



TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING
IEC 60081, Edition 5(1997) – A1(2000) – A2(2003) – A3(2005) – A4(2010) – A5(2013)
Double-capped fluorescent lamps – Performance 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
1.5.2	Caps	Standard Sheet and gauges according to IEC 60061-3 Gauges according to a) and b)	R
1.5.3	Dimension	Digital caliper (or equivalent)	R
1.5.4	Starting characteristics	Voltmeter, Timer controller	R
1.5.5	Electrical and cathode characteristics	Voltmeter, Oscilloscope, Ohmmeter,	R
1.5.6	Photometric characteristics	Goniophotometer or Ulbricht sphere, integrator, photocell, calibrated lamp source, Colorimeter or spectroradiometer	R
1.5.7	Lumen maintenance	Goniophotometer or Ulbricht sphere, integrator, photocell, calibrated lamp source	R
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	R

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
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	R
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	R
Annex D	Chromaticity co-ordinates	Goniophotometer or Ulbricht sphere, integrator, photocell, calibrated lamp source, Colorimeter or spectroradiometer	R