



GermanSolar
The Partner For Your Solar Lifetime!®



HIGH EFFICIENCY
SOLAR PANELS



CUSTOMIZED
SOLAR PANELS



ON-GRID/OFF-GRID
SOLAR SYSTEM
SOLUTION



ENERGY STORAGE
SYSTEM

WWW.GERMANSOLARASIA.COM

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ABOUT THE COMPANY

GermanSolar is a leading solar solution provider and solar panel manufacturer, with offices in Singapore, Germany, Slovenia, the US, Taiwan, and China. Having relocated its headquarters to Singapore, GermanSolar is now positioned closer to the rapidly growing Asian markets, thus further strengthening GermanSolar's already outstanding dominance of the worldwide solar arena.

GermanSolar engineers design and manufacture high performance panels for On-Grid and Off-Grid applications in accordance with the highest possible standards of quality control. GermanSolar provides excellent solar solutions that are engineered for durability and topnotch functionality, and are attractively designed.

GermanSolar offers individual and customized complete solutions for all solar system types, from residential On-Grid and Off-Grid installations with Energy Storage options, to commercial rooftops, to megawatt power plants. With more than 20 years of experience in the solar industry, GermanSolar is capable of delivering proven high quality products, and is able to guarantee continual performance and outstanding functionality.

GermanSolar manufactures high efficiency solar panels designed to provide unprecedented quality and versatility allowing you to turn your ideas into customized solutions for different applications: for roof tile, marine-related products, streetlight solar panels, etc. We focus on quality throughout the value chain by selecting only top quality components from leading manufacturers. Apart from solar panels, our products include inverters, innovative installation components, and energy storage systems.

"Quality makes a difference" forms the solid basis for GermanSolar's sustainable solutions, and is the guiding philosophy of our entire GermanSolar team. GermanSolar is strongly focused on building long-term relationships with customers and partners. GermanSolar constantly finds the optimal solutions for its customers, working closely with them to determine their preferences and needs, and to provide the most suitable solutions for them.

MISSION

The workforce of GermanSolar is highly experienced and committed to providing excellent engineering to make GermanSolar the turn-key solution for any idea and application. One such idea has become a GermanSolar team continual goal: to cut carbon emissions in a significant way by providing long lasting products to our customers.

FACTORY APPEARANCE





GermanSolar
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AGRIVOLTAIC SERIES

AGRIVOLTAIC S O L A R P A N E L S

Bring a new life to your farm by combining solar panels and agriculture. Make your farm greener, healthier, and more earth-friendly.

FEATURES

Specifications: customized specifications.



*High transmittance
from
20 % - 60 %*



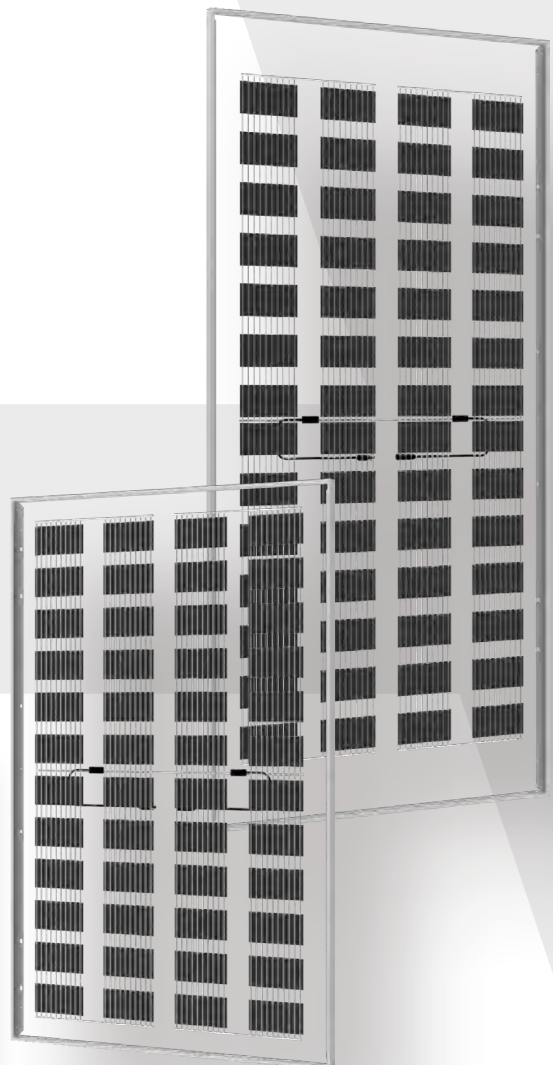
*Double glass
laminated,
water resistant*



*Suitable
for farming, BIPV,
high transmittance
demands*



Customized size



APPLICATION SCENARIO



61730-2



IEC 61730-1
IEC 61730-2, IEC 61215-1,
IEC 61215-2 and IEC 61215-3-1



IEC 61730-1
IEC 61730-2, IEC 61215-1,
IEC 61215-2 and IEC 61215-3-1



EN IEC 61730:
PHOTOVOLTAIK (PV) MODULE
SAFETY QUALIFICATION
2014/35/EU:
THE LOW VOLTAGE DIRECTIVE



ISO 9001
ISO 14001
ISO 45001
ISO 26000
ISO 19600




RoHS



Reach

ELECTRICAL DATA*

Light Transmittance (%)	20	30	40	50	60
Illustration					
Model	GSM10-Agri-365W-CG	GSM10-Agri-320W-CG	GSM10-Agri-275W-CG	GSM10-Agri-215W-CG	GSM10-Agri-180W-CG
Cell Number	6 X 16	6 X 14	4 X 18	4 X 14	4 X 12
Nominal Max. Power (P _{max}) *(W)	365	320	275	215	180
Open Circuit Voltage (V _{oc}) (V)	34.23	29.95	25.68	19.97	17.12
Short Circuit Current (I _{sc}) (A)	12.94	12.96	13.00	13.06	12.76
Max. Power Voltage (V _{mpp}) (V)	29.39	25.71	22.04	17.14	14.69
Max. Power Current (I _{mp}) (A)	12.42	12.45	12.48	12.54	12.25
Module Efficiency (%)	18.69	16.39	14.08	11.01	9.22
Power Tolerance (%)	± 3				
Power Temperature Coefficient γ	-0.33 % / °C				
Current Temperature Coefficient α	+0.04 % / °C				
Voltage Temperature Coefficient β	-0.27 % / °C				

*STC: Irradiance 1000 W / m², cell temperature 25 °C, AM = 1.5, Tolerance of P_{max} is within + / - 3 %.

BSTC**

Nominal Max. Power (P _{max}) *(W)	404	355	305	238	199
Open Circuit Voltage (V _{oc}) (V)	34.35	30.06	25.77	20.04	17.18
Short Circuit Current (I _{sc}) (A)	16.24	16.27	16.31	16.40	16.01
Max. Power Voltage (V _{mpp}) (V)	29.39	25.71	22.04	17.14	14.69
Max. Power Current (I _{mp}) (A)	13.76	13.79	13.83	13.90	13.57
NMOT (Nominal Module Operating Temperature) (°C)	41°C ± 3°C				

**BSTC: Front side irradiation 1000 W / m², back side reflection irradiation 135 W / m², AM = 1.5, ambient temperature 25 °C.

