CORDLESS LED CURING LIGHT

LED 50N

Installation, Operation & User Manual

Cordless LED curing light with charging base and built-in radiometer · Includes troubleshooting and warranty card



DOCUMENT
LED 50N Manual
November 2026 · LED50N-MAN-002

TPC DENTAL
851 S. Lawson St.
City of Industry, CA 91748

CONTACT
Tech support (800) 560-8222
service@tpcdental.com

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How to read this manual

⚠ **WARNING** Risk of injury or damage to the equipment. Follow exactly.

ⓘ **NOTE** Information that makes the job easier or the result more reliable.

Technical support

(800) 560-8222

Monday to Friday, 8:00 AM to 5:00 PM Pacific.

SECTION 01

Introduction

Thank you for purchasing the LED 50N. It is a cordless dental curing light that uses the latest LED technology to polymerize composite resin.

Before you start

- The LED 50N must be installed and operated by a qualified dental professional.
- Read this entire manual before installation or operation.
- Wear colored protective glasses to avoid eye injury from the LED light.

Safety symbols



Attention
Important information. Refer to this manual for more information.



High-intensity light
Protect your eyes from the light this product generates.



Type B applied part
Beware of electrical shock or injury.



Class II medical equipment
Double insulated.



Electronic waste
Dispose of properly when you stop using the device.

GENERAL INFORMATION

Technical information

Light range	430–490 nm
Light intensity at the tip	800–1,000 mW/cm²
Battery life	200 cycles of 10 seconds, or 135 cycles of 20 seconds, in FAST mode
Charging time, full charge	5 hours
Battery	Lithium-ion
Charging base	Rechargeable
Operating temperature	15–30 °C (60–86 °F). The unit turns off automatically when the temperature at the light guide tip reaches 48 °C (118 °F).
Power input, curing light	5 V DC @ 2.4 A
Power input, power supply	100–240 V AC, 50–60 Hz
Pulse rate	10 Hz
Pulse duty cycle	50%
Storage and transport	0–40 °C (32–104 °F) · 0–100% relative humidity · −1,000 to +9,000 m elevation

NOTE Follow the composite manufacturer's instructions when choosing the curing time.

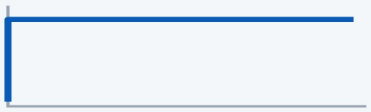
SECTION 02

Features

- Latest LED technology with low heat output
- Easy operation with an LCD display
- Three preset curing programs and five curing times

Curing programs

F FAST



Intensity Time

Full power output for the whole curing time.

P PULSE



Intensity Time

Full power output in 0.5-second pulses.

R RAMP



Intensity Time

Soft start: output rises gradually through the first half of the cycle, then stays at full power to the end.

Timer

Five preset curing times: 5, 10, 20, 30 and 40 seconds.

Sleep mode

If the LED 50N is not used for 3 minutes, it goes into sleep mode to save the battery.

Corded or cordless

You can run the light directly from the power supply connected to the bottom of the handpiece. It charges the battery while you work.

Low battery signal

When ▭ blinks on the display, or a triple beep sounds every 20 seconds, charge the battery for at least 4 hours.

