

OLYMPUS

Your Vision, Our Future

Stereomicroscope Lighting Systems
KL200/KL1500/KL2500/VisiLED
SZ2/SZX2 Series

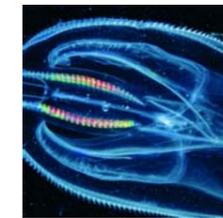
Flexible and Illuminating



BRING IT TO LIGHT

Olympus lighting systems for stereomicroscopy

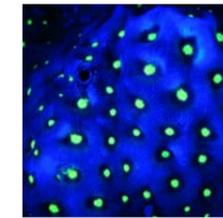
With its three-dimensional vision, stereomicroscopy is a well-used yet exciting technique. However, it is only with lighting perfectly matched to your requirements that you get the full benefit of stereomicroscopy. Olympus light accessories for the Olympus SZ2 and SZX2 stereomicroscope systems deliver uniform illumination over large areas, light up points of interest that are difficult to access, and can be used for contrast techniques in the identification of specific surface irregularities for more informed failure detection.



Cold-light systems: bright and flexible

4-7

Our cold-light illumination systems offer the largest range of accessories and so provide the greatest flexibility in tailoring the lighting to the specific inspection or research task. Three light sources and approximately 100 accessories, from simple, single-spot light guides to darkfield illumination rings, make this system the perfect choice for both routine work and research and development, with its constantly changing requirements.



VisiLED systems: variable contrast at the push of a button

8-11

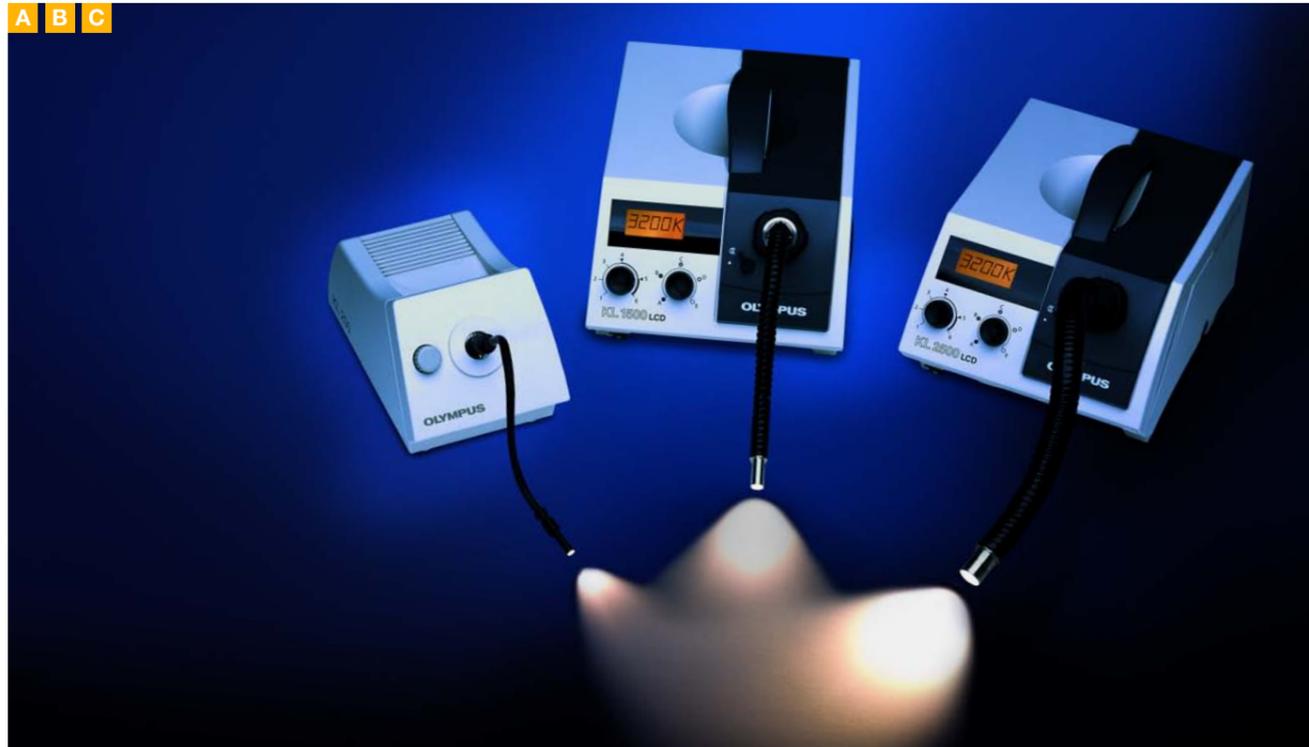
The advanced Olympus LED light systems open up new contrast possibilities with the smallest space requirements. From homogeneous illumination to sharp contrast, mixed reflected transmitted light and the highlighting of direction-oriented structures without moving the specimen or manually repositioning the light element – all of this is available at the push of a button.

