

# N<sup>+</sup>SERIES

## SUN210RTHCD455&460-48

**455~460W**

MAXIMUM POWER OUTPUT

**22.77%~23.02%**

MAX MODULE  
EFFICIENCY

**0~+5W**

POWER  
TOLERANCE

**≤1%**

FIRST YEAR

POWER DEGRADATION

**≤0.4%**

YEAR 2~30

POWER DEGRADATION

### BIFACIAL MODULE

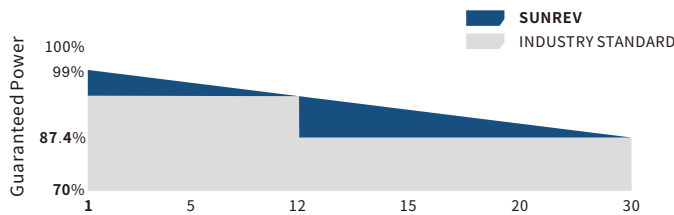
#### N-Type

IEC 61215(2021), IEC 61730(2023)

ISO 9001:2015: Quality management system

ISO 14001:2015: Environment System

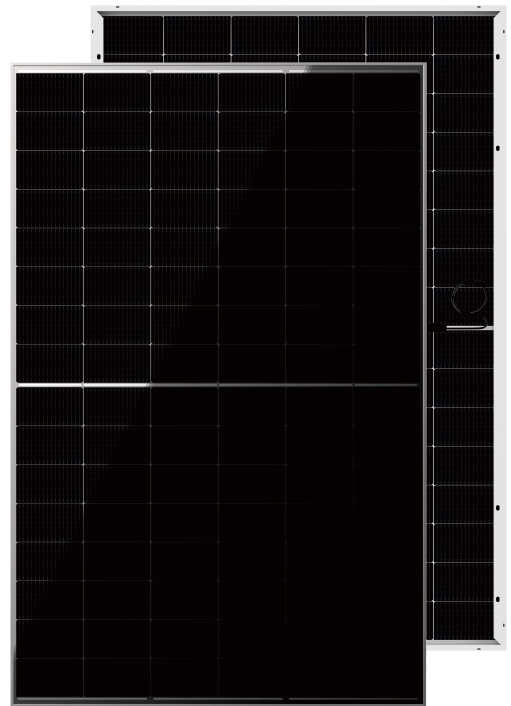
ISO 45001:2018: Occupational health management systems



**12-Year** Warranty for Materials and Processing

**30-Year** Warranty for Extra Linear Power Output

**0.40%** Annual Degradation Over 30 years



## PRODUCT FEATURES



#### SMBB Technology Half Cut N-Type Cell

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



#### Higher Power Output

Module power increases 5-25% generally, bringing significantly lower LCOE and higher IRR.



#### PID Resistance

Excellent Anti-PID performance guarantee via optimized mass-production process and materials control.



#### Higher reliability

The N-type has a single-watt power generation gain of over 3% compared to PERC modules, reduces power temperature loss, and exhibits excellent high-temperature performance. Low electricity cost



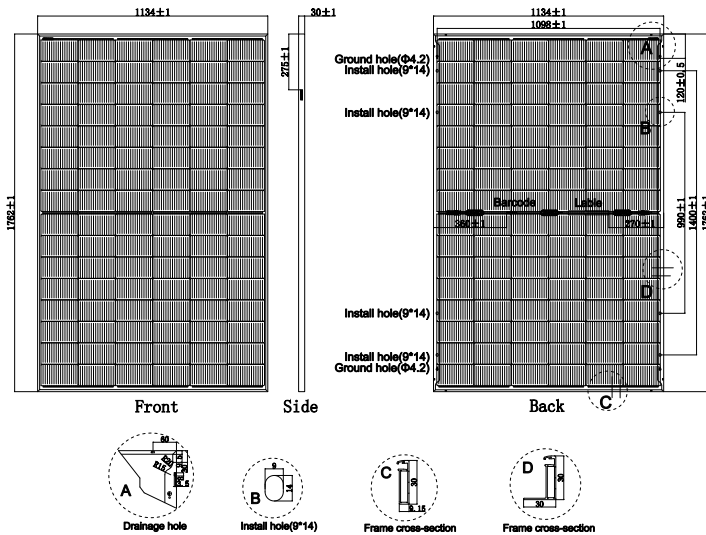
#### Enhanced Mechanical Load

Test load 5400Pa(downward) and 2400 Pa(upward).

