

RCH-113

<https://www.gigahertz-optik.de/en-us/product/RCH-16>

Product tags: UV



Description

In UV curing applications for surface and deep curing, radiation in the UV and visible spectral range is used to excite the photoinitiators. UV radiometers for applications in which LED technology is used for irradiation must be designed in such a way that the irradiance is measured within the spectral range emitted by the LED.

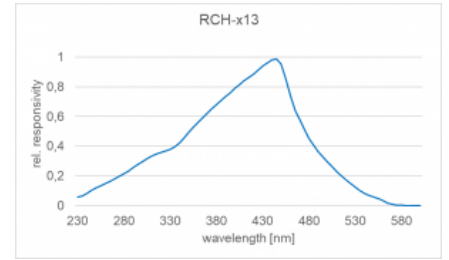
Product description

RCH-113 irradiance detector

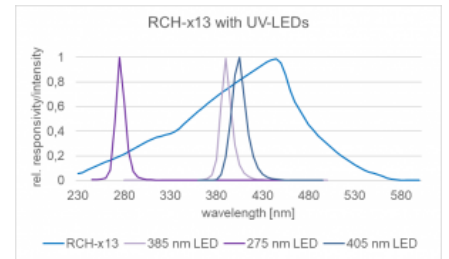
The RCH-113 UV detector was specially developed for use in UV curing with UV LEDs. They offer all the features and functions of the RCH series detectors (link to RCH-xxx series data sheet). Their spectral responsivity covers the wide wavelength range from 250 to 550 nm and thus applications for surface and deep curing.

Calibration

The detectors offer an integral calibration. Optional available is a spectral calibration in 5 nm steps with regard to their spectral irradiance responsivity. They are supplied with a factory calibration certificate that corresponds to the high standard of the measuring laboratory for optical radiation measurements of Gigahertz-Optik. If necessary, a test certificate accredited according to DIN EN ISO / IEC 17025 can optionally be created for the detector with the associated measuring device.



Typical spectral responsivity (relative) of the RCH-x13 detectors



Relative spectral sensitivity of the RCH-x13 detectors together with some typical UV LED emission spectra



RCH-113 detector with rigid light guide

Specifications

General

Short description

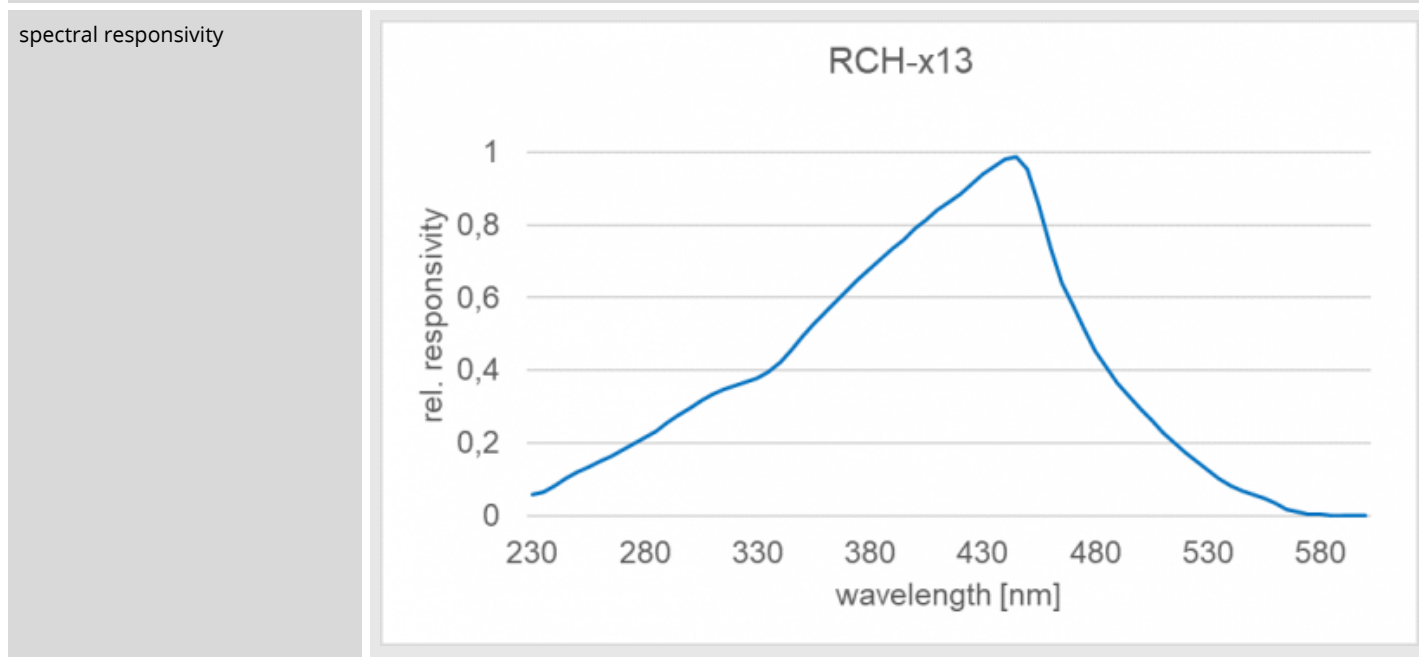
UV detector for measuring the irradiance in UV curing with UV LEDs
[Link to RCH-xxx series datasheet](#)

