

# MSC15

<https://www.gigahertz-optik.de/en-us/product/msc15>

**Product tags:** VIS , Mobile Meter , Spectral Data , Color Temperature , CRI , Bilirubin , PAR , Scotopic , Luminous Color , Photometry



## Description

The compact and user-friendly MSC15 spectral light meter is an inexpensive entry-level light-color-spectral measurement solution for any type of conventional and solid-state light source such as LEDs and OLEDs.

## Cost Effective Measurement of Lighting Conditions

The hand-held MSC15 spectral light meter is designed for quick and easy light intensity and color evaluation of all types of light sources. As a spectral light meter it is ideally suited for new technology SSL light sources such as LEDs and OLEDs. Spectral measurement capability is necessary for accurate solid state lighting analysis. In addition to illuminance and color coordinates the MSC15 also determines color rendering indices, tristimulus values, color temperature and light spectrum.

## Measurement of Effective Photosynthesis Lighting

In order to evaluate the effectiveness of lighting in plant growth, agronomy, greenhouse design and maintenance, Photosynthetically Active Photon Flux Density, PPF or short PFD radiation is measured. PAR is measured in quantum units of  $\mu\text{mol}/(\text{m}^2\text{s})$  from 400 to 700 nm. The MSC15 spectral measurement method ensures accurate readings regardless of light source type (natural or artificial).

## Measurement of Effective Blue Light Irradiation in Neonatal Jaundice Treatment

Newborn jaundice or neonatal hyperbilirubinaemia, a yellowish appearance of the skin and whites of the eyes, can be treated by application of phototherapeutic blue light irradiation of ideally 459 nm (practice: 450-475 nm). In order to minimize the side effects of phototherapy and ensure proper dosimetry, Bilirubin effective irradiance can be measured and adjusted with the MSC15 spectral light meter.

## Main Applications

- Commercial and residential lighting design, inspection, repair and maintenance of lighting systems
- Light efficiency planning and implementation through the use of photopic and scotopic luminous efficiency
- Lighting comfort design and review by taking into account the color temperature and color rendering indices
- Assessing and monitoring task lighting compliance with government regulations in the workplace
- Comparison of light sources with different spectral distribution such as sunlight, fluorescent lamps, LEDs & OLEDs
- Display lighting in restaurants, museums, retail, studios and theaters
- Lighting design, installation, inspection and repair in greenhouses and in the field
- Measurement of bilirubin effective blue light irradiation for the treatment of neonatal jaundice

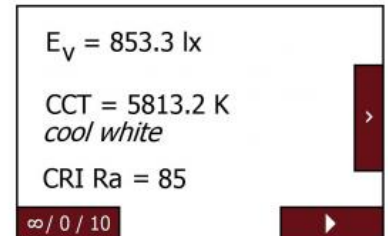
## Main Features



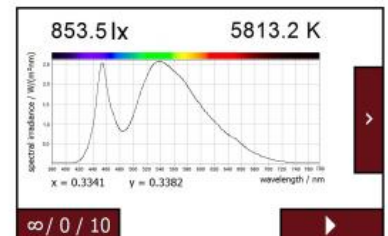
*Simple intuitive operation.*



*Touchscreen for intuitive handling of the meter*

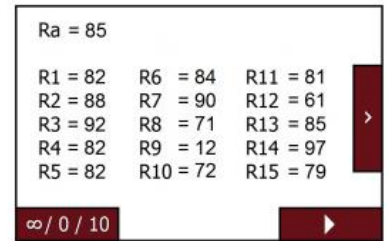


*Display of photopic lux, CCT and CRI Ra*

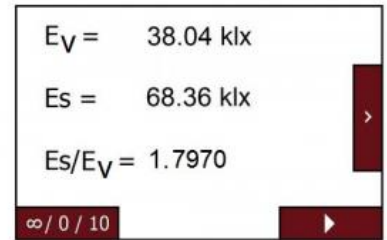


*Display of the spectral power distribution, photopic lux and CCT*

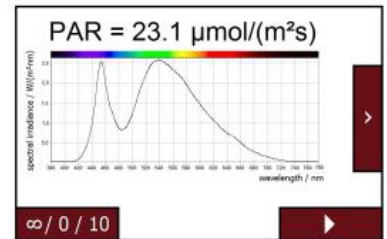
- Inexpensive
- Compact, light-weight, battery powered and rechargeable
- Simple intuitive operation via color touch screen
- Cosine field of view
- Simple dark current calibration without detector cap
- Spectral measurement method
- Photopic and scotopic illuminance and S/P ratio
- Color temperature with display of color sensation
- Color rendering indices
- Effective PAR irradiance
- USB interface
- User software



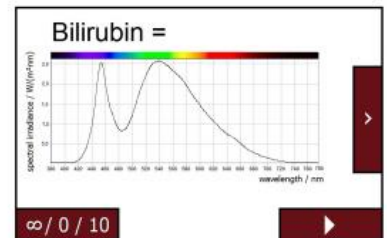
Display of the CRI's



Display of photopic and scotopic lux and their ratio.



Display of PAR and the spectral power distribution



Display of Bilirubin and the spectral power distribution

## Specifications

**General**

MSC15  
Handheld meter for illuminance and light color. Color-Touchscreen, simple intuitive Operation with clearly arranged display views.  
(Class B according to DIN 5032-7 or AA according to JIS C 1609-1:2006)

Measurement Quantities  
Illuminance photopic  
Illuminance scotopic  
Spectral Irradiance  
Color coordinates (x,y)  
CCT  
CRI (color rendering index)  
PAR  
Bilirubin

Entrance Optic  
Diffuser window with 10mm diameter, cosine corrected field of view,  $f2 \leq 3 \%$

**Spectral Detector**

Wavelength Range  
(360 - 830) nm

Optical Bandwidth  
10 nm  
optical bandwidth correction will be applied according to CIE 214

Measurement Range  
(1 - 350000) lx

$\Delta x, \Delta y$  reproducibility  
+/- 0.0002

$\Delta x, \Delta y$  uncertainty  
+/- 0.002 (Standard illuminant A)

CCT Measurement range  
(1700 - 17000) K

$\Delta$ CCT  
+/- 50K (standard illuminant type A)  
+/- 4% (depending on the LED spectrum)

**Calibration**

Calibration uncertainty  
Illuminance (standard illuminant A) +/- 3%  
Illuminance (typ. LED) +/- 4%  
*(Traceable to national standard. Uncertainty of the standard is included)*

**Miscellaneous**

Interface  
USB 2.0

Temperature Range  
Operation: 10°C bis +30°C  
Storage: -10°C to +50°C

Power  
rechargeable battery  
minimum 8h of operation

Charging voltage  
5VDC by USB

Display	Color Touchscreen
Weight	160 g
Dimensions	136 mm x 74 mm x 32 mm

## Purchasing informations

Article-Nr	Modell	Description
<b>Product</b>		
15298960	MSC15	MSC15 measurement device, USB cable, User Software CD