UV Transilluminator

Instruction Manual

Catalog No. MUV21-254
MUV21-312
MUV21-312H
MUV21-365
MUV21-254/312
MUV21-254/312H
MUV21-254/365
MUV26-254
MUV26-312
MUV26-312H
MUV26-365
MUV26-254/312
MUV26-254/312H
MUV26-254/365

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Version 04H
Revised on: 2023.06.28

Packing list

- 1x UV Transilluminator

312 (302)nm	
21 x 21 cm	MUV21-312
	MUV21-312H **high performance*
21 x 26 cm	MUV26-312
	MUV26-312H **high performance*
365 nm	
21 x 21 cm	MUV21-365
21 x 26 cm	MUV26-365
254/312 (302) nm	
21 x 21 cm	MUV21-254/312
	MUV21-254/312H **high performance*
21 x 26 cm	MUV26-254/312
	MUV26-254/312H **high performance*
254/365 nm	
21 x 21 cm	MUV21-254/365
21 x 26 cm	MUV26-254/365
254 nm	
21 x 21 cm	MUV21-254
21 x 26 cm	MUV26-254

- 1x Power cord
- 1x Instruction Manual

Signed by:

Date:

Major Science is liable for all missing or damaged parts / accessories within 7 days after customer receives this instrument package. Please contact Major Science immediately regarding this issue. If no response is received within such a time period from consignee party, it will be the consignee party's whole responsibility.

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Warning

Major Science UV Transilluminator has been tested and found to comply with safety limits for the CE regulation. Also, UV Transilluminator is RoHS compliant to deliver confident product which meets the environmental directive. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their expense. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. It is strongly recommended the user to read carefully the following points before this equipment is operated.

1. Read and follow carefully the manual instructions.
2. Do not alter the equipment. Failure adhered to these directions could result in personal and/ or laboratory hazards, as well as invalidate equipment warranty.
3. Use a properly grounded electrical outlet with correct voltage and current handing capacity.
4. Disconnect from power supply before maintenance and servicing. Refer servicing to qualified personnel.
5. In the event, solution is accidentally spilled into the hood, disconnect grounded plug and the user must carry out appropriate decontamination measurements, For instance, turning it upside down to avoid solution contacting the internal components. Remove cover and inspect to assure solution has not contacted elements and connector. Replace damaged parts.
6. Do not use in the presence of flammable or combustible material; fire or explosion may result. This device contains components, which may ignite such materials.
7. Refer maintenance and servicing to qualified personnel.
8. Ensure that the system is connected to electrical service according to local and national electrical codes. Failure to properly connection may create fire or shock hazard.

9. The unit shall be operated Only by qualified personnel.
10. It is strongly recommend it is a must that the user to wear probable UV protection equipment whilst operating a UV Transilluminator.

Warning: High Ultraviolet Radiation!

FCC infromation

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.If this equipment does cause harmful interference to radio or television reception,which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.
-- Increase the separation between the equipment and receiver.
-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-- Consult the dealer or an experienced radio/TV technician for help.

Notice:

(1) changes or modifications not expressly approved by the party responsible for could void the use is authority to operate the equipment.

Safety Information

Use high levels of precaution against any electrical device. Before connecting with the electrical supply, check that the supplied voltage is within the range stated at the rating label. The device must be earthed. Place the unit in a safe, and dry location. It MUST NOT touch things in the surrounding. Also follow the safety precautions for chemicals / dangerous materials. If needed, please contact a qualified service representative or service@majorsci.com:

Caution:

All Major Science UV Transilluminators are powerful sources of UV radiation that can cause damage to unprotected eyes and skin. Before operating the UV Transilluminator, be sure all personnel in the area are properly protected. It is preferable that the UV Transilluminator be installed and operated in a darkroom where access and exposure is limited while the unit is in operation. Each UV Transilluminator is equipped with a UV blocking cover. Even though the cover blocks the ultraviolet radiation emitted by the unit, UV Blocking Eyewear should be worn as well.

Environmental Conditions

Ensure the instrument is installed and operated strictly under the following conditions:

(1) Indoor use only
(2) ≤95% RH
(3) 75 KPa-106 Kpa
(4) Altitude must not texceed 2000 meters
(5) Ambient to 40°C operating temperature
(6) Pollution degree:2
(7) Mains supply voltage fluctuations up to (+/-) 10% of the normal voltage

Avoiding Electrical Shock

Follow the guidelines below to ensure safe operation of the unit.
UV Transilluminator has been designed to use with shielded wires thus minimizing any potential shock hazard to the user. Major Science recommends against the use of unshielded wires.

To avoid electrical shock:

1. In the event of solution accidentally spilled into the instrument, it must be

dried out for a period of time, at least 2 hours, and restored to NORMAL CONDITION before each operation.

2. NEVER connect or disconnect wire leads from the power jacks when the power is on.
3. WAIT at least 5 seconds after stopping a run before handling output leads or connected apparatus.
4. ALWAYS make sure that hands, work area, and instruments are **clean** and **dry** before making any connections or operating the UV Transilluminator.
5. ONLY connect the UV Transilluminator to a properly grounded AC outlet.

