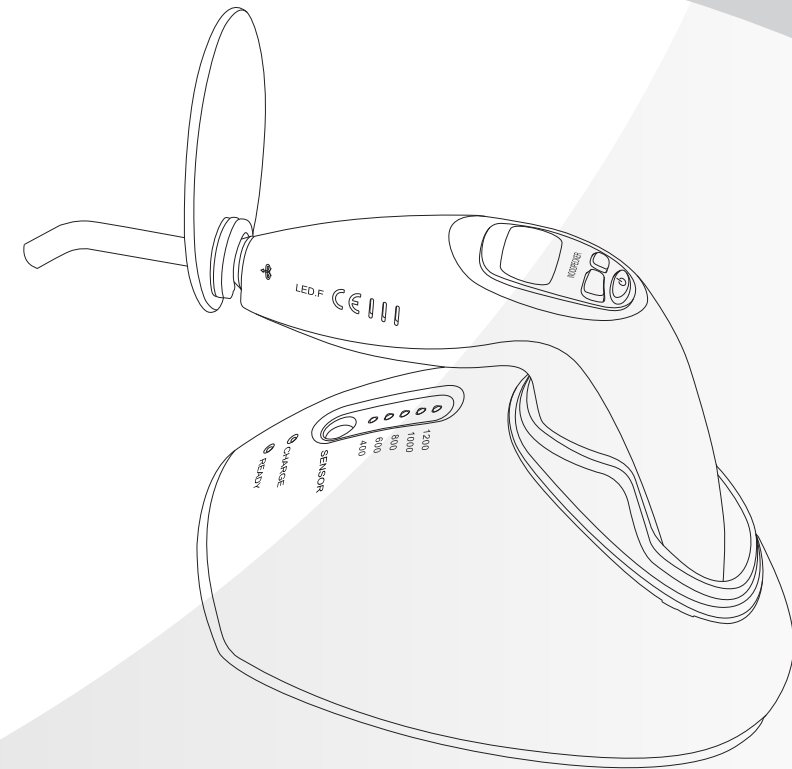


Instruction Manual for LED.F (curing light)



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- ◎ Light meter attached
- ◎ Built-in fan to avoid heat
- ◎ The battery can be replaced
- ◎ OLED screen. All angles visible
- ◎ Automatic memory. Avoid setting frequently
- ◎ Ergonomics design, more comfortable in operation
- ◎ Three working modes with three criteria of light intensity
- ◎ Stable output of light intensity, the solidification effect will not be affected by battery power decrease
- ◎ Efficient transfer from electricity into light. A full charge can be used more than 250 times continuously

GUILIN WOODPECKER MEDICAL INSTRUMENT CO., LTD.

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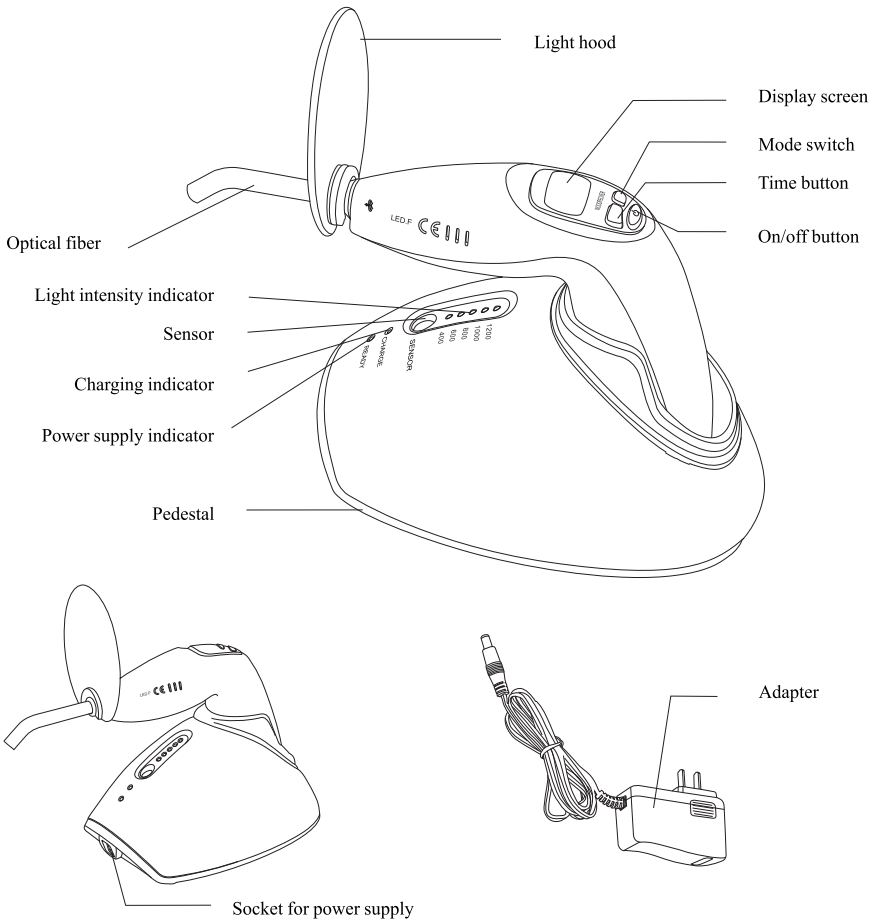
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1.Principle and Application

- 1.The curing light LED.F utilizes the principle of the light radiation to make the resin which is high sensitivity with the ray radiation solidified rapidly.
- 2.With the function of accelerating the renovation of the teeth and solidifying the whiten teeth materials.

