

Klercide®

UV VALIDATION TORCH



Instructions For Use

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BACKGROUND

Operation and maintenance should only be performed by suitably qualified and trained personnel. In order to help prevent accidents or ill health all operators and maintenance personnel must read carefully, fully understand and follow all the instructions and warnings contained in this manual **BEFORE** operation or maintenance for the first time.



This manual should always be readily available to all operators and maintenance personnel. It should be prominently located in the area of usage.

PRODUCT DESCRIPTION

The Klercide UV Validation Torch is a rechargeable battery operated UV light source, designed for the following applications:

- UV light fluorescent inspection
- UV light curing of materials
- UV light exposure

It **MUST NOT** be used for any other purpose without first consulting Shield Medicare – a division of Ecolab.

The torch incorporates a high intensity discharge 35W Xe bulb (Appendix 2) within a reflector. A black filter glass (Appendix 3) is mounted in front of the UV bulb.

The torch is switched on and off by using the switch on the side of the unit below the handle. It offers hot re-strike after 5 seconds and reaches full UV light output after 15 seconds.

The battery pack is accessed by opening a door in the back plate and is fully removed for charging. It provides a running time of 45 minutes from a 4 hour charge.

HEALTH AND SAFETY HAZARDS

Under the Health and Safety at Work Act 1974 and the Management of Health and Safety at Work Regulations 1999, it is necessary to assess the health and safety risks associated with work activities affecting employees and non-employees and take measures to control these risks as far as is reasonably practicable. This is not a matter of reducing any risks to zero, but managing the risks adequately.

To comply with the above, involves the person responsible for the risk assessment to make sound judgements regarding the levels of risk and then to decide what more, if anything, should be done to reduce the risk to an acceptable level. In order to assist with this process, the nature and extent of the following health and safety hazards and the necessary control measures are listed below:

- a) UV Light Exposure
- b) Fire
- c) Explosion
- d) Electrical
- e) Hot Surfaces
- f) Broken Glass
- g) Mercury

UV Light Exposure



Safety Classification in accordance with BS EN 62471:2008
Risk Group 3

It is well established and generally agreed, that low level exposure to certain wavelengths of UV light provides some health benefits, for example synthesis of vitamin D3, which improves the body's absorption of calcium, particularly into the bones. On the other hand, over exposure to UV light can cause adverse health effects, such as erythema (sunburn), photo conjunctivitis and photokeratitis (arc eye) in the short term (acute effects) and can be attributed to premature skin ageing, skin cancer and cataracts as a result of repeated exposure in the long term (chronic effects).

The level of risk for adverse health effects to the skin and eye from exposure to UV light depends on the UV light wavelengths, UV light irradiance values and personal exposure time.

The key is to avoid over exposure and this necessitates the strict implementation of exposure limits, in order to protect against over exposure to UV light in the workplace.

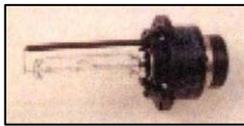
Occupational UV light exposure in Great Britain is subject to the Control of Artificial Optical Radiation at Work Regulations 2010, which was brought into law on 27th April 2010, the European Physical Agents (Artificial Optical Radiation 2006/25/EC) Directive. This incorporates statutory UV light exposure limit values (ELV's) which are based on those defined by the International Commission on Non-Ionising Radiation Protection (ICNIRP).

In cases of persons subjected to UV light emissions from artificial sources, it is necessary to assess the level of risk for adverse health effects by determining personal UV light exposure levels and comparing with the exposure limit values.

Where personal UV light exposure levels comply with the exposure limit values, the risk can be considered low for the majority of the population and adequately controlled so far as is reasonably practicable. In addition workers must be provided with specific information and training.

Where personal UV light exposure exceeds the exposure limit values, then additional control measures must be implemented which decrease exposure to below the exposure limit values.

