



The third generation of the GivEnergy Hybrid Inverter is a battery and solar inverter in one unit.

It can be coupled directly with solar panels to generate usable electricity in the property, as well as store any excess energy for later use in a battery. The Hybrid Inverter aims to minimise export by storing excess energy in the battery during generation hours. Additionally it will minimise import by discharging to meet demand in the property.



**In-built WiFi and LAN**

Includes in-built WiFi and LAN for a hard-wired network connection.



**Higher Charge/Discharge Rate**

Increased efficiency, higher discharge rates of up to 3.6kW.



**Flexible Rate Tariff**

Charge the battery off peak where its cleaner, greener and less costly then discharge the battery during peak times for maximum saving.



**5 Year Warranty**

Supplied with a full manufacturers warranty, extendable to 10 years. Our UK team are on hand to help you should any issues arise.

# Hybrid Inverter 5.0 Gen 3

## INPUT DATA (PV)

Max. DC Input Power (per string)	7.5kWp
Start-up Voltage	150V
Max. PV Voltage	580V
MPPT Range	120V-550V
Nominal Voltage	360V
Max. Short Circuit Current (per string)	20A
Max. Input Current (per string)	15A
MPPT Tracker / No. of Strings per MPPT Tracker	2/1

## OUTPUT DATA (AC)

Nominal AC Output Power	5000W
Max. Apparent Power Output to Utility Grid	5200VA
Max. Output Current	21.7A
Nominal Voltage / Range	180VAC - 270VAC
Frequency Range	50 / 60 Hz; ±5 Hz
Power Factor (Full Load)	>0.99
Power Factor Range	0.8 Lagging... 0.8 Leading
THDI (Nominal Power)	<3%
AC Connection	Single Phase

## BATTERY

Battery Type	LiFePO <sub>4</sub>
Battery Voltage Range	45V - 58V
Nominal Voltage	51.2VDC
Charge* / Discharge Current	65A / 81A
Max. Charge / Discharge Power	3300W / 3600W
	RS485

### Communication Interface

## BACKUP TERMINAL PARAMETER (AC)

Nominal AC Output Power	5000W (3600W battery only)
Nominal Voltage	230VAC
Max. Output Current	21.7A
Nominal Frequency	50 Hz
Automatic Switch Time	10ms
THDv ( Linear Load)	<3%

\* Charge current increased to 70A via firmware update

## PROTECTION DEVICES

DC Reverse Polarity Protection	Yes
DC Switch Rating for each MPPT	Yes
Output Over Current Protection	Yes
Output Overvoltage Protection Varistor	Yes
Ground Fault Monitoring	Yes
Grid Monitoring	Yes
Max. Inrush Current	30A Peak
Max. Output Fault Current	40A Peak
Max. Output Overcurrent Protection	25A RMS
Earth Leakage Current Monitoring	Yes

## GENERAL DATA

Dimensions	588H x 214D x 480W (mm)
Weight	32Kg
Charge / Discharge Efficiency	94% / 94%
PV Max. Efficiency	97.6%
Euro Efficiency	97%
MPPT Efficiency	99.9%
Protection Class	IP65
Noise Emission (Typical)	<30dB
Operational Temperature	-20°C - 60°C with derating at 50°C
Relative Humidity	0 ~ 100%
Altitude	4000m (derating above 2000m)
Inverter Topology	Transformerless
Self-Consumption	<5W

## FEATURES

Display LCD	LED & APP
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## INTERFACE

