Grant-bio

DNA/RNA UV-cleaner box
UVC/T-M-AR

Operating instructions

Contents

1. Safety

The following symbols mean:

Caution: Read these operating instructions fully before use and pay particular attention to sections containing this symbol

Caution: Do not work in the box or open the protective screen while the open UV-lamp is switched ON. Otherwise it can expose the operator to a dangerous level of UV light.

- Use only as specified by the operating instructions, or the intrinsic protection may be impaired.
- After transport or storage in humid conditions, dry out the unit before connecting it to the supply voltage. During drying out the intrinsic protection may be impaired.
- Connect only to a power supply with a voltage corresponding to that on the serial number label.
- Ensure that the mains switch and isolating device (power supply connector) are easily accessible during use.
- Ensure that electrical appliances to be used inside the cabinet are inspected/tested for safety before use.
- Connect only to a power supply which provides a safety earth (ground) terminal.
- Do not work in the box or open the protective screen while the open UV-lamp is switched ON.
- Before moving, disconnect at the power supply socket.
- To disconnect the unit from the mains, disconnect the two-pin plug from the power socket.
- Do not place any hot objects close to the plexiglass sides of the box to avoid damage.
- Do not operate the unit outside the laboratory premises.
- Do not operate the unit in premises with aggressive or explosive chemical mixtures.
- Before using any cleaning or decontamination method except those recommended by the manufacturer, user should check with the manufacturer that the proposed method will not damage the equipment.

2. General Information

DNA/RNA UV-cleaner box UVC/T-M-AR is designed for operation in laboratories working in the fields of DNA analysis, genetic engineering, molecular biology.

Bench top model, constructed from stainless steel skeleton and 4-mm glass (8-mm front side) covered with special film, stainless steel covered working area and digital timer control of UV exposure. UVC/T-M-AR has one open UV-lamp installed in the upper part of the box that disinfect the working place substantially decreases contamination level during UV-exposure (15-30 min).

White 15 W lamp provide local illumination of the working place and ensures good conditions for visual control of operation. Digital timer controls the time of UV-exposure by open UV-lamps.

UVC/T-M-AR includes not only traditional UV source for direct lighting the surface of the inner working place of the PCR-box, but also additional UV air flow cleaner (UV - recirculator) for biosafety DNA decontamination to protect the user from direct UV-light during operation.

UV-recirculator consists of a UV lamp, fan and dust filters organized in a special box, i.e. a person working in the UVC/T-M-AR is not exposed to UV-radiation and therefore processing the air-flow with UV-light can be performed practically all the time, without interrupting working process. UV-recirculator increases the density of UV-light to maximum (1000 x fold) leading sufficiently to effectivity of DNA inactivation. UV-recirculator generates 100 Volumes of the PCR per 1 hour air flow exchange giving maximum aseptic conditions inside the Box.

Advantages:

- No Hepa filters
- Ozone Free High Density Uv Decontamination
- Long Living Uv Lamps (8000 hrs guaranty)
- Automatic UV-lamps Switch Off When The Protective Screen Is Open;
- No Noise, Low Energy Consumption
- Compact “BENCH TOP” For Personal Labs

UVC/T-M-AR is not recommended for work with dangerous infectious and viral materials.

3. Getting started

3.1 **Unpacking**
Remove packing materials carefully, and retain for future shipment or storage of the unit.

⚠ Caution – due to it's size and weight (35 kg) the unit requires two people to lift or move it.

3.2 **DNA/RNA UV-cleaner box UVC/T-M-AR set includes:**

- DNA/RNA UV-Cleaner Box, UVC/T-M-AR .....1 pce.
- A spare fuse (inside fuse compartment).....1 pce.
- Power cord .....1 pce.
- Specifications, Operating manual, CE Certificate .....1 pce.

3.3 Place UV-cleaner box upon stable surface.

⚠ *Note!* Any lifting and replacing of the box correctly with two persons help.
Ensure that tabletop (not less, then 530x720 mm) equipment is placed on solid, level surface, which is able to support it's weight.

4. Operation of UVC/T-M-AR

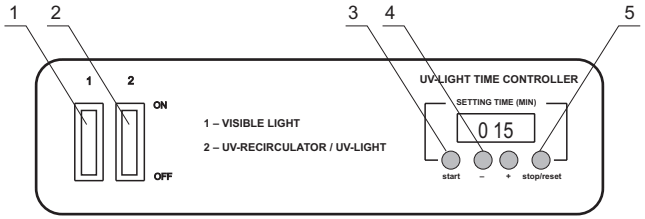

Fig.1. Control Panel

4.1 Connect UV-cleaner box to a grounded (earthed) electrical power supply with voltage and frequency within the range specified on the serial number label.

4.2 **UV-exposition of the working place.**

Caution: Do not work in the box or open the protective screen while the open UV-lamp is switched ON. Otherwise it can expose the operator to a dangerous level of UV light.

