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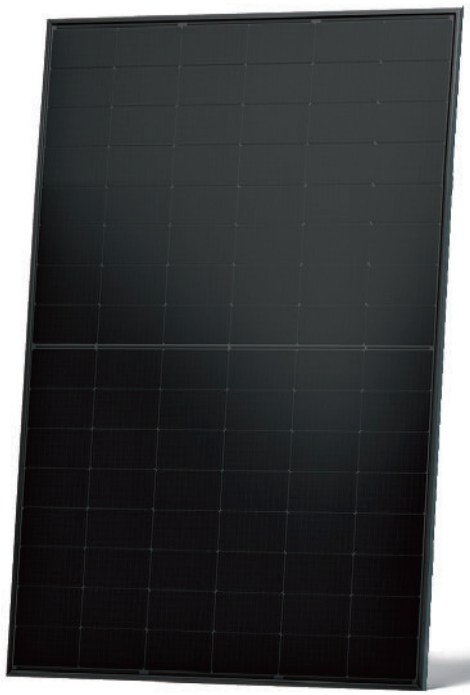
# TIGER Neo

# 48HL4M-DB

## 450-475 Watt

ALL BLACK MONO-FACIAL MODULE
WITH DUAL GLASS

## N-type

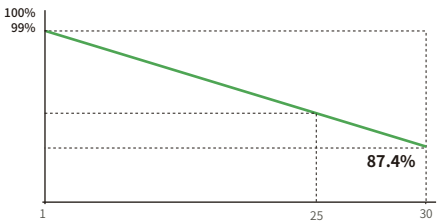


### N-type Technology

N-type modules with Tunnel Oxide Passivating Contacts (TOPCon) technology offer lower LID/LeTID degradation and better low light performance.

### HOT 3.0 Technology

N-type modules with JinkoSolar's HOT 3.0 technology offer better reliability and efficiency.




**25**Year
Product Warranty

**30**Year
Linear Power Warranty

**1**%
First-year Degradation

**0.40**%
Annual Degradation Over 30 Years

### Durability Against Extreme Environment

High salt mist and ammonia resistance.

### Mechanical Load Enhanced

Certified to withstand:
6000 Pa front side max static test load
4000 Pa rear side max static test load

- IEC61215:2021 / IEC61730:2023
- IEC61701 / IEC62716 / IEC60068 / IEC62804
- ISO9001:2015: Quality Management System
- ISO14001:2015: Environment Management System
- ISO45001:2018: Occupational health and safety management systems

### SMBB Technology

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

### Anti-PID Guarantee

Minimizes the chance of degradation caused by PID phenomena through optimization of cell production technology and material control.

**JKM450-475N-48HL4M-DB-Z1-EU**

# 48HL4M-DB 450-475 Watt

## Mechanical Characteristics

| | |
|---|---|
| Cell Type | N- type Mono-crystalline |
| No. of cells | 96（48×2） |
| Dimensions | 1762×1134×30 mm |
| Weight | 24.0 kg |
| Front Glass | 2.0 mm, Anti-reflection Coating |
| Back Glass | 2.0 mm, Heat Strengthened Glass |
| Frame | Anodized Aluminium Alloy |
| Junction Box | IP68 Rated |
| Protection Class | Class II |
| IEC Fire Type | Class C |
| Connector Type | JK03M/JK03M2/Others* |
| Output Cables (Including Connector) | 4.0 $mm^2$<br>(+): 400 mm , (-): 200 mm or Customized Length |

* MC4 and MC4-EVO2 available upon request and subject to availability

## Packaging Configuration

| | |
|---|---|
| Pallet Dimensions | 1792×1140×1249 mm |
| Packing Detail (Two pallets = One stack) | 37 pcs/pallets, 74 pcs/stack,<br>962 pcs/ 40'HQ Container |

