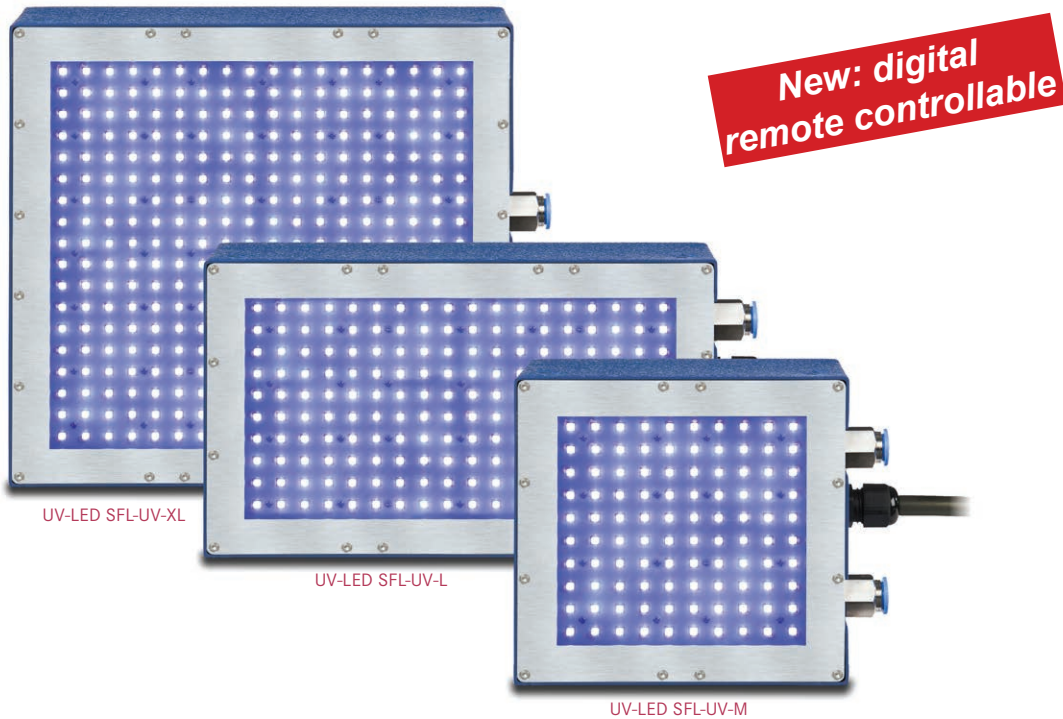


Uniform surface Led series SFL-UV



High UV irradiance combined with a uniform irradiated area is the key feature of the surface LED series SFL-UV. The SFL-UV modules are water-cooled high-power UV LED sources with an intelligent LED driver. The absence of ineffective infrared radiation reduces the heat compared to conventional UV lamps.

Three standard sizes are available with light-emitting areas of 100 x 100 mm to 200 x 200 mm. Customized sizes are available on request.

Independent of size, we offer two versions. The HO versions reach high irradiance of up to 8000 mW/cm², while the ECO versions still offer up to 2000 mW/cm². Both irradiances are measured at a distance of 10 mm to the emitting window.

The high irradiance allows extremely short processing times. Wavelengths of 365, 385, 395, 405, and 450 nm are available for many different applications.

With the multi-channel LEDControl 5S, up to 5 UV LEDs can be controlled individually. The LEDControl is cascable and can be configured as master or slave.



Surface LED SFL-UV-M with control unit LEDControl

Remote control can be done via RS485, USB or RS232 for each channel and enables the use in industrial production. Other digital and analog inputs are also available as an option.

A timer for the irradiation times between 0.01 s and 9999 s is already integrated. Optionally you can choose between continuous or triggered operation.

The large-area UV LED light source operates reliably with internal and external control.

