

DuoVIEW Transilluminator

Instruction Manual

Catalog No DUOVIEW254
 DUOVIEW312
 DUOVIEW365
 . DUOVIEW254/312
 DUOVIEW254/365



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Version 01G

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Packing list

-1x DuoVIEW Transilluminator

312(302)nm	DUOVIEW312
254nm	DUOVIEW254
365nm	DUOVIEW365
254/312(302) nm	DUOVIEW254/312
254/365 nm	DUOVIEW254/365

- 1x Power cord

- 1x Instruction Manual

Signed by:

Date:

Cleaver Scientific is liable for all missing or damaged parts / accessories within 7 days after customer receives this instrument package. Please contact Cleaver Scientific 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

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 device 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 device 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 device does cause harmful interference to radio or television reception, which can be determined by turning the device 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 device and receiver.**
- Connect the device 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 device.

Cleaver Scientific DuoVIEW Transilluminator has been tested and found to comply with safety limits for the CE regulation. Also, DuoVIEW 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 device is operated in a commercial environment. This device 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 device 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 device. It is strongly recommended the user to read carefully the following points before this device is operated.

1. Read and follow carefully the manual instructions.
2. Do not alter the device. Failure adhered to these directions could result in personal and/ or laboratory hazards, as well as invalidate device warranty.
3. Use a properly grounded electrical outlet with correct voltage and current handling 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 device whilst operating a DuoVIEW Transilluminator.



Warning: High Ultraviolet Radiation!

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 info@cleaverscientific.com:

Caution:

All Cleaver Scientific DuoVIEW Transilluminator's are powerful sources of UV radiation that can cause damage to unprotected eyes and skin. Before operating the DuoVIEW Transilluminator, be sure all personnel in the area are properly protected. It is preferable that the DuoVIEW Transilluminator be installed and operated in a darkroom where access and exposure is limited while the unit is in operation. Each DuoVIEW 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.

Safe blue light LED of DuoVIEW Transilluminator may promote macular degeneration upon prolonged exposure, especially in those prone to such problems (e.g. people with fair complexion and blue eyes, nutritional or endocrine defects, or those who are aging).

Environmental Conditions

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

- (1) Indoor use only
- (2) $\approx 95\%$ RH (non-condensing)
- (3) 75 KPa-106 KPa
- (4) Altitude must not exceed 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.

DuoVIEW Transilluminator has been designed to use with shielded wires thus minimizing any potential shock hazard to the user. Cleaver Scientific 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 DuoVIEW Transilluminator.
5. ONLY connect the DuoVIEW 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 DuoVIEW 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 device.

Disposal of the UV lamp

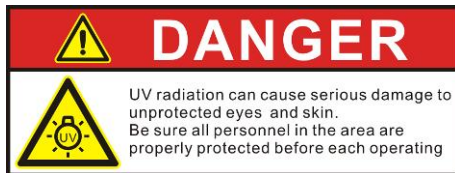
UV lamp containing mercury is considered as a hazardous waste. **DO NOT** discard these lamps in the trash at the end of their useful life. Disposal of the UV lamp must be accordance with the local and federal regulations. Please contact the local hazardous authority for proper recycling and disposal.

Symbols

The symbols used on DuoVIEW 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.

Potential Risk and Preventive Measure

1. Risk assessment table

Potential Risk Frequency	Frequent	Likely	Possible	Rare	Unlikely
Bruise			$\frac{1}{2}$		
Pinch			$\frac{1}{2}$		
Slash					$\frac{1}{2}$
UV radiation dangerous					$\frac{1}{2}$
Power cord plug wrong				$\frac{1}{2}$	

2. Preventative measures of risk

Potential Risk	Preventive measures
Bruise	Do not put the machine near the table edge. Move the machine by cart.
Pinch	Do not put your hands on the open door.
Slash	Prevent hard impact on the acrylic panel.
UV radiation dangerous	Do not open the darkroom door while you turn on the UV light.
Power cord plug wrong	Observe correct adapter plug.

