Natural Hygiene
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‘Safety First with UV Light’

UV Glow Box

Operating Manual

(including maintenance and health and safety)

UV LIGHT TECHNOLOGY
OptiMinUV®
Optimizing your process - Minimizing the risk

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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.

The UV Glow Box is designed for use with SmartCleanUV® - UV glow lotion, to teach best practice hand washing for improved infection control.

It **MUST NOT** be used for any other purpose without first consulting UV Light Technology Limited.

Disclaimer – UV Light Technology Limited cannot accept responsibility for damages resulting from improper use or use for any purpose other than those intended.

Due to our policy of continuous product development, we reserve the right to amend specifications and technical data, therefore information in this manual may be subject to change without prior notice.

Issue No. 01/15

1. Health and Safety

1.1 UV light exposure

Safety Classification in accordance with BS EN 62471:2008
Risk Group 1 (low risk)
Notice – UV emitted from this product

Over exposure to UV light can cause adverse health effects, such as erythema (sunburn), photoconjunctivitis 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 key is to avoid over exposure by implementation of control measures.

Occupational UV light exposure in Great Britain is subject to the Control of Artificial Optical Radiation at Work Regulations 2010, which brought into law on 27th April 2010, the European Physical Agents (Artificial Optical Radiation 2006/25/EC) Directive (AORD 2006/25/EC). This incorporates statutory UV light exposure limit values (ELV's).

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.

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.

Control measures

The objective is to ensure that the UV light exposure limit values for the unprotected skin and eye are not exceeded by any person. This can be achieved by the following 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 and training to understand the associated risks to their health and 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.

b) Compliance with the UV light exposure limit values for the unprotected skin and eye in accordance with the Control of Artificial Optical Radiation at Work Regulations 2010.

The UV light exposure limit values 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 exposed to photosensitising agents and the exposure limits may not provide adequate protection. These individuals should seek medical advice with respect to additional protective measures which may be required before any exposure to UV light.

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

The distance at which the maximum permissible UV light exposure time is equal to 8 hours is known as the Hazard Distance (HD). At this distance and beyond, the applicable exposure limit value cannot be exceeded within an 8 hour period per day.

Distance from UV LEDs (mm)	**Maximum permissible UV light exposure time within an 8 hour period per day**	
	unprotected skin	**unprotected eyes**
100	**30 minutes**	**4 minutes**
250	**4 hours**	**25 minutes**
500	**8 hours (HD) with eye protection**	**1.5 hour**
750		**4 hours**
1000		**7 hours**
1250		**8 hours (HD) without eye protection**

Maximum permissible UV light exposure times, at various distances within the beam of the UV LEDs, for the unprotected skin and eye in an 8 hour period per day in compliance with the Control of Artificial Optical Radiation at Work Regulations 2010.

Using the UV glow box as described in the Procedure for Hand Washing Training on page 7 results in sufficiently low exposure that most individuals do not need to limit their use. However, young children and people who are unusually photosensitive or exposed to photosensitising agents should limit their use of the UV glow box to a ten minute period in any eight hours - this refers to the time the hands are inside the UV glow box and exposed to the UV light.

1.2 Fire

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

1.3 Explosion

Never operate in areas where there is an explosive atmosphere hazard.

1.4 Electrical

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 the UV glow box, cable or plug.

Before maintenance always disconnect the mains supply .

2. Assembly

Handle with care to avoid damage.

Ensure all packaging material is removed and visually inspect the UV glow box for any damage.

3. Operation

The UV glow box should be used on a flat surface and positioned so that no person can look directly at the UV LEDs inside the UV glow box.

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

NEVER operate

a) If there is any visible damage to the UV glow box, cable or plug.

c) Without the necessary control measures in place for protection against exceeding the UV light exposure limit values.

To switch on: plug into a standard mains socket and to turn on the UV LEDs wave your hand in front of the infrared switch (without touching) located on the top left corner of the UV glow box. Repeat to turn off.

3.1 Procedure for Hand Washing Training

a) 

Apply 1-2 pumps of SMARTCLEANUV® UV Glow Lotion to hands and spread evenly over the palms, back of hands and fingers.

b) 

Place hands into UV glow box to check for even coverage. Both hands should glow uniformly. Spread lotion over any areas which are not glowing.

c) Allow lotion to dry, then wash hands thoroughly and re-inspect in the UV glow box. Any glowing areas remaining on the hands after washing, highlight areas not washed properly.

d) Teach best practise hand washing procedure shown on Page 7.

e) Repeat and look for improvements.

This dramatically demonstrates the effectiveness of personal hand washing and creates awareness of the need to learn how to wash hands properly.

3.2 Best practice hand washing procedure with soap and water

The procedure below conforms with World Health Organisation guidelines on how to wash your hands properly for good hand hygiene in health care.

The procedure should take 40-60 seconds.

