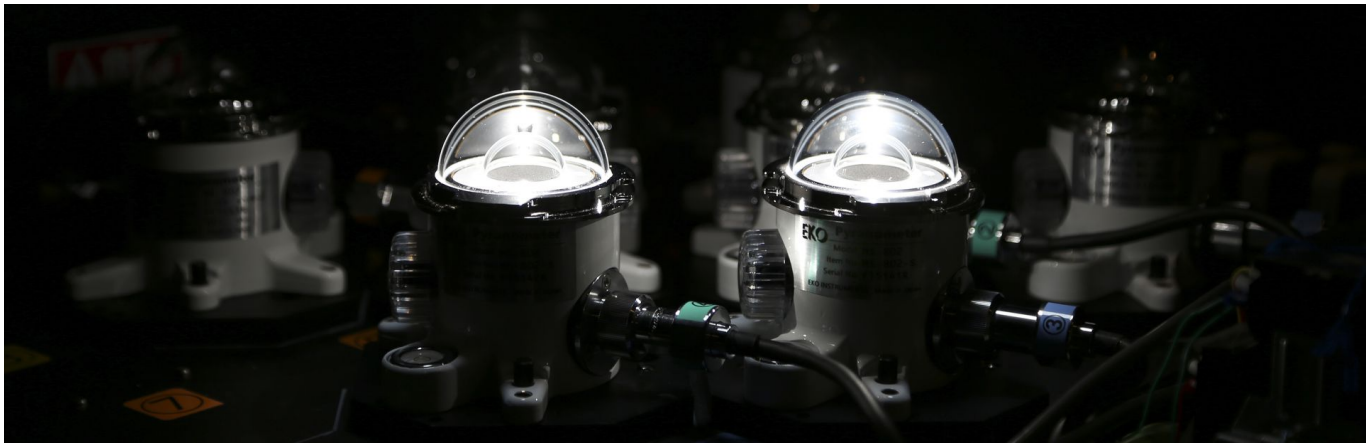

Measure spectral irradiance of sun simulator

Sun simulators are available in different classes indicating the performance characteristics by the combination of three letters (A,B or C) (according to IEC 60904, JIS 8912 and ASTM E 927-05). Each letter represents respectively the spectral match with the solar spectrum (1000 W/m2, AM 1.5), uniformity of the light field and temporary stability. Class AAA are considered as most accurate and have an ideal spectral match between 0.75 and 1.25, max. 2.0% non-uniformity and 0.5% nonstability according to the IEC standard. The ideal spectral match is divided in spectral bands. Those represent a certain energy quanta of the total spectrum allowing a 25% variance in that particular range.

The LS-100 is the portable spectroradiometer. Its spectrometer and detector part are connected through fiber optics. The LS-100 is for the indoor use. It is furthermore suitable for the evaluation of the artificial light source generated by solar simulator. The LS-100 can be used in various researches. The LS-100 software has an automatic monitoring function for a spectral match between the solar simulator and JIS provided value.

HOW-TO Application Guide

1. In practice, it is possible that 2 different types of AAA sun simulators give a totally different artificial solar spectrum within the standard. To be able to quantify the solar spectrum against the standardized AM 1.5 solar spectrum, the LS-100 spectroradiometer measures and calculates the exact mismatch for each individual wavelength.

2. With this information the I-V characteristics of the module can be corrected according to the real AM1.5 spectrum instead of the approximate sun simulator spectrum.