



PERLIGHT SOLAR
Powering Possibilities

PERLIGHT BLACK GRID 500W

PLM-500DH8N-120

N-Type TOPCon Bifacial Dual Glass

23.10%
STC
Efficiency

25.52%
BSTC
Efficiency

30-YEAR
Warranty

N-TYPE
TOPCon

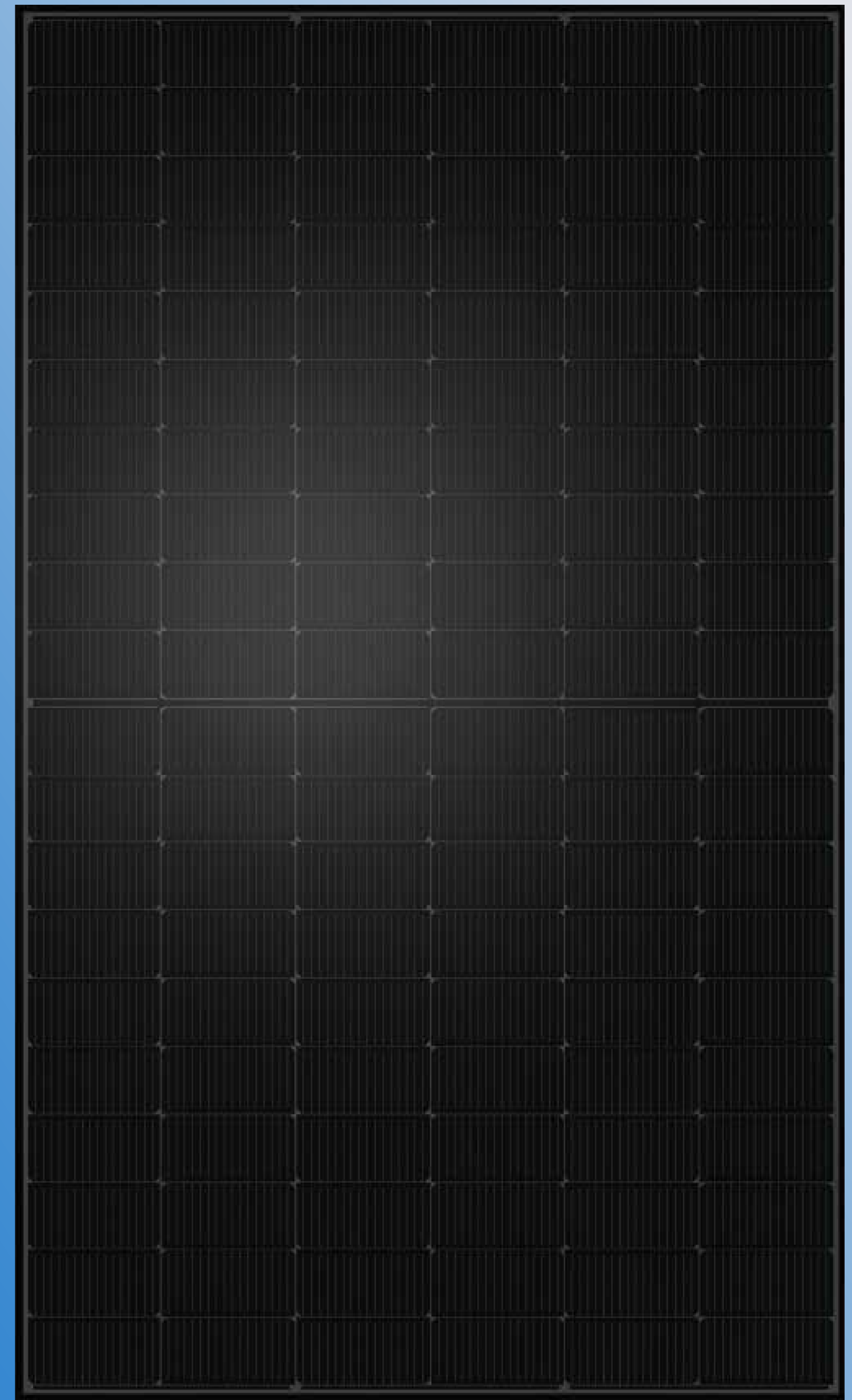
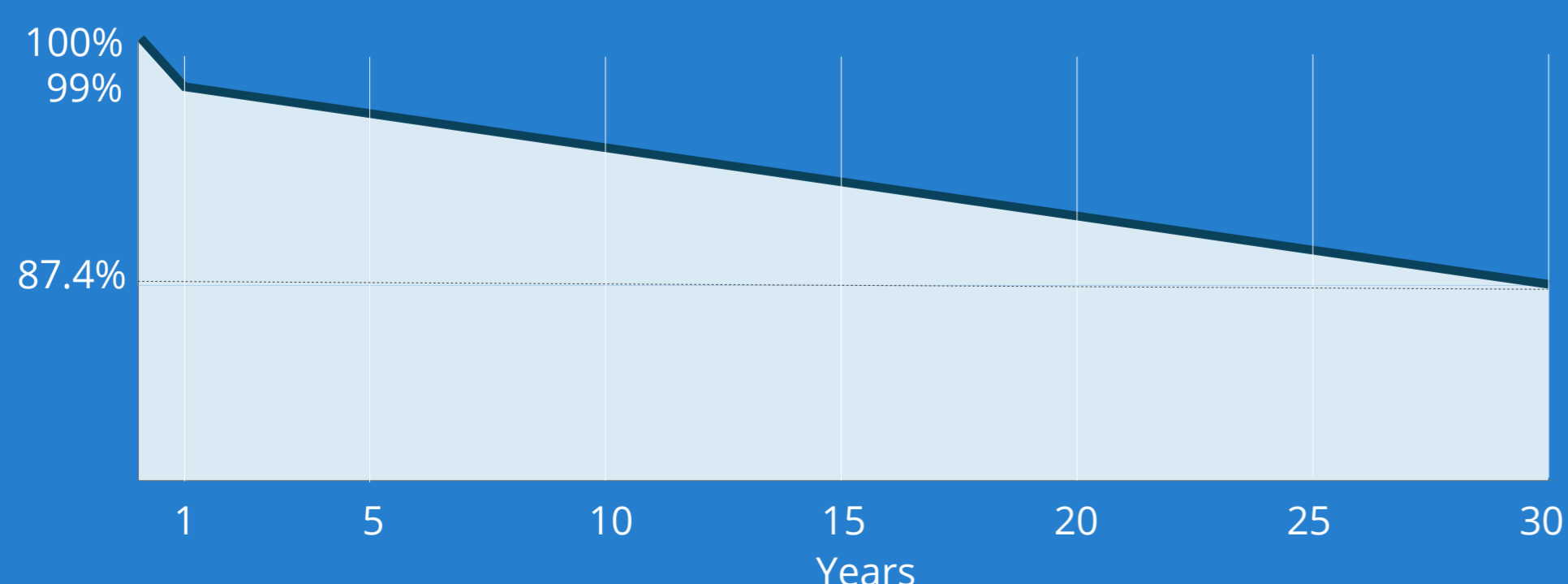
MODULE FEATURES

