

Instruction Manual for LED.D (curing light)

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EN ISO 9001:2000
EN ISO 13485:2003

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1.Principle and usage

- 1.LED.D adopts the principle of ray radiation to solidify the light-sensitive resin by shooting at it in a short time.
- 2.This product is used to restore teeth and solidify material for whitening teeth.

2.Structure and components

LED.B (dental) is composed mainly of high power LED, optical fiber, main unit and adapter.

3.Technical specifications

- 1.Power supply: rechargeable Lithium battery
 - a)Battery voltage and capacity:
3.7V 1400mAh
Battery model: ICR18490
 - b)Adapter input: AC100~240V 50/60Hz
output: DC5V 1A
Build-in fuse of adapter: 1A/250V
2. Light source:
 - (1) 3 W high power blue light LED
 - (2) wave length: 420nm—480nm
3. Working conditions:
 - (1)environment temperature: 5°C to 40°C
 - (2)relative humidity: ≤80%
4. Dimensions: 32 x 38 x 202 mm
5. Net weight: 143g
6. Consumption power: ≤ 8W
7. Protection type against electrical shock: class I
8. Protection against electrical shock: type B
9. Protection against harmful ingress of water or particular matter: ordinary equipment (IPX0)
10. Safety in the presence of flammable anesthetic mixture with air, oxygen or nitrous oxide: not suitable under this condition.

4. Installation and removal method

1. Take off the red cap from the optical fiber and then insert the metal part into the front of LED.D. (Make sure to screw when installing, oblique insert should be prevented)
2. Fix the light hood on the top of the optical fiber.
3. To disassemble please reverse the above processes.
4. Battery replacement: press the button on the bottom of the main unit, pull the cover back and open it, take the battery out, then disconnect the plug. Connect the plug of the new battery correctly then fix the battery, press the cover onto the main unit correctly to the right position.

5.Operation

- 1.Press the mode button to enter working mode, the chosen mode indicator is on.
 - 1) Full power:
 - 2) Ramping: The blue light power increases stronger continually, and get to the strongest power 5s later
 - 3) Pulse: The blue light works on the pulse condition
2. Press the time button to choose the solidification time, 8 working time modes are available: 5, 10, 15, 20, 25, 30, 35 and 40 seconds.
3. When the mode and time are set, the curing light will memorize the setting, and working with this setting next time.
4. When operating, aim the blue light at the correct position, press the-ON/OFF button, the machine produces a sound “BI” and works under chosen mode with blue light, the figures on the screen start to count down

- And stop working when count to "0", the figures on the screen restore to the same time setting been used.
- During the working state of the machine, operation can be stopped by pressing the ON/OFF button at any time.
 - There is a buzzer inside the machine, will produce "BI" sound when pressing the button and time is up.
 - The electrical quantity monitoring device is fixed inside the machine, when detecting the power is low, the mode indicator twinkles, please charge the machine duly.
 - When charging, pull out the shell on the plug jack on the bottom of the main unit lightly, and inset the output tip of the charger into the plug jack, pull out the output tip from the plug jack when charging is done. Restore the shell on the plug jack. When charging the curing light, the three mode indicators shine in turn; when charging is finished, all of the three mode indicators lighten up.
 - During the charging process, the machine can enter into standby mode by pressing the button, and switch to normal working state for operation.
 - When normal working state turns into sleep state, the machine will enter into charging status if the charging is not finished, the charging indication is on.
 - Under the situation of faulty battery or no battery, the machine can still work by connecting the adapter to the machine.
 - After the low battery alarm starts, the machine can still work, but the light intensity will decrease, when using several times the machine will turns into protective mode, all functions will be locked until connecting the Machine to the power or changing the battery. Then the machine will back to work.
 - After the operation, please clean the fiber with calico to avoid infecting the light intensity.
 - The machine will power off automatically after 2 minutes of idle status. Turn on the machine by pressing any button.
 - The effective light intensity of LED.D is much higher than halogen lamp curing light, the solidified depth of the curing light composites resin for 10 seconds is not less than 4mm.
 - The optical fiber can be detached and autoclaved to the temperature of 135°C and pressure of 0.22MPa.