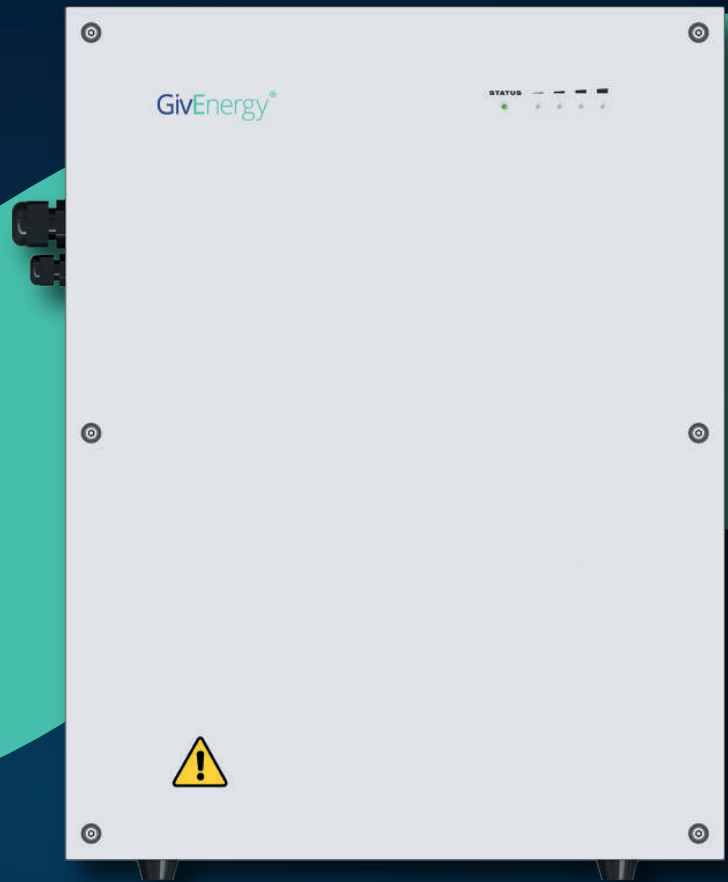
Communication	BMS: RS485 Meter - Meter: RS485 Portal - WiFi (USB) or LAN
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## CERTIFICATES AND APPROVALS

TÜV CE,  
TÜV IEC 62109-1&2,  
TÜV VDE 0126-1-1,  
AS4777&AS/NZS 3100,  
EN50549,  
SAA,  
G99,  
G100

# GivEnergy<sup>®</sup>

## Giv-Bat 8.2 Unlimited



Built in cell balancing



Remote firmware updates



Brackets and fixings included



LiFePO4 Cell Technology



Active BMS system communicates directly with inverter



Unlimited throughput warranty over 10 years when used with one of our domestic inverters



Heavy duty lifting handles for ease of install



100% DoD



85A Charge / Discharge



<https://www.givenergy.co.uk>

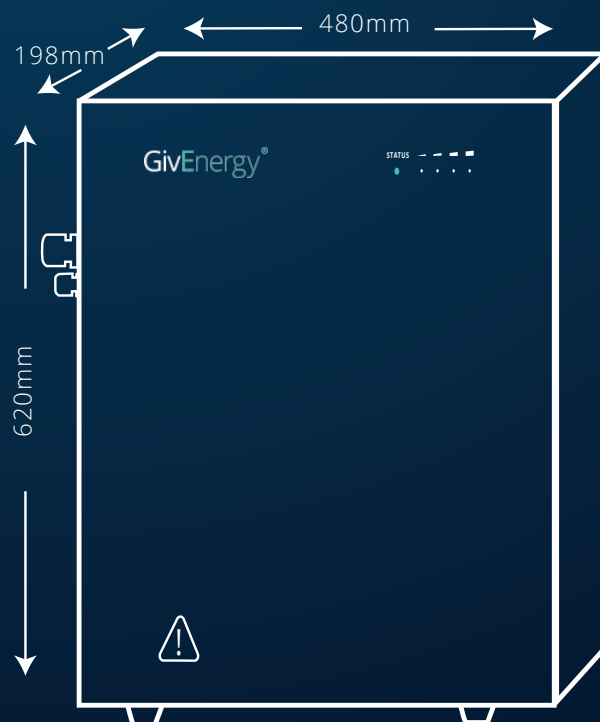


## Model Bat 8.2

Capacity	8.2KWh / 160Ah
Voltage	51.2VDC
Current	85A
Technology	LiFePO4 Cell
IP Grade	IP65
BMS	Robust Multi Point Monitoring BMS Pre Installed
Life Cycling (100% DOD, 25°C)	10 Years
Operating Temperature	-10°C - 55°C
Storage Temperature	-30°C~60°C
Warranty BTT	Unlimited Cycles / 10 Years
Standard	UN 38.3, IEC61000
Weight	94 KG

