

LEDEX™ WL-090+

LED Dental Curing Light



User's manual



A lot of research & development has gone into the manufacturing of this product and we sincerely hope that it will give you many years of trouble-free use. Please read and understand all the instructions before using this equipment, and save this manual for your reference.

**EN**



This icon marks warnings, information that should be read before using your product to prevent possible injury.



Use only the authorized parts provided for the purpose to maintain compliance with product regulations.



Do not disassemble. Touching the product's internal parts could result in injury. In the event of a malfunction, the product should be repaired only by a qualified technician.



When inserting the battery, do not attempt to insert it upside down. Do not short or disassemble the battery. Do not expose the battery to flame or to excessive heat. Do not immerse in or expose to water.



For as long a life cycle of battery as possible, please return the hand-piece to the cradle as often as possible, and do not store battery for longer than 6 months. In order to avoid irrevocable deep discharge if the battery is not used, a new battery is best purchased only once the old battery needs to be replaced. Since the battery is a consumable, it has to be replaced if the performance drops considerably or after its typical life cycle has expired after approx. 30 months.



The LEDEX™ WL-090+ is the specialized equipment for dental department and it should be operated by specialist only in the dental clinic. To avoid to damage the eyes please do not point the beam of the light toward the eyes.



Do not exceed recommended irradiation time and light intensity for an application as tooth overheating may result.



Please do not continuously irradiate on any specific area for a long time because it may cause the head of the device to be too hot. If so, we strongly suggest you to move it away for a while. Remember to properly adjust the time of light irradiation according to different light intensity.



Please do not use plaque inspect & caries inspect function in conjunction with red dental disclosing solutions or caries dyeing solutions.



It is danger of explosion if battery is incorrectly replaced. To reduce risk of fire or burns, do not disassemble, crush, puncture, short external contacts, expose to temperature above 60 °C (140°F), or dispose of in fire or water. Replace only with specified batteries. Recycle or dispose of used batteries according to the local regulations or reference guide supplied with your product.

Patent M463575!

Manufactured by **DENTMATE TECHNOLOGY CO., LTD.**

***Indication for use:***

LEDEX WL-090+ is a visible curing unit programmed for polymerization of dental light cured materials by dental professionals.

***Conditions for use:***

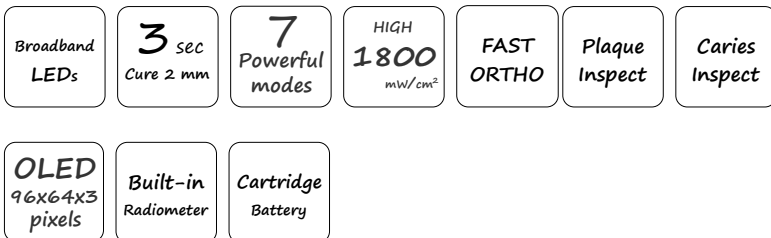
10°C~40°C , 30%~75% relative humidity  
500hPa~1060hPa atmospheric pressure

***Conditions for storage and transport:***

10°C~40°C , 10%~95% relative humidity  
500hPa~1060hPa atmospheric pressure

## Properties of the LEDEX™ WL-090+:

1. WL-090+ uses 10 watt broadband violet & blue wavelengths LEDs, and individually work for curing materials and caries detector specially, it is an innovation in dental fields. While you use WL-090+ for curing materials, the broadband violet & blue wavelength output is more fitting to phenyl propanedione (PPD) and Lucirin® TPO photoinitiator. A performance with  $1800 \text{ mW/cm}^2$  real high intensity, it can cure the composite resin over 2 mm in 3 seconds.
2. 7 powerful extensive modes including Low, Ramp, Standard, High, Fast Ortho, Plaque inspect and Caries inspect modes.
3. The turbo light guide rod is made from genuine optical fiber and not inferior acrylic that optimizes light conduction and minimizes loss of light from source to tip thereby ensuring the highest possible intensity of light at the light guide tip.
4. Advanced and high efficient cooling heat sink designed accompanied with over temperature protection. A thermal protection circuit and safety mode accord to protect the light from overheating.
5. The automatic memorization of the last operation chosen is another unique feature of the light.
6. It has OLED display, built-in radiometer, auto sleep designed for saving the energy of battery.