Spectral output classification for the Klercide UV Validation Torch (fitted with 35W Xenon UV bulb and black filter glass)

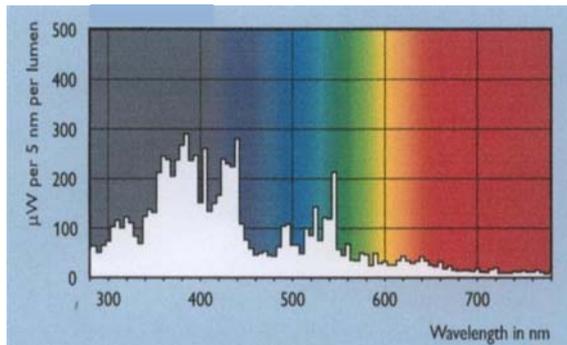


35W Xenon UV Bulb

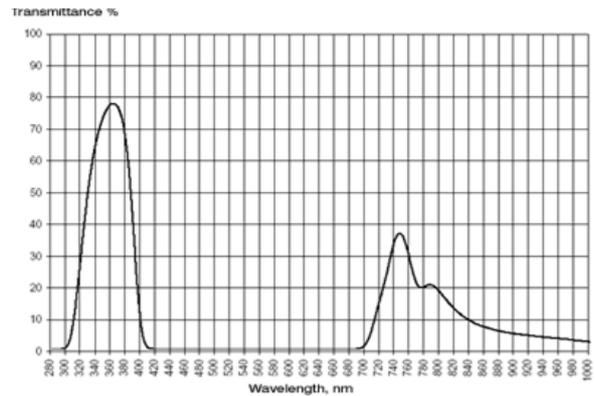


Black Filter Glass

**Emission Spectrum
35W Xenon UV Bulb**



**Spectral Transmission Curve
25010**



UV Light classification band	Spectral range (nm)	Common descriptions	Potential to cause adverse health effects	UV bulb unfiltered	UV bulb with filter glass fitted
UV-A	400 to 315	Longwave or blacklight	Least potential to cause adverse health effects (lowest energy). Largest UV component of sunlight, (approximately 90%).	✓	✓
Most adverse health effects of over exposure to UV light are caused by wavelengths below 315nm, i.e. UV-B and UV-C.					
UV-B	315 to 280	Middlewave or Erythematous	Greater potential to cause adverse health effects than UV-A (significantly higher energy). Most aggressive component of sunlight. Largely responsible for sunburn (erythema).	✓	✗
UV-C	280 to 100	Shortwave or Germicidal (kills bacteria, yeasts and fungi)	Generally the most potential to cause adverse health effects (highest energy). Totally absorbed by the earth's atmosphere. Only normally encountered from artificial UV light sources.	✓	✗

Control measures

The objective is to ensure that the UV light exposure limits for the unprotected skin and eye are not exceeded by any person.

Protection against over exposure to UV light can be achieved by a combination of the following control methods: administrative, engineering, personal protective equipment.

Emphasis should be placed on administrative and engineering control measures to minimise the need for personal protective equipment.

Administrative Control Measures

a) Hazard awareness

All persons who could be exposed to levels of UV light exceeding the exposure limit values or significant personal exposure must be provided with sufficient information, instruction and training to understand the associated risks to their health and the precautions which should be taken to adequately manage the risk.

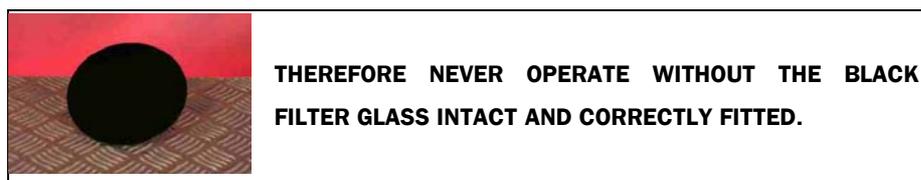
Any person who notices any unusual or adverse reaction thought to be due to UV light exposure should not be further exposed until after consulting with a suitably qualified person.

It is essential that the following information regarding the UV bulb and filter glass is fully understood and complied with:-

UV bulb in combination with black filter glass produces UV-A.

UV bulb without black filter glass produces UV-A, UV-B and UV-C

See page 7.



All persons must be aware of and comply with the maximum permissible UV light exposure times for the unprotected skin and eye, at specified locations relative to the UV 35W blacklight torch where less than 8 hours.

b) Compliance with the UV light exposure limits for the unprotected skin and eye

The UV light exposure limit values are set below threshold levels of UV light exposure where observable adverse health effects would occur and incorporate significant safety margins.

They define a level of UV light exposure, below which it is believed that nearly all individuals may be repeatedly exposed without adverse health effects. Some people may be unusually photosensitive or may be exposed to photosensitising agents, in which case these exposure limits may not provide adequate protection.

