



PERMANENT DOCUMENT

**ENEC 303
Annex AJ**

**Annex AJ
to Routine Test Requirements for manufacturers
(as per Article 9 of the Agreement)**

**LED modules for general lighting – Safety specifications
covered by EN 62031**

Approved by:

ENEC Group

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for LED modules for general lighting – Safety specifications covered by EN 62031

1. ROUTINE TESTS (100%)

1.1 Operating Check

The LED module power shall be measured at rated voltage/current. The luminous flux of no LED module should be significantly lower than that of the rest of the production.

Very low values of the luminous flux indicate internal losses that can be safety relevant, such as current bridges.

1.2 Inspection (for independent and built-in)

Visual inspection shall take place to ensure that:

- a) all specified labels are securely in place;
- b) manufacturers' instructions are placed with the LED module, where necessary;
- c) visual inspection of LED module for completeness and mechanical check against a checklist for the product.

1.3 Electric strength / Insulation resistance test (for independent and built-in)

Please refer to EN 60598-1 Annex Q (Table Q.1 Minimum values for electrical tests).

1.4 Earth continuity (only for independent class I and built-in class I)

Please refer to EN 60598-1 Annex Q. (Table Q.1 Minimum values for electrical tests).

2. PRODUCT VERIFICATION TESTS (PVT) (at least once a year)

2.1 Endurance test

This test shall be carried out on the most critical type of each range of products. Please note that this test is only applicable to luminaires with an IP Class of 20 or above.

2.2 Protection of the enclosure

2.3 Mechanical strength of screws and nuts

2.4 Protection against electric shock (clause 8) and creepage distances and clearances (clause 11)

2.5 PHOTOBIOLOGICAL SAFETY OF LAMPS AND LAMP SYSTEMS (EN 62471, and IEC TR62778)

2.5.1 UV Radiation Hazard

The periodic test below is only required for LED modules where UV light is converted to visible light by phosphor conversion.

2.5.1.1 UV radiation hazard measurement according to Clause 5 of EN 62471

2.5.2 Blue Light Hazard

Modules not exceeding RG1 unlimited do not require periodic tests as mentioned below.

2.5.2.1 Threshold illuminance E_{thr} assessment according to IEC TR 62778
