

UV-LED chamber BSL-03



The UV LED chamber BSL-03 is the second largest irradiation chamber in the BSL series. The high irradiance combined with the exact dose control offers a unique reproducibility for perfect results!

Due to the irradiance of up to 220 mW/cm², it is possible to use the most common UV curing adhesives or lacquers. For high irradiances, the UV LED chamber can be ordered completely with one LED wavelength. A particularly flexible application is possible when two separately controllable LED wavelengths are ordered.

Compared with our irradiation chambers of the BS series, the BSL-03 offers an irradiance that is 22 times as high. The high irradiance allows for extremely short exposure times. With the high homogeneity of the irradiation, the samples can also be positioned as needed.

Due to the typical characteristics for UV LEDs, such as "immediate start", the dimmability and the high durability, the BSL-03 is ideally suited for medium-sized laboratory tests and curing of large components.

The integrated timer already controls the irradiation in an exact way.

For even better results, we recommend one of our calibrated UVA+ sensors. The dose control is already integrated in the UV-MAT Touch and UV-MAT control units in the BSL-03 UV LED chamber. By means of an optional sensor, the UV-MAT measures the irradiance continuously, and stops the irradiance at the set target dose.

The wavelengths 365 nm, 385 nm, 395 nm, 405 nm and 450 nm are available for your application.

We offer the BSL-03 in two versions:

0 up to 220 mW/cm² (Version HO)

0 up to 110 mW/cm² (Version ECO)

Due to the little heat input of the UV LEDs and a sample room temperature of ca. 40 °C, thermal damage is minimized.

The irradiation chamber has a base area of 64 x 49 cm and a height of 25 cm. Parts to be bonded or cured can be placed conveniently and safely on the movable sample carrier.

Thanks to the fully enclosed and monitored irradiation chamber, operating personnel are fully protected from UV radiation during handling.

NOTES

The typical irradiances in an interior height of 30 mm are indicated. The irradiance can be increased by the short distance to the light source.

The information corresponds to a complete fitting with LEDs of 365, 385, 395, 405 or 450 nm. In case of two wavelengths, the irradiation chamber is equipped with one LED type per half.

SPECIFICATIONS UV-LEDS

Wavelength	365, 385, 395, 405, 450 nm
Emission, peak tolerance	+/- 5 nm
Emission, FWHM	10 - 20 nm

IRRADIANCE HO

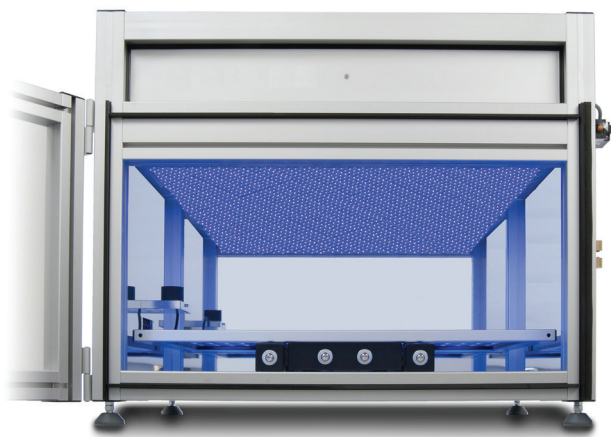
365 nm	120 mW/cm ²
385 nm, 395 nm, 405 nm	200 mW/cm ²
450 nm	220 mW/cm ²

IRRADIANCE ECO

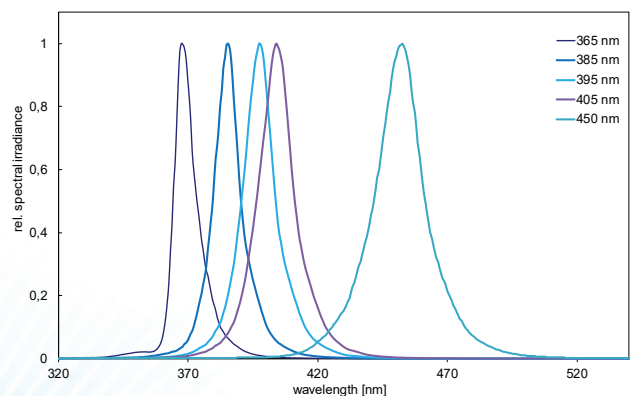
365 nm	60 mW/cm ²
385 nm, 395 nm, 405 nm	100 mW/cm ²
450 nm	110 mW/cm ²

