




TEST REPORT

Applicant : Guangzhou Felicity Solar Technology Co., Ltd
Address : (Airport Baiyun)No.2, 4, 6, 8, 10 and 12 Donghua Huaye Road, Renhe Town, Baiyun District, Guangzhou, Guangdong, P. R. China
Manufacturer : Guangzhou Felicity Solar Technology Co., Ltd
Address : (Airport Baiyun)No.2, 4, 6, 8, 10 and 12 Donghua Huaye Road, Renhe Town, Baiyun District, Guangzhou, Guangdong, P. R. China
Product Name : Hybrid Solar Inverter
Trade Mark : 
Model No. : IVGM25KHP3G3, IVGM20KHP3G3, IVGM15KHP3G3, IVGM12KHP3G3, IVGM10KHP3G3, IVGM9K9HP3G3, IVGM8KHP3G3
Ratings : Refer to the marking plate
Standard : Safety of power converter for use in photovoltaic power systems
Part 1: General requirements
IEC 62109-1:2010, EN 62109-1:2010
Safety of power converter for use in photovoltaic power systems
Part 2: Particular requirements for inverters
IEC 62109-2:2011, EN 62109-2:2011
Date of Receiver : May 19, 2026
Date of Test : May 19, 2026 to June 04, 2026
Date of Issue : June 13, 2026
Test Report Form No. : NTCS-IEC 62109-1-E
Test Result : Pass*

This Test Report is Issued Under the Authority of :

Compiled by



Winnie Li / Engineer

Approved by



Han Song / Manager

*Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of Shenzhen Nore Testing Center Co., Ltd. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Summary of testing:

The product has been tested according to standard listed below:

- IEC 62109-1:2010
- EN 62109-1:2010
- IEC 62109-2:2011
- EN 62109-2:2011
- Others

General remarks:

"(see Attachment #)" refers to additional information appended to the report.

"(see appended table)" refers to a table appended to the report.

The tests results presented in this report relate only to the object tested.

This report shall not be reproduced except in full without the written approval of the testing laboratory.

List of test equipment must be kept on file and available for review.

Additional test data and/or information provided in the attachments to this report.

Throughout this report a comma / point is used as the decimal separator.

Derivative Version remark:

1. This report is based on SZNTC2512175SV01 (issued date April 10, 2026) in accordance with the agreement between the original report holder and the applicant. Updated the IP protection class and rated parameter, and the corresponding test was conducted.