TECHNICAL DATA LED MODULS

Wavelength	450, 405, 395, 385, 365 nm
Irradiance 450 nm	8000 / 2000 mW/cm ²
Irradiance 405 nm	5000 / 1400 mW/cm ²
Irradiance 395 nm	5000 / 1400 mW/cm ²
Irradiance 385 nm	5000 / 1400 mW/cm ²
Irradiance 365 nm	4000 / 1000 mW/cm ²
Emission, peak tolerance	+/- 5 nm
Emission, FWHM	10 - 20 nm
Uniformity	>90%, typical in a distance of 10 mm with 5% std. deviation
Cooling water temperature	min 18 °C, non-condensing max 40°C
Cooling water pressure	< 4 bar
Operating temperature	5 to 40 °C
Storage temperature	-10 to 60 °C
Humidity	< 80%, non-condensing
Internal security circuit	Over-temperature
Optical feedback, opt.	internal and external sensor
Cable length	3 m, up to 10 m (opt.)
Classification	risk group 3 according DIN EN 62471:2009-03

TECHNICAL DATA SFL-UV-M

Emitting area, SFL-UV-S	100 x 100 mm
Dimensions	135 x 135 x 75 mm
Power HO version	2000 W
Power ECO version	500 W
Cooling water flow	typical 5 to 1 l/min

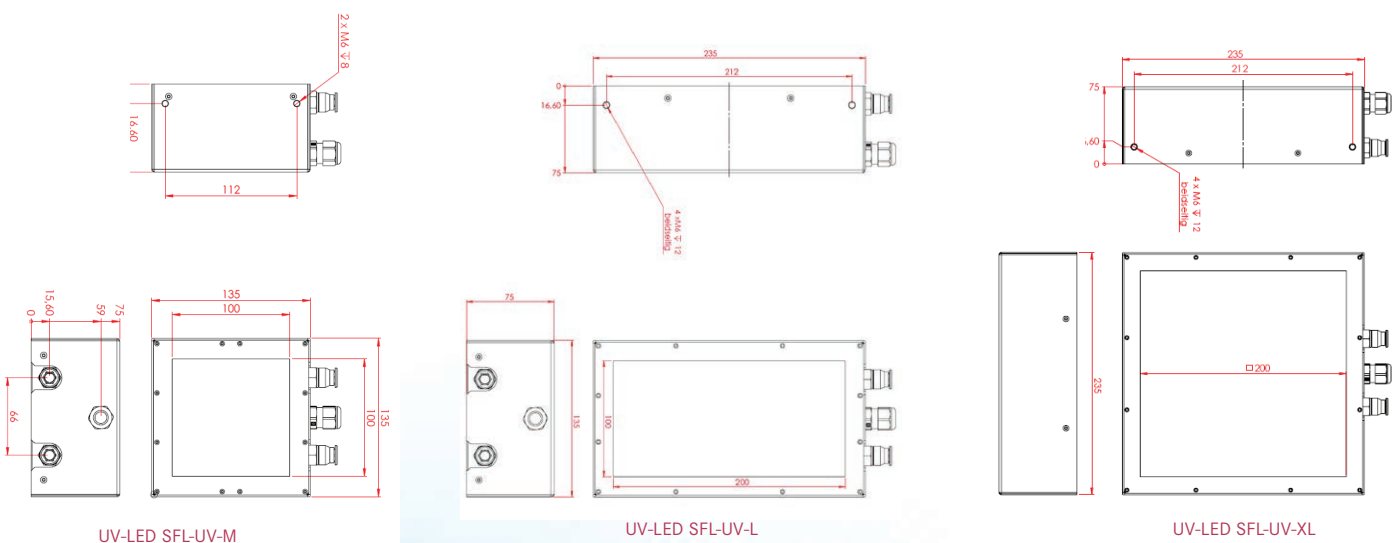
TECHNICAL DATA SFL-UV-L

Emitting area, SFL-UV-S	200 x 100 mm
Dimensions	235 x 135 x 75 mm
Power HO version	3800 W
Power ECO version	1000 W
Cooling water flow	typical 12 to 2,5 l/min

