

# RCH-116

<https://www.gigahertz-optik.de/en-us/product/RCH-2>

**Product tags: UV , VIS**



# Description

In UV curing applications requiring deep curing of adhesives and lacquers, radiation in the UV-A and blue (visible) spectral range is used to excite the photoinitiators. UV radiometers for applications in which LED technology is used for object irradiation must be designed and calibrated in such a way to ensure that the irradiance is correctly measured for the spectral emission range of the LED.

---

## Product description

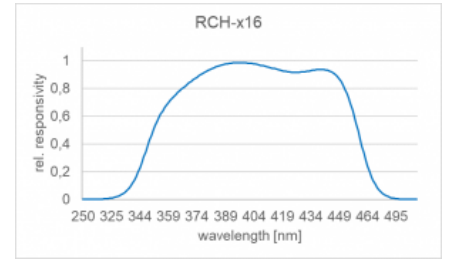
RCH-116 irradiance detector

The RCH-116 UV detector was specially developed for use in UV radiation curing with UV-A LEDs. It offers all the features and functions of the [RCH series detectors](#). Its spectral responsivity covers the wavelength range from 360 to 450 nm and thus applications for deep curing of adhesives and lacquers.

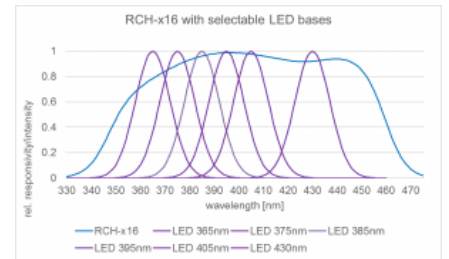
---

## Calibration

The detector is calibrated for 6 typical UV LED wavelengths in terms of its spectral irradiance responsivity and is supplied with a factory calibration certificate that corresponds to the high standard of the measurement laboratory for optical radiation measurement quantities 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 sensitivity (relative) of the RCH-116 detector



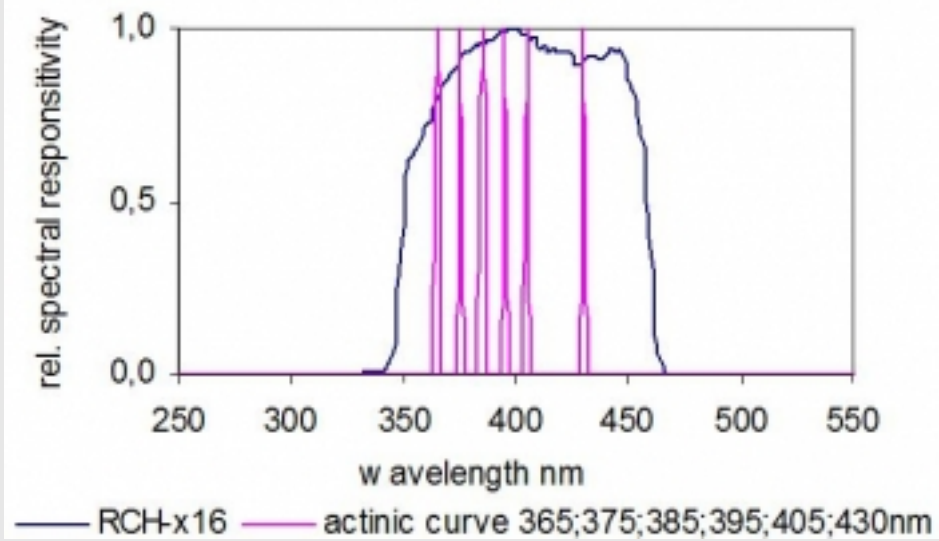
Relative spectral sensitivity of the RCH-116 detector together with typical UV LED emission spectra




