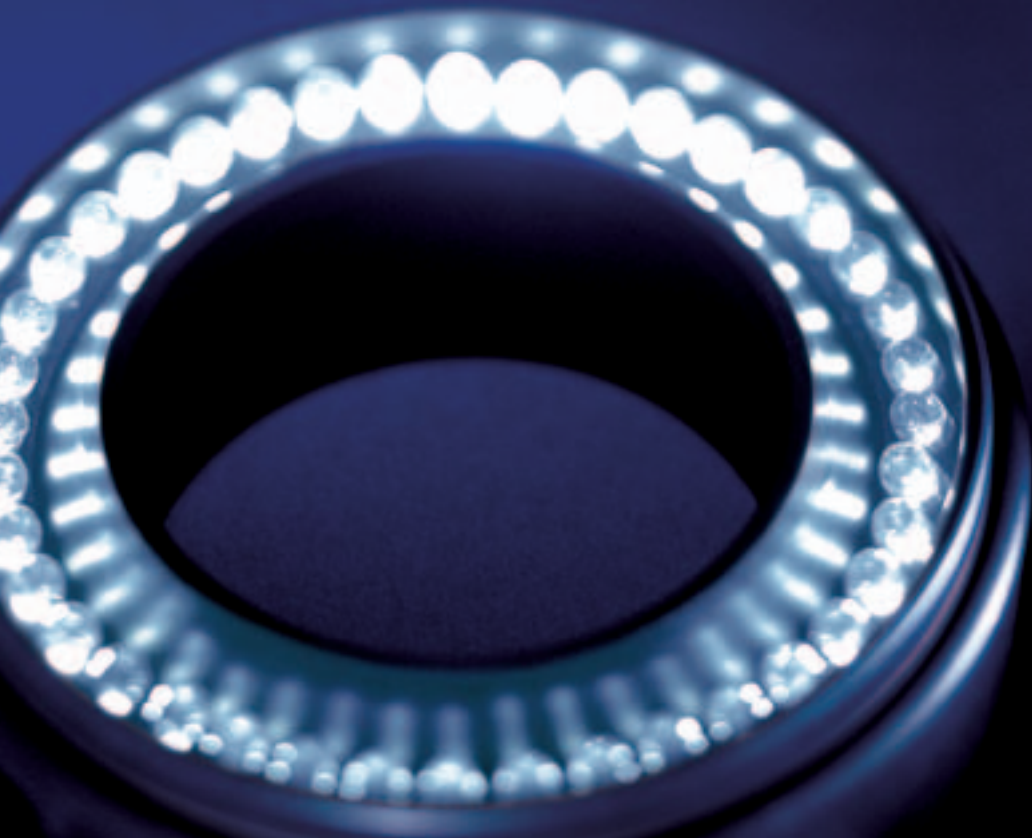


LED ILLUMINATION





MODULAR LED LIGHTING SYSTEM

The modular LED product line for direct object illumination was developed specifically by Photonic for stereomicroscopy illumination tasks. The field of application for this lighting system is very broad. The main areas of application are

- ▶ Industry
- ▶ Life Sciences
- ▶ Biology
- ▶ Forensics
- ▶ Laboratories
- ▶ Schools and universities

Product features

- ▶ Daylight (5,000 K)
- ▶ Long LED service life (min. 7,000 hours)
- ▶ Noiseless and vibration-free operation
- ▶ Ripple and flicker free: light output remains stable in event of voltage fluctuations
- ▶ Homogenous, shadow-free illumination
- ▶ "Cold" light
- ▶ Segment control of LED sectors
- ▶ Battery operation possible

The LED components are equipped with very high quality and powerful high performance white light LEDs (customer specific wavelength ranges can be manufactured upon request).

The modularity of the system is particularly user-friendly, providing a lighting solution that is extendable and cost-effective and which can be assembled to provide the perfect setup for each task.

