

TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING
IEC 60081:1997, A6:2017 Edition 5.0
Double-capped fluorescent lamps – Performance specifications

“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

Clause	Measurement/testing	Testing / measuring equipment / material needed	Equipment Classification
1.5.2	Caps	Standard Sheet and gauges according to IEC 60061-3 Gauges according to a) and b)	
1.5.3	Dimension	Digital caliper (or equivalent)	
1.5.4	Starting characteristics	Voltmeter, Timer controller	
1.5.5	Electrical and cathode characteristics	Voltmeter, Oscilloscope, Ohmmeter,	
1.5.6	Photometric characteristics	Goniophotometer or Ulbricht sphere, integrator, photocell, calibrated lamp source, Colorimeter or spectroradiometer	LPCE-2(LMS-9000)
1.5.7	Lumen maintenance	Goniophotometer or Ulbricht sphere, integrator, photocell, calibrated lamp source	LEDLM-84PL
Annex A	Method of test for starting characteristics	Draught proof cabinet (between 20 °C and 27 °C and a relative humidity of 65% maximum); Voltmeter; Oscilloscope, Reference ballasts according to IEC 60921, Capacitors according to IEC 61049; HF Generator, Ballasts resistor; Starter according to IEC 60155; Ampere meter; Power meter, Metal plate	RB-3

Clause	Measurement/testing	Testing / measuring equipment / material needed	Equipment Classification
Annex B	Method of test for electrical, photometric and cathode characteristics	Test racks for lamp operation (ageing period), Voltmeter; Ampere meter; Oscilloscope; Power meter; Reference ballasts according to IEC 60921 or IEC 60929; Power supply; HF Generator; Goniophotometer or Ulbricht sphere, integrator, photocell, calibrated lamp source, Colorimeter or spectroradiometer; heating cabinet; Thermometer	
Annex C	Method of test for lumen maintenance and life	Goniophotometer or Ulbricht sphere, integrator, photocell, calibrated lamp source, Colorimeter or spectroradiometer; Test racks for lamp operation (ageing period), timer controller, voltmeter, cycling device , Power meter; Reference ballasts according to IEC 60921 or IEC 60929; Power supply; HF Generator; Capacitors according to IEC 61049; Voltmeter; Ampere meter; Starter according to IEC 60155	LEDLM-84PL
Annex D	Chromaticity co-ordinates	Goniophotometer or Ulbricht sphere, integrator, photocell, calibrated lamp source, Colorimeter or spectroradiometer	LMS-6000