- High Power Output**
Improved light trapping and current collection enhance module power output and long-term reliability.
- Outstanding Low Light Performance**
Excellent low-light performance ensures higher energy yield in cloudy, foggy, and early morning or late afternoon conditions.
- Improved Temperature Coefficient**
Optimised for stronger power generation and improved energy yield under high-temperature operating conditions.
- PID Resistance**
Excellent resistance to Potential Induced Degradation (PID) through optimised cell processing and strict material quality control.
- Enhanced Mechanical Load**
Certified to withstand wind loads of up to 2400 Pa and snow loads of up to 5400 Pa, ensuring reliable performance under demanding environmental conditions.
- Bifacial Performance**
Up to 25.52% module efficiency under BSTC, delivering up to 10.48% additional energy gain compared to standard front-side STC performance.

EXTENDED POWER OUTPUT WARRANTY

30 years limited product warranty | **30** years performance warranty

PERLIGHT'S LINEAR PERFORMANCE WARRANTY



QUALITY MANAGEMENT SYSTEMS & 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 / occupational health & safety management system
ISO 50001:2011 / energy management system
IEC TS 62941 - 2016 / PV industry quality management system

ETHICAL MANUFACTURING STANDARDS



Independently verified for ethical manufacturing, worker welfare, and responsible supply chains.





