



Overview

Product name	iQ-LED V2 bundle
Principle	A high power SMD-LED based spectral broadband light source to build your own spectral programmable illumination device The iQ-LED technology is optimized for the best spectral match and allows CRI values up to 99, depending on illuminant and intensity

Features

Illumination

Light source	<ul style="list-style-type: none"> • 41 SMD high-power LEDs separated into 20 color channels • Spectral range: 380 – 820 nm • Intensity controlled via 4000 steps per channel with 32 kHz PWM • Switchable to 1000 steps with 128 kHz PWM • Typical LED spectra and Gamut on request
Illumination stability	+/- 1% when stabilized (for selected standard illuminants after changing illuminant at optimal temperature) 2% (after switching D illuminants while the first 5 seconds)
Response time (switch illuminant)	< 50 ms
Maximum / Minimum illumination level	Depending on the application/installation and illuminant The iQ-LED bundle comes as components WITHOUT any diffuser or sphere to mix the separated LED light channels For intensity examples, please see other Image Engineering iQ-LED products
Dim function	Software-based dim function by presetting the intensity during a closed loop link with the micro-spectrometer or stored with different intensity illuminants on the device
Included reference illuminants	D50, D55, D65, D75, A, B, C, E Planckian spectral curve by selected temperature (1900 – 18,000 K) The iQ-LED technology is optimized for the best spectral match and allows CRI values up to 99, depending on illuminant and intensity
Service life	10,000 h (iQ-LED)



Spectrometer

Construction	Mini spectrometer
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
Calibration	Yearly calibration required independent of working hours (contact Image Engineering), NIST traceable

Software

System requirements	PC with Windows 7 operating system (or higher) USB port
Control system	Software-based control system via USB
Functions	<ul style="list-style-type: none"> • 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 up to 44 different illuminants, one sequence, and default light source on the device, controllable via microswitch controller (without connected PC) • Creation of test sequences • Real-time display of spectral measurement • Real-time calculation of CCT, CRI, curve fit, and illumination level
Output data	Real-time measurement of spectral trend, CCT, CRI, illuminance, and radiant power with closed-loop connection to the micro spectrometer
API (C++)	Available as a separate option (iQ-LED API)

General description hardware

Power supply/consumption	12 V / 100 W
Ports	1 x USB for software control
Dimension [W x H x D]	100 mm x 105 mm x 76 mm iQ-LED PCB incl. CAN-USB connector board
Weight	0.5 kg (only iQ-LED V2 device)
Operating conditions	Optimal: 22 to 26 °C / Maximum: 18 to 28 °C
Warm-up time	< 2 min. at optimal ambient temperature
Scope of delivery	<p>Starter bundle version:</p> <p>1 x iQ-LED V2, 1 x CAN-USB connector board, 1 x micro switch controller board, USB cable, power supply, calibrated micro-spectrometer (detailed specs see EX2 datasheet) with 1m metal coated fiber, control software</p> <p>Add on version:</p> <p>1 x iQ-LED V2, CAN cable, power supply</p>