

Operating Manual

for hand-held UV lamp model UV-H 255
(polymerisation tool for industrial and laboratory applications)



To be observed prior to commissioning:



The instructions in this manual are **binding**. For a **safe and disruption-free** operation of the UV lamp, it is imperative that these instructions are adhered to.

In the event of **improper use or use for purposes other than those intended**, all warranty is voided and Panacol-Elisol rejects any **liability for damages**.

The operating instruction must be available near the UV lamp for reference.

If you have any queries regarding the safety, operation or maintenance of the device, please do not hesitate to contact Panacol-Elisol.

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Symbols

The following symbols are designed to facilitate the use of this manual. They refer to specific types of information:



Warning – Risk of damage to persons or property



Important information – always follow the instructions!










Tip – useful tips and hints



Step-by-step instructions for specific procedures

Safety symbols

Symbol	Meaning/nature of risk	Possible damage
	Caution! High voltage!	=> Risk to life and limb
	Caution! Risk of fire!	=> Risk to life and limb
	Caution! Risk of explosion!	=> Risk to life and limb
	Caution! UV radiation!	=> Damage to eyes, burns
	Caution! UV radiation!	=> Damage to eyes, burns
	Caution! Hot surfaces!	=> Burns
	Caution! Broken filter!	=> Cuts, damage to eyes

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1 General safety instructions



To prevent damage to persons and materials, it is important that all operators read this manual carefully prior to commissioning. All instructions must be adhered to:



Risk of fire

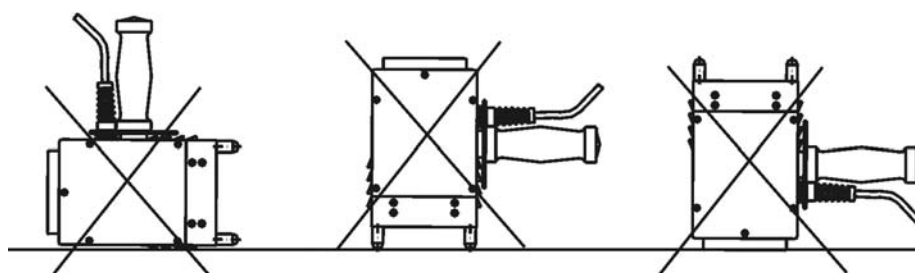
Do not use material containing flammable solvents.

Always ensure that the hand-held lamp and the control device are only used in a dry room. Never use the devices outdoors or in areas where there is a risk of explosion.

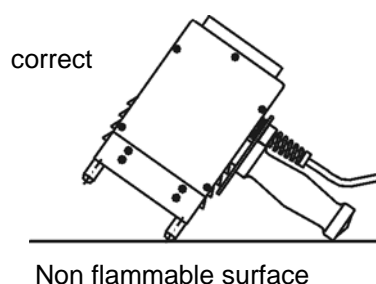
Always adhere to the safety instructions of the manufacturers of the coatings, adhesives and casting compounds. It might be necessary to apply special fume extraction equipment.

Caution! Placing of hand-held lamp

Never place lamp as shown below.



Always place the hand-held lamp as shown below. Place the hand-held lamp only onto non-flammable and heat-resistant surfaces:



Risk of burns and dazzling

UV radiation can damage skin and eyes. Always protect skin and eyes against direct radiation.



Personal protective equipment: Always wear UV-protective goggles and protective clothing and always direct UV lamp away from persons.

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Risk in the event of damage

When unpacking the device and during operation, inspect hand-held lamp, control device and cables for damages. The hand-held lamp must only be operated, if

- the UV-A blue filter is undamaged and correctly fitted.
- there is no visible damage to the hand-held lamp, control device, cables and adapters.
- a standard 4A slow safety fuse is inserted into the power adapter housing.

The hand-help lamp may only be operated, when all damages have been fully repaired!



Risk of burns from hot surfaces

Repair or replacement work at the electrical components (e.g. replacement of tube) may only be carried out after the device has cooled down. Prior to such work, disconnect the device from the power supply.

Always hold the lamp by the handle! Always direct the lamp away from the body!

During the operation, the blue filter is heated to a temperature of over 100°C. The lamp may thus not be used near flammable material.

Please always remember that also the treated material might become very hot, depending on the duration of treatment.



