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EasyLED Spotlight Plus

User Manual

Operating instructions

EasyLED Spotlight Plus

Status: March 2016

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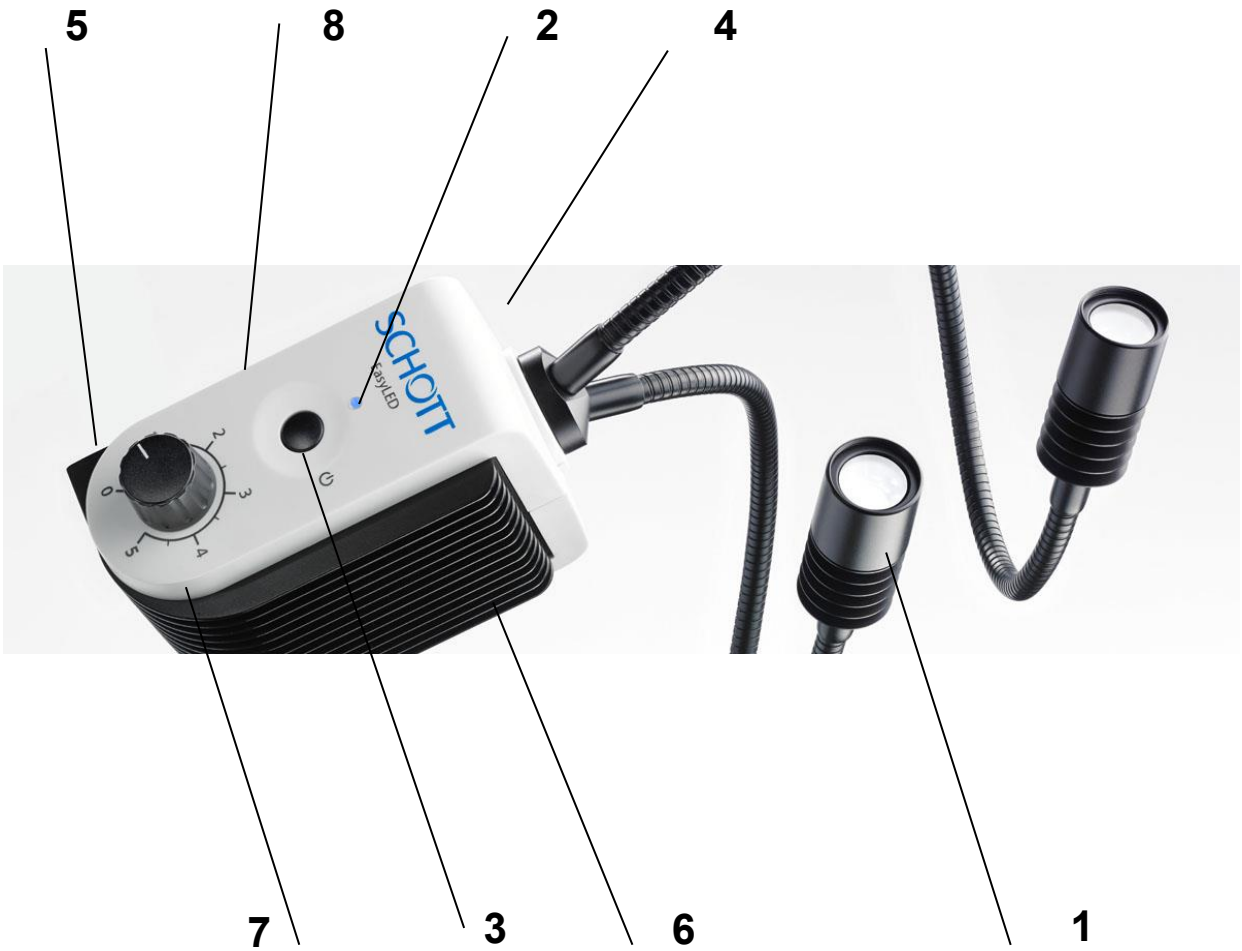
The instrument at a glance



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1. Important information

Symbols used:

Symbol	Meaning
	Warning of danger (caution, obey documentation)
	LED-radiation (caution, do not look directly into the beam!)