COLD-LIGHT SYSTEMS: BRIGHT AND FLEXIBLE

The ideal light intensity – whatever your application

How much light do you need? This is probably the first key question that needs to be answered. The Olympus lighting range offers you a range of systems covering a 17-fold increase in intensity between the lowest intensity light, the KL200, and the most powerful light source, the KL2500-LCD. Truly a light source for every application.





LIGHT BY DESIGN

From 20 to 250 W, the Olympus cold-light range offers you the flexibility to illuminate all samples to the right level. Flexible fibre bundles enable precise positioning of the light for both pinpoint and diffuse lighting conditions.

KL200: the compact light source for routine work

A At 20 W, the KL200 is optimised for fibre bundles of up to 7 mm in diameter. The KL200 provides enough light for even illumination on brighter samples as well as for simple contrasting with spotlights on a small sample area. It is equipped with a three-step intensity switch and a filter holder which allows the insertion of a daylight filter or a colour filter for contrast enhancement.

KL1500-LCD: the universal light source

B With its 150 W power and optics optimised for fibre bundles of up to 9 mm, the KL1500-LCD provides eight times more light than the KL200. This supports professional contrast and illumination techniques such as reflected polarised light, three-armed spot illumination, line light, reflected and transmitted darkfield illumination, or coaxial illumination. On top of excellent lighting, additional features are especially useful for documentation work (see below).

KL2500-LCD: no limits

C The KL2500 provides at least twice the light intensity of the KL1500. The 250 W bulb illuminates fibre bundles up to a diameter of 15 mm, making the KL2500 ideal for the even illumination of very large samples, enhanced darkfield contrast, fluorescence applications or light-absorbing samples like black rubber.

KL1500/KL2500-LCD: features

The Olympus KL1500 and KL2500-LCD are not only powerful light sources. They also have a host of features that provide enhanced versatility. As well as dual-dimming controls and a clear colour temperature indication, the light sources also offer a rigid and stable clamp to hold the fibre guide securely in position.

Multiple control possibilities

The KL1500 has two separate light intensity controls. Seamless mechanical dimming with a specially designed attenuator allows the camera to be operated on the microscope with the same white balance settings, independent from the light intensity of the light source. In addition, with stepless electronic dimming, it is possible to prolong the bulb's life whenever the KL1500's full light intensity is not required.

LCD status display

The LCD display indicates the actual colour temperature, which allows the precise duplication of inspection or documentation conditions.

Secure fibre guide position

D The fibre guide is kept securely in position by a combination of the clamping mechanism and the design and weight of the light source housing. This is especially important when changing the position of self-supporting fibre guides.

KL2500: additional features

With the top of the range, it is right to expect more. The Olympus KL2500 offers a level of flexibility that makes the light source easier to control, enabling greater efficiency and speed.

Remote control interface

With the remote control interface, the KL2500 can be operated with a PC, a tilt switch – which can be combined with STX suspension arm stands – or by a hand-held remote control.

