

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 Division 3, Interior Environment and Lighting Design</i>
European entity responsible for submission of the need	<i>International Commission on Illumination (CIE) Vienna, Austria www.cie.co.at</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)	<u><i>Quantifying temporal light modulation (i.e. flicker, phantom array and stroboscopic effects)</i></u> <i>European Ecodesign and energy labelling regulations related to lighting products (Commission Regulation (EC) No 244/2009, Commission Regulation (EC) No 245/2009 and Commission Regulation (EU) No 1194/2012) are presently under revision. In its latest draft version (Ecodesign draft</i>

	<p><i>regulation - Interservice consultation (July 2018)) two metrics for quantify flicker and stroboscopic effects are proposed (Pst LM and SVM) and limit values at full-load are specified.</i></p> <p><i>Currently no international agreed standard exists that address the measurement of Pst LM and SVM explicitly. Also standardized measurement conditions and methods to measure waveforms of light (time intervals, duration, bandwidth, photometer requirements, etc.) and frequency-domain power spectra (FFT and other methods) are missing.</i></p> <p><i>On a more general level, existing metrics for TLM have to be reviewed, revised and internationally standardized. The draft Ecodesign directive proposes to include "more stringent requirements on flicker and stroboscopic effects" and "requirements on dimming, including the interaction with flicker" on a future revision. The IEA 4E SSL Annex treats TLM as a priority topic and recognizes the urgent need for measurement standards to support regulation, . For this purpose, additional research is necessary.</i></p>
<p>Further explanation of need (TC business plan, road map, formal decision, work item, etc.)</p>	<p><i>CIE considers TLM as a priority research topic. Different CIE activities are related to TLM:</i></p> <ul style="list-style-type: none"> <i>– CIE Technical Committee TC 1-83 "Visual Aspects of Time-Modulated Lighting Systems" builds a model for the visibility of temporal light artefacts and their dependence on environmental, demographical and lighting parameters</i> <i>– CIE Technical Committee TC 2-89 "Measurement of Temporal Light Modulation of Light Sources and Lighting Systems" provides guidance on the measurement of temporal light modulation of light sources and lighting systems.</i> <i>– CIE Research Forum RF-02 "Matters relating to temporal light modulation" provides a discussion and information- and data-sharing platform for all aspects of temporal light modulation of lighting systems.</i>
<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"](#)