



## **DELOLUX 50 and DELOLUX 502**

LED Spot Lamps



Adhesive curing with the DELOLUX 50 LED lamp



**Intensity**, directly at the chip:

DELOLUX 50:

365 nm: **50,000 mW/cm<sup>2</sup>**

400 nm: **54,000 mW/cm<sup>2</sup>**

460 nm: **54,000 mW/cm<sup>2</sup>**

DELOLUX 502:

365 nm: **52,550 mW/cm<sup>2</sup>**

## DELOLUX 50 and DELOLUX 502

### LED curing lamps for industrial production

Short cycle times and fast, reliable series production processes are key criteria in industrial manufacturing. LED lamps are today's leading adhesives curing technology for industrial production, with decisive advantages over classic discharge lamps. They ensure a curing process that is perfectly adjusted to the adhesive used and have a significantly longer service life than discharge lamps at much greater energy efficiency. The service life of a conventional mercury discharge lamp is approx. 1,000 hours, while the typical service life of an LED can exceed 20,000 hours. This gives them a stable intensity over their entire long service life, ensuring high process reliability.

Another benefit is the fact that the emission spectrum can be adjusted to the specific adhesive allowing optimized curing. The long service life of LEDs, the possibility of individual switching and their low energy consumption help make production processes highly cost-efficient.

DELO has adapted this LED technology to create the ideal answer to bonding requirements. The newly developed DELOLUX 50 lamp enables fast curing of UV and light curing adhesives, while ensuring reliable processes.

### “Plug and Produce”

The small dimensions of the LED heads allow them to be easily integrated into production facilities. High intensities of up to 12,000 mW/cm<sup>2</sup> are possible while the continuous intensity control enables fast, reliable series processes. Internal control and monitoring of safety-relevant parameters, such as LED temperature, makes for high process reliability.

The DELOLUX 50 series can be controlled by the DELO-UNIPRO or DELO-UNIPRO Light control units, or via an external PLC.



All DELO products are developed and produced in Germany. This ensures highest quality.



DELOLUX 50 x1  
with L3 lens

Irradiated area:  
Ø 3 mm

Typical  
working distance:  
8 – 14 mm

DELOLUX 50 x4  
with L10 lens

Irradiated area:  
Ø 10 mm

Typical  
working distance:  
9 – 15 mm

DELOLUX 502

Irradiated area:  
3 mm × 8 mm

Typical  
working distance:  
5 – 8 mm

DELOLUX 50 x1

Light exit area:  
Ø 8.6 mm

DELOLUX 50 x4

Light exit area:  
Ø 11.5 mm

DELOLUX 502

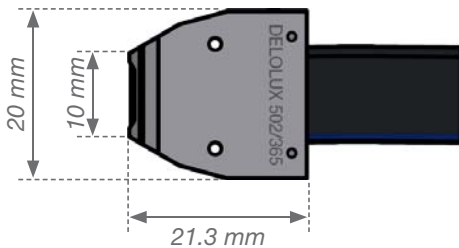
Light exit area:  
2.2 mm × 7 mm

## Spot-On

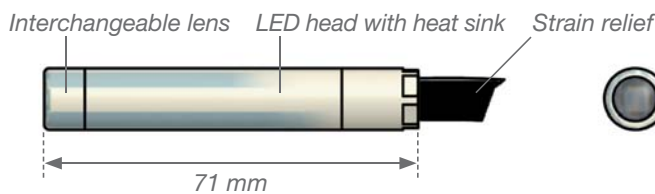
### Fast pinpoint curing of UV and light curing adhesives

The DELOLUX 50 product portfolio offers high-intensity spot light sources for curing small drops of UV- and light-curing adhesives within seconds. Up to 4 LED heads can be connected to the base unit to enable independent irradiation of multiple bonding areas. There are three available variants of the LED heads with emission spectra

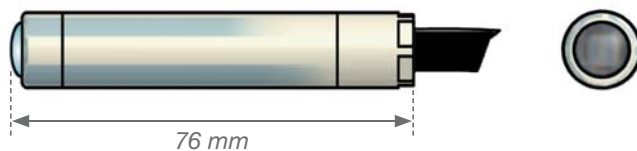
of 365 nm, 400 nm and 460 nm. Hence there is an ideal lamp for any given UV and light curing application of adhesives – be it fast fixing within significantly less than a second at 365 nm or deep curing of the adhesive while achieving transmittance of the plastic material at 400 nm or 460 nm.