Filter wheel

E The KL2500's five-position filter wheel allows easy switching between different excitation wavelengths when used for fluorescence microscopy, or between daylight balance and colour contrast filters.



KL1500/KL2500 bulb exchange slider



KL1500/KL2500 fibre guide clamp



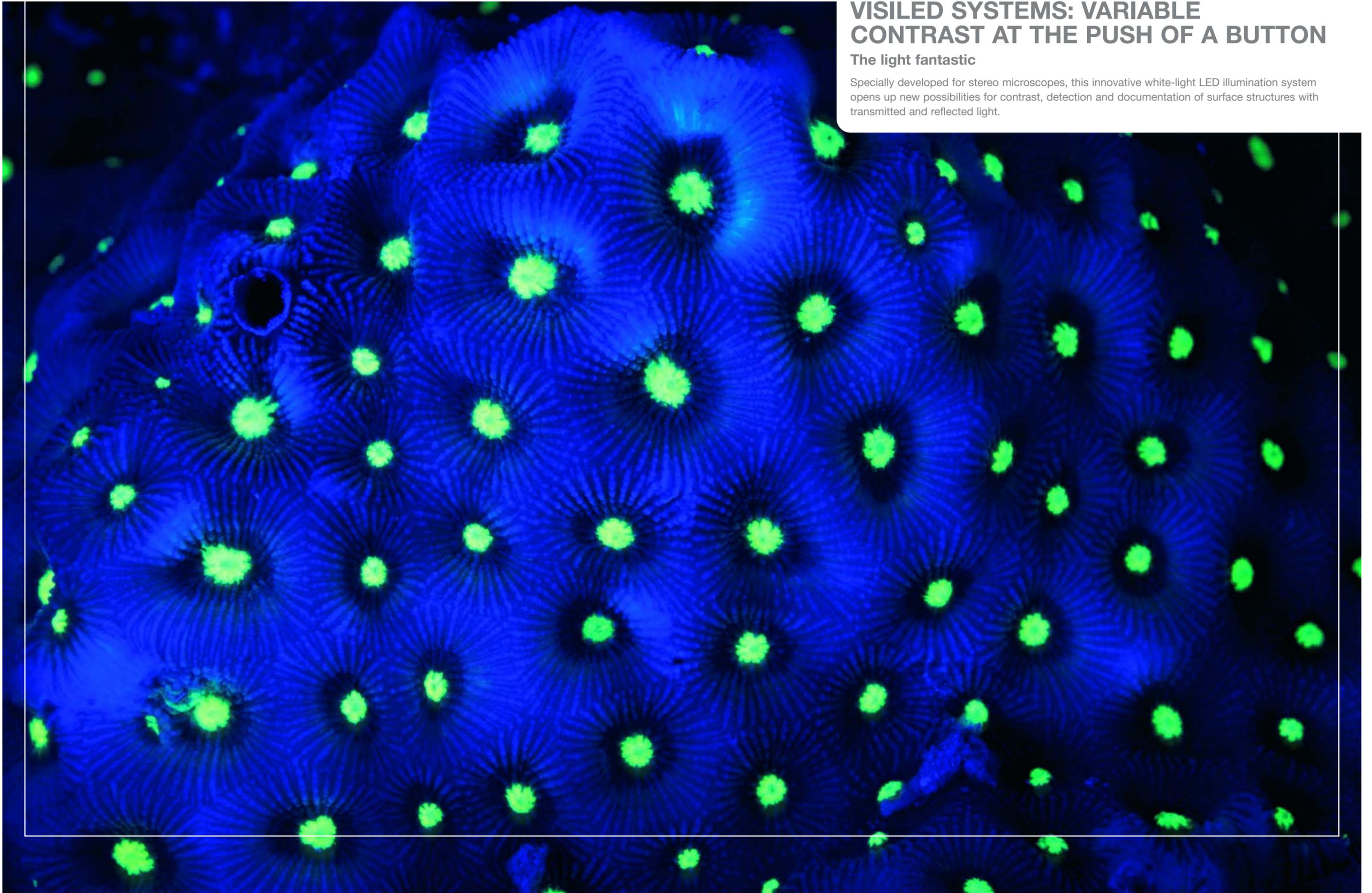
KL2500 five-position filter wheel



VISILED SYSTEMS: VARIABLE CONTRAST AT THE PUSH OF A BUTTON

The light fantastic

Specially developed for stereo microscopes, this innovative white-light LED illumination system opens up new possibilities for contrast, detection and documentation of surface structures with transmitted and reflected light.





