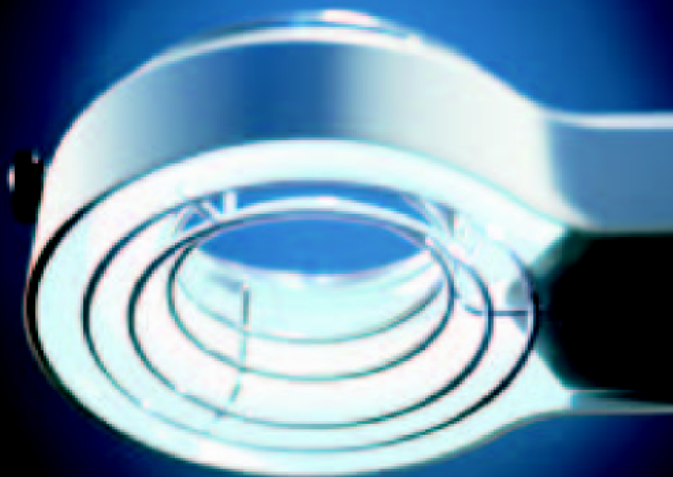


FLUORESCENT UV-RING LIGHT

OPERATING INSTRUCTION



Caution!

UV-radiation of this device is in the range of UV-A (320 - 400 nm). Direct exposure to eyes shall therefore be avoided. UV protection glasses shall be used when working with this illuminator

Operating instructions for UV- Fluorescent ring light (FLRL)

Please read all the operating instructions before putting the FLRL into operation!

Technical data

Description

Fluorescent ring light

Lamp	UV-A fluorescent lamp
Wavelength	365 nm Max.
Dimension max.	98 mm x 170 mm Height: 37 mm
Mounting	Clamp with screws
Lamp housing	White synthetic ESD material Surface resistance (10 E9-10 E11 Ohm/sq) (connected with ESD socket on ballast via 10 MOhm protective resistor)

Electronic ballast

Power supply	24 V DC +/- 1 V, hollow plug 5.5 x 2.1 mm, 450 mA or 12 V DC (12-16 V DC), 1 A @ 12 V
On/Off switch	
Switch	for 2 brightness settings
Dimensions	95.5 x 64 x 28.5 mm
ESD connection	4 mm banana pin
Test symbol	CE
Fuse	internal glass-tube fuse 5 x 20 mm (F 1.6 A L 250 V)

Power pack

Plug connection	3-pin IEC 320
Voltage range	100-240 V
Mains frequency	50-60 Hz
Power input max.	15 VA
Protection class	I
Test symbol	CE UL CSA

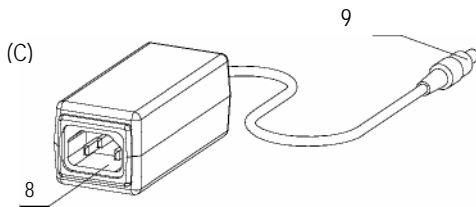
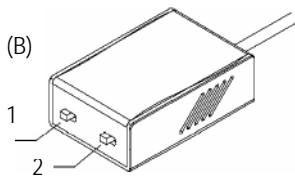
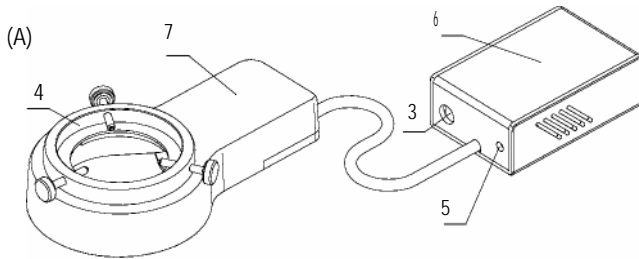
Ambient temperature 10-35°C

Rel. humidity 10-90 % (non-condensing!)

CE Mark of conformity:



Certifies that the electronic ballast conforms to the EMC directive 89/336/EEC and low voltage directive 73/23/EEC.