ELECTRICAL CHARACTERISTICS	STC	BSTC	NOCT
Maximum Power - Pm (W)	500	552.2	378.5
Open Circuit Voltage - Voc (V)	44.22	44.22	42.04
Short Circuit Current - Isc (A)	13.94	15.38	10.97
Maximum Power Voltage - Vm (V)	37.14	37.14	35.77
Maximum Power Current - Im (A)	13.48	14.87	10.59
Module Efficiency - η (%)	23.10	25.52	

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 (NOCT): Irradiance 800 W/m²; wind speed 1 m/s, ambient temperature 20°C;
3. BSTC: Front side irradiance 1000W/m², back side reflection irradiance 135W/m², AM=1.5, ambient temperature 25 °C
4. Tolerance of Pm: -/+3%, Measuring uncertainty of power: -/+3%. Performance deviation of Voc (V), Isc (A), Vm (V) and Im (A): -/+3%

MECHANICAL PARAMETERS

Dimensions	1908 x 1134 x 30 mm
Weight	27.2 kg ±4%
Front Glass	2.0 mm High-transmittance, AR Tempered Glass
Rear Glass	Black Grid 2.0 mm Semi-tempered Glass
Frame	Anodized Aluminium Alloy
Cells	N-Type Monocrystalline Cell
Number of Cells	120 [2 x (10x6)]
Junction Box	IP 68 (3 Diodes)
Cable	4 mm ² , 1200 mm or Customised Length
Connector	Staubli MC4 EVO 2A

TEMPERATURE PARAMETERS

NOCT	45°C (±2°C)
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	+0.046%/°C
Temperature Coefficient of Pm	-0.30%/°C