Risk of injury by broken glass

During operation, the internal pressure of the metal-halide lamp can increase to up to 2 bar. Always take measures to ensure that there is no risk to persons in the event of an exploding tube.



Caution: The risk of the lamp exploding increases with its age. Therefore always observe the average service life of the lamp. The service life of the lamp is reduced by frequent switching on and off and by touching the lamp with bare hands. The risk of exploding is thereby increased.



Safety measures for repair and cleaning work

Prior to starting repair or cleaning, disconnect device from the power supply.

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2 Product features

Polymerisation devices such as the hand-held UV lamp, are used for the hardening of specially designed polymers. The term polymerisation describes the process where several molecules of a compound of the same composition are combined into one product, similar to the melting together of two materials. To enable or accelerate this process, many compounds require activation by UV radiation. This radiation is generated by means of a metal halide discharge tube in a lamp housing. The discharge tube contains a halogen gas mixture, which is ignited with high-voltage power (3,500V) and thus beams of light.

Market and applications

The hand-held lamp is specifically designed for industrial and laboratory applications. The commissioning, operation, maintenance, etc. must always be carried out by suitably trained staff who have read the instructions and are familiar with the process. Always ensure that the device is not handled by any other persons.

Proper use

UV radiation is used in a wide range of industrial laboratory applications, such as the detection of hairline cracks or the examination of bank notes to detect forgeries. The UV-H 255 lamp is exclusively designed for the hardening of

- coatings
- adhesives (e.g. Panacol-Elosol 1K Vitralit adhesives)
- and casting compounds requiring UV hardening.

Always comply with the instructions of the manufacturers as regards safety and the application of the above materials.



Do you have questions regarding a specific application? Please do not hesitate to contact Panacol-Elosol. We would be delighted to help you find a suitable adhesive.

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Use for other purposes

The UV lamp including control device must only be used for the above purposes and applications. Any other application requires the written consent of Panacol-Elosol.

Never use the UV lamp as a tanning lamp or as a hair-dryer, as this could lead to serious burns and injuries.

In the event of improper use or use for purposes other than those intended, all warranty is voided and Panacol-Elosol rejects any liability for damages.

Delivery and accessories

The following components are included in the delivery:

- Hand-held lamp (housing holding the metal halide tube, reflector, safety thermostat, cooling fan, frame with blue filter)
- Control device (power adapter with working hour counter)
- Power cable
- Operating manual

Optional accessories:

- UV protective glasses
- Stand for lamp
- Extension cables
- mounting bracket for static/swinging fixing

3 Transport, packaging and storage

The components are delivered in a robust cardboard box. The foam packaging in the cardboard box protects the components against damage by impact.

After removing the components from the packaging, inspect every part for damages, especially the blue filter. This is recommended for your own safety.

Store components in their original packaging at a temperature of between 10°C and 40°C in a dry room.



We recommend to keep the packaging material so that it is available for any future transport.

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4 Commissioning and decommissioning

Location of operation

The ambient temperature should not exceed 40°C. The device should only be used in a dry room with adequate ventilation.



Caution! Risk of explosion!

During the hardening of adhesives, gases are produced. If there is no sufficient extraction, the concentration of such gases might locally be increased. The gas mixture can in certain cases be explosive. There is a risk of ignition of the gases by sparks produced in the device housing.

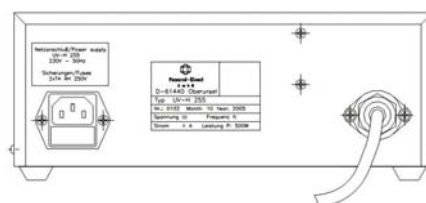
Therefore remove the lamp during the hardening process from the spray booth and do not use the lamp in rooms without adequate extraction.

Assembly of the device

The hand-held lamp can only be used with handle (see mounting instruction for handle)

- ▶ Connect the supplied power cable to the control device and insert the power plug into a 230V 50Hz socket.

Back side



- ! To prevent damage to the device, do not connect it to a socket to which other high-powered devices are connected.

- ! Cable of the Hand Lamp should not be disconnected during operation of control device.

The control device should be first shut down and disconnected from plug.