Intended use:

The EasyLED Spotlight Plus System is intended to provide lighting in stereomicroscopy applications used in industry and laboratories. It is designed to intensely illuminate objects of all kinds.

According to the EN 62471:2008 standard, the EasyLED Spotlight Plus System is a product of Risk Class 1.

The EasyLED Spotlight Plus System is in compliance with the following directives of the European Community:

2014/35/EU (Low Voltage Directive)

2014/30/EU (EMC Directive)

2011/65/EU (RoHS)

The technical documentation and full compliance with the standards listed below proves the conformity with the essential requirements of the above EU Directives:

EN 61326-1:2013

EN 61010-1:2010

EN 50581:2012

Safety information:

Please read and observe these instructions carefully. The instrument's safety cannot be guaranteed unless you observe the operating instructions.

Never look directly into the light emitting aperture of the spotlights during operation (danger of ophthalmic injury)!

The EasyLED Spotlight Plus System emits high intensity visible light. As light absorbing materials have the physical property of converting incident light into heat, damage may occur to heat sensitive or flammable light absorbing materials. To avoid such thermal damage and the potential danger of fire or burns, please adhere to the following instructions:

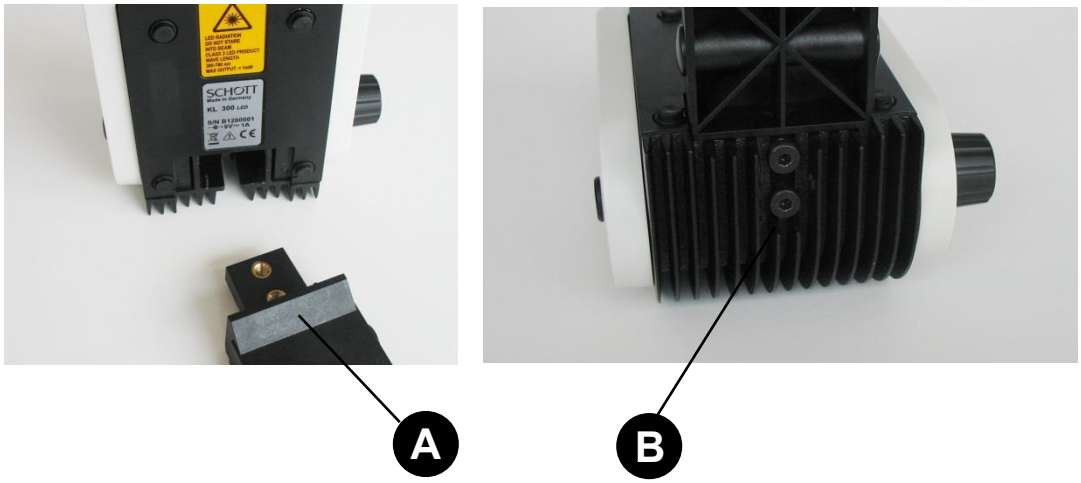
- Never cover up the EasyLED Spotlight Plus System (danger of fire!)
- Never cover up the light emitting aperture of the spotlights with your hands or other parts of your body (danger of burns!)
- When illuminating heat sensitive or flammable light absorbing objects, special care must be taken to keep an appropriate distance and select a suitable brightness level in order to avoid thermal damage to the object.
- All spotlights not being used in the working procedure must always be a safe distance – at least 10 cm – away from heat sensitive or flammable light absorbing materials (prevention of possible fire hazard). Care must, therefore, be taken that these spotlights are at the above mentioned safe distance away from, for example, dark/coloured textiles and dark/coloured wooden or plastic surfaces
- To avoid unnecessary strain on biological tissue by illuminating with visible light, reduce the brightness and duration of illumination to the absolute minimum level required.

Please make sure that your EasyLED Spotlight Plus System is operated at the voltage indicated on the rating plate (8).