Factory : Guangzhou Felicity Solar Technology Co., Ltd

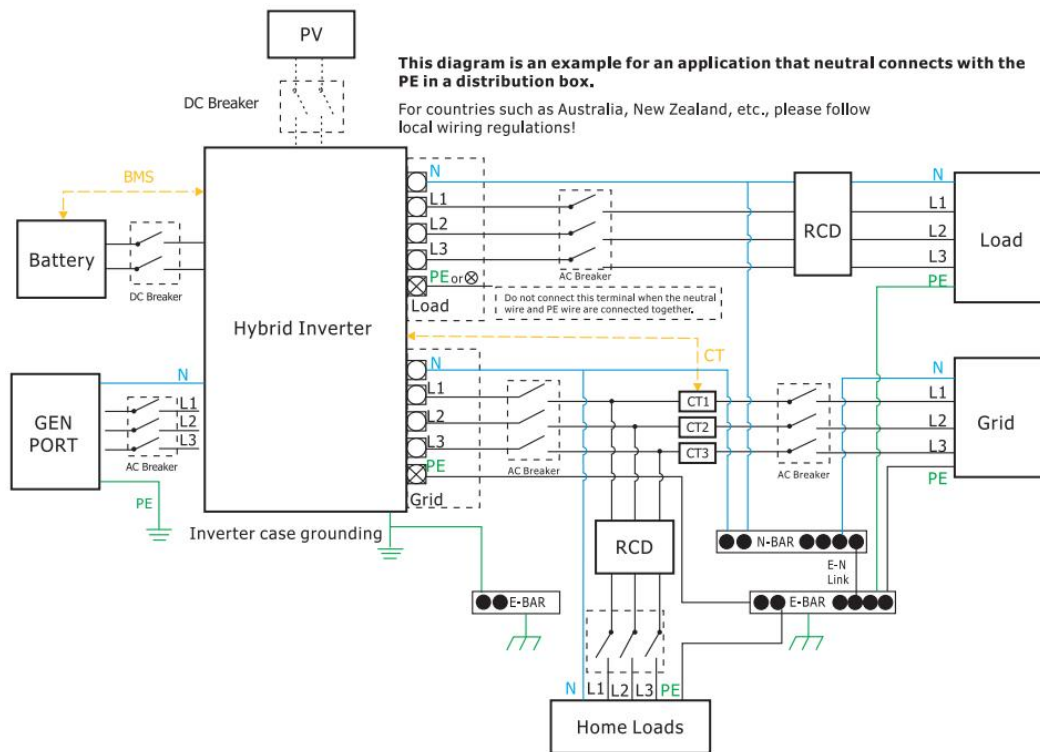
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Test item particulars :	
Equipment mobility..... :	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> stationary <input checked="" type="checkbox"/> fixed <input type="checkbox"/> transportable <input type="checkbox"/> for building-in
Connection to the mains..... :	<input type="checkbox"/> pluggable equipment <input type="checkbox"/> direct plug-in <input checked="" type="checkbox"/> permanent connection <input type="checkbox"/> for building-in
Environmental category..... :	<input checked="" type="checkbox"/> outdoor <input type="checkbox"/> indoor unconditional <input type="checkbox"/> indoor conditional
Over voltage category Mains..... :	<input type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input checked="" type="checkbox"/> OVC III <input type="checkbox"/> OVC IV
Over voltage category PV..... :	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV
Mains supply tolerance (%)..... :	±10 %
Tested for power systems..... :	TN system
IT testing, phase-phase voltage (V)..... :	N/A
Class of equipment..... :	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
Mass of equipment (kg)..... :	Approx. 39.4kg
Pollution degree..... :	PD2 for inter of unit, PD3 for outer of unit
Operation ambient temperature..... :	-40°C~+60°C
IP protection class..... :	IP66
Possible test case verdicts:	
- test case does not apply to the test object..... :	N/A (Not Applicable)
- test object does meet the requirement..... :	P (Pass)
- test object does not meet the requirement..... :	F (Fail)



General product information:

1. Felicitysolar IVGM Series is a multifunctional inverter, combining functions of inverter, solar charger and battery charger to offer uninterruptible power support with portable size. Its comprehensive LCD display offers user configurable and easy accessible button operation such as battery charging, AC/solar charging, and acceptable input voltage based on different applications.
2. The Hybrid Solar Inverter shall be used at specified ambient conditions:
 - IP protection class: IP66 (IP66 test evaluation is reported on NTC2605206SV00 from Dongguan Nore Testing Center Co., Ltd.).
 - Temperature and humidity: -40°C~+60°C, 0~100%RH, Condensing.
 - Environment pollution degree: PD2 for inter of unit, PD3 for outer of unit.
 - Altitude: up to 3000m.
3. Double/reinforced insulation provided between primary circuits or hazardous voltage to secondary circuits and DVC A circuits by application of safety isolation transformer, and optocouplers and sufficient clearances and creepage distances within the unit.
4. Software version: 100; Hardware version: 100
5. In order to protect the inverter, user and installer, external circuit breaker shall be equipped for all source ports at the end-use application except for AC input port.
6. The unit provides two relays in series on each inverter output conductors. The internal control is redundantly built. It contains a main DSP and a slave DSP. Both DSP can open relays independently and communicate with each other.
7. All models have are the same except model name and rated power, the model IVGM25KHP3G3 was tested in this report, other supplemental differential testing.