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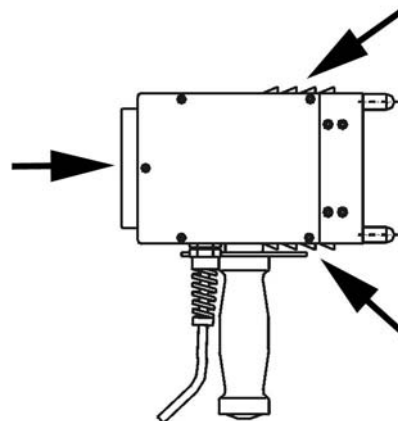
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- ! During operation, always ensure that the ventilation slots and the fan grid are not covered.

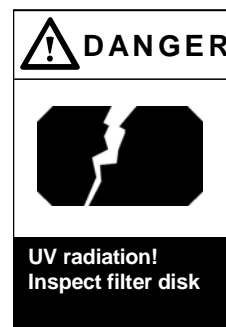


- i The lamp housing is equipped with a safety thermostat, which switches off the device when a temperature of $> 90^{\circ}\text{C}$ is reached.

5 Operation

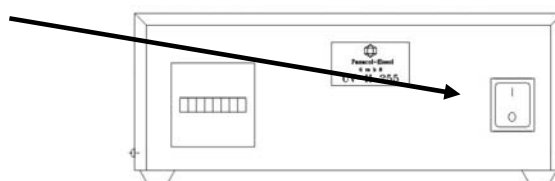
Please read these instructions prior to operating the device

UV radiation can damage skin and eyes. Protect skin and eyes from direct radiation. Always wear UV protective goggles and protective clothing. Always direct the hand-held lamp away from persons. Please also note that certain surfaces might reflect UV radiation.



- Switch on the control device by pressing the power switch at the front of the housing (position I).

Front side



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After approx. 4 minutes, the operating temperature for optimum UV radiation is reached.

The hand-held lamp should be held (or secured to the stand) in such a way that the area to be treated is exposed to direct radiation.

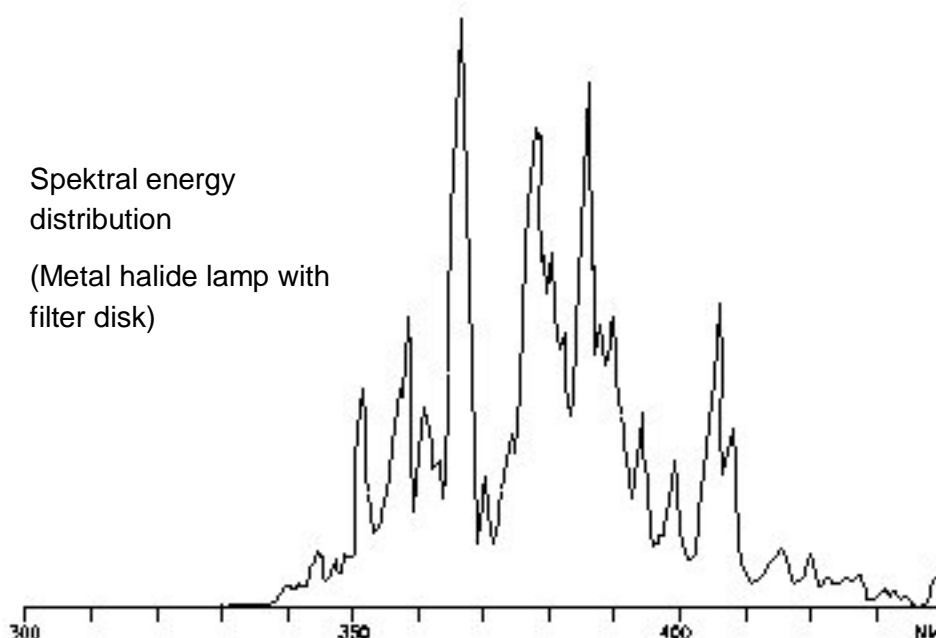


Spectral power distribution

Certain applications require "controlled UV exposure". This exposure is defined by the intensity of radiation and the duration of exposure.

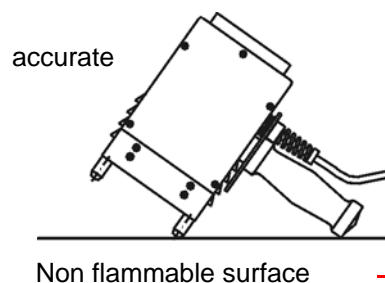
Always comply with the instructions of the manufacturers. Certain manufacturers indicate the optimum spectral region for their products.

