

**Mono**

## 390W MBB Half-Cell Module

JAM60S20 365-390/MR Series

### Introduction

Assembled with multi-busbar 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



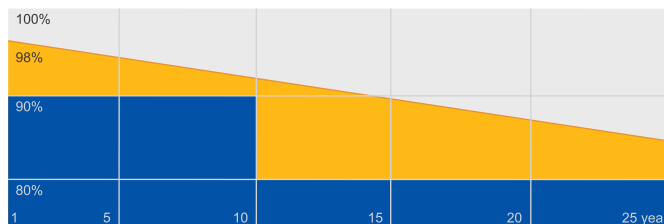
Less shading and lower resistive loss



Better mechanical loading tolerance

### Superior Warranty

- 12-year product warranty
- 25-year linear power output warranty



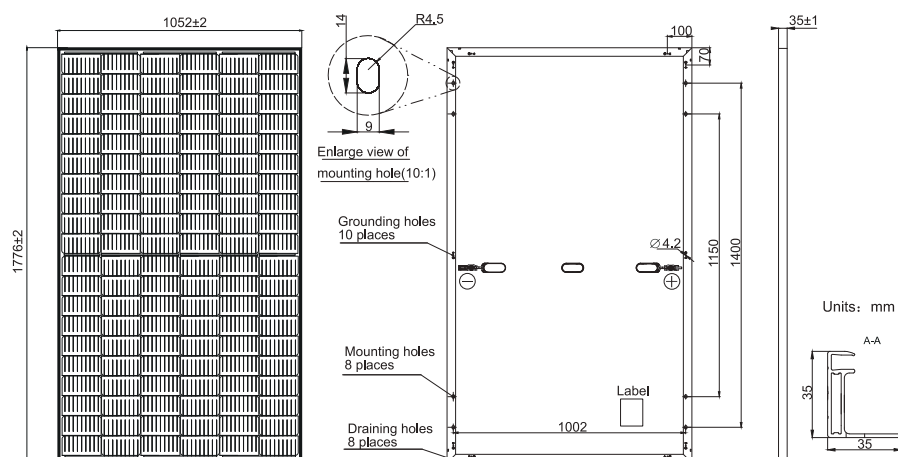
■ JA Linear Power Warranty ■ Industry Warranty

### Comprehensive Certificates

- IEC 61215, IEC 61730, UL 61215, UL 61730
- ISO 9001: 2015 Quality management systems
- ISO 14001: 2015 Environmental management systems
- OHSAS 18001: 2007 Occupational health and safety management systems
- IEC TS 62941: 2016 Terrestrial photovoltaic (PV) modules – Guidelines for increased confidence in PV module design qualification and type approval



## MECHANICAL DIAGRAMS



Remark: customized frame color and cable length available upon request

## SPECIFICATIONS

|                                    |                                       |
|------------------------------------|---------------------------------------|
| Cell                               | Mono                                  |
| Weight                             | 20.7kg±3%                             |
| Dimensions                         | 1776±2mm×1052±2mm×35±1mm              |
| Cable Cross Section Size           | 4mm <sup>2</sup> (IEC) ,12 AWG(UL)    |
| No. of cells                       | 120(6×20)                             |
| Junction Box                       | IP68, 3 diodes                        |
| Connector                          | MC4                                   |
| Cable Length (Including Connector) | 1000mm(+)/1000mm(-)                   |
| Packaging Configuration            | 31pcs/Pallet<br>744pcs/40ft Container |

