

HIGHWAY Solar Module

HT50-156M-4BB-215W/220W/225W

Reliable State-owned Enterprise
Deliver Solar Power since 1960s



Shanghai Aerospace Automobile
Electromechanical Co., Ltd

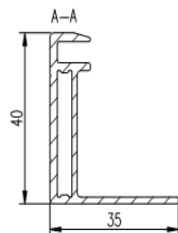
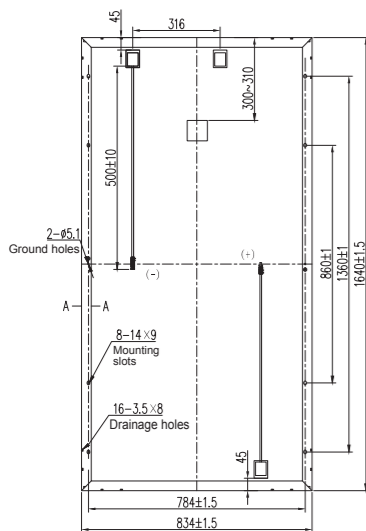
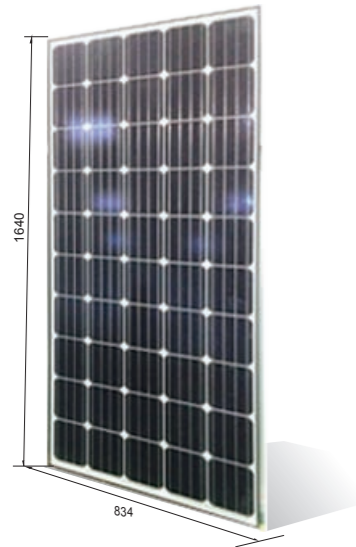
Key Features

Cell Efficiency **19.6 %** Power Output **225 W**

Warranty on Materials and Workmanship **10 YEARS**

Warranty on Power Output **25 YEARS**

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Shorter current transmission path



Less SOLAR CELL'S series resistance



PID (potential induced degradation) Resistant



All HT modules are double EL tested avoiding invisible cracks, dark cells and broken bars to ensure the performance, quality and reliability.



Independent international authentication certified.



HT-SAAE guarantees highest production standards: IEC 61215, IEC 61730, IEC 62716 (Ammonia corrosion) & IEC 61701 (Salt Mist Corrosion)



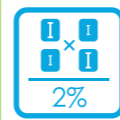
Higher module's output power



Guaranteed positive tolerance 0/+5w ensures power output reliability



Excellent performance under low light environments (mornings, evenings and cloudy days)



All the modules are sorted and packaged by amperage, reducing mismatch losses and maximizing system output.



Entire module certified to withstand extreme wind (2400 Pa) and snow loads (5400 Pa)



Strict quality control, meeting the highest international standards: ISO 9001, ISO14001 and OHSAS18001

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Electrical Characteristics

STC

| Module | HT50-156M-4BB-215 | HT50-156M-4BB-220 | HT50-156M-4BB-225 |
|---------------------------------|------------------------------|-------------------|-------------------|
| Maximum Power at STC(Pmax) | 215W | 220W | 225W |
| Open-Circuit Voltage(Voc) | 31.8V | 32V | 32.2V |
| Optimum Operating Voltage (Vmp) | 25.5V | 25.8V | 26.1V |
| Short-Circuit Current(Isc) | 9.05A | 9.12A | 9.19A |
| Optimum Operating Current(Imp) | 8.44A | 8.54A | 8.63A |
| Module Efficiency | 15.7% | 16.1% | 16.5% |
| Power Tolerance | 0 ~ +5W | | |
| Maximum System Voltage | 1000V DC (IEC) / 600V DC(UL) | | |
| Maximum Series Fuse Rating | 15A | | |
| Operating Temperature | -40 °C to +85 °C | | |

STC: Irradiance 1000W/m², module temperature 25, AM=1.5

Optional black frame or white frame module according to customer requirements

NOCT

| Module | HT50-156M-4BB-215 | HT50-156M-4BB-220 | HT50-156M-4BB-225 |
|-------------------------------|-------------------|-------------------|-------------------|
| Maximum Power | 157W | 161W | 165W |
| Open Circuit Voltage (Voc) | 28.8V | 29V | 29.2V |
| Maximum Power Voltage (Vmp) | 23.1V | 23.5V | 23.9V |
| Short Circuit Current (Isc) | 7.31A | 7.36A | 7.41A |
| Maximum Circuit Current (Imp) | 6.81A | 6.86A | 6.91A |
| NOCT | 45 °C ± 2 °C | | |

NOCT : Irradiance 800W/m², ambient temperature 20°C, wind speed 1 m/s

Mechanical Characteristics

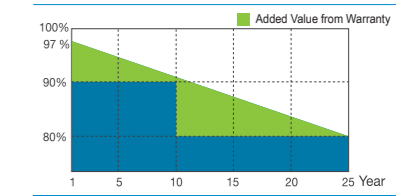
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|---|--|--|
| Solar Cells | Monocrystalline 156 × 156mm | |
| No. of Cells | 50 (5 × 10) | |
| Dimensions | 1640 × 834 × 40 | |
| Weight | 14.0kg (59.5lbs) | |
| Front Glass | High transmission tempered glass | |
| Frame | Anodized aluminium alloy | |
| Junction Box | IP67 / IP65 3diodes | |
| Cable | 4mm ² (IEC)/12AWG(UL), 1000mm | |
| Connectors | MC4/MC4 Comparable | |
| Module Pieces per Container (40' High Cube Container) | 700pcs | |

Temperature Characteristics

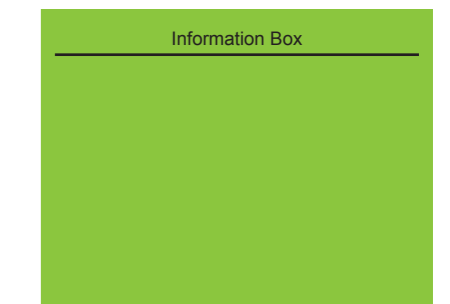
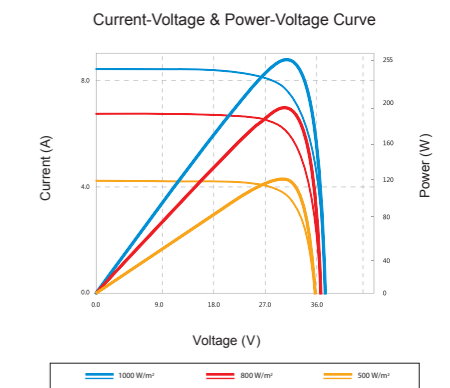
| | | |
|---------------------------------|---------|----------|
| Temperature Coefficient of Pmax | γ (Pm) | -0.41%/K |
| Temperature Coefficient of Voc | β (Voc) | -0.34%/K |
| Temperature Coefficient of Isc | α (Isc) | 0.049%/K |

Warranty

- 10-year product warranty
- 25-year warranty on power output
- Specific information is referred to the product quality guarantee



I-V Curves



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