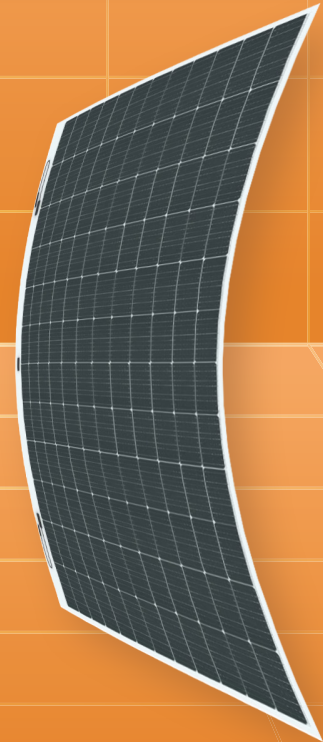
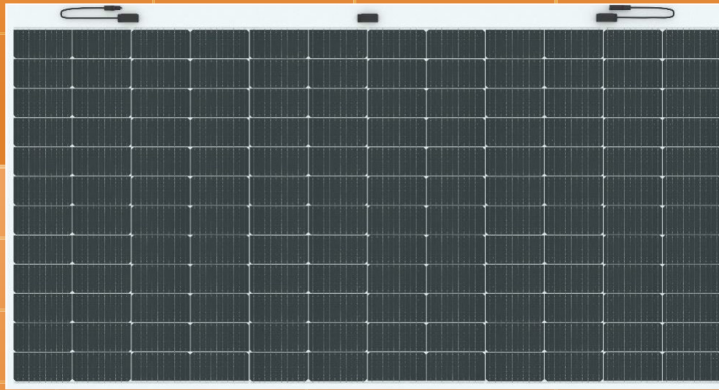


STANDARD SOLAR PANELS

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



GermanSolar
The Partner For Your Solar Lifetime®



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

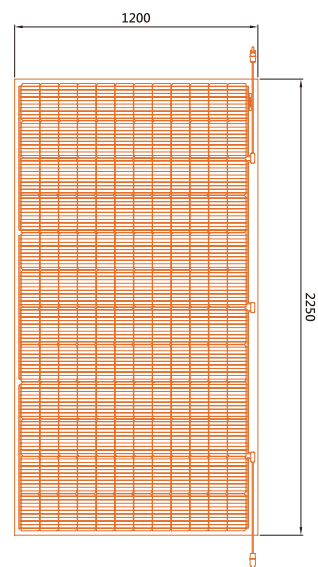
Panels Per Pallet (pcs)	70
Pallets Per Container (pcs)	18
Panels quantity per 40' container (pcs)	1260

OPERATING CONDITIONS

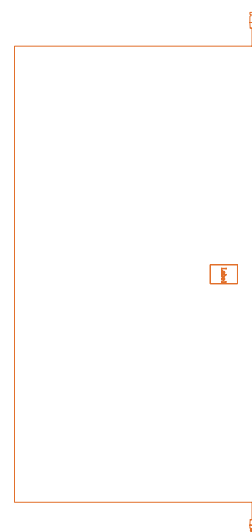
Max. System Voltage (V)	1500
Operating Temperature (°C)	-40°C ~ +85°C
Max. Series Fuse Rating (A)	30
Front Side Maximum Static Loading / Rear Side Maximum Static Loading (Pa)	2400 / 2400

Design (mm)

Front View



Back View



LINEAR PERFORMANCE WARRANTY

12 Years Product Warranty | 25 Years Performance Warranty

