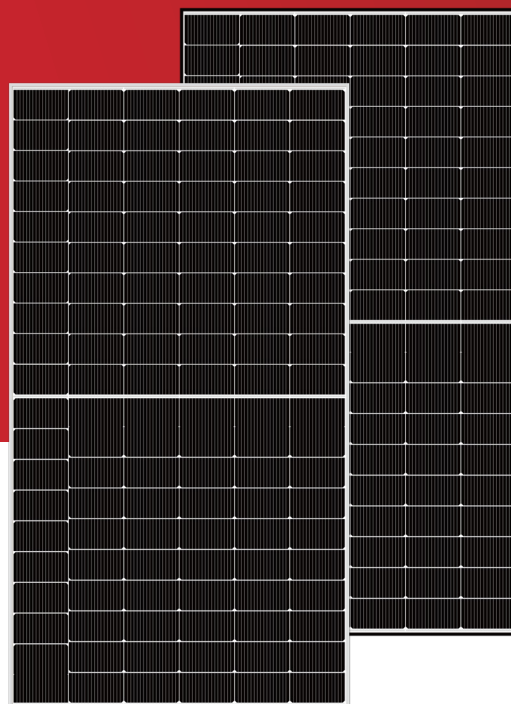




# Tangra™ MHD

## 515-530W

N-type high density half-cell mono module



30-year lifespan delivers 10-30% more power compared with conventional P-type modules



The natural lack of LID in the N-type solar cell can increase power generation



Excellent low irradiance performance



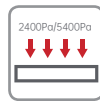
Better light trapping and current collection to improve module power output and reliability



Industry-leading, lowest thermal coefficient



Optimized electrical design and lower operating current for reduced hot spot loss and better temperature

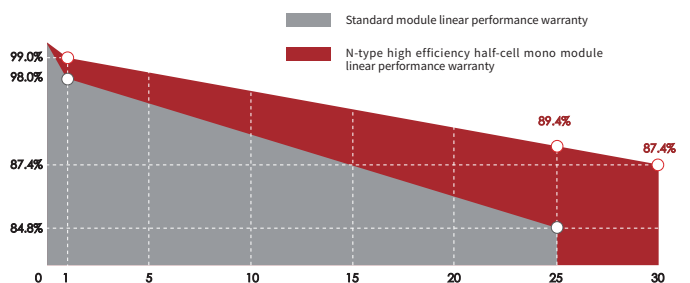


Certified to withstand 2400 Pa of wind load and 5400 Pa of snow load



100% triple EL test, which greatly reduces the hidden cracks rate

### LINEAR PERFORMANCE WARRANTY



**15** years

Product quality & process guarantee

**30** years

Linear power guarantee

**0.40** %

Annual degradation

### COMPREHENSIVE CERTIFICATES



ISO 9001: Quality Management System

ISO 14001: Environmental Management System Standard

ISO 45001: International Occupational Health and Safety Assessment System Standard

SA8000: 2014 Social Accountability Management System

### WARRANTY INSURANCE



\* Optional performance warranty insurance. Please contact our local sales staff for more information.

\* Different markets have different certification requirements. Also, the products are under rapid innovation. Please confirm the certification status with regional sales representatives.

## ELECTRICAL CHARACTERISTICS

| Model of modules                     | SS-515-60MDH-G13(T) |       | SS-520-60MDH-G13(T) |       | SS-525-60MDH-G13(T) |       | SS-530-60MDH-G13(T) |       |
|--------------------------------------|---------------------|-------|---------------------|-------|---------------------|-------|---------------------|-------|
|                                      | STC                 | NOCT  | STC                 | NOCT  | STC                 | NOCT  | STC                 | NOCT  |
| Maximum power — $P_{mp}$ (W)         | 515                 | 388   | 520                 | 392   | 525                 | 395   | 530                 | 399   |
| Open-circuit voltage — $V_{oc}$ (V)  | 43.32               | 40.89 | 43.52               | 41.08 | 43.73               | 41.28 | 43.94               | 41.48 |
| Short-circuit current — $I_{sc}$ (A) | 15.09               | 12.19 | 15.15               | 12.24 | 15.21               | 12.29 | 15.27               | 12.34 |
| Maximum power voltage — $V_{mp}$ (V) | 36.19               | 33.88 | 36.39               | 34.07 | 36.58               | 34.24 | 36.77               | 34.42 |
| Maximum power current — $I_{mp}$ (A) | 14.23               | 11.45 | 14.29               | 11.50 | 14.35               | 11.55 | 14.41               | 11.60 |
| Module efficiency — $\eta_m$ (%)     | 21.7                |       | 21.9                |       | 22.1                |       | 22.3                |       |
| Power tolerance (W)                  | (0,+5)              |       |                     |       |                     |       |                     |       |
| Maximum system voltage (V)           | 1500                |       |                     |       |                     |       |                     |       |
| Maximum rated fuse current (A)       | 25                  |       |                     |       |                     |       |                     |       |
| Current operating temperature (°C)   | -40~+85 °C          |       |                     |       |                     |       |                     |       |