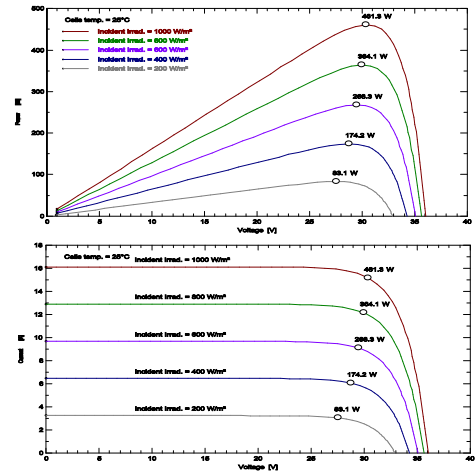


Made in China

## Drawing Information



## I-V Curve(460W)



## Connector Model

- 1: Zerun Co., Ltd. Z4S-abcd
- 2: Zhejiang Minghe New EnergyTechnology Co., Ltd. PV-MH5
- 3: Zhejiang Chint XinHui PV Co., Ltd. PV-HCC40

## Packaging Configuration

Per Pallet	36Pcs	
Container	20'GP	40'HQ
Pcs/Container	216	936

## Mechanical Parameters

Cell Type	N type Mono-crystalline
No.of cells	96(6*16)
Dimensions	1762*1134*30mm
Weight	24.0kg
Front Glass	2.0mm, Anti-Reflection Coating
Back Glass	2.0mm, Heat Strengthened Glass
Frame	Anodized Aluminum Alloy Frame
Junction Box	IP68 Rated / 3 Diodes
Output Cables	4.0mm <sup>2</sup> /+300mm-300mm, or Customized length
Fire Safety Class	Class C according to UL790

## ELECTRICAL PARAMETERS

Module Type	SUN210RTHCD455-48			SUN210RTHCD460-48		
	STC	BNPI	aBSI	STC	BNPI	aBSI
Maximun Power(Pmax/W)	455	504		460	510	
Maximun Power Voltage(Vmp/V)	29.74	29.74		29.88	29.88	
Maximun Power Current(Imp/A)	15.30	16.95		15.40	17.07	
Open-circuit Voltage(Voc/V)	35.86	35.86		36.06	36.06	
Shot-circuit Current(Isc/A)	16.08	17.82	19.94	16.14	17.88	20.01
Module Efficiency(%)	22.77			23.02		
Module[T <sub>95</sub> ] <sub>max</sub>	70°C					
Maximun system voltage	1500VDC					
Maximun series fuse rating	35A					
Tolerance of Pmax/Voc/Isc	±3%					
Temperature coefficients of Pmax	-0.290%/°C					
Temperature coefficients of Voc	-0.250%/°C					
Temperature coefficients of Isc	0.040%/°C					
Bifaciality Coefficient	φVoc=100±5% φIsc=80±5% φPmax=80±5%					

- \*STC:** ☀ Irradiance 1000W/m<sup>2</sup> 🌡 Cell temperatura 25°C ☁ AM=1.5
- \*BNPI:** ☀ Irradiance front 1000W/m<sup>2</sup> rear 135W/m<sup>2</sup> 🌡 Cell temperatura 25°C ☁ AM=1.5
- \*aBSI:** ☀ Irradiance front 1000W/m<sup>2</sup>, rear 300W/m<sup>2</sup> 🌡 Cell temperatura 25°C ☁ AM=1.5

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