**Contents:**

Description	Numbers of items
01. LEDEX™ WL-090+ handpiece.....	1
02. Battery (Including in handpiece, 3.7V/2500mAh).....	1
03. Cradle.....	1
04. Power supply (Input AC100~240 V, 50/60Hz, output DC5V/1.2A).....	1
05. Optical fiber light guide rod (Ø11>8 mm).....	1
06. Optical fiber light guide rod (Ø11>5 mm).....	1
07. Filter.....	1
08. *FIND™ optical filter.....	1
09. Anti-glare shield.....	2
10. Light guide sleeves.....	20
11. Curing light sleeves.....	10
12. User's manual.....	1

\*FIND™: Fluorescence Inspect and Determine system

### ***Charging the Battery:***

The battery is not fully charged at shipment. Before use, please charge the battery, charging time is about 2 hours.

1. Connect the power supply to AC100~240V electronic socket and plug-in connector to cradle. Put hand piece into cradle to charge battery.
2. When the battery is in low status, the display of handpiece will glow showing battery low sign. Refer to figure 1.
3. When the battery is fully charging, the display of handpiece will glow showing battery full sign. Refer to figure 2.
4. When the battery is charging, the display of handpiece will glow showing battery charge sign. Refer to figure 3.

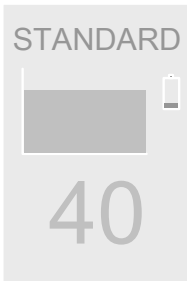


Figure 1

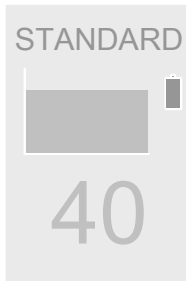


Figure 2

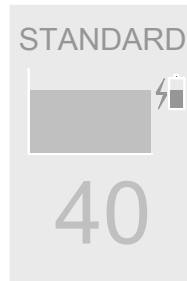





Figure 3

***Turn on handpiece:***

Push the “” on/off button to turn on the LEDEX™ WL-090+ handpiece.

***Output / Interrupt the light:***

When the status of handpiece is turning on, push the “” on/off button again to output the light.

During the exposure time, the specialist can push “” on/off button to interrupt the light. Then the system will generate one beep and reset the time automatically.

***Change the mode format:***

Push the “**M**” mode button, the mode can be changed:

LOW→ RAMP→ STANDARD→HIGH→ FAST ORTHO→PLAQUE INSPECT→  
CARIES INSPECT→LOW→ RAMP→ STANDARD→....

***Change the timer format:***

Push the “**T**” timer button, the time can be changed:

LOW mode: 10→20→30→40→10→20→30....

RAMP mode: 5→10→15→20→25→30→35→40→5→10→15....

STANDARD mode: 5→10→15→20→25→30→35→40→5→10→15....

HIGH mode: 2→4→6→8→10→2→4→6....

FAST ORTHO mode: 3→4→5→3→4....

PLAQUE INSPECT: not timer selected, 30 seconds setting only.

CARIES INSPECT: not timer selected, 30 seconds setting only.

## ***Recommend for use:***

### LOW mode:

Ideal for curing bonding material that is between tooth and composite resin.

### RAMP mode:

Ideal for curing the wide area of composite resin, it can avoid shrinkage.

### STANDARD mode:

It is a stable output, ideal for most cases.

### HIGH mode:

Ideal for pediatric dentistry, or such as dental cement, porcelain veneer, fiber post in endodontic fields. It can save time.

### FAST ORTHO mode:

Ideal for orthodontic, it is easy to bond materials and saving time.

### PLAQUE INSPECT:

Ideal for plaque inspect, it is an easy way to check plaque on the anterior.

### CARIES INSPECT:

Ideal for caries inspect, it is an easy way to check caries on the posterior.

### ~~~~~ Tips ~~~~~

- *While using plaque or caries inspect, please put on 5 mm light guide rod, it is a best size to check plaque and caries in dark environment and observe the pure violet wavelength output via FIND™ optical filter, you can easy and immediately see where excavation of caries is needed.*
- *While using plaque or caries inspect, please switch off dental unit light, it can avoid other sources of light to ensure that the distinction between red and green fluorescence is clearly maintained. The plaque & caries area will be displayed on red fluorescent results.*

### ***Auto sleep designed:***

LEDEX™ WL-090+ will sleep automatically if no operations are performed for three minutes, the display will be turn off.