- ♦ The EasyLED Spotlight Plus System has been developed for operation in dry rooms only (see Point 6 "Technical data").
- ♦ The instrument must not be used in explosive areas.
- ♦ Safe disconnection from the power supply is only guaranteed by pulling out the mains plug.
- ♦ The instrument may neither be opened nor dismantled. Technical modifications are forbidden. Repairs must only be carried out by the manufacturer or by its authorised customer service agencies.
- ♦ Please ensure that every user of the system has quick access to these operating instructions.
- ♦ The manufacturer is not liable for damage caused by failure to obey these instructions.

2. Operation and use

2.1 Installation



The EasyLED Spotlight Plus System is designed for direct installation on all common microscope and swivel arm stands. Matching adapters have either been included with the light source or are available from your dealer (see Point 5 "Accessories").

Start by guiding the matching side of the mounting adapter (A) into the designated holder (5) on the bottom of the control unit as far as it will go. Proceed by guiding the two fastening screws (M5) through the groove from the bottom before screwing them in place using an Allen key (3 mm).

You are now ready to clamp the EasyLED Spotlight Plus System onto the microscope or swivel arm stand using the mounting adapter. You may have to remove the microscope body / carrier beforehand and refit it when installation is complete.

2.2 Power connection

Plug the barrel connector of the included power supply unit into the designated mains connection socket (4) on the control unit.

Please ensure to operate your EasyLED Spotlight Plus System only with the included power supply unit.

The plug connection of the power supply unit is interchangeable for EU, UK, US and AU. The plug connection needs to be connected to the mains supply (100-240 V AC, 50-60 Hz).

2.3 Start-up procedure

You turn the EasyLED Spotlight Plus System on/off by pressing the switch (3).

The blue indicator light (2) will be on when the instrument is switched on.

Please disconnect power by pulling out the power plug!

2.4 Light intensity setting

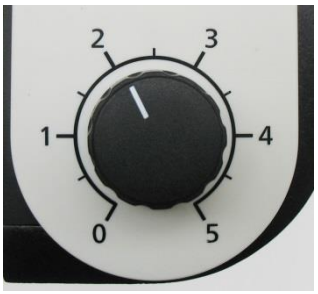
The brightness can be adjusted continuously by turning the light intensity setting knob (7).

The scale is divided into 6 brightness levels ranging from 0 to 5.

The greatest light intensity is reached when the knob is turned all the way to position 5.

Please note that when the brightness control is set to 0, there is no more intensity as all spotlights are off. However, the instrument itself is not switched off in this case.

To turn the EasyLED Spotlight Plus System off, press the On/Off switch (3) once.



2.5 Operating mode selection (EasyLED Double Spotlight Plus System only)

You can successively select the following operating modes by pressing the switch (3) repeatedly:

LED head 1 ON, LED head 2 ON, both LED heads ON, both LED heads OFF, etc.

3. Maintenance

Your EasyLED Spotlight Plus System is maintenance free.

Disinfecting the light source during medical applications is to be avoided.

To clean the outside of the instrument, disconnect the instrument from the mains supply and use a soft dry cloth or commercially available plastic cleaning cloths. However, never use combustible or flammable liquids for cleaning.

4. Troubleshooting

Should you be unable to correct the fault you are experiencing applying the measures listed below, turn to your authorised dealer or the next SCHOTT dealership. More extensive repairs have to be performed by authorised service technicians.

Type of the fault	Possible cause	Remedy
Lamp off	Instrument not switched on Plug not in socket No mains voltage	Switch the instrument on Insert the plug Check mains voltage
Light intensity decreasing	LED head overheated	Provide sufficient cooling, and allow the instrument to cool down before resuming operation

5. Accessories for your EasyLED Spotlight Plus System

We offer an extensive range of accessories to complement your EasyLED Spotlight Plus System.

Only SCHOTT accessories guarantee perfect operation, safety and optimum light yield.

You can install screw on filters acting as optical filters in front of the LED head. Please refer to our catalogue for details on the standard types of filters we carry.

We also offer mounting adapters for our EasyLED Spotlight Plus System that match microscope stands and swivel arms. We either include these adapters with your light source, or you can order them separately. Refer to our catalogue for a detailed description of the available models.