MECHANICAL DATA

Dimensions (mm)	1722 × 1134 × 30
Weight (kg)	24.2
Solar Cells (mm)	Mono 182 × 91
Front Glass	2.0 mm glass
Back Glass	2.0 mm glass
Junction Box	IP68, 3 diodes
Cables	1200mm in length (customizable) / UV resistant
Connectors	MC4 original / MC4 compatible

OPERATING CONDITIONS

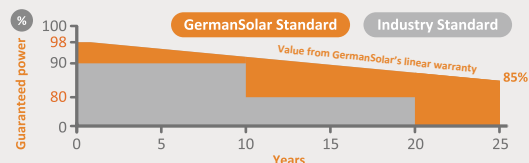
Max. System Voltage (V)	1500
Operating Temperature (°C)	-40°C ~ +85°C
Max. Series Fuse Rating (A)	30
Front Side Maximum Static Loading (Pa)	5400
Rear Side Maximum Static Loading (Pa)	2400

PACKAGING

Panels Per Pallet (pcs)	36
Pallets Per Container (pcs)	26
Panels quantity per 40' container (pcs)	936

LINEAR PERFORMANCE WARRANTY

12 Years Product Warranty | 25 Years Performance Warranty



ELECTRICAL DATA *

Light Transmittance (%)	20	30	40	50	60
Illustration					
Model	GSM10-Agri-455W-AG	GSM10-Agri-415W-AG	GSM10-Agri-335W-AG	GSM10-Agri-275W-AG	GSM10-Agri-215W-AG
Cell Number	6 X 20	6 X 18	4 X 22	4 X 18	4 X 14
Nominal Max. Power (P _{max}) *(W)	455	415	335	275	215
Open Circuit Voltage (V _{oc}) (V)	42.79	38.51	31.38	25.68	19.97
Short Circuit Current (I _{sc}) (A)	12.90	13.08	12.95	13.00	13.06
Max. Power Voltage (V _{mpp}) (V)	36.73	33.06	26.94	22.04	17.14
Max. Power Current (I _{mpp}) (A)	12.39	12.55	12.44	12.48	12.54
Module Efficiency (%)	17.61	16.06	12.96	10.64	8.32
Power Tolerance (%)	± 3				
Power Temperature Coefficient γ	-0.33 % / °C				
Current Temperature Coefficient α	+0.04 % / °C				
Voltage Temperature Coefficient β	-0.27 % / °C				

*STC: Irradiance 1000 W / m², cell temperature 25 °C, AM = 1.5, Tolerance of P_{max} is within + / - 3 %.

BSTC **

Nominal Max. Power (P _{max}) *(W)	504	460	371	305	238
Open Circuit Voltage (V _{oc}) (V)	42.94	38.65	31.49	25.77	20.04
Short Circuit Current (I _{sc}) (A)	16.19	16.41	16.26	16.31	16.40
Max. Power Voltage (V _{mpp}) (V)	36.73	33.06	26.94	22.04	17.14
Max. Power Current (I _{mpp}) (A)	13.72	13.91	13.78	13.83	13.90
NMOT (Nominal Module Operating Temperature) (°C)	41°C ± 3°C				

**BSTC: Front side irradiation 1000 W / m², back side reflection irradiation 135 W / m², AM = 1.5, ambient temperature 25 °C.

MECHANICAL DATA

Dimensions (mm)	2279 x 1134 x 30
Weight (kg)	31.5
Solar Cells (mm)	Mono 182 x 91
Front Glass	2.0 mm glass
Back Glass	2.0 mm glass
Junction Box	IP68, 3 diodes
Cables	1200 mm in length (customizable) / UV resistant
Connectors	MC4 original / MC4 compatible

OPERATING CONDITIONS

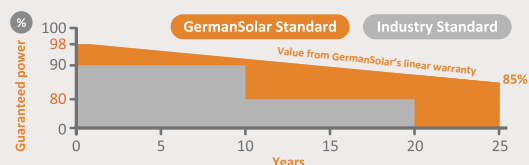
Max. System Voltage (V)	1500
Operating Temperature (°C)	-40°C ~ +85°C
Max. Series Fuse Rating (A)	30
Front Side Maximum Static Loading (Pa)	5400
Rear Side Maximum Static Loading (Pa)	2400

PACKAGING

Panels Per Pallet (pcs)	36
Pallets Per Container (pcs)	20
Panels quantity per 40' container (pcs)	720

LINEAR PERFORMANCE WARRANTY

12 Years Product Warranty | 25 Years Performance Warranty





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AGRIVOLTAIC SERIES

AGRIVOLTAIC SEMI-FLEX SOLAR PANELS

Bring a new life to your farm by combining solar panels and agriculture. Make your farm greener, healthier, and more earth-friendly.

FEATURES

Specifications: customized specifications.



**High
transmittance
from 20 % - 60 %**



Flexible



**Waterproof
and
corrosion resistant**



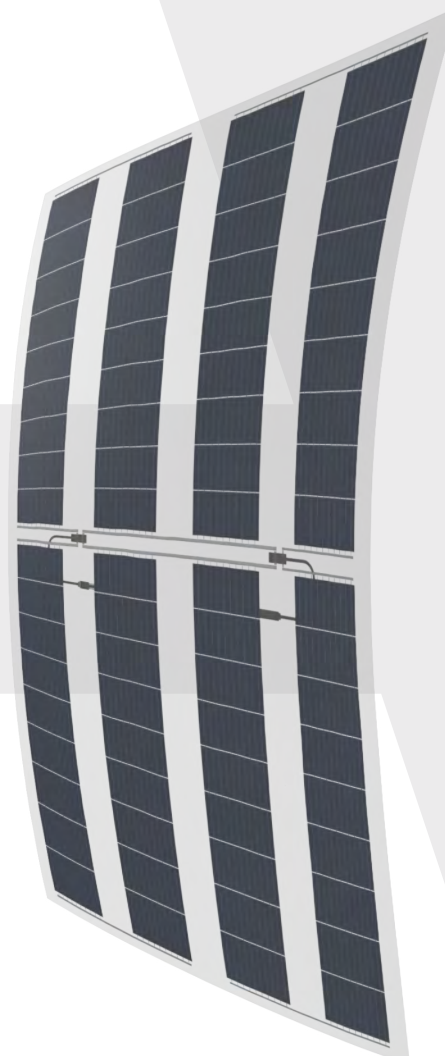
**Suitable
for farming, BIPV,
high transmittance
demands**



**Reinforced
composite Film**



**Customized size
and
transmittance rate**




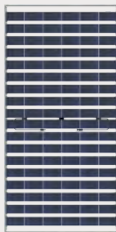

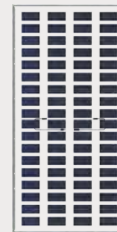
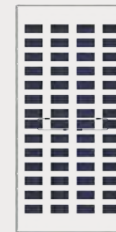
APPLICATION SCENARIO



APPLICATION SCENARIO



ELECTRICAL DATA *

Light Transmittance (%)	20	30	40	50	60
Illustration					
Model	GSM10-Agri-365W-CF	GSM10-Agri-320W-CF	GSM10-Agri-275W-CF	GSM10-Agri-215W-CF	GSM10-Agri-180W-CF
Cell Number	6 X 16	6 X 14	4 X 18	4 X 14	4 X 12
Nominal Max. Power (P _{max}) *(W)	365	320	275	215	180
Open Circuit Voltage (V _{oc}) (V)	34.23	29.95	25.68	19.97	17.12
Short Circuit Current (I _{sc}) (A)	12.94	12.96	13.00	13.06	12.76
Max. Power Voltage (V _{mpp}) (V)	29.39	25.71	22.04	17.14	14.69
Max. Power Current (I _{mp}) (A)	12.42	12.45	12.48	12.54	12.25
Module Efficiency (%)	18.69	16.39	14.08	11.01	9.22
Power Tolerance (%)	± 3				
Power Temperature Coefficient γ	-0.33 % / °C				
Current Temperature Coefficient α	+0.04 % / °C				
Voltage Temperature Coefficient β	-0.27 % / °C				

*STC: Irradiance 1000 W / m², cell temperature 25 °C, AM = 1.5, Tolerance of P_{max} is within + / - 3 %.

BSTC **

Nominal Max. Power (P _{max}) *(W)	404	355	305	238	199
Open Circuit Voltage (V _{oc}) (V)	34.35	30.06	25.77	20.04	17.18
Short Circuit Current (I _{sc}) (A)	16.24	16.27	16.31	16.40	16.01
Max. Power Voltage (V _{mpp}) (V)	29.39	25.71	22.04	17.14	14.69
Max. Power Current (I _{mp}) (A)	13.76	13.79	13.83	13.90	13.57
NMOT (Nominal Module Operating Temperature) (°C)	41°C ± 3°C				

**BSTC: Front side irradiation 1000 W / m², back side reflection irradiation 135 W / m², AM = 1.5, ambient temperature 25 °C.

