Polymatech®

USER MANUAL
Instructions for use
Version V1 · October 2026

DENTAL EQUIPMENT · LIGHT CURING

LED Curing Light

Model DCL-100-E1 · Cordless with charging base

Engineered by Polymatech for human comfort

For use by qualified dental professionals only.
Please read this manual carefully before using the device, and keep it in a safe place for future reference.

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About this manual. This manual covers the Polymatech DCL-100-E1 LED Curing Light, comprising the cordless handpiece, the charging base with built-in light-intensity meter, and the power adapter.

Availability and regulatory status vary by market.

1 Recommendation of Use

Before using the device, please read this instruction manual carefully, and then keep it in a safe place.

1.1 Intended Use / Indication for Use

The LED Curing Light is used for the light-curing polymerisation of dental composites, luting materials, cements and other light-cured materials.

1.2 Contraindication

Patients with heart disease, pregnant women and children should be treated with caution when using this equipment.

1.3 Warnings

WARNING

- The light radiation produced by this type of unit is hazardous. Never point the light at the eyes. Direct the light only at the area to be treated in the oral cavity.
- If the curing light is operated continuously for 40 s, the temperature at the tip of the light guide may reach 56 °C.
- To avoid overheating, allow an interval of at least 10 s between exposures.

- Do not modify this equipment without the authorisation of the manufacturer.
- Connect the adapter to a socket that is easy for the operator to reach.
- Do not use the unit near a heat source. Do not use solvents, detergents or flammable products, which may damage the unit or cause a short circuit.
- The device is not waterproof.
- Although the device conforms to IEC 60601-1-2, it may still cause, or be affected by, electromagnetic interference (EMI) from other devices. If this happens, separate the devices, re-orient the cabling, or plug the device into a different power outlet. If the problem persists, contact the manufacturer for technical support.
- Do not use the system in close proximity to strong magnetic fields (such as those found near an MRI).

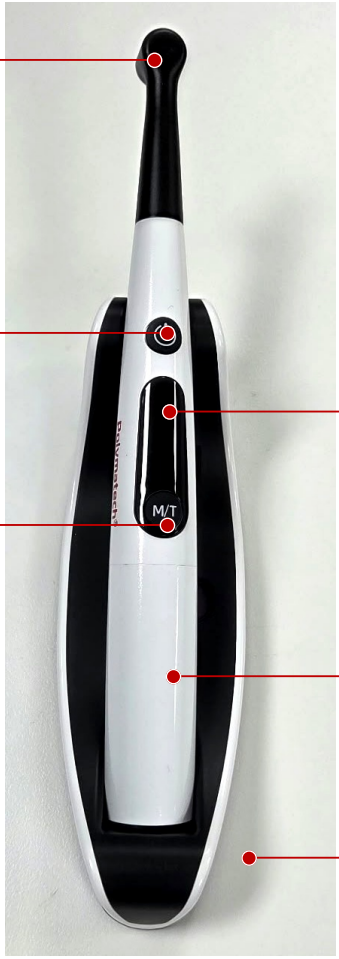
- The device is not supplied sterile and is not intended to be sterilised. To prevent cross-contamination, cover the device with an FDA-cleared barrier sheath before use, and change the sheath between patients.

1.4 Precautions

- Charge the battery for at least 4 hours before first use.
- During operation, aim the blue light straight at the composite resin to ensure effective curing.
- Avoid aiming the blue light directly at the eyes.
- Use only the power adapter and lithium battery designed and supplied by Polymatech. A power adapter or lithium battery supplied by other manufacturers may cause potential danger to the operator and patient.
- Do not allow metal or other conductors to touch the charging contacts of the main unit or the charging base. This may burn the internal circuit or short-circuit the lithium battery.

2 Structure and Components

The LED Curing Light is composed mainly of a high-power LED and the main unit (handpiece), together with a charging base and a power adapter.



Curing head
Light guide with high-power blue LED output

ON/OFF button
Starts and stops a curing cycle

Mode/Time (M/T)
Selects work mode and exposure time

Display screen
Shows work mode, exposure time and status

Main unit (handpiece)
Cordless, with rechargeable lithium battery

Charging base
With light-intensity meter and display

Package contents

No.	Item	Qty
1	Main unit (cordless handpiece with light guide)	1
2	Charging base with light-intensity meter	1
3	Power adapter, 100–240 V~ input, DC 5 V output	1
4	User manual with warranty card	1

Controls and display

Control	Function
ON/OFF button	Press to start the curing light according to the set mode. Press again to stop it at any time. The device switches off automatically after 7 minutes without operation.
Mode/Time button (M/T)	Press and hold for about 2 seconds to select the work mode. Press briefly to select the exposure time within the chosen mode.
Display screen	When the device is switched on, the work mode is shown on the display: Restoration, Pulp, Orthodontics, Brackets, Soft or Caries detection.

