

RESEARCH AND STANDARDISATION

RESPONSE FORM for Standardisation groups

To contribute to *EMPIR - the European Metrology Programme for Innovation and Research* *

Objective: to collect standardization needs and suggestions to develop research projects in testing and measurements for the upcoming EMPIR calls (2019 and 2020)

In the frame of the between CEN, CENELEC and EURAMET, CEN and CENELEC have been invited by the EURAMET Management to put forward their **testing and measurement needs in research** for consideration by metrology institutes for future calls under EMPIR.

Relevant technical groups (sector fora, advisory boards, coordination groups, TCs, WGs...) **are invited to contribute with**

- a short introduction or an overview paper of their unaddressed standardization needs for testing and measurement, and
- a contact person (secretary, chair, convenor, liaison officer, etc.) whom proposers for the Potential Research Topics can contact,

by using this Response Form and send it at :

STAIR EMPIR secretariat, Mr Ortwin Costenoble: empir@nen.nl

Deadline for the consultation: **14 December 2018**.

Proof of need by the TC/SC is highly recommended for a successful submission.

Source of the identified need (identification of TC, WG, etc, incl. title)	<input type="checkbox"/> CEN/TC 0/WG 0 <input type="checkbox"/> CLC/TC 0/WG 0 <input type="checkbox"/> ISO/TC 0/SC 0 / WG 0 <input type="checkbox"/> IEC/TC 0/SC 0 / WG 0 <input checked="" type="checkbox"/> Other, namely <i>CIE, International Commission on Illumination</i>
European entity responsible for submission of the need	<i>CIE Division 3 Interior Environment and Lighting Design</i>
Person that can be contacted for more detail	<i>Dr Jennifer A. Veitch, Director, CIE Division 3 and elected CIE Vice President Technical for the period 2019 to 2023 j_a_veitch@jdarchitect.ca +1-613-993-9671 CA</i>
Unaddressed need (short description)	<p><u><i>Calibration and Characterization of HDR-cameras for luminance distribution measurements and glare evaluation.</i></u></p> <p><i>Visual perception strongly relates to the luminance distribution in the visual field. Excessive luminance, and areas of high luminance in the field of view can lead to discomfort and reduced visibility. Lighting application standards specify minimum luminance values for the visual tasks (cf EN 13201-2 for road lighting) or maximum values</i></p>

	<p><i>for glare sources (cf EN 12464-1 for lighting of indoor work places) that need to be evaluated in the field. For this purpose imaging luminance measurement devices are typically used. These devices are complex and expensive, limiting significantly the application potential.</i></p> <p><i>Cost effective cameras with a high dynamic range (HDR) are becoming very popular for field field measurements. They can potentially be used for glare evaluation. Already the draft standard FprEN 17037:2018 (daylight) proposes the use of an HDR camera using a fish eye lens for quantifying the daylight glare probability (DGP).</i></p> <p><i>Thus far no international standard exists for the calibration and characterization of HDR-cameras used for luminance distribution measurements and glare evaluation. To draft such a standard, additional research is necessary in particular to define calibration and evaluation conditions and to provide guidance on the uncertainty evaluation for luminance distribution measurements and glare assessment.</i></p>
<p>Further explanation of need (TC business plan, road map, formal decision, work item, etc.)</p>	<p><i>CIE has identified the need for research in the research strategy (http://www.cie.co.at/research-strategy, research topic no 9). Several technical committee are relate to the topic:</i></p> <p><i>CIE TC 2-59 Characterisation of Imaging Luminance Measurement Devices</i></p> <p><i>CIE TC 2-86 Glare Measurement by Imaging Luminance Measurement Device (ILMD)</i></p> <p><i>CIE TC 3-56 Assessment of Discomfort Glare from Daylight in Buildings</i></p> <p><i>CIE JTC 07 Discomfort caused by glare from luminaires with a non-uniform source luminance</i></p> <p><i>CIE TC 4-33: Discomfort Glare in Road Lighting</i></p>
<p>Enclosures</p>	<p><input type="checkbox"/> Yes</p> <p><input checked="" type="checkbox"/> No</p>

*See more information at [EMPIR website](#)
[CEN/CENELEC website](#) "Standards and metrology"