



**TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING  
IEC 62031, Edition 1 (2008) – A1/2012 – A2/2014**

**LED modules for general lighting – Safety specifications**

- “R” Required
- “S” May be subcontracted, see OD 2012
- “SF” Specialized Facility, see IECEE 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
5.5	SELV-operated LED modules	Appropriate vibration equipment (Annex I – IEC 61347-2-13)	<b>S</b>
7.1 g)	Mandatory marking for built-in or independent modules	Spectroradiometer (single or double monochromator), diffuser, detector 300 nm – 780 nm, optical fiber, calibration lamp for spectral irradiance measurement 300 nm – 780 nm	<b>S</b>
7.3	Durability and legibility of marking	Pieces of cloth / water	<b>R</b>
8	- Screw and screwless terminals  - Connectors	- Test screwdriver, digital calliper (or equivalent), test cables, pull device, screwless terminals apparatus (Section 15 – IEC 60598-1) - See IEC 60838-2-2, if applicable	<b>R</b>
9	Provisions for protective earthing	Earthing test equipment 25A (Clause 7.2.1 – IEC 60598-1 also refers)	<b>R</b>
10	Protection against accidental contact with live parts	Test finger (fig. 1 IEC 60529) with force indicator	<b>R</b>
11	Moisture resistance and insulation	Humidity cabinet, mega ohmmeter	<b>R</b>
12	Electric strength	High voltage transformer	<b>R</b>

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
13	Fault conditions	Variable Supply, temperature measurement device, heating cabinet, high-frequency spark generator, tissue paper, timer voltmeter, mega ohmmeter, wattmeter	<b>R</b>
16	Creepage distances and clearances	Digital calliper (or equivalent)	<b>R</b>
17	Screws, current-carrying parts and connections	Test screwdriver, test rods, Clause 4.11.6 – IEC 60598-1 equipment	<b>R</b>
18	Resistance to heat, fire and tracking	Ball pressure test apparatus (see also CTL D.S. N. 391.mod), heating cabinet, digital calliper (or equivalent), timer, glow wire apparatus, tissue paper, timer, measuring device, test equipment required - IEC 60249-1 - Clause 4.3, needle flame burner, tracking test apparatus	<b>R</b>
19	Resistance to corrosion	Solution of ammonium chloride in water, humidity cabinet, oven	<b>R</b>
Annex A	Tests	Oven, adjustable supply unit, amperometer, ohmmeter, temperature measurement device, wooden blocks, draught-proof enclosure according to Annex F, test corner (IEC 61347-1, Annex H, clauses H.1, H.2, H.4, H.7, and subclause H.11.2; in H.1.3, ignore the first paragraph. In all clauses, replace “lamp”, “(lamp) control gear” or “ballast” by “LED module”.	<b>R</b>