SSL FiLMI 2.3 (Field Luminance Mapping Instrument)
Measures luminance by imaging

SSL FiLMI 2.3 creates a luminance map over an area by one mouse click. This data can be used to determine the level and variation of luminance in the measurement area.

These values are needed e.g. when lighting of roads are evaluated.

SSL-FiLMI-sw measurement parameters
- ✓ L_{av} (average luminance)
- ✓ U_o overall uniformity
- ✓ U_{ow} (overall uniformity wet
- ✓ U_l (longitudinal uniformity)
- ✓ required illumination at the entrance of a tunnel (L20 and perceived contrast)

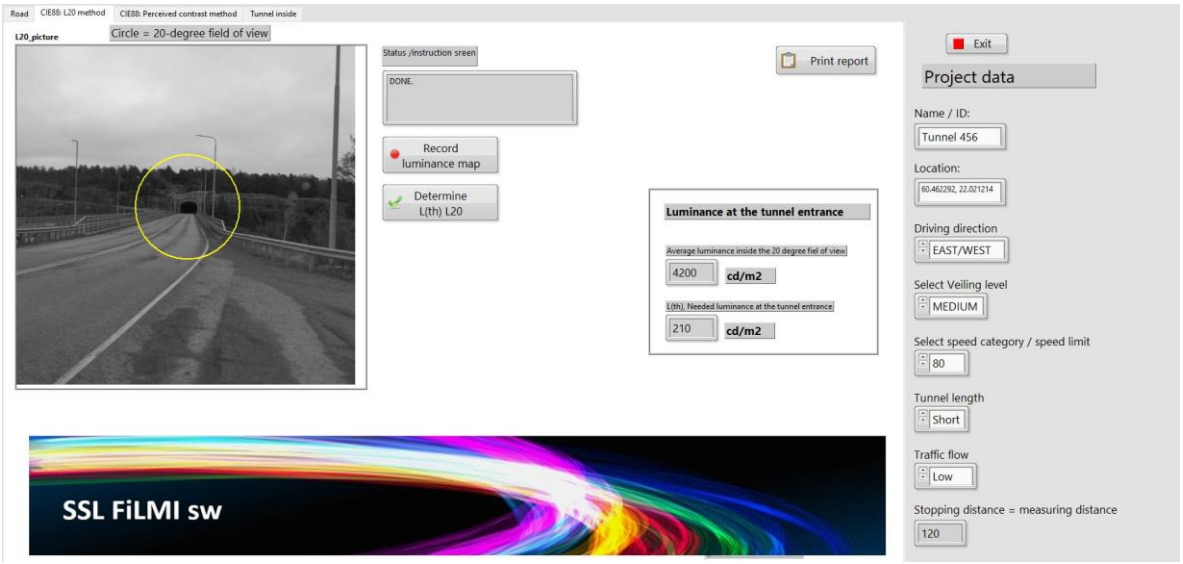
Determination of these are required in road lighting standards like CIE 088 and EN 13201.

An automatic report is saved or printed after the measurement. The report includes identification data for the measured object, the measured parameter values and pass/fail criteria if such exist.

