

RCH-113

<https://www.gigahertz-optik.com/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.

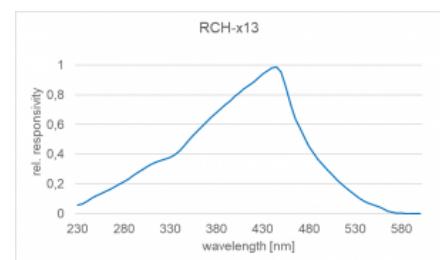
Product description

RCH-113 irradiance detector

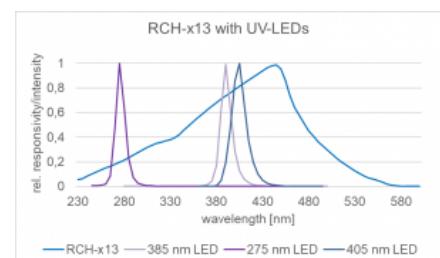
The RCH-113 UV detector was specially developed for use in UV curing with UV LEDs. They offer all the features and functions of the RCH series detectors (link to RCH-xxx series data sheet). Their spectral responsivity covers the wide wavelength range from 250 to 550 nm and thus applications for surface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

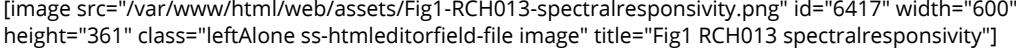
General

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
Measurement Head	
typical applications	UV radiation curing with medium pressure lamps
Product	
spectral responsivity	 [image src="/var/www/html/web/assets/Fig1-RCH013-spectralresponsivity.png" id="6417" width="600" height="361" class="leftAlone ss-htmleditorfield-file image" title="Fig1 RCH013 spectralresponsivity"]
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	365 nm LED: 0.5 nA/(mW/cm ²) 405 nm LED: 2.6 nA/(mW/cm ²) 460 nm LED: 3.0 nA/(mW/cm ²)
max. Irradiance	40 W/cm ²
Max. signal current	100 µA
Miscellaneous	
temperature range	up to + 100 °C (short-term)
Cable Length	50 cm
Connector	-1,-2 or -4
Humidity	<80%, non-condensing
Info	If a different light source needs to be measured than calibrated (spectral distribution), spectral mismatch correction factors should be applied in order to achieve a low measurement uncertainty. At very high humidity fault-currents of the radiometer at low measurement currents are possible and need to be considered. At higher temperature a temperature correction of the detector signal might be necessary in order to achieve a low measurement uncertainty.

Purchasing information

Article-Nr	Modell	Description
Product		
15309117	RCH-113-1	Detector with -1 connector and rigid light guide. With integral calibration.

Article-Nr	Modell	Description
-	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