## Electrical Parameters

Operating Voltage Range	43.2 - 58.5V DC
Maximum Charging Voltage	59VDC
Maximum Charging / Discharging Current	85A / 85A
Network Interface	RS485
Communication Protocols	Modbus
Advantages	Stackable, BMS Upgradeable, IP65



# Harvest the Sunshine

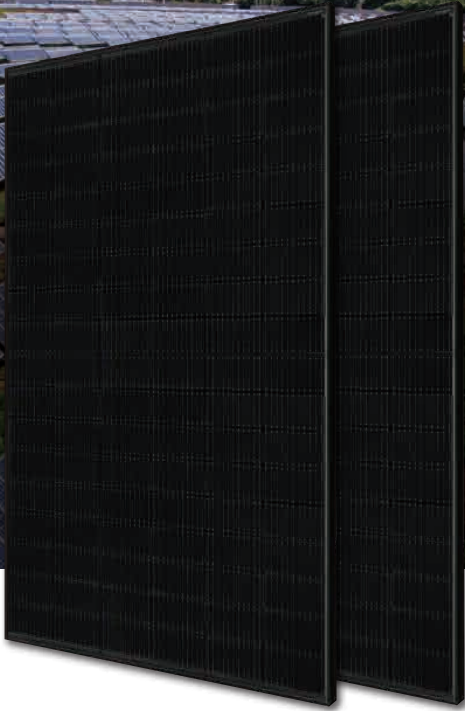
## DEEP BLUE 3.0 Light



405W MBB  
Half-cell Black Module  
JAM54S31 380-405/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

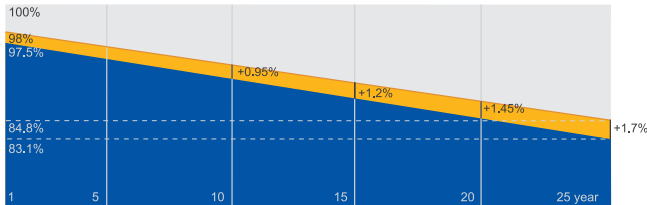


Better mechanical loading tolerance

### 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 TS 62941: 2016 Terrestrial photovoltaic (PV) modules – Guidelines for increased confidence in PV module design qualification and type approval



