

Living up to Life



Leica LED 1000

Modular LED Lighting System





Modular LED lighting system

Our comprehensive modular system for microscopy provides light sources for almost every task, and it is compatible with all standard Leica Microsystems stereo microscopes. Particular importance is attached to combining intelligent solutions with high product quality in order to ensure a good price/performance ratio.

LED ILLUMINATION V. FIBRE OPTICS

One advantage of LED ring lights, compared to fibre-optic lighting systems, is the option to switch parts of the ring

light on or off and to rotate selected segments.

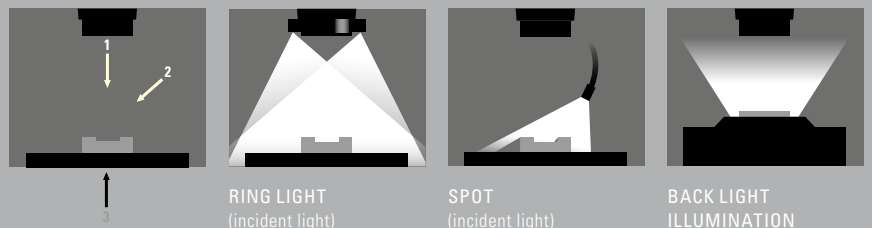
This allows homogeneous illumination as well as directed lighting. In addition, the resulting shadows offer excellent contrasting options for surface structures.

The following product properties are further advantages compared to fibre optics:

- › daylight quality (5 000 K)
- › long service life
- › no noise, no vibrations
- › homogeneous, shadow-free illumination.



The type and direction of lighting are crucial for good results. To achieve the desired optical image contrast, three approaches are followed: incident light (with ring light [1] or spots [2] for the greatest light intensity with maximum flexibility and the widest range of lighting systems), and back light [3].





LED ring lights



LED RING LIGHT 38/20

This LED ring light (20 LEDs), with an inside diameter of 38 mm, is ideal for objectives in video systems and image processing. The ring light 38/20 can be combined with both the standard control unit and the segment control unit. When used with the segment control unit, different lighting scenarios can be created. Working distance: 50–100 mm.



LED RING LIGHT 66/40

This slender-build LED ring light (40 LEDs) with an outside diameter of only 94 mm permits extraordinarily bright homogeneous object illumination. It can be used with microscopes with an objective diameter of 66 mm (and if adapters are used, with other diameters as well) and can be combined with both the standard control unit and the segment control unit (for segment lighting, see page 10).

Working distance: 55–120 mm.



LED RING LIGHT 66/80

This LED ring light has 80 LEDs, and its output is comparable to a 150 W halogen light source with a fibre-optic light guide. It is combined with the segment control unit, with which it is possible to select, illuminate and rotate individual segments, for the best possible identification of contrasts on different surface structures. Working distance: 35–120 mm or 120–300 mm.

ACCESSORIES

The accessories for LED ring lights 66/40 and 66/80 include polarisation filter sets consisting of an analyser and a polariser. The polariser is attached to the outside of the ring light, and the analyser is integrated into the ring light.

Polarising filter set for suppressing undesired reflections, for ring lights 66/40 and 66/80.

Diffuser for light scattering, for ring lights 66/40 and 66/80.



Adapters for attaching the LED ring lights to various microscope objectives (see Accessories, page 13).



LED Hi-Power spots



LED HI-POWER SPOT

This compact spot light source is needed for all microscopy applications in which a smaller area (15 mm) is to be illuminated. Its extremely bright light is transmitted directly to the object. Another highly useful feature of the LED Hi-Power spot is its colour temperature of either 5 900 K (+/-5%) or 4 000 K. Its light output is comparable to a 150 W halogen light source with a fibre-optic light guide.

One or two Hi-Power spots can be connected with the Hi-Power control unit. If two spots are used, either one or both spots can be activated alternately or simultaneously.



LED HI-POWER SPOT, 2-ARMED

This spot is used for direct attachment to microscope stands.

As it is mounted on the stand, it is perfect for use in small spaces, and it is compatible with the compact Hi-Power control unit.

