



PERLIGHT
smart.black

PERLIGHT DELTA 415W

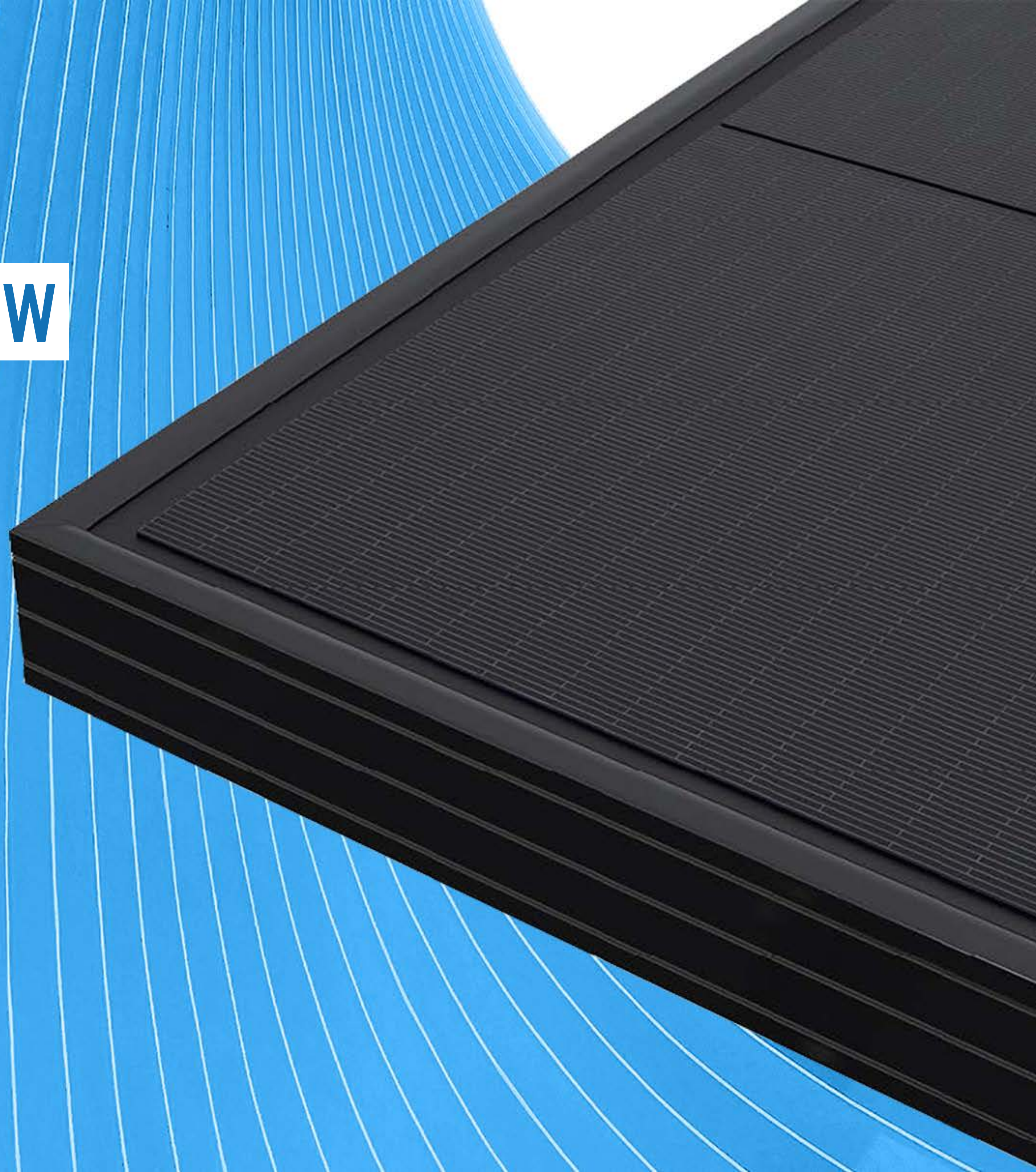
PLM-4150M6B-60

Monocrystalline PERC Solar Module

21.2%
Efficiency

415W
Power

30-YEAR
Warranty



MODULE FEATURES



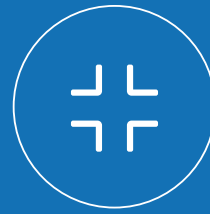
TECHNOLOGY

Innovative structure, high density cell layout.



