



# CHN-460-NEF-SG

Monocrystalline Module  
Single Glass

435W-460W

**460W**  
Maximum Power  
Output

**23.10%**  
Maximum Module  
Efficiency

**0~+3%**  
Power Output  
Guarantee

TOPCON



16BB(182.2\*191.6mm)

● **FIRE CLASS C**

Fire protection through single glazing according to safety requirements

● **REINSURANCE COVERAGE**

Taoistic is reinsured for 25 years of performance guarantee



High quality silicon wafers guarantee high power module output and excellent cost-effectiveness, making it an ideal choice for large power plants



Selected packaging materials and strict process plans to ensure component PID resistance



Lower oxygen and carbon content leads to lower LID



Adapt to harsh outdoor environments through weather resistance tests such as sand and dust, salt spray, and ammonia gas



The design of series and parallel connection reduces the series resistance  $R_s$  of components, reduces internal electrical performance losses, and improves the power generation capacity of the system end



Our company has concluded a reinsurance agreement with Ariel Re - Lloyd's syndicate 1910. Please see <http://verification.arielre-cleanenergy.com>

## Deliver Reliable Performance Over Time

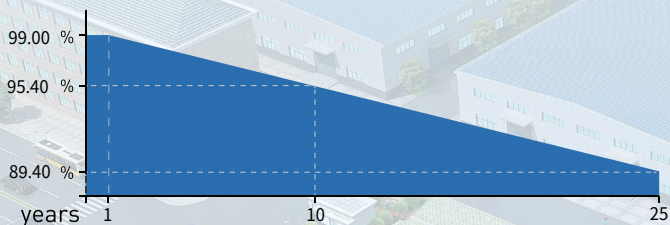
- manufacturer of crystalline silicon photovoltaic modules
- Fully automatic facility and world-class technology
- Rigorous quality control to meet the highest standard: ISO9001:2015, ISO14001: 2015 and ISO 45001:2008
- Tested for harsh environments (salt mist, ammonia corrosion, sand blowing test, and PID test: IEC 61701, IEC 62716)
- Long term reliability tests
- 2x100% EL inspection ensuring defect-free modules

## WARRANTY

12 years product warranty

25 years performance warranty

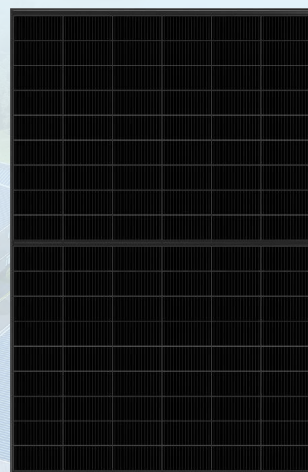
## Linear Performance Warranty



12 Years Product Warranty 25 Years Linear Power Warranty

\* Please refer to standard warranty for details

## Product Certification



# CHN-460-NEF-SG

## Monocrystalline Module

## Single Glass

**435W-460W**

### Electrical Specification [ STC\* ]

|                        |                      |       |       |       |       |       |       |
|------------------------|----------------------|-------|-------|-------|-------|-------|-------|
| Maximum Power          | P <sub>max</sub> [W] | 435   | 440   | 445   | 450   | 455   | 460   |
| Maximum Power Voltage  | V <sub>mp</sub> [V]  | 32.60 | 32.80 | 33.00 | 33.20 | 33.40 | 33.60 |
| Maximum Power Current  | I <sub>mp</sub> [A]  | 13.35 | 13.42 | 13.49 | 13.56 | 13.63 | 13.69 |
| Open Circuit Voltage   | V <sub>oc</sub> [V]  | 38.98 | 39.18 | 39.38 | 39.58 | 39.80 | 39.99 |
| Short Circuit Current  | I <sub>sc</sub> [A]  | 14.23 | 14.27 | 14.31 | 14.35 | 14.39 | 14.43 |
| Module Efficiency      | [%]                  | 22.10 | 22.30 | 22.50 | 22.70 | 22.90 | 23.10 |
| Power Output Tolerance | [W]                  | 0~+3% |       |       |       |       |       |