Lamp head  
DELOLUX 502



Lamp head  
DELOLUX 50 x1  
Ø 12 mm

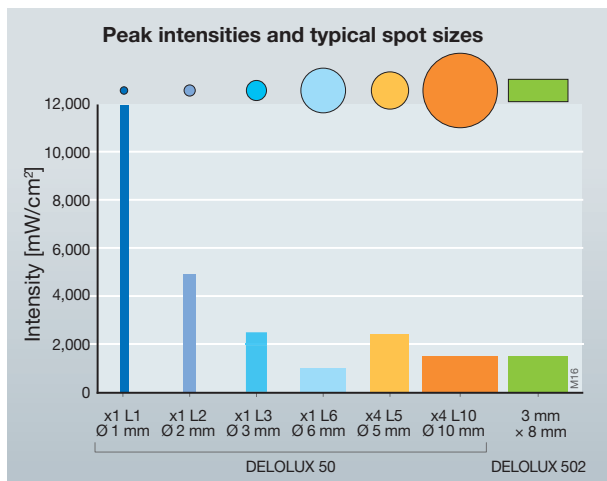


Lamp head  
DELOLUX 50 x4  
Ø 15 mm

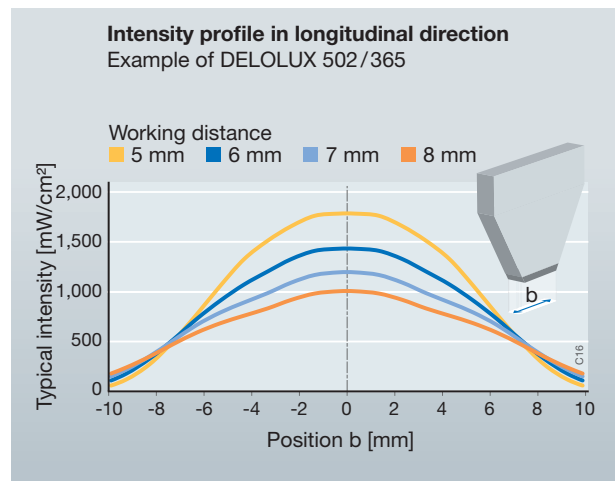
# Interchangeable lenses and LED heads for specific light focusing

Three lamp heads and different interchangeable lenses are available to enable perfect irradiation of various component shapes in different fields of application.

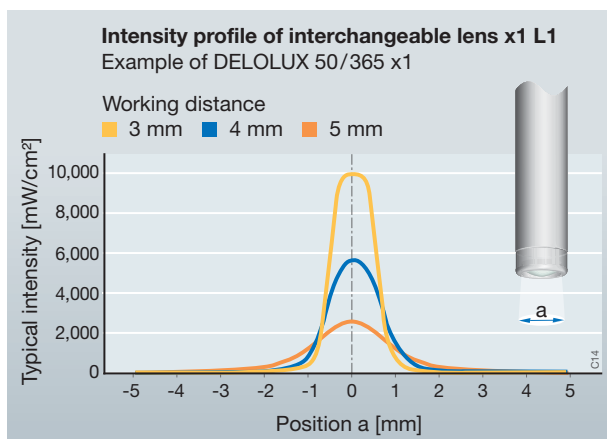
Lamp head	Lens	Irradiated area	Working distance [mm]	Peak intensity [mW/cm <sup>2</sup> ]
DELOLUX 50 x1	L1	Ø ~ 0.6 – 1.1 mm	3 – 5	12,000
	L2	Ø ~ 1.1 – 2.0 mm	6 – 14	6,000
	L3	Ø ~ 2.0 – 3.2 mm	8 – 14	2,500
	L6	Ø ~ 3.2 – 6.0 mm	10 – 30	1,000
DELOLUX 50 x4	L5	Ø ~ 5.0 mm	7 – 8	2,500
	L10	Ø ~ 10.0 mm	9 – 15	1,500
DELOLUX 502	–	3 mm × 8 mm	5 – 8	1,500