**STC** (Standard Testing Conditions): Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25 °C, Spectra at AM1.5

**NOCT** (Nominal Operating Cell Temperature): Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, Spectra at AM1.5, Wind at 1m/s

## STRUCTURAL CHARACTERISTICS

|                           |  |
|---------------------------|--|
| Module dimensions (L*W*H) | 2094 x 1134 x 30 mm  |
| Weight                    | 25.5 kg  |
| Number of cells           | 120 cells  |
| Cell                      | N-type monocrystalline                                     |
| Glass                     | Tempered, 3.2 mm AR, high transmittance, low iron          |
| Frame                     | Anodized aluminum alloy (Silver/Black)                     |
| Junction box              | IP68, 3 bypass diodes                                      |
| Output wire               | 4.0 mm <sup>2</sup> , wire length: 300mm/1200mm/customized |
| Connector                 | MC4 Compatible   |
| Mechanical load           | Snow load: 5400 Pa * / Wind load: 2400 Pa ∞                |

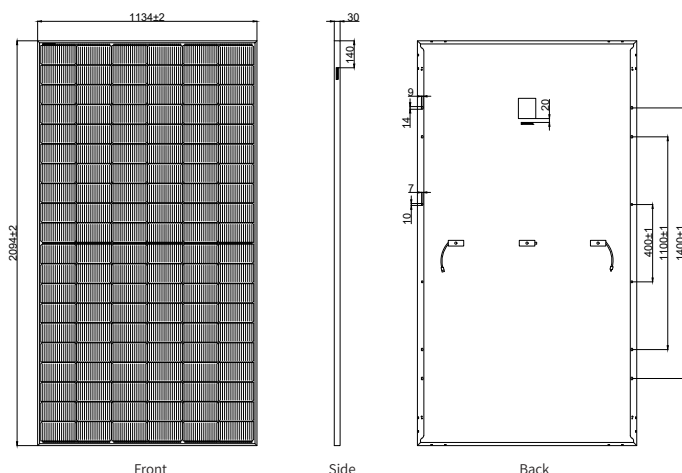
## TEMPERATURE PERFORMANCE RATINGS

|  |            |
|--|------------|
| TANGRA temperature coefficient ( $P_{max}$ ) | -0.30 %/°C |
| Temperature coefficient ( $V_{oc}$ )         | -0.28 %/°C |
| Temperature coefficient ( $I_{sc}$ )         | +0.04 %/°C |
| Nominal operating cell temperature           | 43±2 °C    |

## PACKAGING CONFIGURATION

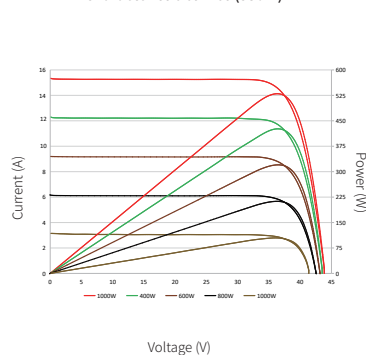
|                    |      |
|--------------------|------|
| Container          | 40HQ |
| Quantity/pallet    | 36   |
| Pallets/container  | 22   |
| Quantity/container | 792  |

## MODULE DIMENSIONS (MM)



\* The unmarked tolerance is ±1 mm  
Length shown in mm

Characteristic curves (530W)



Temperature Dependence of  $I_{sc}$ ,  $V_{oc}$ ,  $P_{max}$

