UV TRANSILLUMINATOR 2000

Instruction Manual

Catalog Numbers
170-8110
and
170-7942

4000125RevB

Hardware Instruction Manual

This UV transilluminator is suitable for research use only.
It must be used by specialized personnel that know the health risks associated with UV radiation and with the reagents that are normally used with this instrument. The acrylic screen provides some UV protection. However, it does not guarantee complete protection. It is designed to shield the person working at the UV transilluminator only. The use of protective eyeglasses, mask, and gloves is strongly recommended when operating or when in the vicinity of the transilluminator with the UV lights turned on.

WARRANTY

The UV transilluminator is warranted against defects in materials and workmanship for 1 year. If any defects occur in the instrument or accessories during this warranty period, Bio-Rad Laboratories will repair or replace the defective parts at its discretion without charge. The following defects, however, are specifically excluded:

1. Defects caused by improper operation.
2. Repair or modification done by anyone other than Bio-Rad Laboratories or an authorised agent.
3. Damage caused by substituting alternative parts.
4. Use of fittings or spare parts supplied by anyone other than Bio-Rad Laboratories.
5. Damage caused by accident or misuse.
6. Damage caused by disaster.
7. Corrosion caused by improper solvent or sample.

This warranty does not apply to parts listed below:

1. Fuses
2. Lamps
3. Starters

The warranty general conditions are indicated in the attached warranty card that has to be filled in and sent back.
For any inquiry or request for repair service, contact your local Bio-Rad Laboratories office. Inform Bio-Rad of the model and serial number of your instrument.

REGULATORY NOTICE

IMPORTANT: This Bio-Rad instrument is designed and certified to meet EN 61010* safety standards and EMC regulations. Certified products are safe to use when operated in accordance with the instruction manual.
This instrument should not be modified or altered in any way. Alteration of this instrument will:

1. Void the manufacturer's warranty
2. Void the EN61010 safety and EMC certification
3. Create a potential safety hazard

Bio-Rad Laboratories is not responsible for any injury or damage caused by the use of this instrument for purposes other than those for which it is intended, or by modifications of the instrument not performed by Bio-Rad Laboratories or an authorised agent.

*EN 61010 is an internationally accepted electrical safety standard for laboratory instruments.

IMPORTANT NOTICE

Please, read the installation instruction carefully before installing the UV transilluminator.

This instrument is intended for clinical and research laboratory use with Ethidium Bromide Gel activation and it must be operated only by specialised personnel aware of the potential risks associated with the chemical and biological agents normally used with this unit.

This instrument is meant for use only by specialized personnel that know the health risks associated with UV radiation and with reagents that are normally used with this instrument. The acrylic shield provides some UV protection. However, it does not guarantee complete protection, and it is designed to shield only the person working in front of the system.

	WARNING: The operator and anyone in the near vicinity should wear appropriate safety glasses, or a protective mask and gloves, in addition to using the UV safety shield provided with this instrument.

Contact your local Bio-Rad Laboratories representative if service is required.

INSTALLATION

Unpacking

Carefully unpack the transilluminator and the shield as follow:

1. First remove the cardboard at the top and extract the acrylic shield.
2. Remove the Transilluminator from the two cardboard shells and place it on a stable, horizontal surface.
3. Remove the blue plastic protection film from the UV Filter
4. The shield can be placed vertically in front of the Transilluminator inserted in the two frontal slots or horizontally on the top.

Stand alone installation

1. The instrument must be placed on a bench leaving at least 10 cm of space all around in order to avoid any obstacle that may reduce the ventilation.
2. Connect the instrument to the power using the annexed cable. The power font must be able to deliver at least 250 VA with a voltage between 100 and 240 Vac. The plug must have a ground connection.

Installation with the Standard Documentation System:

This instrument has been designed to work with the Standard Documentation System. In this case follow the instructions included in the Standard Documentation manual or any other instrument that will be released in the future.