The UV light exposure limits – within an 8 hour period per day are as follows:

- **UV light in the spectral region 180nm-400nm (UV-A, UV-B and UV-C)**
maximum permissible effective radiant exposure for the unprotected skin and eye = 30 J/m^2
- **UV light in the spectral region 315nm-400nm (UV-A)**
maximum permissible radiant exposure for the unprotected eye = $10,000 \text{ J/m}^2$

It is necessary for duty holders to limit personal UV light exposure time at the specified positions in the Table on Page 10, to ensure that the maximum permissible exposure values for the unprotected skin and eye are **NOT EXCEEDED** within an 8 hour period per day.

If the maximum permissible exposure values are exceeded then the UV light irradiance must be reduced by appropriate control measures. These could include containment, moving further away from the UV light source, reducing exposure time, or as a last resort provision of personal protective equipment (PPE).

		Klercide UV Validation 35W Torch fitted with Xe bulb and UV-A black filter glass	
Distance from front of Klercide UV 35W Validation Torch (mm)	Maximum permissible UV light exposure time within an 8 hour period per day (minutes)		
	unprotected skin	unprotected eye	
100	9	1.5	
250	14	2.5	
500	24	4	
750	30	4.25	
1000	33	4.5	
2000	47	6.0	
<p>This data is only applicable to a UV blacklight torch fitted with a 35W Xenon UV bulb and black 25010 filter glass, supplied by Shield Medicare – a division of Ecolab.</p>			

Maximum permissible UV light exposure times (derived from the exposure limit values) for the unprotected skin and eye in an 8 hour period per day, at various distances within the beam of the Klercide UV Validation Torch.

UV light irradiance measurements used to produce the data presented in the table above were taken perpendicular to the centre of the black filter glass in the front of the Klercide UV Validation Torch. This is the position of highest UV light irradiance. Therefore, for exposures towards the edges of the beam, an extra safety factor is built in due to reduced UV light irradiance levels.

Reflected UV Light

Many surfaces, especially those that are smooth and/or highly reflective and/or light coloured are often good reflectors of UV light.

In a situation where a person is located behind or outside the UV light beam of the torch shining directly at a highly reflective surface, determine the maximum permissible exposure times by using the distance from the Klercide UV Validation Torch to the reflective surface and back to the person. This method will automatically introduce an additional safety margin due to reflective losses.

c) Heightened Individual Photosensitivity

Check that all persons who could be exposed to significant levels of UV light are not unusually photosensitive or exposed to photosensitising agents.

- Individuals who are intrinsically photosensitive are normally aware of their heightened sensitivity.
- Individuals who are exposed to photosensitising agents, either ingested, injected or externally applied, may not be aware of their heightened sensitivity.

The UV light exposure limits may not be adequate protection for photosensitive individuals and special precautions may be necessary. These individuals should seek medical advice with respect to additional protective measures which may be required before any exposure to UV light.

Also check that all persons who could be exposed to significant levels of UV light are not aphakic (had an eye lens removed and not replaced by an artificial lens) or pseudophakic (had an eye lens replaced with a non UV light absorbing artificial intraocular lens).

These persons should be aware that they may not be adequately protected against retinal injury from exposure to UV light within the exposure limit values. They should seek medical advice with respect to additional protective measures which may be required before any exposure to UV light.

These checks can be done using questionnaires.

d) Heightened Collective Photosensitivity

Particular attention should be paid to any possible photosensitising effects resulting from workplace interactions between UV light exposure and chemical compounds which could cause heightened collective photosensitivity.

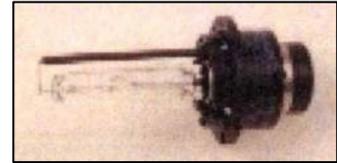
- e) Limitation of access** - Access to an area where the Klercide UV Validation Torch is operated should be limited only to persons directly concerned with its use or those necessary.

- f) Warning labels and signs** – Should be used to indicate the presence of UV light which could result in persons being exposed to levels of UV light exceeding the exposure limit values, or significant personal exposure.



- g) Routine maintenance** – Regular routine maintenance is essential to ensure optimum performance and minimum risk. The recommended procedures and intervals should be strictly implemented.