SSL FiLMI 2.3
Measurement of Tunnel Entrance

Illumination at the beginning of the tunnel

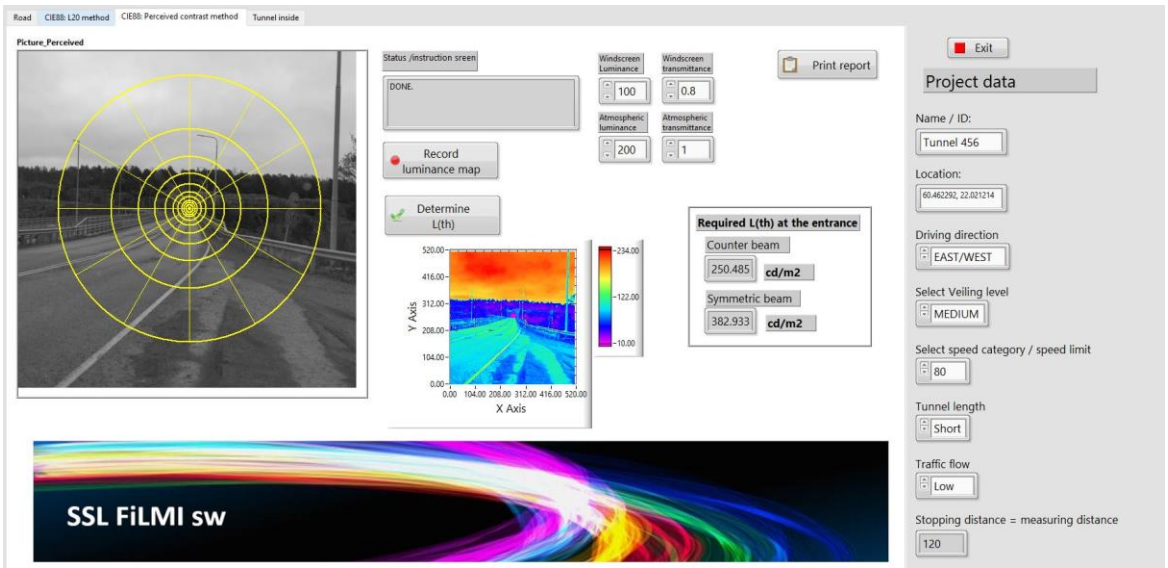
Illumination at the beginning of a road tunnel has to be designed using the luminance of the surrounding of the tunnel entrance. The standard CIE 088 describes two methods (L20 and Perceived contrast method) for this. SSL FiLMI 2.3 can determine the required illumination at the beginning of the tunnel with both methods.



The measuring procedure with both methods is the same.

1. Record the luminance map surrouding the tunnel entrance.
2. Mouse-click at the center of the tunnel entrance.
3. Mouse-click the 'Determine L(th)'-button. The required luminance at the beginning of the tunnel is calculated.
4. Print / save the report of the measurement with the 'Print report'-button

Before the measurement, the user should enter the data of the tunnel including driving direction, veiling level and speed category for calculations.



SSL FiLMI 2.3. Measurements on the Road and inside the Tunnel

Illumination inside the tunnel

Illumination inside the tunnel is measured by manually selecting the area to be measured (road or walls). Longitudial uniformity is measured by selecting a narrow area in the left side / middle / right side of the lane or road.

When the measuring area is chosen manually

1. Measurement can be easily adapted to all kind of roads
2. Many situations causing errors can be eliminated

Illumination at the Street / Road

Illumination of the street can be measured either at the grid points set according to the instructions of EN13201-3 or from the luminance map of the selected street area. Average luminance, overall uniformity and longitudal uniformity are measured.

Measurement area is selected by Mouse-Clicking the corners of the area. Grid or area measurements or both can be selected. Pass-Fail criteria are calculated according EN13201-2

SSL FiLMI 2.3 - SPECIFICATION

DEVICE CODE	SSL FiLMI 2.3
Application range	Tunnel lighting, road lighting, displays
Detector	CMOS imaging luminance meter, 1920 x 1200 pixels (2.3Mpix), 12-bit A/D conversion
Measurement range[1)] (cd/m2)	0.04 – 4 700 000 (with lens f-35mm) 1 – 90 000 000 (with lens f-8mm)
Dynamic range	1E+8
Focusing distance	0.1 m - ∞
Integration time	40 µs – 10 s
Spectral response[2)]	Class A (f_1' <3%)
Dimensions (W x D x H, m)	130 mm x 215 mm x 93 mm, 1.2 kg
Computer Interface	USB 3.0
Measurement software	SSL FiLMI sw. Standardized measurements according to CIE 088, EN 13201, generic analysis tools for luminance analysis within circle, rectangle, polygon. Result representation with grey-scale and false-color figures, average, max/min, standard deviation.
Package[3)]	Case, 5m USB 3.0 cable, Factory calibration, Tripod adapter. SSL FiLMI-sw.

[1)] Depend on the lens aperture.
[2)] Designed for standard lenses 8mm and 35mm.
[3)] Dedicated accessories for field measurements separately available.