

# camSPECS

## Advanced spectral sensitivity measurements

The camSPECS combines all interference filters into one “test chart” to improve the effectiveness of camera spectral sensitivity measurements. This device makes spectral sensitivity measurements much faster and more convenient.

### Main Features

- \* Spectral sensitivity measurements
- \* 39 high quality interference filters
- \* Advanced analysis software included
- \* Color transform generation
- \* Visual evaluation of ICC profiles with real images



### camSPECS express XL and TE292

The camSPECS XL uses the same interference filters, but now each has a diameter of 22 mm, making it more suitable for wide-angle cameras from industries such as automotive or security.

The TE292\* has been adapted from the front plate of the camSPECS device. This chart has been developed to be used primarily with the LE7 for camera calibration with iQ-LED illumination.



LE7 with the TE292 XL chart



camSPECS XL

## camSPECS express software

Both of the camSPECS options come with evaluation software. This software calculates the spectral sensitivity with the images and the calibration data of the filters as a direct measurement. The software also includes a module that can be used to evaluate the camera's color correction matrix (CCM). Color transform generation is possible once the spectral sensitivities are determined. This process is done by converting camera values to color metric values.

## in-situ Database

In addition to the camSPECS software, we also offer an in-situ database. This database greatly expands on the 14 spectral radiances offered in ISO 17321-1 and includes numerous objects and scenes that people typically photograph. Each object is available in two variants: incident light and white tile corrected.

## Software Features

- \* Measuring spectral sensitivity
- \* Creation of ICC profiles
- \* Support for 2D and 3D-MLUT color transforms
- \* CIECAM16 implementation
- \* Calculation of spectral sensitivity with images of iQ-LED devices



Color transform evaluation

| At a Glance                   | camSPECS  | camSPECS XL  |
|-------------------------------|---|--|
| Principle                     | Illumination box with narrow-band interference filters  | Illumination box with narrow-band interference filters |
| Light source                  | Halogen (24 V / 250 W) Osram 64657 HLX  | Halogen (24 V / 250 W) Osram 64657 HLX                 |
| Durability of light source    | 300 h   | 300 h  |
| Wavelength range              | 380 - 760 nm (10 nm steps)  | 380 - 760 nm (10 nm steps)                             |
| Bandwidth                     | 10 nm   | 10 nm  |
| Diameter interference filters | 10 mm   | 22 mm  |
| Diameter ND filters           | 6 mm  | 12 mm  |
| Software system requirements  | PC with Windows 10 operating system (or higher)   |  |
| Additional functions          | <ul style="list-style-type: none"> <li>• Spectral measurement based on iQ-LED technology</li> <li>• Test procedure for evaluating CCMs with different training data</li> <li>• Digital camera RAW file processing / dark frame subtraction / batch processing</li> <li>• Validation by comparing camera and predicted RGB values</li> <li>• Calibration with an included calibration spectro radiometer</li> <li>• Side by side comparison of images with separate ICC profiles</li> <li>• Export all results to XML or plain text files</li> </ul> |  |