UV Dosimeter & Radiometer curelog

curelog

Simple, precise. The curelog is a precise radiometer with dose measurement and up to four spectral ranges. Due to its fast and precise measurements the curelog can universally be used for applications in the fields of lacquer curing, bonding, sterilization, disinfection, lithography and many other applications.

The adjustable data recording rate of up to 2000 Hz (measurements per second) allows reliable measurements on fast running UV belt systems.

The recording time of up to 180 h allows the measurement of long-lasting processes at low doses, like UV disinfection. The curelog simultaneously records up to four spectral ranges, each with a high-precision 24 bit ADC. The high-precision ADC gives the curelog a extrem high dynamic range. The resolution of 0.0001 mW/cm² and a measurement range of 50 W/cm² are the main features of the curelog.

All common UV lamps and UV-LEDs can be measured and compared, no matter if spot or area lamps, fibre optics or UV/VIS LEDs are used. The display directly shows maximum irradiance and dose.

A further application is the adjustment and focusing of the reflector in UV systems. Due to its small dimensions the curelog can be placed on most objects / surfaces and records the irradiance with pinpoint accuracy.
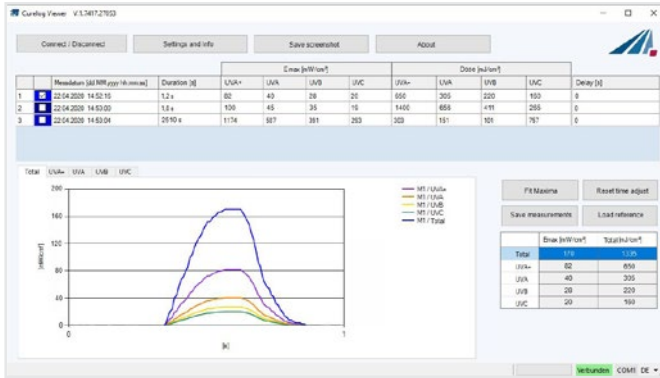
With the curelog software measurements can be analyzed, exported and compared. Previously stored reference measurements can be read in and superimposed in a time-synchronous manner. So, changes in the irradiation belt profile, i.e. irradiance over time, are visible. Errors that occur over time, such as dirty reflectors, are reliably and easily detected.

With the curelog DOCK we offer a base station for PLC connection. The peak irradiance and dose are transmitted directly to the PLC. If these are in tolerance, the measurement can be deleted and if not, the measurement can be evaluated with the PC software.

The curelog spectral ranges do not overlap, so crosstalk is not possible. Regardless of whether you use low powered UVC disinfection lamps, high intensity mercury / xenon lamps or LEDs for bonding or medium pressure lamps for UV curing, with the curelog you always measure accurately and reproducibly.

SOFTWARE

On the PC, measurements can be displayed, evaluated, compared and exported. By time synconization and comparing the measured data, changes in irradiance can simply be seen. The date and time of each measurement are saved.
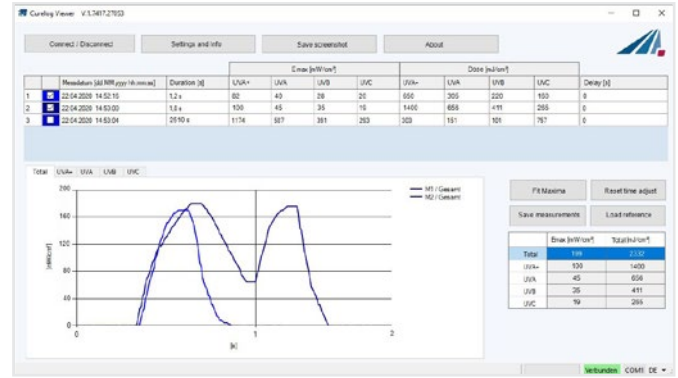
Settinges:

- Data storage rate & trigger threshold
- Measuring time from approx. 5 s to 180 hours

Data export:

- Measurements with irradiance profile & dose
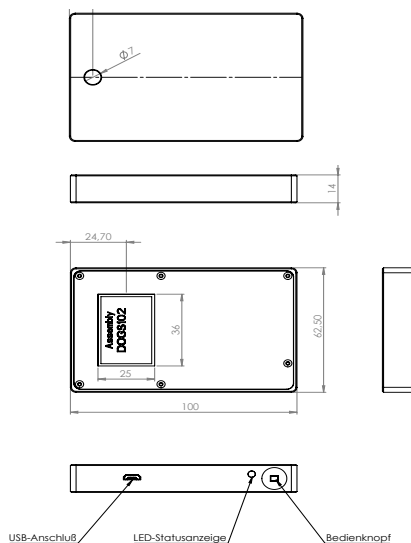- Measurement parameters, date/time, duration

