

EU RO Mutual Recognition Technical Requirements

STATIONARY LIGHTING FIXTURES/ FLOOD LIGHT PROJECTORS	Version	0.2
	Adoption Date	1 April 2016
	Application Date	1 October 2016
	Tier	3
This document is subject to controlled issue and can be found here: http://www.euromr.org/technical-requirements *** Uncontrolled if downloaded or printed ***		

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1. PRODUCT DESCRIPTION

1.a General description of the product

- a) Complete lighting units, designated as light fixture, light fitting or luminaries, and hereinafter referred as luminaries, are electrical devices used to create artificial light, by the use of one or more lamps (bulbs or tubes that emit light), along with the socket and other parts that protect and hold the lamp in place;
- b) Luminaries have a fixture body and may have a reflector that helps to direct and distribute the light. Luminaries are mostly ceiling or wall-mounted fixtures. Generic name of luminaries also includes floodlights as a specific type.

1.b Application limitations

- a) Luminaries shall be used in low voltage AC or DC circuits;
- b) Supplementary lighting is not covered by this technical requirement;
- c) LED luminaries are not covered by this technical requirement;
- d) Luminaries required as per statutory requirements, such as emergency lighting, searchlights, rescue lights, daylight signalling lamps, luminaries installed in bridge deck, low location lighting and navigation lights, are not covered by this technical requirement.

1.c Intended use

Luminaries are intended for general illumination of, on board spaces (indoor or outdoor) with no special classification (hazardous areas).

1.d System context

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See item 1.c above.

2. DESIGN EVALUATION

2.a Engineering evaluation requirements

2.a.i. Technical Requirements

General

- a) Luminaries shall comply with the requirements of IEC 60598 and IEC 60092-306. Luminaries complying with other equivalent standards will be considered by the EU RO.

Construction

- b) The temperature of terminals for the connection of supplying cables shall not exceed the maximum conductor temperature permitted for the cable, in order to prevent damage of the cable;
- c) Synthetic resin enclosures which support current-carrying parts shall be flame retardant;
- d) Lighting fixtures installed in engine room or similar spaces which are exposed to the risk of mechanical damage shall be provided with suitable grilled metallic guards to protect their lamps and glass globes against such damage;
- e) Luminaries shall be fitted with terminal boxes which are to be thermally insulated from the light source, where necessary;
- f) Wires used for internal connections, shall be of a temperature class corresponding to the maximum temperature within the luminaries. Such wires shall also be able to withstand UV light within the luminaries;
- g) The temperature rise of parts of luminaries, which are in contact with the support, shall not exceed 50°C. The rise shall not exceed 40°C for parts in contact with flammable materials;

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- h) The temperature rise of surface parts which can easily be touched in service shall not exceed 15°C.
- i) High power luminaries with higher surface temperatures than those specified above shall be adequately protected against accidental contact.

2.a.ii. Technical documents to be submitted

IMPORTANT: The English Language shall be used for all submitted documents.

- a) Drawings of detailed sectional assembly and layout of components;
- b) Specification of applied materials for the enclosure and insulation;
- c) List of electrical components and materials;
- d) Field of application and operational limitations;
- e) Details of construction, namely:
 - Power.
 - Voltage.
 - Cos. phi.
 - Temperature class.
 - Insulation class.
 - Degree of protection (IP).
- f) Design standards, specifications, others as required.

2.b Type testing requirements

Prior to tests the manufacturer shall submit, in compliance with the requirements of IEC 60598, as applicable, the following documentation:

- a) Proposed test program and test schedule.
- b) Description of the test specimens and explanation of the selected test sample(s).
- c) Complete accreditation certificate of the test laboratory.

Environmental and electrical tests are to be in accordance with **Table 1**. Type test shall be carried out on (1) equipment out of (100) of each type, with minimum of (5) units.

Test specimens shall be taken from the production line or from stocks[†]. Test shall be performed in the presence of an EU RO surveyor. In case the tests are conducted at

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Nationally Accredited Laboratories, the presence of the EU RO surveyor may be omitted†.

† For further clarification of witnessing of tests and sampling the test specimen(s), refer to paragraphs 6, 7 and 8 of the EU RO "Design Evaluation Scheme" procedure (Appendix V of EU RO Framework Document for the Mutual Recognition of Type Approval found on <http://www.euromr.org/Guidance%20for%20Mutual%20Recognition>)

CONTROLLED DOCUMENT

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Table 1 – environmental and electrical tests