For topological graph details, see the below figure:



Copy of marking plate:

IVGM25KHP3G3	
Product Type	Hybrid Inverter
Protection Degree	IP66
Overvoltage-category	DC II; AC III
Ambient Temperature	-40°C~60°C, >45°C Derating
Warranty	10 years
Battery Input Data	
Battery Voltage Range	160Vd.c. ~700Vd.c.
Max. Charging Current	50Ad.c.
Max. Discharging Current	50Ad.c.
PV String Input Data	
Max. DC Input Power	40kW
Max. DC Input Voltage	1000Vd.c.
Min. DC Input Voltage	150Vd.c.
MPPT Range	150~850Vd.c.
Full Load DC Voltage Range	476~850Vd.c.
PV Input Current	42+42Ad.c.
Max. PV Isc	63+63Ad.c.
AC Input/Output Data	
Rated AC Input/Output Power	25kW
Max. Apparent Input/Output Power	27.5kVA
AC Input/Output Rated Current	36.3Aa.c.
Max. AC Input/Output Current	39.8Aa.c.
Max. Continuous AC Passthrough	80Aa.c.
Rated AC Voltage	220/380Va.c., 230/400 Va.c. (-20%~+15%)
AC Wiring Mode	3L+N+PE
Rated AC Frequency	50 /60 Hz(45~55Hz/55~65Hz)
Power Factor	0.8(leading) to 0.8(lagging)
Efficiency	
Max. Efficiency	97.60%
Euro Efficiency	97.00%
MPPT Efficiency	>99%
Non-isolated topology, Class I protective class	





CAUTION:


- High Voltage, warning electric shock
- Keep the equipment well ventilated
- The capacitors store hazardous energy Do not touch while working!

Manufacturer:
Guangzhou Felicity Solar Technology Co., Ltd.

Address:
(Airport Baiyun)No.2, 4, 6, 8, 10 and 12 Donghua Huaye Road, Renhe Town, Baiyun District, Guangzhou, Guangdong, P. R. China

IVGM20KHP3G3	
Product Type	Hybrid Inverter
Protection Degree	IP66
Overvoltage-category	DC II; AC III
Ambient Temperature	-40°C~60°C, >45°C Derating
Warranty	10 years
Battery Input Data	
Battery Voltage Range	160Vd.c. ~700Vd.c.
Max. Charging Current	50Ad.c.
Max. Discharging Current	50Ad.c.
PV String Input Data	
Max. DC Input Power	32kW
Max. DC Input Voltage	1000Vd.c.
Min. DC Input Voltage	150Vd.c.
MPPT Range	150~850Vd.c.
Full Load DC Voltage Range	381~850Vd.c.
PV Input Current	42+42Ad.c.
Max. PV Isc	63+63Ad.c.
AC Input/Output Data	
Rated AC Input/Output Power	20kW
Max. Apparent Input/Output Power	22kVA
AC Input/Output Rated Current	29Aa.c.
Max. AC Input/Output Current	32Aa.c.
Max. Continuous AC Passthrough	80Aa.c.
Rated AC Voltage	220/380Va.c., 230/400Va.c. (-20%~+15%)
AC Wiring Mode	3L+N+PE
Rated AC Frequency	50 /60 Hz(45~55Hz/55~65Hz)
Power Factor	0.8(leading) to 0.8(lagging)
Efficiency	
Max. Efficiency	97.60%
Euro Efficiency	97.00%
MPPT Efficiency	>99%
Non-isolated topology, Class I protective class	