### ***Safety mode:***

Whenever the LEDEX™ WL-090+ is operated frequently and/or for long periods of time, however, the temperature may become too high and the “Safety” mode function will then be automatically activated to protect the light. Safety mode cuts the light intensity in approx. half and extends the irradiation time. Refer to figure 1.

When the temperature become quite high, the display of handpiece will glow showing “Over Heat” sign. Refer to figure 2.

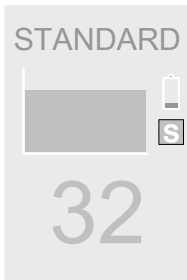


Figure 1

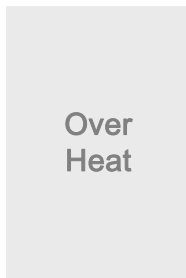


Figure 2

### ***Intensity check:***

A built-in radiometer is including in cradle. While the cradle gets electric power from power supply, output the light into the test area, the radiometer will show the intensity of light.

LOW mode.....	Approx. 600 mW/cm <sup>2</sup> (+/-15%)
RAMP mode.....	Approx. 1000 mW/cm <sup>2</sup> (+/-10%)
STANDARD mode.....	Approx. 1000 mW/cm <sup>2</sup> (+/-10%)
HIGH mode.....	Approx. 1800 mW/cm <sup>2</sup> (+/-10%)
FAST ORTHO mode.....	Approx. 1800 mW/cm <sup>2</sup> (+/-10%)
PLAQUE INSPECT.....	Approx. 200 mW/cm <sup>2</sup> (+/-15%)
CARIES INSPECT.....	Approx. 300 mW/cm <sup>2</sup> (+/-15%)

If result of intensity test in STANDARD mode is under 700 mW/cm<sup>2</sup>, the output is too low, please contact with your dealer, we will check your light.

### ***Clean and disinfection:***

The plastic of the handpiece, cradle and filter may be cleaned with a wet cloth, while the optical light guide rod may be cleaned with alcohol or put it in autoclave for disinfection. Suggestion is to use autoclave 134°C/75 psi for maximum result. The disinfection time at 134°C should be 5 minutes. A disposable curing sleeve available from your dealer may be used as protection over the optical light guide rod without loss of light intensity. The applicant will (or have) validate the sterilization procedure according to ISO 17665-1.

### ***Warranty:***

DENTMATE TECHNOLOGY Co., Ltd. warrants the product to be free of manufacturing defects for a period of 1 year from date of purchase, this being deemed the date of the invoice. It will repair or replace at its own discretion all equipment failures due to manufacturing defects. The following are however expressly excluded from the warranty:

1. Damage and/or failure of the equipment caused by falling and/or jolting during transportation after purchase and/or during normal use.
2. Damage and/or failure of the equipment caused by natural disasters such as but not limited to earthquakes, floods, lightning, pollution, incorrect electrical voltage and voltage spikes.

Do not attempt to open the hand piece as doing so will invalidate the warranty.

## Specifications:

Dental Curing Light	Medical equipment
Device Name	LEDEX™
Model Number	WL-090+
Power supply	Input: AC100~240V, 50/60Hz Output: DC 5V/1.2A
Battery	3.7V, 2500mAh, type: Lithium-ion
Light source	10W violet & blue broadband LEDs
The range of wavelength	390 to 480 nm
Radiant intensity	600 to 1800 mW/cm <sup>2</sup>
Hand piece size	Ø38 mm(max.) x L 190 mm
Hand piece weight	180 g
Cradle size	Ø115 mm(max.) x H 68 mm
Cradle weight	140 g

## Troubleshooting:

Situation	Troubleshooting
Do not turn on or turn off the handpiece	Remove and reinsert Battery. If the error persists, please plug-in the power supply to cradle and charge the battery at least 10 min., then push the ON/OFF button again.
Do not charge the battery	Please clean battery contacts. If the error persists, please change a new battery.
Display show overheat sign	The temperature rises up to high really. Please wait a moment and then use it again.
The intensity is too low	If result of intensity test in Standard mode is under 700 mW/cm <sup>2</sup> , the output is too low, please contact with your dealer.

*European Authorized Representative:*



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