Environmental tests		
1	Vibration test	IEC 60092-306 par. 7.2.1, IEC 60068-2-6
2	Electrical shock exposure	IEC 60092-306 par. 7.2.2, IEC 60068-2-27
3	Climatic exposure, operation cold	IEC 60092-306 par. 7.2.3, IEC 60068-2-1
4	Climatic exposure, operation dry heat	IEC 60092-306 par. 7.2.3, IEC 60068-2-2
5	Climatic exposure, operation damp heat	IEC 60092-306 par. 7.2.3, IEC 60068-2-78 <i>applicable only for indoor luminaires</i>
6	Climatic exposure, operation salt mist	IEC 60092-306 par. 7.2.3, IEC 60068-2-52 <i>applicable only for outdoor luminaires</i>
7	Climatic exposure, storage cold	IEC 60092-306 par. 7.2.4, IEC 60068-2-1
8	Climatic exposure, storage dry heat	IEC 60092-306 par. 7.2.4, IEC 60068-2-2
9	Climatic exposure, storage damp heat	IEC 60092-306 par. 7.2.4, IEC 60068-2-78
10	Uv resistance	IEC 60092-306 par. 7.2.5, ISO 4892-3 or ISO 4892-2
11	Resistance to heat, fire	IEC 60092-306 par. 7.2.5, IEC 60695-2-11
Electrical tests		
12	General	IEC 60092-306 par. 4.1,4.7, 4.9, 8, IEC 60598-1
13	Electromagnetic compatibility	IEC 60092-306 par. 4.3.3, IEC 60533, IACS UR E10
14	High voltage test before and after each environmental test	IEC 60092-306 par. 7.3.1, IEC 60598-1
15	Insulation resistance test before and after each environmental test	IEC 60092-306 par. 7.3.2, IEC 60598-1

After completion of tests the manufacturer shall submit:

- a) The test report with an identification number containing all relevant data and test results including place and date of the tests;
- b) Type references and serial numbers of the products tested.

Test reports and test records must be signed by the personnel members in charge of the test and shall be confirmed by the EU RO by signing and marking the test report.

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3. PRODUCTION REQUIREMENTS

Refer to EU RO "Product Quality Assurance (PQA)" procedure (Appendix VI of EU RO Framework Document for the Mutual Recognition of Type Approval).

4. MARKING REQUIREMENTS

Manufacturers of the approved equipment are, in principle, to mark the product before shipment for identification of approved equipment as per referenced standard. In addition, and as a minimum, the following items to be marked at the suitable place:

- a) Manufacturer's name or equivalent;
- b) Type reference or designation of the product;
- c) Serial number;
- d) Voltage; max. power/current;
- e) Degree of protection (IP);
- f) Other as required.

The marking provided in the luminaries shall allow the trace back to the type approval certificate of the product.

5. TYPE APPROVAL CERTIFICATE CONTENT

The EU RO MR Type Approval Certificate shall contain the minimum information as defined in the "EU RO Framework Document for the Mutual Recognition of Type Approval" - see Appendix I EU RO MR Type Approval Certificate Information.

Manufacturer's documentation included on The EU RO MR Type Approval Certificate shall include particular information for the product or series:

- a) Manufacturer type designation;
- b) Power;
- c) Type of current (ac; dc; both);
- d) Voltage;
- e) Cos. phi,
- f) Temperature class;
- g) Insulation class;
- h) Degree of protection (IP).

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6. APPROVAL DATE AND REVISION NUMBER

Date	Revision	Comment
31 January 2014	0.0	Approved by the Advisory Board
31 January 2015	0.1	CRF018 – Revision to par. 2.a.ii - Technical documents to be submitted in English; CRF020 – Revision to par. 5 - ‘Type Approval Certificate Content’
1 April 2016	0.2	CRF025 – Updated to new MR TR document format incl. par. 8; CRF026/026a – Witness testing & control of test specimen; CRF028 – addition of 6 month application clause.

7. BACKGROUND INFORMATION / REFERENCES

- a) IEC 60598 – “Luminaires”;
- b) IEC 60695 – “Fire hazard testing”;
- c) IEC 60092-306 – “Electrical installations in ships - Part 306: Equipment - Luminaires and lighting accessories”;
- d) IEC 60533 – “Electrical and electronic Installations in ships - Electromagnetic compatibility”;
- e) IEC 60068 – “Environmental testing”;
- f) ISO 4892 – “Plastics-Methods of exposure to laboratory light sources”;
- g) IACS UR E10 - “Test Specification for Type Approval”;
- h) EU RO Framework Document for the Mutual Recognition of Type Approval.

8. MAINTENANCE / CLARIFICATION OF TECHNICAL REQUIREMENTS

Anyone wishing to propose changes to this document or request clarification of technical issues should contact the EU RO MR Group Secretariat in the first instance: Secretariat@euromr.org.

Review and approval of change requests shall follow the EU RO MR Maintenance Process detailed in the EU RO Framework Document for the Mutual Recognition of Type Approval: <http://www.euromr.org/Guidance%20for%20Mutual%20Recognition>.

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