If not mounted to a stand or swivel arm, the instrument can also be installed to a base as a standalone unit by means of a corresponding mounting device. More information is, again, provided in our catalogue.

6. Technical data

Properties		Values
General information		
Type description		EasyLED Spotlight Plus / EasyLED Double Spotlight Plus
Dimensions - control unit (W x D x H)	mm	approx. 61 x 114 x 107
Weight - single spot	kg	approx. 0.5
Weight - double spot	kg	approx. 0.7
Cooling		Convection
Ambient temperature*	°C	+ 5 ... + 40
Relative humidity*	%	at 31°C ambient temperature: 80% 31°C to 40°C ambient temperature: linearly decreasing to 50%
Air pressure*	hPa	800 ... 1060
Transport and storage		
Temperature	°C	-20 ... +70
Rel. humidity	%	10 ... 95 (non-condensing)
Air pressure	hPa	500 ... 1200
Degree of fouling		2
Electrical information		
- Power supply unit -		
Operating voltage, frequency		100 - 240 V ~ 50 - 60 Hz
Power consumption, max.	VA	max. 6
Protection class		II
Overvoltage category		II
- Controller -		
Supply Voltage		5 V DC
Current		1.2 A
Diode		High Power LED
Power rating LED	W	3
Average lifetime LED level 5	h	50,000 (luminous flux drop to 70%)

* test conditions required by standards DIN EN 61010-1 and UL61010-1

Lighting information		
Total light flux at LED head (typical value)		
Level 5	lm	130
Colour temperature	K	approx. 5,600
Light exit angle ($2\alpha_{eff}$)		approx. 53°
Approvals EMC emission class		CE, (power supply unit CE, UL, PSE) B

The right is reserved to make changes in the design and supplied items within the scope of ongoing technical development.

WEEE Declaration
High-quality materials and components have been used during the development and the production of your SCHOTT product. This symbol means that electrical and electronic equipment must be disposed of separately from your household waste after they have reached their end-of-life.
SCHOTT AG Lighting and Imaging have arranged for a return system that customers can use to dispose of their equipment. Please make use of this system to dispose of your product. Join us in helping preserve the environment in which we live.
For more information on our return system, log on to www.schott.com/lightingimaging/recycle.

Manufacturer's Address:

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System diagram for EasyLED series

Ring light
P/N 600.200

Ring light plus
P/N 600.300

Polarization filter set
P/N 400.550

Diffusor
P/N 400.570

Protection window
P/N 400.560

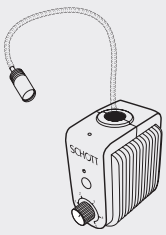
Adapter
for brightfield ring lights
Øi = 50 mm P/N 157.448
Øi = 58 mm P/N 157.450
Øi = 60 mm P/N 157.452

Adapter
for base plate
Ø 90 mm P/N 157.630
Ø 100 mm P/N 157.600
Ø 120 mm P/N 157.610
Ø 180 mm P/N 157.620

Back light / Transmitted light stage
P/N 600.400

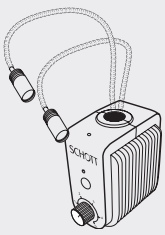
Polarizing filter attachment for TL
P/N 158.500

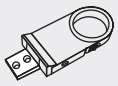
Analyzer M 49 x 0.75
P/N 158.505
Analyzer M 52 x 1
P/N 158.510



Spot light plus single
P/N 600.101

Spot light plus double
P/N 600.121





Mounting bracket
for column Ø 20 mm P/N 120.220
for column Ø 25 mm P/N 120.225
for column Ø 29 mm P/N 120.229
for column Ø 32 mm P/N 120.232
for column Ø 35 mm P/N 120.235
for ZEISS stand K/stand M P/N 120.240

Mounting bracket
P/N 120.250

Base
Ø = 100 mm
3 x M6 thread
P/N 158.340

Polarization filter for spot (turnable)
P/N 600.600

Color filter for spot

red	P/N 600.650
blue	P/N 600.660
green	P/N 600.670
yellow	P/N 600.680
halogen	P/N 600.690

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