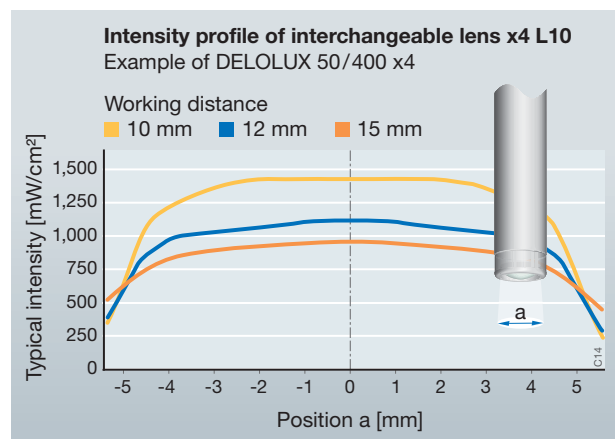
The graph shows the expected intensity values of DELOLUX 50 and DELOLUX 502 at different spot diameters.



DELOLUX 502/365, optimized for homogeneous irradiation of an adhesive bead from a distance of 5 – 8 mm. At a distance of 6 mm, an intensity of up to 1,500 mW/cm<sup>2</sup> can be achieved in an area of 3 mm × 8 mm.



Lens x1 L1, optimized for maximum intensities up to 12,000 mW/cm<sup>2</sup>. The maximum intensity is achieved with a working distance of 3 mm.



Lens x4 L10, optimized for homogeneous irradiation of an adhesive drop at working distances of 10, 12 and 15 mm. At a distance of 10 mm, an intensity of up to 1,350 mW/cm<sup>2</sup> can be achieved in an area with a diameter of approx. 9 mm.

## Benefits at a glance

Technical properties	Your benefits
LED technology as a convincing improvement of conventional discharge lamps	<ul style="list-style-type: none"> <li>→ Reduction of operating costs (lower power consumption, lower costs for maintenance and spare parts)</li> <li>→ 20 times longer service life</li> <li>→ 10 times higher energy efficiency usable for the adhesive compared to discharge lamps</li> <li>→ Light generation directly at the lamp head</li> <li>→ No heating time, full intensity instantly after switching on</li> <li>→ Stable light output at a constantly high level</li> <li>→ Continuous intensity control via power supply, no mechanical shutter required</li> </ul>
Various lamp heads DELOLUX 50 x1 DELOLUX 50 x4 DELOLUX 502	<ul style="list-style-type: none"> <li>→ Flexible irradiation of different areas and shapes</li> <li>→ The right LED head for every application</li> </ul>
Up to four plug-in LED heads per base unit	<ul style="list-style-type: none"> <li>→ Flexible irradiation of multiple bonding areas</li> </ul>
Interchangeable lenses with screw fitting	<ul style="list-style-type: none"> <li>→ Specific light focusing (spot size, working distance)</li> </ul>
Intensities of up to 12,000 mW/cm <sup>2</sup>	<ul style="list-style-type: none"> <li>→ Fast adhesive curing within seconds</li> <li>→ Short cycle times</li> <li>→ Fast, reliable series processes</li> </ul>
New generation of LED light sources: LEDs with optimized heat sink	<ul style="list-style-type: none"> <li>→ Achievable service life &gt; 20,000 h; time of light emission = service life</li> <li>→ Constant light intensity</li> <li>→ Ultimate process reliability thanks to monitoring of the LED temperature</li> <li>→ Continuous irradiation is possible</li> </ul>
Emission spectrum optimized for adhesives: 365 nm, 400 nm, 460 nm	<ul style="list-style-type: none"> <li>→ Optimal curing of photoinitiated-curing adhesives DELO PHOTOBOND, DELO KATIOBOND and DELO DUALBOND</li> <li>→ Minimum heat development at the component (cold light source)</li> <li>→ No hazardous radiation in the UVB and UVC spectrum; high occupational safety</li> </ul>
Easy-to-integrate lamp head	<ul style="list-style-type: none"> <li>→ Any installation position of the lamp heads as appropriate for the component</li> <li>→ Easy integration into systems thanks to compact design</li> </ul>
Typical fields of application	<ul style="list-style-type: none"> <li>→ Fixing of coil wires</li> <li>→ Bonding of decorative elements to glass</li> <li>→ Pin sealing</li> <li>→ Sealing of housings</li> <li>→ Bonding of compact camera modules</li> <li>→ Bonding of lenses</li> <li>→ Bonding of ferrites in solenoid coils</li> <li>→ Bonding of fastening elements (ONSERT®)</li> <li>→ Bonding of plastic parts</li> <li>→ Cable fixation on printed circuit boards</li> </ul>



