Confirmation of Test Result

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

Ref.: **10002/2021-40314**

Applicant: **aleo solar GmbH, Marius-Eriksen-Straße 1, 17291 Prenzlau**

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

Standard: IEC 62716:2013, Ammonia corrosion test

Type:

LEO L62YXXX
LEO Black L82YXXX
LEO Black L84YXXX,
XXX in the type replaces the power in Watt
Y=S (Standard), Y=A (Anti glare glass)

LEO L64YXXX
P24YXXX
LEO Sol S82YXXX

Manufacturer: aleo solar GmbH

Test conditions

Hours including heating up:	8 h
NH_3 -concentration (ppm):	6667
Chamber temperature:	60 °C
Relative Humidity:	100 %
Hours including cooling:	16 h
NH_3 -concentration (ppm):	0
Chamber temperature:	25 °C
Relative Humidity:	36 %
Number of Cycles	20
Total exposure:	480 h

Pass criteria

Power degradation:	< 5 %
Dry Insulation:	> 40 MΩm²
Wet insulation:	> 40 MΩm²
Ground continuity:	< 0,1 Ω
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. 1,24 %

The measured degradation is below the allowed degradation.

Dry insulation resistance:	required	20,0 MΩ
	measured	> 1000 MΩ

The measured dry insulation resistance is above the limit.

Wet insulation resistance:	required	20,0 MΩ
	measured	455 MΩ

The measured wet insulation resistance is above the limit.

Visual inspection:	No findings	
Ground continuity test:	required	max. 0,1 Ω
	measured	max. 0,004 Ω

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-2021-40314-1

VDE Renewables GmbH

Norbert Lenck ***Arnd Roth***

63755 Alzenau, 2022-01-04