The figure below shows the spectral region of the hand-held lamp.



Placing of lamp

When putting down the hand-held lamp, ensure that it is positioned as shown in the figure to the right. Never place the lamp on the fan slots or on all three plastic knobs of the filter frame.



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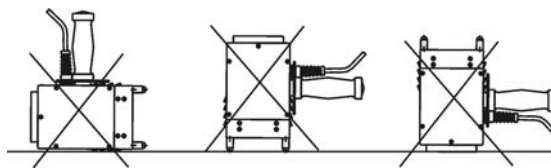
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Caution! Risk of fire!

If the lamp is placed in any other position, it could overheat or damage and ignite the material to be hardened. Never place the lamp as shown below.



! Important operating instructions

If the above instructions are not adhered to, the lamp might be damaged or its service life might be considerably shortened!

- Frequent switching on and off leads to damage to the lamp and shortens its service life.
- After switching on the lamp, it should be left on for at least 15 minutes. Only switch off the device during production breaks that exceed 1 hour.
- After switching off the device, allow the lamp to cool down for approximately 10 minutes before you switch it on again.

6 Maintenance and cleaning

Maintenance includes the replacement of the metal halide tube as well as the cleaning of the filter, the dust filter and the surfaces of the device.



Caution! High voltage!

Prior to any maintenance or cleaning work, disconnect the device from the power supply.

During cleaning, ensure that no moisture penetrates the housing. Use only a slightly moist cloth for cleaning.



Use only original spare parts!

Unsuitable cables, metal halide tubes or fuses result in faults. Use only original spare parts and accessories that fulfil the technical requirements (see technical data). If in doubt contact Panacol-Elosol.

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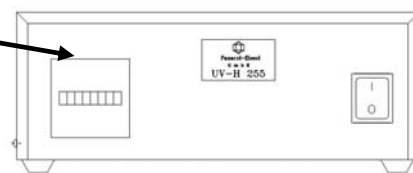
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Working hour counter

The different maintenance tasks must be carried out depending on the working hours.

The number of completed working hours is shown on the counter.



Replacement of tube

Please use our Lamp Change Kit.

The performance of the metal halide tube is gradually reduced after approx. 500 hours of operation so that the tube should be replaced.

! Important

Never touch the metal halide tube with bare hands. Fingerprints on the tube can be burnt into the quartz and reduce the service life of the tube.

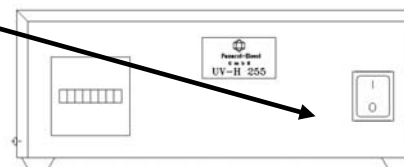
If there are fingerprints on the tube, clean it with a little alcohol on a cloth.



High voltage!

- ▶ Always switch off the control device by setting the power switch at the front of the housing to position **0** and disconnect the power cable.

front side



Caution! Hot surfaces!

Before any maintenance or cleaning, allow the lamp to cool down for 30 minutes.



>30 minutes

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- ▶ Loosen the 2 cross-head screws with a Philips screwdriver at the right and left side.



▶

▶




- ▶ Place the hand-held lamp onto the fan grid so that the filter is at the top, and remove the frame.

Carefully remove the filter. Never use tools with sharp edges as this could damage the filter.

- ▶ The metal halide tube is held in an R7_s socket. Carefully push the tube to the side and remove it from the socket.
- ▶ Insert the new tube into the hand-held lamp.

Ensure that the tube is properly positioned at the contacts. To position the tube correctly, move it carefully in the socket.



-  Close the housing by completing the above steps in reverse order. Ensure that the filter is exactly centred within the housing.

Carry out a function test. The hand-held lamp is again ready for operation.

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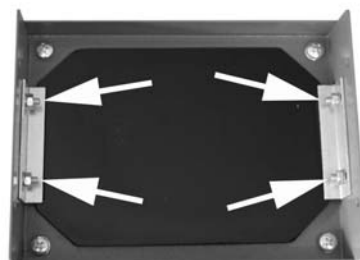
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Glass Filter replacement

(only in repairing case)

to remove the glass filter , Loosen the 4 cross-head screws with a Philips screwdriver at the right and left side. Never use tools with sharp edges as this could damage the filter.