## The right lamp head for every component



*Curing pin sealings with DELOLUX 50*



*Adhesive curing in compact camera modules using 4 DELOLUX 502 heads*

## Product portfolio overview

System components	Article number
DELOLUX 50 base unit	95 200 50
DELOLUX 50 LED head 365 x1	95 200 69
DELOLUX 50 LED head 400 x1	95 200 65
DELOLUX 50 LED head 460 x1	95 200 68
L1 lens for DELOLUX 50 x1	95 200 94
L2 lens for DELOLUX 50 x1	95 200 95
L3 lens for DELOLUX 50 x1	95 200 96
L6 lens for DELOLUX 50 x1	95 200 97
DELOLUX 50 LED head 365 x4	95 200 70
DELOLUX 50 LED head 400 x4	95 200 77
L5 lens for DELOLUX 50 x4	95 200 86
L10 lens for DELOLUX 50 x4	95 200 87
DELOLUX 502 LED head 365	95 200 81
Powerguide DELOLUX 502	95 200 82
Control	Article number
DELO-UNIPRO Light	95 200 51
Connecting line DELOLUX 50, 502 – DELO-UNIPRO Light	95 200 53
DELO-UNIPRO	95 200 01
Connecting line DELOLUX 50, 502 – DELO-UNIPRO	95 200 59
Accessories	Article number
DELO-RACK for DELOLUX 50, 502 and DELO-UNIPRO Light	95 200 36
Foot switch	91 910 01
DELOLUXcontrol light intensity meter without detector head	95 201 08
DELOLUXcontrol detector head LED 1 mm	95 201 06
DELOLUXcontrol measuring adapter DELOLUX 502	95 200 83
UV safety glasses	95 200 48

## Optimized for maximum process reliability



DELO-UNIPRO Light control unit



DELOLUXcontrol light intensity meter

### Simple control: DELO-UNIPRO

In order to be able to meet customer-specific requirements, DELOLUX has a modular control concept. Up to four devices can be controlled independently with the external DELO-UNIPRO control unit. This enables individual settings for irradiation time and intensity.

In addition, the status of all monitored lamp functions is displayed on DELO-UNIPRO – or alternatively via PLC. The control unit is also available as DELO-UNIPRO Light version, which features basic functionality.

### Measuring made simple: DELOLUXcontrol

Regular intensity measurement using DELOLUXcontrol ensures process reliability to the customer when using DELOLUX lamps. Contaminations as well as extremely small changes in distance that might impair the intensity of the optical systems are displayed by the measuring device.

DELOLUXcontrol is the perfect support for users and their processes. The instrument can also be equipped and operated with various detector heads.

Parameters	DELO-UNIPRO	DELO-UNIPRO Light
Core functions (intensity, irradiation time)	✓	✓
Controllable DELOLUX 50, 502	4	1
Status and error indication	✓	–



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The technical data are for informational purposes only. Specific values can be found in the user manual. It is the user's responsibility to test the suitability of the device for the intended purpose by considering all specific requirements. If you need support in using the devices, please feel free to ask your contacts in our Engineering Department.

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Adhesives

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