3 Technical Specifications

General	
Product name	LED Curing Light
Model	DCL-100-E1
Intended user	Dentist
Intended use site	Hospital or professional medical site
Light source	High-power blue-light LED
Wavelength	385 nm to 515 nm
Light intensity	800 – 2,500 mW/cm² (±10%)
Depth of cure	≥ 2 mm

Work modes

Mode	Display	Exposure time	Light intensity
P1 Restoration	Rest	5, 10, 15, 20 s	800 – 1,000 mW/cm²
P2 Pulp	Pulp	5, 10, 15, 20 s	800 – 1,000 mW/cm²
P3 Orthodontics	Orth	3, 6, 9 s	1,200 – 1,400 mW/cm²
P4 Brackets	Brac	1, 2, 3 s	2,300 – 2,500 mW/cm²
P5 Soft	Soft	5, 10, 15, 20 s	1,200 – 1,400 mW/cm²
P6 Caries detection	Cari	30, 60 s	—

Power and charger	
Power source	Rechargeable lithium battery, 3.6 V / 2,000 mAh, 7.2 Wh
Charger power input	100 – 240 V~, 50/60 Hz, 0.4 A max.
Charger input power	10 VA
Charger power output	DC 5 V / 1 A

Classification	
Operation mode	Intermittent operation
Protection type against electric shock	Class I
Protection degree against electric shock	Type B applied part
Protection against harmful ingress of water or particulate matter	IPX0 (ordinary equipment)
Safety in the presence of flammable anaesthetic mixture with air, oxygen or nitrous oxide	Not suitable for use under this condition

Physical	
Weight	114 g
Packing size	245 (L) × 210 (W) × 60 (H) mm

4 Installation

When the battery needs to be charged:

Step	Action
1	Connect the plug of the adapter to a 100 – 240 V~ power supply.
2	Connect the output plug of the adapter to the DC 5 V input jack of the charging base.
3	Place the main unit into the charging base so that it rests on the charging contacts.

5 Operation

> The device is not supplied sterile and is not intended to be sterilised. To prevent cross-contamination, cover the device with an FDA-cleared barrier sheath before use, and change the sheath between patients.

Selecting a mode and exposure time

- Press and hold the Mode/Time button to step through the six work modes (see Section 3, Work modes). The display shows the mode name: `Rest` `Pulp` `Orth` `Brac` `Soft` `Cari`.
- Within the selected mode, press the Mode/Time button briefly to select the exposure time.

Curing

- Aim the light guide at the correct position and press the ON/OFF button. The unit beeps, the curing light radiates blue light and the countdown begins according to the set mode.
- When the countdown reaches 0, the unit beeps and the light stops. The display then returns to the set mode.
- The blue light can be stopped at any time by pressing the ON/OFF button.
- After a working cycle, press the ON/OFF button to start another cycle. If the equipment becomes noticeably warm, do not restart until it has cooled down. It is recommended to run fewer than 10 consecutive working cycles.
- The depth of cure of composite is not less than 4 mm per 10 seconds of exposure.

Battery and charging

- A low-power detection circuit is built into the main unit. When low power is detected, the display flashes. Please charge the unit promptly.
- To charge, connect the adapter as described in Section 4 and place the main unit into the charging base. The display scrolls and charging starts.
- The equipment switches off automatically if there is no action within 7 minutes. Switch it on again by pressing any button, or it switches on automatically when lifted from the base.

6 Cleaning and Disinfection

To prevent cross-infection, the following process is recommended before and after each operation:

Step	Action
1	Switch off the device and remove the main unit from the charging base.
2	Remove and dispose of the barrier sheath after each operation.
3	Wipe the main unit with a soft cloth moistened with purified water.
4	Allow the device to dry naturally.

7 Daily Maintenance

- This equipment contains no user-serviceable spare parts. Maintenance must be carried out by an appointed professional or authorised repair service.
- Users may replace the lithium battery. Please use accessories designed and supplied by Polymatech, which may be ordered through your local dealer or from Polymatech. Accessories designed and supplied by other manufacturers may damage the curing light or other equipment.
- Accessories should be cleaned with clean water or a neutral disinfecting solution. Do not soak. Do not use highly volatile or other solvents, which can cause the markings on the control panel to fade.
- Clean any resin remaining on the tip of the main unit after use, to avoid shortening its life or reducing the curing effect. The device must not be maintained during operation; monthly maintenance is recommended.

8 Troubleshooting

Fault	Possible cause	Solution
No indication, no response	1. Battery is out of power. 2. Battery fault. 3. Battery protection circuit has activated.	1. Charge the device. 2. Send to after-sales service for repair. 3. Place the main unit in the charging base to reactivate.
Er shown on the display	1. System error. 2. Fault in the main unit.	Send to after-sales service for repair.
Display flashes	Low battery.	Reconnect the charger. If Lo appears again after 15 minutes, send for repair.
Light output is weak	Resin on the tip of the main unit.	Clean off the resin.
Not charging with the adapter connected	1. Adapter not connected properly. 2. Adapter faulty or incompatible. 3. Charging contacts are dirty.	1. Reconnect. 2. Change the adapter. 3. Clean the contacts with alcohol.
Mode indicator flashes while charging	1. Low battery voltage. 2. Battery short circuit.	1. Returns to normal after 15 minutes of charging. 2. Send to after-sales service for repair.