A VisiLED system
Segment ring light



Temperature control

LIGHT SOURCE, HEAVY FEATURES

For the ultimate in controllable illumination, the VisiLED systems – which offer segmented circular light arrays – provide the correct type of lighting for all samples.

80 LEDs: eight individually controllable segments

A At the heart of the VisiLED system are illumination heads with 80 or 40 LEDs divided into eight individually controllable segments. The white LEDs have been specially selected for stereomicroscopy, producing white light which shows samples as close to their natural colour as possible. Heads are available for transmitted and reflected light, and for brightfield and darkfield illumination.

From even illumination to sharp contrast

-  The full circle of the VisiLED system provides homogeneous illumination similar to conventional ring lighting. Perfect for inspection tasks where shadow-free illuminations are a must.
-  **A** Four of the eight segments provide low-contrast illumination, similar to conventional four-point ring lights. This allows slight enhancement of the 3-D effect without losing the homogeneous background illumination.
-  **C** Two quarter segments can be used to provide slightly more contrast than four segments, with a clear single-axis light orientation, similar to conventional two-armed single-spot fibre guides.
-  **D** The semicircle allows single-direction contrast by introducing visible shadows onto the sample. Useful whenever you need to enhance the three-dimensional structure of a sample, e.g. for documentation purposes.
-  **E** A quarter LED segment is used to provide sharp contrast similar to oblique illumination techniques and is ideal for detecting and differentiating between the orientation of structures. By simply pressing a button on the LED controller, the single LED segment can be moved around the sample, allowing you to illuminate the sample from eight different directions – in any order.

Complex mixed illumination techniques made easy

F Because you can control two illumination heads with a single controller, you can easily store and recall complex illumination settings. For example, a combination of a single LED segment reflected brightfield at 45° and 50% light intensity together with a semicircle reflected darkfield at 225° and 100% light intensity can be stored to one of the four personal memory buttons and recalled at any time. In addition, the rotation button allows the segments of both illumination heads to be turned simultaneously.

Active LED temperature control for prolonged life

B All VisiLED illumination heads are equipped with a temperature sensor to avoid overheating – a common problem in conventional LED illumination heads which dramatically accelerates the degradation of the light quality. With the VisiLED active temperature control, LEDs are automatically switched to a lower intensity before any risk of degradation arises.