6. Cautions

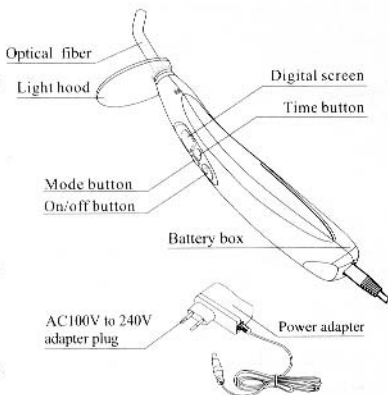
- During operation, the light should be aimed straightly at the resin to ensure solidification effectively.
- Avoid aiming light at eyes directly.
- Please use the original adapter, other adapters may break the battery and the circuit due to incompatibility.
- It is forbidden to touch the charging needle of the main unit with metal other conductors. On order to avoiding damage the circuit board and the Lithium battery.
- Charging the battery in a cool and ventilated room.
- Do not disassembly the battery, otherwise will lead to short circuit or electrolyte leakage.
- Do not squeeze、shake the battery, do not do the short circuit, do not store the battery with metal articles.

7. Contraindication

1. Patients with biological reactions are forbidden to use this equipment.
2. The patients or doctors with heart pacemaker are forbidden to use this equipment.
3. The heart disease patient, pregnant woman and children should be cautious to use the equipment.

8. Daily maintenance

1. Only the optical fiber of this equipment can be autoclaved under high temperature and pressure. Other parts should be cleaned by clean water or neutral sterilized liquid. Do not soak, do not clean by volatile or soluble liquid, otherwise the marks on the control panel will likely to fade.
2. Please clean the optical fiber to avoid the remaining resin on the surface and infect the life-span and the effectiveness of solidification.



9. Trouble shooting

Faulty	Possible cause	Solutions
No indication, no response	1. Battery is out of power 2. Faulty of battery	1. Charge the equipment/ Change a new batter 2. Change a new battery
"Er" shown on the screen	Faulty of main unit	Send to after service for repair
"E1" shown on the screen	Low battery	Reconnect the charger, if "E1" show again after 15 minutes please change the battery
Light intensity is weak	1. The optical fiber is not installed well 2. There is crevice on the optical fiber 3. There is resin on the tip of the optical fiber	1. Reinstall the optical fiber 2. Change a new optical fiber 3. Clear the resin
The equipment is not charging when the adapter is connected	1. The adapter is not connected well 2. Faulty of adapter or incompatible	1. Reconnect 2. Change the adapter
Effective duration of the battery become short	The capacity of the battery decreased	Change a new battery
The mode indicator twinkles when charging	1. Low voltage 2. Short-circuit of the battery	1. Back to normal after 15 minuets charging 2. Change a new battery

10. Packing list

(The components of the machine are listed in the packing list)

11. After service

1. We offer one year warranty from the date of the equipment to be sold.
2. We will not responsible for any damage caused by non-professional person.

12. Storage and transportation

1. This equipment should be handled carefully, kept away from shaking point, installed or stored at shadowy, dry, cool and ventilated places.
2. Don't store the equipment together with articles that are combustible, poisonous, caustic and explosive.
3. This equipment should be stored in the environment where the relative humidity is $\leq 80\%$, the atmosphere pressure is 75 kPa~106kPa and the temperature is $-10^{\circ}\text{C}\sim+55^{\circ}\text{C}$.
4. Excess impact or shake should be prevented during transportation, lay it carefully and do not invert it.
5. Don't put it together with dangerous articles during transportation.
6. Avoid solarization or getting wet in rain or snow during transportation.

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13. Symbol instruction



Trademark



Type B applied part

IPX0

Ordinary equipment



Caution! consult accompanying documents.



Used indoor only



CE mark



FDA marked product



Date of manufacture



Manufacturer



Screw inside/outside

14. Environmental protection



There is no harmful elements in this equipment, it can be disposed according to the local laws.

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1st Edition