

TIGER Neo

48HL4M-DB

460 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.



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



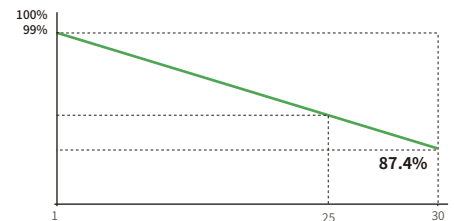
SMBB Technology

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.



25 Year Product Warranty	30 Year Linear Power Warranty	1 % First-year Degradation	0.40 % Annual Degradation Over 30 Years
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- 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



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

48HL4M-DB 460 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 (+): 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, 962 pcs/ 40'HQ Container

Specifications (STC)

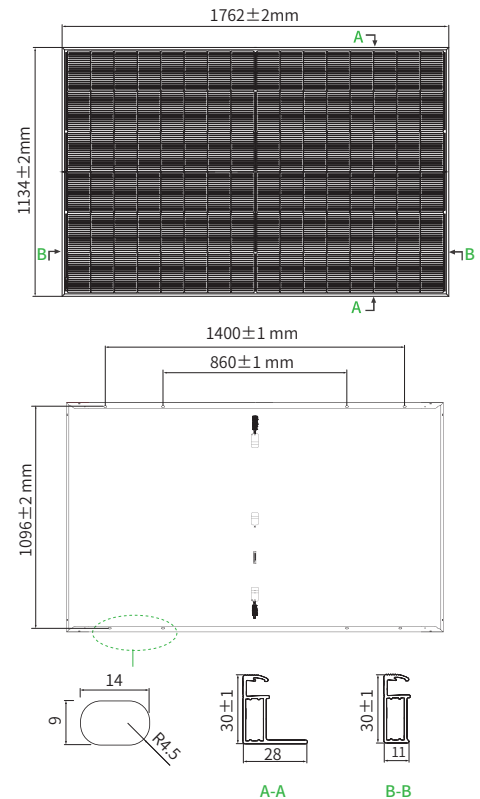
Maximum Power - Pmax [Wp]	460
Maximum Power Voltage - Vmp [V]	30.71
Maximum Power Current - Imp [A]	14.98
Open-circuit Voltage - Voc [V]	36.38
Short-circuit Current - Isc [A]	15.86
Module Efficiency STC [%]	23.02
Power Tolerance	0 ~ + 3 %
Temperature Coefficients of Pmax	-0.29 %/°C
Temperature Coefficients of Voc	-0.25 %/°C
Temperature Coefficients of Isc	0.045 %/°C

STC: Irradiance 1000W/m², 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