C VisiLED system
Two quarter segments



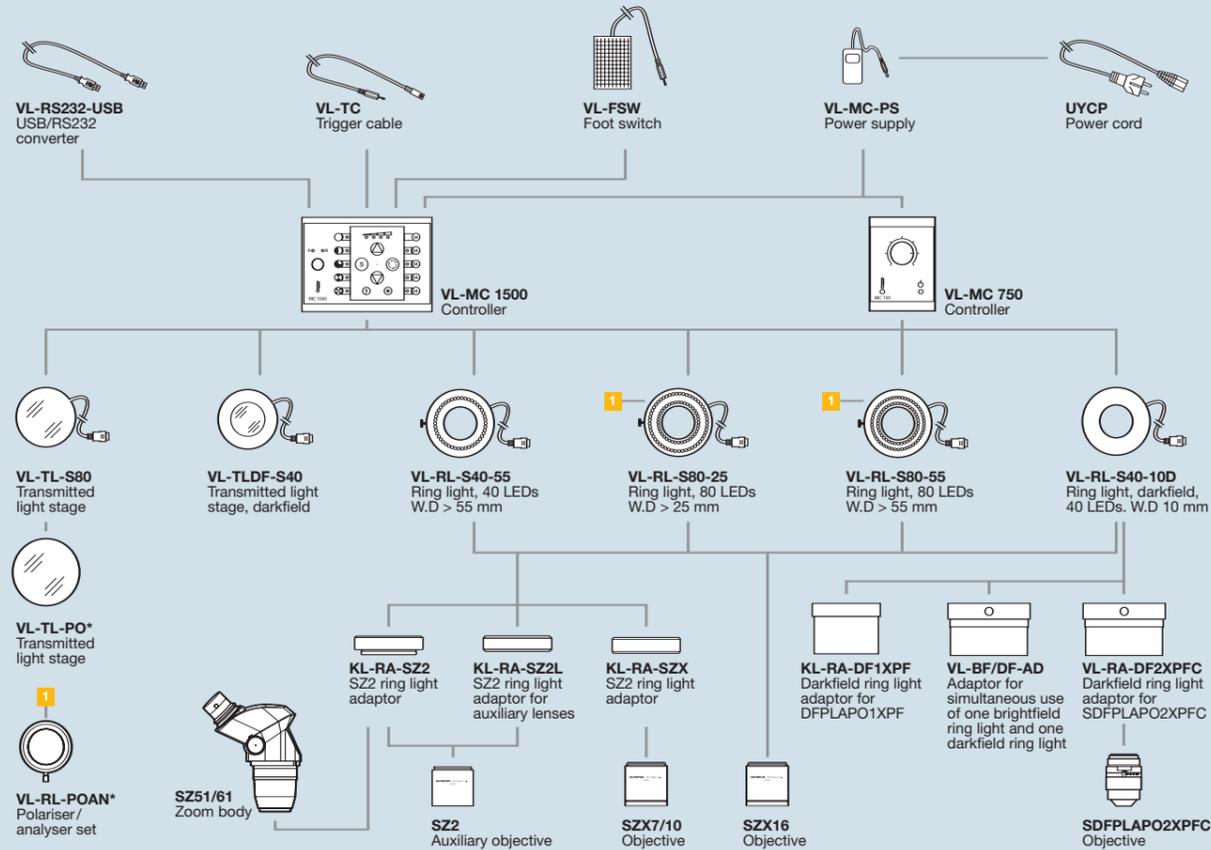
D VisiLED system
Semicircular segment



E VisiLED system
Quarter segment



VisiLED



* Available from March 2007

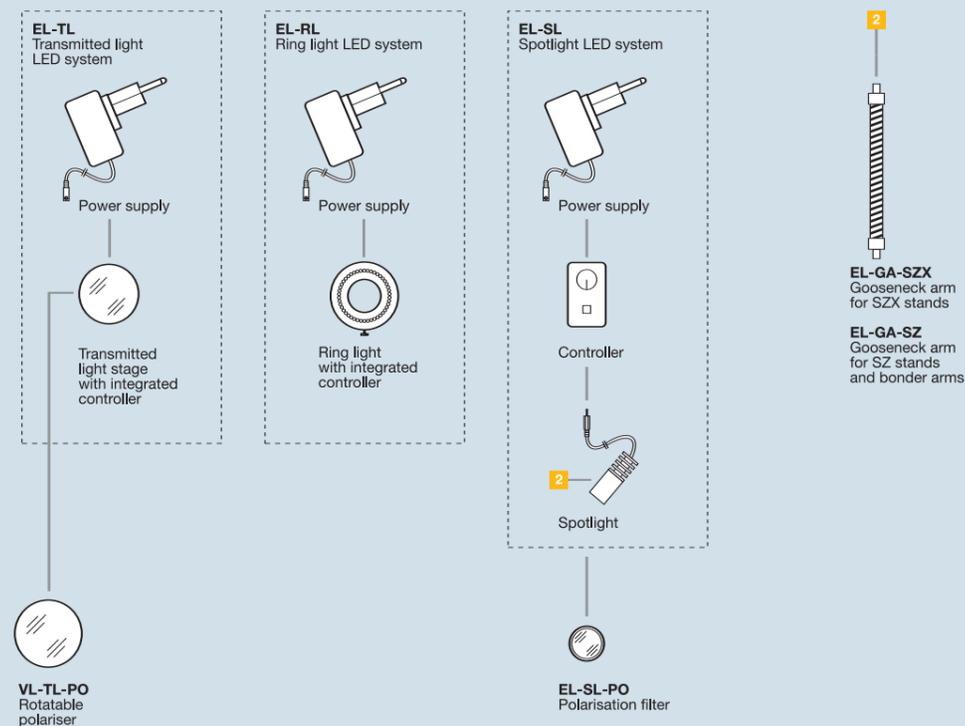
Technical specifications: KL light sources

