

Workshop

PRACTICAL PHOTOMETRY IN THE FIELD

Convener: Peter Blattner¹

¹ METAS, Bern-Wabern, SWITZERLAND

peter.blattner@metas.ch

Summary

Application standards and recommendations define minimum requirements for different lighting parameters. For example:

- CIE S 015 (Lighting of Outdoor Work Places) requires minimum values of the maintained average illuminance depending on the workplace.
- ISO 30061:2007(E)/CIE S 020/E:2007: (Joint ISO/CIE Standard: Emergency Lighting) states that the horizontal illuminance shall be not less than 0,5 lx at the floor level at each point of the empty core area.
- IESNA (2004) ANSI/IESNA RP-1-04 (American National Standard Practice for Office Lighting.) and CEN (2011) EN 12464-1:2011 (Light and lighting — Lighting of work places — Part 1: Indoor work places) recommend minimum ratios of minimum and average illuminance (uniformity) and luminance ratio limits.

In order to verify if a specific lighting installation fulfils the requirements, measurements in the field are performed. However all measurements are subject to uncertainties and a measurement result should include a statement of the associated uncertainty. Furthermore, this uncertainty should be taken into account when comparing measurement results and requirements. An example is given in the new European standard for road lighting EN 13201-4:2015: "All comparison of measured results with standard requirements or design expectations shall be carried out considering the expanded measurement uncertainty of the measure, i.e. for parameters that require a value greater or equal to a given level, the lower limit of the coverage interval of the expanded measurement uncertainty shall be greater or equal to the given level."

However, the evaluation of uncertainty for measurement in the field is complex and time-consuming. This workshop shall discuss the necessity and applicability of the concept of measurement uncertainty to practical measurements in the field. The workshop is suitable for everyone dealing with measurement of lighting installation and for those responsible for applying standards and regulations. It shall bring together CIE experts from all Divisions.