RCH-116 detector with rigid light guide

# Specifications



General	
Short description	UV detector for measuring the irradiance in UV curing with UV LEDs <a href="#">Link to RCH-xxx series datasheet</a>
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 360 nm to 450 nm. Linear measuring range from 0.1 mW / cm <sup>2</sup> to 40,000 mW / cm <sup>2</sup> with measuring device X1-1

typical applications	UV radiation curing with medium pressure lamps
Calibration	Calibration of the spectral irradiance responsivity in A / (W / cm <sup>2</sup> ) for 6 typical UV HLEDs wavelength. Factory calibration certificate of the measuring laboratory of the Gigahertz-Optik. Optional DIN EN ISO / IEC 17025 accredited test certificate
<b>Product</b>	
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, Length 22c m / 8.7 inch
spectral responsivity	 <p>— RCH-x16 — actinic curve 365;375;385;395;405;430nm</p>
max. Irradiance	40 W/cm <sup>2</sup>
Max. signal current	100 µA
<b>Miscellaneous</b>	
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>	<a href="https://www.gigahertz-optik.de/en-us/product/X1">https://www.gigahertz-optik.de/en-us/product/X1</a>

Produktname	Product Image	Description	Show product
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>	<a href="https://www.gigahertz-optik.de/en-us/product/X1-2">https://www.gigahertz-optik.de/en-us/product/X1-2</a>
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>	<a href="https://www.gigahertz-optik.de/en-us/product/P-9710">https://www.gigahertz-optik.de/en-us/product/P-9710</a>
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>	<a href="https://www.gigahertz-optik.de/en-us/product/P-2000">https://www.gigahertz-optik.de/en-us/product/P-2000</a>
P-9801		<p>Eight-channel optometer.</p> <p>Features: State-of-the-art 8 channel laboratory optometer with a signal amplifier and sample &amp; hold ADC per channel for clocked recording of the measurement signals. RS232 and IEEE488 interface. Trigger input and output.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/P-9801">https://www.gigahertz-optik.de/en-us/product/P-9801</a>
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>	<a href="https://www.gigahertz-optik.de/en-us/product/P-9802">https://www.gigahertz-optik.de/en-us/product/P-9802</a>
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>	<a href="https://www.gigahertz-optik.de/en-us/product/X1-RM">https://www.gigahertz-optik.de/en-us/product/X1-RM</a>
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>	<a href="https://www.gigahertz-optik.de/en-us/product/X1-PCB">https://www.gigahertz-optik.de/en-us/product/X1-PCB</a>
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>	<a href="https://www.gigahertz-optik.de/en-us/product/P-9202-4">https://www.gigahertz-optik.de/en-us/product/P-9202-4</a>
P-9202-5		<p>Universal trans-impedance signal amplifier.</p> <p>Features: High quality analogue amplifier with current-voltage conversion. Minimal diode offset voltage (1mV) for short circuit photodiode operations. 5µs to 20ms rise time depending on the amplification. Large I-U amplification range – 1×10<sup>-10</sup>A/V to 1×10<sup>-3</sup>A/V.</p>	<a href="https://www.gigahertz-optik.de/en-us/product/P-9202-5">https://www.gigahertz-optik.de/en-us/product/P-9202-5</a>

Produktname	Product Image	Description	Show product
P-9202-6		Highly sensitive trans-impedance signal amplifier. 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.	<a href="https://www.gigahertz-optik.de/en-us/product/P-9202-6">https://www.gigahertz-optik.de/en-us/product/P-9202-6</a>
X1-PCBC		Optometer module. 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.	<a href="https://www.gigahertz-optik.de/en-us/product/X1-PCBC">https://www.gigahertz-optik.de/en-us/product/X1-PCBC</a>

## Purchasing information

Article-Nr	Modell	Description
<b>Product</b>		
-	RCH-116-1	Detector with -1 connector and rigid light guide
15298855	RCH-116-2	Detector with -2 connector and rigid light guide
15297984	RCH-116-4	Detector with -4 connector and rigid light guide
<b>Re-calibration</b>		
15300571	K-UV-SR	Calibration of relative spectral responsivity from 250 nm - 550 nm
15300468	K-RCHn16-S	Calibration