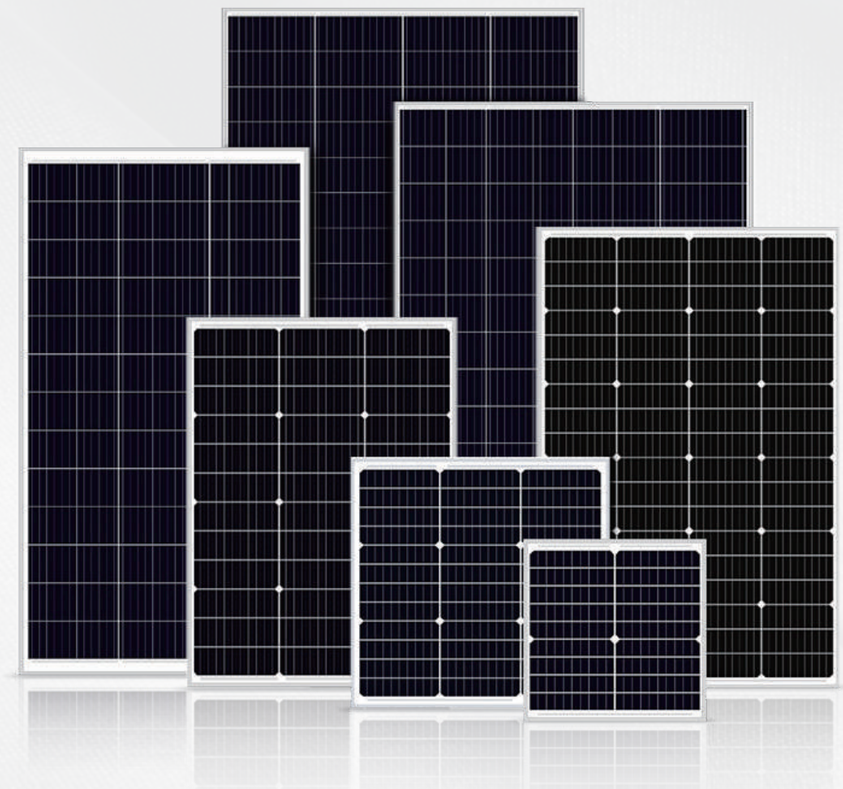
I-V/P-V Curve at Different Irradiation (720W)