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IVGM15KHP3G3

Product Type	Hybrid Inverter
Protection Degree	IP66
Overvoltage-category	DC II; AC III
Ambient Temperature	-40°C~60°C,>45°C Derating
Warranty	10 years
Battery Input Data	
Battery Voltage Range	160Vd.c. ~700Vd.c.
Max. Charging Current	50Ad.c.
Max. Discharging Current	50Ad.c.
PV String Input Data	
Max. DC Input Power	24kW
Max. DC Input Voltage	1000Vd.c.
Min. DC Input Voltage	150Vd.c.
MPPT Range	150~850Vd.c.
Full Load DC Voltage Range	381~850Vd.c.
PV Input Current	42+21Ad.c.
Max. PV Isc	63+32Ad.c.
AC Input/Output Data	
Rated AC Input/Output Power	15kW
Max. Apparent Input/Output Power	16.5kVA
AC Input/Output Rated Current	21.7Aa.c.
Max. AC Input/Output Current	23.8Aa.c.
Max. Continuous AC Passthrough	80Aa.c.
Rated AC Voltage	220/380Va.c.,230/400Va.c.(-20%~+15%)
AC Wiring Mode	3L+N+PE
Rated AC Frequency	50 /60 Hz(45~55Hz/55~65Hz)
Power Factor	0.8(leading) to 0.8(lagging)
Efficiency	
Max. Efficiency	97.60%
Euro Efficiency	97.00%
MPPT Efficiency	>99%

Non-isolated topology, Class I protective class





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IVGM12KHP3G3

Product Type	Hybrid Inverter
Protection Degree	IP66
Overvoltage-category	DC II; AC III
Ambient Temperature	-40°C~60°C,>45°C Derating
Warranty	10 years
Battery Input Data	
Battery Voltage Range	160Vd.c. ~700Vd.c.
Max. Charging Current	50Ad.c.
Max. Discharging Current	50Ad.c.
PV String Input Data	
Max. DC Input Power	19.2kW
Max. DC Input Voltage	1000Vd.c.
Min. DC Input Voltage	150Vd.c.
MPPT Range	150~850Vd.c.
Full Load DC Voltage Range	305~850Vd.c.
PV Input Current	42+21Ad.c.
Max. PV Isc	63+32Ad.c.
AC Input/Output Data	
Rated AC Input/Output Power	12kW
Max. Apparent Input/Output Power	13.2kVA
AC Input/Output Rated Current	17.4Aa.c.
Max. AC Input/Output Current	19.2Aa.c.
Max. Continuous AC Passthrough	80Aa.c.
Rated AC Voltage	220/380Va.c.,230/400Va.c.(-20%~+15%)
AC Wiring Mode	3L+N+PE
Rated AC Frequency	50 /60 Hz(45~55Hz/55~65Hz)
Power Factor	0.8(leading) to 0.8(lagging)
Efficiency	
Max. Efficiency	97.60%
Euro Efficiency	97.00%
MPPT Efficiency	>99%

Non-isolated topology, Class I protective class





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IVGM10KHP3G3

Product Type	Hybrid Inverter
Protection Degree	IP66
Overvoltage-category	DC II; AC III
Ambient Temperature	-40°C~60°C,>45°C Derating
Warranty	10 years
Battery Input Data	
Battery Voltage Range	160Vd.c. ~700Vd.c.
Max. Charging Current	50Ad.c.
Max. Discharging Current	50Ad.c.
PV String Input Data	
Max. DC Input Power	16kW
Max. DC Input Voltage	1000Vd.c.
Min. DC Input Voltage	150Vd.c.
MPPT Range	150~850Vd.c.
Full Load DC Voltage Range	381~850Vd.c.
PV Input Current	21+21Ad.c.
Max. PV Isc	32+32Ad.c.
AC Input/Output Data	
Rated AC Input/Output Power	10kW
Max. Apparent Input/Output Power	11kVA
AC Input/Output Rated Current	14.5Aa.c.
Max. AC Input/Output Current	16Aa.c.
Max. Continuous AC Passthrough	40Aa.c.
Rated AC Voltage	220/380Va.c.,230/400Va.c.(-20%~+15%)
AC Wiring Mode	3L+N+PE
Rated AC Frequency	50 /60 Hz(45~55Hz/55~65Hz)
Power Factor	0.8(leading) to 0.8(lagging)
Efficiency	
Max. Efficiency	97.60%
Euro Efficiency	97.00%
MPPT Efficiency	>99%
Non-isolated topology, Class I protective class	