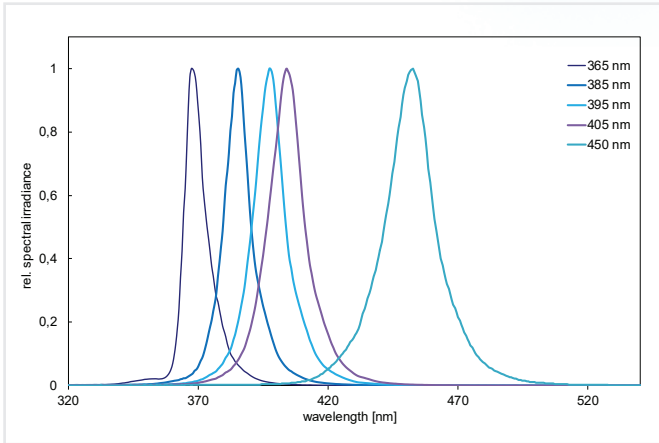
TECHNICAL DATA SFL-UV-XL

Emitting area, SFL-UV-S	200 x 200 mm
Dimensions	235 x 235 x 75 mm
Power HO version	7700 W
Power ECO version	1900 W
Cooling water flow	typical 25 to 5 l/min

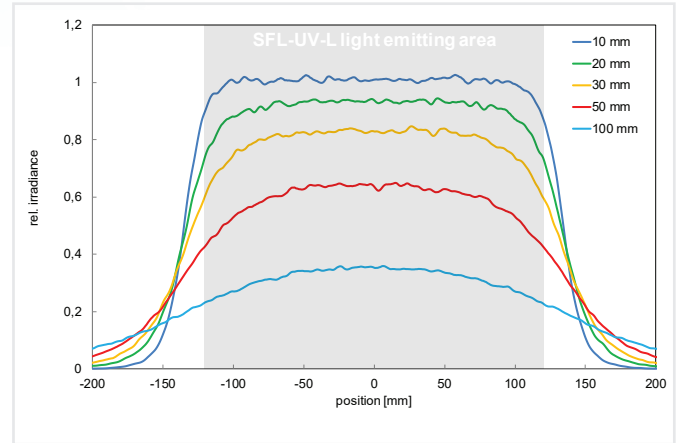
DIMENSIONS



SPECTRA AND UNIFORMITY



Typical UV-LED spectra

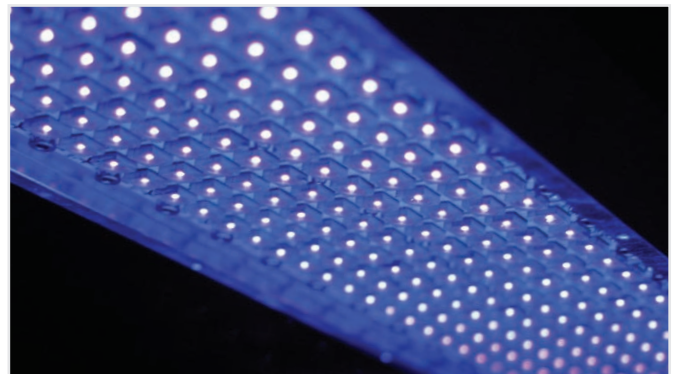


Uniformity vs. distance along X axis for SFL-UV-M

TECHNICAL DATA LEDCONTROL

Number of UVLED-Spots	1 (LedControl)
	5 (LedControl 5S-500W)
Functions	2 to 100%, each spot separate timer, continuous operation Master /slave mode
Display	graphical, 128 x 64 px
Connections	Interlock
Interface option	dimming in (0-10V), common Trigger (IN/OUT), common
Terminals, Interface option	Galvanically isolated
Signals, Interface option	24 V, 5 mA max
Programming, optional	RS485, RS232 or USB
Dimensions	305 x 358 x 145 mm
Cooling	Aircooling
Operating temperature	5 to 40 °C
Storage temperature	-10 to 60 °C
Humidity	< 80%, non-condensing

Power (el.)	dep. on type, 500 W - 6500 W
	100 - 500 W LedControl 5S
Mains < 2500 W	100 - 240 V, 50/60 Hz
Mains > 2500 W	3 x 340-550 VAC, 50/60 Hz
Internal security circuit	Over-temperature, LED N.C.