If the device still does not work normally after these steps, please contact an authorised service centre or Polymatech.

9 After-sales Service

The warranty period of the equipment is **one year from the date of sale**. For service, please contact your authorised dealer or Polymatech at **sales@polymatechworld.com**.

10 Storage and Transportation

- Handle the equipment carefully. Keep it away from vibration, and install or store it in a shaded, dry, cool and ventilated place.
- Do not store it together with combustible, poisonous, caustic or explosive articles.
- Avoid excessive impact or shaking during transportation, do not transport it with dangerous goods, and keep it away from sun, snow and rain.

Storage and transport environment	
Temperature	−20 °C to +55 °C
Relative humidity	10% to 93%
Atmospheric pressure	70 kPa to 106 kPa

11 Environmental Protection

Please dispose of the device, battery and accessories in accordance with local laws. Do not dispose of this product as unsorted municipal waste.

12 Symbol Description

The following symbols may appear in this manual, on the LED Curing Light or on its accessories. Some of the symbols represent standards and compliance associated with the device and its use.

Symbol	Meaning
	Date of manufacture
	Manufacturer
SN	Serial number
	Type B applied part
	Follow instructions for use
	Direct current
	Disposal: do not dispose of this product as unsorted municipal waste. Separate collection for special treatment is necessary.
IPX0	Degree of protection against ingress of water or particulate matter into ME equipment (ordinary equipment)

13 EMC Declaration

Guidance and manufacturer's declaration — electromagnetic emissions

The LED Curing Light is intended for use in the electromagnetic environment specified below. The customer or the user of the LED Curing Light should ensure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment — guidance
RF emissions **CISPR 11**	Group 1	The LED Curing Light uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions **CISPR 11**	Class B	The LED Curing Light is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions **IEC 61000-3-2**	Class A	
Voltage fluctuations / flicker emissions **IEC 61000-3-3**	Complies	

Guidance and manufacturer's declaration — electromagnetic immunity

The LED Curing Light is intended for use in the electromagnetic environment specified below. The customer or the user of the LED Curing Light should ensure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment — guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient / burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines ±1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5% U_T (>95% dip) for 0.5 cycle 40% U_T (60% dip) for 5 cycles 70% U_T (30% dip) for 25 cycles <5% U_T (>95% dip) for 5 s	<5% U_T (>95% dip) for 0.5 cycle 40% U_T (60% dip) for 5 cycles 70% U_T (30% dip) for 25 cycles <5% U_T (>95% dip) for 5 s	Mains power quality should be that of a typical commercial or hospital environment. If the user of the LED Curing Light requires continued operation during power mains interruptions, it is recommended that the LED Curing Light be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

NOTE: U_T is the a.c. mains voltage prior to application of the test level.

Guidance and manufacturer's declaration — electromagnetic immunity (RF)

The LED Curing Light is intended for use in the electromagnetic environment specified below. The customer or the user of the LED Curing Light should ensure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment — guidance
Conducted RF **IEC 61000-4-6**	3 Vrms 150 kHz to 80 MHz	3 V	Portable and mobile RF communications equipment should be used no closer to any part of the LED Curing Light, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance** $d = 1.2\sqrt{P}$ $d = 1.2\sqrt{P}$ 80 MHz to 800 MHz $d = 2.3\sqrt{P}$ 800 MHz to 2.5 GHz Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range. Interference may occur in the vicinity of equipment marked with the following symbol: ((•))
Radiated RF **IEC 61000-4-3**	3 V/m 80 MHz to 2.5 GHz	3 V/m	

NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.
NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Recommended separation distances between portable and mobile RF communications equipment and the LED Curing Light

The LED Curing Light is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the LED Curing Light can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the LED Curing Light as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter (W)	Separation distance according to frequency of transmitter (m)		
	150 kHz – 80 MHz d = 1.2 √P	80 MHz – 800 MHz d = 1.2 √P	800 MHz – 2.5 GHz d = 2.3 √P
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.
NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.
NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Fixed transmitters. Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast, cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the LED Curing Light is used exceeds the applicable RF compliance level above, the LED Curing Light should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the LED Curing Light. Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

14 Warranty Card

Product LED Curing Light · Model DCL-100-E1

Serial number (SN) _____

Date of sale _____

Customer / clinic _____

Dealer _____

Dealer stamp & signature _____

Warranty period: one year from the date of sale. Please keep this card with your proof of purchase.

Repair record

Date	Fault	Reason	What was repaired	Repaired by

Notes

Polymatech®

MANUFACTURER

Polymatech Electronics Limited
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Sriperumbudur, Kanchipuram District
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SALES AND SERVICE ENQUIRIES

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PRODUCT

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