Auto memory

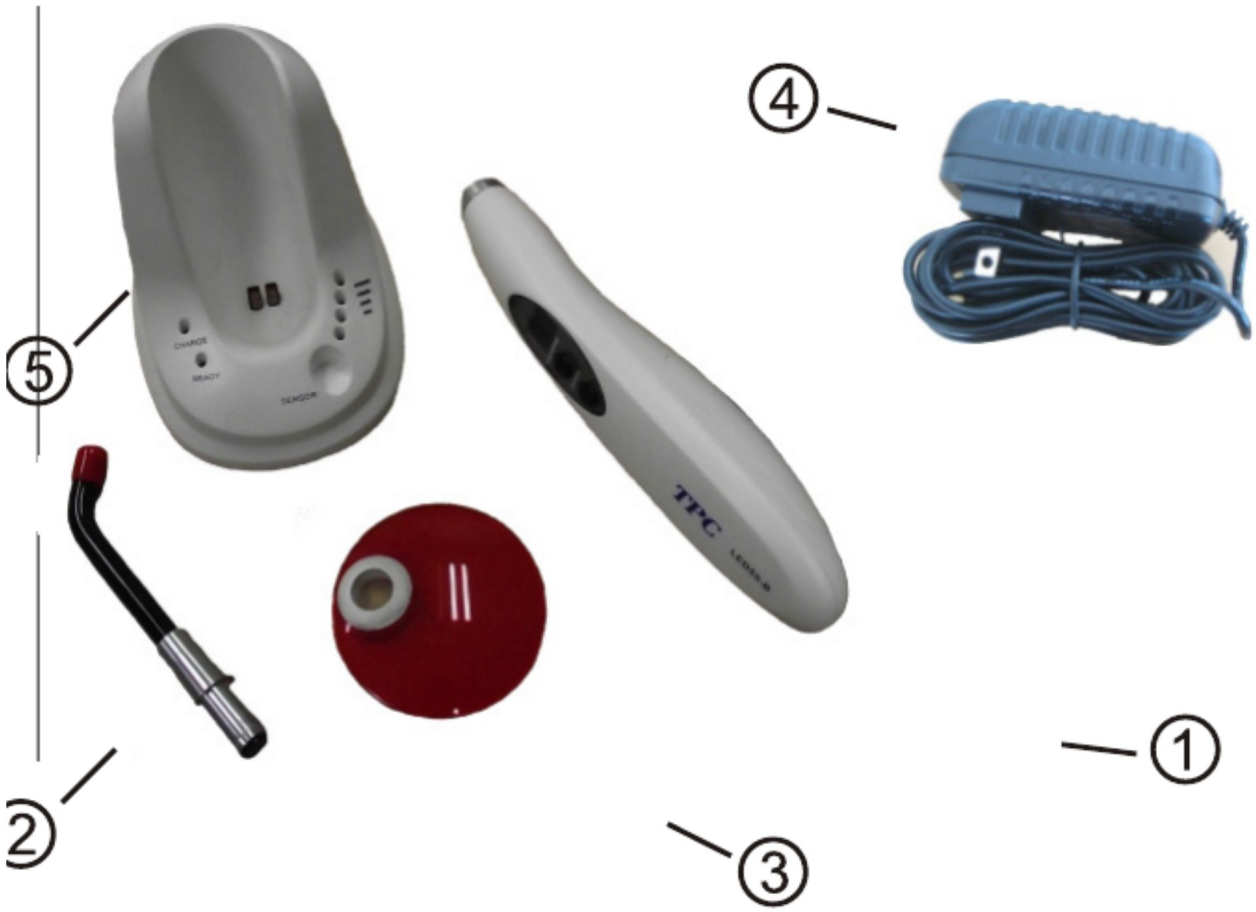
The light keeps your last settings, including the curing time and the curing program.

Built-in radiometer

Check the LED output with the LCD radiometer on the charging base.

FEATURES

What's in the box



1	Curing light handpiece	2	Light guide
3	Eye protector (oval)	4	Switching power adapter
5	Charging base		

SECTION 03

Installation

1 · Connect the battery

Remove the battery cover on the side of the handpiece. Connect the battery terminals, then refit the cover.



Fig. 1 Remove the battery cover

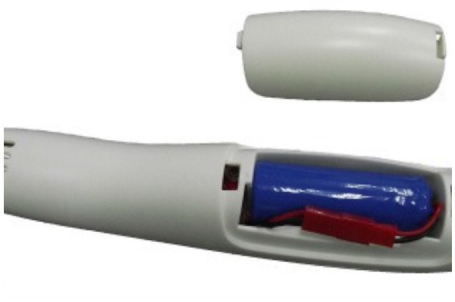


Fig. 2 Battery terminals connected

2 · Connect the power

Plug the power adapter into the charging base.



Fig. 3 Power adapter plugged into the charging base

3 · Fit the light guide

Push the light guide straight into the handpiece and check it is fully seated. You can rotate the light guide to get the best angle on the tooth.

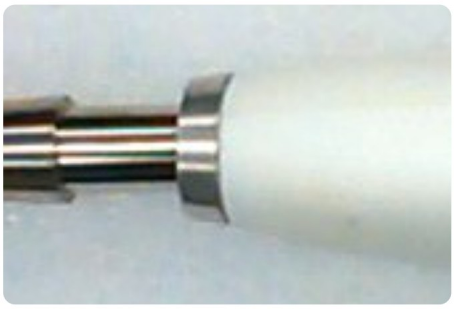


Fig. 4 Insert the light guide



Fig. 5 Fully seated

INSTALLATION

Eye protector and charging

4 · Fit the eye protector

Slide the eye protector over the light guide until it sits against the handpiece.



Fig. 6 Fit the eye protector

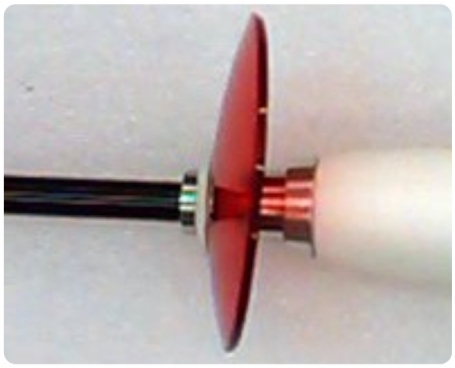


Fig. 7 Eye protector in place

5 · Charge the battery

1. **Before first use,** charge the battery for at least 8 hours.
2. **Place the handpiece in the charging base.** One short beep confirms it is seated and charging.
3. **For best performance,** charge continuously for 4 hours.
4. **When the battery is full,** the battery symbol on the display shows full power. A flashing ▭ means it needs charging; you can also connect the power supply directly and keep working.

