



# TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING

## IEC 61730-2 Edition 1.1 2012-11 PV module – Safety qualification

### Part 2: Requirements for testing

“R” Required  
 “S” May be subcontracted, see OD 2012  
 “SPTL” Specialized Facility, see IECCE 02-2  
 “W” Witness testing in the categories “MED” and “MEAS”  
 “3PPS” Three Phase Power Supply required

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
<b>5.1</b>	<b>Preconditioning tests</b>		
MST 51	Thermal cycling	Test equipment according to clause 10.11 of IEC 61215 / IEC 61646	R
MST 52	Humidity freeze	Test equipment according to clause 10.12 of IEC 61215 / IEC 61646	R
MST 53	Damp heat	Test equipment according to clause 10.13 of IEC 61215 / IEC 61646	R
MST 54	UV resistance	Test equipment according to clause 10.10 of IEC 61215 / IEC 61646	R
<b>5.2</b>	<b>General Inspection</b>		
MST 01	Visual inspection	Test equipment according to clause 10.1 of IEC 61215 / IEC 61646	R
<b>5.3</b>	<b>Electrical shock hazard tests</b>		
MST 11	Accessibility test	- Test finger, type 11 according to figure 7 of IEC 61032 - Ohm-meter or continuity tester	R
MST 12	Cut susceptibility test	Test apparatus in accordance with figure 2 of IEC 61730-2	R



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MST 13	Ground continuity test	Constant current supply, producing 2.5 times the maximum over-current protection rating of the module under test Volt-meter	R
MST 14	Impulse voltage test	- Impulse voltage generator, wave-form in accordance with IEC 60060-1, impulse voltage max. 8 kV - Oscilloscope - Self-adhesive and conducting copper foil	R
MST 16	Dielectric withstand test	Test equipment according to clause 10.3 of IEC 61215 / IEC 61646	R
MST 17	Wet leakage current test	Test equipment according to clause 10.15 of IEC 61215 (Ed. 2) or clause 10.20 of IEC 61646	R
MST 42	Robustness of terminations test	Test equipment according to clause 10.14 of IEC 61215 / IEC 61646	R
<b>5.4</b>	<b>Fire hazard tests</b>		
MST 21	Temperature test	- Temperature measurement equipment (accuracy 2°C) - Irradiance measuring device with the accuracy 5% in accordance with IEC 60904-2 and IEC 60904-6 - Flat black mounting platform	R
MST 22	Hot-spot test	Test equipment according to clause 10.09 of IEC 61215 / IEC 61646	R
MST 23	Fire test	Test equipment in accordance with Appendix A of IEC 61730-2	S
MST 25	Bypass diode thermal test	Test Equipment according to clause 10.18 of IEC 61215 (Ed. 2)	R



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MST 26	Reverse current overload test	- DC-power supply, producing 1.35 times the module's over-current protection rating of the module - 9 mm pine board - White tissue paper	R
<b>5.5</b>	<b>Mechanical stress tests</b>		
MST 32	Module breakage test	- Test apparatus in accordance with figures 4,5,6 of IEC 61730-2 - Weighing equipment - Vernier calliper - Stopwatch	R
MST 34	Mechanical load test	Test equipment according to clause 10.16 of IEC 61215 / IEC 61646	R
<b>5.6</b>	<b>Component tests</b>		
MST 15	Partial discharge test	Charge measuring device or radio interference meter in accordance with IEC 60664-1	S
MST 33	Conduit bending test	- Test assembly in accordance with figure 7 of IEC 61730-2 - Load: 220, 330, 490 N	R
MST 44	Terminal box knockout test	- Flat end mandrel (length > 38 mm long, diameter 6.4 mm) - Force meter - Refrigerator: -20°C ± 1°C - Vernier calliper	R