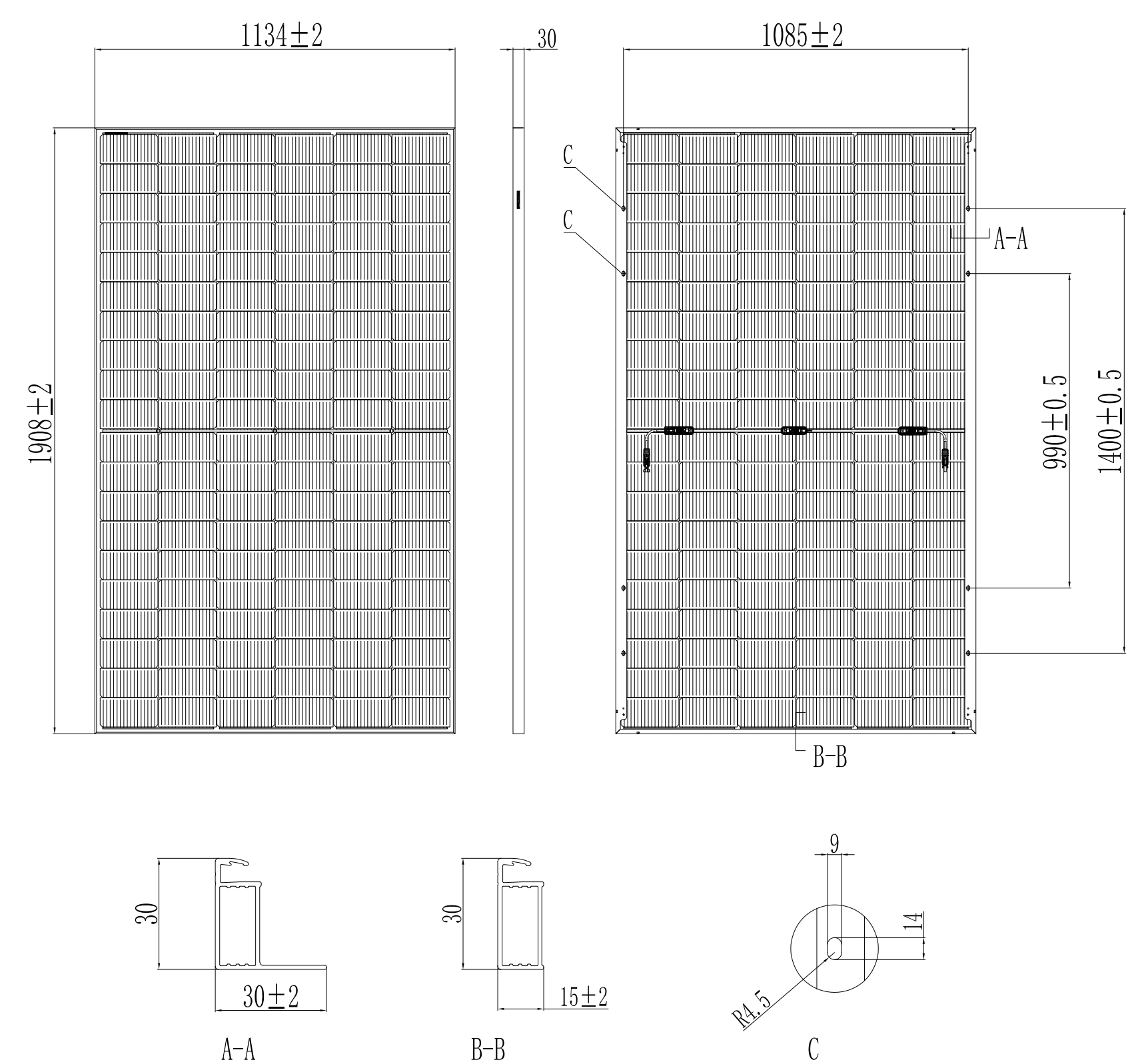
MAXIMUM RATINGS

Maximum System Voltage	1500 V DC (IEC)
Limiting Reverse Current	30 A
Maximum Surface Load Capacity	Front 5400 Pa / Back 2400 Pa
Temperature Range	-40 °C ~ +85 °C
Withstanding Hail	Max. diameter 25 mm with impact speed of 23 m/s
Power Tolerance	-/+3%