\* Irradiance 1000W/m<sup>2</sup>, Module Temperature 25°C, Air Mass 1.5

### Electrical Specification [ NOCT\* ]

|                       |                      |       |       |       |       |       |       |
|-----------------------|----------------------|-------|-------|-------|-------|-------|-------|
| Maximum Power         | P <sub>max</sub> [W] | 329   | 333   | 337   | 340   | 344   | 348   |
| Maximum Power Voltage | V <sub>mp</sub> [V]  | 30.72 | 30.94 | 31.21 | 31.41 | 31.61 | 31.81 |
| Maximum Power Current | I <sub>mp</sub> [A]  | 10.71 | 10.76 | 10.80 | 10.84 | 10.88 | 10.94 |
| Open Circuit Voltage  | V <sub>oc</sub> [V]  | 36.40 | 36.60 | 36.80 | 37.00 | 37.20 | 37.40 |
| Short Circuit Current | I <sub>sc</sub> [A]  | 11.45 | 11.50 | 11.55 | 11.60 | 11.65 | 11.70 |

\* Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1m/s

### Mechanical Data

|                                 |                                      |
|---------------------------------|--------------------------------------|
| Number of Cells                 | 108pieces [6×18]                     |
| Dimensions of Module L*W*H [mm] | 1802×1134×30mm                       |
| Weight [kg]                     | Approx 22.3kg                        |
| Front Side Glass                | 3.2mm, Anti-reflection coating glass |
| Backsheet                       | Black                                |
| Frame                           | Anodized aluminium                   |
| J-Box                           | Protection level IP68                |
| Cable                           | 4.0mm <sup>2</sup> , 300mm           |
| Number of diodes                | 3                                    |
| Wind/Snow Load                  | 2400 Pa/5400 pa*                     |
| Connector                       | MC4 compatible or MC compatible      |

\* For more details please check the installation manual

### Temperature Ratings

|                                             |            |
|---------------------------------------------|------------|
| Nominal Operating Cell Temperature [ NOCT ] | 44±2°C     |
| Temperature Coefficient of I <sub>sc</sub>  | +0.046%/°C |
| Temperature Coefficient of V <sub>oc</sub>  | -0.250%/°C |
| Temperature Coefficient of P <sub>MAX</sub> | -0.300%/°C |

### Temperature Ratings

|                         |              |
|-------------------------|--------------|
| Operational Temperature | -40~+85°C    |
| Maximum System Voltage  | 1500V DC-[H] |
| Max Series Fuse Rating  | 25A          |

### Packaging Configuration

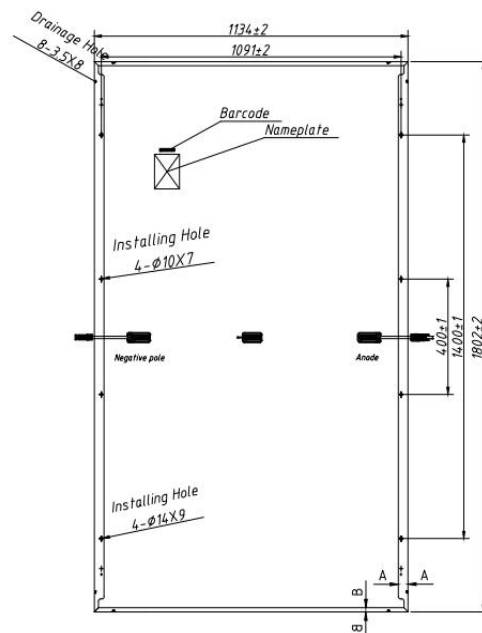
|                         |             |
|-------------------------|-------------|
| Module per box          | 36 pieces   |
| Module per 17.5 flatcar | 1296 pieces |
| Module per 40 container | 936 pieces  |

\* Due to different specifications, the specific loading quantity is subject to the actual arrival of goods

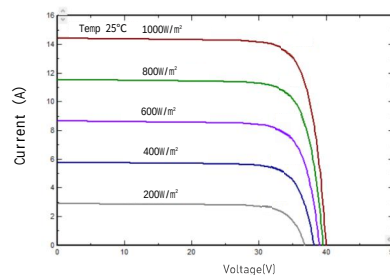
### Optional

|              |             |
|--------------|-------------|
| Connector    | Original MC |
| Cable length | 1200mm      |
| Frame        | Silver      |
| Backsheet    | White       |

### Module Dimension



I-V Curve at Different Temperature (460W)



I-V/P-V Curve at Different Irradiation (460W)

