



Overview

Product name	LE7-2x / LE7-4x / LE7-6x / LE7-IR / LE7-E / LE7-850-940
Principle	<p>An integrating sphere to illuminate transparent test charts based on iQ-LED technology (includes micro-spectrometer)</p> <p>Hardware/Software controlled device with an internal spectrometer for spectral control. The iQ-LED technology is optimized for the best spectral match and allows CRI values up to 99, depending on the illuminant and intensity.</p>

Features

Integrating sphere

Diameter integrating sphere	500 mm
Output window	Rectangular output window, 290 x 220 mm Dual slot for D280-sized test charts

Illumination

Light source	<p>Different LE7 versions are available, including:</p> <p>LE7-2x: 2 x iQ-LED V2</p> <p>LE7-4x: 4 x iQ-LED V2</p> <p>LE7-6x: 6 x iQ-LED V2</p> <p>LE7-IR: 2 x iQ-LED V2 plus 4 x iQ-LED IR</p> <p>LE7-E: 5 x iQ-LED V2 plus 1 x iQ-LED V2 with 1.8 ND filter</p> <p>LE7-850-940: 4 x iQ-LED V2 plus 2 x iQ-LED 850 plus 2 x iQ-LED 940</p>
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	<p>Image Engineering iQ-LED V2 technology:</p> <p>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</p> <p>Image Engineering iQ-LED IR technology:</p> <p>80 THT LEDs / separated in 10 IR channels and one blue channel / Spectral range: 820 – 1050 nm and one 400nm channel / Intensity controlled via 4000 steps per channel and 32 kHz PWM (switchable to 1000 steps with 128 kHz) / Approx. lifetime of 10,000 hrs. / Typical LED spectra on request</p> <p>Image Engineering iQ-LED 850 and iQ-LED 940 technology:</p> <p>Each with 4 SMD high power LEDs per channel / 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 / The iQ-LED 850 and 940 boards are half the size of a standard iQ-LED board</p>
Uniformity	<p>> 97% for active chart area, 280 x 157.5 mm, for standard D55</p> <p>> 96% for full chart area, 290 x 220 mm, for standard D55</p>
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 for standard D55*	<p>LE7-2x / LE7 IR: 25 lx – 8000 lx</p> <p>LE7-4x: 100 lx – 16000 lx</p> <p>LE7-6x 25 lx – 24000 lx</p> <p>LE7-E: 0.25 lx – 20000 lx</p> <p>LE7-850-940: 100 lx – 16000 lx</p> <p><i>*Illuminating a TE291 D calibration chart</i></p>
Dim function	Software-based by presetting the intensity 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

Spectrometer

Construction	Built-in 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
Functions	<ul style="list-style-type: none"> • Auto-generation of standard illuminants or externally measured spectra • Creation or adaptation of spectral trends via 20 (IR: 31) 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++)	Available as a separate option (iQ-LED API)

General description hardware

Power supply/consumption	110 V / 230 V, LE7-2x: 180 W / LE7-4x: 340 W / LE7-IR: 260 W
Ports	1 x USB for software control 1 x port for the power adaptor
Dimensions [W x H x D]	620 x 730 x 430 mm
Weight	16 kg
Operating conditions	Optimal: 22 - 26 °C, maximal: 18 - 28 °C
Warm-up time	< 2 min. at an optimal ambient temperature
Scope of delivery	Integrating sphere (with a dual-slot for D280-sized charts), spectrometer (built-in), power cord, USB cable, control software

Miscellaneous

Accessories	Rolling Cart
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