

TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING

IEC 60598-1:2020 Edition 9

Luminaires – Part 1: General requirements and tests

“R” Required
 “S” May be subcontracted, see OD 2012
 “SP” Specialized Facility, see IECEE 02-2
 “W” Witness testing in the categories “MED” and “MEAS”
 “3PPS” Three Phase Power Supply required
 “E” 3rd party evidence issued by ILAC accredited lab

Clause	Measurement/testing	Testing / measuring equipment / material needed	LISUN Model	Equipment Classification
3.4	Test of marking	Piece of cloth / Water / Petroleum spirit		R
4.4.4	Lamp holder pressure test	Test caps / Pressure device / Torque driver	GNG-G5H/ GNG-G13H	R
4.4.5	Voltage across lamp holders	High voltage probe / Oscilloscope	OSP3104AE	R
4.11.6	Electro-mechanical contact system	Low voltage variable current power supply, voltmeter, high voltage source		R
4.12.1/4.12.4 / 4.12.5	Screws and connections (mechanical) and glands testing/ Torque	Test screwdriver or spanner / Test rods Screwed and other fixed connections between different parts of luminaires shall be made in such a way that they do not work loose through such torsion	LWMF-1 CH338	R

Clause	Measurement/testing	Testing / measuring equipment / material needed	LISUN Model	Equipment Classification
4.13.1/4.13.4 4.13.6/4.21.4	Mechanical strength tests	Spring-operated impact test apparatus / Apparatus for ball impact tests Conditioning cabinet (e.g. freezer) / Angle measuring device / Weighting device / Tumbling barrel test equipment acc. to IEC 60068-2-31:2008	IK01-06 LS-DDT1-B SMT-529T	R
4.14.1/4.14.2 4.14.3	Adjusting devices testing	Glass test shelves / Weighting device / Test apparatus for adjustable devices	LS-WJ62 DJTJ-1	R
4.9.2/4.18.1	Insulating linings and sleeves tests / Resistance to corrosion	Heating cabinet, humidity cabinet, megaohmmeter, high voltage source		R
4.18.2/Annex F	Stress corrosion	Closeable glass vessel / test solution / Heating cabinet / Facilities to wash samples after test	YWX/Q-010	R
4.20	Rough service luminaires	Vibration test equipment	LVD-100KG-6D	S
4.22	Attachment to lamps	Weighting device		R
4.24/Annex P	Photobiological hazard: UV radiation, retinal blue light hazard	<ul style="list-style-type: none"> - UV radiation test instruments / retinal blue light hazard test instruments (Equipment List of IEC/TR 62778 - Goniophotometric measurement system 	EN62471-C	Sor E Sor E
4.26	Short circuit protection test	Test chain / Weighting device	DJSYL-1	R
4.28	Fixing of thermal sensing controls	Temperature change test instruments in accordance to IEC 60068-2-14, test Na		S
4.34	Electromagnetic fields	A Van der Hoofden test head(fig 2 in IEC 62493),EMI test receiver or spectrum analyser(CISPR 16-1-1)		S or E
4.35	Protection against moving fan blades	<ul style="list-style-type: none"> - Test finger IEC 61032:1997 Fig. 13 probe 19 - Hardness test equipment acc. to ISO48-4:2018 - Equipment to measure peripheral speed 	SMT-1219	R S or E S
5.2.10.3&4	Pull and torque tests on cord anchorage	Cord anchorage tests apparatus (pull and torque)		R
5.2.14	Plug test	Continuity tester (fig.34)		R

Clause	Measurement/testing	Testing / measuring equipment / material needed	LISUN Model	Equipment Classification
5.3	Internal wiring dimensions	Micrometer / Equipment for insulation thickness		R
5.4	Test of conductors having a reduced cross-sectional area	Thermometer / Thermocouples / Ammeter / Adjustable resistive load		R
7.2.3	Earth continuity test	Earthing test equipment	WB2678A	R
8.2.5 8.2.7	Protection against electric shock tests / Capacitor discharge	Standard test finger (IEC 60529) / Unjointed test finger Voltmeter / oscilloscope	SMT-529T	R
9.2.0	Solid object proof luminaire testing	IP 3X (2,5 mm) / IP 4X (1 mm) probes	SMT-IP30T SMT-IP40T	R
9.2.1 / 9.2.2	Dust proof luminaire tests	Apparatus for proving protection against dust	SC-015	R
9.2.3,4,5,6, 7, 8,9	Water proof luminaires testing	Apparatus for protection against water tests IPx1 to 7	JL-12/JL-34/JL-56/JL-7	R
9.2.9 to .11	Water proof luminaires testing	Apparatus for protection against water tests IPx8 &9	JL-8, JL-9K1L	S
9.3.1	Humidity tests	Humidity cabinet	GDJS-015B	R
10.2.1	Insulation resistance tests	Megaohmmeter	WB2681A	R
10.2.2	Electric strength tests	High voltage source	WB2673C	R
10.3	Touch current, protective conductor current and electric burn	Figure G2/G3/G4	MNTC-G2/G3 MNTC-G4	
10.3.1	Leakage current testing	Leakage current tester	WB2675D	R
11.2.1	Creepage distances and clearances measurements	Digital calliper (or equivalent) / Oscilloscope	OSP3104AE CK-1	R
11.2.1	IEC 61347-1 Annex P: Cr/CI and dti: Control gear protected against pollution by the use of coating or potting	Additional test equipment: Rapid temperature changing chamber, 1,2/50 µs generator	GDJS-010A SG61000-5	S
12.3.1	Endurance tests	Thermal cabinet (35°C) / Endurance test equipment / Multimeter / Wattmeter	GDJS-010A	R

Clause	Measurement/testing	Testing / measuring equipment / material needed	LISUN Model	Equipment Classification
12.4.1	Thermal tests	Draught-proof enclosure (25°C) or alternative chamber/room / Thermometer / Thermocouples / Voltage stabilizer / Multimeter / Wattmeter	TMP-LM	R
12.5.1e) Annex C Fig. C3	Abnormal operation testing	Test circuit for metal halide luminaires		R
12.7.2	Test for luminaires with temperature sensing controls internal/external to the ballast or transformer	Relevant equipment of clauses 15.3 and 20.6, Equipment List of IEC 61558-1:2005		R
13.2.1	Resistance to heat test	Heating cabinet / Ball pressure test apparatus (see also CTL DSH 391 D)	ZBP-T GW-225	R
13.3.1	Resistance to flame test	Needle flame test apparatus	ZY-3	R
13.3.2	Resistance to ignition testing	Glow-wire test apparatus	ZRS-3H	R
13.4.1	Resistance to tracking test	Proof tracking test device	TTC-1	R
14	Screw terminals	Torque drivers, test cables, pull device, micrometer, timer		R
15	Screwless terminals	Pull device, variable current source, voltmeter, heating cabinet, timer, test cables		R