ⓘ **NOTE** The LED 50N detects the charging base automatically. Keep the handpiece in the base when it is not in use.

SECTION 04

Operation

A · Set the curing program

Press and hold the function switch for 2 seconds. The programs change once a second: FAST, PULSE, RAMP. Release the switch when the one you want is shown.

B · Set the timer

Press the function switch to choose 5, 10, 20, 30 or 40 seconds.

> **NOTE** PULSE and RAMP start at 10 seconds automatically.

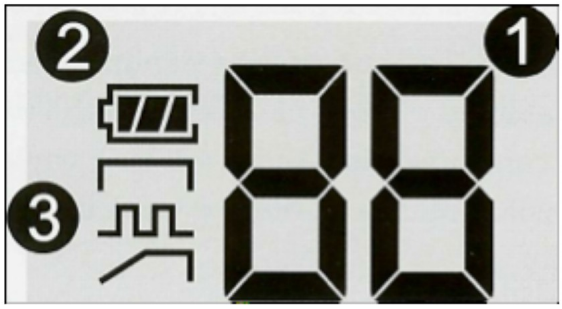


Fig. 8 LCD display

1	Curing time
2	Battery symbol
3	Curing program

C · Cure

Press the curing switch to start the program. Press it again to stop early. When the program ends, the handpiece beeps and the light turns off.

> **CAUTION** Never look directly into the light. Use the eye protector and colored protective glasses.

OPERATION

Sleep mode, battery and radiometer

D · Wake from sleep mode

The light goes to sleep after 3 minutes without use. Press the function switch or the curing switch once to wake it.

E · Low battery

When ▭ blinks, put the handpiece in the charging base right away, or connect the power supply directly to keep working.

F · Turn off

The handpiece switches itself off in sleep mode, which shuts down all curing functions to save power. To turn it off completely, disconnect the battery terminals.

G · Check the output with the radiometer

Hold the light guide tip on the sensor spot on the charging base. The radiometer measures the LED intensity and shows it on the base display.

ⓘ **NOTE** The reading is a reference to help you set the right curing time. The radiometer tests LED output only.



Fig. 9 Radiometer reading on the charging base

SECTION 05

Maintenance

1. Keep the light guide free of resin and other material.
2. If material sticks to the light guide, wipe it off right away with a soft cloth. A clean guide gives better intensity and curing.
3. Sterilize the light guide after each use. It can be autoclaved at 121 °C (250 °F) for no more than 15 minutes. Let it cool before handling.
4. Wipe the handpiece and eye protector with clean water, then disinfect them using standard disinfection procedures.
5. Keep the handpiece in the charging base when not in use.
6. Dispose of the lithium battery according to federal, state and local laws.

⚠ **WARNING** The user should wear colored protective glasses to avoid eye injury from the LED light.

⚠ **CAUTION** Do not autoclave the handpiece, the charging base or the eye protector.

CARE AND WARRANTY

Warranty

2 year limited warranty

TPC products are guaranteed free from defects in workmanship and materials for 2 years from the date of purchase, unless otherwise stated. TPC will repair or replace any defective part at no charge during the warranty period.

Not covered

- Light guides and batteries
- Labor, and shipping to and from TPC
- Normal wear or stains on the surface finish
- Damage from improper installation or misuse

Shipping damage

Claims against the freight carrier must be started when the damaged items are received. Filing the claim is the customer's responsibility.

TPC improves its products continuously and may modify them without notice, without obligation to modify items already made.

Warranty card

Model: LED 50N

NAME _____ EMAIL _____

ADDRESS _____ PHONE _____

CITY / STATE / ZIP _____ FAX _____

HANDPIECE SN _____ BASE SN _____

Complete this card and return it to TPC with a copy of your invoice or packing slip: TPC Dental, 851 S. Lawson St., City of Industry, CA 91748, or email a scanned copy to service@tpcdental.com.

SECTION 06

Troubleshooting

	PROBLEM	CAUSE	SOLUTION
01	**Display does not work**	Battery is drained	Charge the battery, or connect the power supply
02	**Function button does not change the mode**	Button is stuck	Check the button presses in and springs back out
03	**Light overheats in use**	Fan is not working	Send to TPC for service
04	**Battery drains very quickly**	Battery is near the end of its life	Let a full charge cycle complete; if it still drains, replace the battery
05	**Light does not work after charging, but works on the power supply**	Battery is exhausted	Replace the battery
06	**Display works but no light comes out**	LED is damaged	Send to TPC for service
07	**Battery does not charge in the base**	Handpiece not seated correctly Dirty contacts Battery is exhausted	Reseat the handpiece in the base Clean the contacts Replace the battery
08	**Low intensity reading**	Light guide dirty or damaged Battery is low LED is wearing out	Clean or replace the light guide Charge the battery Send to TPC for service
09	**Light guide is loose in the handpiece**	O-ring is damaged	Replace the O-ring

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