UV bulb replacement - Ensure that the correct type of UV bulb is fitted otherwise the UV light exposure information, provided on Page 10, will not be valid and new UV light measurements and evaluation would be necessary. Only use replacement UV bulbs supplied by Shield Medicare-a division of Ecolab, **otherwise this will invalidate the warranty and could result in a serious breach of health and safety regulations.**



Filter glass replacement - Ensure the correct type of filter glass is fitted, intact and securely mounted in position otherwise the UV light exposure information, provided on Page 10, will not be valid and new UV light measurements and evaluation would be necessary. Only use replacement filter glass supplied by Shield Medicare, **otherwise this will invalidate the warranty and could result in a serious breach of health and safety regulations.**



Engineering Control Measures

- a) **Reduction of reflected UV light** – Many surfaces, especially those of shiny metal or glossy light-coloured paints, will reflect UV light. To reduce reflected UV light, some surrounding area surfaces could be painted in a dark, matt colour.
- b) **Containment** – Indiscriminate emission of UV light into the workplace must not be allowed. The use of screened areas may be appropriate. If used, screens must be well maintained, inspected regularly and replaced as necessary.

Personal protective equipment

- a) **Protection of the skin** – The most effective way to protect the skin from UV light is to cover it. The areas of skin usually at risk are the backs of the hands, forearms, face and neck, as other areas are usually covered by clothing. The hands can be protected by wearing gloves, and arms can be covered by long sleeves, using material with low UV light transmission. In general, darker coloured, heavier fabrics with a closed structure offer a higher level of protection than light coloured, light weight fabrics with an open structure. The face can be protected by a UV blocking face shield, and this will also provide eye protection. Particular attention must be paid to prevent gaps in protective clothing that commonly occur around the neck and wrist areas.
- b) **Protection of the eyes** – We recommend that where personal UV light exposure could be significant, all persons affected should always wear UV blocking spectacles or face-shield. These will ensure protection against any residual risk.

Fire



During operation - black filter glass temperature exceeds 100°C.
- minimum distance from flammable materials to UV torch is 0.5 metres.

Never operate in areas where there is a flammable atmosphere hazard.

Explosion



a) **Temperature during operation** - UV bulb exceeds 650°C
- black filter glass exceeds 100°C.
Never operate in areas where there is an explosive atmosphere hazard.

b) **UV bulbs operated at over pressure**

- risk of explosion cannot be excluded and increases with operating hours.
- replace UV bulbs after maximum 2000 operating hours
- wear safety spectacles when handling.

Electrical



The battery charger requires a 100-240V/50-60Hz power supply.

Electrical equipment is potentially dangerous and may cause death or injury if sufficient precautions are not taken before operation or maintenance.

Never operate – if any visible damage to UV torch, battery charger, cables or connectors.

The battery should only be charged in a dry environment.

Before maintenance always disconnect the cable from the battery charger.

Hot Surfaces



During operation - black filter glass temperature exceeds 100°C.

- take precautions to avoid burns.
- ensure no unprotected skin comes into contact with this hot surface.
- always point UV light beam away from body.

Beware when handling items after UV light exposure, they could be hot and cause burns.

Before maintenance - allow to cool for 30 minutes.

Broken Glass

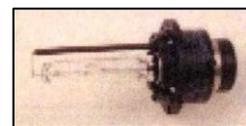


Black Filter Glass

The black filter glass is dark violet tinted silicate glass. It is fully thermally toughened and the edges are ground and chamfered. There should be no sharp edges which could cause cuts, however take precautions when handling. We recommend wearing suitable gloves for protection.

In the event of damage the black filter glass could shatter into very small fragments. In this case there would be many sharp edges and precautions must be taken when handling to avoid the possibility of cuts. We recommend wearing gloves and the use of a dust pan and brush to clean up. Disposal of broken glass should be done in accordance with waste disposal regulations.

UV Bulb



The UV bulb is made of quartz glass. There should be no sharp edges which could cause cuts, however take precautions when handling.

In the event of damage the quartz glass could shatter producing large and small pieces of sharp glass. Precautions must be taken when handling to avoid the possibility of cuts.

Mercury



The UV bulb contains a small amount of mercury. In the event of damage, protection is necessary against release of mercury vapour and potential skin exposure.

In the event of a mercury spillage, clean up and remove immediately, using a Mercury Spillage Kit.

ASSEMBLY

The Klercide UV Validation Torch is delivered in a cardboard box with packing material.

When opening the packaging do not use sharp implements, such as knives, which could damage the product inside. Unpack and visually inspect for any damage. Handle with care to avoid damage due to neglect.

Ensure all packaging material is removed.

To assemble the UV torch ready for operation follow the procedure below:



Place on a solid flat surface. Unscrew and remove the thumb wheel on the rear of the torch. Rotate the battery access door to the fully open position.