- › cable fed into the flexible arms
- › neutral white light, 5 900 K (+/-5%)
- › homogeneous illumination
- › high-quality flexible arms
- › stable mounting on microscope stand.

ACCESSORIES

Diffuser for light scattering.



Spot holders: available lengths 85, 200 and 300 mm.



Adapters for attaching the 2-armed spot to round columns and various stands (see Accessories, page 13).



Polarising filter for suppressing undesired reflections.



Base plate for attaching spot holders on which LED spot lights can be mounted.



LED spot

LED SPOT 19

This LED spot (19 LEDs) has a spot holder for direct attachment to the microscope and, with the spot holder and the base plate, it can be positioned anywhere.

Two LED spots can be simultaneously attached to, and operated by, one control unit.

ACCESSORIES

Spot holders: available lengths 85, 200 and 300 mm.



Colour filters are available in blue, green, yellow and red.



Base plate for attaching spot holders on which LED spot lights can be mounted.





LED back lights

UNIVERSAL LED BACK LIGHT

This back light (40 LEDs) can be attached to the work surface of a stereo microscope and provides illumination in daylight quality, ensuring perfect uniform illumination with low-build LEDs of a long service life.

The control unit permits infinitely variable brightness control of the back light.

LED BACK LIGHT, RECESSED

This LED back light can be used with the bases of the Leica Microsystems M and S series, and ensures extraordinarily bright, homogeneous illumination at a colour temperature of 5 500 K. The standard control unit permits infinitely variable brightness control of the back light.



Control units

STANDARD CONTROL UNIT

This compact control unit includes an on/off switch, infinitely variable brightness control, as well as two socket connections for LED lighting units.

SEGMENT CONTROL UNIT

The segment control unit now has a button for segment selection, which is displayed by four LEDs:

- › separate buttons for left/right rotation of the segment
- › auto-rotation
- › rotation in 45° or 90° steps (segment size: semi, quarter or one-eighth circles)
- › infinitely adjustable dimmer
- › no flickering with cameras due to direct-current excitation
- › permits operation of two light heads
- › wide-range power supply 100–240 V, ESD socket.

Segment control:
Button for segment
selection.





HI-POWER CONTROL UNIT

The Hi-Power control unit can be connected with up to two Hi-Power spots. Either only one spot is activated or both spots can be used alternately or simultaneously (with the selected setting shown on the display). This control unit permits infinitely variable brightness control.



COMBI CONTROL UNIT

This control unit can be connected with up to two Hi-Power spots plus one LED component (e.g. a ring light) with a maximum of 40 LEDs.

The LED combination control unit can be operated in normal or storage mode. In normal mode, any desired position can be entered, while in the storage mode, the selected positions are stored for use at a later time.

Components

LIGHT SOURCE	LED RING LIGHT 66/40 (30 210 002)	LED RING LIGHT 66/80 (30 230 005/35–120 mm, 30 230 006/120–300 mm)	LED RING LIGHT 38/20 (30 230 001)
Diodes	40 white LEDs	80 white LEDs	20 white LEDs
Colour temperature	5 000 K	5 000 K	5 000 K
Dimensions	outside: Ø 94 mm x 25 mm inside: Ø 66 mm	outside: Ø 112 mm x 27 mm inside: Ø 66 mm	outside: Ø 60 mm x 22 mm inside: Ø 38 mm
Attachment	circumference clamping with spring and screw		
Working distance	55–120 mm from ring light	35–120 mm or 120–300 mm from ring light	50–100 mm from ring light

LIGHT SOURCE	LED HI-POWER SPOT (30 220 003/5 900 K, 30 220 006/4 000 K)	LED HI-POWER SPOT, 2-ARMED (30 220 007)	LED SPOT 19 (30 220 001)
Diodes	1 x Hi-Power LED	2 x Hi-Power LED	19 white LEDs
Colour temperature	5 900 K (+/-5%) / 4 000 K	5 900 K (+/-5%)	5 000 K
Dimensions	Ø 25 mm x 51 mm	Ø 34 mm x 45 mm	Ø 35 mm x 45 mm
Connections/attachment	M6 thread for spot holder	via incident light adapter	via spot holder