	KL200	KL1500-LCD	KL2500-LCD
Power	20 watts	150 watts	250 watts
Max. fibre bundle diameter	7 mm	9 mm	15 mm
Relative light intensity	1	8	17
Light intensity control	Electrical	Three steps (35%, 60%, 100%)	Continuous
	Mechanical	-	10%-100%
LCD display	-	•	•
Remote control	-	-	•
Filter insert	Filter holder	Filter slider	Five-position filter wheel
Compatible filter size	17 mm	28 mm	28 mm
Average bulb life	Economy position	10,000 h	1,500 h
	Standard position	1,000 h	150 h
	Maximum position	300 h	50 h
Colour temperature	Standard position	3,200 K	3,200 K
	With daylight filter	5,500 K	5,500 K
Cooling	Convection	Fan	Fan
Power consumption	24 VA	200 VA	300 VA

Technical specifications: VisiLED

LED controller	VL-MC1500	VL-MC750
Number of light heads	2	1
LED temperature control	•	-
Functions	Intensity control	Continuous dimming (0%-100%)
	Segment control	Five modes (full circle, four segments, two segments mirrored, two segments, one segment)
Segment turning	One segment/continuous	-
Memory	Save and recall four different settings	-
Strobe	15 - 10,000 Hz	-
Remote interface	RS232	-
Power consumption	0.55 VA (max.)	0.55 VA (max.)

EasyLED



LED light heads	VL-S40-T	VL-S40-T-D	VL-RL-S40-55	VL-RL-S80-25	VL-RL-S80-55	VL-RL-S40-10D
Type	Transmitted brightfield	Transmitted darkfield	Ring light	Ring light	Ring light	Darkfield ring light
Number of LEDs	80	40	80	80	80	40
Number of segments	8	8	8	8	8	8
Working distance	-	-	55-105 mm	25-50 mm	55-130 mm	5-15 mm
Light spot diameter	50 mm	30 mm	35-60 mm	30-40 mm	35-80 mm	15-30 mm
LED life*	30,000 h	30,000 h	30,000 h	30,000 h	30,000 h	30,000 h
Colour temperature	5,600 K	5,600 K	5,600 K	5,600 K	5,600 K	5,600 K

*Until drop-off to 50% brightness

Technical specifications: EasyLED

LED light heads	EL-TL	EL-RL	VL-SL
Type	Transmitted brightfield	Ring light	Spotlight
Number of LEDs	39	45	1
Working distance	-	55-135 mm	-
Light spot diameter	50 mm	50-70 mm	-
LED life (until drop-off to 50% brightness)	30,000 h	30,000 h	30,000 h
Colour temperature	5,600 K	5,600 K	5,600 K

The manufacturer reserves the right to make technical changes without prior notice.

www.olympus-europa.com

OLYMPUS

OLYMPUS LIFE AND MATERIAL SCIENCE EUROPA GMBH

Postfach 10 49 08, 20034 Hamburg, Germany
Wendenstrasse 14-18, 20097 Hamburg, Germany
Phone: +49 40 23 77 30, Fax: +49 40 23 77 36 47
E-mail: microscopy@olympus-europa.com