MECHANICAL DATA

Dimensions (mm)	1782 × 1134 × 1.8
Weight (kg)	6.0
Solar Cells (mm)	Mono 182 x 91
Junction Box	IP68, 2 diodes
Cables	1200 mm in length (customizable) / UV resistant
Connectors	MC4 original / MC4 compatible

OPERATING CONDITIONS

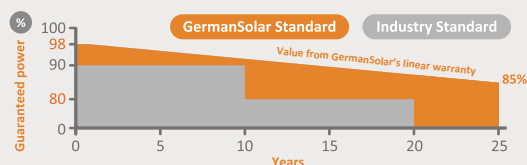
Max. System Voltage (V)	1500
Operating Temperature (°C)	-40°C ~ +85°C
Max. Series Fuse Rating (A)	30
Front Side Maximum Static Loading (Pa)	2400
Rear Side Maximum Static Loading (Pa)	2400

PACKAGING

Panels Per Pallet (pcs)	70
Pallets Per Container (pcs)	12
Panels quantity per 40' container (pcs)	840

LINEAR PERFORMANCE WARRANTY

12 Years Product Warranty | 25 Years Performance Warranty





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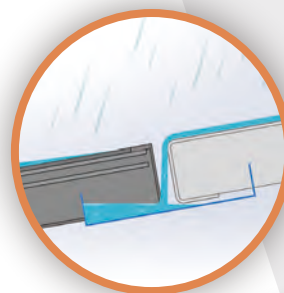
AGRIVOLTAIC SERIES

Water-Proof Racking Solution

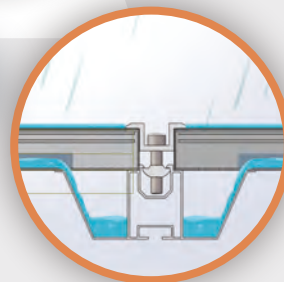
Vertical direction
water-proof



APPLICATION SCENARIO



Horizontal direction
water-proof



AGRIVOLTAIC STRUCTURE SYSTEM

Bring a new life to your farm by combining solar panels and agriculture. Make your farm greener, healthier, and more earth-friendly.

FEATURES

With GermanSolar's high-transparency agrivoltaic solar panels and custom-designed "Agrivoltaic Structure System," the integrated water collection and isolation system ensures no dripping between the panels. Combining aesthetics with high light transmittance, the structure is water-isolating and easy to install, providing a complete solution for your field.





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BIPV SERIES

BIPV COLORFUL SOLAR PANELS

GermanSolar BIPV Series design brings elegance to your building.

The design can be used in a wide variety of applications, such as facades, rooftops, canopies, parking structures, and balconies. The color and specifications can be customized according to your needs.



3 TYPES OF BIPV SPECIFICATIONS

These are available in a variety of colors, dimensions, thicknesses, and shapes to meet any project requirement.



Double Glass Series

Available in partial transparency or opaque options



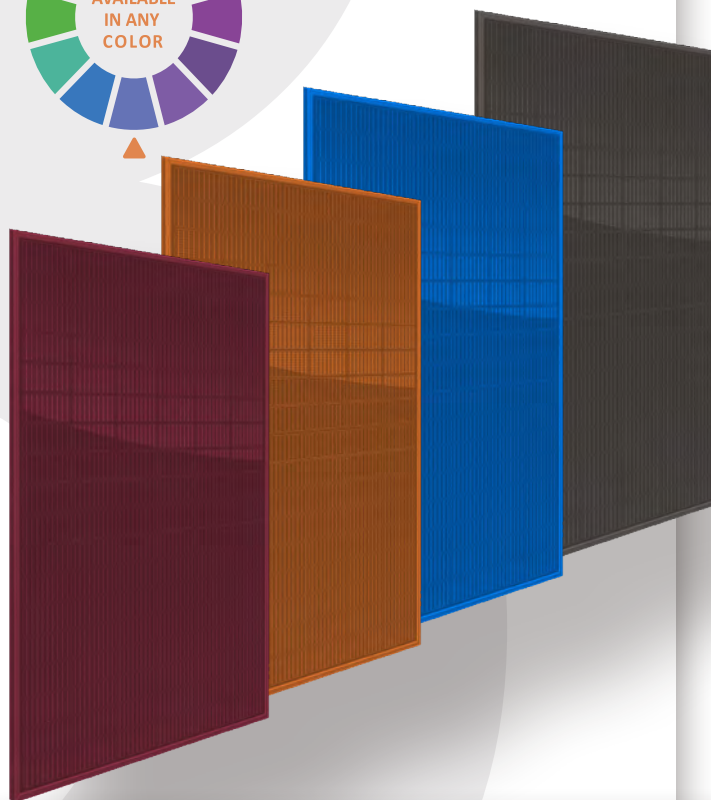
See-Through PV Glass Series

A semi-transparent range of panels



PV Colorshine (opaque) Series

Replacement for standard color-coated glass



APPLICATION SCENARIO



ELECTRICAL DATA *

Color	Gray	Blue	Red	Orange
Illustration				
Light Transmittance(%)	80			
Nominal Max. Power (Pmax)* (W)	350			
Open Circuit Voltage (Voc) (V)	38.30			
Short Circuit Current (Isc) (A)	11.50			
Max. Power Voltage (Vmpp) (V)	32.90			
Max. Power Current (Impp) (A)	10.65			
Module Efficiency (%)	17.92			
Power Tolerance (%)	± 3			
Power Temperature Coefficient γ	-0.34 % / °C			
Current Temperature Coefficient α	+0.04 % / °C			
Voltage Temperature Coefficient β	-0.24 % / °C			

*STC: Irradiance 1000 W / m², cell temperature 25 °C, AM = 1.5, Tolerance of Pmax is within + / - 3 %.

NOCT **

Color	Gray	Blue	Red	Orange
Nominal Max. Power (Pmax)* (W)	284.8			
Open Circuit Voltage (Voc) (V)	38.8			
Short Circuit Current (Isc) (A)	9.18			
Max. Power Voltage (Vmpp) (V)	33.50			
Max. Power Current (Impp) (A)	8.50			
NMOT (Nominal Module Operating Temperature) (°C)	41°C ± 3°C			

* NOCT: Irradiance at 800 W / m², ambient temperature 20 °C, Wind Speed 1 m / s. AM = 1.5.

MECHANICAL DATA

Dimensions (mm)	1722 x 1134 x 30
Weight (kg)	24.2
Solar Cells (mm)	Mono 182 x 91
Front Glass	2.0 mm glass
Back Glass	2.0 mm glass
Junction Box	IP68, 3 diodes
Cables	1200 mm in length (customizable) / UV resistant
Connectors	MC4 original / MC4 compatible

OPERATING CONDITIONS

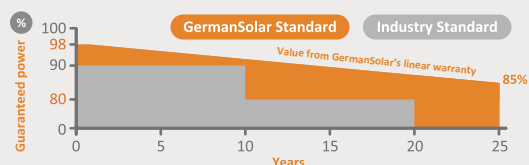
Max. System Voltage (V)	1500
Operating Temperature (°C)	-40°C ~ +85°C
Max. Series Fuse Rating (A)	30
Front Side Maximum Static Loading (Pa)	5400
Rear Side Maximum Static Loading (Pa)	2400

PACKAGING

Panels Per Pallet (pcs)	36
Pallets Per Container (pcs)	26
Panels quantity per 40' container (pcs)	936

LINEAR PERFORMANCE WARRANTY

12 Years Product Warranty | 25 Years Performance Warranty





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BIPV SERIES

BIPV AESTHETIC SOLAR PANELS

GermanSolar BIPV Series design brings elegance to your building.

The design can be used in a wide variety of applications, such as facades, rooftops, and balconies. It is also adaptable for commercial buildings and customizable for solar panel layouts, enhancing the aesthetic appeal of your architecture.

FEATURES

Specifications: customized specifications.



