



ASTORIOS

per aspera ad astra

ULTRA BLACK HIGH EFFICIENCY BIFACIAL, DOUBLE GLASS PHOTOVOLTAIC MODULE

ASTR 108HCND/10 Series 425-445 Wp

TOPCON N-TYPE HALF CUT CELLS

445 Wp
MAXIMUM POWER OUTPUT

22.27%
MAXIMUM MODULE EFFICIENCY



NO LID

N-Type cells have no Light Induced Degradation



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

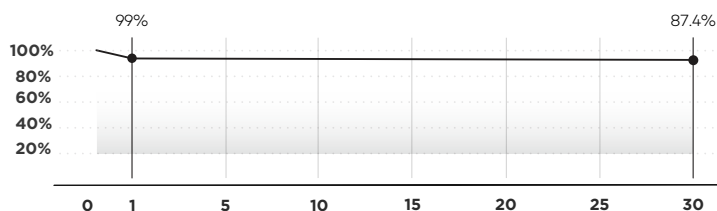
Sand blowing, ammonia and salt mist resistance tests have been passed by international standards to ensure operation in harsh conditions



SUPERIOR SAFETY AND RELIABILITY

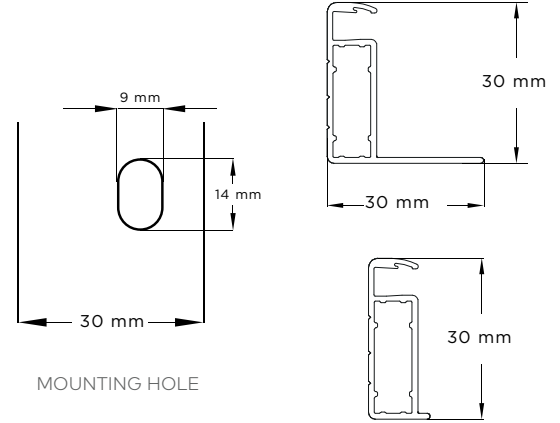
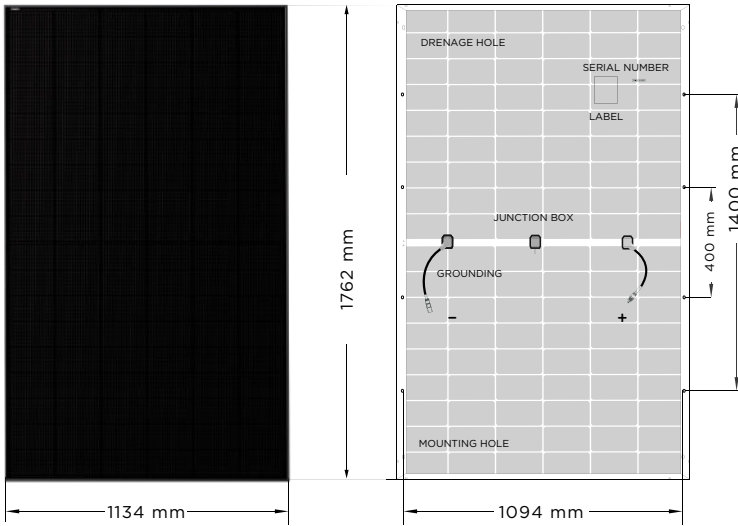
Tested to avoid microcracks and welding cracks, can withstand high pressure loads, passed multi-step quality control

PERFORMANCE



30 YEARS
Performance Guarantee

20 YEARS
Product Warranty



FRAME PROFILE

MATERIAL CHARACTERISTICS

| | |
|------------------|---|
| Dimensions | 1762 x 1134 x 30 mm |
| Weight | 22.5 kg |
| Glass front/rear | 2mm, High transparency, AR coated |
| Number of cells | 108 pcs (6x18) |
| Cells | Mono-crystalline, Half Cut N-Type 16BB/10 BB (186x182 mm) |
| Frame | Black Color, Anodized aluminum alloy |
| Junction box | IP68 Rated, 3 bypass diodes |
| Connector type | Staubli MC4-Evo 2 / MC4 (Original) |
| Cable | 4 mm ² , 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 | 25 A |
| Uplift load (wind) | 2400 Pa* |
| Downforce load (snow) | 5400 Pa* |

*For more information please refer to Instruction Manual

PACKAGING INFORMATION

| | |
|-----------------------|---------|
| One pallet quantity | 36 pcs |
| 40 ft HC/HQ container | 936 pcs |

| MODULE TYPE | 108HCND/10 | | 425 Wp | | 430 Wp | | 435 Wp | | 440 Wp | | 445 Wp | |
|-----------------------------------|------------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|------|
| | STC | NOCT | STC | NOCT | STC | NOCT | STC | NOCT | STC | NOCT | STC | NOCT |
| ELECTRICAL CHARACTERISTICS | | | | | | | | | | | | |
| Maximum power (Pmax / Wp) | 425 | 320 | 430 | 323 | 435 | 327 | 440 | 331 | 445 | 335 | | |
| Open circuit voltage (Voc / V) | 38.75 | 36.81 | 38.95 | 37.00 | 39.16 | 37.20 | 39.38 | 37.41 | 39.59 | 37.61 | | |
| Short circuit current (Isc / A) | 13.66 | 11.03 | 13.73 | 11.09 | 13.80 | 11.14 | 13.86 | 11.19 | 13.93 | 11.25 | | |
| Maximum power voltage (Vmp / V) | 32.18 | 29.99 | 32.38 | 30.10 | 32.59 | 30.33 | 32.81 | 30.56 | 33.02 | 30.76 | | |
| Maximum power current (Imp / A) | 13.21 | 10.67 | 13.28 | 10.73 | 13.35 | 10.78 | 13.41 | 10.83 | 13.48 | 10.89 | | |
| Module efficiency at STC (ηm / %) | 21.27 | | 21.52 | | 21.77 | | 22.02 | | 22.27 | | | |
| Power tolerance (Pmax) | (0,+5) Wp | | | | | | | | | | | |

STC: Irradiance of 1000 W/m² with spectrum AM 1.5 and a module temperature of 25°C

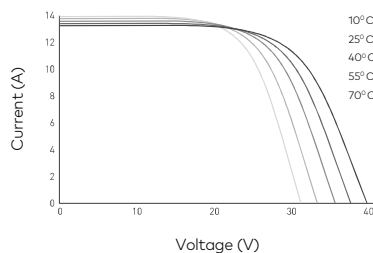
NOCT: Irradiance 800 W/m², ambient temperature 20°C and wind speed 1 m/s

CERTIFICATES

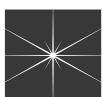
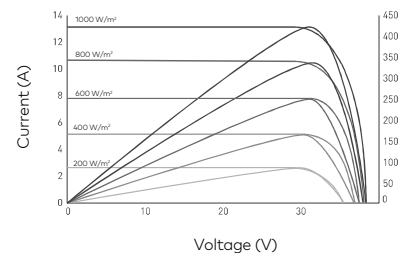
IEC62716 (Ammonia)
IEC60068-2-68 (Sand)
IEC61215 / 61730 / 61701



I-V Curve at Different Temperature (445W)
Irradiation 1000 W/m²



I-V/P-V Curve at Different Irradiation (445W)
Cell temperature 25°C



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