

OPERATIONS GUIDE

BLUEIDENT POWER PEN - cordless LED curing light

Black color

Silver color



OPERATIONS GUIDE

ATTENTION!

Before installation and starting work with the unit, carefully read this guide!



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I. UNIT DESCRIPTION AND FUNCTION

LED curing light BLUEIDENT POWER PEN cordless is a light source for intraoral polymerization of dental materials. The unit uses LED (Light Emitting Diode) module as the light source. The emitted light is in the wavelength range 450-490 or 410-490 nm .

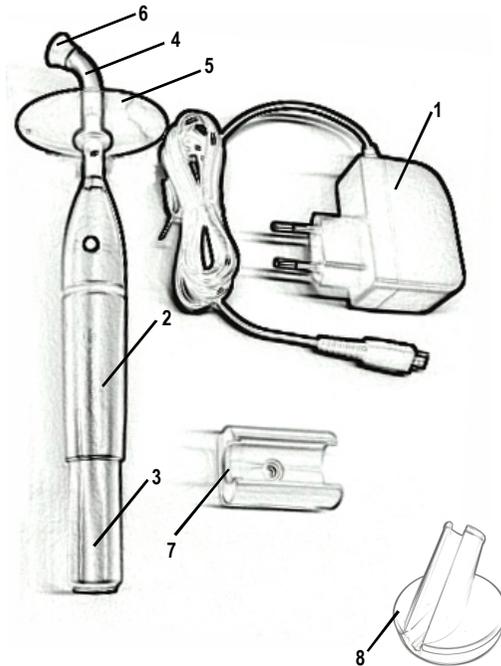
BLUEIDENT POWER PEN cordless is produced in conformity with MDD 93/42/EEC and 2007/47/EC.

II. TECHNICAL DATA

1. Operating voltage - 3.7V Li Ion battery (800mAh)
 2. Power consumption - mains adaptor: 110-240VAC / 50-60Hz, 0.2-0.1A.
- Output: 5VDC / 1.2A micro USB socket.
 3. Dimensions:
- max diameter of handpiece - 25mm
- length - 148 mm without lightguide
 4. Weight of Emitting handpiece - 105 g
 5. Light intensity:
- up to 1000 mW/sq.cm - constant intensity, regardless of battery charge level.
 6. Emitting time:
- In RAMP mode - 10 / 20 / 30 sec. / ±10%
- Start/Stop button, can stop in every moment by second press of the button.
7. Emitted light - blue, 450-490 or 410-490 nm.
 8. Light source - powerful LED crystals in module.
 9. Charge time - 6-8 hours for full charge and 3-4 hours to 80% of full charge.
 10. Working ability after full charged battery - up to 2000sec.
 11. Visual indication - color RING and (audible) signal every 10 sec.
 12. Low battery warning. Fully discharged battery indication.
 13. Working mode (1 min. / 10 min.)

III. ACCESSORIES AND SPARES

1. Charge adaptor with micro USB output 5V DC / 1.2A - 1 pc.
2. Cordless handpiece - 1 pc.
3. Battery (inside the unit) - 1 pc.
4. Lightguide - 1 pc.
5. Protection shield - 1 pc.
6. Protection cap - 1 pc.
7. Holder small - 1pc.
8. Holder big - optional
9. Operations guide - 1 pc.



IV. SAFETY PRECAUTIONS

As with all technical devices, the proper function and safe operation of this unit depend on the user's compliance with the standard safety procedures as well as the specific safety recommendations described in this Operations guide.

1. The unit must be used in strict accordance with the Operations guide. The manufacturer accepts no liability for any damage resulting from the use of this unit for any other purposes.

2. **NOTE: Lightguide and protection cap must be sterilized before every use !!!**
The lightguide is provided in a non-sterile condition and must be sterilized prior to patient contact.

3. Before start-up of the unit make sure that the operating voltage indicated on the adapter label corresponds to the mains voltage. Operation of the unit at a different voltage may damage the unit.

Electrical safety is ensured by Protection class II against electrical current damages according to EN 60601-1. Use of "Shuko" plug or unit's grounding is not necessary.

BLUEDENT should be operated in indoor premises, in the following conditions:

- temperature +10° - +40° C;
- relative air humidity - 30 - 75%;
- atm. pressure - 700 - 1060 hPa;
- absence of chemically active or flammable substances.

4. Irradiation of the eyes bears certain risk for their damage. Therefore the light must not be directed toward the eyes! Exposure must be restricted to the working area. Use of protection glasses for operator and patient that blocks effectively the blue spectral range is highly recommended! This curing unit produces high-output curing energy! A significant increase in curing energy is possible compared with equipment previously used. It is important to observe the following precautions and procedures:

- Do not place light directly on or towards unprotected gingiva or skin.
- Adjust curing techniques in accordance with the increase in curing energy.

