

# N-type Module

## TOPHiKu6 (All-Black)

CS6.2-48TD-440 | 445 | 450 | 455 | 460 | 465 | 470

### MORE POWER



Module power up to 470 W  
Module efficiency up to 23.5 %



Excellent anti-LeTID & anti-PID performance.  
Low power degradation, high energy yield



Lower temperature coefficient (Pmax): -0.29%/°C,  
increases energy yield in hot climate



Lower LCOE & system cost

### MORE RELIABLE



Tested up to ice ball of 35 mm diameter  
according to IEC 61215 standard



Minimizes micro-crack impacts



Heavy snow load up to 6000 Pa,  
wind load up to 4000 Pa\*



Industry Leading Product Warranty on Materials  
and Workmanship\*



Linear Power Performance Warranty\*

1<sup>st</sup> year power degradation no more than 1%  
Subsequent annual power degradation no more than 0.4%

\*According to the applicable Canadian Solar Limited Warranty Statement.

### MANAGEMENT SYSTEM CERTIFICATES\*

ISO 9001: 2015 / Quality management system  
ISO 14001: 2015 / Standards for environmental management system  
ISO 45001: 2018 / International standards for occupational health & safety  
IEC 62941: 2019 / Photovoltaic module manufacturing quality system

### PRODUCT CERTIFICATES\*

IEC 61215 / IEC 61730 / CE / MCS / UKCA / INMETRO / CGC  
UL 61730 / IEC 61701 / IEC 62716 / IEC 60068-2-68  
UNI 9177 Reaction to Fire: Class 1 / Take-e-way



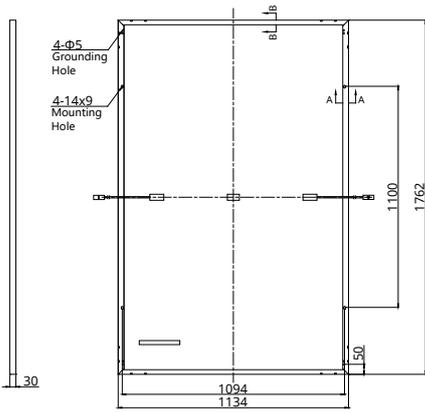
\* The specific certificates applicable to different module types and markets will vary,  
and therefore not all of the certifications listed herein will simultaneously apply to the  
products you order or use. Please contact your local Canadian Solar sales representative  
to confirm the specific certificates available for your Product and applicable in the regions  
in which the products will be used.

**CSI Solar Co., Ltd.**, a BNEF Tier 1 and S&P Global Tier 1 module manufacturer, is a leading provider of integrated solar and energy storage solutions. With over 24 years of expertise, the company has delivered more than 165 GW of premium-quality solar modules worldwide.

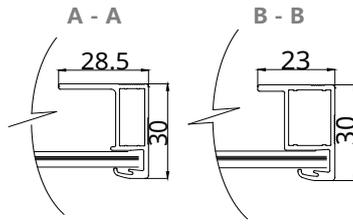
\* For detailed information, please refer to the Installation Manual.