Insert battery.



Close battery access door.
Replace thumb wheel.

OPERATION

Operation should only be performed by suitably qualified and trained personnel.

Pre-Operation Checks

Before switching on, always check the following. If in any doubt whatsoever, do not switch on.

NEVER operate the Klercide UV Validation Torch:

:

- a) **Without** the black filter glass intact and correctly mounted in position
- b) **If** there is any visible damage to the UV torch or battery pack.
- c) **Without** the necessary control measures in place for protection against exceeding the UV light exposure limit values.
- d) Once satisfied that all the above check out satisfactorily, then the Klercide UV Validation torch is ready to be switched on.

Switching On

The Klercide UV Validation Torch should be held or mounted to allow direct illumination of the required area.

The operator should always point the UV light beam away from their body.

Never put the UV torch down on the front containing the black filter glass or its back when igniting. It should rest on its side or be held pointing forward away from the operators body so that the UV light beam will be perpendicular to the body.

Switch on using the power switch on the side of the torch.

The UV bulb will take approximately 15 seconds from switching on to reach optimal operating temperature and hence UV light output.



If at any time during operation the black filter glass fitted in front of the UV bulb is broken or damaged in any way, then the torch must be switched off immediately. It must not be used again until a replacement black filter glass is fitted.

If the black filter glass is broken or damaged in any way, this will be readily apparent because very bright UV/white light will be emitted instead of the normal violet coloured UV-A light output.

When switched off, the UV bulb requires a cooling period of approximately 5 seconds before re-ignition. The UV bulb cannot re-ignite within 5 seconds from switch off. A UV bulb switched back on within 5 seconds, will continually attempt to ignite, but will not do so until sufficiently cool. This will damage the UV bulb.

Never put the Klercide UV Validation Torch down on the front containing the black filter glass when switched on.

A fully charged battery will provide approximately 45 minutes of operation depending upon the number of on/off switching cycles.

BATTERY PACK CHARGING

Only use battery charger supplied by Shield Medicare – a division of Ecolab



Allow to cool for 30 minutes.



Place the Klercide UV Validation Torch on a solid flat surface. Unscrew and remove the thumb wheel on the rear of the torch.



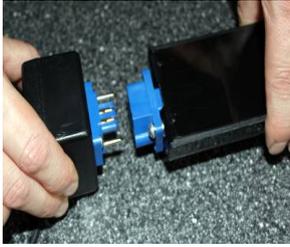
Rotate the battery access door to the fully open position.



Remove the battery pack.



Plug the charger into the mains supply.



Connect the battery pack and charger to commence charging.

The LED on the charger will turn red while charging. Once the battery is charged the LED will turn green. This will take approximately 4 hours for a fully flat battery.

Notes on Charging

- a) If the mains/input voltage is turned off during charging the charger will reset and start a new charge cycle when the mains/input voltage is re-instated.
- b) Do not leave connected for more than 24 hours.
- c) Should the UV torch only be used for short periods (less than 45 minutes) and then returned to charge, we recommend every tenth time the battery is run flat before recharging. To do this leave the unit switched on. The light will switch itself off when the battery is flattened.
- d) Once the torch has switched off because of a flattened battery do not try to re-ignite the UV bulb. Switch the torch off, remove the battery pack and recharge or replace with a spare fully charged battery pack to continue.
- e) If a battery is not used for longer than 2 weeks it will be necessary to recharge before use.
- f) If a battery is fully discharged, recharge as soon as possible. Leaving batteries fully discharged for extended periods can permanently damage them.

MAINTENANCE

Maintenance of any kind must only be performed by suitably qualified and trained personnel.

Only use replacement parts supplied by Shield Medicare – a division of Ecolab.

Shield Medicare –a division of Ecolab cannot accept any responsibility for damages resulting from improper maintenance, repairs or use of replacement parts not supplied by Shield Medicare.

Cleaning and Replacement of User Serviceable Parts

Regular routine cleaning and replacement of user serviceable parts is essential to ensure the UV torch is safe to use and operates at peak performance. The intervals recommended are provided in the following sections.

Cleaning of Black Filter Glass



Remember that it is absolutely imperative that the UV torch is never operated without the black filter glass intact and correctly mounted in position

The black filter glass should be kept free of dust, dirt and contamination by regular cleaning. Cleaning intervals will be dependent on the operating environment.

Failure to keep the black filter glass clean will result in reduced performance and service life.