## ELECTRICAL PARAMETERS AT STC

| TYPE                                                            | JAM60S20<br>-365/MR                                             | JAM60S20<br>-370/MR | JAM60S20<br>-375/MR | JAM60S20<br>-380/MR | JAM60S20<br>-385/MR | JAM60S20<br>-390/MR |
|-----------------------------------------------------------------|-----------------------------------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Rated Maximum Power(P <sub>max</sub> ) [W]                      | 365                                                             | 370                 | 375                 | 380                 | 385                 | 390                 |
| Open Circuit Voltage(V <sub>oc</sub> ) [V]                      | 41.13                                                           | 41.30               | 41.45               | 41.62               | 41.78               | 41.94               |
| Maximum Power Voltage(V <sub>mp</sub> ) [V]                     | 33.96                                                           | 34.23               | 34.50               | 34.77               | 35.04               | 35.33               |
| Short Circuit Current(I <sub>sc</sub> ) [A]                     | 11.30                                                           | 11.35               | 11.41               | 11.47               | 11.53               | 11.58               |
| Maximum Power Current(I <sub>mp</sub> ) [A]                     | 10.75                                                           | 10.81               | 10.87               | 10.93               | 10.99               | 11.04               |
| Module Efficiency [%]                                           | 19.5                                                            | 19.8                | 20.1                | 20.3                | 20.6                | 20.9                |
| Power Tolerance                                                 | 0~+5W                                                           |                     |                     |                     |                     |                     |
| Temperature Coefficient of I <sub>sc</sub> (α <sub>Isc</sub> )  | +0.044%/°C                                                      |                     |                     |                     |                     |                     |
| Temperature Coefficient of V <sub>oc</sub> (β <sub>Voc</sub> )  | -0.272%/°C                                                      |                     |                     |                     |                     |                     |
| Temperature Coefficient of P <sub>max</sub> (γ <sub>Pmp</sub> ) | -0.350%/°C                                                      |                     |                     |                     |                     |                     |
| STC                                                             | Irradiance 1000W/m <sup>2</sup> , cell temperature 25°C, AM1.5G |                     |                     |                     |                     |                     |

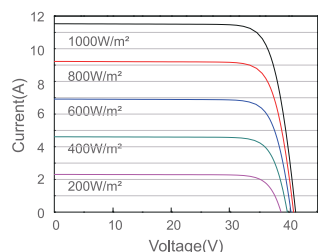
Remark: Electrical data in this catalog do not refer to a single module and they are not part of the offer.They only serve for comparison among different module types.

## ELECTRICAL PARAMETERS AT NOCT

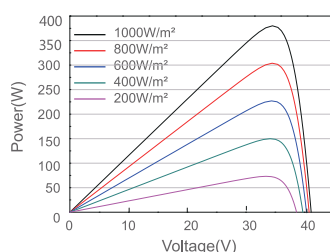
| TYPE                                        | JAM60S20<br>-365/MR                                                                   | JAM60S20<br>-370/MR | JAM60S20<br>-375/MR | JAM60S20<br>-380/MR | JAM60S20<br>-385/MR | JAM60S20<br>-390/MR | OPERATING CONDITIONS      |                                   |
|---------------------------------------------|---------------------------------------------------------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------------|-----------------------------------|
| Rated Max Power(P <sub>max</sub> ) [W]      | 276                                                                                   | 280                 | 284                 | 287                 | 291                 | 295                 | Maximum System Voltage    | 1000V/1500V DC                    |
| Open Circuit Voltage(V <sub>oc</sub> ) [V]  | 38.41                                                                                 | 38.65               | 38.89               | 39.14               | 39.38               | 39.63               | Operating Temperature     | -40°C~+85°C                       |
| Max Power Voltage(V <sub>mp</sub> ) [V]     | 32.05                                                                                 | 32.30               | 32.55               | 32.72               | 32.96               | 33.20               | Maximum Series Fuse       | 20A                               |
| Short Circuit Current(I <sub>sc</sub> ) [A] | 9.15                                                                                  | 9.20                | 9.25                | 9.30                | 9.35                | 9.40                | Maximum Static Load,Front | 5400Pa ( 112 lb/ft <sup>2</sup> ) |
| Max Power Current(I <sub>mp</sub> ) [A]     | 8.61                                                                                  | 8.66                | 8.71                | 8.78                | 8.83                | 8.88                | Maximum Static Load,Back  | 2400Pa ( 50 lb/ft <sup>2</sup> )  |
| NOCT                                        | Irradiance 800W/m <sup>2</sup> , ambient temperature 20°C,<br>wind speed 1m/s, AM1.5G |                     |                     |                     |                     |                     | NOCT                      | 45±2°C                            |
|                                             |                                                                                       |                     |                     |                     |                     |                     | Safety Class              | Class II                          |
|                                             |                                                                                       |                     |                     |                     |                     |                     | Fire Performance          | UL Type 1                         |

## CHARACTERISTICS

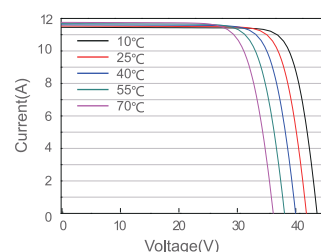
Current-Voltage Curve JAM60S20-380/MR



Power-Voltage Curve JAM60S20-380/MR



Current-Voltage Curve JAM60S20-380/MR



# TRIPLE POWER

- Safest LiFePO<sub>4</sub> battery
- 90% DOD
- Cycle life > 6000 times
- IP55 protection level
- Floor or wall mounting
- Less self consumption
- Quick installation
- No toxic heavy metals or caustic materials