- (A) 3 Jack for 9
4 Mounting ring
5 ESD plug
6 Electronic ballast
7 Lamp housing
- (B) 1 Brightness switch
2 On/Off switch (right-> On)
- (C) 8 Plug for mains cable
9 Plug for 3

Description

In purchasing this product, you have acquired a high-quality UV fluorescent ring light (FLRL) that can be employed wherever extremely homogenous illumination with minimal heat generation is required.

This new FLRL has been developed for illumination purposes in industrial and laboratory stereomicroscopy.

The lighting system consists of:

- ✓ Lamp housing
- ✓ Electronic ballast
- ✓ (Desktop) switch-mode power supply

The **lamp housing** (7) is ESD (Electrostatic Discharge) synthetic material and is ideal for use at ESD workplaces. The lamp can be replaced without tools and is ignited by the electronic ballast in an especially gentle manner, being pre-heated when supplied with 24 V DC. Another great advantage of the electronic ballast is the lamp's ripple-free operation.

The FLRL allows surfaces to be illuminated especially brightly and homogeneously and is designed for microscopes with an inner diameter of 40–66 mm.

The compact **electronic ballast** (6) has an **ON/OFF switch** (2), a **selector switch** for 2 brightness settings (1) and an **ESD socket** (5) for discharging electrical charges from the **mounting ring** (4) and the optional protection grid.

The voltage range of the switch-mode **power supply** (C) is 100–240 V and it has a 3-pin plug connection.

Safety information

These warning symbols are used throughout this document.



Caution: Risk of electrical shock!



Caution: Dangerous area.

Warning: Refer to accompanying documentation!



Warning: Hot surfaces!

This section contains safety information which must be observed strictly when using this device.

IT IS IN YOUR OWN INTEREST TO PAY ATTENTION TO ALL WARNINGS on the unit and in this manual.

Exposure to Eye: UV-radiation of this device is in the range of UV-A (320 - 400 nm). Direct exposure to eyes shall therefore be avoided. UV protection glasses shall be used when working with this illuminator

Target audience: People working with the device must read the sections which are relevant to their work. This applies especially to the chapter entitled „Safety information“.

Duty of observation with respect to product: The operator must report all operational irregularities or changes to components which are relevant to device safety immediately to the responsible supervisor or the manufacturer.

Location of operating instructions: We recommend storing these operating instructions near the device to ensure quick access by operating staff.

Legal provisions: National and local safety and accident prevention regulations which are in force must be strictly observed in addition to the operational guidelines issued by the operating entity.



No technical modifications whatsoever are to be made to this device under any circumstances!

Do not operate this device without a lamp as a high ignition voltage is applied to the lamp socket contacts.

Operating the device without a lamp (or with a faulty lamp) causes the electronic ballast to overheat, as a result of which it switches itself off. After a period of cooling, the device switches on again automatically.



Do not touch the lamp socket contacts under any circumstances as high voltage is applied to these during lamp ignition!

Refer to specifications in „Technical Data“ section for binding operational limits.


DO NOT USE this unit near water or in any space with excessive humidity. **WARNING:** In order to prevent electric shock, do not expose this appliance to rain or high humidity.

NEVER SPILL LIQUID ON THE UNIT OR INSERT OBJECTS INTO THE UNIT! This could result in electric shock or damage to the unit.

DO NOT PLACE FLAMMABLE materials on or near the unit at any time. Keep unit away from any sources of heat. The device has not been approved for operation in areas subject to explosion hazards!

The device may only be operated using the mains voltage indicated.

Never open the device or any components unless instructed expressly to do so by these instructions.

 Never look directly into the light during operation as this may lead to injury to the eyes!

Cleaning: Disconnect unit from the mains power supply before cleaning and only clean with a damp cloth. Never use combustible or flammable liquids. If fluids accidentally enter the device, unplug the mains cable immediately and let the unit dry thoroughly before using again.

Spare parts: Use only original spare parts. If this is not done, it can lead to personal injury and material damage. Refer to „Spare Parts“ section for component codes.