BEAUTIFUL APPEARANCE

Ultra-sleek with consistent tone, providing a modernised look.



SAFETY AND RELIABILITY

Lower operating temperature and high pressure-resistance.



LOW SYSTEM COST

High module efficiency, reducing system cost.



LOW HOT SPOT EFFECT

Prolong module lifetime. Reduce electricity loss during generation.



LOWER SHADING LOSS

Parallel layout reduces shading effect compared to conventional modules.



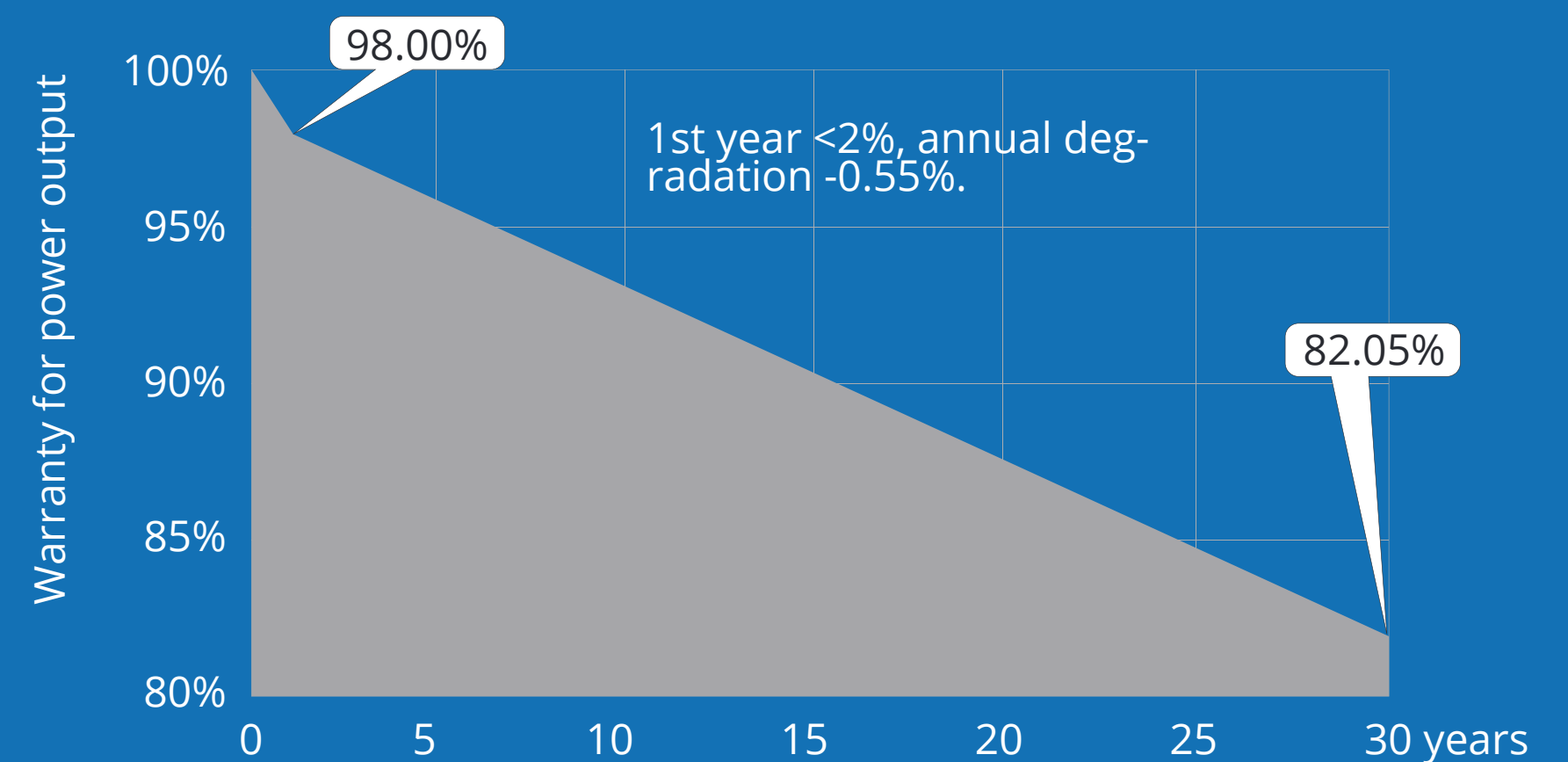
BETTER FOR THE ENVIRONMENT

More environmentally friendly, Fluorine-free and low Pb levels.

LINEAR POWER OUTPUT WARRANTY

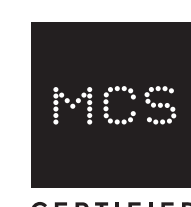
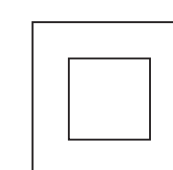
30 30-year warranty for materials.

30 30-year warranty for linear power output.



QUALITY MANAGEMENT SYSTEM AND PRODUCT CERTIFICATION

IEC61215/61730, IEC62804(PID), IEC61701 (Salt), IEC62716 (Ammonia), IEC60068-2-68 (Sand)
 ISO 9001:2015 / quality management system
 ISO 14001:2015 / environmental management system
 ISO 45001:2018 / occupation health safety management system
 ISO 50001:2011 / energy management system
 IEC TS 62941 - 2016 / PV industry quality management system





ELECTRICAL CHARACTERISTICS (STC)

Module Type:	415	410	405	400
Maximum Power - P _m (W)	415	410	405	400