Avoiding Damage to the Instrument

1. Do not attempt to operate the device if it is damaged.
2. Protect this unit from physical damage, corrosive agents and extreme temperature (direct sunlight etc).
3. For proper ventilation and safety concerns, keep at least 10 cm of space behind the instrument, and at least 5 cm of space on each side.
4. Do not operate the UV Transilluminator in high humidity environments (> 95%), or where condensation may occur.
5. Prior to using any cleaning or decontamination methods other than manufacturer's recommendation, users should check with the manufacturer's instruction to confirm the proposed method will not damage the equipment.

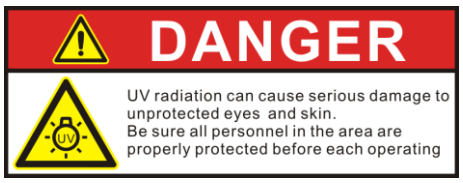
Disposal of the UV lamp

UV lamp containing mercury is considered as a hazardous waste. **DO NOT** discard these lamps in the trash at the end of their useful life. Disposal of the UV lamp must be accordance with the local and federal regulations. Please contact the your local hazardous authority for proper recycling and disposal. For more information, please go to : www.lamprecycle.org.

Symbols

The symbols used on UV Transilluminator are explained below.

 Indicates an area where a potential hazard may exist.



Indicates a warning of UV radiation.UV radiation can cause serious damage to unprotected eyes and skin. Be sure all personnel in the area are properly protected before each operating.

Indicates a disposal instruction.

DO NOT throw this unit into a municipal trash bin when this unit has reached the end of the lifetime. To ensure utmost protection of the global environment and minimize pollution, please recycle this unit.

Section 1 Product Introduction

The Major Science bench-top UV Transilluminator offers the researcher a uniform and strong source of ultraviolet light (radiation) in a compact package. Their special design emits either one or two intensity excitation UV wavelengths for back-illumination of transparent fluorescent materials.

The key feature of the bench-top UV Transilluminators is gels can easily be viewed under long wavelengths for extended periods of time, avoiding photo nicking damage. Short wavelength is used to irradiate samples. All Bench-top Transilluminator models are compact, lightweight and economical units.

Front view

Main power switch

For Single wavelength models:
UV intensity switch
For Dual wavelength models:
UV wavelength selection switch.

Feature:

254nm, 312(302)nm, 365nm, 254/365nm, or 254/312(302)nm modes available
26 x 21cm or 21 x 21cm view dimension
High / low intensity switch for single wavelength modes
UV protection cover
Long life time filter

Section 2 Product Specifications

Wavelength

312 (302)nm	
21 x 21 cm	MUV21-312
	MUV21-312H **high performance*
21 x 26 cm	MUV26-312
	MUV26-312H **high performance*
365 nm	
21 x 21 cm	MUV21-365
21 x 26 cm	MUV26-365
254/312 (302) nm	
21 x 21 cm	MUV21-254/312
	MUV21-254/312H **high performance*
21 x 26 cm	MUV26-254/312
	MUV26-254/312H **high performance*
254/365 nm	
21 x 21 cm	MUV21-254/365
21 x 26 cm	MUV26-254/365
254 nm	
21 x 21 cm	MUV21-254
21 x 26 cm	MUV26-254

Filter Size	21 x 21 cm for MUV21 series 21 x 26 cm for MUV26 series
Light Source	8W x 6 tubes
Intensity Switch	High (100%) / Low (70%) intensity switch for single wavelength model
Wavelength selection	Single or Dual wavelength
Fast Response	High quality starter to light up the tubes instantaneously and cause no blinking

UV Resistance Plastic Cover	330 x 250 mm (W x D)
Unit Dimension	340 x 305 x 155mm (W x D x H)
Rated Voltage	110V ~/ 220V~ (selectable)
Weight	Approx. 7.8kg

Section 3 Installation Instructions

The Major Science UV Transilluminator is actually an already installed instrument. As long as it is placed on a sturdy and level surface in a safe and dry place, it is ready for operation.

Section 4 Operation Instructions

Single wavelength module

1. Place the UV Transilluminator on a sturdy and level surface in a safe, dry place, away from laboratory traffic. Be sure that an air space exists around the bottom of the work surface. This space allows for proper air circulation and ventilation of the unit.

2. Ensure that the AC power switch is OFF, then plug the three-pronged power cord into a grounded three-prong AC outlet with appropriate voltage (115V or 220V which is selectable by the rated Voltage selection switch on the back of the unit).

3. The UV Transilluminator is equipped with a UV Blocking Cover. If this cover is not in place or has been removed, do not operate the unit without securing the cover. If the cover is missing, a UV Blocking Faceshield must be worn to avoid UV exposure to the skin. UV Blocking Eyewear should be worn even with the cover in place to avoid accidental UV exposure.

4. Place gel/sample on the filter area. It is recommended to place the gels on a UV transparent Gel Tray to protect filter surface from cuts and scratches. It is recommended to wear gloves to avoid contact with gel and staining agents.