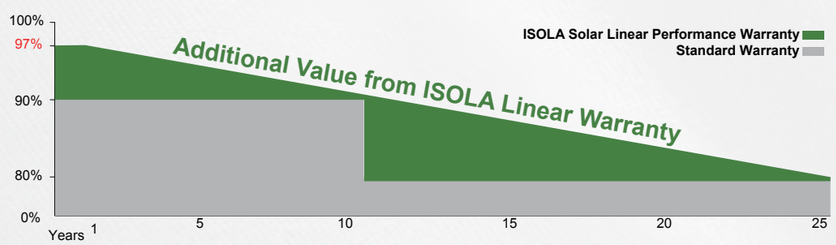
Small

20W-400W

CUSTOMIZED MONO SOLAR PANEL



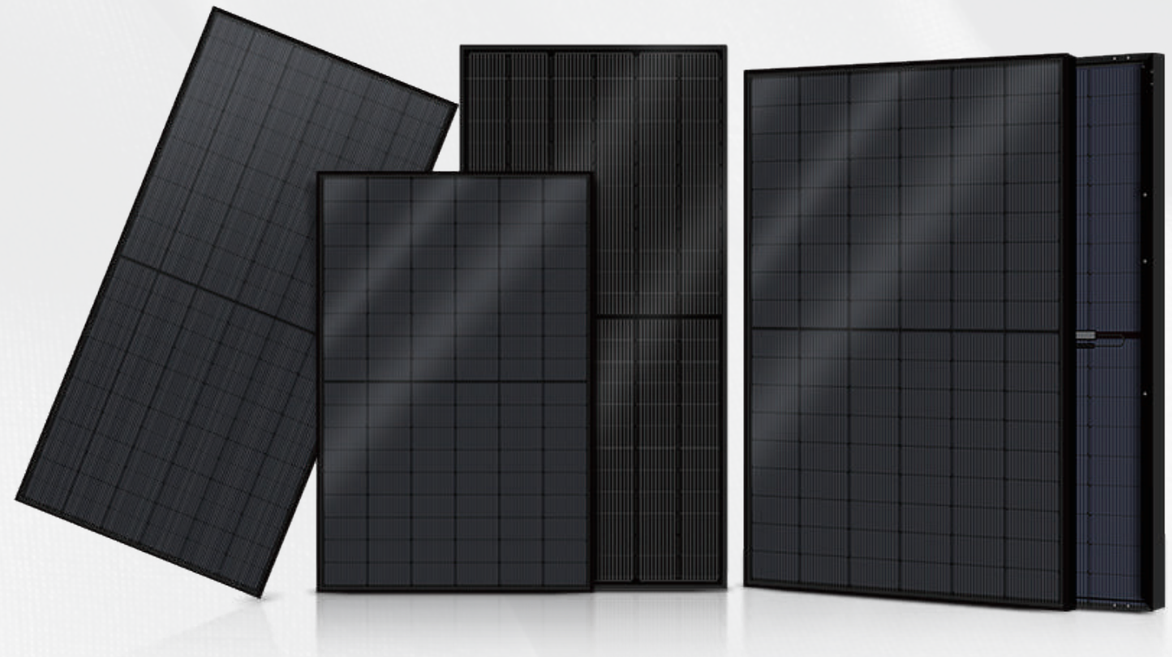
Linear Performance Warranty



12 years Product warranty on materials and workmanship

25 years Linear power output warranty

All Black



N-Type

GSM-M10/108NHBD-430-455W

GSM-MN12R/96HBD-440-460W

GSM-M10/144NHBD-575-595W

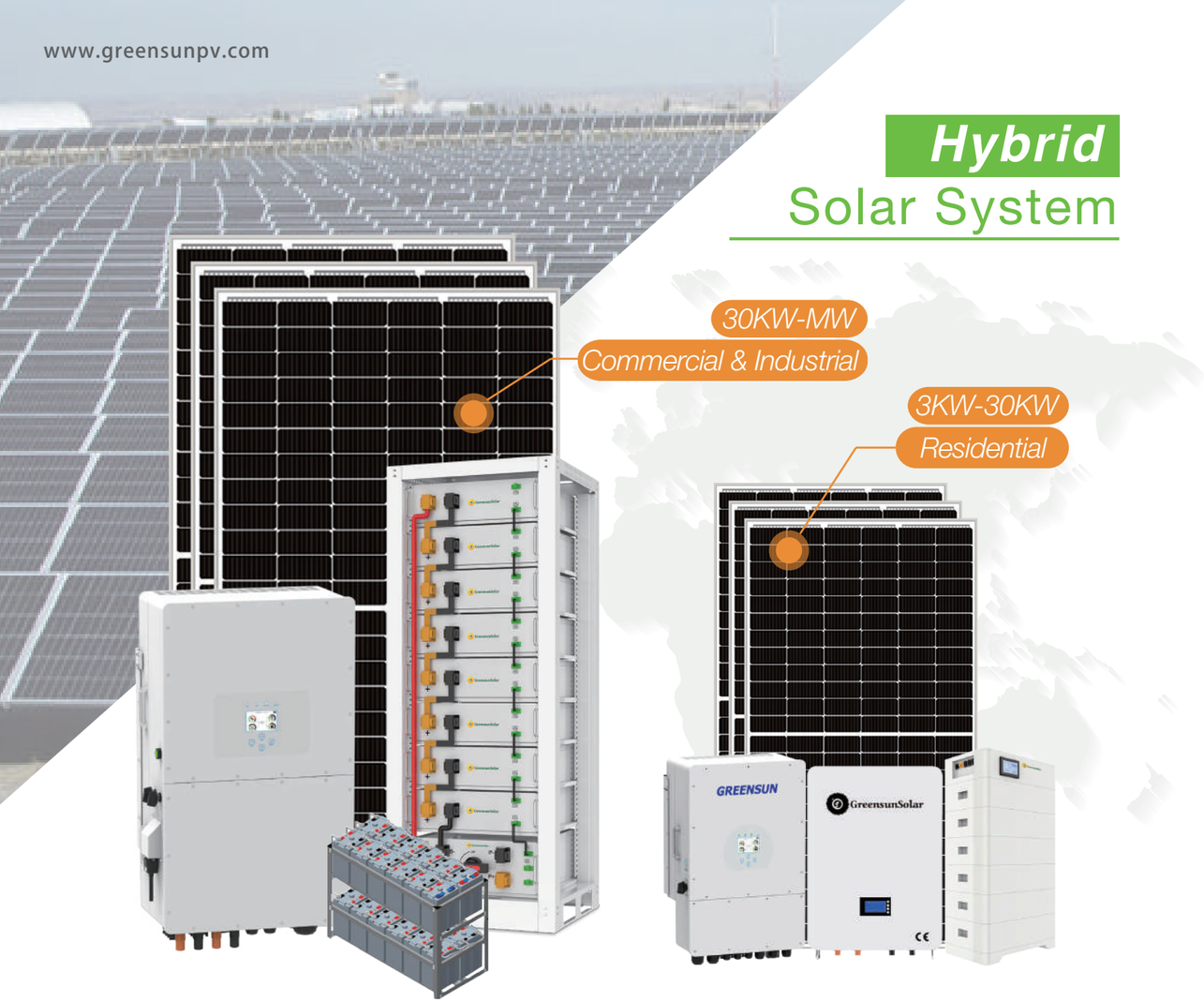
One-Stop Solar Solution

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



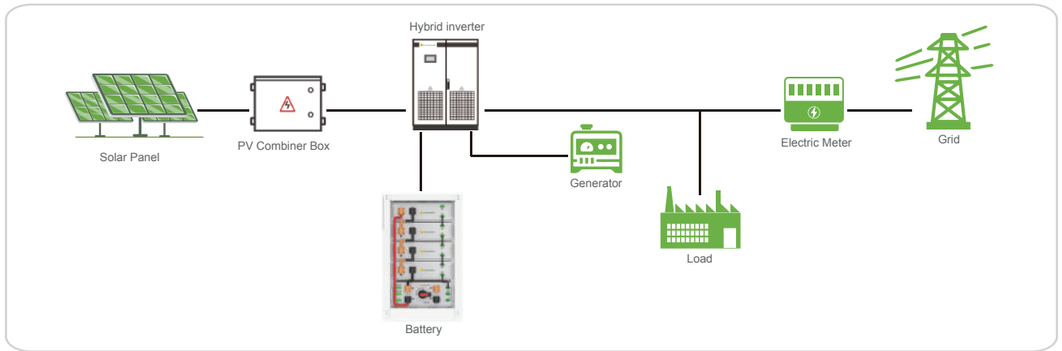
Fulfill your needs in every way

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
- **Programmable working mode**
  Peak-shaving, back-up, UPS, use the system however you want it
- **Scalable design**
  Quadruple capacity by paralleling 4 units
- **Touchscreen LCD**
  More convenient for parameter setting and maintenance
