



LABORATÓRIO NACIONAL
DE ENGENHARIA CIVIL

**TESTING
and METROLOGY**

UFC

BUILDINGS DEPARTMENT

Photometry and Colorimetry
Laboratory

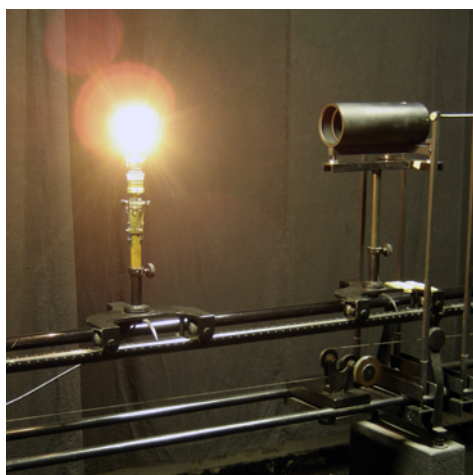
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Scope

The Photometry and Colorimetry Laboratory (UFC) of LNEC-EM is a laboratory unit integrated in the Buildings Department/Acoustics, Lighting, Building Components and Facilities Unit of LNEC. It has the facilities and equipment appropriate for carrying out tests and characterisations in various fields of photometry and colorimetry and in particular in the fields of natural and artificial lighting.

The UFC performs laboratory and in situ activities for the characterisation of the optical properties of materials and for the evaluation of the lighting (natural and artificial) conditions in buildings and outer spaces. It is integrated in the LNEC-EM Quality Management System, by complying with the requirements established by standard NP EN ISO/IEC 17025. The tests performed in this laboratory are essential in various domains, ranging from the calibration of photometric sensors to the characterisation of the lighting conditions in tunnels or in interior spaces for verification of the compliance of those conditions with the different normative documents.



Field of expertise

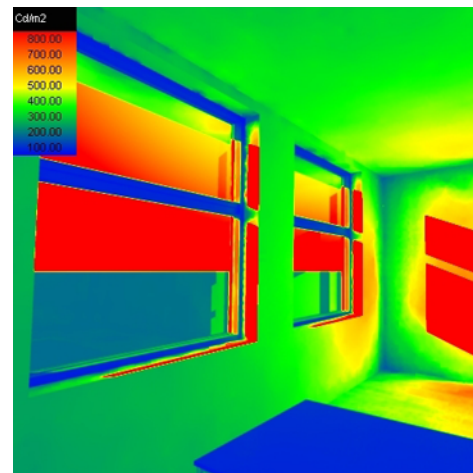
UFC carries out laboratory and in situ activities for the characterisation of optical properties of materials and for the evaluation of the lighting conditions (natural and artificial) in buildings and outer spaces. UFC performs diverse activity within the optical/light characterisation and the evaluation of the performance of equipment,

materials and construction systems, in laboratory and/or in situ. UFC carries out tests for the characterisation of photometric sensors and for the characterisation of the light and colour properties of materials.



This laboratory also conducts tests for determining the optical characteristics of car components and signalling and hence providing vital support to the Portuguese and international industry

Furthermore, it performs tests for characterising the internal and external lighting environment by the in situ evaluation of the natural and artificial lighting conditions. This activity makes it possible to support R&D&I studies and projects in the fields of lighting, environmental comfort and energy efficiency in both new and rehabilitated buildings.



Highlights

UFC has an important interaction with the market in various fields of activity, including the dissemination of knowledge, the development of new techniques and methodologies for the evaluation of the lighting environment (internal and external). Special reference is made below to some relevant actions:

- Participation in interdisciplinary teams for the development of recommendations and guides with a view to improve the quality of construction by the inclusion of visual comfort features and the rational use of energy;
- Evaluation, inspection and verification of the conformity of the lighting conditions within the framework of the European Directive that establishes the minimum safety requirements for tunnels in the Trans-European Road Network; and
- Advisory and support to the design, in the fields of visual comfort and rational use of energy, either for new constructions or for the maintenance and rehabilitation of existing buildings.