

# TEST REPORT

**Applicant** : Havells India Ltd.  
**Address** : QRG Towers, 2D, Sector 126, Noida Expressway, NOIDA - 201304, INDIA

**Report No** : 191012018GZU-002 **Issue Date** : 27 Nov., 2019

## Sample Description

**Name of Sample** : Solar Grid-tied Inverter  
**Model Number** : enviro GTi 1100 NG, enviro GTi 1600 NG, enviro GTi 2200 NG  
enviro GTi 2700 NG, enviro GTi 3000 NG, enviro GTi 3300 NG  
**Quantity of Sample(s)** : 1  
**Date of Receival** : 12 Oct., 2019  
**Date of test Conducted** : 27 Nov., 2019

## Test

**Test Requested** : IP65  
**Test Method** : Refer to IEC60529:2013 Ed.2.2  
**Test Observation:** : See appendix test condition for details  
**Test Conclusion:** : **Pass**  
**Other information** : --  
**Remark** :

- This test report is only for evaluation of the specified standard clauses listed in Test Requested.
- When determine the test result, measurement uncertainty has been considered.

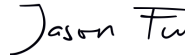
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Tested by:



Tommy Zhong  
Technical Manager

Approved by:



Jason Fu  
Technical Team Leader

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**This report is based on original report 190724109GZU-001, dated 26 Jul., 2019 and changes the applicant, trade mark and model name to apply for a new certificate.**

**The model enviro GTi 1100 NG, enviro GTi 1600 NG, enviro GTi 2200 NG, enviro GTi 2700 NG, enviro GTi 3000 NG, enviro GTi 3300 NG in this report are same as the model SOFAR 1100TL-G3, SOFAR 1600TL-G3, SOFAR 2200TL-G3, SOFAR 2700TL-G3, SOFAR 3000TL-G3, SOFAR 3300TL-G3 respectively in the report 190724109GZU-001, except the model name and the trade Mark.**

Rating:

Model	enviro GTi 1100 NG	enviro GTi 1600 NG	enviro GTi 2200 NG	enviro GTi 2700 NG	enviro GTi 3000 NG	enviro GTi 3300 NG
Max. PV voltage	500V			550V		
PV MPPT voltage range	50-500V			50-550V		
Max. input current	12A					
PV Isc	15A					
Max. apparent power	1100VA	1600VA	2200VA	2700VA	3000VA	3300VA
Nominal output voltage	230Vac					
Max. output current	5.3A	7.7A	10.6A	13.0A	14.5A	16.0A
Nominal output Frequency	50/60Hz					
Power factor range	0.8 Leading – 0.8 Lagging					
Inverter technology	Non-isolated					
Safety level	Class I					
Ingress Protection	IP 65					
Operation Ambient Temperature	-30 - +60°C					

All the models have the similar enclosure.

Other than special notes, typical model enviro GTi 3300 NG was used as representative for testing in this report.

**Intertek Testing Services Shenzhen Ltd. Guangzhou Branch**

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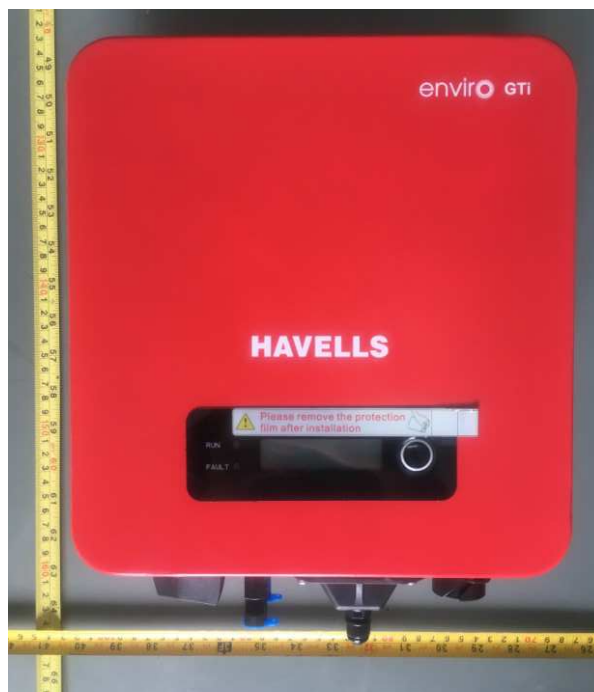
Appendix test condition:

Number	Test items	Test condition	Test result
<u>1</u>	IP6X	The enclosure under test is supported inside the test chamber and the pressure inside the enclosure is maintained below the surrounding atmospheric pressure by a vacuum pump, The suction connection shall be made to a hole specially provided for the test.	No deposit of dust is observable inside the enclosure.
<u>2</u>	IPX5	Internal diameter of the nozzle: 6.3 mm Delivery rate: 12.5 L/min Core of the substantial stream: circle of approximately 40 mm diameter at 2.5 m distance from nozzle Test duration: 3 min Distance from nozzle to enclosure surface: between 2.5 m and 3 m.	No water inside the enclosure

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**Appendix Photos:**

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Overview



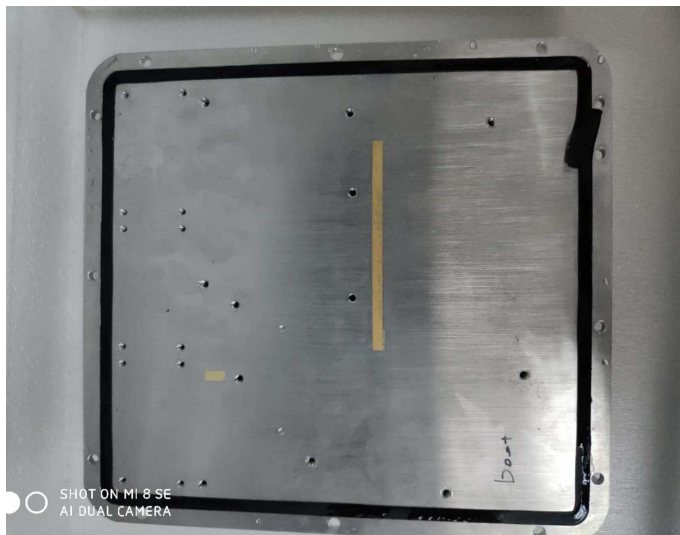
Bottom view

Appendix Photos:

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Checked after test finish



Checked after test finish

\*\*\*\*\*End of report\*\*\*\*\*