- **Seamless transfer**
  Uninterruptable power supply guaranteed
- **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**

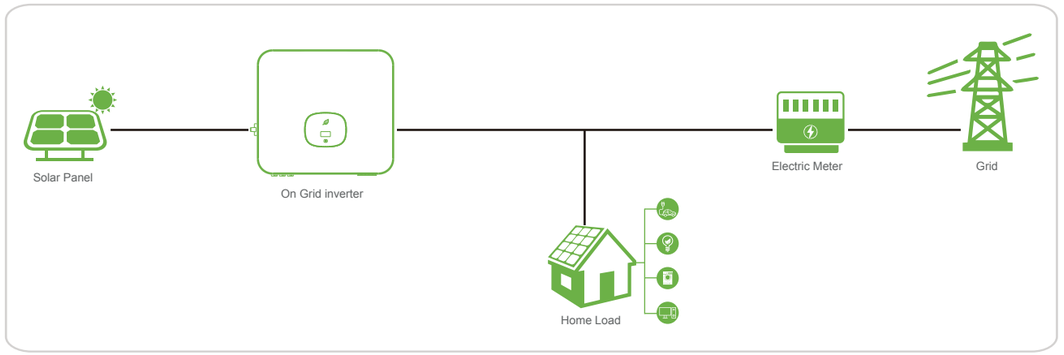
  - Multiple dataloggers with kinds of communication methods
  - 24h self-consumption monitoring
  - Local commissioning with smart APP
  - Support export limitation function

- **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

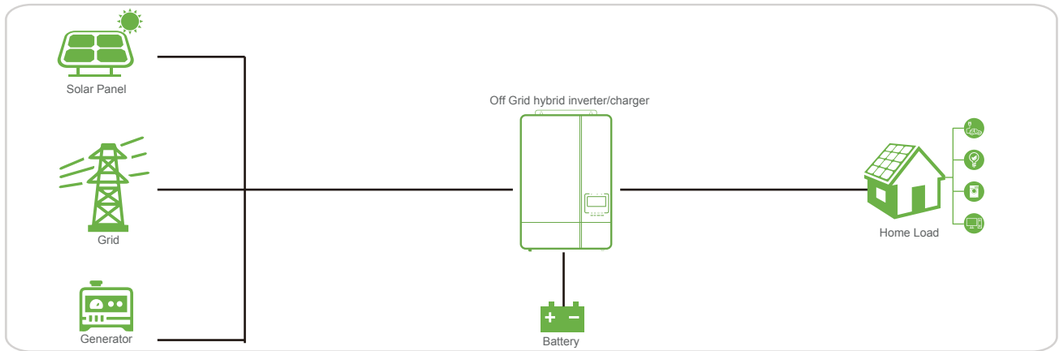
Fulfill your needs in every way

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

- Very stuitable 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 Cable4mm²	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







www.greensunpv.com

Project Case

Global Delivery







Project Case

Global Delivery

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Project Case

Global Delivery