



**IEC 61050, ED 1 (1991) + A1(1994)**  
**TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING**  
**Transformers for tubular discharge lamps having a no-load output voltage exceeding 1000 V**  
**(generally called neon-transformers) General and safety requirements**

R=Required by Lab  
S=May be subcontracted

Clause	Measurement/testing	Testing / measuring equipment / material needed	Subcontracting
7.6	Marking durable	Petroleum spirit, water, piece of cloth	R
8.2, 8.3, 8.4	Electrical characteristics	Voltage meter, ohmmeter, thermometer, thermocouples, amperometer, supply source	R
9.	Magnetic influence	Amperometer, steel plate, supply source	R
10.1, 10.2, 10.3, 10.5	Heating	Ohmmeter, thermocouples, thermometer, chronometer, voltage meter, wooden blocks, draught free enclosure, equivalent normal load, supply source	R
11.1,11.3, 11.4,	Endurance (if the transformers are marked with the rated maximum operating temperature ( $t_w$ )	Voltage meter, mega ohmmeter, high voltage transformer, frequency converter, oven, ohmmeter, thermometer, supply source	R
12.2	Degrees of protection	Standard test finger, apparatus for protection against dust and water, torque meter, test probes 1mm / 2,5 mm	R
13.1, 13.3, 13.4	Voltage across series capacitors	Ohmmeter, voltage meter, supply source	R
14	Moisture resistance	Humidity cabinet, humidity meter	R
15	Insulation resistance and electric strength	Mega ohmmeter, high voltage transformer, frequency converter,	R



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16.2,16.4, 16.5.1, 16.5.2, 16.5.3, 16.5.4	Construction	Voltage meter, amperometer, chronometer, spring operated impact hammer (IEC 60817), freezer cabinet, ball-pressure test apparatus (see also CTL D.S. N. 391.mod)/ heating cabinet, glow-wire test apparatus (IEC 60695-2-1), ohmmeter, supply source	R
17	Connection of the conductors	Chronometer, heating cabinet, torque meter, dynamo meter, voltage meter, amperometer, digital calliper (or equivalent)	R
18	Provision for earthing	Chronometer, heating cabinet, torque meter, dynamo meter, voltage meter, amperometer, digital calliper (or equivalent)	R
19	Screws, current carrying parts, and connections	Amperometer, power meter, ohmmeter, voltage meter, torque meter, digital calliper (or equivalent)	R
20	Creepage distances and clearances	Digital calliper (or equivalent), voltage meter	R
21.1, 21,2	Insulating materials	Tracking test apparatus (IEC 60112), glow-wire test apparatus (IEC 60695-2-1)	R
22	Resistance to corrosion	Humidity cabinet, heating cabinet, ammonium chloride, water, chronometer, thermometer	R
Annex B	Transformers with connecting leads	Torque meter, dynamo meter, balance	R
Annex C	Guidance for conformity of production test	Ohmmeter, volt meter, amperometer, high voltage transformer	R
Annex D	System used in Japan and North America	Amperometer, high voltage transformer	R

Note: The presence of equipment alone does not indicate a satisfactory situation. Assessors must evaluate the equipment design, calibration, uncertainty and documentation to ensure compliance with the directions of the standard. The requirements of ISO Guide 25 regarding validation are applicable, as the tests of this standard are not standardised tests.