Confirmation of Test Result

IEC 62716:2013
Ammonia corrosion testing of photovoltaic (PV) modules

Ref.: **TRPVM-2019- 40222-1**

Applicant: Solarwatt GmbH, Maria Reiche Straße 2A, 01109 Dresden

Manufacturer: Solarwatt GmbH, Maria Reiche Straße 2A, 01109 Dresden

Product: **Crystalline silicon Photovoltaic (PV)-Modules**

Standard: IEC 62716:2013, Ammonia corrosion test

Type:

Vision 60M	EasyIn 60M
Vision 60M style	EasyIn 60M style
Vision 60M black	EasyIn 60M black
Vision 60M high power	EasyIn 60P
Vision 60M build	EasyIn 60P style
Vision 60P	
Vision 60P style	

Test conditions

Hours including heating up:	8 h
NH3 -concentration (ppm):	6667
Chamber temperature:	60°C
Relative Humidity:	100 %
Hours including cooling:	16 h
NH3 -concentration (ppm):	0
Chamber temperature:	23°C
Relative Humidity:	75 %
Number of Cycles:	20
Total exposure:	480h

Pass criteria

Power degradation:	< 5%
Dry Insulation:	> 40 MΩm²
Wet insulation:	> 40 MΩm²
Ground continuity:	< 0.1Ω
Visual Inspection:	No findings which may affect safety.
Bypass diode functionality:	Shall be functional after test.

VDE RENEWABLES GMBH
Siemensstraße 30
63755 Alzenau, Germany
Managing Director: Burkhard Holder

Tel: +49 69 6308 5300
Fax: +49 69 6308 5320
Email: renewables@vde.com
www.vde.com/renewables

Location: Alzenau
District Court: Aschaffenburg
Registration No: HRB 13820
Tax Number: 204/141/20793

Bank Information:
Deutsche Bank AG
IBAN: DE14 5007 0010 0235 5006 01
BIC: DEUTDEFFXXX

Summary of test results:

Maximum power degradation:	required	max. 5 %
	measured	max. 0,2 %

The measured degradation is below the allowed degradation.

Dry insulation resistance:	required	24,10 MΩ
	measured	>9990 MΩ

The measured dry insulation resistance is above the limit.

Wet insulation resistance:	required	24.10 MΩ
	measured	>911 MΩ

The measured wet insulation resistance is above the limit.

Visual inspection:	No findings

Ground continuity test:	required	max. 0,1Ω
	measured	max. 0,0008Ω

Bypass diode functionality test: Still functional after test

The complete test results and the relevant bill of materials are given in Test Report No.: TRPVM-2019-40222-1

VDE Renewables GmbH

Ruben Schonfelder ***Arnd Roth***

63755 Alzenau, 2019-11-18