



# 435~455W

## KSM-435-455/120-S3

### Durability Against Extreme Environmental Conditions

High salt mist and ammonia resistance certified by TUV NORD.



### PID Resistance

Excellent Anti-PID performance guarantee limited power degradation for mass production.(Potential Induced Degradation) under the test conditions.



### High Efficiency

Higher module conversion efficiency(up to 21.02%) benefit from half cell structure(low resistance characteristic).



### Low-light Performance

Advanced glass and cell surface textured design ensure excellent performance in low-light environment.



### Severe Weather Resilience

Certified to withstand:Wind load(2400 pascal)  
and snow load(5400 pascal).



12-year Warranty for  
Materials and Processing



25-year Warranty for  
Extra Linear Power Output



IEC61215, IEC61730, IEC61701, IEC62716, IEC62804

ISO 9001:2015: ISO Quality Management System

ISO 14001: 2015: ISO Environment Management System

ISO 45001: 2018: ISO Occupational Health and Safety Management Systems



KSM-435-455/120-S3

# 435-455W

Half-Cell High Efficiency PV Module

## Weight

24.0kg±3%

## Cells Type

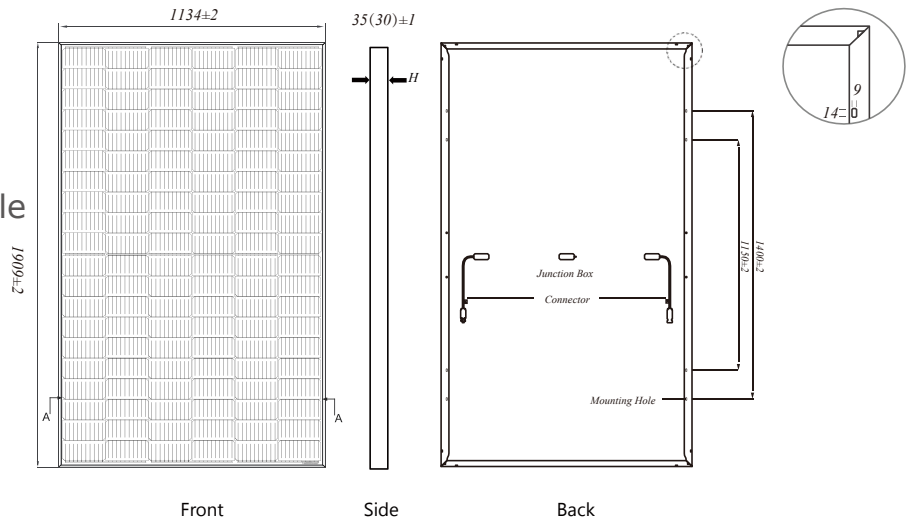
Mono 182-10BB

## Dimension(LxWxT)

1909×1134×35(30)mm

## Packaging

31/744pcs 37/888pcs



Remark: customized frame color and cable length available upon request

## MECHANICAL SPECIFICATION

|                          |                        |
|--------------------------|------------------------|
| Cell                     | Mono                   |
| No.of cells              | 120(6x20)              |
| Cable Length             | 300mm(+)/300mm(-)      |
| Cable Cross Section Size | 4mm <sup>2</sup> (IEC) |
| Junction Box             | IP68,3 diodes          |
| Connector                | MC4 Compatible         |

## OPERATING PARAMETERS

|                          |                                |
|--------------------------|--------------------------------|
| Maximum System Voltage   | 1500VDC                        |
| Operating Temperature    | -40°C~+85°C                    |
| Maximum Series Fuse      | 25A                            |
| Maximum StaticLoad,Front | 5400Pa(112lb/ft <sup>2</sup> ) |
| Maximum StaticLoad,Back  | 2400Pa(50lb/ft <sup>2</sup> )  |
| Safety Class             | Class II                       |

