415W MBB Half-cell Module
JAM54S30 390-415/MR Series

Introduction

Assembled with 11BB PERC cells, the half-cell configuration of the modules offers the advantages of higher power output, better temperature-dependent performance, reduced shading effect on the energy generation, lower risk of hot spot, as well as enhanced tolerance for mechanical loading.

Higher output power  Lower LCOE
Less shading and lower resistive loss  Better mechanical loading tolerance

Superior Warranty
- 12-year product warranty
- 25-year linear power output warranty
  0.55% Annual Degradation Over 25 years

New linear power warranty  Standard module linear power warranty

Comprehensive Certificates
- IEC 61215, IEC 61730, UL 61215, UL 61730
- ISO 9001: 2015 Quality management systems
- ISO 14001: 2015 Environmental management systems
- ISO 45001: 2018 Occupational health and safety management systems
- IEC 62941: 2019 Terrestrial photovoltaic (PV) modules - Quality system for PV module manufacturing

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Specifications subject to technical changes and tests. JA Solar reserves the right of final interpretation.
**MECHANICAL DIAGRAMS**

**SPECIFICATIONS**

- Cell: Mono
- Weight: 19.5kg
- Dimensions: 1722x22mm x1134x22mm x30±1mm
- Cable Cross Section Size: 4mm² (IEC), 12 AWG (UL)
- No. of cells: 106 (6x18)
- Junction Box: IP68, 3 diodes
- Connector: QC 4.10-35/MC4-EVO2A
- Cable Length (Including Connector): Portrait: 2000mm (+)/3000mm (-), Landscape: 1100mm (+)/1100mm (-)
- Front Glass: 2.8mm
- Packaging Configuration: 36pcs/Pallet, 936pcs/40ft Container

** Remark:** customized frame color and cable length available upon request.

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### ELECTRICAL PARAMETERS AT STC

<table>
<thead>
<tr>
<th>TYPE</th>
<th>JAM54S30-390/395/400/405/410/415</th>
<th>JAM54S30-390/395/400/405/410/415</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Circuit Voltage (Voc) [V]</td>
<td>36.85/36.98/37.07/37.23/37.32/37.45</td>
<td>36.85/36.98/37.07/37.23/37.32/37.45</td>
</tr>
<tr>
<td>Maximum Power Voltage (Vmp) [V]</td>
<td>30.64/30.84/31.01/31.21/31.45/31.61</td>
<td>30.64/30.84/31.01/31.21/31.45/31.61</td>
</tr>
<tr>
<td>Power Tolerance</td>
<td>0 ± 5% W</td>
<td>0 ± 5% W</td>
</tr>
<tr>
<td>Temperature Coefficient of Isc (aIsc)</td>
<td>+0.045% /°C</td>
<td>+0.045% /°C</td>
</tr>
<tr>
<td>Temperature Coefficient of Voc (aVoc)</td>
<td>-0.275% /°C</td>
<td>-0.275% /°C</td>
</tr>
<tr>
<td>Temperature Coefficient of Pmax (aPmp)</td>
<td>-0.350% /°C</td>
<td>-0.350% /°C</td>
</tr>
</tbody>
</table>

**STC**

- Irradiance: 1000W/m², cell temperature: 25°C, AM1.5G

** Remark:** Electrical data in this catalog do not refer to a single module and they are not part of the offer. They only serve for comparison among different module types.

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### OPERATING CONDITIONS

- Maximum System Voltage: 1000V/1500V DC
- Operating Temperature: -40°C to +65°C
- Maximum Series Fuse Rating: 25A
- Maximum Static Load (Front): 5400Pa (112lb/ft²)
- Maximum Static Load (Back): 2400Pa (50lb/ft²)
- NOCT: 45±2°C
- Safety Class: Class II
- Fire Performance: UL Type 1

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### CHARACTERISTICS

**Current-Voltage Curve** JAM54S30-405/MR

**Power-Voltage Curve** JAM54S30-405/MR

**Current-Voltage Curve** JAM54S30-405/MR