TECHNICAL DATA BSL-03

Interior chamber	68 x 51 x 31 cm
Sliding sample carrier	64 x 49 cm
Dimensions, chamber	77 x 64 x 68 cm
Weight	~ 70 kg
Power consumption	1000 - 2000 W
Mains	100 - 240 V, 50/60 Hz
Operation temperature	10 to 40 °C
Storage temperature	-10 to 60 °C
Humidity	< 80% non-condensing
Cooling	air cooling
Sample temperature	~40 °C +/- 10 °C. Additional heating up by high UV irradiance
Classification	group 0 according DIN EN 12198:2000
PC interface	USB 2.0
Timer	0,01 s to 9999 h
Resolution	0,01 s
Dose control	with optional sensor
Internal security circuit	Over-temperature, door contact



BSL-03 (Illustration similarly)



Typical UV-LED spectra

INCLUDED ACCESSORIES

The irradiation chamber is modular expandable and thus optimal for different applications.

The following functions are always included:

DOSE CONTROLLER



The irradiation controller UV-MAT continuously measures the irradiance and stops the irradiation at the set target dose.



The dose control UV-MAT Touch offers alternatively all functions of the UV-MAT, but simplifies the operation and documentation of the irradiations.

TECHNICAL DATA UV-MAT TOUCH

Display	Capacitive touch display
	5" WVGA
Display output	Irradiance + dose
	Oscilloscope view
Data recording rate	adjustable: 1 s - 1 h
Recording duration	> 24000 h
Memory interface	1 USB flash drive (up to 32 GB)

TECHNICAL DATA UV-MAT

Display	graphical, 128 x 64 px
	monochrom
Display output	Irradiance + dose
	-
Data export	via USB
Recording duration	-

UV-MAT TOUCH

The UV-MAT Touch user interface is a high-resolution capacitive touchscreen. A powerful Cortex ARM processor ensures durability and updateability. This means that new functions can be installed directly on site. The UV-MAT Touch and the PC software are Windows 10 compatible.

Numerical and graphical single and multi-channel irradiations, oscillograms and the settings are clearly displayed. The parameterization is done intuitively directly on the UV-MAT Touch and is password protected.



TIMER



Alternative to the dose control, we offer a settable timer. This timer is suitable for a simple irradiation between 0,01 s and 9999 h. Timer is included in the standard system.

IRRADIATION LOGS

The irradiations can be recorded with a PC.

The UV-MAT Touch also records irradiations on a USB flash drive without a PC.

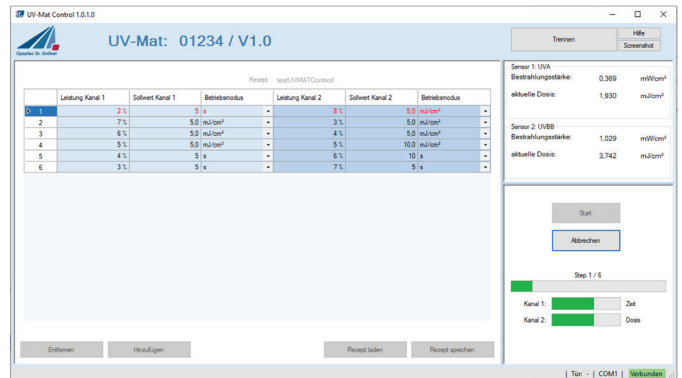
COMMON TECHNICAL DATA UV-MAT

Sensor connectors	24 bit, fully digital	PC interface	USB 2.0
Number of sensors	1	Sensor identification	yes
Dose range	0 - 1.000.000 J/cm ²	Dimensions	185 mm x 251 mm x 100 mm
Dose resolution	1 mJ/cm ²	Operation temperature	5 - 60 °C
Timer	0,01 s to 9999 h		

PC SOFTWARE FOR UV-MAT TOUCH

Complex, multi-stage irradiations, e.g. a pre-irradiation with UV-A at low irradiance and then a high-intensity UV-C irradiation can be easily and individually parameterized with the remote control option. Up to 30 dose- or time-controlled steps and pauses are possible.

At the same time the irradiation is logged and stored on the PC.



