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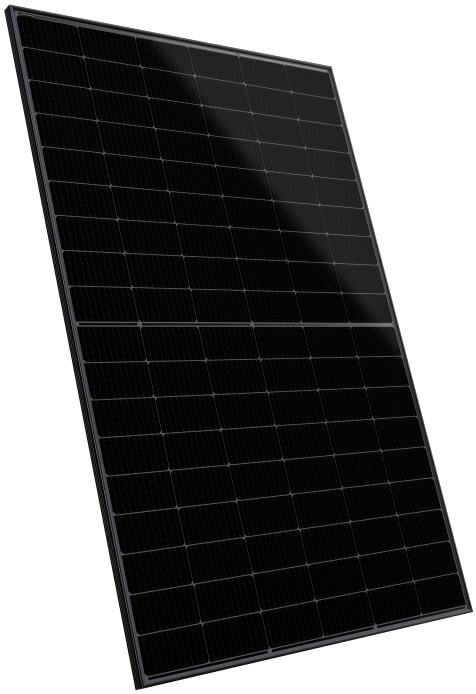


PHOTOVOLTAIC MODULE

HIGH EFFICIENCY
TOPCON N-TYPE BIFACIAL CELLS
ULTRA BLACK, DOUBLE GLASS

ASTR **108HCND/10** Series **445-455 Wp**

455 Wp
MAXIMUM POWER OUTPUT

22.77%
MAXIMUM MODULE EFFICIENCY

NEGLIGIBLE LID IMPACT
TOPCon cells exhibit an almost zero susceptibility to Light Induced Degradation, ensuring sustained high efficiency over time despite exposure to sunlight

HOT SPOTS RISK REDUCTION
Sophisticated electrical design, cells sorting, cutting and soldering technology leads to low hot spot risk and temperature control

HIGH EFFICIENCY
N-type cells technology provides the highest efficiency modern multi busbar configuration at affordable cost

MULTI BUSBAR TECHNOLOGY
Better light absorption and current collection for better power output

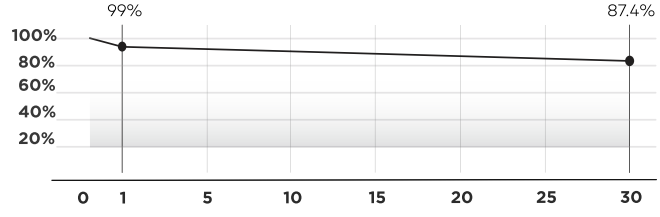
MINIMIZING THE SHADING IMPACT
Better partial-shade tolerance due to separated half panel string wiring

PID RESISTANT
Selected encapsulants, precision in manufacturing quality control makes modules highly PID resistant and snail trails free

SAND, AMMONIA AND SALT MIST RESISTANCE
Sand blowing, ammonia and salt mist resistance tests have been passed by international standards to ensure operation in harsh conditions

SUPERIOR SAFETY AND RELIABILITY
Tested to avoid microcracks and welding cracks, can withstand high pressure loads, passed multi-step quality control

PERFORMANCE



30 YEARS
Performance Guarantee

20 YEARS
Product Warranty

info@astorios.com
www.astorios.com

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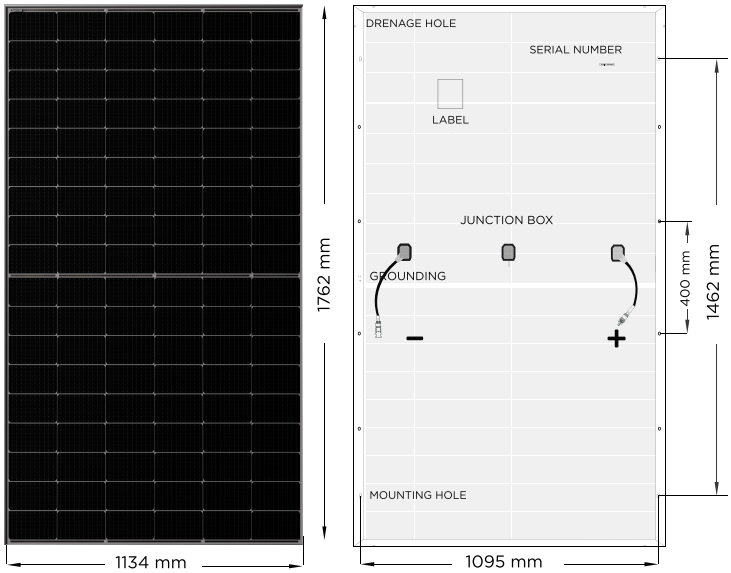
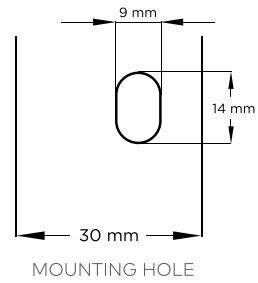
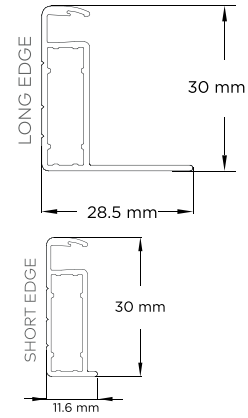