Procedure:



Allow to cool for 30 minutes.



Place the UV torch on a solid flat surface.
Unscrew and remove the thumb wheel on the rear of the torch.



Rotate the battery access door to the fully open position.



Remove the battery pack



Place the UV torch on a solid flat surface.

Remove the 4 x M4 screws and washers from the front of the torch.



Pull the filter mounting ring off the front of the torch.



Remove black filter glass



Wipe both sides with an alcohol impregnated wipe. Never use any soaps, detergents or abrasive materials.



Put on lint free nylon gloves. This will avoid fingerprints contaminating the filter glass during reassembly.



Fit the black filter glass back in the filter mounting ring.



Replace filter mounting ring and black filter glass on the front of the torch and secure with the 4 x M4 screws and washers.

UV Bulb Replacement



It is absolutely imperative that only 35W Xenon UV bulbs, supplied by Shield Medicare – a division of Ecolab are fitted, otherwise this will invalidate the warranty and the maximum permissible UV light exposure times, provided on Page 10, will not be valid and new UV light measurements and evaluation would be necessary. This could result in a serious breach of health and safety regulations.

UV light intensity will reduce by approximately 30% in the wavelength region 315nm-400nm over the maximum 2000 hour lifetime of the UV bulb. The precise deterioration will depend on age, environment and switching.

UV bulbs operate at over pressure. Risk of explosion cannot be entirely excluded, therefore always wear impact resistant safety spectacles when handling. The risk of explosion increases with operating hours elapsed. Therefore, always replace UV bulbs after a maximum 2000 operating hours.



Avoid touching the UV bulb with bare hands. Fingerprints will burn into the quartz during operation, resulting in reduced performance and service life.

Remove any possible fingerprints with an alcohol impregnated wipe.

The UV bulb is a 'bayonet' type fitting, therefore when rotating to remove or install in the UV bulb holder always ensure the UV bulb is fully rotated into the correct position.

Procedure:



Allow to cool for 30 minutes.



Place the UV torch on a solid flat surface.

Unscrew and remove the thumb wheel on the rear of the torch.



Rotate the battery access door to the fully open position.



Remove the battery pack



Put on safety spectacles.



Place the UV torch on a solid flat surface.



Remove the 4 x M4 screws and washers from the front of the torch.



Pull the filter mounting ring and black filter glass off the front of the torch.



Put on lint free nylon gloves. This will avoid fingerprints which would burn into the quartz during operation and significantly reduce performance and UV bulb life.



Carefully remove the reflector taking care not to damage the UV bulb.

Rotate UV bulb approximately 30° anti-clockwise and pull forward to remove.

Caution: Incorrect handling or installation of a UV bulb can result in damage and the risk of injury from sharp pieces of glass and mercury vapour.



In the event of damage to the UV bulb clean up and remove immediately, using a Mercury Spillage Kit.



Take a new UV bulb and check for any visible damage. Never use damaged UV bulbs.



Push new UV bulb into place and rotate clockwise.



Carefully replace the reflector taking care not to damage the UV bulb.



Replace filter mounting ring and black filter glass on the front of the torch and secure with the 4 x M4 screws and washers.

Disposal of UV Bulbs

Disposal of used UV bulbs should be done in accordance with waste disposal regulations. It is therefore advisable to contact your local Waste Disposal Authority or authorised waste disposal facilities.

Replacement of Black Filter Glass



It is absolutely imperative that only black filter glass, supplied by Shield Medicare – a division of Ecolab is fitted, otherwise this will invalidate the warranty and the maximum permissible UV light exposure times, provided on Page 10 will not be valid and new UV light measurements and evaluation would be necessary. This could result in a serious breach of health and safety regulations.

Remember that it is absolutely imperative that the Klercide UV Validation Torch is never operated without the black filter glass intact and correctly mounted in position.

Procedure:



Allow to cool for 30 minutes.



Place the UV torch on a solid flat surface.

Unscrew and remove the thumb wheel on the rear of the torch.



Rotate the battery access door to the fully open position.



Remove the battery pack



Place the UV torch on a solid flat surface.

Remove the 4 x M4 screws and washers from the front of the torch.



Pull the filter mounting ring off the front of the torch.



Remove black filter glass.



Remove white silicone filter gasket.



Take a new black filter glass and fit white silicone filter gasket.



Wipe both surfaces with an alcohol impregnated wipe. Never use any soaps, detergents or abrasive materials.