*Multilayer
glass*



*Double glass
laminated,
water resistant*



*Aesthetics
pattern*

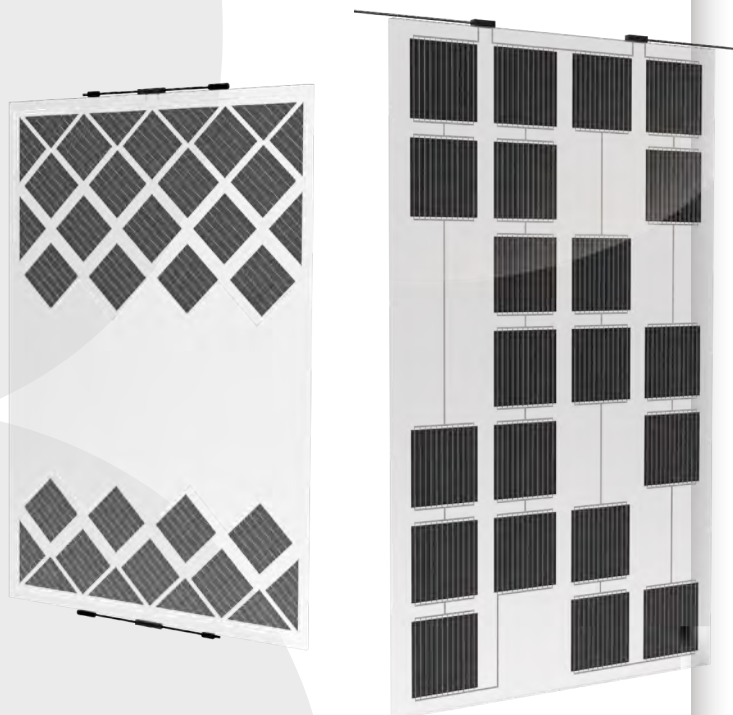


*Customized size
and thickness*

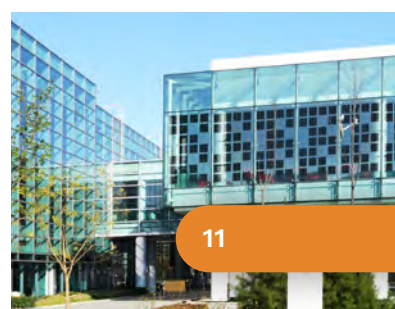
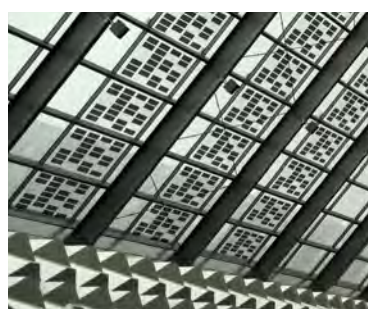
MATERIALS

*4-12 mm tempered glass, high-
transparency 0.76 mm PVB layer*

APPLICATION SCENARIO



APPLICATION SCENARIO





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SEMI-FLEX SERIES



APPLICATION SCENARIO



CAR & BOAT

SEMI-FLEX SOLAR PANELS

+ GSA-S-60W / GSA-S-120W / GSA-S-240W

Wherever you go, wherever the sun shines, GermanSolar car & boat panels are perfect for your adventures - as backup power for your electronic devices, and as alternative power sources.

FEATURES

GermanSolar's Semi-Flex Solar Panels are designed for versatile use on automobiles, boats, balconies, fences, and camping. Made from lightweight, non-glass materials, they offer exceptional flexibility and durability for various applications.



SPECIAL FEATURES



PACKAGE INCLUDES

GSA-S-60W / GSA-S-120W /
GSA-S-240W
Semi-Flex Panels



User Guide



SPECIFICATIONS

No.	Model	Power (W)	Size (mm)	V _{mpp} (V)	I _{mpp} (A)	V _{oc} (V)	I _{sc} (A)	Weight (Kg)	Connector
1	GSA-S-60W	60	390 × 830 × 3	19.74	3.04	22.88	3.20	1.9	MC4
2	GSA-S-120W	120	780 × 830 × 3	19.74	6.08	22.88	6.40	3.8	
3	GSA-S-240W	240	780 × 1560 × 3	19.74	12.16	22.88	12.80	6.5	

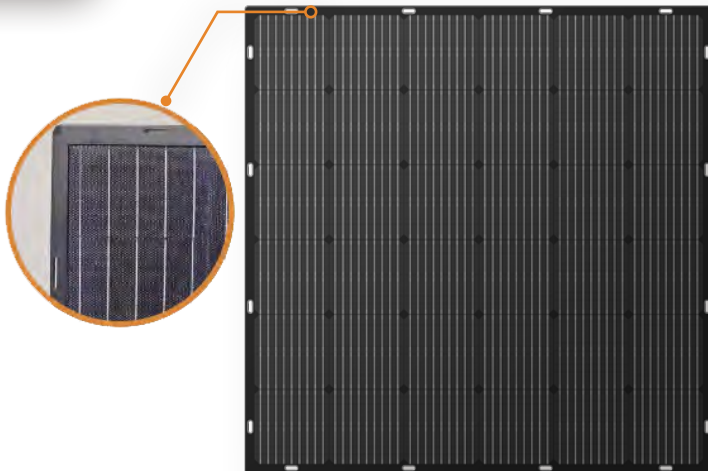
PRODUCT WARRANTY

5
Years

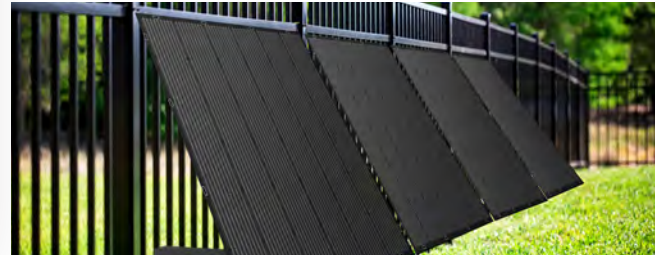
Product warranty: 5 years



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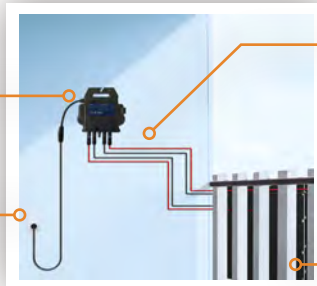
APPLICATION SCENARIO



Micro inverter



VDE cable



PV extension line

Solar panel + Bracket



BALCONY & FENCE S O L A R K I T S

+ SEMI-FLEX + MICROINVERTER

Wherever you go, and wherever the sun shines, GermanSolar Balcony & Fence Solar Kits are the perfect solution for backup power for your electronic devices and as an alternative energy source.

FEATURES

GermanSolar Balcony & Fence Solar Kits

The design brings endless possibilities, turning every sunny day into an opportunity to power your home with clean, sustainable energy. Whether it's your cozy balcony or other outdoor spaces, harness the power of the sun to energize your devices—ensuring a greener, more sustainable future, one sunbeam at a time!



SYSTEM FEATURES



Plug and Play



App Management

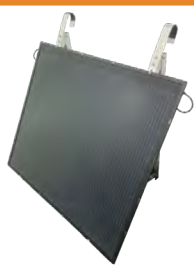


Easy Installation



Adjustable Angle

BRACKET STRUCTURE



Adjustable Angle: 40-60 degrees

SYSTEM COMPOSITION

Balcony & Fence Solar Kits	400 W	600 W	800 W
200 W Solar Panels (pcs)	2	4	4
Bracket (pcs)	2	3	4
Microinverter (W)	400	600	800
VDE Cable (pcs)	1		
PV Extension Cable (pcs)	1	2	2

TECHNICAL SPECIFICATIONS

Function	400 W / 600 W / 800 W
System Type	On-grid power system
Communication	Wi-Fi App
Grid EU Socket	EU standard
Keyword	Plug and play
Nominal Output Frequency (Hz)	50
Nominal Output Voltage (V)	230
Operating Voltage Range (V)	16 - 60
Enclosure Environmental Rating	IP67
Isolation Design	High frequency transformers, galvanically isolated
Safety, EMC & Grid Compliances	EN 62109-1/-2; EN 61000-6-1/-2/-3/-4; VDE-AR-N 4105

PRODUCT WARRANTY

Panel warranty: 5 years
Microinverter warranty: 10 years



GermanSolar
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PORTABLE SERIES

FOLDABLE

50 W
100 W
200 W

Wherever you go, wherever the sun shines, GermanSolar's foldable panels are perfect for your adventures - as backup power for your electronic devices, and as alternative power sources.

50 W / 100 W



200 W



APPLICATIONS

Our foldable solar panels **50 W / 100 W / 200 W** are suitable for phones and for tablets. They've adopted high efficiency mono solar cell technology, producing a conversion efficiency of up to 25%. Their design not only includes ETFE-lamination, which results in an IP68 water-resistant rating, but also provides ultra-protection and enough durability to extend and optimize each foldable panel's lifetime. Our foldable panels are a perfect choice for all of your travel, camping, and adventure needs.

