Image Engineering

Image quality test equipment made in Germany

New fit calculation from iQ-LED SW version 3.3.1

iQ-LED SW version 3.3.1 will include a new calculation of the FIT value called "global fit." The original fit calculation still exists and is called "local fit." When the software starts the new fit calculations, "global fit" is automatically selected. You can change the fit calculation in the measurement settings section.

The fit value is an estimated error of the fitting algorithm. With the local setting, the normalization is performed per each LED channel, with the global setting, it's performed over all wavelength values uniformly. Errors for low intensity values get relatively more weight in the local settings compared to the global. This can produce non-ideal results for spectra that contain regions of low intensity.

The new "global fit" calculation provides the best performance when generating spectra that have low intensity in the border area of the spectrum such as, for example, a typical white LED spectrum. The "global fit" also provides better results when generating spectra with high green intensities and sharp edges within the reference spectra.

With all other spectra the "global fit" also shows strong results, so we recommend using only the "global fit" setting.

Calculation of FIT Parameter (local)

$$FIT = 100 - \left(\left(\frac{\sqrt{\sum_{min}^{max} \left(\frac{C_i - Ref_i}{Ref_i} \right)^2}}{n} \right) * 100 \right)$$

C = normalized measured spectrum

Ref = normalized reference spectrum

n = number of support points

max = maximum wavelength

min = minimum wavelength

Calculation of FIT Parameter (global)

$$FIT = 100 - \left(\frac{\sqrt{\sum_{min}^{max}(C_i - Ref_i)^2}}{\sqrt{\sum_{min}^{max} Ref_i^2}} * 100 \right)$$

C = normalized measured spectrum

Ref = normalized reference spectrum

max = maximum wavelength

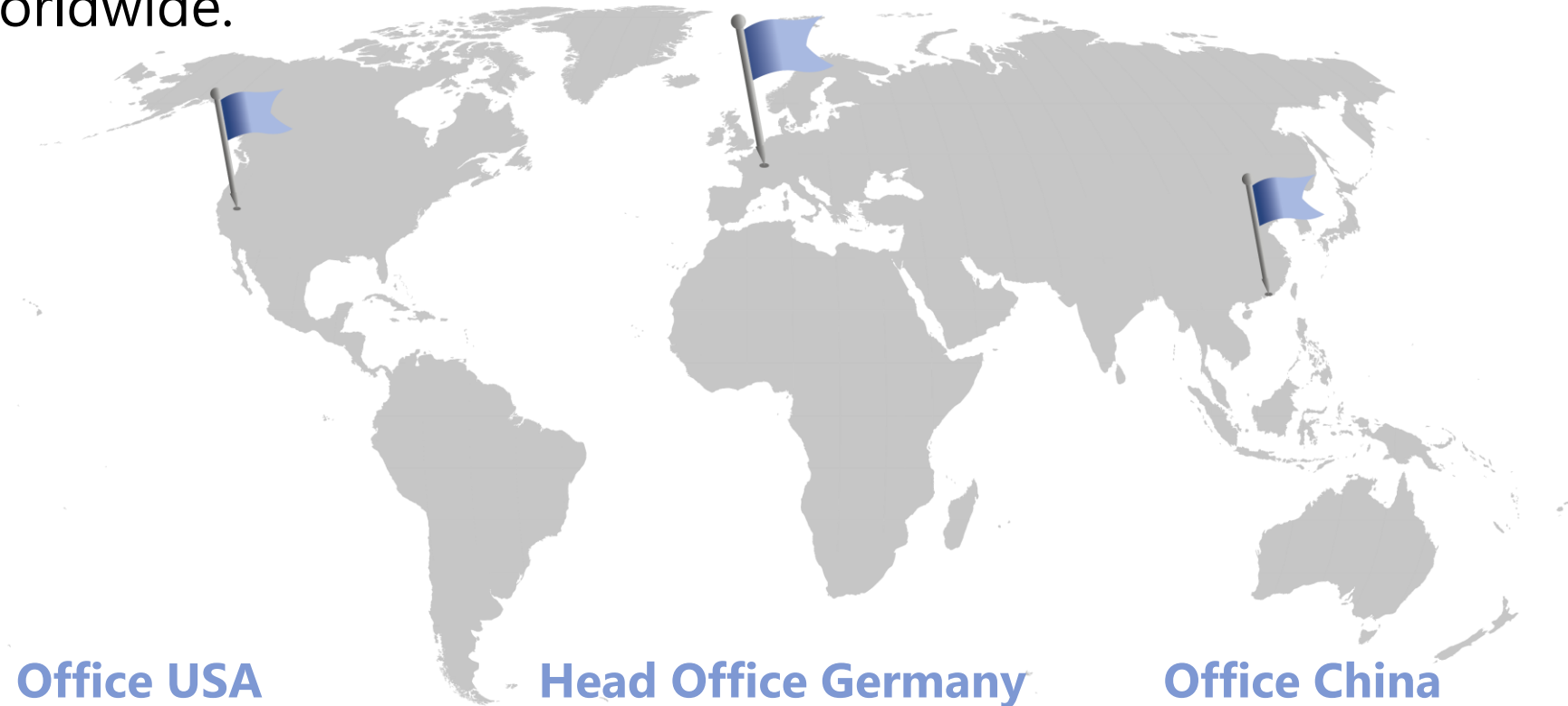min = minimum wavelength

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