Surface LED SFL-UV-L ECO with 385 nm

APPLICATIONS

- Industrial UV curing and bonding
- IC Encapsulation
- UV sealing
- Hairline / leak detection using fluorescence markers
- Fluorescence Spectroscopy
- Surface Inspection



Uniformity in large distance

REMOTE OPERATION

The LEDControl can be controlled via the rear programming interface (USB, RS485 or RS232). Communication takes place as ASCII communication, which is illustrated below using the example of „Switching on“:

- control transmits: LOnOff: 1!
- LedControl answers: LOnOff: 1 (CRC-16)

Each channel can be individually controlled. The LedControl sends only when requested by the controller.

Via the other interface option LED powers can be set together for all channels (0-10V), LEDs on / off (trigger IN 24V) and the status (trigger OUT 24V) can be set and queried.

This option is suitable for simple system integration with common signals and allows cascading of any number of LedControl.

PART NUMBERS

SFL-UV-M ECO xxx nm	860609-M-xxx nm
SFL-UV-M ECO xxx nm	860609-L-xxx nm
SFL-UV-L ECO xxx nm	860609-XL-xxx nm
HO Version (Option)	560609-HO
LEDControl	860609B
LEDControl 5S-500W	860610B5-500W
Wall angle for LEDControl	86060X-WA
Optical feedback option	86060X-OF
Foot switch	860611
Power monitoring option	860609-PM

SCOPE OF DELIVERY

SFL-UV module, LEDcontrol, cable 3 m, manual,

UV sensor & manufacturers certificate of calibration if ordered optical feedback option

Remote example software for instant testing, if ordered with programming option

Please specify wavelength, optics and options.

OPTICAL FEEDBACK

The optical feedback option allows for connecting an external sensor to the SF-UV-LED driver. The irradiance can be measured with our long-term stable UV sensors at the desired position. To monitor and control irradiance, the internal feedback diode can be calibrated to the external sensor. The internal feedback keeps the irradiance constant to minimize LED temperature drift and aging. In combination with the external sensor, pollution can also be controlled. Two alarm levels can be programmed for warning and failure alarms.

Sensors are calibrated with traceability to PTB (Physikalisch Technische Bundesanstalt, the German national test authority); after calibration, they are supplied with a factory calibration certificate.

POWER MONITORING

Optionally, the LED module power can be monitored. Thus, failures can be detected quickly and online.

Radiometer and sensor	821201 / 811045
Interface option (I/O)	860609-CP
Programming interface RS485	860609-RS485 *
Programming interface RS232	860609-RS232 *
Programming interface USB	860609-USB *
Test and control software	860609-SW
Connection cable, 3 m	860609C
Cable, each add m	86060X-m
Cooler M	860607C
Cooler L - XL ECO	860608C
Cooler XL HO	860609C
UV safety goggles	918800

* Includes Interface option (I/O)



UV-LED SFL

SAFETY

The equipment contains LEDs that emit UV-A radiation and blue light. UV radiation is invisible. The light you see is just luminescence caused by the UV. Mostly, luminescence is much weaker than the exciting UV.

UV-A light may lead to cataract formation in the eye lens and to photo-retinitis. Always use proper UV protection goggles when operating the device. The UV-A also causes pigmentation and aging of the skin. Please use proper clothing, gloves, and/or other personal safety equipment depending on exposure. Avoid irradiating skin or eyes directly! UV irradiance in the spot is several hundred times higher than that of sunlight!

This device is classified to risk group 3 (High Risk) according to DIN EN 62471:2009-03 "Photobiological safety of lamps and lamp systems."

For protection, the operating staff should not look into the LED and should not expose their skin continuously to UV/VIS radiation.

We will gladly assist you with UV job security and risk assessment according to EN 14255:2005.