COMPATIBILITY



Phone



Tablet



Camera



Computer



Batteries

(GEL, AGM, flooded, and lithium)

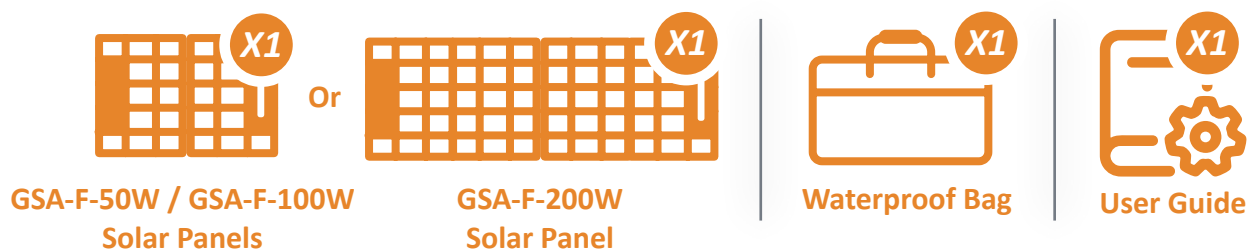
APPLICATION SCENARIO



SPECIAL FEATURES

- 01
Portable
- 02
Foldable
- 03
Versatile Output
- 04
Plug and Use
- 05
Adjustable Stand
- 06
High Durability
- 07
Aesthetics
- 08
Easy to Setup

PACKAGE INCLUDES



SPECIFICATIONS

Item	GSA-F-50W	GSA-F-100W	GSA-F-200W
Nominal Max. Power (P_{max}) *(W)	50	100	200
Open Circuit Voltage (V_{oc}) (V)	27.20	21.40	21.20
Short Circuit Current (I_{sc}) (A)	2.20	6.05	12.10
Max. Power Voltage (V_{mpp}) (V)	23.20	17.40	17.40
Max. Power Current (I_{mpp}) (A)	2.16	5.75	11.50
Folded Size (mm)	465 × 425 × 40	570 × 610 × 40	580 × 610 × 65
Unfolded Size (mm)	940 × 425 × 35	1140 × 610 × 35	2170 × 610 × 35
Weight (kg)	2.8	4.8	8.8
Connector Type	USB + Type C + DC + Anderson 30A + XT60		USB + Type C + DC + Anderson 30A + XT60 + MC4

PRODUCT WARRANTY

3
Years

warranty: 3 years

OFF-GRID SOLAR PANELS



GermanSolar
The Partner For Your Solar Lifetime®



CUSTOMIZED SOLAR PANELS

GermanSolar is a specialist in customization, introducing colored glass, frames, and back-sheet material and shapes to aesthetically match your ideas with the prospective application. With innovative technology and design, GermanSolar offers high quality solar panels with enhanced aesthetic appearance for building structures and facades. By providing outstanding customization options, GermanSolar supports your required project needs with colored and shaped panels of your choice, and consults with you in choosing the right size, thickness, shape, and color to complement the design of your application and your building.

FEATURES



Unique design,
backed by
GermanSolar
standards of
engineering



Use of bypass
diodes to avoid
hot-spot effect



EL tested and
micro cracks
inspected



Easy and quick
installation



Every solar panel
flash tested



UL 61215, 61730
& UL 1703, C1D2



Choices of colors,
front and back
materials &
frames



5-year product
warranty and
10-year limited
performance
warranty



Model		GSP-005W-12	GSP-010W-12	GSP-020W-12	GSP-030W-12	GSP-040W-12	GSP-050W-12	GSP-060W-12	GSP-070W-12	GSP-080W-12	GSP-090W-12	GSP-100W-12
ELECTRICAL CHARACTERISTICS	Nominal Max. Power (W)	5	10	20	30	40	50	60	70	80	90	100
	Open Circuit Voltage (Voc) (V)	21.80	21.80	22.00	22.10	22.00	22.30	22.00	22.54	22.50	22.1	22.75
	Short Circuit Current (Isc) (A)	0.31	0.62	1.20	1.75	2.35	2.80	3.56	3.95	4.53	5.31	5.58
	Max. Power Voltage (Vmpp) (V)	18.10	18.10	18.20	18.20	18.20	18.90	18.20	18.98	18.90	18.40	19.15
	Max. Power Current (Imp) (A)	0.28	0.55	1.10	1.65	2.20	2.65	3.29	3.69	4.24	4.89	5.22
	Power Tolerance (%)	± 3										
MECHANICAL CHARACTERISTICS	Module Dimensions (LxWxH, mm)	280 × 195 × 17	355 × 265 × 17	680 × 290 × 25	680 × 380 × 30	680 × 475 × 30	680 × 545 × 30	680 × 640 × 30	680 × 720 × 35	680 × 800 × 35	680 × 980 × 35	1106 × 680 × 35
	Cell Dimensions (mm)	76 × 9.92	76 × 19.61	157 × 24.42	157 × 34.51	157 × 44.09	157 × 52.33	157 × 63.5	157 × 72.15	157 × 78.8	157 × 99.21	157 × 99.21
	Cell Type	Poly crystalline silicon										
	Cell String	9 × 4										
	Front Glass	3.2 mm tempered glass										
	Cell Encapsulation	EVA (Ethylene-Vinyl Acetate)										
	Frame	Anodized aluminum frame; original, black, or customized										
	Back Cover	White, black fluorochemical backsheet or customized										
	Junction Box	IP65 / IP67										
	Weight (Kg)	1.0	1.6	4.0	4.9	6.1	7.5	8.2	8.8	9.5	10.3	10.3
WARRANTY & TEMP. CHARACTERISTICS	NMOT (°C)	41°C ± 3°C										
	Temperature Coefficient	γ Pmax: -0.41 % / °C, α Voc: -0.331 % / °C, β Isc: 0.059 % / °C										
	Operating Temperature Range (°C)	-40°C ~ +85°C										
	Certification	C1D2 / ETL EU / ETL CUS / RoHS / CE										
	Product Warranty	5 years										
	Performance Warranty	25 years										

*STC: Irradiance 1000 W / m², cell temperature 25 °C, AM = 1.5, Tolerance of Pmax is within + / - 3 %.
For more details or other specifications not listed above, please feel free to contact us.



Model		GSP-160W-12	GSP-170W-12	GSM-190W-12	GSM-200W-12	GSM-210W	GSM-215W	GSM-220W
ELECTRICAL CHARACTERISTICS	Nominal Max. Power (W)	160	170	190	200	210	215	220
	Open Circuit Voltage (Voc) (V)	22.65	22.90	24.00	24.66	41.50	42.10	42.66
	Short Circuit Current (Isc) (A)	9.05	9.29	9.94	10.17	5.06	5.11	5.16
	Max. Power Voltage (Vmpp) (V)	18.90	19.44	20.12	20.78	47.96	48.57	48.92
	Max. Power Current (Imp) (A)	8.47	8.75	9.44	9.62	5.43	5.46	5.50
	Power Tolerance (%)	± 3						
MECHANICAL CHARACTERISTICS	Module Dimensions (LxWxH, mm)	1515 × 680 × 35				1590 × 710 × 35		
	Cell Dimensions (mm)	157		158.75		166		
	Cell Type	Poly crystalline silicon		Mono crystalline silicon				
	Cell String	9 × 4				12 × 6		
	Front Glass	3.2 mm tempered glass						
	Cell Encapsulation	EVA (Ethylene-Vinyl Acetate)						
	Frame	Anodized aluminum frame; original, black, or customized						
	Back Cover	White, black fluorochemical backsheet or customized						
	Junction Box	IP65 / IP67						
	Weight (Kg)	14.0				14.5		
WARRANTY & TEMP. CHARACTERISTICS	NMOT (°C)	41°C ± 3°C						
	Temperature Coefficient	γ Pmax: -0.41 % / °C, α Voc: -0.331 % / °C, β Isc: 0.059 % / °C						
	Operating Temperature Range (°C)	-40°C ~ +85°C						
	Certification	C1D2 / ETL EU / ETL CUS / RoHS / CE						
	Product Warranty	5 years						
	Performance Warranty	10 years						

*STC: Irradiance 1000 W / m², cell temperature 25 °C, AM = 1.5, Tolerance of Pmax is within + / - 3 %.
For more details or other specifications not listed above, please feel free to contact us.

Steps we request and follow when designing your special solar panels or solar solutions to meet your requirements.