5. Press the main switch ON. The UV tubes within the unit should be glowing

beneath the filter during the start-up period.

6. Select proper UV intensity using the intensity switch; high (intensity) for 100% UV intensity and low (intensity) for 70% UV intensity,.

7. After viewing/photographing the sample, turn the unit off.

8. Clean the filter surface with a damp soft cloth or sponge, and use a soft cloth to dry the filter surface after each operation. Never use abrasive cleaners (can damage the UV filter surface).

Dual wavelength module

The installation and operations are the same as the Single wavelength module except the intensity switch. The Intensity switch position is replaced by the UV wavelength selection button. Selection of different wavelength can be done through this button.

Replacing the UV lamp

1. Disconnect the UV Transilluminator from the electrical supply.

2. A Phillips screwdriver is required to remove the filter cover.

3. Carefully twist the UV tubes from their sockets.

4. Fit with the proper replacement tubes.

Replacing the fuse

For additional fuses, contact Major Science co. ltd.

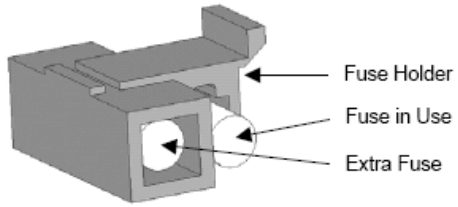
To replace the fuse:

1. Turn off the main power switch on the rear of UV Transilluminator and detach the power cord from the rear part.

2. Open the fuse compartment located inside the Power Entry Module by inserting a small flat blade screwdriver into the slot below the ON/OFF switch. Turn the screwdriver to gently pry open the fuse compartment. **Note**: The fuse compartment will not open with the power cord in place.

3. Pull the fuse holder out of the compartment and inspect the fuse. If the fuse is burned or there is a break in the fuse element, replace the fuse with an identical type of fuse (T1A/250V) as provided in the fuse holder (see figure below).

4. Place the fuse holder back into the compartment.
5. Snap the cover closed.



Section 5 Maintenance

To extend the filter life of the UV Transillulminator, the filter area should be cleaned with water, soap, and a sponge or cloth towel, dry the filter surface with a soft cloth after each operation. Never use abrasive cleaners, solvent based cleaners or scouring pads.
Always disconnect the UV Transilluminator from the electrical power prior to cleaning.

Section 6 Ordering information

Cat. No.	Description
MUV21-254	21 x 21 cm Transilluminator for 254 nm
MUV21-312	21 x 21 cm Transilluminator for 312(302) nm
MUV21-312H	21 x 21 cm Transilluminator for 312(302) nm **high performance*
MUV21-365	21 x 21 cm Transilluminator for 365 nm
MUV21-254/312	21 x 21 cm Transilluminator for 254/312(302) nm
MUV21-254/312H	21 x 21 cm Transilluminator for 254/312(302) nm **high performance*
MUV21-254/365	21 x 21 cm Transilluminator for 254/365 nm
MUV26-254	21 x 26 cm Transilluminator for 254 nm
MUV26-312	21 x 26 cm Transilluminator for 312(302) nm
MUV26-312H	21 x 26 cm Transilluminator for 312(302) nm **high performance*
MUV26-365	21 x 26 cm Transilluminator for 365 nm
MUV26-254/312	21 x 26 cm Transilluminator for 254/312(302) nm
MUV26-254/312H	21 x 26 cm Transilluminator for 254/312(302) nm **high performance*
MUV26-254/365	21 x 26 cm Transilluminator for 254/365 nm

ACCESSORIES

MUV-T254	8 W 254 nm UV lamp
MUV-T312	8 W 312(302) nm UV lamp
MUV-T365	8 W 365 nm UV lamp
MUV-F21-254/365	21 x 21cm filter for 254 / 365nm UV transilluminator
MUV-F26-312	21 x 26 cm filter for 312(302)nm UV transilluminator
MUV-F26-312	21 x 26 cm filter for 312(302)nm UV transilluminator
MUV-C	UV protected cover

MUV21-CP-01	Complete package of MUV21-312 Transilluminator and Digimage System
MUV21-CP-02	Complete package of MUV21-312 Transilluminator and SmartView Simple 310 Imager System
MUV21-CP-03	Complete package of MUV26-312 Transilluminator and Digimage System
MUV26-CP-01	Complete package of MUV26-312 Transilluminator and Digimage System
MUV26-CP-02	Complete package of MUV26-312 Transilluminator and SmartView Simple 310 Imager System
MUV26-CP-03	Complete package of MUV26-312 Transilluminator and SmartView Simple 320 Imager System

Section 7 Warranty

Major Science warrants apparatus of its manufacture against defects in materials and workmanship, under normal service, for ***one year from the shipping date to purchaser***. This warranty excludes damages resulting from shipping, misuse, carelessness, or neglect. Consumable parts (UV lamp and filter) are not covered by our warranty. Major Science's liability under the warranty is limited to the receipt of reasonable proof by the customer that the defect is embraced within the terms of the warranty. All claims made under this warranty must be presented to Major Science within one year following the date of delivery of the product to the customer.

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