**TRIPLE**  
POWER

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## T-BAT SYS-HV Configuration List

### T-BAT H 5.8

|                                              |                                                   |
|----------------------------------------------|---------------------------------------------------|
|                                              |                                                   |
| Nominal Voltage [V]                          | 115.2                                             |
| Operating Voltage [V]                        | 100-131                                           |
| Battery Type                                 | Li-on (LFP)                                       |
| Nominal Capacity [kWh]                       | 5.8                                               |
| Usable Capacity [kWh]                        | 5.2                                               |
| Faradic Charge Efficiency [%]                | 99                                                |
| Battery Roundtrip Efficiency [%]             | 95                                                |
| Standard Power [kW]                          | 2.9                                               |
| Max Power [kW]                               | 4.0                                               |
| Recommend Charge/Discharge Current [A]       | 25                                                |
| Max Charge/Discharge Current [A]             | 35                                                |
| Cycle Life [90% DOD]                         | >6000 Cycles                                      |
| Warranty [Year]                              | 10                                                |
|                                              |                                                   |
| Available Operating Temperature Range [ °C ] | 0 to 55                                           |
| Full-load Operating Temperature Range [ °C ] | 5 to 48                                           |
| Humidity [%]                                 | 4 to 100 (condensing)                             |
| Altitude [m]                                 | Below 2000                                        |
| Protection                                   | IP55                                              |
|                                              |                                                   |
| System to Inverter                           | CAN2.0                                            |
| Battery to Battery/BMS                       | RS485                                             |
| Data Collection Port /FW UPDATE              | CAN2.0                                            |
| Master Control Working Mode Indicator        | 1 LED                                             |
| Master Control Capacity Indicator            | 4LED (25%, 50%, 75%, 100%)                        |
| Battery Module LED                           | 2 LED                                             |
| Reset                                        | Button                                            |
| Switch ON/OFF                                | Button*1 + breaker*1                              |
|                                              |                                                   |
| Safety                                       | CE, RCM, TUV(IEC62619) UL1973,ROHS,REACH          |
| UN Number                                    | UN3840                                            |
| Hazardous Materials Classification           | Class 9                                           |
| Transport Testing Requirement                | UN38.3                                            |
|                                              |                                                   |
| Dimensions(LxWxH) [mm]                       | 474*193*708 (T-BAT H 5.8) / 474*193*647 (HV11550) |
| Weight [kg]                                  | 72.2 (T-BAT H 5.8) / 68.5 (HV11550)               |

\*The Triple Power battery could be scalable up to 4 modules, for a total of 23.2kWh.





## X1-AC

3.0kW/3.6kW/4.6kW/5.0kW

## Features:

- Natural Cooling, quiet and low maintenance
- Max Efficiency up to 97%
- Multiple protection: RCD, isolation, over voltage  
over temperature, earth protection, short-circuit protection, etc
- Compatible with High-voltage batteries
- Transformerless design with software and hardware protection.