Main features

Detector for the high UV radiation levels in UV radiation curing. Large safety distance between the handle and the radiation sensor of the detector. For use with all gigahertz optics measuring devices.
 Link Optometer selection table

| | |
|--------------------|--|
| Measurement ranges | Spectral responsivity 240 nm to 550 nm. Linear measuring range from 0.1 mW / cm ² to 40,000 mW / cm ² with measuring device X1-1 |
| Calibration | Calibration of integral irradiance sensitivity. Optional calibration of the spectral irradiance responsivity in A / (W / cm ²) in 5 nm steps. Factory calibration certificate of the measuring laboratory of the Gigahertz-Optik. Optional DIN EN ISO / IEC 17025 accredited test certificate |

Product



| | |
|----------------------|---|
| Input optics | 9 mm, diffuser |
| Dimensions | Measurement head: Height: 8 mm / Diameter: 37 mm Detector element: Length: 65 mm / Diameter: 15 mm |
| Light Guide | Rigid: 22 cm / 8.7 inch |
| typical responsivity | UVA-VIS 305 nm - 485 nm: 0.3 nA/(mW/cm ²) |
| max. Irradiance | 40 W/cm ² |
| Max. signal current | 100 µA |










Measurement Head




| | |
|----------------------|--|
| typical applications | UV radiation curing with medium pressure lamps |
|----------------------|--|

Miscellaneous

| | |
|-------------------|----------------|
| temperature range | up to + 100 °C |
| Cable Length | 50 cm |
| Connector | -1,-2 or -4 |

