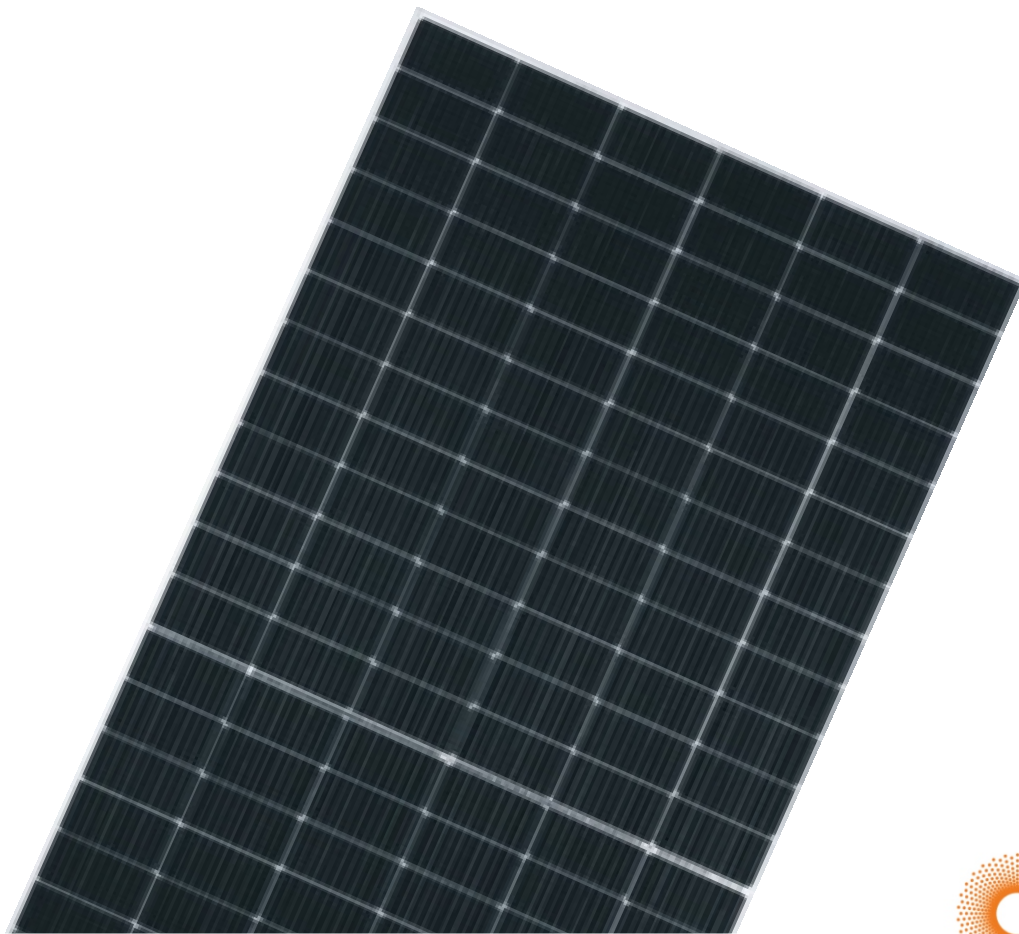




MODEL: KD-M590-144-N

**590W**  
MAXIMUM POWER OUTPUT

MONO-FACIAL  
BLACK SOLAR MODULE

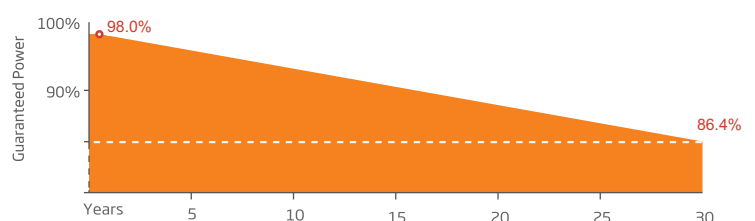


12 YEAR PRODUCT WARRANTY

30 YEAR LINEAR POWER WARRANTY

0.40% ANNUAL DEGRADATION OVER 30 YEARS

#### KDM SERIES LINEAR PERFORMANCE

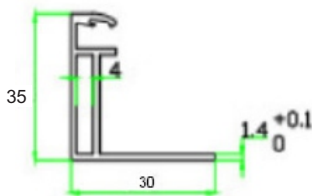
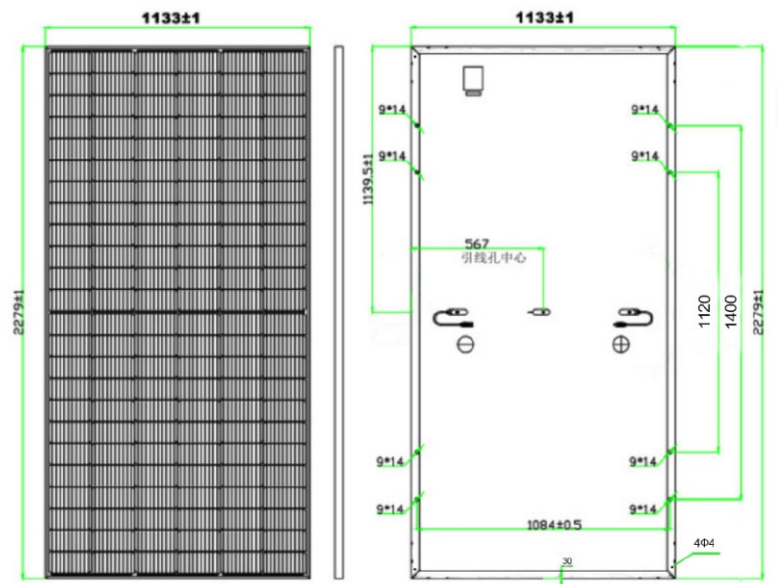