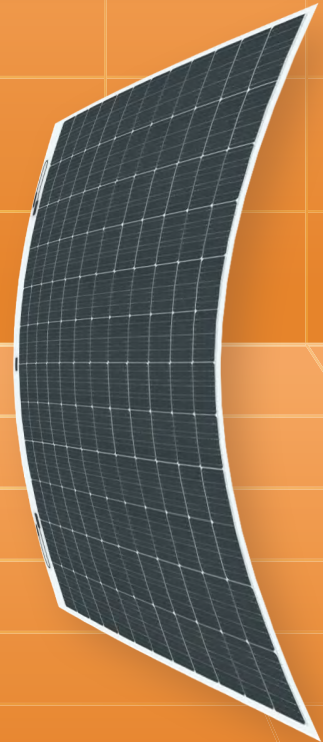
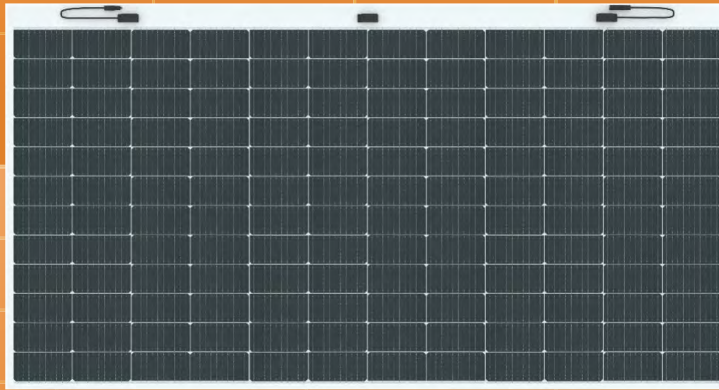


STANDARD SOLAR PANELS

GermanSolar's standard solar panels are high efficiency, convenient, and easy to use



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SEMI-FLEX TITANLINE MAX M10 144 MONO CELL SOLAR PANELS

GSM-510W-HCSF GSM-515W-HCSF GSM-520W-HCSF

Say goodbye to traditional heavy solar panels. GermanSolar continues to innovate with the SEMI-FLEX TITANLINE MAX, specially designed for easy and versatile installation. Ultra-thin and lightweight, it easily conforms to curves and unique surfaces, making installation effortless and stress-free.

FEATURES



Flexible
radius < 0.3m



Lightweight
2.9 Kg/m²



Hail test:
IEC 61215-2:2021 :
Φ25mm, 23m/s



Withstands wind
loads up to 2400Pa
/ heavy snow loads
up to 2400Pa



Sealing with PIB:
Stronger moisture
resistance, greater air
impermeability to extend
module lifespan.



Fully automated
production line with
German quality
engineering and
design standards



EL tested and micro
cracks inspected



12-year limited
product warranty



25-year linear
performance
warranty



ISO 9001
ISO 14001
ISO 45001
ISO 26000
ISO 19600



RoHS



IEC 61730-1
IEC 61730-2, IEC 61215-1,
IEC 61215-2 and IEC 61215-1-1



EN IEC 61730:
PHOTOVOLTAIIC (PV) MODULE
SAFETY QUALIFICATION
2014/35/EU:
THE LOW VOLTAGE DIRECTIVE

STANDARD SOLAR PANELS

ELECTRICAL DATA *

Nominal Max. Power (P _{max}) * (W)	510	515	520
Open Circuit Voltage (V _{oc}) (V)	49.76	49.83	49.90
Short Circuit Current (I _{sc}) (A)	12.74	12.78	12.86
Max. Power Voltage (V _{mpp}) (V)	42.29	42.35	42.41
Max. Power Current (I _{mp}) (A)	12.31	12.34	12.37
Module Efficiency (%)	18.88	19.07	19.25
Power Tolerance (%)	± 3		
Power Temperature Coefficient γ	-0.37 % / °C		
Current Temperature Coefficient α	+0.05 % / °C		
Voltage Temperature Coefficient β	-0.28 % / °C		

*STC: Irradiance 1000 W / m², cell temperature 25 °C, AM = 1.5, Tolerance of P_{max} is within + / - 3 %.

NMOT * * *

Nominal Max. Power (P _{max}) * (W)	395	399	403
Open Circuit Voltage (V _{oc}) (V)	46.10	46.17	46.24
Short Circuit Current (I _{sc}) (A)	10.72	10.76	10.84
Max. Power Voltage (V _{mpp}) (V)	39.37	39.43	39.49
Max. Power Current (I _{mp}) (A)	10.37	10.40	10.43
NMOT (Nominal Module Operating Temperature) (°C)	41°C ± 3°C		

**NMOT: Front side irradiation 800W / m², back side reflection irradiation 135 W / m², AM = 1.5, ambient temperature 25 °C.

MECHANICAL DATA

Dimensions (mm)	2250 x 1200 x 1.8
Weight (kg)	8.2
Solar Cells (mm)	Mono 182 × 182
Junction Box	IP68, 3 diodes
Cables	300 mm in length (customizable) / UV resistant
Connectors	MC4 original / MC4 compatible

PACKAGING

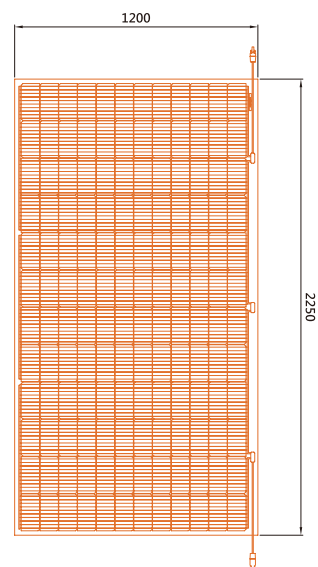
Panels Per Pallet (pcs)	70
Pallets Per Container (pcs)	18
Panels quantity per 40' container (pcs)	1260

OPERATING CONDITIONS

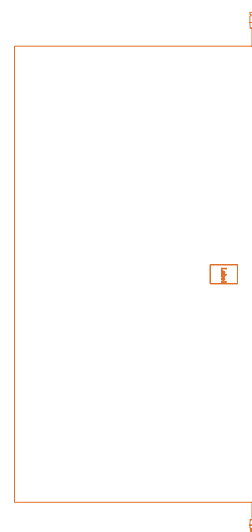
Max. System Voltage (V)	1500
Operating Temperature (°C)	-40°C ~ +85°C
Max. Series Fuse Rating (A)	30
Front Side Maximum Static Loading/ Rear Side Maximum Static Loading (Pa)	2400 / 2400

Design (mm)

Front View

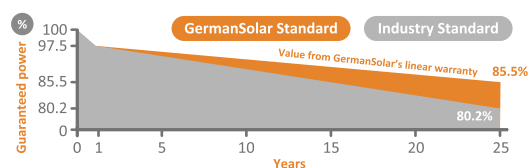


Back View



LINEAR PERFORMANCE WARRANTY

12 Years Product Warranty | 25 Years Performance Warranty



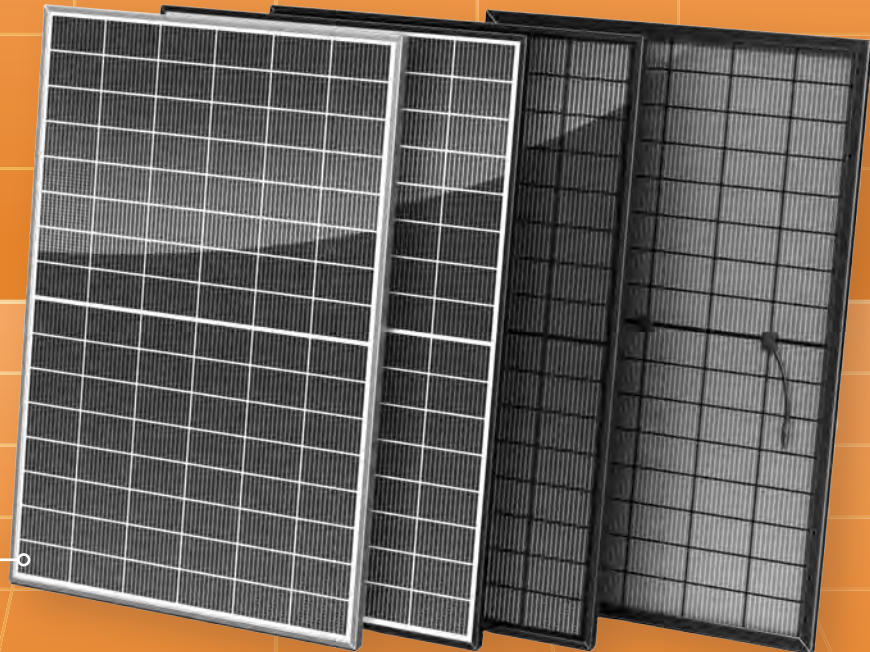
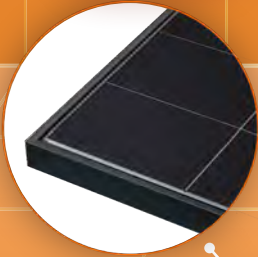
STANDARD SOLAR PANELS

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OBB



BIFACIAL APOLLO G12R 96 MONO CELL SOLAR PANELS

GSM-440W 445W 450W 455W 460W

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FEATURES



HJT OBB Technology -
Shorter current transport
path, better low-light
performance and higher
power generation



Positive power of
up to +5.00 Wp



Hail test :
IEC 61215-2:2021
Φ45mm, 30.7m/s



Withstands wind
loads up to 2400Pa
/ heavy snow loads
up to 5400Pa



Sealing with PIB:
Stronger moisture
resistance, greater air
impermeability to extent
module lifespan.