LIGHT SOURCE	LED BACK LIGHT, UNIVERSAL (30 240 003)	LED BACK LIGHT, RECESSED (30 240 004)
Diodes	40 white LEDs	40 white LEDs
Colour temperature	5 500 K	5 500 K
Dimensions	Ø 120 mm x 19 mm	
Illuminated area	Ø 55 mm	Ø 55 mm

CONTROL UNIT	STANDARD (30 210 001)	SEGMENT (40 LEDs) (30 210 015)
Power supply	24 V DC ± 5%, hollow pin 5.5 x 2.1 mm, 250 mA	24 V DC ± 5%, hollow pin 5.5 x 2.1 mm, 250 mA
Dimensions (D x W x H)	95.5 x 64 x 29 mm	95.5 x 64 x 29 mm
Connections	2 x 3.5 mm jack sockets (stereo)	2 x 3.5 jack sockets (stereo) and 1 x mini DIN
On/off switch		•
Buttons for segment rotation	–	2 (incl. auto-rotation)
Potentiometer wheel		approx. 1–25 mA, with index marks
ESD connection		4 mm banana plug
Ambient temperature		10–40 °C
Rel. humidity		30–70%
Conformity mark		CE

CONTROL UNIT	HI-POWER (30 210 014) max. 2 Hi-Power spots	COMBI (30 210 013) max. 2 Hi-Power spots + 1 ring light/back light
Power supply	5 V DC ± 5%, hollow pin 5.5 x 2.5 mm, 1.2 A	24 V DC ± 5%, hollow pin 5.5 x 2.1 mm, 0.75 A
Dimensions (D x W x H)	95.5 x 64 x 29 mm	126 x 52 x 45 mm
Connections	2 x 3.5 mm jack sockets (stereo)	2 x 3.5 jack sockets (stereo) and 1 x mini DIN
ESD connection	4 mm banana plug	4 mm banana plug
Operation	potentiometer, buttons for Port 1, Port 2, on/off with LED display	potentiometer, 3 buttons with LED display

Accessories

RING LIGHT

Adapters	
66/58	30 123 107
MS5/MZ6 (achromat 1.0x/0.8x/0.63x/0.32x)	30 123 101
MS5/MZ6 (achromat 1.5x)	30 123 102
MS5/MZ6 (achromat 2.0x)	30 123 103
M420 (macro lens/apo zoom)	30 123 104
M5A (lens 2.0x/1.5x/0.5x)	30 123 105
Diffusers	
for ring light 66/40	30 231 008
for ring light 66/80	30 231 011
Polarising filter sets	
analyser and polariser 66/40	30 121 111
analyser and polariser 66/80	30 231 006
Extension cable	30 231 005

HI-POWER SPOT / HI-POWER SPOT, 2-ARMED

Diffuser	30 221 019
Polariser	30 221 013
Spot holders	
L = 85 mm	30 221 009
L = 200 mm	30 221 010
L = 300 mm	30 221 011
Base plate with M5 thread	30 221 008
Adapters (for 2-armed spot)	
for S stand	30 221 014
for attaching to round columns Ø 25, 30, 32, 35 mm	30 221 015
for column 104 50 171	30 143 004
for routine M series	10 450 570
for combination light guide	10 450 205

SPOT 19

Filters	
blue	30 221 001
green	30 221 002
yellow	30 221 003
red	30 221 004
Spot holders	
L = 85 mm	30 221 005
L = 200 mm	30 221 006
L = 300 mm	30 221 007
Base plate with M5 thread	30 221 008

System overview

LIGHT SOURCE

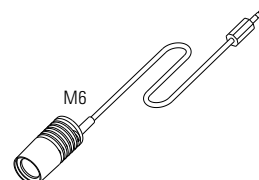
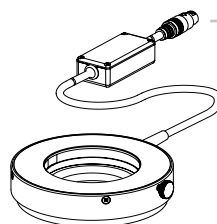
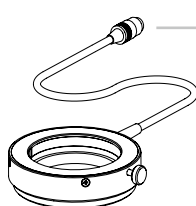
LED RING LIGHT 38/20
30 230 001