#### Comprehensive Products and System Certificates

ISO 9001: Quality Management System  
ISO 14001: Environmental Management System  
ISO14064: Greenhouse Gases Emissions Verification  
ISO45001: Occupational Health and Safety Management System

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DIMENSIONS OF PV MODULE(mm)



SIDE PROFILE

Load Capacity:  
Dependant on Installation please  
refer to installation manual

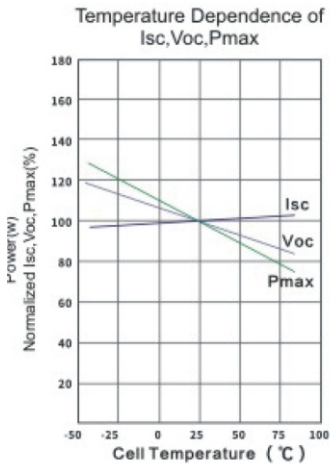
MECHANICAL DATA

|                   |                                                                                 |
|-------------------|---------------------------------------------------------------------------------|
| Solar Cells       | N-Type Monocrystalline                                                          |
| No. of cells      | 144 cells                                                                       |
| Module Dimensions | 2279 X 1133 X 35mm                                                              |
| Weight            | 28.0kg                                                                          |
| Front Glass       | 3.2mm Anti-reflection Coating, High transmission,<br>Low Iron, Tempered Glass   |
| Frame             | 30mm Anodized Aluminium Alloy                                                   |
| J-Box             | IP 68 Rated                                                                     |
| Cables            | TUV 1 X 4.0mm <sup>2</sup> 400mm Length                                         |
| Connectors        | AM-SOLAR15C1 connectors supplied by<br>Zhejiang Anmai Solar Technology Co., Ltd |

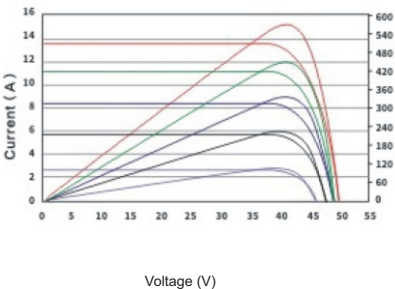
ELECTRICAL DATA (STC)

|                                                              |        |
|--------------------------------------------------------------|--------|
| Peak Power Watts -P <sub>MAX</sub> (Wp)<br>Tolerance +/- 3%  | 590    |
| Binning Tolerance-P <sub>MAX</sub> (W)                       | 0 ~ +5 |
| Maximum Power Voltage-V <sub>MPP</sub> (V)                   | 43.71  |
| Maximum Power Current-I <sub>MPP</sub> (A)                   | 13.50  |
| Open Circuit Voltage-V <sub>oc</sub> (V)<br>Tolerance +/- 3% | 52.01  |
| Short Circuit Current-I <sub>sc</sub> (A)                    | 14.48  |
| Module Efficiency $\eta_m$ (%)<br>Tolerance +/- 3%           | 22.80  |

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5.  
\*Measuring tolerance: ±3%.



Current-Voltage & Power-Voltage  
Curves



TEMPERATURE RATINGS

|                                             |             |
|---------------------------------------------|-------------|
| NOCT (Nominal Operating Cell Temperature)   | 45°C (±2°C) |
| Temperature Coefficient of P <sub>MAX</sub> | - 0.29%/°C  |
| Temperature Coefficient of Voc              | - 0.25%/°C  |
| Temperature Coefficient of Isc              | 0.045%/°C   |
| Module [T98] MAX value:                     | 70°C        |

MAXIMUM RATINGS

|                         |                |
|-------------------------|----------------|
| Operational Temperature | -40 ~ +70°C    |
| Maximum System Voltage  | 1500 VDC (IEC) |
| Max Series Fuse Rating  | 30A            |
| Fire Class Rating       | C              |

WARRANTY

|                                      |
|--------------------------------------|
| 12 Year Product Workmanship Warranty |
| 30 year Power Warranty               |
| 2% first year degradation            |
| 0.4% Annual Power Attenuation        |

PACKAGING CONFIGURATION

Modules per box: 31pcs  
Modules per 40' HQ 620pcs

CAUTION: READ SAFETY AND INSTALLTION INSTRUCTIONS BEFORE USING THE PRODUCT.  
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County of Manufacture / Origin China

Certificate Holder  
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