



IEC 62716:2013

Ammonia corrosion testing of photovoltaic (PV) modules Confirmation of test results

Ref.: 10036/2021-40045

Applicant: LG Electronics Inc.
168, Suchul-daero, Gumi-si, Gyeongsangbuk-do, 730-903,
South Korea

Product: Crystalline Silicon Photovoltaic (PV)-Modules

Type:

| | |
|----------------|----------------|
| A) LGXXXN2W-L5 | G) LGXXXQ1C-N5 |
| B) LGXXXN2W-N5 | H) LGXXXN1C-A6 |
| C) LGXXXN1C-L5 | I) LGXXXN1W-A6 |
| D) LGXXXN1W-L5 | J) LGXXXQ1C-A6 |
| E) LGXXXN1C-N5 | K) LGXXXQAC-A6 |
| F) LGXXXN1W-N5 | |

XXX in the type replaces the power in Watt at STC and can be any number between: 390-430 for A), B), 310-365 for C), D), 310-370 for E), F), 370-390 for G), 355-385 for H), I), 390-405 for J) and 430-445 for K).

Manufacturer: LG Electronics Inc.

Standard: IEC 62716:2013

Test conditions: As given in IEC 62716:2013

1st test section:

| | |
|--------------------------------|----------|
| Testing time | 8 h |
| NH ₃ Concentration: | 6667 ppm |
| Chamber temperature: | 60°C |
| Rel. humidity: | 100% |

2nd test section:

| | |
|--------------------------------|-------|
| Testing time | 16 h |
| NH ₃ Concentration: | 0 ppm |
| Chamber temperature: | 23°C |
| Rel. humidity: | 36 % |

Total testing time 480 h (20 cycles)



Pass criteria

| | |
|----------------------------------|---------------------------------------|
| Visual inspection: | No findings which may affect safety. |
| Power degradation: | <5 % |
| Dry Insulation: | >40 MΩm ² |
| Wet insulation: | >40 MΩm ² |
| Bonding path resistance: | <0,1 MΩ |
| Bypass diode functionality test: | Bypass diodes shall remain functional |

Summary of test results:

Visual inspection: No findings which affect safety.

Maximum power degradation: allowed <5 %
measured 0,58 %

The measured degradation is below the allowed degradation.

Dry insulation resistance: required $\geq 19,4 \text{ M}\Omega$
measured min. 500 MΩ

The measured dry insulation resistance is above the limit.

Wet insulation resistance: required $\geq 19,4 \text{ M}\Omega$
measured min. 500 MΩ

The measured wet insulation resistance is above the limit.

Bonding path resistance: required <0,1 MΩ
measured <0,01 MΩ

The measured resistance is below the limit.

Bypass diode functionality test: Bypass diodes remain functional

The complete test results and the related bill of materials are given in the Test Report No. TRPVM-2021-40045-5.

VDE Renewables GmbH


Akio Sato


Thomas Hartmann

63755 Alzenau, 2021-01-25