Section 1 Product Description

1.1 Overview

DuoVIEW Transilluminator is the next generation of the illuminator for your lab. Combining the blue light and UV light, this equipment allows you to work either using blue light or UV light with your sample. The epi-blue light proportionally emits your sample to give excellent fluorescent for you to view the nucleic acid bands. As the single or dual wavelength UV light allows you to induce stronger signals. Moreover, since blue light is within visible light spectrum, it simply provides just enough energy to induce the signals without endangering operator safety. In addition, this two-in-one system provides you additional convenience to work on any of your sample with UV light or blue light simultaneously without moving your gel back and forth. DuoVIEW Transilluminator is the ultimate for any of your lab practice.

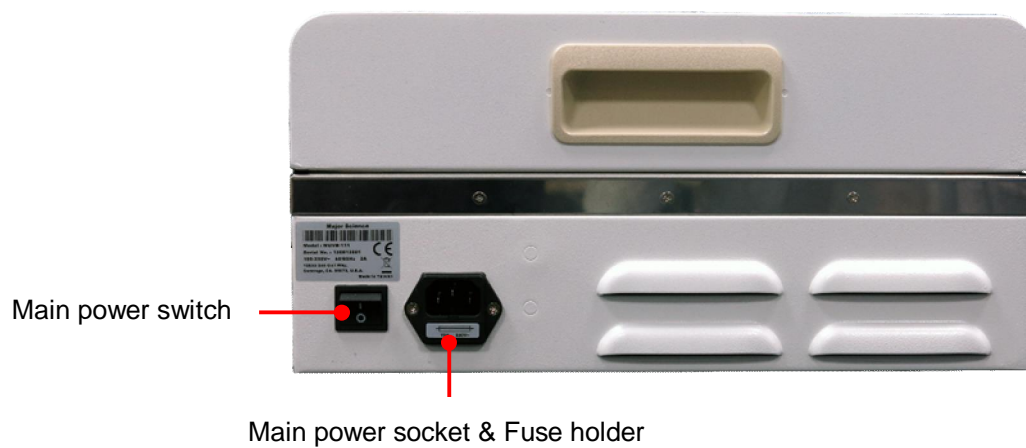
Feature

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

1.2 Components guide



Front view



Main power switch

Main power socket & Fuse holder

Rear View

Section 2 Product Specifications

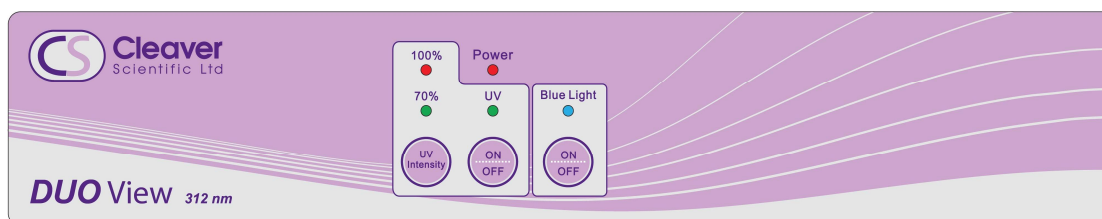
Model	Type	Wavelength	UV Light Source (1tube / 8W)
DUOVIEW312	Single	312(302)nm	5 tubes
DUOVIEW254	Single	254nm	5 tubes
DUOVIEW365	Single	365nm	5 tubes
DUOVIEW254/312	Dual	254nm 312(302)nm	4 tubes 5 tubes
DUOVIEW254/365	Dual	254nm 365nm	5 tubes 4 tubes
Filter Size		21 x 21cm	
Intensity Switch		High (100%) / Low (70%) intensity switch for single wavelength model	
Fast Response		High quality starter to light up the tubes instantaneously and cause no blinking	
Blue Light Source		1W x 18 lamps	
UV Resistance Plastic Cover		L260 x W225 mm (W x D) (Transparent)	
Blue Light Resistance Plastic Cover		L260 x W225 mm (W x D) (Orange)	
Unit Dimension		L386 x W340x H176 mm (W x D x H)	
Rated Voltage		100-230V~ ,50/60Hz, 2A	
Weight		Approx. 11.2kg	

Section 3 Installation Instructions

The Cleaver Scientific DuoVIEW 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


4.1 Single wavelength module




1. Place the DuoVIEW 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, and then plug the three-pronged power cord into a grounded three-prong AC outlet with appropriate voltage.
3. The DuoVIEW Transilluminator is equipped with a DuoVIEW 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 Face shield 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.