Software Curelog Viewer

Software: Irradiance comparison of two measurements

PART NUMBERS

curelog PRO	680004
curelog LED	680002
curelog ONE UVC	680001C
curelog ONE UVB	680001B
curelog ONE UVA	680002A
curelog ONE UVBB	680001BB
curelog ONE LUX	680001L
curelog DOCK	680005
ISO 17025 Calibration	17025

SCOPE OF DELIVERY

curelog, USB cable, power supply, manufacturers' calibration certificate, manual, carrying case, PC software for any number of workstations

For best results, our ISO 17025 accredited calibration laboratory is also at your disposal. Therefore we deliver curelogs either with factory or ISO 17025 calibrations.

DIMENSIONS

CURELOG HIGHLIGHTS

- Multi-channel radiometer with dose measurement
- Cordless and battery operated
- 24 bit precision ADC
- Low height of only 14 mm
- Up to 180 h recording time
- Up to 2000 Hz data storage rate
- Software for measurement comparisons
- Docking station for PLC integration (RS485 & RS232)

TECHNICAL DATA

Irradiance meas. range	0,0001 - 25000 mW/cm²
Dose range	0,0001 mJ/cm² - 6 MJ/cm²
Resolution	0,0001 mWcm² / mJ/cm²
Calibration	traceable to PTB / NIST
	optional ISO 17025
Sampling rate	1 Hz to 2000 Hz, adjustable
Recording time	180 h to 5 min, depending
	on the time resolution
Memory	64 MBit
AD conversion	24 bit precision ADC
Display	graphical, 128 x 64 px
Dimensions	62,5 x 100 x 14 mm³
Sensor position	backside
Weight	~125 g
Cosine correction	yes
Operation temperature	70 °C
	briefly for up to 60s at
	120°C ambient temperature
Power supply	internal Li-Ion battery
Measuring duration	30 h on one battery charge
PC interface	USB
System requirements	Windows 10,
	30 MB HDD, 4 GB RAM

For optimal measurement results, we deliver the curelog in three versions:

The **curelog ONE** is a entry level version that measures one spectral range and is the cheapest version.

The **curelog LED** is adapted for LED measurements at the wavelengths 365 nm, 385 nm, 395 nm, 405 nm and 450 nm. The curelog LED also records UV radiation.

The **curelog PRO** measures UVA, UVB, UVC and VISB according to the international CIE classification.

CURELOG PRO

Spectral ranges	UVA, UVB, UVC & VISB
Application	UV curing

CURELOG LED

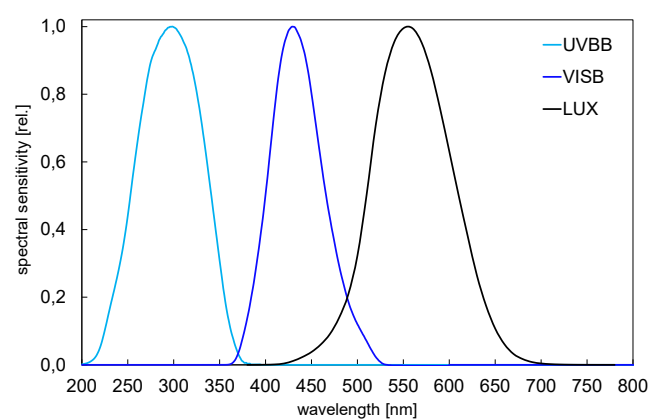|	
Spectral ranges	UVA+ & UVBB
Application	UV glueing