The following sets are available:

In each case, the core is the control unit, which is powered via a separate power supply and can be combined with different LED lighting units:

- ▶ **Control unit standard**
- ▶ **Control unit with segment control facility**

The control units can be combined with:

- ▶ Ring light 66/40 (Ø 66 mm, 40 LEDs)
- ▶ Ring light 38/20 (Ø 38 mm, 20 LEDs)
- ▶ Spot (19 LEDs)
- ▶ Spot 2-arms (each with 19 LEDs)
- ▶ Universal backlight (20 LEDs)
- ▶ Special backlight for Nikon (equivalent to 40 LEDs)

- ▶ **The LED control unit 80** also has a segment control facility and is designed for the ring light with 80 LEDs.



LED CONTROL UNITS



Standard control unit

The compact control unit has an on/off switch, infinitely variable intensity control with a "turbo range", and two connection sockets for the LED lighting units.

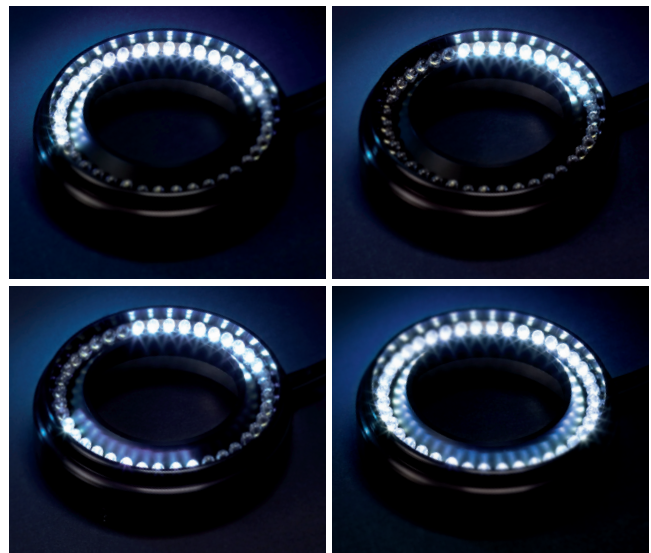


Control unit with segment control facility

This control unit also allows the operator to select segments. The individual segments are selected using the on/off switch and rotated by means of a pushbutton. The brightness can be infinitely adjusted using the rotary potentiometer.

The following segments can be selected:

- ▶ semicircle
- ▶ quadrant
- ▶ two opposing quadrants
- ▶ full circle



LED RINGLIGHTS



LED ringlight 66/40

The LED ringlight (40 LEDs) provides exceptionally bright and homogenous object illumination and is suitable for microscopes with a lens diameter of 66 mm – as well as for other microscopes in combination with an adapter. The ringlight is fastened by means of a spring and screw to protect the lens.

A range of illumination scenarios can be generated in conjunction with the control unit with the segment control facility.

Working distance: 60–130 mm.



LED ringlight 38/20

The LED ringlight (20 LEDs) with an internal diameter of 38 mm is suitable for video system and image processing lenses.

Employing the control unit with the segment control facility provides additional lighting variations.

Working distance: 40–100 mm.

ACCESSORIES



Polarizing filter set for RL 66/40

Suppresses undesirable reflections.



Adapters

A range of suitable adapters is available to attach the LED ringlights onto the various microscope lenses.

LED SPOTS



LED spot

The LED spot (19 LEDs) can be attached directly to the microscope using a gooseneck arm or be positioned wherever it is required by fixing the gooseneck arm to a base plate. Two LED spots can also be connected simultaneously to one control unit and/or operated by it.



LED spot with 2 arms

The 2-arm LED spot (with 19 LEDs each), consisting of two interconnected gooseneck arms, each with an LED spot attached, is a unique accessory. The lighting unit can be fastened directly onto the microscope stand by means of an adapter.

ACCESSORIES



Base plate

A base for attaching gooseneck arms for mounting LED spotlights.



Gooseneck arm

For attaching LED spots to a microscope or base plate. Available in 85, 200 and 300 mm lengths.



Filters

Available for LED spots in the colours blue, green, yellow and red.

LED BACKLIGHT



LED universal backlight

This backlight (20 LEDs) can be attached to the working surface of a stereomicroscope and features daylight quality illumination with extreme uniformity, long LED service life and compactness. The brightness of the transmitted light can be varied infinitely using the control unit.



