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**BioGlow<sup>®</sup>**  
**Ultraviolet Hand**  
**Lamps User's Manual**



**Crystal Technology & Industries, Inc.**  
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Crystal Technology & Industries, Inc

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## DANGER

This product generates ultraviolet radiation. Avoid exposure. Exposure of your skin to ultraviolet radiation may cause allergic reactions, premature aging of the skin and cancer. Always wear protective clothing and eyewear. Never look directly into the UV lamp. Failure to do so may result in severe burns or long term injury to the eyes. A protective shield must be used if no other protective means are implemented. Make sure all persons in the area are also properly protected. If you are under medication or have a history of skin problems please consult a physician before operating the unit.



## WARNING

Please read the manual carefully before operating the product. Use the product according to the instructions otherwise the protection provided by the product may be impaired.

**Attention:** Ultraviolet radiation is harmful to the human body!



## Warranty Card

The certificate is an important basis for product warranty, please take good care of it!

### Warranty certificate

User name		Phone	
E-mail Address			
Zip code		E-mail	
Product Name		Product Model	
Production Number		The date of sale	

● Warranty  
1 year warranty

● The following circumstances, Warranty is not implemented:

1. Over the warranty period; (warranty period starts from the date of purchase within one year)
2. Damage caused by use maintenance violate the instruction requirement of use, maintenance, custody
3. Damage caused by Non-professionals dismantlement
4. No valid invoice; (except the goods can prove the validity of the warranty)
5. Product model and serial number of products does not match the warranty certificate
6. The damage caused by force majeure;

Customer Service Phone: 972-934-2525  
(086)0512-66625996

Dear users, the above information is completed by the sellers and stamped effect.

### Maintenance records

Completed by maintenance organizations, and they should help customers to paste maintenance records in the appropriate position!

The 1 time	Maintenance company's name		Maintenance Date	
	Address		Tel	
	Maintenance documents No.		Maintenance personnel to sign	
The 2 time	Maintenance company's name		Maintenance Date	
	Address		Tel	
	Maintenance documents No.		Maintenance personnel to sign	
The 3 time	Maintenance company's name		Maintenance Date	
	Address		Tel	
	Maintenance documents No.		Maintenance personnel to sign	

## Packing List

Description	Quantity	Remark
Machine	1	
User's Manual	1	
Fuse(AC250V, 1A)	1	For AC Operated Model
Charger	1	For Lithium Battery Operated Model

## 1-1:Function

The BG product series provide UV radiation with wave lengths of 365nm , 254nm, or a combination of 254nm and 365nm. They are used for detecting nucleic acids stained with fluorescent dyes such as ethidium bromide and acridine orange. The BG UV Hand Lamps may be used to detect nucleic acids in several fields including molecular biology, biochemistry, medical and forensic examinations and biological preparations including observing fluorescence.

## 1-2:Features and Specification

**1.2.1** High UV intensity, reliable components.

**1.2.2** Portable, light weight with artistic design.

**1.2.3** Single or dual wavelength.

**1.2.4** Choice of corded or rechargeable\* units.

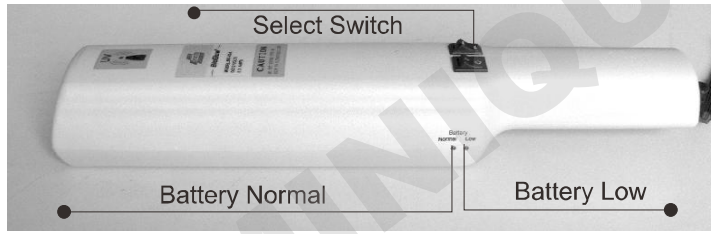
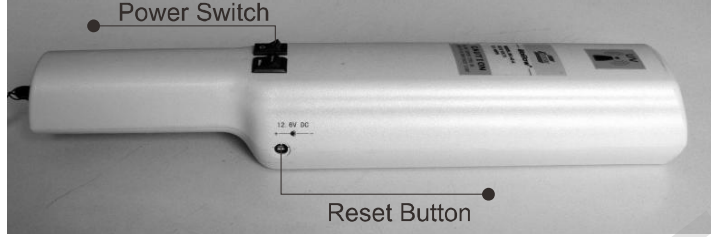
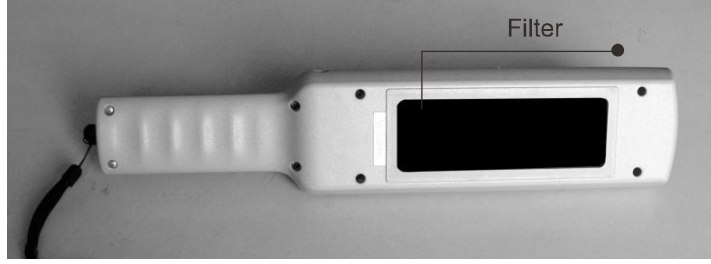
**1.2.5** Automatic safety switch to prevent harmful UV radiation exposure if unit is turned upside down.

**1.2.6** UV window size: 150 x 50mm.

**1.2.7** Outside dimensions: 415 x 88 x 60mm.

**1.2.8** The rechargeable unit uses 12V rechargeable batteries and comes with a charger (100-240VAC, 50/60Hz). When the battery is fully charged, the unit can sustain about 2 hours continuous use . The battery will have sufficient power to operate when the indicator light is green. The battery will need to be recharged if the indicator light is yellow. It will take approximately 4 hours to get a completely drained battery fully charged.

