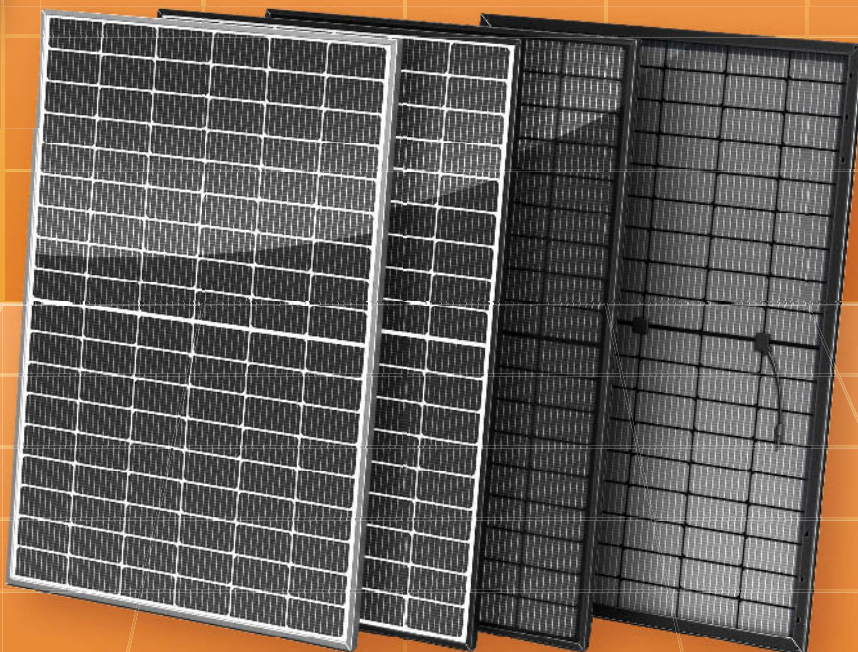


# STANDARD SOLAR PANEL

GermanSolar's Standard Solar Panel is High efficiency, convenient and easy to use



GermanSolar  
The Partner For Your Solar Lifetime!



## BIFACIAL TITANLINE MONO M10 108 CELL SOLAR PANEL

GSM - 410 W 415 W 420 W 425 W 430 W 435 W 440 W

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 you in choosing the right size, thickness, shape, and color to compliment the design of your application and your building.

### FEATURES



Best price-performance ratio



Positive power of up to +5.00 Wp



EL tested and micro cracks inspected



Fully automated production line with German quality engineering and design standards



Better performance in diffused sunlight and high temperature



High ammonia & salt mist resistant certified, and PID-free



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



30-year limited product warranty



30-year linear performance warranty



Class I Division II  
Groups A, B, C & D



STANDARD SOLAR PANEL

**ELECTRICAL DATA**

Nominal Max. Power (Pmax)* (W)	410	415	420	425	430	435	440
Open Circuit Voltage (Voc) (V)	37.23	37.42	37.61	37.80	37.99	38.18	38.37
Short Circuit Current (Isc) (A)	13.98	14.05	14.13	14.20	14.27	14.34	14.42
Max. Power Voltage (Vmpp) (V)	31.21	31.42	31.63	31.84	32.05	32.26	32.47
Max. Power Current (Impp) (A)	13.14	13.21	13.28	13.35	13.42	13.48	13.55
Module Efficiency (%)	21.00	21.25	21.51	21.76	22.02	22.28	22.53
Power Tolerance	0 ~ +5 W						
Temperature Coefficient (Pmax)	-0.26%/°C						
Temperature Coefficient (Isc)	+0.04%/°C						
Temperature Coefficient (Voc)	-0.24%/°C						

\* STC: Irradiance 1000 W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5.

**BSTC \*\***

Nominal Max. Power (Pmax)* (W)	440	445	450	455	460	465	470
Open Circuit Voltage (Voc) (V)	37.23	37.42	37.61	37.80	37.99	38.18	38.37
Short Circuit Current (Isc) (A)	15.00	15.07	15.14	15.19	15.27	15.35	15.40
Max. Power Voltage (Vmpp) (V)	31.21	31.42	31.63	31.84	32.05	32.26	32.47
Max. Power Current (Impp) (A)	14.10	14.16	14.23	14.28	14.36	14.43	14.47
NMOT (Nominal Module Operating Temperature)	41°C ± 3°C						

\*\*BSTC: Front side irradiation 1000 W/m<sup>2</sup>, back side reflection irradiation 135 W/m<sup>2</sup>, AM=15, ambient temperature 25°C.

**MECHANICAL DATA**

Dimensions	1722 x 1134 x 30 mm
Weight	22 kg (2.0 mm glass) or 20 kg (1.6 mm glass)
Solar Cell	Mono 182 x 91 mm
Front Glass	2.0 mm solar glass or 1.6 mm solar glass
Back Glass	2.0 mm glass or 1.6 mm glass
Frame	Black Anodized Aluminium Alloy
Junction Box	IP68, 3 diodes
Cable	4 mm <sup>2</sup> , 1200 mm in length, length can be customized / UV resistant
Connector	MC4 or MC4 compatible

**PACKAGING**

Standard Packaging	36 pcs/pallet
Pallets Per Container	26
Module quantity per 40' container	936 pcs/40' HQ container

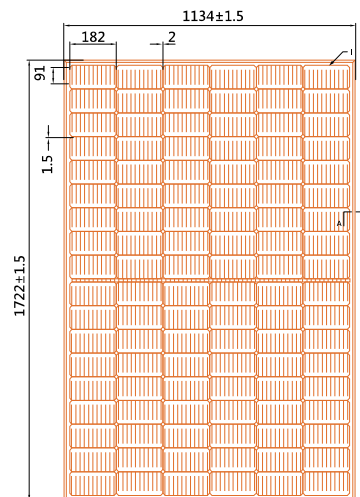
**OPERATING CONDITIONS**

Max. System Voltage	1500 V (IEC/UL) or 1000 V (IEC/UL)
Operating Temperature	-40°C ~ +85°C
Max. Series Fuse Rating	30 A
Front Side Maximum Static Loading/ Rear Side Maximum Static Loading	5400 Pa/2400 Pa

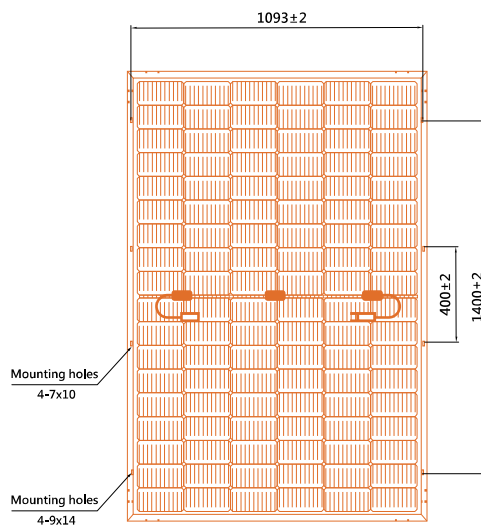
**STANDARD SOLAR PANEL**

**Design (mm)**

Front View



Back View



**LINEAR PERFORMANCE WARRANTY**

30-year Product Warranty | 30-year Linear Power Warranty