Nikon LED backlight

This Nikon LED backlight (equivalent to 40 LEDs) can be inserted into the bases of the SMZ 600, SMZ 800, SMZ 1000 (C-PS, C-DS stand) and SMZ 1500 (C-PS160, C-DSS, C-DSD and C-BD stands, with adapter ring) Nikon microscopes and provides very bright and homogenous illumination (maximum light intensity 26,500 cd/m²) at a colour temperature of 5,500 K.

ACCESSORIES FOR NIKON MICROSCOPES

- ▶ Self-adhesive feet to increase the height of the microscope stand (for SMZ 600, SMZ 800 and SMZ 1000)
- ▶ Adapter ring for employing the backlight for the SMZ 1500
- ▶ Glass plate to ensure flat surface for petrie dishes

LED RINGLIGHT-SET 66/80



LED ringlight 66/80

This LED ringlight has 80 diodes and an accordingly high light output. Different segments can be selected, illuminated and also rotated in combination with the control unit 80. This guarantees the optimal detection of contrasts on the most diverse of surface structures.

Working distance: 35–100 mm.

LED control unit 80 with a segment control facility (Only for RL 66/80)

This control unit allows segments to be selected using an on/off switch and the individual segments are rotated by means of a pushbutton, with two buttons available for changes of direction. The brightness is infinitely variable thanks to the rotary potentiometer. It is only compatible with the LED ringlight 66/80.

The following segments can be selected:

- ▶ semicircle
- ▶ quadrant
- ▶ two opposing quadrants
- ▶ full circle

ACCESSORIES



Polarizing filter set 66/80

Suppresses undesirable reflections.



ALL PRODUCTS - TECHNICAL

COMPONENTS

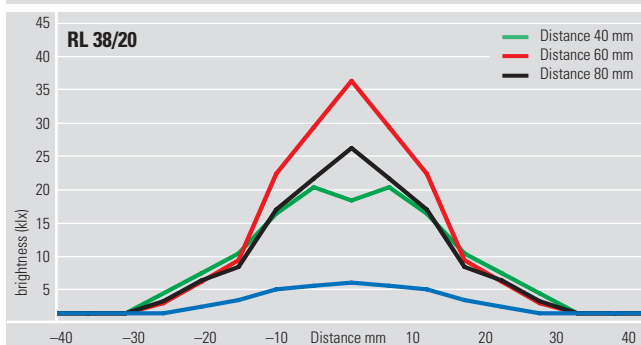
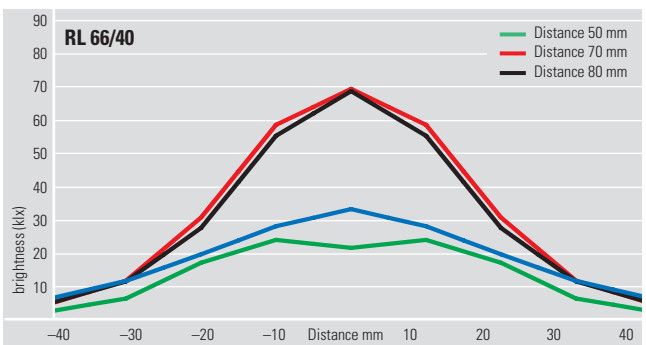
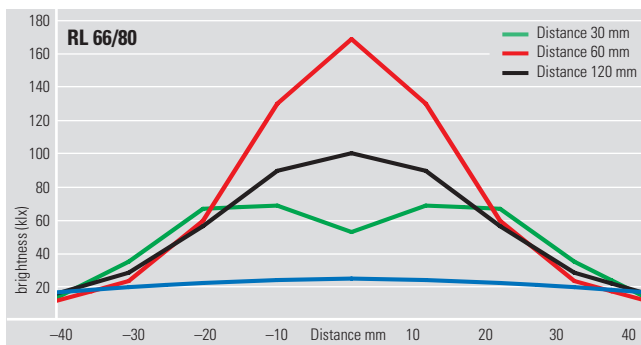
RING LIGHTS	66/40	38/20	66/80
Item No.	619-20-002	619-20-006	619-20-039
Diodes (white LEDs)	40 units	20 units	80 units
Colour temperature	5,000 K	5,000 K	5,000 K
Dimensions (external)	Ø 94 x 25 mm	Ø 60 x 25 mm	Ø 112 x 23.5 mm
(internal)	Ø 66 mm	Ø 38 mm	Ø 66 mm
Working distances	60–130 mm	40–100 mm	35–100 mm
SPOTS / BACKLIGHTS	LED Spot / 2-arm	Universal backlight	Nikon backlight
Item No.	619-20-011 / 619-20-012	619-20-032	619-20-036
Diodes (white LEDs)	19 units	20 units	LED cluster (equiv. to 40 LEDs)
Colour temperature	5,000 K	5,000 K	5,000 K
Dimensions	Ø 34 mm x 45 mm	Height 22.5 mm	int. 54 mm, ext. 59.5 mm ext. + adapter 178 mm
Attachment	with goose neck arm	–	–
Base plate	–	PVC black, Ø 120 x 24.5 mm	–
Specimen holder	–	Laminated glass, Ø 95 mm	Frosted flashed glass
Illuminated surface	–	Ø 55 mm	Ø 54 mm
CONTROL UNITS	Standard	Segment	Segment 80 (only for 66/80)
Item No.	619-30-00199	619-30-02199	619-30-02299
Power supply	24V DC +/- 5%, hollow pin 5.5 x 2.1 mm		
	250 mA	250 mA	500 mA
Dimensions	95.5 x 64 x 29 mm	95.5 x 64 x 29 mm	102 x 106 x 39 mm
Ringlight connections /Spots	2 units 9-pin mini-DIN-socket	2 units 9-pin mini-DIN socket	D-Sub (25 pin)
On/off switch	on/off	with segment selection	with segment selection
Segment rotation button	–	1	2
Potentiometer wheel	3-30 mA, with index holes		
ESD connector	4 mm banana plug		
Ambient temperature	10°– 40° C		
Rel. humidity	30–70 %		
Mark of conformity	CE		
POWER SUPPLY			
Plug connection	3-pin IEC 320		
Voltage range	100–240 V		
Mains frequency	50–60Hz		
Power input max.	15 VA		
Protection class	I		
Marks of conformity	CE, UL, CSA		