Replacement of the dust filter

The dust filter should be replaced or cleaned at regular intervals (after approx. 100 hours).

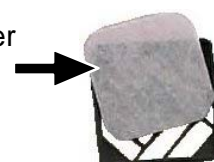
- ▶ Pull off the plastic cover (snap-on lid).



- ▶ Remove the dirty dust filter from the housing.



Dust filter



- ▶ Insert a new or cleaned filter.



To clean the filter, remove the visible dirt from its surface and clean it subsequently with compressed air.

- ▶ Replace plastic cover.

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Cleaning of the blue filter

It is recommended to regularly clean the blue filter.

Clean the filter only when it is cold and after you have disconnected the device from the power supply!



- ▶ Clean the blue filter carefully with a soft moist cloth (water or alcohol-based window cleaner).

! Important

- Never use soap or other cleaning agents.
- Inspect the blue filter for damages. Ensure that it is exactly centred in the housing. Do not use hand-held lamp, if you suspect that there are damages to the filter.

Cleaning of device surface

It is recommended to regularly clean the housing.

Clean the housing only when it is cold and after you have disconnected the device from the power supply!



- ▶ Clean the housing with a moist soft cloth. Use only water.

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7 Disposal



Always comply with the local statutory regulations for the disposal of defective or burnt out metal halide tubes or other device components (power adapter, thermostat, housing, etc.). Contact the local authorities to obtain the address of the respective disposal contractor.

8 Troubleshooting (repairs)

If the device must be repaired, always contact the service department of your supplier. We are committed to ensure that your device is repaired as quickly as possible.



Restricted liability

Panacol-Elosol rejects any liability or warranty for damages caused by improperly completed repairs.

Prior to returning the device to Panacol-Elosol, please check the device by following the steps in the table below. If none of the remedies below is successful, please contact your supplier.

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Problem	Possible cause	Remedy
Hand-held lamp/tube does not emit any radiation	Metal halide tube is being heated up (initial warming-up phase) Cables not properly connected	Depending on the ambient temperature, the warming-up phase can take up to 2 minutes. Inspect cable connections
Hand-held lamp/tube goes off during operation	Hand-held lamp has overheated => safety thermometer has automatically switched off the tube Metal halide tube has burnt out Cables not properly connected	<ul style="list-style-type: none"> – Clean blue filter, if necessary – The hand-held lamp is automatically switched on again after a cooling period Replace metal halide tube; follow the relevant instructions Inspect cable connections
Hand-held lamp/tube is not emitting any radiation after renewed switching on	Automatic switching delay	The hand-held lamp is automatically switched on after a few minutes
Poor lamp performance	Metal halide tube has burnt out	Replace metal halide tube; follow the relevant instructions
The power switch lamp at the front of the control device housing is not on	Power cable is disconnected Fuse burnt out Power failure	Inspect power cables and adapters Contact appliance retailer to replace fuse Check other electrical devices and fuses

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9 Technical data

Operating conditions

Temperature:	15°C to 40°C
Air humidity:	20% to 60%

Metal halide tube

Type:	ES 250
Average service life:	approx. 500 h (depending on operation: ON-OFF cycle, cooling, etc.)
Voltage, current:	~125 V, 2.5 A, 250 W
Power:	3.5 kW
Min. ignition voltage:	350 °C
Base edge temperature T_{max} :	R7 _s metal contact (ceramic base)
Electrical contact:	

radiation

UV-A 315-400 nm:	30 W
UV-B 280-315 nm:	3 W

Reflector:	Aluminium
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Filter

Type:	Blue filter
UV-A radiation spectrum:	320 to 450 nm
Dimensions:	140 x 85 mm

Exposed surface:	approx. 300 x 200 mm (at a distance of approx. 200 mm)
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Electrical data

Power supply:	230V/50Hz
Power consumption:	500 VA
Fuse:	2*T 4 AH 250V (4A, slow)

Dimensions (H x L x W)

Hand-held lamp:	250 x 165 x 190 mm
Control device:	90 x 246 x 212 mm

Power cable:	4 metres (longer cable available on request)
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Weight

Hand-held lamp:	approx. 1.3 kg
Control device:	approx. 3.5 kg

Noise:	< 70 dB
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Protection class according to VED 0710/part 1:	IP 20
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Subject to changes due to technical improvements.