## ENGINEERING DRAWING (mm)

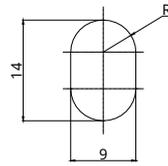
### Rear View



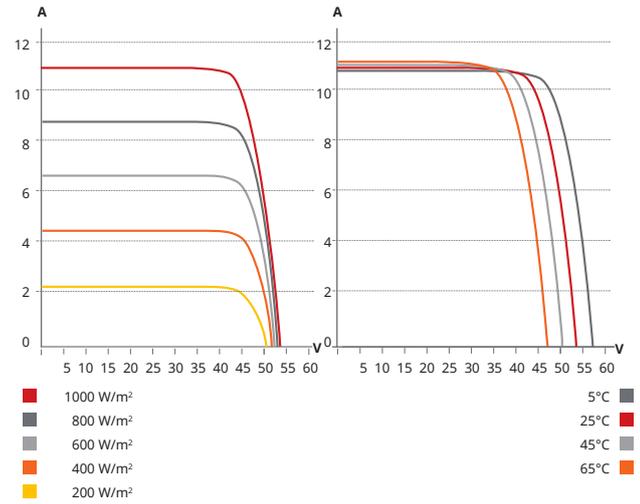
### Frame Cross Section



### Mounting Hole



## CS6.2-48TD-470 / I-V CURVES



## ELECTRICAL DATA | STC\*

| CS6.2-48TD                   | 440                                       | 445     | 450     | 455     | 460     | 465     | 470     |
|------------------------------|---|---------|---------|---------|---------|---------|---------|
| Nominal Max. Power (Pmax)    | 440 W                                     | 445 W   | 450 W   | 455 W   | 460 W   | 465 W   | 470 W   |
| Opt. Operating Voltage (Vmp) | 44.4 V                                    | 44.6 V  | 44.8 V  | 45.0 V  | 45.2 V  | 45.4 V  | 45.6 V  |
| Opt. Operating Current (Imp) | 9.91 A                                    | 9.98 A  | 10.05 A | 10.12 A | 10.18 A | 10.25 A | 10.32 A |
| Open Circuit Voltage (Voc)   | 52.5 V                                    | 52.7 V  | 52.9 V  | 53.1 V  | 53.3 V  | 53.5 V  | 53.7 V  |
| Short Circuit Current (Isc)  | 10.54 A                                   | 10.61 A | 10.68 A | 10.75 A | 10.82 A | 10.89 A | 10.96 A |
| Module Efficiency            | 22.0%                                     | 22.3%   | 22.5%   | 22.8%   | 23.0%   | 23.3%   | 23.5%   |
| Operating Temperature        | -40°C ~ +85°C                             |         |         |         |         |         |         |
| Max. System Voltage          | 1500V (IEC/UL)                            |         |         |         |         |         |         |
| Module Fire Performance      | TYPE 29 (UL 61730) or CLASS C (IEC 61730) |         |         |         |         |         |         |
| Max. Series Fuse Rating      | 20 A                                      |         |         |         |         |         |         |
| Protection Class             | Class II                                  |         |         |         |         |         |         |
| Power Tolerance              | 0 ~ + 10 W                                |         |         |         |         |         |         |

\* Under Standard Test Conditions (STC) of irradiance of 1000 W/m<sup>2</sup>, spectrum AM 1.5 and cell temperature of 25°C.

## ELECTRICAL DATA | NMOT\*

| CS6.2-48TD                   | 440    | 445    | 450    | 455    | 460    | 465    | 470    |
|------------------------------|--------|--------|--------|--------|--------|--------|--------|
| Nominal Max. Power (Pmax)    | 332 W  | 336 W  | 339 W  | 343 W  | 347 W  | 351 W  | 354 W  |
| Opt. Operating Voltage (Vmp) | 41.8 V | 42.0 V | 42.2 V | 42.4 V | 42.6 V | 42.8 V | 43.0 V |
| Opt. Operating Current (Imp) | 7.93 A | 7.98 A | 8.04 A | 8.09 A | 8.14 A | 8.20 A | 8.25 A |
| Open Circuit Voltage (Voc)   | 49.6 V | 49.8 V | 50.0 V | 50.1 V | 50.3 V | 50.5 V | 50.7 V |
| Short Circuit Current (Isc)  | 8.50 A | 8.55 A | 8.61 A | 8.67 A | 8.72 A | 8.78 A | 8.83 A |

\* Under Nominal Module Operating Temperature (NMOT), irradiance of 800 W/m<sup>2</sup> spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.

## MECHANICAL DATA

| Specification                      | Data  |
|------------------------------------|---|
| Cell Type                          | TOPCon cells  |
| Cell Arrangement                   | 144 [2 x (12 x 6)]  |
| Dimensions                         | 1762 × 1134 × 30 mm<br>(69.4 × 44.6 × 1.18 in)                                      |
| Weight                             | 24.6 kg (54.2 lbs)  |
| Front Glass                        | 2.0 mm heat strengthened glass with anti-reflective coating                         |
| Back Glass                         | 2.0 mm heat strengthened glass  |
| Frame                              | Anodized aluminium alloy  |
| J-Box                              | IP68, 3 bypass diodes   |
| Cable                              | 4 mm <sup>2</sup> (IEC), 12 AWG (UL)  |
| Cable Length (Including Connector) | Portrait: 300 mm (11.8 in) (+) / 200 mm (7.9 in) (-); landscape: 1100 mm (43.3 in)* |
| Connector                          | T6 or MC4-EVO2A   |
| Per Pallet                         | 36 pieces   |
| Per Container (40' HQ)             | 936 pieces  |

\* For detailed information, please contact your local Canadian Solar sales and technical representatives.

## TEMPERATURE CHARACTERISTICS

| Specification                        | Data         |
|--------------------------------------|--------------|
| Temperature Coefficient (Pmax)       | -0.29 % / °C |
| Temperature Coefficient (Voc)        | -0.25 % / °C |
| Temperature Coefficient (Isc)        | 0.045 % / °C |
| Nominal Module Operating Temperature | 42 ± 3°C     |

## PARTNER SECTION



\* The specifications and key features contained in this datasheet may deviate slightly from our actual products due to the on-going innovation and product enhancement. CSI Solar Co., Ltd. reserves the right to make necessary adjustment to the information described herein at any time without further notice. Please be kindly advised that PV modules should be handled and installed by qualified people who have professional skills and please carefully read the safety and installation instructions before using our PV modules.