## ELECTRICAL CHARACTERISTICS

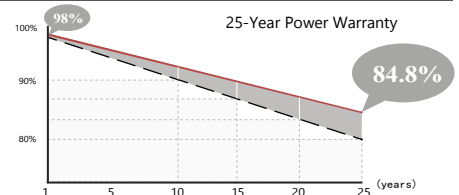
STC:AM1.5 1000W/m<sup>2</sup> 25°C NOCT:AM1.5 800W/m<sup>2</sup> 20°C 1m/s Test uncertainty for Pmax ±3%

| Module Type                      | KSM-435/120-S3 |       | KSM-440/120-S3 |       | KSM-445/120-S3 |       | KSM-450/120-S3 |       | KSM-455/120-S3 |       |
|----------------------------------|----------------|-------|----------------|-------|----------------|-------|----------------|-------|----------------|-------|
| Testing Condition                | STC            | NOCT  | STC            | NOCT  | STC            | NOCT  | STC            | NOCT  | STC            | NOCT  |
| Maximum Power(Pmax/W)            | 435            | 327.7 | 440            | 331.5 | 445            | 335.2 | 450            | 339   | 455            | 342.8 |
| Open Circuit Voltage(Voc/V)      | 40.80          | 38.17 | 40.95          | 38.31 | 41.10          | 38.45 | 41.25          | 38.59 | 41.40          | 38.73 |
| Short Circuit Current(Isc/A)     | 13.34          | 10.77 | 13.41          | 10.82 | 13.52          | 10.91 | 13.62          | 10.99 | 13.72          | 11.07 |
| Voltage at Maximum Power(Vmp/V)  | 33.76          | 32.11 | 33.91          | 32.30 | 34.06          | 32.41 | 34.21          | 32.53 | 34.36          | 32.65 |
| Current at Maximum Power(Impp/A) | 12.89          | 10.21 | 12.98          | 10.26 | 13.07          | 10.34 | 13.16          | 10.42 | 13.25          | 10.50 |
| Module Efficiency(%)             | 20.09          |       | 20.33          |       | 20.56          |       | 20.79          |       | 21.02          |       |

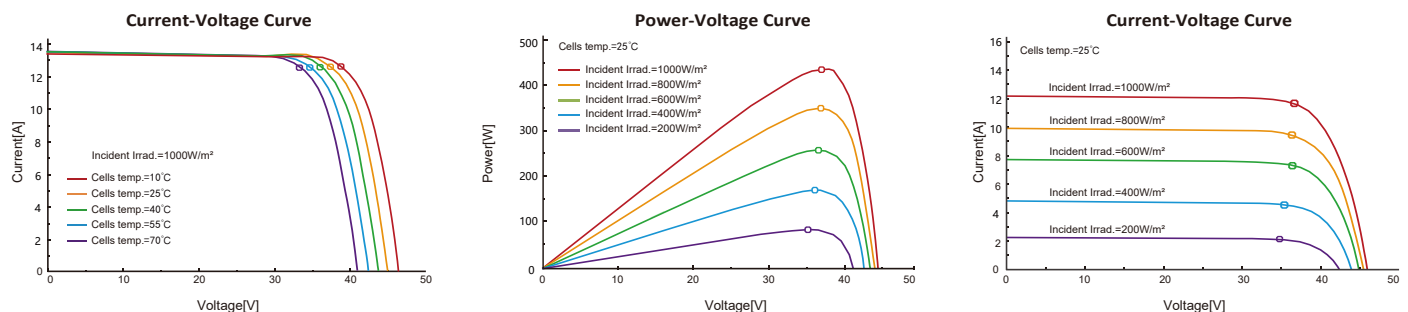
## TEMPERATURE RATINGS

|                                         |            |
|-----------------------------------------|------------|
| Normal Operating Cell Temperature(NOCT) | 45±2°C     |
| Temperature Coefficient of Isc          | +0.045%/°C |
| Temperature Coefficient of Voc          | -0.275%/°C |
| Temperature Coefficient of Pmax         | -0.350%/°C |

## ADDITIONAL VALUE



## I-V CURVE(KSM-435-455/120-S3)



The specifications and key features contained in this datasheet may deviate slightly from our actual products due to the on-going innovation and product enhancement. Karstsolar reserves the right to make necessary adjustment to the information described herein at any time without further notice. Please be kindly advised that PV modules should be handled and installed by qualified people who have professional skills and please carefully read the safety and installation instructions before using our PV modules.