SWITCHING ON

Important: Protect the eyes and skin from the UV radiation with special glasses or mask and gloves before switching on the instrument. For the purposes of band cut applications, you must wear all possible UV protections, especially for your eyes, when the transilluminator switch is turned ON. The UV shield has to be used but glass or mask and gloves are recommended to block the UV radiation. This applies to the operator and anyone in the near vicinity of the powered-on transilluminator.

1. Switch the "Analytical/Preparative" black switch to the 'Analytical' position. The UV bulbs can take longer to come on if the transilluminator is switched on while it is on 'Preparative' mode.
2. Switch on the instrument by pressing the "Power ON/OFF" switch.
3. Once the transilluminator UV lamps are on, it is possible to reduce the irradiated power by toggling the "Analytical/Preparative" switch to the 'Preparative' position. The reduced irradiation under preparative mode reduces damage to the DNA sample during analysis.

The transilluminator has thermal protection to prevent its internal temperature from exceeding 50°C. The thermal protection can be activated if the green "Power ON/OFF" switch is on and lit uninterrupted for at least 1 hour. If this happens, switch off the transilluminator and wait for it to cool.

LAMPS AND/OR STARTER REPLACEMENT

Attention: if substances known to be dangerous to health are used on the transilluminator, clean and treat the instrument for proper decontamination. Please, use protective gloves when handling and opening the transilluminator.

Depending on the fuse installed on the transilluminator, all internal circuits are fed at 110 or 230Vac independently by the line voltage through an autotransformer.

To ensure a good running instrument, replace the lamps every 500 hours of use.

1. Decontaminate the instrument as per the instruction given in the chapter "General precaution".
2. Remove the power cable.
3. Remove the screws on both sides of the transilluminator.
4. Remove the lid and lay it down on its back side. Avoid laying the cover with the glass side directly on the bench as this will scratch the glass surface. Please, note that there is a grounding cable that connects the cover to the base.
5. Remove the lamp by rotating it until the lateral pins are in a vertical position.
6. Insert the new lamp into the lamp holders, and rotate it until the pins are in a horizontal position.
7. To replace a starter, rotate it counter clockwise to remove it.
8. Insert the starter in the holder and rotate clockwise.
9. Reassemble the lid so that the grounding cable slides under the reflecting panel, and retighten the screws on both sides.

It is essential to assemble the lid before making any test.

FUSE REPLACEMENT

The fuses are located on the right lateral panel, the same side as the power entry module.

1. Remove the power cable.
2. Unscrew the plastic screws of the fuse holders with a screw driver.
3. Replace the fuses with others of suitable power (0.8A for 230-240Vac and 1.6A for 100 and 115 Vac).
4. Retighten the fuse holder screws.

GENERAL PRECAUTIONS

- Plug the transilluminator on an electric line with ground connection.
- The transilluminator is equipped with thermal protection to prevent overheating. During normal use of 5-15 minutes, the internal temperature will not reach the threshold that causes the thermal protection to switch off the transilluminator. If the transilluminator is left on for at least 1 hour, the internal temperature can reach around 48 °C, and the thermal protection automatically switches off the lamps. The green light of the main power switch will remain lit. The lamps turn on again when the temperature lowers to 38°C.
- Do not pour liquids directly on the transilluminator.
- Do not block the aeration slits.
- Switch off the instrument immediately after its use.
- Position the transilluminator to prevent harm to nearby operators.
- **The transilluminator surface is a UV filter. Clean the UV filter surface after use. When using the transilluminator with samples stained with Ethidium Bromide, decontaminate the transilluminator surface with bleach. Denatured alcohol can be also used. Always wear disposable gloves.**

SPECIFICATIONS

Electrical data

Voltage	100/230 Vac 50/60 Hz +/- 10%
Fuses	0.8/1.6 Amp
Consumption	120 VA max

Physical data

Dimensions		
	Width	28 cm
	Length	36 cm
	Height	10 cm
Weight		9.5 kg

Operating conditions

Temperature	5-40°C
Relative Humidity	max 80%

Hardware Specifications

Lamps	6x302 nm - 8 Watts
Energy	Analytical/Preparative
Accessories	Acrylic face shield

