

**TESTING AND MEASURING EQUIPMENT/ALLOWED SUBCONTRACTING**  
**IEC 61347-2-13:2014, A1:2016 Edition 2.1**

**Lamp controlgear – Part 2-13: Particular requirements for d.c. or a.c. supplied  
 electronic controlgear for LED modules**

|        |  |
|--------|--|
| “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 |
|--------------|---|--|--------------------------|
| 15           | Transformer heating   | Hybrid Recorder (temperature rise equipment; Resistance meter; Voltmeter; Resistive loads), Power supply | R                        |
| 21           | Maximum working voltage ( $U_{out}$ ) in any load condition | LED modules or suitable load, multimeter / oscilloscope  | R                        |
| Annex J, J.3 | General notes on tests                                      | Resistive load, Diode  | R                        |
| Annex J, J.5 | Operating condition   | Equipment according to IEC 62384:2006 cl. 7.2  | R                        |
| Annex J, J.6 | Emergency supply current                                    | Power supply, ammeter, power meter, LED modules or suitable load   | R                        |

| <b>Clause</b> | <b>Measurement/testing</b>                 | <b>Testing / measuring equipment / material needed</b>  | <b>Equipment Classification</b> |
|---------------|--|---|---------------------------------|
| Annex J, J.7  | EMC immunity                               | Equipment according to IEC 61547  | <b>S</b>                        |
| Annex J, J.8  | Pulse voltage from central battery systems | D.C. power supply, load, Circuit from IEC 61347-1 fig. G.2  | <b>R</b>                        |
| Annex J, J.11 | Functional safety (EOF <sub>x</sub> )      | LED modules or suitable load, test circuit corresponding to that of fig. 1 in IEC 61347-2-7, suitable recording system to read measurements at 0.5, 5 and 60 seconds operation time | <b>R</b>                        |