

# TPC

## User Manual



### LED 70N Cordless LED Curing Light

- LED70 must be installed and operated by a qualified dental professional.
- All instructions in this USER'S MANUAL must be completely read before installation or operation.
- The user should wear colored protective glasses to avoid eye injury by the led light.

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# 1.INTRODUCTION

Thank you for purchasing the LED 70N curing light . The LED 70N is a dental curing light which uses the latest LED technology to polymerize composite resin

## Caution



Attention: Important information is being presented. Refer to the Operator's Manual for more information.



High intensity Light: Protect your eyes from the light generated by this product



Shock Hazard: Beware of electrical shock or injury. Type B Applied Part



Class II Medical Equipment



Electronics Waste: Properly dispose of when use is discontinued.

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## 1.1 Technical Information

|                                                  |                                                                                                          |
|--------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Range of Light (in nm)                           | 430 - 490 nm                                                                                             |
| Light Intensity at the Tip (mW/cm <sup>2</sup> ) | 2,000 mW                                                                                                 |
| Battery Life                                     | 200 cycles at STANDARD mode, 10 seconds per cycle;<br>135 cycles at STANDARD mode, 20 seconds per cycle. |
| Charging Time to Complete                        | 5 Hours                                                                                                  |
| Battery Type                                     | Lithium Ion 7.4V dc 2500mAh                                                                              |
| Cradle Battery                                   | Rechargeable                                                                                             |
| Operating Temperature                            | 15 - 30°C (60 - 86°F); Unit turns off automatically when the temperature at the wand tip reaches 48° C   |
| Power Input, Curing Light                        | 9.0 VDC @ 2.4 A                                                                                          |
| Power Input, Power Supply                        | 100 - 240 VAC @ 50 - 60 Hz                                                                               |
| Pulse Rate                                       | 10 Hz                                                                                                    |
| Pulse Duty Cycle                                 | 50%                                                                                                      |
| Storage and Transport Conditions                 | 0 - 40°C (32 - 104°F)<br>0 - 100% RH<br>-1000 to + 9000 meters elevation                                 |

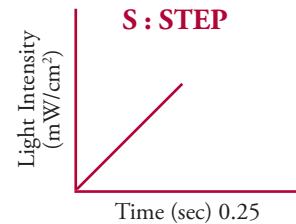
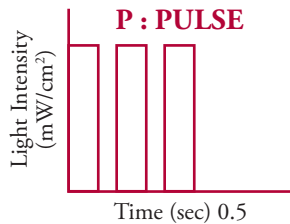
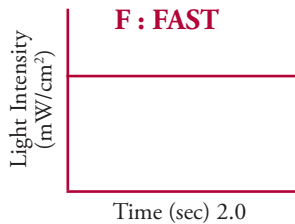
# 2.FEATURES

1. Latest LED technology.
2. Low heat output.
3. Easy operating with LCD Display.
4. Three preset programs

□ FAST : Full power output all time.

▭ PULSE : 0.5 second interval after full power output for

▧ RAMP : Gradually increasing output in first half curing cycle , then Full power output till end.



- Follow the manufacturer's instruction to adjust the curing time for better curing performance.

5. Timer: Five preset curing time from 5, 10, 20, 30, and 40 seconds.

6. Low Battery Signal

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When  is blinking on the LCD Display or there is a triple beep tone alarmed every 20 seconds , the battery needs to be charged for at least 4 hours.

7. Sleeping Mode

If the LED 70N is unused for a period of 3 minutes the curing light will convert to "Sleep Mode" to conserve the battery.

8. Auto Memory

LED 70N will remain in previous settings. Including the curing time and the curing program.

9. Cord/Cordless Interchangeable

The LED 70N may be operated directly using AC power supply connected to the base of the handpiece. This will allow users to operate the curing light while simultaneously charging the battery.

10. Build-in LCD Radiometer

User can monitor LED output by reading the radiometer which is located on the charging base.

### 3. Accessories

1. Curing Light Handpiece
2. Charging Base
3. Oval Protector
4. Light guide
5. Switching Power Adapter
6. Function Switch
7. Curing Switch



### 4. Installation

Step 1: Remove the battery cover located on the side of the handpiece. Connect the battery terminals and install the side cover.



Step 2: Connect the power adaptor to the charging base.

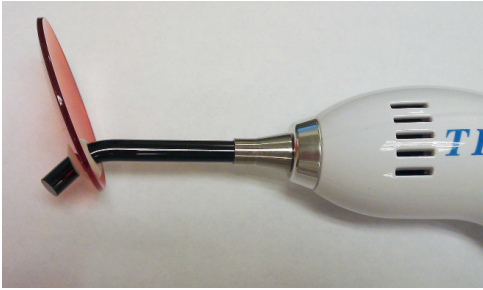


Step 3 : Directly insert the Light Guide into the curing light handpiece. Verify it has been completely inserted into handpiece. Light guide may be rotated to achieve best angle on tooth structure.



## 4. Installation

Step 4 : Install the eye Protector.



Step 5: Charge Lithium battery

For the best performance. Charge curing light handpiece continuously for 4 hours (charge battery at least 8 hours prior to initial use). The battery symbol on the LCD panel will show the sign of “full power” when battery is completely charged. A flashing battery symbol indicates the battery should be recharged or user can directly connect it to the power supply for uninterrupted use.