Ordering Information

170-7942 UV Transilluminator 2000 (100-115 Vac/60 Hz)

Including: Acrylic Face Shield
Power Cable
Spare Fuses 1.6 Amps
Instruction Manual

170-8110 UV Transilluminator 2000 (220-240 Vac/50 Hz)

Including: Acrylic Face Shield
Power Cable
Spare Fuses 0.8 Amps
Instruction Manual

Replacement Parts Information

170-3751	UV bulb
170-8097	Kit of 6 UV bulbs
100-1370	TR2000 Starters ST151 (3each)
900-8931	Fuse, 5x20mm, 1.6amp slo-blo (replacement for catalog number 170-742)
1000-9419	Fuse, 5x20mm, .8amp Type T (replacement for catalog number 170-8110)

Manufactured by:

Bio-Rad Laboratories, Inc.
2000 Alfred Nobel Drive
Hercules, CA 94547 USA
Telephone (510) 741-1000
Fax (510) 741-5800

Bio-Rad Laboratories

Life Science Group

Web site *www.bio-rad.com* ***Bio-Rad Laboratories Main Office*** *2000 Alfred Nobel Drive, Hercules, CA 94547, Ph. (510) 741-1000, Fx. (510) 741-5800*

Also in: Australia *Ph. 02 9914 2800, Fx. 02 9914 2889* ***Austria*** *Ph. (01) 877 89 01, Fx. (01) 876 56 29* ***Belgium*** *Ph. 09-385 55 11, Fx. 09-385 65 54* ***Brazil*** *Ph. 55 21 507 6191* ***Canada*** *Ph. (905) 712-2771, Fx. (905) 712-2990* ***China*** *Ph. 86-10-8201-1366/68, Fx. 86-10-8201-1367* ***Denmark*** *Ph. 45 44 52-1000, Fx. 45 4452 1001* ***Finland*** *Ph. 358 (0)9 804 2200, Fx. 358 (0)9 804 1100* ***France*** *Ph. 01 47 95 69 65, Fx. 01 47 41 9133* ***Germany*** *Ph. 089 318 84-177, Fx. 089 318 84-123* ***Hong Kong*** *Ph. 852-2789-3300, Fx. 852-2789-1257* ***India*** *Ph. (91-124)-6398112/113/114, Fx. (91-124)-6398115* ***Israel*** *Ph. 03 951 4124, Fx. 03 951 4129* ***Italy*** *Ph. 34 91 590 5200 , Fx. 34 91 590 5211* ***Japan*** *Ph. 03-5811-6270, Fx. 03-5811-6272* ***Korea*** *Ph. 82-2-3473-4460, Fx. 82-2-3472-7003* ***Latin America*** *Ph. 305-894-5950, Fx. 305-894-5960* ***Mexico*** *Ph. 52 5 534 2552 to 54, Fx. 52 5 524 5971* ***The Netherlands*** *Ph. 0318-540666, Fx. 0318-542216* ***New Zealand*** *Ph. 64-9-4152280, Fx. 64-9-443 3097* ***Norway*** *Ph. 47-23-38-41-30, Fx. 47-23-38-41-39* ***Russia*** *Ph. 7 095 979 98 00, Fx. 7 095 979 98 56* ***Singapore*** *Ph. 65-2729877, Fx. 65-2734835* ***Spain*** *Ph. 34-91-590-5200, Fx. 34-91-590-5211* ***Sweden*** *Ph. 46 (0)8-55 51 27 00, Fx. 46 (0)8-55 51 27 80* ***Switzerland*** *Ph. 061-717-9555, Fx. 061-717-9550* ***United Kingdom*** *Ph. 0800-181134, Fx. 01442-259*