Put on lint free nylon gloves. This will avoid fingerprints contaminating the filter glass during reassembly.



Place the black filter glass back in the filter mounting ring.



Place on the front of the torch and secure with the 4 x M4 screws and washers.

General Maintenance

The Klercide UV Validation Torch should be routinely maintained. The maintenance intervals will depend on usage and operating environment, but generally every 12 months is recommended.

The maintenance schedule should include:

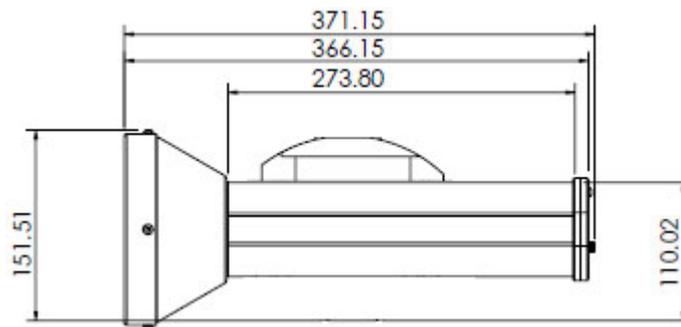
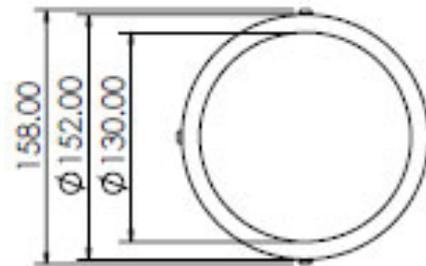
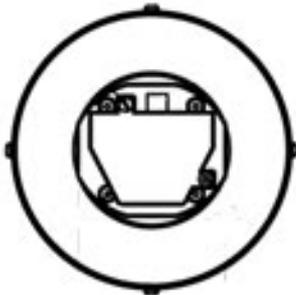
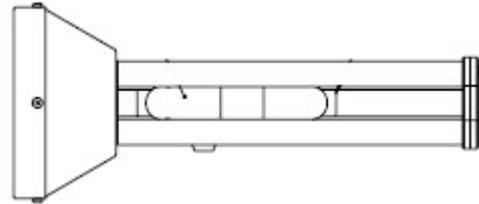
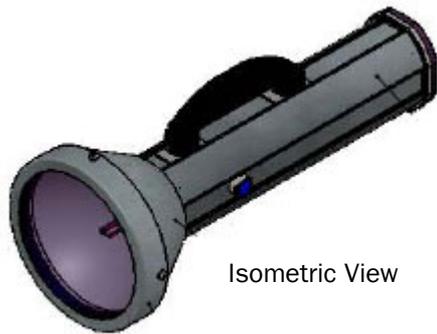
- a. Internal and external inspection and cleaning.
- b. Checking all electrical components and wiring.
- c. Checking all cables and connectors.
- d. UV bulb replacement if necessary.
- e. UV filter glass replacement if necessary

TECHNICAL DATA

Klercide UV Validation Torch	
UV bulb:	Xenon 35W high intensity discharge bulb (ozone free)
Warm up:	Maximum UV light intensity within 15 seconds
Hot re-strike	Minimum cooling period 5 seconds
UV bulb life:	Maximum 2000 hours - depending upon handling, switching and operating position
Filter glass:	Type: Black Size: 140 diameter Wavelength transmission range: 315nm - 405nm
Reflector:	Material: Aluminium Size: 135mm diameter
Dimensions:	See drawing appendix 1
Weight inc. Battery:	1.9 Kg (approx)
Rating:	IP54
Battery Pack	
Power supply:	12V DC via UVLT battery pack
Battery life:	400 charging cycles (approx)
Battery running time:	45 minutes (approx)
Recharge time:	4 hours (approx)
Dimensions:	170mm x 63mm x 45mm
Weight:	0.75 Kg
Rating:	IP54
Battery Charger	
Power supply:	100-240 VAC 50/60Hz
Weight:	0.6 Kg
Dimensions	Main box 135mm x 80mm x 45mm
Rating:	IP67
Temperature range:	5°C – 40°C