High ammonia &
salt mist resistant
certified and PID-
free



EL tested and micro
cracks inspected



15
years 15-year limited
product warranty



30
years 30-year linear
performance
warranty



ISO 9001
ISO 14001
ISO 45001
ISO 26000
ISO 19600



RoHS



IEC 61730-1
IEC 61730-2, IEC 61215-1,
IEC 61215-2 and IEC 61215-1-1



EN IEC 61730:
PHOTOVOLTAIIC (PV) MODULE
SAFETY QUALIFICATION
2014/35/EU:
THE LOW VOLTAGE DIRECTIVE

STANDARD SOLAR PANELS

ELECTRICAL DATA *

Nominal Max. Power (P _{max}) * (W)	440	445	450	455	460
Open Circuit Voltage (V _{oc}) (V)	36.52	36.62	36.72	36.82	36.92
Short Circuit Current (I _{sc}) (A)	15.31	15.42	15.53	15.64	15.75
Max. Power Voltage (V _{mpp}) (V)	30.61	30.72	30.83	30.94	31.05
Max. Power Current (I _{mpp}) (A)	14.38	14.49	14.60	14.71	14.82
Module Efficiency (%)	22.02	22.27	22.52	22.77	23.02
Power Tolerance (%)	± 3				
Power Temperature Coefficient γ	-0.24 % / °C				
Current Temperature Coefficient α	+0.04 % / °C				
Voltage Temperature Coefficient β	-0.22 % / °C				

*STC: Irradiance 1000 W / m², cell temperature 25 °C, AM = 1.5, Tolerance of P_{max} is within + / - 3 %.

BNPC * *

Nominal Max. Power (P _{max}) * (W)	493	499	505	510	515
Open Circuit Voltage (V _{oc}) (V)	36.65	36.75	36.85	36.95	37.05
Short Circuit Current (I _{sc}) (A)	17.17	17.29	17.42	17.54	17.66
Max. Power Voltage (V _{mpp}) (V)	30.72	30.83	30.94	31.05	31.16
Max. Power Current (I _{mpp}) (A)	16.07	16.19	16.31	16.44	16.56
NMOT (Nominal Module Operating Temperature) (°C)	41 ± 3				

**BSTC: Front side irradiation 1000 W / m², back side reflection irradiation 135 W / m², AM = 1.5, ambient temperature 25 °C.

MECHANICAL DATA

Dimensions (mm)	1762 × 1134 × 30
Weight (kg)	25.0 (2.0 mm glass) or 23.0 (1.6 mm glass)
Solar Cells (mm)	HJT Mono 182 × 105 0BB
Front Glass	2.0 mm glass or 1.6 mm glass
Back Glass	2.0 mm glass or 1.6 mm glass
Frame	Anodised aluminum alloy
Junction Box	IP68, 3 diodes
Cables	300 mm in length (customizable) / UV resistant
Connectors	MC4 original / MC4 compatible

PACKAGING

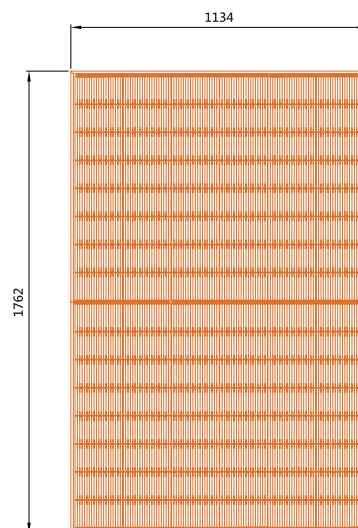
Panels Per Pallet (pcs)	36
Pallets Per Container (pcs)	26
Panels quantity per 40' container (pcs)	936

OPERATING CONDITIONS

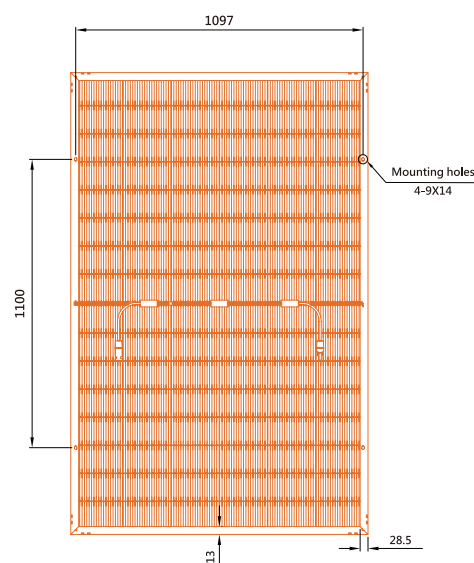
Max. System Voltage (V)	1500
Operating Temperature (°C)	-40°C ~ +85°C
Max. Series Fuse Rating (A)	30
Front Side Maximum Static Loading/ Rear Side Maximum Static Loading (Pa)	5400 / 2400

Design (mm)

Front View

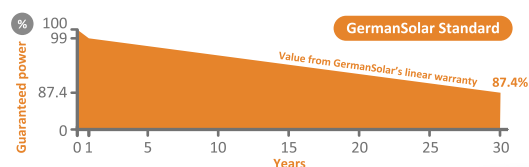


Back View



LINEAR PERFORMANCE WARRANTY

15 Years Product Warranty | 30 Years Performance Warranty



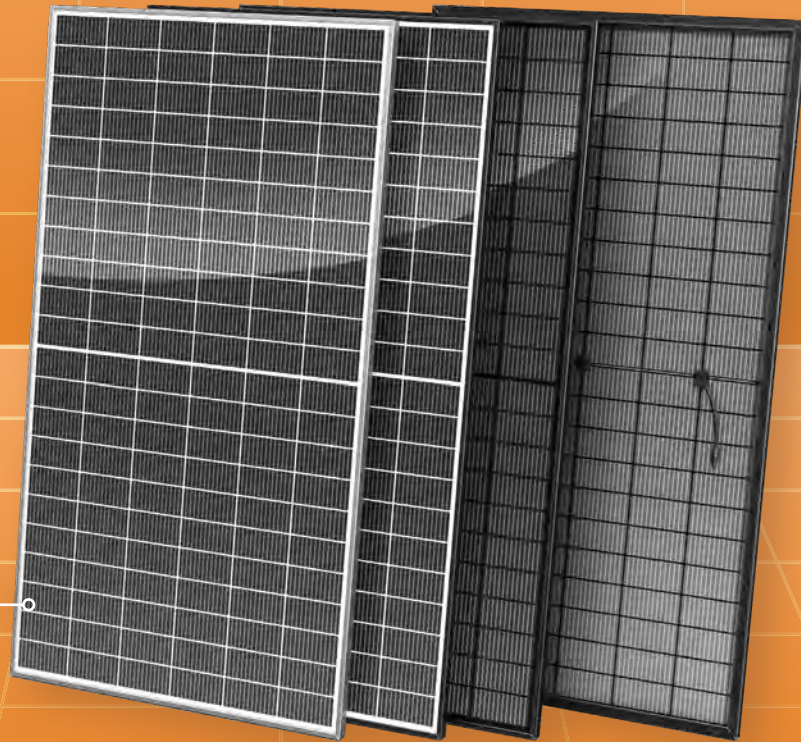
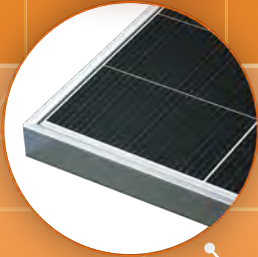
STANDARD SOLAR PANELS

GermanSolar's standard solar panels are high efficiency, convenient, and easy to use



GermanSolar
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0BB



BIFACIAL HELIOSLINE MAX G12 132 MONO CELL SOLAR PANELS

GSM-710W 715W 720W 725W 730W

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FEATURES



HJT 0BB Technology -
Shorter current transport
path, better low-light
performance and higher
power generation



Positive power of
up to +5.00 Wp



Hail test :
IEC 61215-2:2021
Φ45mm, 30.7m/s



Withstands wind
loads up to 2400Pa
/ heavy snow loads
up to 5400Pa



Sealing with PIB:
Stronger moisture
resistance, greater air
impermeability to extend
module lifespan.