## Specifications (STC)

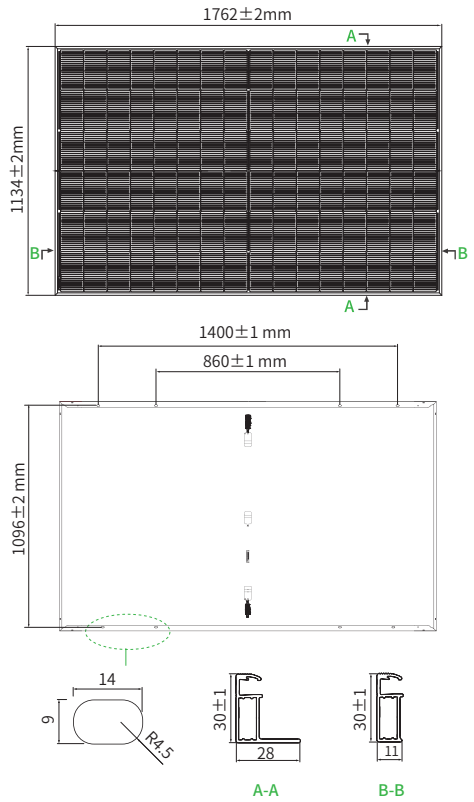
| | | | | | | |
|---|---|---|---|---|---|---|
| Maximum Power - Pmax [Wp] | 450 | 455 | 460 | 465 | 470 | 475 |
| Maximum Power Voltage - Vmp [V] | 30.25 | 30.48 | 30.71 | 30.94 | 31.17 | 31.40 |
| Maximum Power Current - Imp [A] | 14.88 | 14.93 | 14.98 | 15.03 | 15.08 | 15.13 |
| Open-circuit Voltage - Voc [V] | 36.04 | 36.21 | 36.38 | 36.55 | 36.72 | 36.89 |
| Short-circuit Current - Isc [A] | 15.76 | 15.81 | 15.86 | 15.91 | 15.96 | 16.01 |
| Module Efficiency STC [%] | 22.52 | 22.77 | 23.02 | 23.27 | 23.52 | 23.77 |
| Power Tolerance | 0 ~ + 3 % | | | | | |
| Temperature Coefficients of Pmax | -0.29 %/°C | | | | | |
| Temperature Coefficients of Voc | -0.25 %/°C | | | | | |
| Temperature Coefficients of Isc | 0.045 %/°C | | | | | |

STC: Irradiance 1000W/$m^2$, Cell Temperature 25°C, AM=1.5

## Application Conditions

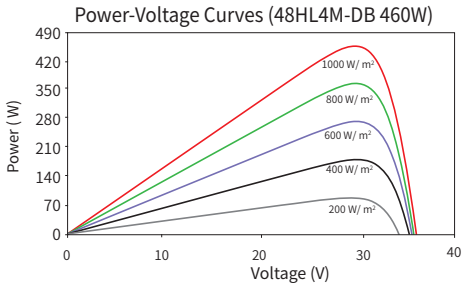
| | |
|---|---|
| Operating Temperature | -40 °C ~ +70 °C |
| Maximum System Voltage | 1500 VDC (IEC) |
| Maximum Series Fuse Rating | 30 A |

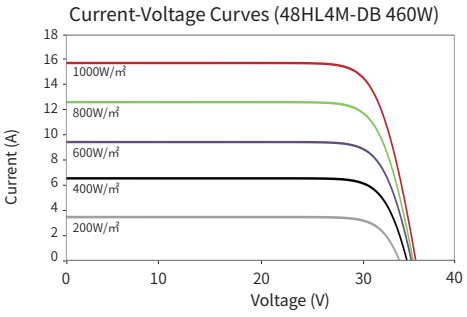
## Engineering Drawings




*Note: For specific dimensions and tolerance ranges, please refer to the corresponding detailed module drawings.

## Electrical Performance

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**Note:** Please read the safety and installation manual before using the product. We reserve the right of final interpretation. The specifications in this datasheet are subject to change without notice.

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