



International Commission on Illumination
Commission Internationale de l'Eclairage
Internationale Beleuchtungskommission

PRESS RELEASE

March 2020

Characterization of AC-Driven LEDs for SSL Applications

CIE 238:2020

ISBN 978-3-902842-64-0

DOI: 10.25039/TR.238.2020

AC-driven LEDs (AC LEDs) operate on AC power and may be connected directly to a mains supply without the need of any electronics (e.g. LED drivers or control gears) for converting AC power to a constant direct current. Similar to DC-driven LEDs (DC LEDs), accurate measurements of AC LEDs are also difficult due to the high sensitivity of optical and electrical properties of LEDs to their thermal and operating conditions. In addition, forward voltage, current, and junction temperature of an AC LED change rapidly, which makes measurements even more difficult.

This Technical Report provides guidance for optical measurements of AC LEDs, performed at testing laboratories with emphasis on reproducibility and small measurement uncertainties by accurately setting and controlling the junction temperature. The report includes measurement methods, instrumentation, and procedures. The measurement methods and procedures used for optical measurement of AC LEDs are based on a specified junction temperature using either single AC cycle operation or continuous AC operation.

The publication is written in English, with a short summary in French and German. It consists of 25 pages with 15 figures and is readily available from the [CIE Webshop](#) or from the National Committees of the CIE.

The price of this publication is EUR 84,- (Members of a National Committee of the CIE receive a 66,7 % discount on this price – please approach your NC for information on accessing this discount).