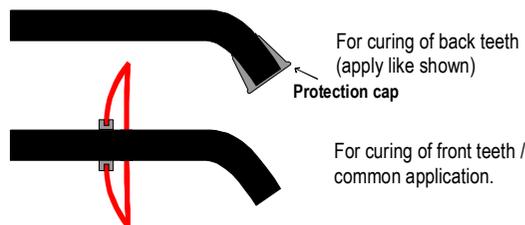


ATTENTION! The emitted light is in the wavelength range 410-490 nanometers. During work use protection goggles!

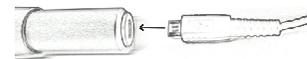
5. The unit can be used only doctor's advice by or in persons with heart pacemakers implant; persons with photobiological reactions; persons currently taking photosensitive medication; persons with cataract surgery; persons with retinal diseases, etc.
6. Solvents, flammable liquids and powerful heat sources must not be kept near the unit as exposure to one of these factors may damage the plastic parts of the unit.
7. Cleaning agents should not enter the unit as this may short-circuit the unit or cause potentially dangerous malfunction.
8. Only factory-authorized technicians are authorized to open and repair the unit.
9. Only original BLUEDENT spare parts should be used to replace defective parts. The unit warranty does not cover any damage resulting from the use on non-original replacement parts. The unit or any of its parts should not be disassembled while it is connected to the mains!
10.  **FRAGILE!** Be extremely careful during transportation, storage and handling of the unit!
11.  Pursuant to Directive 2002/96/EC, this symbol shows that the product must not be disposed of as urban waste at the end of its operating life. The product must be taken to centers specialized in separate collection of electric and electronic equipment. Correct disposal of the equipment, which is no longer used, prevents negative consequences for the environment and human health!

V. PREPARATION AND SEQUENCE OF OPERATION

1. BLUEDENT is designed for use as a battery powered unit for use in dental clinics. Take the curing light BLUEDENT out of the packing and fix the holder with screw to suitable place on the dental unit.
- NOTE: Lightguide and protection cap must be sterilized before every use !!!**
2. Mount lightguide and protection shield or protection cap.
- See VI. ROUTINE CARE AND MAINTENANCE for instructions of initial cleaning and mounting.
Attention! The unit should be placed at least 1 meter away from any heat source.



3. Connect the power adapter to charge battery if needed.



IMPORTANT!
Connect power charger in proper way!

4. Color ring indication

4.1 **Deactivated mode** - Color indication ring is not lit.



4.2 **Charging** - Color indication ring is blinking blue. When fully charged battery - is lit blue.

The curing light has constant intensity, regardless of battery charge level.



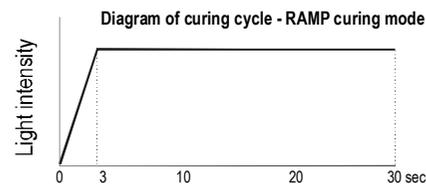
4.3 **Photopolymerization** - Color indication ring is lit green.

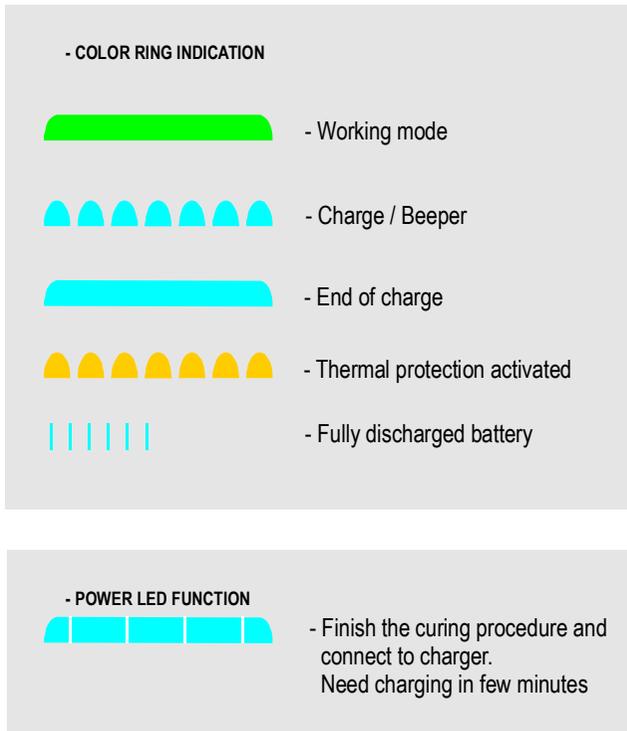


4.4 **Thermal protection activated** - Color indication ring blinks yellow.