MOUNTING HOLE



FRAME PROFILE

MATERIAL CHARACTERISTICS

Dimensions	1762 × 1134 × 30 mm
Weight	24.6kg
Number of cells	108 pcs (6x18)
Glass front/rear	2mm, High transparency, AR coated
Cell layout	Mono-crystalline, N-type, Bifacial (94x182.2 mm)
Frame	Black Color, Anodized aluminum alloy
Junction box	IP68 Rated, 3 bypass diodes
Connector type	Staubli MC4-Evo 2 / MC4 (Original)
Cable	4 mm², 300 mm

TEMPERATURE PARAMETERS

Temperature Coefficient of Pmax	-0.30 % / °C
Temperature Coefficient of Voc	-0.25 % / °C
Temperature Coefficient of Isc	+0.046 % / °C
Operating Temperature	- 40°C to + 85°C
Normal Operating Cell Temperature (NOCT)	44±2°C

MAXIMUM RATINGS

Max. System Voltage	1500V DC - (H)
Max. Series Fuse Rating	25A
Uplift load (wind)	2400 Pa*
Downforce (snow)	5400 Pa*
Hail Resistance	25mm ice-ball with velocity of 23m/s

*For more information please refer to Instruction Manual

PACKAGING INFORMATION

One pallet quantity	36 Pcs / 909kg / 1790x1130x1247mm
40 ft HC/HQ container	936 Pcs / 36 Pallets

MODULE TYPE 108HCND/10	445 Wp		450 Wp		455 Wp	
ELECTRICAL CHARACTERISTICS	**STC**	NMOT	**STC**	NMOT	**STC**	NMOT
Maximum power (Pmax/Wp)	**445**	339	**450**	343	**455**	347
Open circuit voltage (Voc / V)	**39.76**	37.83	**40.03**	38.08	**40.29**	38.35
Short circuit current (Isc / A)	**13.87**	11.20	**13.92**	11.24	**13.97**	11.28
Maximum power voltage (Vmp / V)	**33.59**	31.39	**33.76**	31.59	**33.93**	31.76
Maximum power current (Imp / A)	**13.25**	10.80	**13.33**	10.86	**13.41**	10.93
Module efficiency at STC (ηm / %)	**22.27**		**22.52**		**22.77**	
Power tolerance (Pmax)			**0~+3%**			

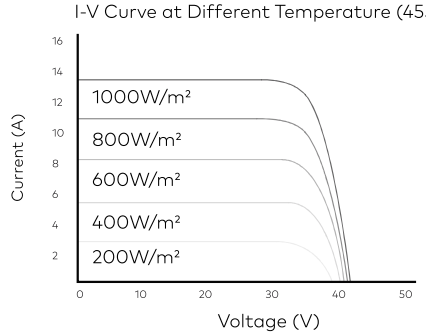
NMOT: Irradiance 800 W/m2, ambient temperature 20°C, wind speed 1 m/s / **STC:** Irradiance of 1000 W/m2, spectrum AM 1.5, a module temperature of 25°C

BIFACIAL OUTPUT: BACKSIDE POWER GAIN	**10%**	**20%**	**10%**	**20%**	**10%**	**20%**
Pmax (Wp)	489.5	534	495	540	500.5	546
Module efficiency (%)	**24.5**	**26.72**	**24.77**	**27.02**	**25.05**	**27.32**

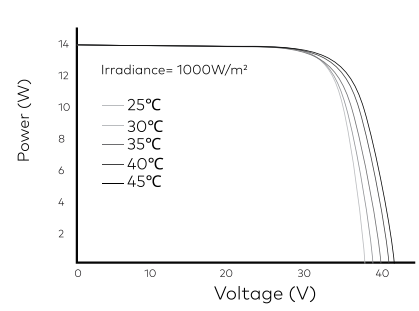
CERTIFICATES

IEC62716 (Ammonia)
IEC60068-2-68 (Sand)
IEC61215 / 61730 / 61701

I-V Curve at Different Temperature (455 W)



P-V Curve



ASTORIOS Holding Inc.
16192 Coastal Highway, Lewes,
Delaware 19958, USA
info@astorios.com

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