



# IEC 62716:2013

## Ammonia corrosion testing of photovoltaic (PV) modules

Confirmation of test results

**Ref.:** 10018/2021-40347

**Applicant:** REC Solar Pte Ltd  
20, Tuas South Avenue 14, 637312 Singapore

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

**Type:**

A) RECxxxTP2	REC TwinPeak 2 Series
A) RECxxxTP2M	REC TwinPeak 2 Mono Series
A) RECxxxTP3M	REC TwinPeak 3 Mono Series
B) RECxxxTP2S 72	REC TwinPeak 2S 72 Series
B) RECxxxTP2SM 72	REC TwinPeak 2S Mono 72 Series
B) RECxxxNP 72	REC N-Peak 72 Series
B) RECxxxTP3SM 72	REC TwinPeak 3S Mono 72 Series
C) RECxxxTP2S 72 XV	REC TwinPeak 2S 72 XV Series
C) RECxxxTP2SM 72 XV	REC TwinPeak 2S Mono 72 XV Series
C) RECxxxNP 72 XV	REC N-Peak 72 XV Series
C) RECxxxTP3SM 72 XV	REC TwinPeak 3S Mono 72 XV Series
D) RECxxxNP	REC N-Peak Series
E) RECxxxAA	REC Alpha Series
F) RECxxxAA 72	REC Alpha 72 Series
G) RECxxxAA 72 XV	REC Alpha 72 XV Series
H) RECxxxTP Plus	REC TwinPeak Plus Series
I) RECxxxNP Plus	REC N-Peak Plus Series
J) RECxxxTP4	REC TwinPeak 4 Series
K) RECxxxAA Pure	REC Alpha Pure Series
L) RECxxxNP2	REC N-Peak 2 Series

xxx in the type number replaces the power in Watt at STC and can be any number between: 260 – 340 for A), 310 – 405 for B) & C), 295 – 335 for D), 340 – 380 for E), 420 – 450 for F) & G), 340 – 365 for H), 335 – 370 for I), 355 – 380 for J), 385 – 410 for K), 355 – 380 for L)

Optional the type can also include at the end any of the following suffixes, or a combination of these: ECO, BLK, BLK2, IQ, Black

**Manufacturer:** Solar Power Technology Co., Ltd.

**Standard:** IEC 62716 ed.1.0

**Test conditions:** As given in IEC 62716 ed. 1.0

**1st test section:**

Testing time	8 h
NH <sub>3</sub> Concentration:	6667 ppm
Chamber temperature:	60°C
Rel. humidity:	100%



<b>2nd test section:</b>	Testing time	16 h
	NH <sub>3</sub> Concentration:	0 ppm
	Chamber temperature:	23°C
	Rel. humidity:	70 %
<b>Total testing time</b>		480 h (20 cycles)
<b>Pass criteria</b>	Visual inspection:	No findings which may affect safety.
	Power degradation:	< 5 %
	Dry Insulation:	> 40 MΩm <sup>2</sup>
	Wet insulation:	> 40 MΩm <sup>2</sup>
	Bonding path resistance:	< 0,1 Ω
	Bypass diode functionality test:	Bypass diodes shall remain functional

**Summary of test results:**

**Visual inspection:** No findings which affect safety.

<b>Maximum power degradation:</b>	allowed	< 5 %
	measured	max. 0,85 %

The measured degradation is below the max. allowed degradation.

<b>Dry insulation resistance:</b>	required	≥20,00 MΩ
	measured	min. 500 MΩ

The measured dry insulation resistance is above the min. required insulation resistance.

<b>Wet insulation resistance:</b>	required	≥20,00 MΩ
	measured	min. 500 MΩ

The measured wet insulation resistance is above the min. required wet insulation resistance.

<b>Bonding path resistance:</b>	required	< 0,1 Ω
	measured	max. 0,01 Ω

The measured bonding path resistance is below max. allowed resistance.

**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-2021-40347-8



The overview of the already approved modules with the approved bill of materials is given in Annex 1 to 10018/2021-40347-8, dated 2021-08-26

**VDE Renewables GmbH**

A handwritten signature in purple ink, appearing to read 'Jose Jojo', is positioned above the name.

**Jose Jojo**

A handwritten signature in black ink, appearing to read 'A. Roth', is positioned above the name.

**Arnd Roth**

63755 Alzenau, 2021-08-26

