



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

CFV SOLAR TEST LABORATORY, INC.
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SUSTAINABLE ENERGY

Valid to: June 30, 2018

Certificate Number: 3301.01

In recognition of the successful completion of the A2LA accreditation is granted to this laboratory to perform the following tests on Photovoltaic Modules:

Test Technology:

Test Method(s):

Preconditioning	IEC 61215-2 (2007 & 2016); IEC 61646 (2008) IEC 62108 (2007 & 2016)
Module Performance Testing and Energy Rating	IEC 61853-1 IEC 61853-2 (§8 only)
Visual Inspection	IEC 61215-1 (2007 & 2016); IEC 61215-2 (2007 & 2016); IEC 61646 (2008); IEC 61730-2 (2007 & 2016); IEC 62108 (2007 & 2016); UL Subject 8703-29
Electrical Performance, I-V Characteristics & Max Power <i>(at STC, NOCT/NMOT, or Low Irradiance)</i>	IEC 61215-2 (2007 & 2016); IEC 61646 (2008); IEC 62108 (2007 & 2016); IEC 60904-1; IEC 60904-3; ANSI/UL 1703; ULC/ORD C1703; UL Subject 8703;
Electrical Insulation <i>(Wet or Dry)</i>	IEC 61215-2 (2007 & 2016); IEC 61646 (2008); IEC 62108 (2007 & 2016); IEC 61730-2 (2007 & 2016); ANSI/UL 1703; ULC/ORD C1703;

Test Technology:

Test Method(s):

	UL Subject 8703;
Temperature Coefficients	IEC 61215-2 (2007 & 2016); IEC 61646 (2008); IEC 60891;
Nominal Operating Cell Temperature / Nominal Module Operating Temperature	IEC 61215-2 (2007 & 2016); IEC 61853-2; IEC 61646 (2008);
Outdoor Exposure	IEC 61215-2 (2007 & 2016); IEC 62108 (2007 & 2016); IEC 61646 (2008); UL Subject 8703;
Hot Spot Endurance	IEC 61215-2 (2007 & 2016); IEC 61730-2 (2007 & 2016); IEC 62108 (2007 & 2016); IEC 61646 (2008); ANSI/UL 1703; ULC/ORD C1703; UL Subject 8703;
UV Preconditioning / Conditioning	IEC 61215-2 (2007 & 2016); IEC 62108 (2007 & 2016); IEC 61646 (2008); UL Subject 8703;
Thermal Cycling / Cold Conditioning / Hot Conditioning	IEC 61215-2 (2007 & 2016); IEC 61370-2; IEC 62108 (2007 & 2016); IEC 61646 (2008); ANSI/UL 1703; UL 2703; ULC/ORD C1703; UL Subject 8703;
Humidity-Freeze Cycling	IEC 61215-2 (2007 & 2016); IEC 61730-2 (2007 & 2016) IEC 62108 (2007 & 2016); IEC 61646 (2008); ANSI/UL 1703; UL 2703; ULC/ORD C1703; UL Subject 8703;
Damp Heat Cycling	IEC 61215-2 (2007 & 2016); IEC 61730-2 (2007 & 2016) IEC 62108 (2007 & 2016); IEC 61646 (2008); UL Subject 8703;



Test Technology:

Test Method(s):

Robustness of Terminations / Terminals / Strain Relief Test / Terminal Torque	IEC 61215-2 (2007 & 2016); IEC 61730-2 (2007 & 2016); IEC 62108 (2007 & 2016); IEC 61646 (2008); ANSI/UL 1703; ULC/ORD C1703; UL 2703; UL Subject 8703;
Mechanical Load	IEC 61215-2 (2007 & 2016); IEC 61730-2 (2007 & 2016) IEC 62108 (2007 & 2016); IEC 61646 (2008); ANSI/UL 1703; ULC/ORD C1703; UL 2703; UL Subject 8703;
Hail Test	IEC 61215-2 (2007 & 2016); IEC 62108 (2007 & 2016); IEC 61646 (2008);
Bypass/Blocking Diode Thermal Testing	IEC 61215-2 (2007 & 2016); IEC 61730-2 (2007 & 2016) IEC 62108 (2007 & 2016); IEC 61646 (2008); UL Subject 8703;
Light Soaking	IEC 61215-2 (2007 & 2016); IEC 61646 (2008);
Water Spray	IEC 62108 (2007 & 2016); ANSI/UL 1703; ULC/ORD C1703; UL Subject 8703;
Push Test	ANSI/UL 1703; ULC/ORD C1703; UL Subject 8703;
Accessibility	IEC 61730-2 (2007 & 2016); ANSI/UL 1703; ULC/ORD C1703; UL Subject 8703;
Surface Cut	IEC 61730-2 (2007 & 2016) ANSI/UL 1703; ULC/ORD C1703; UL Subject 8703;
Ground Continuity / Continuity of Equipotential Bond / Bonding Path Resistance	IEC 62108 (2007 & 2016); IEC 61730-2 (2007 & 2016); ANSI/UL 1703;



Test Technology:

Test Method(s):

	ULC/ORD C1703; UL 2703; UL Subject 8703;
Impulse Voltage	IEC 61730-2 (2007 & 2016);
Temperature Test	IEC 61730-2 (2007 & 2016); ANSI/UL 1703; ULC/ORD C1703; UL Subject 8703;
Reverse Current Overload	IEC 61730-2 (2007 & 2016); ANSI/UL 1703; ULC/ORD C1703; UL Subject 8703;
Bonding Conductor Test	UL 2703 (22.1-a only)
Module Breakage	IEC 61730-2 (2007 & 2016);
Impact Test	ANSI/UL 1703; ULC/ORD C1703; UL Subject 8703;
Wiring Compartment Securement	ANSI/UL 1703; ULC/ORD C1703; UL Subject 8703;
Creepage and Clearance	IEC 61730-1 (2007 & 2016);
Off-Axis Beam Damage	IEC 62108 (2007 & 2016); UL Subject 8703;

The following IEC documents make use of, or relate to, selected tests from the above list of methods for which accreditation is granted:

IEC 60904-2 (Photovoltaic devices – Part 2: Requirements for reference solar cells),

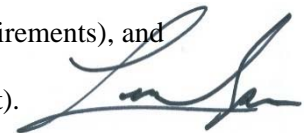
IEC 60904-3 (Photovoltaic devices – Part 3: Measurement principles for terrestrial photovoltaic (PV) solar devices with reference spectral irradiance data),

IEC 60904-6 (Photovoltaic devices – Part 6: Requirements for reference solar modules),

IEC 60904-7 (Photovoltaic devices – Part 7: Computation of spectral mismatch error introduced in the test of a photovoltaic device),

IEC 60904-9 (Photovoltaic devices – Part 9: Solar simulator performance requirements), and

IEC 60904-10 (Photovoltaic devices – Part 10: Methods of linear measurement).



New standards for IEC 61215 and IEC 61730 were released in 2016. The laboratory is maintaining the ability to perform testing against both the current version of the standard, as well as the most recent version prior to 2016. This is to allow for the transition period for NRTLs/IECEE and the manufacturers grace period.

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Accredited Laboratory

A2LA has accredited

CFV SOLAR TEST LABORATORY, INC.

Albuquerque, NM

for technical competence in the field of

Sustainable Energy Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).



Presented this 22nd day of July 2016.

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President & CEO
For the Accreditation Council
Certificate Number 3301.01
Valid to June 30, 2018

For the tests or types of tests to which this accreditation applies, please refer to the laboratory's Sustainable Energy Scope of Accreditation.