iQ-Flatlight V2 data sheet

Overview

Product name	iQ-Flatlight
Principle	A diffuse light panel for illuminating reflective test charts and surfaces based on iQ-LED V2 technology (includes micro-spectrometer) The iQ-LED technology is optimized for the best spectral match and allows CRI values up to 99, depending on illuminant and intensity

Features

Diffuse light panel

Light area	620 x 780 mm

Illumination

Light source	10 x iQ-LED V2 Image Engineering iQ-LED V2 technology: 41 SMD high power LEDs / separated in 20 color channels / Spectral range: 380 – 820 nm / Intensity controlled via 4000 steps per channel and 32 kHz PWM (switchable to 1000 steps with 128 kHz) / An Approx. lifetime of 10,000 hrs. / Typical LED spectra on request
Control functionality without PC	Storage of up to 44 different illuminants and one sequence on the device, default light source, controllable via micro switches on the device without PC
Uniformity on chart plane	Up to 90% (with two iQ-Flatlights in ~1.5 m distance, depending on test setup)
Illumination stability	+/- 1% when stabilized (2% after switching D illuminants in the first 5 seconds)
Response time (switch illuminant)	< 50 ms
Maximum/Minimum illumination level	Single iQ-Flatlight, 400 mm distance (on calibration device): 25 – 7800 lx for standard D illuminants Two iQ-Flatlights illuminating a test chart (in~1,5 m distance, depending on test setup): 10 - 2000 lx for standard D illuminants

Dim function	Software-based by presetting the intensity while the calibration device is in the measurement position or by selecting different pre-stored intensity illuminants directly on the device
Predefined standard illuminants	D50, D55, D65, D75, A, B, C, E Planckian spectral curve by selected temperature (1900 - 18,000 K)
Service life	10,000 h (iQ-LED V2)

Spectrometer

Construction	Swivel-type calibration device with a spectrometer for changing between measurement position (400 mm distance) and an inoperative state
Spectral range	305 – 1100 nm
Pixel resolution	2048 pixel
FWHM	2.5 nm
Output data	Real-time measurement of spectral trend and radiant power via control software while the calibration device is in the measuring position
Calibration	Yearly calibration required independent of working hours (contact Image Engineering), NIST traceable

Software

System requirements	PC with Windows 7 operating system (or higher) 2 x USB port
Functions	• Auto-generation of standard illuminants or externally measured spectra • Creation or adaptation of spectral trends via 20 LED channels • Save and load function of self-defined spectral arrangements or intensities • Storage of illuminants/sequences on the device • Creation of test sequences • Real-time display of spectral measurement • Real-time calculation of CCT, CRI, curve fit, and illumination level
API (C++)	iQ-LED API included

General description hardware

Power supply/consumption	100 V – 250 V / 1000 W
Ports	1 x USB for software control 1 x port for the power adaptor 1 x 3.5 mm jack for trigger output
Dimension [W x H x D]	870 x 1530 - 1830 x 710 mm (300 mm height adjustable)
Weight	65 kg
Operating conditions	Optimal: 22 - 26 °C, maximal: 18 - 28 °C
Warm-up time	< 2 min at an optimal ambient temperature
Rolling Cart	Wheels with brakes
Scope of delivery	Pair of iQ-Flatlights, each with a spectrometer (calibration device) and Rolling Cart, 2x power cords, 2 x USB cables, control software, calibration protocol