SPECIFICATIONS

ACCESSORIES

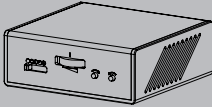
RINGLIGHTS		SPOTS	
Adapters:		Filters:	
66/58	595-32-258	blue	619-30-010
66/62	598-32-127	green	619-30-011
Olympus SZ-III+SZ-60, SZ-1145 (66/54 mm)	598-30-002	yellow	619-30-012
Olympus SD, SF, SZ w. lens attachment (66/50 mm)	598-30-017	red	619-30-013
Nikon (except SMZ1) (66/47 mm)	598-30-004	Gooseneck:	
Nikon SMZ 800, 1000, 1500, SMZ/U, 10A	598-32-043	L = 85 mm	619-30-003
Olympus SZH, SZX-9, SZX-12 (66/60 mm)	598-32-043	L = 200 mm	619-30-004
Nikon SMZ1, 1B, 2B, 2T (66 mm/M48 x 0.75)	598-32-049	L = 300 mm	619-30-005
Olympus SD, SF, SZ without lens attachment	598-32-049	Base plate with M5 thread	619-30-007
Nikon SMZ-645 and SMZ-660 (66 mm/M55 x 0.75)	598-32-050	Adapter Spot 2-arm:	
Universal adapter for lens Ø 38–58 mm	598-30-022	Nikon SMZ 600, 800, 1000	598-30-023
Polarizing filter set:		Nikon SMZ 1500	598-30-024
Analyser and polariser 66/40	619-20-021		
Analyser and polariser 66/80	619-20-022		
		GENERAL	
BACKLIGHT NIKON		Mains cable:	
Tripod foot self-adhesive	619-30-050	EU	ELN-3.001
Base plate	619-32-121	CH	ELN-3.002
Glass table for tripod	619-30-051	USA/CAN/J	ELN-3.003
		UK	ELN-3.004
		AUS	ELN-3.006
		IT	ELN-3.009