Configurable with

| Produktname | Product Image | Description | Show product |
|-------------|---|---|---|
| X1 |  | <p>Four-channel USB optometer designed for mobile use.</p> <p>Features: Compact device for use with all photometric, radiometric, colorimetric, plant-physiologic and photo-biologic measurement heads from Gigahertz-Optik. USB interface. Battery operation or power supply USB.</p> | https://www.gigahertz-optik.de/en-us/product/X1 |
| X1-2 |  | <p>Four-channel RS232 optometer designed for mobile use.</p> <p>Features: Compact device for use with all photometric, radiometric, colorimetric, plant-physiologic and photo-biologic measurement heads from Gigahertz-Optik. USB and RS232 interface. Battery operation or power supply USB.</p> | https://www.gigahertz-optik.de/en-us/product/X1-2 |
| P-9710 |  | <p>High-quality device for measurement of CW-, single pulse and modulated radiation.</p> <p>Features: Optometer for all detector heads with calibration data plug. Measurement modes: CW, pulse energy, dose, peak-to-peak, effective luminous intensity (Blondel-Rey), data logger, battery, main power, RS232</p> | https://www.gigahertz-optik.de/en-us/product/P-9710 |
| P-2000 |  | <p>Two-channel optometer.</p> <p>Features: For use with most photometric and radiometric detectors supplied by Gigahertz-Optik. Modes: CW, pulse energy from both single and multiple flashes, effective luminous intensity (Blondel-Rey), data logger and others.</p> | https://www.gigahertz-optik.de/en-us/product/P-2000 |
| P-9801 |  | <p>Eight-channel optometer.</p> <p>Features: State-of-the-art 8 channel laboratory optometer with a signal amplifier and sample & hold ADC per channel for clocked recording of the measurement signals. RS232 and IEEE488 interface. Trigger input and output.</p> | https://www.gigahertz-optik.de/en-us/product/P-9801 |
| P-9802 |  | <p>Light meter for laboratory use with up to 36 measurement heads.</p> <p>Features: For use with up to 36 photometric and/or radiometric measurement heads. RS232 interface.</p> | https://www.gigahertz-optik.de/en-us/product/P-9802 |
| X1-RM |  | <p>Optometer in 3HE housing for use in 19" racks.</p> <p>Features: Its USB and RS232 remote interface and two additional RS232 device interfaces make the device highly flexible when it comes to system integration. Its four signal inputs enable use with all photometric, radiometric, colorimetric, plant-physiologic and photo-biologic measurement heads from Gigahertz-Optik.</p> | https://www.gigahertz-optik.de/en-us/product/X1-RM |
| X1-PCB |  | <p>Optometer module.</p> <p>Feature: The X1 optometer is available as a printed circuit board either with or without a housing and is suited for applications that do not require a keyboard or display. Four signal inputs enable connection with all measuring heads from Gigahertz-Optik.</p> | https://www.gigahertz-optik.de/en-us/product/X1-PCB |
| P-9202-4 |  | <p>Fast response time trans-impedance signal amplifier.</p> <p>Features: High quality analogue amplifier with current-voltage conversion. Minimal diode offset voltage for short circuit operations. Bandwidths of up to 330kHz. 1µs rise time. Large I-U amplification range from 10pA/V to 1mA/V.</p> | https://www.gigahertz-optik.de/en-us/product/P-9202-4 |

| Produktname | Product Image | Description | Show product |
|-------------|---|---|---|
| P-9202-5 |  | <p>Universal trans-impedance signal amplifier.</p> <p>Features: High quality analogue amplifier with current-voltage conversion. Minimal diode offset voltage (1 mV) for short circuit photodiode operations. 5µs to 20ms rise time depending on the amplification. Large I-U amplification range – 1×10⁻¹⁰A/V to 1×10⁻³ A/V.</p> | https://www.gigahertz-optik.de/en-us/product/P-9202-5 |
| P-9202-6 |  | <p>Highly sensitive trans-impedance signal amplifier.</p> <p>Features: High quality analogue amplifier with current-voltage conversion with minimal diode offset voltage (0.5mV) for short circuit photodiode operation of . 2.5s to 25s rise time depending on the amplification. Large I-U amplification range – 1×10⁻¹¹A/V to 1×10⁻⁴ mA/V.</p> | https://www.gigahertz-optik.de/en-us/product/P-9202-6 |
| X1-PCBC |  | <p>Optometer module.</p> <p>Feature: The X1 optometer is available as a printed circuit board either with or without a housing and is suited for applications that do not require a keyboard or display. Four signal inputs enable connection with all measuring heads from Gigahertz-Optik.</p> | https://www.gigahertz-optik.de/en-us/product/X1-PCBC |

Purchasing information

| Article-Nr | Modell | Description |
|-----------------------|-------------|---|
| Product | | |
| 15309117 | RCH-113-1 | Detector with -1 connector and rigid light guide. With integral calibration. |
| - | RCH-113-2 | Detector with -2 connector and rigid light guide |
| 15298006 | RCH-113-4 | Detector with -4 connector and rigid light guide |
| Calibration | | |
| 15308369 | K-RCHn13-SD | Calibration off the spectral irradiance sensitivity in A/(W/m ²) and A/(W/cm ²) of an RCH-n13 detector from 250 to 540nm in 5 nm steps. |
| Re-calibration | | |
| - | K-RCHn13-I | Calibration with Certificate |