High ammonia &
salt mist resistant
certified and PID-
free



EL tested and micro
cracks inspected



15-year limited
product warranty



30-year linear
performance
warranty



ISO 9001
ISO 14001
ISO 45001
ISO 26000
ISO 19600



IEC 61730-1
IEC 61730-2, IEC 61215-1,
IEC 61215-2 and IEC 61215-1-1



EN IEC 61730:
PHOTOVOLTAIIC (PV) MODULE
SAFETY QUALIFICATION
2014/35/EU:
THE LOW VOLTAGE DIRECTIVE

STANDARD SOLAR PANELS

ELECTRICAL DATA *

Nominal Max. Power (P _{max}) * (W)	710	715	720	725	730
Open Circuit Voltage (V _{oc}) (V)	49.97	50.07	50.17	50.27	50.37
Short Circuit Current (I _{sc}) (A)	17.99	18.08	18.17	18.26	18.35
Max. Power Voltage (V _{mpp}) (V)	41.96	42.05	42.14	42.25	42.32
Max. Power Current (I _{mp}) (A)	16.93	17.02	17.10	17.18	17.26
Module Efficiency (%)	22.85	23.01	23.17	23.33	23.50
Power Tolerance (%)	± 3				
Power Temperature Coefficient γ	-0.24 % / °C				
Current Temperature Coefficient α	+0.04 % / °C				
Voltage Temperature Coefficient β	-0.22 % / °C				

*STC: Irradiance 1000 W / m², cell temperature 25 °C, AM = 1.5, Tolerance of P_{max} is within + / - 3 %.

BNPI * *

Nominal Max. Power (P _{max}) * (W)	796	801	807	813	818
Open Circuit Voltage (V _{oc}) (V)	50.14	50.24	50.34	50.44	50.54
Short Circuit Current (I _{sc}) (A)	20.18	20.28	20.38	20.48	20.58
Max. Power Voltage (V _{mpp}) (V)	42.11	42.20	42.29	42.38	42.47
Max. Power Current (I _{mp}) (A)	18.91	19.00	19.10	19.19	19.28
NMOT (Nominal Module Operating Temperature) (°C)	41 ± 3				

**BSTC: Front side irradiation 1000 W / m², back side reflection irradiation 135 W / m², AM = 1.5, ambient temperature 25 °C.

MECHANICAL DATA

Dimensions (mm)	2384 x 1303 x 33
Weight (kg)	37.9 (2.0 mm glass) or 35.9 (1.6 mm glass)
Solar Cells (mm)	HJT Mono 182 × 105 OBB
Front Glass	2.0 mm glass or 1.6 mm glass
Back Glass	2.0 mm glass or 1.6 mm glass
Frame	Anodised aluminum alloy
Junction Box	IP68, 3 diodes
Cables	300 mm in length (customizable) / UV resistant
Connectors	MC4 original / MC4 compatible

PACKAGING

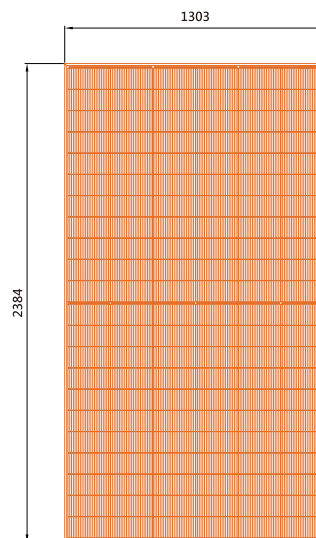
Panels Per Pallet (pcs)	33
Pallets Per Container (pcs)	18
Panels quantity per 40' container (pcs)	594

OPERATING CONDITIONS

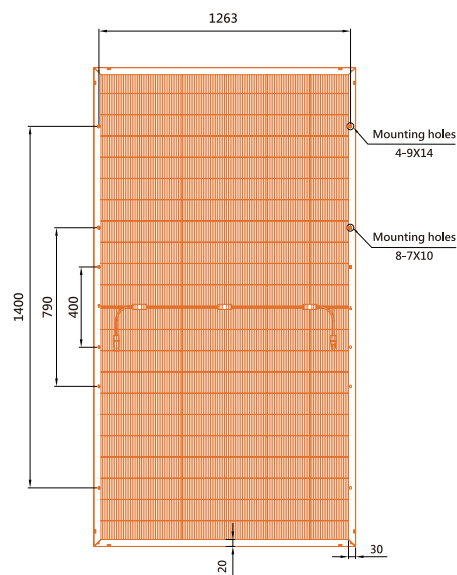
Max. System Voltage (V)	1500
Operating Temperature (°C)	-40°C ~ +85°C
Max. Series Fuse Rating (A)	30
Front Side Maximum Static Loading/ Rear Side Maximum Static Loading (Pa)	5400 / 2400

Design (mm)

Front View

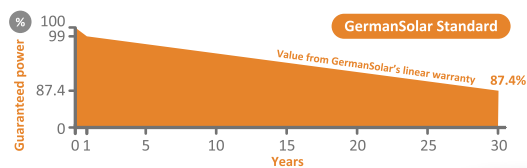


Back View

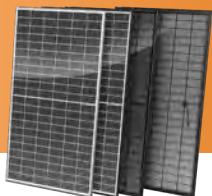


LINEAR PERFORMANCE WARRANTY

15 Years Product Warranty | 30 Years Performance Warranty



PRODUCTS LIST

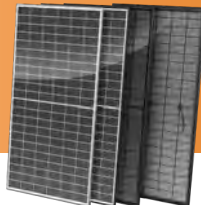


Bifacial Heliosline Max

G12 132 Mono Cell Solar Panels

GSM-

710W 715W 720W 725W 730W

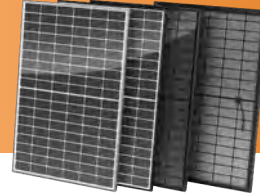


Bifacial Apollo Max

G12R 132 Mono Cell Solar Panels

GSM-

610W 615W 620W 625W 630W

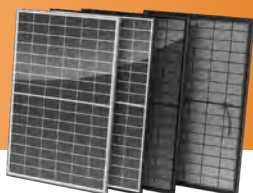


Bifacial Apollo Pro

G12R 108 Mono Cell Solar Panels

GSM-

500W 505W 510W 515W 520W

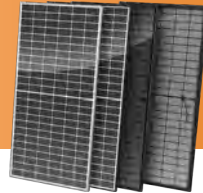


Bifacial Apollo

G12R 96 Mono Cell Solar Panels

GSM-

440W 445W 450W 455W 460W

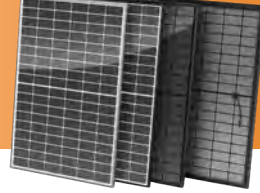


Bifacial Titanline Max

M10 144 Mono Cell Solar Panels

GSM-

580W 585W 590W 595W 600W

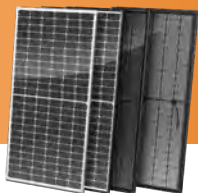


Bifacial Titanline

M10 108 Mono Cell Solar Panels

GSM-

430W 435W 440W 445W 450W

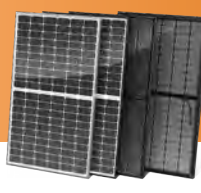


Bifacial Quantumline Max

M6 144 Mono Cell Solar Panels

GSM-

460W 465W 470W 475W 480W

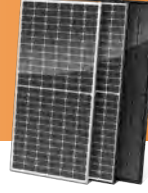


Bifacial Quantumline

M6 120 Mono Cell Solar Panels

GSM-

380W 385W 390W 395W 400W



Premiumline Max

G1 144 Mono Cell Solar Panels

GSM-

400W 405W 410W 415W 420W



Premiumline

G1 120 Perc Mono Cell Solar Panels

GSM-

320W 325W 330W 335W 340W



Powerline Max

Poly 72 Cell Solar Panels

GSP-

325W 330W 335W 340W 345W



Powerline

Poly 60 Cell Solar Panels

GSP-

275W 280W 285W 290W 295W



GermanSolar
The Partner For Your Solar Lifetime!*

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