



# 48HL4M-DV

450-475 Watt

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.



### **Durability Against Extreme Environment**

High salt mist and ammonia resistance.



## **SMBB Technology**

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



## **HOT 3.0 Technology**

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



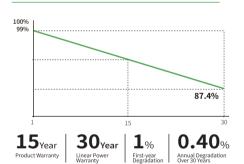
## **Mechanical Load Enhanced**

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



## **Anti-PID Guarantee**

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



- 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-DV-Z2-EN

## 48HL4M-DV 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	4.0 mm <sup>2</sup>			
(Including Connector)	(+): 400 mm , (-): 200 mm or Customized Length			

<sup>\*</sup> MC4 and MC4-EVO2 available upon request and subject to availability

### **Packaging Configuration**

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

### **Specifications (STC)**

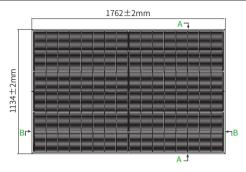
Maximum Power - Pmax [Wp]	450	455	460	465	470	475	
Maximum Power Voltage - Vmp [V]	30.04	30.28	30.51	30.74	30.97	31.19	
Maximum Power Current - Imp [A]	14.98	15.03	15.08	15.13	15.18	15.23	
Open-circuit Voltage - Voc [V]	35.88	36.05	36.22	36.39	36.56	36.73	
Short-circuit Current - Isc [A]	15.83	15.88	15.93	15.98	16.03	16.08	
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						

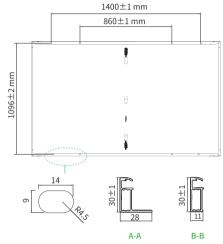
STC: Irradiance 1000W/m², Cell Temperature 25°C, AM=1.5  $\,$ 

### **Application Conditions**

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

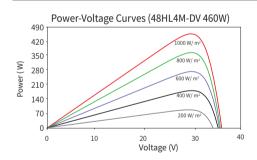
### **Engineering Drawings**

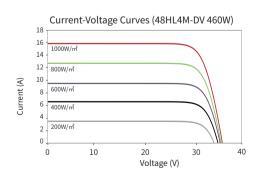




\*Note: For specific dimensions and tolerance ranges, please refer to the corresponding detailed module drawings.

### **Electrical Performance**









**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.