LED 70N will detect the charging automatically. There will be one short beep tone generated when it has been properly put on to the Charging Base.

## 5. Operation

### A. Set Curing Program

Press and hold the function switch for two seconds and you will see the modes change every second. To stop on the desired mode simply let go of the depressed button for the selected mode.

- (1) FAST      □
- (2) PULSE    ▬▬
- (3) RAMP     ▽

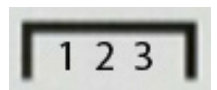
- 1.Curing Time
- 2.Battery Sign
- 3.Curing Program

Indications on LCD Panel



Fast Mode Options.

- 1. 2,000 mW
- 2. 1,500 mW
- 3. 1,000 mW



To select a specific output in the fast mode press and hold the curing switch for two seconds to change to the desired output mode.

## B. Set Timer

Press function switch to select curing time between 5, 10, 20, 30, and 40 seconds.

- When choosing PULSE or RAMP, the curing time will start at 10 seconds automatically.



## C. Start to Operate

Press curing switch to begin curing program. To interrupt a program, just press curing switch again. When the curing program is complete the curing light handpiece will beep and then turn off the light immediately.

## D. Wake Up from Sleeping Mode

The curing light will turn into sleeping mode automatically when it is no longer in using for 3 minutes. Press function switch or curing switch once to activate curing light.

## E. Low Battery Sign

When the  is blinking, the curing light handpiece should be recharged immediately or directly connected to the power supply for continued use.

## F. Turn off the Power

The curing light handpiece will achieve sleeping mode automatically. This will shut down all the curing function to save the power. User may de-activate curing light by disconnecting the battery terminals from the battery.

## G. Radiometer

Place the light guide against the detective spot on the radiometer. The meter will measure the intensity of LED curing light and display the intensity on the LCD display.

- The output reading from the radiometer is a reference for the user to adjust to appropriate curing time. The radiometer is designed to test LED output only.





## 6. MAINTENANCE

1. Be sure there is no resin or material sticking to the surface of the light guide.
2. If materials are sticking on the light guide immediately clean it with soft cloth. Keep light guide clean for better light intensity and curing performance.
3. The light guide should be sterilized after each use. It can be safely autoclaved at 121 °C. For no more than 15 minutes. Let cool before handling.
4. The other accessories such as curing light handpiece and eye protector should be scrubbed with pure water and sheathed in accordance with standard disinfection procedures.
5. Keep curing light handpiece in charging station while not in use.
6. Dispose Lithium battery according to the federal and state laws.
7. The User should wear colored protection glasses to avoid eyes injury due to LED light.



## Warranty Information

All of our products sold are guaranteed to be free from defects in workmanship and materials for a 1 year from date of purchase, unless otherwise stated. TPC will repair or replace any defective part at no charge. During the warranty period. TPC will not be responsible for labor charges or shipping charges to / from the TPC facility. This guarantee does not cover normal wear or stains on surface finish. The guarantee does not cover damage resulting from improper installation or misuse. All claims against the freight carrier must be initiated at the time the damaged items are received. The claim is the responsibility of the customer. We are improving our products on a continuous basis. We reserve the right to make modifications without the need for prior notification and are not obligated to modify previously manufactured items. Light guides and batteries are not covered under any type of warranty.



## 7. Trouble Shooting

| Fault                                                                                                                         | Possible Cause                                                               | Solution                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Display is not functioning on the curing light                                                                                | Battery drained.                                                             | Charge Battery<br>Connect to power supply                                                                   |
| When i press the function button the mode does not change                                                                     | Button Is stuck                                                              | Veryify the button depresses in and pops back out.                                                          |
| When i use the light it over heats                                                                                            | Fan not functioning                                                          | Send to TPC for service                                                                                     |
| Battery drains very quickly                                                                                                   | Battery is near end of life                                                  | Charge battery<br>Verify charging cycle is complete<br>Replace battery<br>Temporarily use with power supply |
| The light does not function after charging but it will function when the power supply is attached to the bottom of the light. | Battery is exhausted                                                         | Replace battery                                                                                             |
| There is no light emitting from the light but the display functions.                                                          | Damaged LED                                                                  | Send to TPC for service                                                                                     |
| When i place the curing light on the charging base the battery does not charge                                                | Light not seated in base correctly<br>Dirty Contacts<br>Battery is exhausted | Reseat light in charging base<br>Clean Contacts<br>Repalce battery                                          |
| Light intensity is reading low                                                                                                | light guide is dirty or damaged<br>Battery is low<br>LED is burning out      | Clean / repalce light guide<br>Charge battery<br>Return to TPC for service                                  |
| Light guide does not fit properly in the end of the curing light                                                              | O-ring is damaged                                                            | Repalce O-ring                                                                                              |
|                                                                                                                               |                                                                              |                                                                                                             |

### Warranty Card

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip \_\_\_\_\_

Phone Number:(\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_ FAX:(\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_

Email Address \_\_\_\_\_

Model: LED 70N

Handpiece: SN \_\_\_\_\_

Base: SN \_\_\_\_\_

Please complete this card and return it to TPC. Include a copy of your invoice or packing slip.

Return to:

TPC Advanced Technology

851 S. Lawson St

City Of Industry, CA 91748

Or Email a scanned copy to [service@tpcdental.com](mailto:service@tpcdental.com)