1
Wet hands with water

2
Apply soap to cover all surfaces of the hands

3
Rub hands palm to palm

4
Right palm over back of left hand with interwoven fingers and vice versa

5
Palm to palm with fingers interwoven

6
Backs of fingers to opposing palms with fingers interlocked

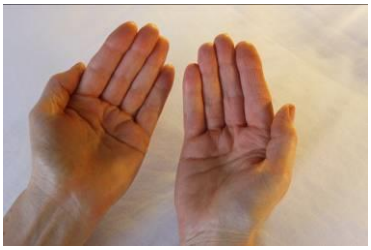
7
Rotational rubbing of left thumb clasped in right palm and vice versa

8
Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa

9
Rinse hands with water

10
Dry hands thoroughly with a single use towel

11
Use towel to turn off water



12
Hands should be thoroughly clean

4. Maintenance

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

Only use replacement parts supplied by UV Light Technology Limited.

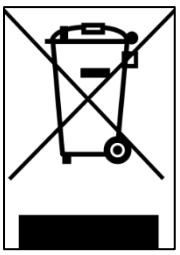
UV Light Technology Limited cannot accept any responsibility for damages resulting from improper maintenance, repairs or use of replacement parts not supplied by UV Light Technology Limited.

4.1 Cleaning

Keep the inside of the UV glow box free from drips or smears of SmartCleanUV® UV Glow Lotion, as these can be distracting during the hand inspection process. Wipe the metal UV glow box surfaces clean using a damp cloth and a mild detergent.

5. Disposal of electrical and electronic equipment

The UV glow box cannot be disposed of with normal waste. It should be taken to an appropriate collection point for the recycling of electrical and electronic equipment. This will help to conserve natural resources and prevent potential negative consequences for human health and the environment. For more information about where to drop off electrical and electronic equipment waste, please contact your local waste disposal authority.

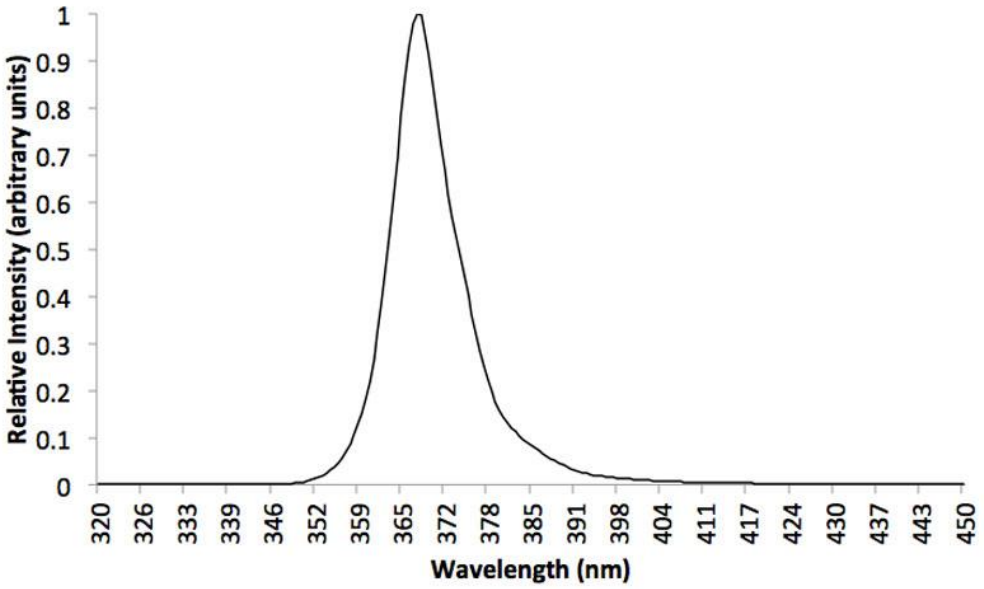


6 Technical Data

Due to our policy of continuous development, we reserve the right to amend technical data and therefore information may be subject to change without prior notice.

UV LEDs:	365 nm LED chips running at 2W per chip
UV LED lifetime:	20,000 hours (estimated)
UV light wavelength range:	360 nm – 370 nm (peak output 365 nm)
Reflector material:	Aluminium
Construction material (body):	Aluminium
UV Light Technology Limited products are RoHS compliant	

UV - Spectral Output



Appendix 1

Accessories

	Product Code	Description
	REVEAL-LOTION	UV glow lotion 200ml bottle
	UVL-BAG	Carrying bag for UV Glow Box

Appendix 2

Warranty

The UV Glow Box is covered by our twelve (12) months back to base warranty, from the date of delivery. (All customs duties and disbursements for the return will be the responsibility of the purchaser.)

UV Light Technology Limited undertake that if, within the warranty period, our equipment or any part thereof, is proved to be defective by reason only of faulty workmanship or materials, we will at our option, repair or replace the same free of charge. However, the following conditions and exclusions will apply:

Conditions:

- The defective equipment or parts are returned to UV Light Technology Limited at the address below.
- The equipment has been correctly supplied by an authorised UV Light Technology Limited distributor and used in accordance with the operating, maintenance and health and safety instructions.
- The equipment has not been serviced, maintained, repaired, taken apart, or tampered with in any way by any person not authorised by UV Light Technology Limited.
- The equipment is still in the possession of the original user.
- Any equipment or defective parts replaced shall become the sole property of UV Light Technology Limited.

Exclusions:

- Damage resulting from transportation, fire, accident, abuse, misuse, improper use, neglect, or act of God.
- Damage resulting from immersion in or exposure to chemicals, liquids or dirt, extremes of climate, fungus or excessive wear and tear.