Open Circuit Voltage - V _{oc} (V)	46.7	46.6	46.5	46.4
Short Circuit Current - I _{sc} [A]	11.12	11.07	11.02	10.97
Maximum Power Voltage - V _m [V]	38.9	38.8	38.7	38.6
Maximum Power Current - I _m [A]	10.67	10.57	10.47	10.36
Module Efficiency - η [%]	21.2	20.9	20.7	20.4

ELECTRICAL CHARACTERISTICS AT NMOT

Maximum Power - P _m (W)	312	309	305	301
Open Circuit Voltage - V _{oc} (V)	44.5	44.4	44.3	44.2
Short Circuit Current - I _{sc} [A]	8.97	8.93	8.89	8.85
Maximum Power Voltage - V _m [V]	37.1	37.0	36.9	36.8
Maximum Power Current - I _m [A]	8.43	8.35	8.27	8.18

Note: 1. Standard Test Conditions [STC]: irradiance 1000 W/m²; AM 1.5; ambient temperature 25°C according to EN 60904-3;
2. Nominal Module Operating Temperature (NMOT): Irradiance 800 W/m²; wind speed 1 m/s, ambient temperature 20°C;
3. Tolerance of P_m: -/+3%, Measuring uncertainty of power: -/+3%. Performance deviation of V_{oc} [V], I_{sc} [A], V_m [V] and I_m [A]: -/+3%

MECHANICAL PARAMETERS

Dimensions	1719 x 1140 x 30 mm
Weight	21 kg
Front Glass	AR coating tempered glass, 3.2mm
Frame	Anodized aluminum profile
Cells	Mono-crystalline solar cell
Cell Orientation	340 (34 x 10)
Junction Box	IP68, two diodes
Cable	4mm ² , 1200mm
Packaging	36pcs/box; 936pcs/26'container

