# iQ-Flatlight V2 data sheet

## Overview

| | |
|---|---|
| Product name | iQ-Flatlight |
| Principle | Diffuse light panel for illuminating reflective test charts and surfaces based on iQ-LED V2 technology (includes micro-spectrometer).<br>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 / light panel<br>Image Engineering iQ-LED V2 technology:<br>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 h / Typical LED spectra on request<br>**Optional:** 3 x HQ fluorescent tube F11 18 W/940, burned in (100 h) / light panel<br>Usage separate from iQ-LED light sources |
| 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):*<br>Up to 7800 lx for standard D illuminants<br>Min. down to 25 lx for standard D illuminants<br>*Two iQ-Flatlights illuminating a test chart:*<br>Up to 2000 lx for standard D illuminants (in~1,5 m distance, depending on test setup)<br>Min. down to 1 lx (in~1,5 m distance, depending on test setup) |
| Dim function | iQ-LED:<br>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<br><br>Fluorescent Tubes (Only for iQ-Flatlight with Fluorescent Tubes):<br>1000 step software or device based dim control |
| Predefined standard illuminants | D50, D55, D65, D75, A, B, C, E<br>Planckian spectral curve by selected temperature (1900 - 18,000 K) |
| Service life | 10,000 h (iQ-LED V2)<br>16,000 h (Fluorescent Tubes, Only for iQ-Flatlight with Fluorescent Tubes) |

## 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)<br>2 x USB port |
| Functions | • Auto-generation of standard illuminants or externally measured spectra<br>• Creation or adaptation of spectral trends via 20 LED channels<br>• Save and load function of self-defined spectral arrangements or intensities<br>• Storage of illuminants/sequences on device<br>• Creation of test sequences<br>• Real-time display of spectral measurement<br>• Real-time calculation of CCT, CRI, curve fit and illumination level |
| API (C++) | Optional available (iQ-LED API) |

## General description hardware

| | |
|---|---|
| Power supply / consumption | 210 V - 230 V / 1000 W (for all iQ-Flatlights)<br>110 V – 120 V / 1000 W (ONLY for iQ-Flatlight without Fluorescent Tubes) |
| Ports | 1 x USB for software control<br>1 x port for power adaptor<br>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 degrees Celsius, maximal: 18 - 28 degrees Celsius |
| 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, 2 x power cord, 2 x USB cable, control software, calibration protocol |