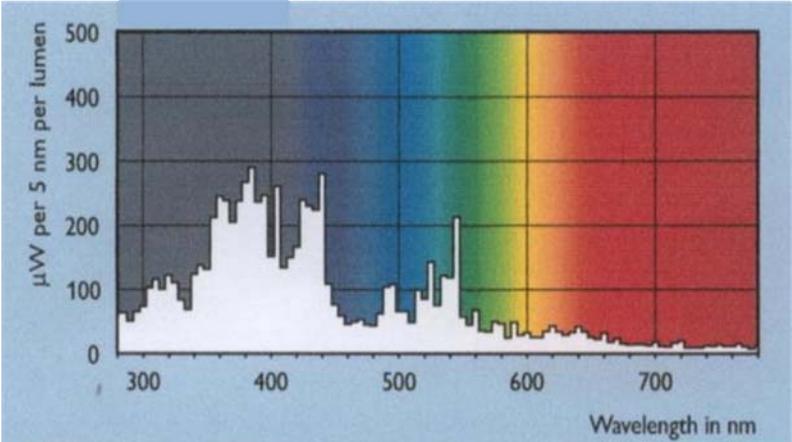
Appendix 1

SCHEMATIC DRAWINGS FOR KLERCIDE UV VALIDATION TORCH



Appendix 2

UV 35W XENON BULB



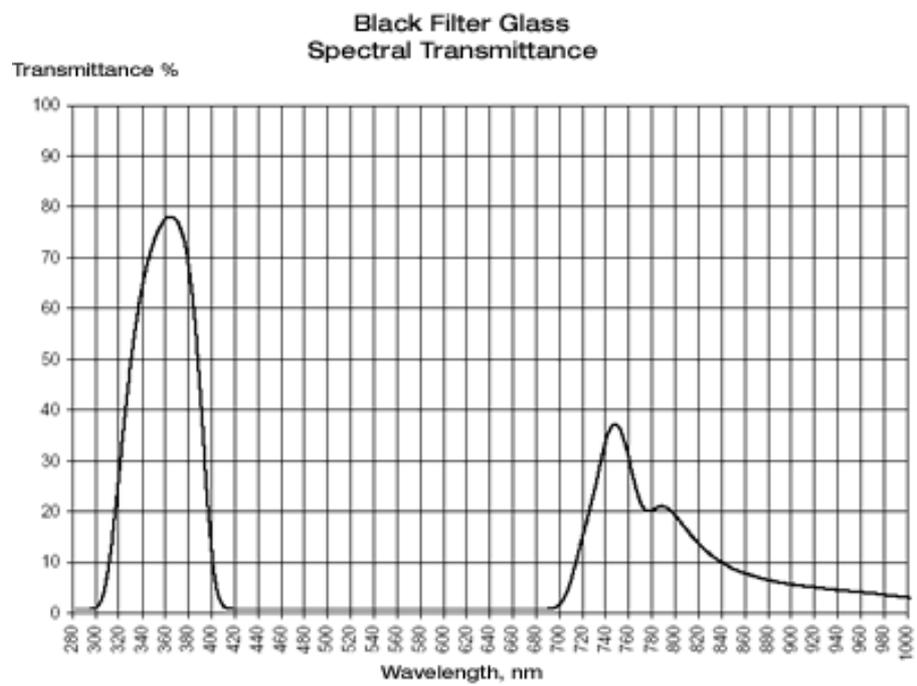
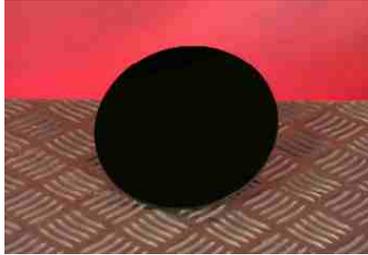
UV 35W Xenon Bulb

Emission spectrum of 35W Xenon UV bulb

Appendix 3

BLACK FILTER GLASS TRANSMISSION CURVE

Product Code 25010



Appendix 4

KLERCIDE UV VALIDATION TORCH



Product Codes

Klercide UV Validation Torch

Code	Description	Unit of Sale
3056560	Klercide UV Validation Torch	Each
3059220	Klercide UV Validation Torch (EU Specification)	Each
3056610	Spare Battery Pack for Klercide UV Validation Torch	Each
3056620	Spare UV 35W Xe Bulb for Klercide UV Validation Torch	Each
3056630	Spare Black Filter Glass for Klercide UV Validation Torch	Each
3056640	Spare Battery Charger for Klercide UV Validation Torch	Each
3056650	Clear UV Blocking Spectacles	Each
3056660	Clear UV Blocking Over Spectacles	Each