LED RING LIGHT 66/40
30 210 002

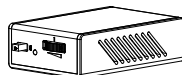
LED RING LIGHT 66/80
30 230 005 / 35–120 mm
30 230 006 / 120–300 mm

LED HI-POWER SPOT
30 220 003 / 5 900 K
30 220 006 / 4 000 K

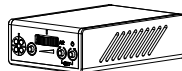
CONTROL UNITS



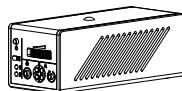
Standard (30 210 001) incl.
desktop power supply (30 211 021)



Segment (30 210 015) incl.
desktop power supply (30 211 021)



Combi (30 210 013) incl.
desktop power supply (30 211 021)



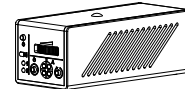
Segment (30 210 015)
incl. desktop power
supply (30 211 021)



Hi-Power (30 210 014)
incl. plug-in power
supply (30 211 012)



Combi (30 210 013)
incl. desktop power
supply (30 211 021)

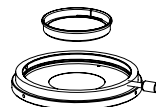


ACCESSORIES

Diffuser 66/40 (30 231 008)



Polarising filter set for
66/40 (30 121 111)



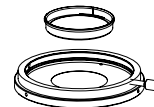
Adapters (see p. 13)



Diffuser 66/80 (30 231 011)



Polarising filter set for 66/80
(30 231 006)



Adapters (see p. 13)



Spot holders M5/M6:
85 mm (30 221 009)
200 mm (30 221 010)
300 mm (30 221 011)

Base plate M5 (30 221 008)



Diffuser (30 221 019)



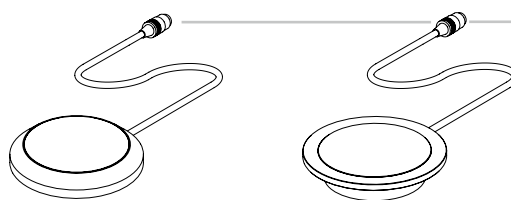
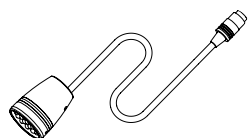
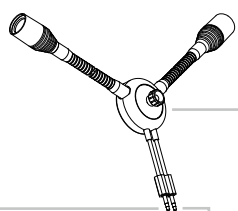
Polarising filter (30 221 013)
(no illustration)

**LED HI-POWER SPOT,
2-ARMED**
30 220 007

LED SPOT 19
30 220 001

**LED BACK LIGHT
UNIVERSAL**
30 240 003

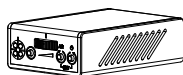
**LED BACK LIGHT
RECESSED**
30 240 004



Standard (30 210 001)
incl. desktop power supply
(30 211 021)



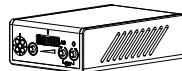
Segment (30 210 015)
incl. desktop power supply
(30 211 021)



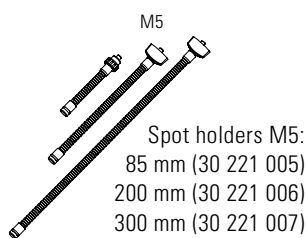
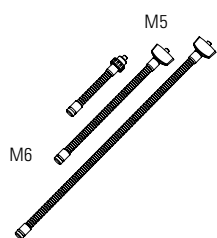
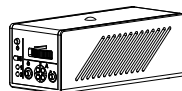
Standard (30 210 001)
incl. desktop power supply (30 211 021)



Segment (30 210 015)
incl. desktop power supply (30 211 021)



Combi (30 210 013)
incl. desktop power supply (30 211 021)



Base plate M5 (30 221 008)



(2-armed
only:)
Adapters
(see p. 13)



Colour filters (see p. 13):
blue
green
yellow
red



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