

Unique ILMD features: Determine detailed luminance/radiance maps from all viewing angles while making normal light measurements. The new Viso LightCam add-on provides lots of data: Blue light hazard, peak luminance/radiance as a function of angle, and much more.

## LUMINANCE CAMERA & RADIANCE CAMERA IN ONE

You get:

- Automatic IEC 62471 blue light hazard risk group
- Check whole luminaires - not just single LEDs. Avoid over-estimation from LED data sheets.
- Evaluate glare characteristics scientifically (CIE 232:2019 correction factor  $k$  and more).
- Get luminance or radiance maps from all viewing angles separately or as videos
- Determines apparent luminous surface area from all angles
- Performs camera measurements in the course of a normal Viso light distribution measurement.
- Add-on for all Viso LabSensor or BaseSensor models
- Captures images from all measured angles without adding measurement time
- Saves camera results with light measurement file
- Self-calibrating ILMD: Uses Viso LabSensor/BaseSensor to verify camera output



Upgrade your Viso BaseSpion / LabSpion with a LightCam.



Light Cam is connects to your sensor with a single RJ45 cable



The automatic zoom lens assures that your DUT is always in focus



LabTemp is easily attached to the sensor with the included bracket



# SPECIFICATIONS

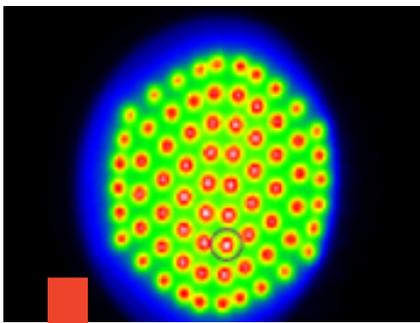
Measure Blue Light Hazard and radiance maps the easy way: Get a LightCam accessory to your Viso BaseSpion og LabSpion system.

## Blue light hazard risk group detection

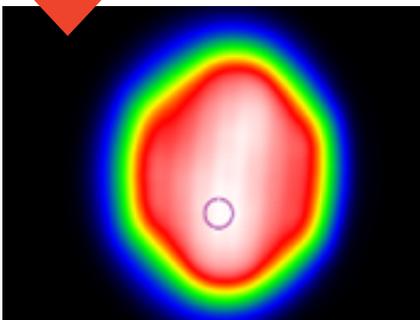
Until now, it has been very challenging to measure blue light hazard risk groups (IEC-62471 and IES RP-27). The standard is difficult to follow and appears to be designed for very small light sources. What if you have luminaires with clusters of powerful LEDs? Which has the highest radiance, and in which viewing direction?

This was the job of specialized laboratories, but now you can do it in your own Viso lab.

The system automatically detects the viewing angle with the highest radiance and makes a hi-res HDR image.



The excessive resolution is then automatically reduced to retinal conditions before blue light hazard evaluation.



## Specifications

### Camera specification (preliminary)

- Sensor type: RGB CMOS
- Resolution: 12.3 MP still, 1920x1080 video.
- FOV: 21° horizontal, 16° vertical.
- Angular resolution: 0.09 mrad / pixel, 0.9 mm @ 10 m distance
- Bit depth: 12 bit still, 16 bit HDR, H.264 video.
- Still image dynamic range: 1:2500 raw, 1:100 000 000 HDR raw

### Software solution

- Viso Light Inspector (free) w/ new control features
- Compatible with LabSpion and BaseSpion sensors

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- Viso Light Inspector (free)
- w/ new control features
- Compatible with LabSpion and BaseSpion sensors
- Power and data
- Data and power via ethernet cable

## Luminance and glare

Many application standards require luminance data. Sometimes this is calculated as the intensity in a given direction divided by the apparent surface area. This is only valid if the surface is equally bright all over.

In all other instances, a camera solution is necessary.

Luminance measurements are necessary to comply with:

- CIE 115, CIE 88, CIE 140, CIE 191
- ISO 8995-1 / CIE S 008
- ANSI/IES RP-8, ANSI/IES RP-22, IES LM-41.
- EN 12464-1, EN 13201 Parts 2–4).
- SMPTE RP 431-2 FAA Advisory Circulars for Airfield Lighting, Runway sign and lighting system luminance requirements
- Automotive Standard UNECE R48, R112, etc.

## Covering wavelengths above 800 nm

LightCam has two auxiliary photosensors covering the 600 – 2600 nm range, which extends the range of Viso's spectrometers into the SWIR (Short-wavelength infrared) range. This allows you to safely determine if there's any radiation in the thermal range and therefore exclude 'retinal thermal' hazard, and get a good indication if you should be concerned about 'eye IR' and 'skin thermal' hazards.

The auxiliary NIR-SWIR photodiodes have sensitivity ranges: 600 - 1750 nm and 800 – 2600 nm.