CURELOG ONE

Spectral ranges	UVC, UVB, UVA oder UVBB
Application	e.g. UV disinfection

SPECTRAL RANGES
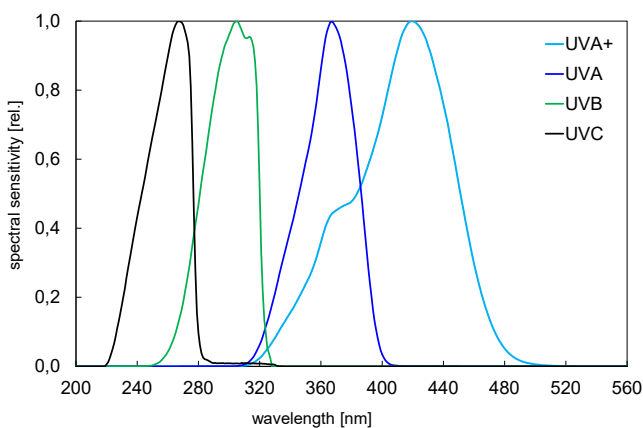
Spectral sensitivity UVA+, UVA, UVB and UVC sensors

UVC	200 - 280 nm
UVB	280 - 315 nm
UVA	315 - 400 nm
UVA+	330 - 450 nm

Spectral sensitivity UVBB, VISB and LUX sensors

UVBB	230 - 400 nm
VISB	400 - 480 nm
LUX	380 - 780 nm, V(λ)

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DIN EN ISO 9001:2015

CURELOG DOCK

curelog DOCK

TECHNICAL DATA

Operating voltage	V_{DC} = 24 V
Current consumption	< 500 mA
Data output	Peak irradiance
	Dose
Spectral ranges	1-4, depending on curelog
Connection	Würth Electronics WR-TBL
	Serie 3633 - 3.81 mm
Communication	RS-485/RS-232, switchable
	USB for FW updates
Mounting type	desktop / wall-mounted unit
Dimensions	120 x 80 x 30 mm
Weight	~ 300 g
Operating temperature	0 to 60 °C
Storage temperature	-10 to 60 °C
Humidity	20-80%, non-condensing
Communication	115200 baud, 8 databit,
	1 Stop bit, no parity
	RS-485: FULL-DUPLEX
Response time, typical	60 ms
Response time, max	200 ms

Measurements can be transferred to the PLC in a simple yet safe way. RS-485 and RS-232 are available for this purpose.

Data evaluation takes place directly in the PLC, so that a request on the HMI for detailed data checking is also possible.

The measured values are protected against transmission errors with a CRC-16 checksum.

Example commands:

- DS_MeasResult?   Request measurement result
- DS_SerialNr?   Request serial number
- DS_Firmware?   Request firmware version
- DS_CalibDate?:   Request calibration date

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RADIOMETER VS. SPECTRAL RADIOMETER

The curelog is a radiometric measuring device. With this measuring principle the irradiance is recorded for each spectral range by filtering and a photodiode. The filters and photodiodes are robust and the measurements are very well reproducible. However, the filtered radiometers cannot detect changes in the spectrum.

Our spectroradiometer like the UVpad are suitable for this purpose. In the UVpad, the light is spectrally decomposed and measured with 512 photodiodes. Due to the high spectral resolution, measurements of all lamps / LEDs are possible without errors. The curelog is subject to an error called „spectral mismatch". Please contact us to discuss the calibration of the curelog. The curelogs have the advantage of a larger dynamic range and measure faster.

The comparison should help you to choose the right measuring device.

UVPAD VS. CURELOG COMPARISON

	UVpad	curelog
Measurements of different lamps	ideal	possible
Number of photodiodes	512	up to 4
Irradiance measurement E	✓	✓
at medium irradiation levels (2 - 5,000 mW/cm²)	✓	✓
at high irradiance levels (25 - 35,000 mW/cm²)	with HP option	✓
at low irradiance levels (0.1 - 500 mW/cm²)	with HS option	✓
at lowest irradiation intensities (0.0001 - 2 mW/cm²)	-	✓
Dose measurement D	✓	✓
Application on UV conveyor belt systems	E up to 10 m/min	up to 100 m/min
	D up to 100 m/min	
Recording duration	8 min to 5 s	180 h to 5 min
Data storage rate	100 Hz to 0,1 Hz	2000 Hz to 1 Hz
Reproducibility	~ 3%	~ 1%
Uncertainty of calibration, typical	5,0% - 9,5%	4,5% - 7%
Dimensions	160 x 100 x 14,4 mm³	62,5 x 100 x 14 mm³
Power supply	3 x CR2032	Li-Ion-Akku
Remote control from PC	✓	✓
Software for data display & analysis	✓	✓
Software for time synchronization of the measured data	✓	-
Firmware upgrades	during recalibration	simply by software