2.Product Performance Structure and Components

The curing light (Dentistry) mainly composes with main unit and accessories (high-power LED, optical fiber, light hood, Li-ion Battery, power adapter and pedestal).



3. Basic Technical Specifications

1. Power supply:

a) Rechargeable Li-ion Battery

Battery nominal voltage and capacity: 3.7V 2000mAh

Battery Model: ICR18650

Battery has protection against Over-voltage, over-current and short circuit

b) Power Adapter

Power Input: AC100V~240V 50Hz/60Hz

Power Output: DC5V/1A, with a fuse protector of 250V/1A

Adapter Model: PRS-C13050 100VE

2. Light source:

1) High-power LED blue light

2) Wave length: 420nm-480nm

3) Light intensity: 850mW/cm²~1000mW/cm²

3. Working condition:

1) Environment temperature: 5°C~40°C

2) Relative humidity: ≤80%

4. Dimension: 195mm×40mm×150mm

5. Net weight: 210g

6. Consume power: ≤8W

4. Equipment Classification

1. Protection type against electric shock: Class II

2. Degree of Electric shock protection: Type B

3. Degree of protection against harmful ingress of water:

Ordinary equipment (IPX0)

4. Degree of safety application in the presence of a flammable anaesthetic mixture with air or oxygen or nitrous oxide: not suitable under this condition.

5. Indoor using equipment

6. Continuous operation

5. Installation and Demounting

1. Take off the red cap from the optical fiber, and then insert the metal part into the front of the curing light. (Make sure to screw the fiber to the end, be sure not sloping insert)
2. Install the light hood on the bottom of the optical fiber.
3. Screw the fiber reversed when demounting.
4. Battery replacement method: open the battery cover of the main unit, take the battery out, then disconnect the plug slightly. Connect the plug of the new battery correctly, put the new battery in, and then fix the battery cover.

6. Operation

1. You can choose one of the following operating modes by pressing the MODE button on the curing light, the relative icon is displayed on the screen.



- 1) High power General mode: the blue light radiate in full power, with the light intensity of $1000\text{mw}/\text{cm}^2$ working continuously for 20s.



- 2) High power Ramping mode: the blue light power increase stronger continually, which reach to the highest power after 5 seconds, with the light intensity of $1000\text{mw}/\text{cm}^2$ working continuously for 20s.



- 3) High power Pulse mode: the blue light working on the pulse condition, with the light intensity of $1000\text{mw}/\text{cm}^2$ working continuously for 20s.



- 4) Medium power General mode: the blue light radiate in full power, with the light intensity of $600\text{mw}/\text{cm}^2$ working continuously for 40s.



- 5) Medium power Ramping mode: the blue light power increase stronger continually, which reach to the highest power after 5 seconds, with the light intensity of $600\text{mw}/\text{cm}^2$ working continuously for 40s.



- 6) Medium power Pulse mode: the blue light working on the pulse condition, working continuously for 40s.



- 7) Lower power mode: the blue light radiate in full power, with the light intensity of $400\text{mw}/\text{cm}^2$ working continuously for 60 minutes.

2. Press the TIME button to set the solidifying time of present mode. Long press can increase the solidifying time continuously, and the time can be displayed on the screen.
3. The curing light keeps the records of last-set mode and solidifying time automatically, it will enter into the same mode automatically during next operation.
4. When operating, please focus on the point needs solidification, press the on / off button, and the main unit will produce "Bi" sound, the curing light radiates blue light and starts working according to the set modes. Meanwhile, it starts counting down and will produce tone at every 10s, it stops working when counting down to "0".
5. During operation, the curing light can be stopped by pressing the power button at any time.
6. After finishing the operation, please clean the fiber with calico in order not to affect the light intensity.
7. The curing light will turn off automatically after 2 minutes' break. Press on / off button to restart.
8. When low power is detected, the indicator in the screen will wink, please charge in time.
9. Connect the output plug of power adapter to the plug of DC5.0V in the pedestal, and then put the main unit to the charging point of the pedestal, the curing light starts charging. The yellow indicator of the pedestal shines and green indicator turns off during charging, while the yellow indicator turns off and green indicator shines after charging finished.
10. The solidified depth of the curing light composite resin 10 seconds will not less than 4mm.
11. The optical fiber can be autoclaved under the high temperature of 135°C and pressure 0.22 MPa. (Refer to EN13060 standard)

7. Light Intensity Measurement

1. Connect the output plug of power adapter to the plug of DC5.0V in the pedestal.
2. Choose general mode and aim the optical fiber at the measurement point,

press on / off button, the present light intensity is displayed on the indicator of pedestal.