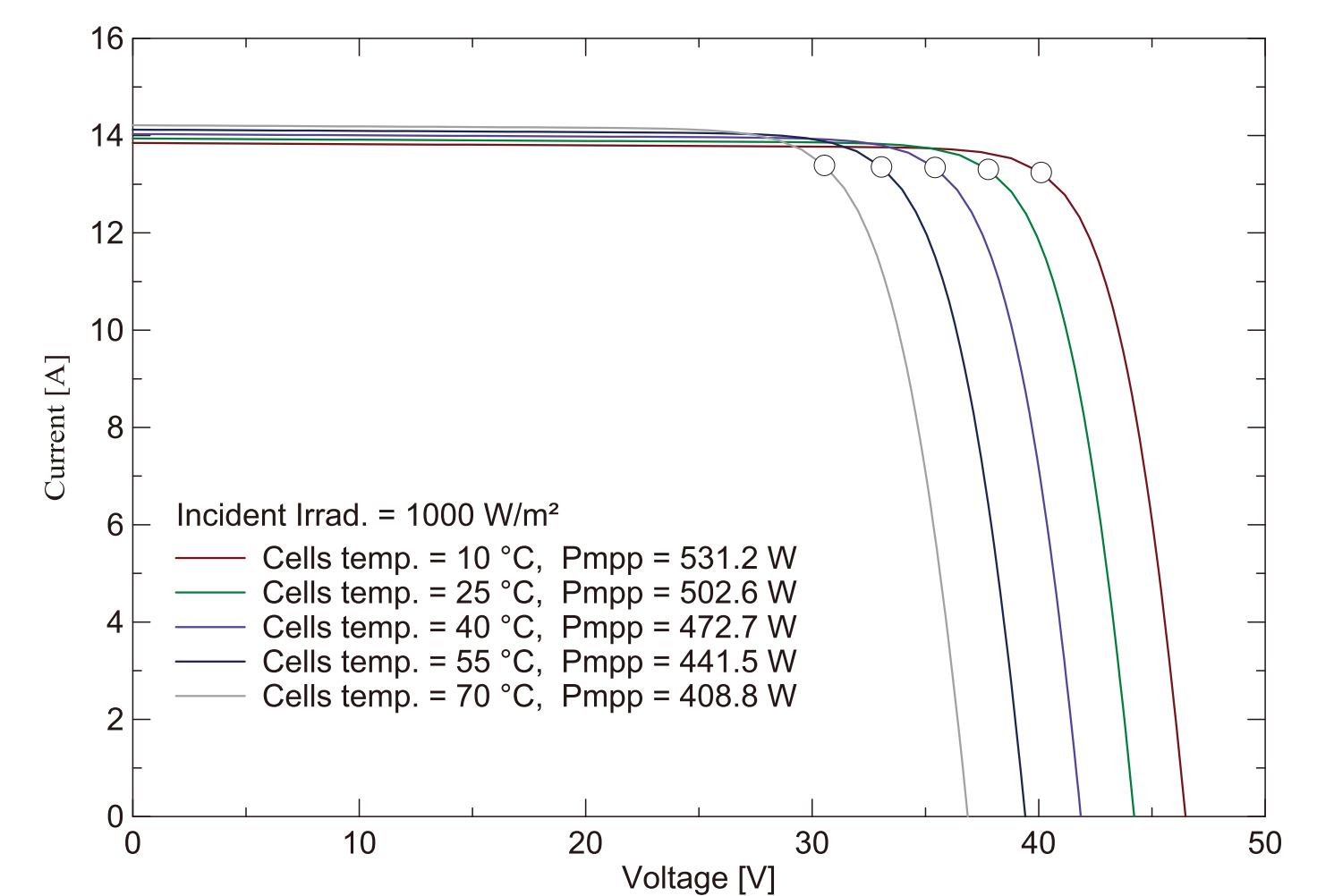
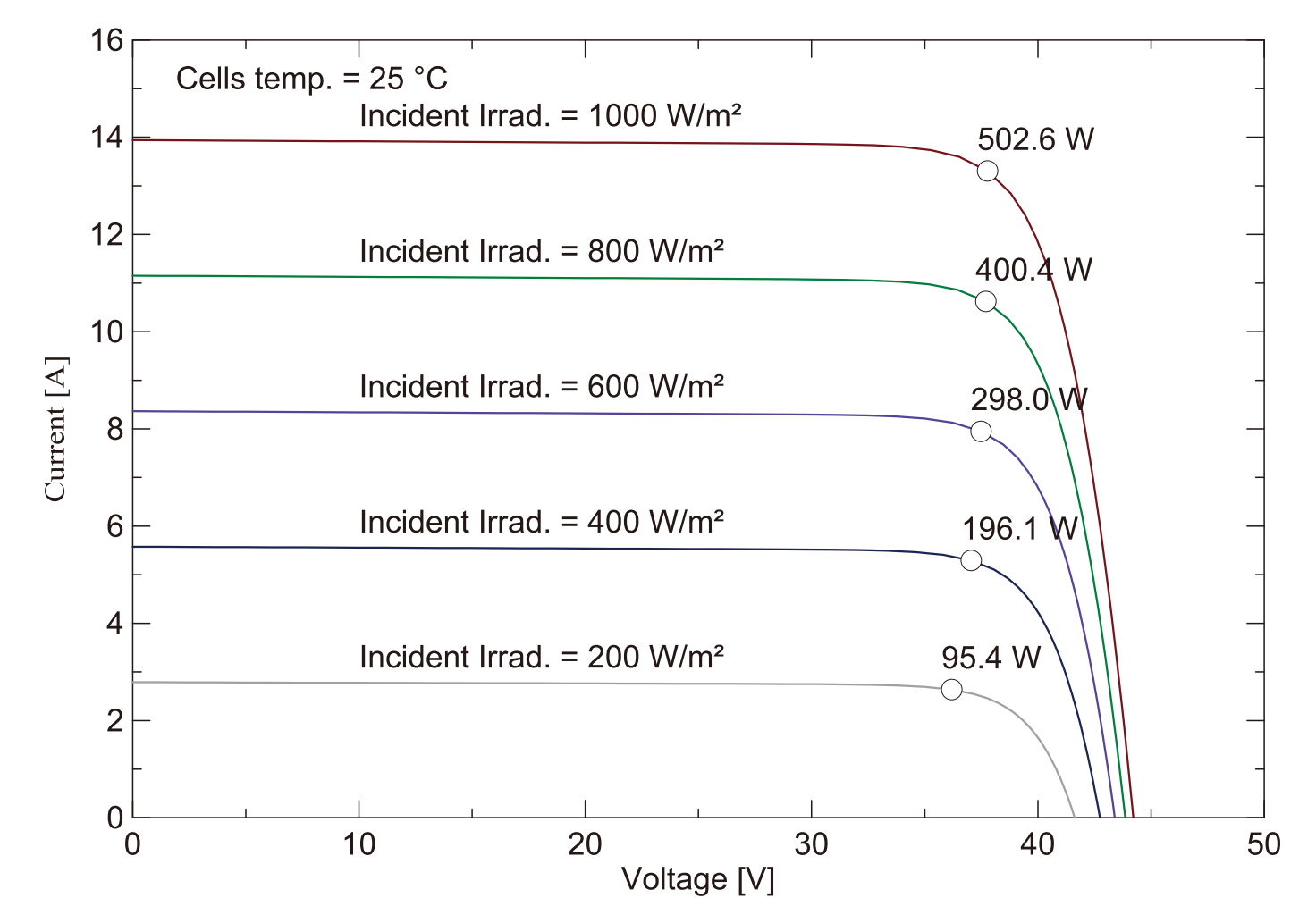
CLAMPING ZONES

Long Side	420 mm to 520 mm from edge
Short Side	150 mm to 250 mm from edge

DRAWINGS



I-V CURVE



PACKAGING CONFIGURATION

Packaging Type	40'HQ
Piece/Pallet	37
Piece/Container	888