4.2.1 Turn ON *switch 2* (Fig.1/2), this automatically turns on the UV-recirculator with the hidden UV-lamp and activates the timer of open UV-lamp. The UV-recirculator will operate all the time until *switch 2* is turned OFF.

4.2.2 Use the timer keys + and - (Fig.1/4) to set the time of direct UV light exposition of the working place:

(+) to increase exposition time (step 1 min)

(-) to decrease exposition time (step 1 min)

Recommended time of exposition 15-20 min.

4.2.3 Press the key *Start* (Fig.1/3), the open UV lamp automatically will be turned ON and timer starts counting up the exposition time. Timer indicator shows actual time: till 1 hour - in minutes and seconds (min:sec), after 1 hour - in hours and minutes (hh:mm).
After reaching the set time the timer will automatically turn off the open UV-lamp.

4.2.4 If the operation time is not set and the timer indicator shows “0:00”, pressing *Start* key cause the unit to operate continuously until the *Stop/Reset* key is pressed again.
Note! The open UV-lamp can be switched off immediately by pressing *Stop/Reset* key (Fig.1/5). The set time of exposition is preserved in the memory. (The set time won't be preserved after the complete switching off the UV-cleaner box).
UV-cleaner box is ready for use.

Note: the open UV-light is switched off when the protective screen is open (timer does not stop automatically).

4.3. Work in the Box.

4.3.1. Turn ON *switch 1* (Fig.1/1) for lighting of the working place (this turns ON the white lamp).

4.3.2. Open the protection screen up for work in the box.

4.3.3. After the task is done close the screen.

4.3.4. At the end of work turn OFF *switch 2* (this turns OFF the UV-recirculator) and *switch 1* (the white light OFF). Disconnect the mains power supply.

5. Specifications

- Direct UV-lamp light .....TUV 25 W (long life - 8000hr)
  (one open UV lamp) under timer control
- Radiation type .....Ultraviolet (254 nm), ozone free
- UV-recirculator .....under control of the switch 2
- Visible light lamp .....TLD 15W for lighting
  of the working place of the Box
- Glass type .....Euroglass, (Germany)
- UV-protection film type ....4 MIL CLEAR
- Optical transmission (visible light) 95%
- UV-protection 96%
- Thickness of glass
  sides .....4 mm
  upper front panel .....8 mm
- LED time controller of UV-exposure .....0 - 24 h/non-stop
- Working place .....650x475 mm
- Overall size .....690x515x555 mm
- Power .....230 V, 50 Hz or 120 V 60 Hz
- Consumed power .....300 W
- Weight, not more .....34.7 kg
- **Operating conditions**
  The product is designed for operation in closed laboratory rooms at ambient temperature from +5°C to +40°C and maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C.

To improve the design manufacturer reserves the right to make changes in specification without prior notice.

6. Guarantee and Service

6.1 Guarantee

When used in laboratory conditions and according to these working instructions, this product is guaranteed for TWO YEARS against faulty materials or workmanship (excludes UV-lamps and dust filters).

6.2 Service

There are no user-serviceable parts inside the unit. For all maintenance and repairs (exept as defined below) return to our service department in the UK or in other countries, our distributor.

6.3 Technical Maintenance

Replacement of fuses. Disconnect the device from the mains power supply. Open the fuse holder located on the rear side of the device by removing the mains cable from the inlet and levering out the drawer using a small flat bladed screwdriver. Replace with the correct fuse (230V, 50Hz, 1.6A; 120V, 60Hz, 5.0A).

Replacement of UV-lamps. It is necessary to replace UV lamps at the end of manufacturer specified life time. Average life time of UV lamps supplied is 8000 hrs. Please return to our service department in the UK or in other countries, our distributor.

6.4 Disinfecting

We recommend cleaning the glass surface using ethyl alcohol 50% (ethanol) as a disinfecting liquid. After washing the inside parts of the box it is necessary to rub them dry.

6.5 Routine safety tests

If routine tests are to be made, we recommend a test of the integrity of the protective earth conductor and an insulation test at 500 Vdc. Routine flash tests are not recommended for any electrical equipment, because repeated high voltage tests degrade insulation materials.

6.6 Replacement of Dust Filters

The dust filters on either end of the UV-recirculator with the hidden UV-lamp should be checked monthly and cleaned or replaced when they become clogged. To check/replace the filter, simply unclip the cover fit a new filter and clip it back in place.

Declaration of Conformity

Manufacturer:	BIOSAN LTD. Ratsupites 7, build.2, Riga, LV-1067, Latvia
Equipment name/type number:	UVC/T-M-AR
Description of Equipment:	DNA/RNA UV-cleaner box
Directives:	EMC Directive 2004/108/EC Low Voltage Directive 2006/95/EC

Applied Standards	
Harmonized Standards:	EN 61326-1: Electrical equipment for measurement, Control and laboratory use - EMC requirements Part 1: General requirements EN 61010: Safety requirements for electrical equipment for measurement, control and laboratory use.

I declare that this apparatus conforms to the requirements of the above Directive(s)

Dated 31.01.2011

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