8. Precaution

1. During clinical operation, make the light source focuses directly on the resin which is needed solidification, avoiding to point to incorrect position and affecting solidification effects.
2. Patients with biological reaction are forbidden to use this equipment.
3. It is forbidden to point blue light to the eyes.
4. Please use the power adapter and Li-ion Battery which is designed and supplied by our company. It may cause potential dangers to operator and patient by using the power adapter and Li-ion Battery which is designed and supplied by other manufacturers.
5. It is forbidden to use metal or other conductors to touch the main unit and the charging point of pedestal because it may burn the internal circuit or make the Li-ion Battery short circuit.
6. Please charge the battery in cool and ventilative room. During charge, ensure that the equipment is far away from the patient.
7. It is forbidden to disassemble the battery, otherwise it may cause short circuit and electrolyte leakage.
8. It is forbidden to extrude, shock or vibrate the battery. It is forbidden to make the battery short circuit. It is forbidden to put the battery together with metal.
9. If it is not used for a long time, the battery must be taken out to save.
10. This equipment has electromagnetic interference. Do not use this equipment on the patients with artificial pacemaker or around the electronic operation. It should be cautious to use this equipment in the strong electromagnetic interference environment, since it will be interfered by other equipments.

9. Contraindication

1. The patients who have biological reaction history are forbidden to use this equipment.
2. The patients or doctors with artificial pacemaker are forbidden to use this

equipment.

3.The heart disease patients, pregnant women and children should be cautious to use this equipment.

10.Daily maintenance

- 1.This equipment does not include the self-maintainable spare parts. The maintenance of this equipment should be taken by the appointed professional or special repair shop.
- 2.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 use highly volatile and diffluent solvent to clean this equipment, which can cause the signs on the control panel to fade.
- 3.Please clean the resin remained on the surface of optical fiber after using to avoid infecting the life-span or solidified effect.

11.Troubleshooting

Faults	Possible causes	Solutions
Non-indication, non-act	<ol style="list-style-type: none">1. The battery in the curing light has no power.2. Battery protection caused by the external reasons.3. Battery is damaged.	<ol style="list-style-type: none">1. Connect to the power supply to charge or change the battery2. Charge the main unit to stop the protection.3. Change the battery
The charging indicator on the pedestal twinkles when charge	<ol style="list-style-type: none">1. The battery voltage is too low.2. Battery is damaged.	<ol style="list-style-type: none">1. Return to normal state automatically after charging 15 minutes.2. Change the battery
Light intensity is insufficient	<ol style="list-style-type: none">1.The optical fiber is not inserted into the bottom.2. The optical fiber is cracked.3.There is resin remained on the surface of optical fiber.	<ol style="list-style-type: none">1.Please reinstall the optical fiber.2.Please change the optical fiber.3.Please wipe off the remained resin.
The equipment can not charge after connecting	<ol style="list-style-type: none">1. The power supply is not inserted well.2. Power supply is damaged or the specification is not matching.3. The power of battery is full.	<ol style="list-style-type: none">1. Pull out the adapter then reconnect.2. Change the power supply.3. Do not charge.
The using time of battery becomes short after charging	The battery capacity is decreased.	Change the battery.

If all the above solutions have been completed, the machine still can not work normally. Please contact our special repair shop or us.

12.Packing list

For the components of equipment, please refer to the packing list.

13. After service

1. Because of the quality problems, we offer two years warranty of main unit, pedestal and adapter since the day of sale. With the warranty card, our company is in charge of free repair. Li-ion Battery warranty for one year, optical fiber and light hood is not in the scope of warranty.
2. We are not responsible for any irretrievable damage caused by the non-professional person.

14. For technical data, please contact



15. Storage and transportation

1. The equipment should be handled carefully and lightly, kept away from the shaking source, 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 humidity is $\leq 80\%$, the atmosphere pressure is 75kPa \sim 106kPa and the temperature is $-10^{\circ}\text{C} \sim 55^{\circ}\text{C}$.
4. Excess impact or shake should be prevented during transportation. Handle with care. Do not place upside down.
5. Don't put it together with dangerous articles during transportation.
6. Keep it away from the sun, rain or snow during transportation.

16. Symbol instruction



Trademark



Used indoor only



Type B applied part



Date of manufacture

IPX0

Ordinary equipment



Manufacturer



Class II equipment



Screw inside/outside



Notice! Please consult
accompanying documents



Consult the instruction manual



FDA marked product



CE mark



Authorised Representative in the
EUROPEAN COMMUNITY

17. Environmental protection

There is not any harmful element in our product. It can be disposed according to the local law.