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IVGM9K9HP3G3

Product Type	Hybrid Inverter
Protection Degree	IP66
Overvoltage-category	DC II; AC III
Ambient Temperature	-40°C~60°C,>45°C Derating
Warranty	10 years
Battery Input Data	
Battery Voltage Range	160Vd.c. ~700Vd.c.
Max. Charging Current	50Ad.c.
Max. Discharging Current	50Ad.c.
PV String Input Data	
Max. DC Input Power	15.8kW
Max. DC Input Voltage	1000Vd.c.
Min. DC Input Voltage	150Vd.c.
MPPT Range	150~850Vd.c.
Full Load DC Voltage Range	376~850Vdc
PV Input Current	21+21Ad.c.
Max. PV Isc	32+32Ad.c.
AC Input/Output Data	
Rated AC Input/Output Power	9.9kW
Max. Apparent Input/Output Power	9.9kVA
AC Input/Output Rated Current	14.3Aa.c.
Max. AC Input/Output Current	14.3Aa.c.
Max. Continuous AC Passthrough	40Aa.c.
Rated AC Voltage	220/380Va.c.,230/400Va.c.(-20%~+15%)
AC Wiring Mode	3L+N+PE
Rated AC Frequency	50 /60 Hz(45~55Hz/55~65Hz)
Power Factor	0.8(leading) to 0.8(lagging)
Efficiency	
Max. Efficiency	97.60%
Euro Efficiency	97.00%
MPPT Efficiency	>99%
Non-isolated topology, Class I protective class	





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IVGM8KHP3G3

Product Type	Hybrid Inverter
Protection Degree	IP66
Overvoltage-category	DC II; AC III
Ambient Temperature	-40°C~60°C,>45°C Derating
Warranty	10 years
Battery Input Data	
Battery Voltage Range	160Vd.c. ~700Vd.c.
Max. Charging Current	50Ad.c.
Max. Discharging Current	50Ad.c.
PV String Input Data	
Max. DC Input Power	12.8kW
Max. DC Input Voltage	1000Vd.c.
Min. DC Input Voltage	150Vd.c.
MPPT Range	150~850Vd.c.
Full Load DC Voltage Range	305~850Vd.c.
PV Input Current	21+21Ad.c.
Max. PV Isc	32+32Ad.c.
AC Input/Output Data	
Rated AC Input/Output Power	8kW
Max. Apparent Input/Output Power	8.8kVA
AC Input/Output Rated Current	11.6Aa.c.
Max. AC Input/Output Current	12.8Aa.c.
Max. Continuous AC Passthrough	40Aa.c.
Rated AC Voltage	220/380Va.c./230/400Va.c.(-20%~+15%)
AC Wiring Mode	3L+N+PE
Rated AC Frequency	50 /60 Hz(45~55Hz/55~65Hz)
Power Factor	0.8(leading) to 0.8(lagging)
Efficiency	
Max. Efficiency	97.60%
Euro Efficiency	97.00%
MPPT Efficiency	>99%

Non-isolated topology, Class I protective class

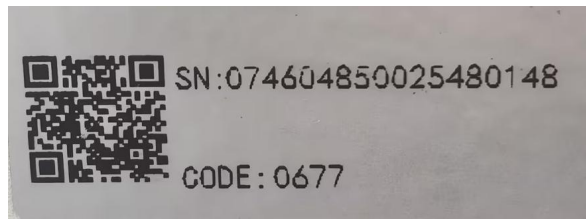









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DRM 0	X	DRM 1	X	DRM 2	X
DRM 3	X	DRM 4	X	DRM 5	X
DRM 6	X	DRM 7	X	DRM 8	X

Note:

- The CE marking and WEEE symbol shall be marked on other outer surface of the enclosure and should be at least 5.0mm and 7.0mm respectively in height.
- The above markings are the minimum requirements required by the safety standard. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.
- All marking plates are the same except for different model number, serial number, ratings and AC input terminal wiring method.
- The manufacturer and importer information should be marked in product when this product import to European Marketing.