FEATURES IN DETAIL

Did you know? The UV-MAT and the UV-MAT Touch use the same sensors. Therefore, these can be used on both devices.

The differences are:



UV-MAT Touch



UV-MAT

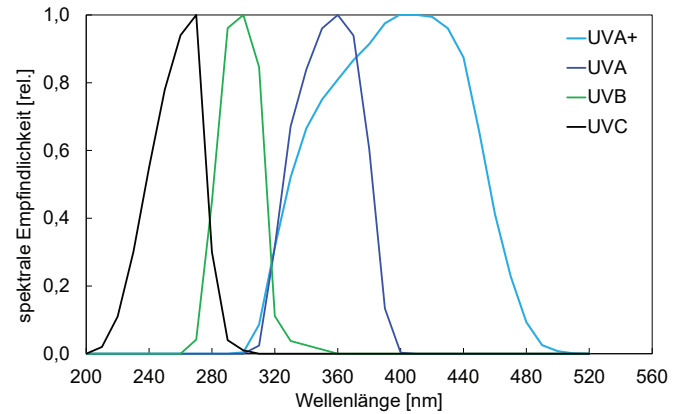
	UV-MAT Touch	UV-MAT
Display	Capacitive touch display	monochrom, 128 x 64 px
Memory	USB flash drive	-
Number of channels	2	2
Irradiance, dose and temperature measurement	✓	✓
Time and dose controlled irradiations	✓	✓
Recordings of measurements	✓	-
Oscilloscope view	✓	-
Screenshots can be saved on USB flash drive	✓	-
Pause and restart of irradiations	✓	-
Add notes and comments to the irradiation	✓	-
Remote control from PC	✓	-
Irradiation logs	USB flash drive	PC
User control & admin mode	✓	-
Easy firmware upgrades	✓	✓

TECHNICAL DATA SENSORS

The calibrated radiometer sensors are available for any LED wavelength. The integrated diffuser ensures the required cosine correction. Excellent long-term stability is achieved through the use of appropriate materials. The sensors are calibrated with traceability to PTB (the

German national test authority); after being calibrated, they are supplied with a factory calibration certificate. Opsytec Dr. Gröbel GmbH has an accredited calibration laboratory. As an option, calibration according to ISO 17025 with DAkkS calibration certificate is possible.

Sensor type	UVA+
Spectral range	330 - 455 nm
Measuring range, typ.	0 - 10 W/cm ²
Resolution	1 µW/cm ²
Dose measuring range	0 - 100 MJ/cm ²
Dynamic range	up to zu 10 ⁷
AD conversion	24 bit
Temperature sensor	integrated
Dimensions	Ø 40 mm, h 35 mm
Optical surface	Ø 6 mm
Weight	160 g
Connection cable	1,8 m
Operating temperature	0 to 40 °C
Storage temperature	-20 to 60 °C
Humidity	<80%, non-condensing



Spectral sensitivity UVA+ sensor

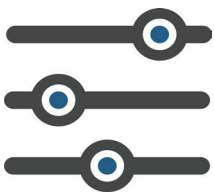
The specified measuring ranges are our recommended measuring ranges. These can be adapted on customer request. Please ask us or specify this when ordering.

ATTACHMENTS & OPTIONS

The irradiance chamber is modular expandable and thus optimal for different applications.

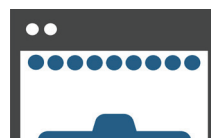
We gladly support you with your individual configuration.

DIMMING & SPECTRAL MATCHING



The LEDs are available for various applications. Optionally, two wavelengths are available so that mixing and switching are possible. The LEDs can be dimmed continuously from 2% to 100%.

INTERTGAS-BOX



Working under inert-conditions is possible with our removeable inert gas boxes.

Separate gas inlets and outlets allow the measurement of O₂ concentration at gas outlet. Available with top window made of high quality glass for UVA / VIS irradiations.

PART NUMBERS

BSL-03 HO Version	860903L-HO xxx nm
BSL-03 ECO Version	860903L-ECO xxx nm
UV-MAT TOUCH	820930L
UV-MAT	820920L

PC-Software UV-MAT TOUCH	860901
UVA+ Sensor	814445
DAkkS calibrierung	17025
Option 2. wavelength	860801X2
Inert gas box	860802i