### Get in touch now:

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## X1-AC-3.0

## X1-AC-3.6

## X1-AC-4.6

## X1-AC-5.0

| OUTPUT AC                                                     |                                                                     |                   |      |                       |
|---------------------------------------------------------------|---------------------------------------------------------------------|-------------------|------|-----------------------|
| Nominal AC power [VA]                                         | 3000                                                                | 3680              | 4600 | 4999                  |
| Max. apparent AC power [VA]                                   | 3000                                                                | 3680              | 4600 | 4999                  |
| Rated grid voltage ( range) [V]                               | 220/230/240 (180 to 280 )                                           |                   |      | 230/240 (180 to 280 ) |
| Rated grid Frequency[Hz]                                      | 50/60                                                               |                   |      |                       |
| Nominal AC current[A]                                         | 13                                                                  | 16                | 20   | 21.7                  |
| Max. AC current[A]                                            | 13.6                                                                | 16.8 (16 for G83) | 21   | 21.7                  |
| Max. overcurrent protection[A]                                | 45                                                                  |                   |      |                       |
| Displacement power factor                                     | 0.8 leading to 0.8 lagging                                          |                   |      |                       |
| THDi, rated power [%]                                         | <2                                                                  |                   |      |                       |
| Load control                                                  | Optional                                                            |                   |      |                       |
| INPUT AC                                                      |                                                                     |                   |      |                       |
| Nominal AC power[VA]                                          | 3000                                                                | 3680              | 4600 | 4999                  |
| Max. apparent AC power[VA]                                    | 3000                                                                | 3680              | 4600 | 4999                  |
| Rated grid voltage(range)[V]                                  | 220/230/240 (180 to 280)                                            |                   |      |                       |
| Rated grid frequency[Hz]                                      | 50/60                                                               |                   |      |                       |
| Nominal AC current[A]                                         | 13                                                                  | 16                | 20   | 21.7                  |
| Max.AC current[A]                                             | 13.6                                                                | 16.8 (16 for G83) | 21   | 21.7                  |
| Max. short current(Isc)[A]                                    | 45                                                                  |                   |      |                       |
| Displacement power factor                                     | 0.8 leading to 0.8 lagging                                          |                   |      |                       |
| BATTERY                                                       |                                                                     |                   |      |                       |
| Battery type                                                  | Lithium/Lead-acid battery                                           |                   |      |                       |
| Battery voltage range[V]                                      | 70-400                                                              |                   |      |                       |
| Recommended battery voltage[V]                                | 300                                                                 |                   |      |                       |
| Rated charge/discharge current[A]                             | 25                                                                  |                   |      |                       |
| Max. charge/discharge current[A]                              | 35                                                                  | 35                | 30   | 30                    |
| Communication interfaces                                      | CAN                                                                 |                   |      |                       |
| Reverse connect protection                                    | Yes                                                                 |                   |      |                       |
| EFFICIENCY                                                    |                                                                     |                   |      |                       |
| Max. efficiency                                               | 97.00                                                               |                   |      |                       |
| Max. Battery charge efficiency (AC to BAT)(@full load) [%]    | 97.00                                                               |                   |      |                       |
| Max. Battery discharge efficiency (BAT to AC)(@full load) [%] | 97.50                                                               |                   |      |                       |
| SAFETY & PROTECTION                                           |                                                                     |                   |      |                       |
| Over/under voltage protection                                 | Yes                                                                 |                   |      |                       |
| DC isolation protection                                       | Yes                                                                 |                   |      |                       |
| Grid protection                                               | Yes                                                                 |                   |      |                       |
| DC injection monitoring                                       | Yes                                                                 |                   |      |                       |
| Residual current detection                                    | Yes                                                                 |                   |      |                       |
| Anti-islanding protection                                     | Yes                                                                 |                   |      |                       |
| Over load protection                                          | Yes                                                                 |                   |      |                       |
| Over heat protection                                          | Yes                                                                 |                   |      |                       |
| General Data                                                  |                                                                     |                   |      |                       |
| Dimension [W/H/D](mm)                                         | 430*341.5*143                                                       |                   |      |                       |
| Dimension of packing [W/H/D](mm)                              | 554*446*259                                                         |                   |      |                       |
| Net weight [kg]                                               | 15.5                                                                | 15.5              | 16.3 | 16.3                  |
| Gross weight [kg]                                             | 18.5                                                                | 18.5              | 19.3 | 19.3                  |
| Installation                                                  | Wall-mounted                                                        |                   |      |                       |
| Operating temperature range[°C]                               | -20~+60 (derating at 45)                                            |                   |      |                       |
| Storage temperature [°C]                                      | -20~+60                                                             |                   |      |                       |
| Storage/Operation relative humidity                           | 0~100%, condensing                                                  |                   |      |                       |
| Altitude [m]                                                  | ≤2000                                                               |                   |      |                       |
| Ingress Protection                                            | IP65(for outdoor use)                                               |                   |      |                       |
| Protective Class                                              | I                                                                   |                   |      |                       |
| Over Voltage Category                                         | III(MAINS), I(DC)                                                   |                   |      |                       |
| Pollution Degree                                              | III                                                                 |                   |      |                       |
| Cooling                                                       | Natural                                                             |                   |      |                       |
| Inverter Topology                                             | Non-isolated                                                        |                   |      |                       |
| Communication interface                                       | RS485, Meter(optional), Wifi(optional), RF(optional), DRM, CAN, USB |                   |      |                       |
| Certification                                                 | G83,G59                                                             |                   |      |                       |