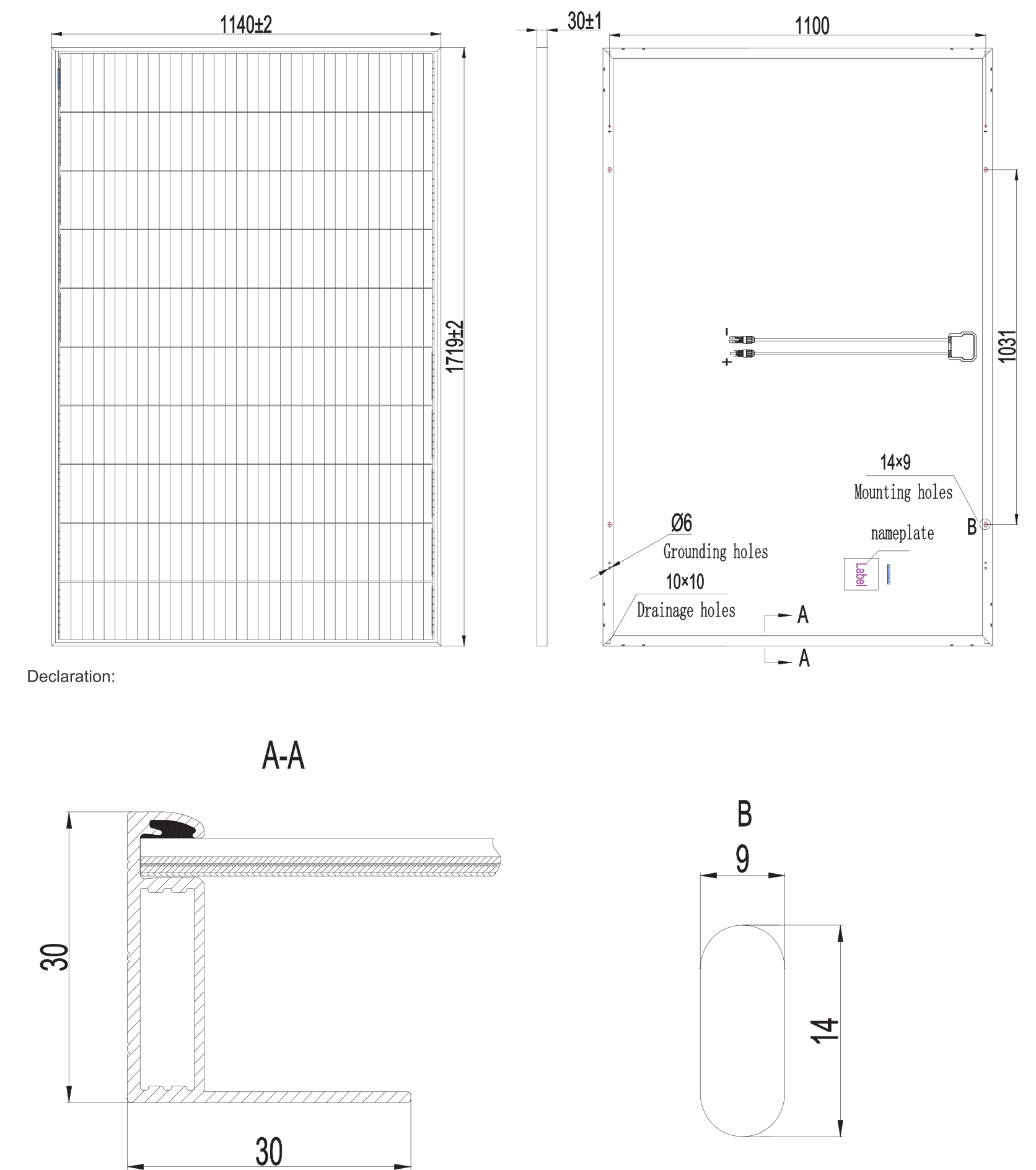
TEMPERATURE PARAMETERS

NMOT	42.3°C (±2°C)
Temperature Coefficient of V _{oc}	-0.27%/°C
Temperature Coefficient of I _{sc}	+0.04%/°C
Temperature Coefficient of P _m	-0.34%/°C

MAXIMUM RATINGS

Maximum System Voltage [V]	DC1500 / 1000(IEC)
Series Fuse Rating [A]	20
Maximum Surface Load Capacity [Pa]	Front 5400
Temperature Range [°C]	-40 ~ +85
Withstanding Hail	Maximum diameter of 25 mm with impact speed of 23 m/s

DRAWINGS



I-V CURVE