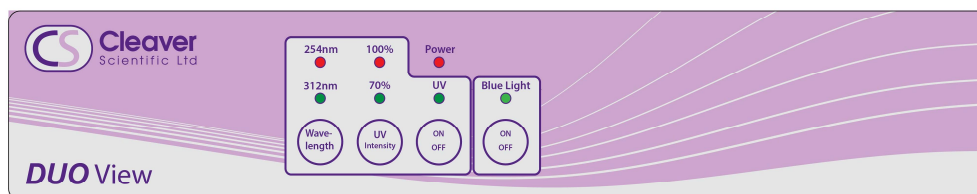
4. Place gel/sample on the filter area. It is recommended to place the gels on a UV transparent Gel Tray to protect filter surface from cuts and scratches. It is recommended to wear gloves to avoid contact with gel and staining agents.

5. Turn the power switch ON. Press  key, the UV tubes within the unit should be glowing beneath the filter during the start-up period.

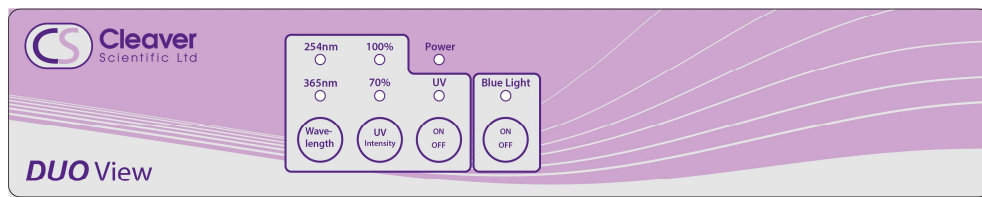
6. Select proper UV intensity using  key; red light for 100% UV intensity and green light for 70% UV intensity.

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).

4.2 Dual wavelength module









254/312(302) wavelength





254/365 wavelength

The installation and operations are the same as the Single wavelength module except the wavelength key. Adding a wavelength selection key is positioned nearby the UV intensity key.

1. Press   turn off the UV light.
2. Using    key to select different wavelength.
3. Turn on the UV light through press  key.

4.3 Blue light module

The installation and operations are the same as the UV light module.

Select blue light source using   key.

4.4 Replacing the UV lamp

1. Disconnect the DuoVIEW 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.

4.5 Replacing the fuse

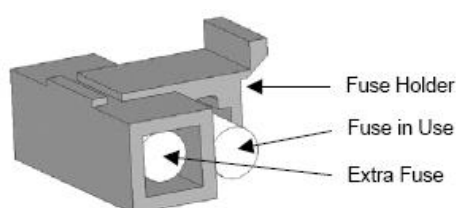
For additional fuses, contact Cleaver Scientific Ltd.

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 (T2A/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 DuoVIEW Transilluminator, 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. If the white case is dirty, please cleaning it with water and cloth towel only. Never use abrasive cleaners, solvent based cleaners or scouring pads.

Always disconnect the DuoVIEW Transilluminator from the electrical power prior to cleaning.

Section 6 Ordering information

Cat. No.	Description
DUOVIEW312	312nm UV Transilluminator with Blue light, View Size:21x21cm
DUOVIEW254	254nm UV Transilluminator with Blue light, View Size:21x21cm
DUOVIEW365	365nm UV Transilluminator with Blue light, View Size:21x21cm
DUOVIEW254/312	Duo UV Transilluminator with Blue light, View Size:21x21cm 254/312nm
DUOVIEW254/365	Duo UV Transilluminator with Blue light, View Size:21x21cm 254/365nm

Section 7 Warranty

Cleaver Scientific 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. Cleaver Scientific'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 Cleaver Scientific within one year following the date of delivery of the product to the customer.

Manufacturer:

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