5. Direct the light of handpiece to the curing spot at the closest distance (2-7 mm) and make sure the lightguide does not touch the photocomposite during the first several seconds and after that, when surface layer is hardened enough, the head can touch the photocomposite.
6. **TIMER:** ONE pressing of the Start/Stop button - 10sec
TWO pressing of the Start/Stop button - 20sec
THREE pressing of the Start/Stop button - 30sec
After second pressing of the Start/Stop button or after the selected time exposure the unit is deactivated.





6. Overheating protection

The unit is equipped with overheating protection, which is activated if the temperature of the LED module rises up to 50°C. When overheating protection is activated the color ring will blink in yellow next 60sec, then is deactivated until the temperature of the handpiece reaches 35°C. It is necessary to wait for device's cooling down.

7. BATTERY MAINTENANCE, CHARGING AND REPLACEMENT

The cordless handpiece is equipped with electronic charging control that ensures optimal battery charge and helps avoid overcharging.

7.1 Charge adaptor is SYS1421-0605-W2E - 100-240VAC input and 5VDC output - micro USB type. It is not allowed to use another type power supply.

7.2 Low Battery indication:
-rarely blinking of lightguide shows that battery is almost discharged. Handpiece can be used for several minutes, light intensity remains stable.

7.3 No danger for battery overcharge - inside is battery protector. When battery is fully charged, the handpiece can work for approximately 2000 sec.

7.4 Curing light can be used during charge time.

7.5 To replace the Li-Ion battery:

- Place the battery end of handpiece on a non-slip surface and unscrew the cylindrical part 3 of the handpiece. Carefully remove the coupling with the battery out.

- Install new battery in reverse order.

- To assemble handpiece, place the battery end of handpiece on a non-slip surface, then hold firmly part 1 to fit part 2 together. In the same time screw cylindrical part 3 back to front cone - part 1.

Note: The fitting of parts 1 and 2 - tooth and groove - must match!

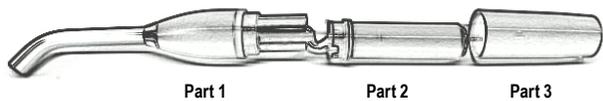
Battery cable must not be rotated in any way!

(For more information, see pictures on page 9.)

Use only original BLUEDENT POWER PEN Li-Ion battery!

7.6. The battery must not be immersed in water or thrown in fire, short circuit + and - polarity. Utilize according to local requirements.

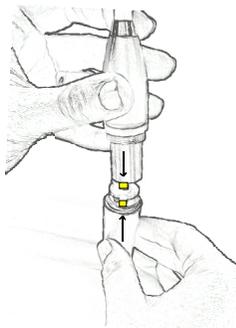
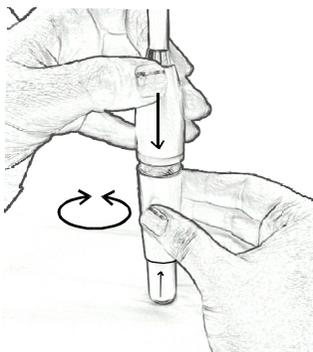
- When discarding old battery, observe environment protection rules!



Part 1

Part 2

Part 3



VI. ROUTINE CARE AND MAINTENANCE

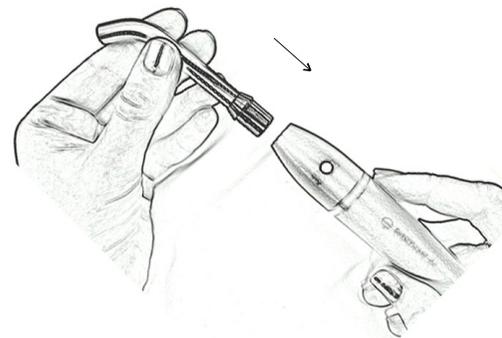
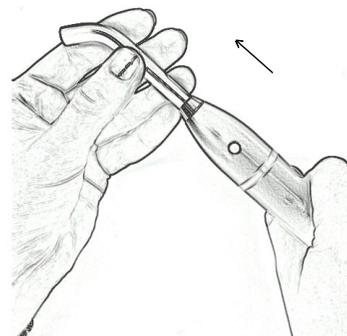
1. Examining of lightguide / protection cap.

Lightguide is mounted / dismantled by pulling (can be rotated).