DISTRIBUTION OF BRIGHTNESS

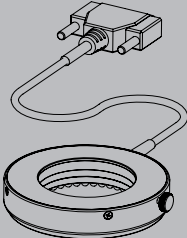


OVERVIEW OF BROAD SYSTEM

**Control unit 66/80
with segment control facility**

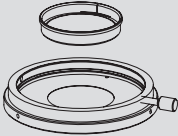


LED ringlight 66/80

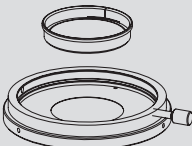


Ringlight accessories

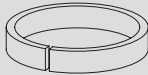
Polarizing filter set for 66/40



Polarizing filter set for 66/80



Adapters for ringlights:



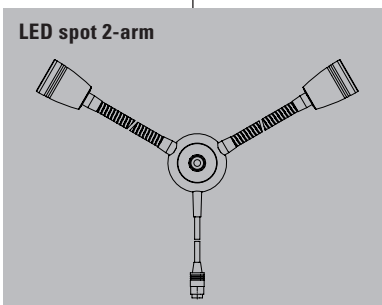
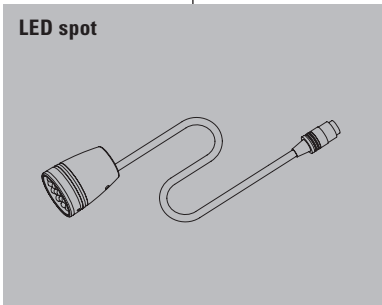
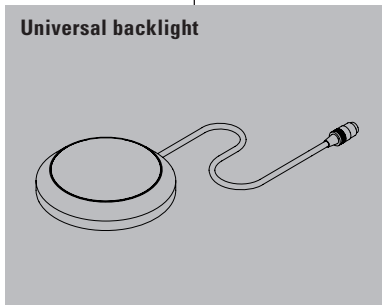
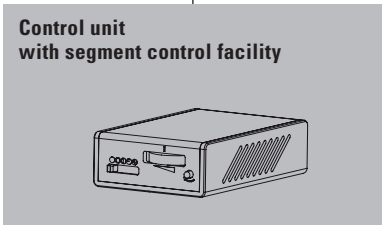
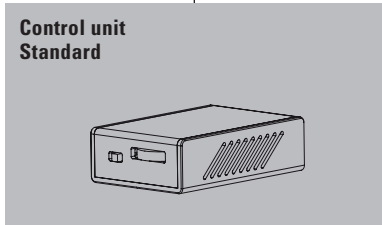
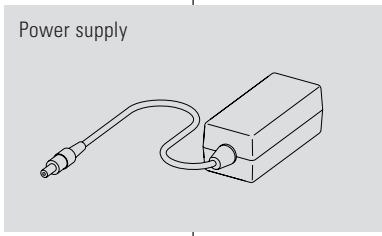
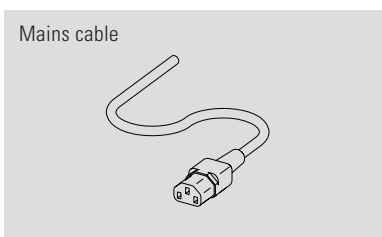
66/58
66/62
Olympus SZ-III + SZ-60, SZ-1145
(66/54 mm)
Olympus SD, SF, SZ with lens attachment
(66/50 mm)
Nikon (except SMZ1) (66/47 mm)
Nikon SMZ 800, 1000, 1500, SMZ/U, 10A
Olympus SZH, SZX-9, SZX-12 (66/60 mm)
Nikon SMZ1, 1B, 2B, 2T
(66 mm/M48 x 0.75)
Olympus SD, SF, SZ without lens attachment
Nikon SMZ-645 und SMZ-660
(66 mm/M55 x 0.75)
Universal adapter for objektiv
Ø 38–58 mm

LED ringlight 66/40



LED ringlight 38/20





Spot accessories

Base plate

Gooseneck arms

L = 85 mm
L = 200 mm
L = 300 mm

Colour filters

blue
green
yellow
red



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