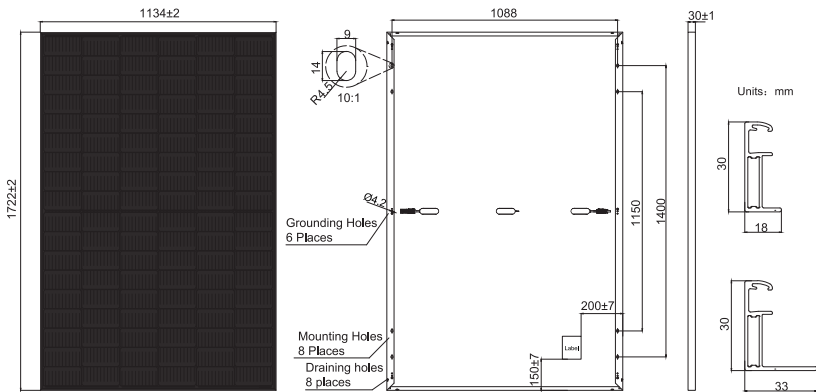
JASOLAR

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



**MECHANICAL DIAGRAMS**



Remark: customized frame color and cable length available upon request

**SPECIFICATIONS**

Cell	Mono
Weight	21.5kg±3%
Dimensions	1722±2mm×1134±2mm×30±1mm
Cable Cross Section Size	4mm <sup>2</sup> (IEC) , 12 AWG(UL)
No. of cells	108(6x18)
Junction Box	IP68, 3 diodes
Connector	MC4(1000V) MC4-EVO2(1500V)
Cable Length (Including Connector)	Portrait: 300mm(+)/400mm(-); Landscape: 1200mm(+)/1200mm(-)
Packaging Configuration	36pcs/Pallet, 936pcs/40ft Container

**ELECTRICAL PARAMETERS AT STC**

TYPE	JAM54S31 -380/MR	JAM54S31 -385/MR	JAM54S31 -390/MR	JAM54S31 -395/MR	JAM54S31 -400/MR	JAM54S31 -405/MR
Rated Maximum Power(Pmax) [W]	380	385	390	395	400	405
Open Circuit Voltage(Voc) [V]	36.58	36.71	36.85	36.98	37.07	37.23
Maximum Power Voltage(Vmp) [V]	30.28	30.46	30.64	30.84	31.01	31.21
Short Circuit Current(Isc) [A]	13.44	13.52	13.61	13.70	13.79	13.87
Maximum Power Current(Imp) [A]	12.55	12.64	12.73	12.81	12.90	12.98
Module Efficiency [%]	19.5	19.7	20.0	20.2	20.5	20.7
Power Tolerance	0~+5W					
Temperature Coefficient of Isc(α <sub>Isc</sub> )	+0.045%/°C					
Temperature Coefficient of Voc(β <sub>Voc</sub> )	-0.275%/°C					
Temperature Coefficient of Pmax(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**

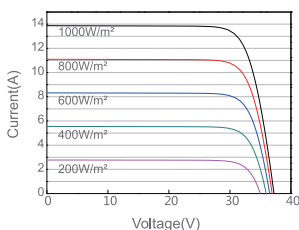
TYPE	JAM54S31 -380/MR	JAM54S31 -385/MR	JAM54S31 -390/MR	JAM54S31 -395/MR	JAM54S31 -400/MR	JAM54S31 -405/MR
Rated Max Power(Pmax) [W]	286	290	294	298	302	306
Open Circuit Voltage(Voc) [V]	34.36	34.49	34.62	34.75	34.88	35.12
Max Power Voltage(Vmp) [V]	28.51	28.68	28.87	29.08	29.26	29.47
Short Circuit Current(Isc) [A]	10.75	10.82	10.89	10.96	11.03	11.10
Max Power Current(Imp) [A]	10.03	10.11	10.18	10.25	10.32	10.38
NOCT	Irradiance 800W/m <sup>2</sup> , ambient temperature 20°C, wind speed 1m/s, AM1.5G					

**OPERATING CONDITIONS**

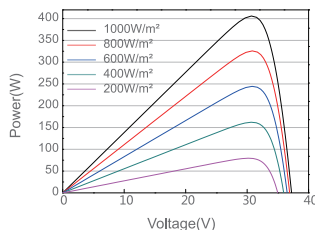
Maximum System Voltage	1000V/1500V DC
Operating Temperature	-40 C ~+85 C
Maximum Series Fuse Rating	25A
Maximum Static Load,Front* Maximum Static Load,Back*	5400Pa(112lb/ft <sup>2</sup> ) 2400Pa(50lb/ft <sup>2</sup> )
NOCT	45±2 C
Safety Class	Class II
Fire Performance	UL Type 1

**CHARACTERISTICS**

Current-Voltage Curve JAM54S31-405/MR



Power-Voltage Curve JAM54S31-405/MR



Current-Voltage Curve JAM54S31-405/MR