Every day the lightguide tip should be examined for:

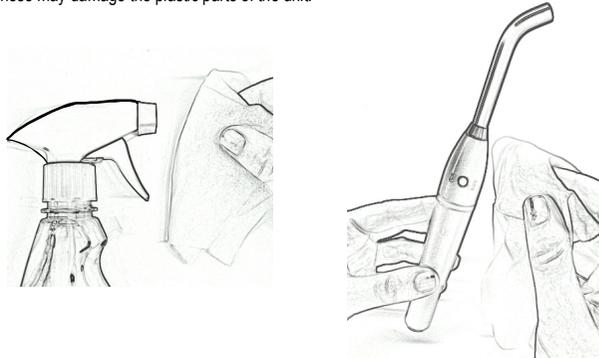
- stuck restorative material (it should be removed very carefully with blunt non-metal object);
- mechanical damages on the lightguide. It should be sterilized by autoclave at 134° C for 5 min.

The same must be done for protection cap.

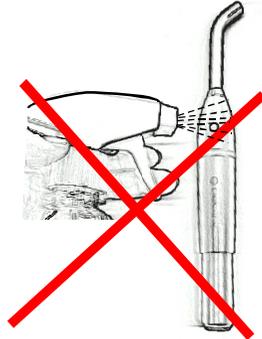


2. Cleaning of the unit.

For disinfection of the unit, spray the disinfection agent onto a piece of soft cloth / cotton and clean the handpiece and power adapter. Do not use abrasives or solvents as these may damage the plastic parts of the unit!



Do not spray directly onto handpiece or in button / charge connector!



3. Infection control

To prevent cross-contamination, it is recommendable to use a disposable barrier sleeve over the handpiece for each patient.



VII. WARRANTY CONDITIONS

1. Warranty period of the BLUEEDENT curing light is 24 (twenty four) months from the date of purchase. If date of purchase is not written, warranty starts at date of production.
2. During the warranty period the replacement of the defective parts (LED module and battery - 6 months warranty) is done free of charge by manufacturer's service.
3. If during the guarantee period the unit is damaged, due to incorrect operation (mechanical, chemical, thermal or electrical damages), damage caused by improper use, storage or any other reasons in user's fault, the repair is paid by the user. If any damage is noticed on electric cables, the device must be brought immediately to manufacturer's service. The device must not be used if cables are damaged. If liquids, such as water and solvents, aggressive or flammable substances and their vapors, also pouring or wiping the device with the same, insects or rodents have entered the device, it must be brought immediately to manufacturer's service. In such cases warranty is lost. Damages and claims are not accepted due to electric shocks, thunder storms, non-following of measures for electric safety or insufficient protection of patients, personnel or outer persons toward light irradiation. The manufacturer does not owe compensation for lost benefits in cases of defects or imperfect functioning of the device regardless of the cause. No claims and damages are accepted due to incorrect security and attention for protection during transportation, unpacking, moving, work and preservation of device. Warranty becomes null and void if any of the above mentioned happens. If a dispute arises on the application and interpretation of this Operations guide, it shall be solved according to the applicable laws in Republic Bulgaria, and the court of Plovdiv shall be the court of jurisdiction.
4. This warranty becomes null and void if any repair to or servicing of the product is performed by any unauthorized party or if other than original BLUEEDENT spare parts are used therefore.
5. The manufacturer recommends that the users check once a year (or if there is an incident immediately) in the manufacturer's service if the parameters: output light intensity and heat radiation of their units are in the admissible range. This check-up is done free of charge in the manufacturer's service.
6. The warranty servicing is performed at the manufacturer's service at the following address:



155, Vasil Aprilov Blvd.
 4027 Plovdiv, Bulgaria
 tel./fax:: +359 32 641913 , +359 32 644089
 e-mail: office@bglight.com
 http://www.bglight.com

VIII. BLUEIDENT DATA

SN:	<input type="text"/>
LOT:	<input type="text"/>
DATE OF PRODUCTION:	<input type="text"/>
QC:	<input type="text"/>
DATE OF PURCHASE:	<input type="text"/>



IX. SYMBOLS

	Manufacturer BG LIGHT LTD, 155 Vasil Aprilov Blvd., 4027 Plovdiv, Bulgaria
	Pursuant to Directive 2002/96/EC, this symbol shows that the product must not be disposed of as urban waste at the end of its operating life.
	Pay attention to the instructions accompanied by this symbol.
	Fragile!
	Product with CE mark.
	Applied part type BF
	The device is equipped with double electric insulation (Class II)
Ω	Ohm (electric resistance unit)
s	Second (time unit)
W	Watt (power unit)
Hz	Hertz (frequency unit)
mm	Milimeter (length unit)
A	Amper (electric current unit)
V	Volt (electric voltage unit)
Pa	Pascal (atmosphere pressure unit)
$^{\circ}$ C	Degrees Centigrade (temperature unit)
g	Gram (weight unit)
SN	Serial number
LOT	LOT

X. SERVICE DATA

