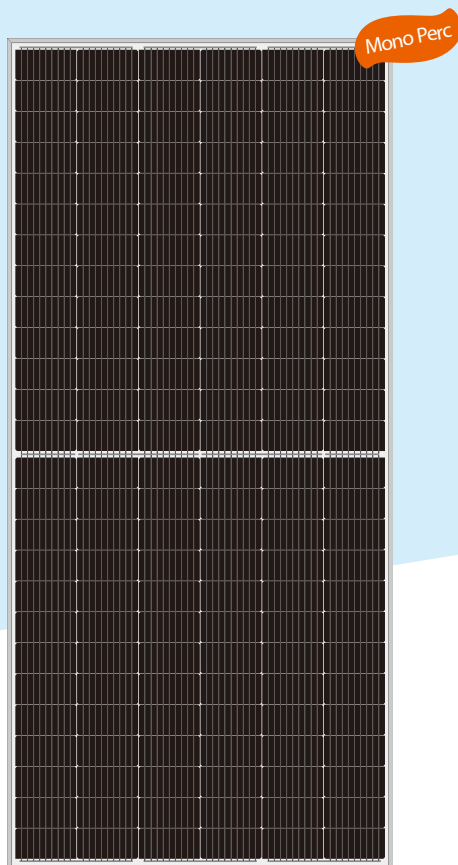


# HCM78X9

## 440~460W

Half-Cell High Efficiency PV Module



### Comprehensive Products and System Certificates

IEC 61215 / IEC 61730 / CE / JPEA / FIDE / INMETRO

ISO 9001: 2015 / Quality management system

ISO 14001: 2015 / Standards for environmental management system

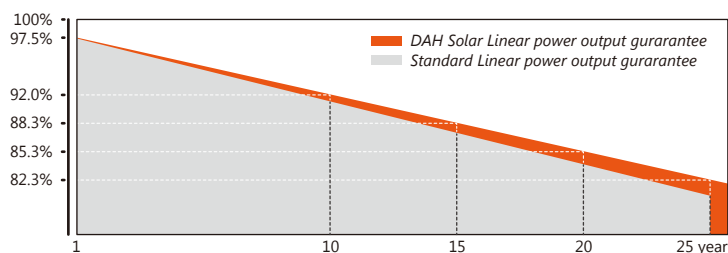
OHSAS 18001: 2007 / International standards for occupational health & safety



### Quality Guarantee

**12-year** Material & technology warranty

**25-year** Linear power output warranty



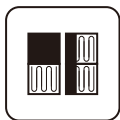
Max Module  
Efficiency

**21.14%**



**Half-cell & High eff.**

9BB Half-cell technology,  
Higher output power



**Less Shading Effect**

Unique circuit design,  
Minimize shading effect



**Lower Temperature**

Lower temperature coefficient,  
Lower hot spot temperature



**Weather Resistance**

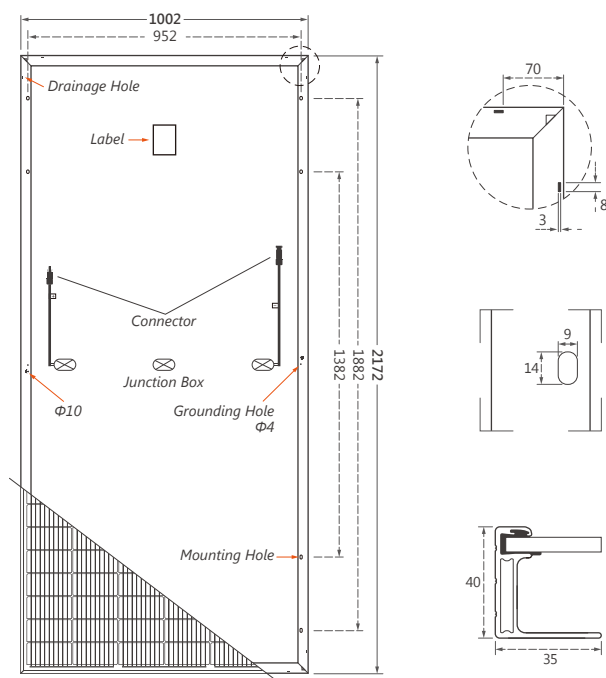
Pass Anti PID test. 100%  
double EL test, Minimizes  
micro-cracks



**T6 Frame**

T6 frame, better mechanical  
load, safer and more  
stable

## Design



## Mechanical Specification

Cells Type	Mono 158.75×79.375mm
Weight	24.3kg
Dimension (L×W×T)	2172×1002×40mm
Cable	4.0mm <sup>2</sup> , Portrait: 300mm(+)/400mm(-) (Including connector) Landscape: 1300mm(+)/1300mm(-)
No. of Cells	156(6×26)
Packing	27pcs/pallet, 270pcs/20GP, 580pcs/40HQ
Glass	3.2 mm High Transmission, Antireflection Coating
Junction box	IP68, 3 Bypass Diodes
Connector	QC4 or MC4 Compatible

## Operating Parameters

Maximum system voltage	1000V/1500V DC
Operating Temperature	-40 ~ +85°C
Maximum series fuse rating	20A
Snow load, frontside	5400Pa
Wind load, backside	2400Pa
Nominal operating cell temperature	45°C±2°C
Application level	Class A

## Electrical Characteristics(STC)

Module Type	HCM78X9-440W	HCM78X9-445W	HCM78X9-450W	HCM78X9-455W	HCM78X9-460W
Maximum Power (Pmax)	440W	445W	450W	455W	460W
Open-circuit Voltage (Voc)	53.1V	53.3V	53.5V	53.7V	53.9V
Maximum Power Voltage (Vmp)	44.5V	44.7V	44.9V	45.1V	45.3V
Short-circuit Current (Isc)	10.37A	10.42A	10.47A	10.54A	10.61A
Maximum Power Current (Imp)	9.89A	9.96A	10.03A	10.09A	10.16A
Module Efficiency (%)	20.22%	20.45%	20.68%	20.91%	21.14%

Power Tolerance	0~+5W
Temperature Coefficient of Isc	0.05%/°C
Temperature Coefficient of Voc	-0.29%/°C
Temperature Coefficient of Pmax	-0.37%/°C
Standard Test Environment	Irradiance 1000W/m <sup>2</sup> , Cell temperature 25°C, Spectrum AM1.5

## Electrical Characteristics(NOCT)

Module Type	HCM78X9-440W	HCM78X9-445W	HCM78X9-450W	HCM78X9-455W	HCM78X9-460W
Maximum Power (Pmax)	332W	336W	339W	342W	346W
Open-circuit Voltage (Voc)	51.4V	51.6V	51.8V	52.0V	52.2V
Maximum Power Voltage (Vmp)	43.1V	43.3V	43.5V	43.7V	43.9V
Short-circuit Current (Isc)	8.21A	8.26A	8.30A	8.34A	8.39A
Maximum Power Current (Imp)	7.71A	7.76A	7.80A	7.83A	7.89A
Standard Test Environment	Irradiance 800W/m <sup>2</sup> , Cell temperature 20°C, Spectrum AM1.5, Wind speed 1m/s				