# Operating instructions



Lithium Battery Operated Model with DC12V 0.3A										Wave Length		Number of UV Tubes	
Plug	US	Eur.	UK	AU	SA	Universal	UV-A	UV-C	UV-A & UV-C	UV-A	UV-C		
<b>Regular Battery Operated Model</b>	BG-12A (BG-12)	BG-12E	BG-12EN	BG-12AU	BG-12SA	BG-12Z					2		
	BG-32A (BG-32)	BG-32E	BG-32EN	BG-32AU	BG-32SA	BG-32Z	2						
	BG-42A (BG-42)	BG-42E	BG-42EN	BG-42AU	BG-42SA	BG-42Z	1			1			
	BG-12-AA (BG-12-A)	BG-12-AE	BG-12-AEN	BG-12-AAU	BG-12-ASA	BG-12-AZ					2		
<b>Model with Automatic Safety Switch</b>	BG-32-AA (BG-32-A)	BG-32-AE	BG-32-AEN	BG-32-AAU	BG-32-ASA	BG-32-AZ	2						
	BG-42-AA (BG-42-A)	BG-42-AE	BG-42-AEN	BG-42-AAU	BG-42-ASA	BG-42-AZ	1			1			

Long wave (UV-A) : 365nm  
 Short wave (UV-C) : 254nm  
 All models come with a window size of 150 X 50mm.

## Specification

AC Operated Model		AC220V,50Hz,0.3A		Wave Length	Number of UV Tubes	
		SA	SA		UV-A	UV-C
AC120V,60Hz,0.3A	Plug	US	UK	UV-C	2	1
		Eur.	SA			
	BG-10A (BG-11)	BG-10E	BG-10EN	UV-A	2	
	BG-30A (BG-31A)	BG-30E	BG-30EN	UV-A & UV-C	1	1
	BG-40A (BG-41A)	BG-40E	BG-40EN			

## 2. Operating instructions

### 2-1 Connecting Power Supply

Refer to Specification.

### 2-2 Turn ON the Unit

**For Models with Single wavelength:** Press power switch to position "I".

**For Models with Dual Wavelength:** Select desired wavelength by pressing the select switch at right. Press power switch to position "I".

**Note:** The intensity of the radiation might be weak initially while the lamp tube is cold.

### 2-3 Turn Off

Press power switch to position "O".

### 2-4 Charging Battery for Models Operated with 12 VDC

Each 12VDC operated model contains a lithium battery pack. The battery needs to be charged when the yellow light is on. Please use the charger which comes with the product.

## 3. Operator Servicing

The servicing instructions here are intended for limited maintenance. Do not perform any servicing other than that contained in the instructions. Return product to factory for maintenance not covered in this section.



### Warning

*Always unplug the product from its power source before cleaning or servicing.*

### 3-1:Housing and Filter Maintenance

The plastic housing is designed for protecting the internal parts and facilitates handling. Make sure no liquids come into contact with electrical components. Clean the filter with a glass cleaner and soft cloth.

### 3-2:Tube and Reflector Maintenance

Refer to the following instructions in the “TUBE REPLACEMENT” section and remove the tube before cleaning. Glass cleaner may be used for cleaning the reflector and a mild detergent may be used for cleaning the tube. Wipe and dry with soft cloth.

### 3-3:Tube Replacement

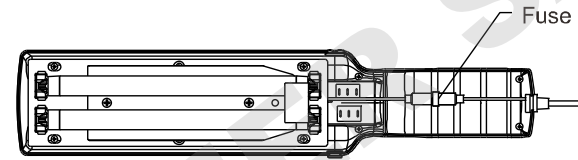
When the product fails to operate correctly, check with above operating instructions first. If the problem persists and tube replacement is deemed necessary, proceed as follows:

- 3.3.1 Turn the power switch to off position and unplug the power cable from electric outlet.
- 3.3.2 Lay the UV- lamp housing on a flat table.
- 3.3.3 Remove the 8 screws at the filter's side of the plastic housing. Separate the top and bottom housing parts.
- 3.3.4 Hold the tube's metal parts at tube's 2 ends and rotate the tube gently until the electrode is out from the socket.
- 3.3.5 Take a new tube and hold metal parts at the ends of the tube. Press the tube's one electrode at each end to the base and turn tube gently until it is set firmly into the base.
- 3.3.6 Replace the top and bottom plastic housing parts together by re-fastening the 8 screws.
- 3.3.7 Test the new tubes by turning the power on.
- 3.3.8 If the lamp still does not emit UV radiation, check the electrodes of the tube and make sure they are properly connected with the two copper contacts in each socket.

### 3-4:Fuse Replacement

3.4.1 Carry out steps 3.3.1, 3.3.2 and 3.3.3 see above.

3.4.2 Remove the fuse from it's holder and put in the new fuse (AC250V 1A).



3.4.3 Finish the procedure by following step 3.3.6 above.

### 3-5:Care and Maintenance for Battery

The following care and maintenance is only for models with rechargeable batteries.

- 3.5.1 The battery charger comes with the unit. It works with AC 100~240V,50/60Hz.
- 3.5.2 It takes up to 4 hours to recharge the lithium battery completely.
- 3.5.3 The battery charger and lithium battery system in these models have a built in self protection system to prevent fire and other hazards. Battery replacement has to be done by trained technician.
- 3.5.4 Improper use and treatment such as burning or heating over 100°C (212°F) may cause fire or other hazards.
- 3.5.5 Handle dead batteries properly. Do not disassemble. Keep them away from children and fire.

### 3-6:Environmental Conditions

The following conditions are safe for operating the BG Series UV Lamp:

- 3.6.1 Indoor use;
- 3.6.2 Operating altitude not to exceed 2,000 meters above sea level;
- 3.6.3 Temperature: 5°C to 40°C;
- 3.6.4 Maximum humidity: 80% at 30°C or below, 40% at 40°C;
- 3.6.5 The voltage fluctuation of power supply is less than  $\pm 10\%$ .