Liability: As the ultimate legal entity, the operating institution is responsible for ensuring the proper use of the device and for providing other operators with the necessary information and it specifies the competencies required to operate the device.

DISCONNECT THE MAINS CABLE when the unit is not being used for an extended period of time.

ONLY USE THE ORIGINAL mains cable. Route cable so that it cannot be pinched or severed.

FOR REASONS OF SAFETY only use the grounded 3-pin plug.

Repairs which are not described in this document must only be carried out by authorized workshops!

The manufacturer is not liable for any damage resulting from a failure to comply with the above instructions!

Current technology

This product constitutes state-of-the-art technology and employs recognized safety standards.

This instrument was designed and built in accordance with the following regulations and standards:

- EEC/73/23: Low voltage directive (CE)
- EEC/89/336: Electromagnetic compatibility (CE)

Installation and connection

Remove the individual system components from their packaging and place them onto a sufficiently large horizontal surface.

To obtain optimal functionality, the FLRL must be positioned correctly.

Observe the following criteria:

- Atmospheric humidity (*cf. technical data*)
- Room temperature (*cf. technical data*)



The device may only be operated at the rated mains voltage. Only connect the unit to grounded sockets.



Keep air vents free!

If the mounting ring (4) has not yet been mounted on the lamp housing, it must be attached by positioning it on the end and twisting or screwing it. Connect the ESD cable coming from the lamp socket to one screw of the mounting ring.

Connect one end of the power pack to the electronic ballast (3) by means of the hollow plug connector (9) and the other end to the power mains (1 00-240 V AC, 50-60 Hz) by means of the mains cable (8).

The FLRL can now be mounted directly onto the objective of all Microscopes/Cameras with 44-66mm diameter by means of 1 screw (for 66mm diameter) or 3 screws (for smaller than 66mm) that must be screwed in or out depending on the diameter. Remove any UV-protection filter from the camera or microscope before assembling the FLRL.

If required, an adapter can be mounted onto the FLRL in order to attach the FLRL to a base plate by means of a flexible gooseneck. This means that the FLRL can be used as a workplace lamp when not being employed for a microscope (e.g. for assembly work).



The mains plug must be pulled out when mounting the adapter!

Loosen the lamp housing cover screw (not the screw for replacing the lamp!) without opening the cover and screw the adapter with the cover tight again.

As the lamp is not ESD safe, a protective grid can be mounted for particularly ESD-critical applications in order to prevent accidental contact with the lamp. Please note that the housing of the electronic ballast is not ESD protected.

The ballast has an ESD socket that is connected to the lamp housing by means of a 10M Ω protective resistor. Connect this socket to your ESD workplace potential.

Operation

Turn on the electronic ballast (2) and the lamp begins to light up. Using the switch (1) you can select between the 2 brightness settings.



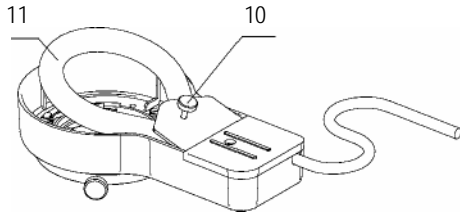
Do not open the unit or its individual components!

Try not to turn the device on and off too often as this reduces the service life of the lamp.

If the ballast is supplied by a 12 V DC source it is possible that the lamp might not ignite on the dim setting (especially at low temperatures). In this case you should set the switch to the bright setting and then switch to the desired setting after ignition.



Replacing the lamp: Detach the device from the power supply before removing the lamp and let the lamp cool down. Be careful because the lamp can be hot!



To replace the lamp, release the mounted screw (10) on the underside of the lamp housing and fold the lamp and its mounting out. Pull out the old lamp (11) from the mounting and insert a new lamp. Make sure that the lamp is correctly seated in the mounting. Press the lamp and its mounting back into the lamp housing and tighten the screw.



Do not plug the device into the power supply again until the lamp has been correctly fitted.

The design of the product is under constant review, and although every effort is made to keep this manual up to date, we reserve the right to change specifications at any time without prior notice.

