



Therapeutic Light Emitting Diode Device

## **Product Manual**

Please read entire manual before using device

**Light Therapy Bio-Med Inc.**

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[www.TheraLED.com](http://www.TheraLED.com)



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## Welcome to TheraLED™

Infrared therapy is not new to the health care and veterinarian field. In fact, it has been used in the equine market for more than 30 years. In the early stages of light emitting diode (LED) technology, infrared light was often used to treat performance racehorses for a variety of injuries ranging from abrasions to strained muscles and tendons. The use of infrared treatment has saved a number of animals from being put down due to injury and non-healing wounds.

Over the years the application of infrared therapy has not drifted far. The applications and known benefits have simply increased, in addition, the technology has vastly improved, to aid in enhancing the quality of life for many people.

TheraLED™ utilizes high quality LEDs in a patented array configuration with advanced circuitry to bring you the most effective non-invasive treatment available.

Due to its design and versatility TheraLED™ provides you not only with the latest in continuous infrared/red light technology (CIRLT) not only for yourself but also larger performance animals and is perfect for treating your smaller house pets.

TheraLED™ is a therapeutic device: natural, convenient, and affordable. It is painless and one would appear unconcerned to the treatment as it is being easily delivered.

TheraLED™ is conveniently cordless and delivers healing light through the skin surface. No shaving of hair is necessary.

TheraLED™ treatments may also reduce your risk of bacterial and viral infection after surgery while reducing your recovery time.

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TheraLED™ is low intensity LED therapy that can be used for the treatment of:

- Arthritis
- Muscle or tendon injuries
- Skin wounds
- Joint pain
- Back pain
- Muscular skeletal illnesses
- Pain relief
- Reduce inflammation
- Increase the speed and quality of tissue repair
- Cause a boost to the immune system
- Help resolve infection
- Improve the function of damaged nerve tissue by reducing the scar tissue surrounding it

TheraLED™ is not a substitute for medical care; if you have a concern, always contact your physician or medical health care professional.

For treatment centers, rental, purchase, or more information please call (888) 967-2872 or visit our Internet site at [www.TheraLED.com](http://www.TheraLED.com).

## Before You Begin

- ✓ Review the parts checklist to make sure your order is complete.
- ✓ Read and understand the “Important Safeguards” section.
- ✓ Read and understand the “Treatment Theory and Protocol” for your TheraLED™.
- ✓ Read and understand the “TheraLED™ Application and Operation” section.
- ✓ Review the “Caring for Your TheraLED™” section to ensure years of product use.
- ✓ Service and warranty information can be found at the end of the manual.

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## Parts Checklist

- ✓ 1 TheraLED™ LED Device
- ✓ 1 AC/DC Adaptor Battery Charger
- ✓ 2 Straps
- ✓ 1 Manual
- ✓ 1 Warranty



## Important Safeguards

The TheraLED™ has been carefully engineered both for effectiveness and safety. However, basic safety precautions should always be observed when using any electrical (electronic) equipment, and especially during charging.

### 1. READ ALL INSTRUCTIONS AND PRECAUTIONS BEFORE USING THIS PRODUCT

### 2. PRECAUTIONS

- Always use caution when plugging the charging unit into an electrical outlet.
- Plug only into a standard:
  - Outlet (120 volts, 60 Hertz) using the proper charger/transformer supplied with TheraLED™.
  - We suggest using an outlet strip with surge protector.
- Never place or store any unit or charger where it can fall or be pulled in a tub, sink, toilet, water tank or bucket.
- Never reach for a unit that is plugged into an electrical outlet and has fallen into water. With care, unplug immediately.
- Be sure unit is off before plugging and unplugging chargers.

NOTE: Using the wrong charger may cause damage to the unit. Only use the properly labeled chargers that correspond to each device. Call (888) 967-2872 for questions.

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### 3. MEDICAL WARNING

Treatment without a general or specific diagnosis as to the cause of the pain or dysfunction is not recommended. TheraLED™ is not a substitute for professional care; if you have a concern, always contact your physician.

- Before allowing other people to use your TheraLED™ instruct them as to the proper use and precautions.
- Observe all precautions.
- Do not shine the beam of light from the light emitting diodes (LED's) directly into operator's eyes for long periods of time. Extended exposure to any bright light can damage eyes.
- Use cautiously; burns may result from improper use.
- This product is not to be used by incapacitated persons.
- Do not leave small children unattended with product.
- Do not use on areas of insensitive skin.
- Do not sit on, against, or crush.
- Do not use with liniments, salves or ointments that contain heat-producing ingredients, as skin burns could result.
- Use caution over areas of poor circulation, as skin burns could result.
- Consult a medical professional or veterinarian if on medication.

## Indications and Contraindications

Treatment without a general or specific diagnosis as to the cause of the pain or dysfunction is not recommended.

### Indications

Therapeutic applications of the TheraLED™ are as follows:

- Use when hot applications are desirable for comfort and whenever recommended by a licensed medical professional.
- Provides temporary relief of minor muscle and joint pain and stiffness, minor arthritis pain, or muscle spasm.

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- Helps provide for a temporary improved range and freedom of motion due to muscle relaxation and temporary minor pain relief.
- Provides a temporary increase in local blood circulation.

Many studies have reported great results with LED therapy for the following:

- Inflammatory conditions (e.g., bursitis, tendonitis, arthritis, etc).
- Wound care and tissue repair (e.g., ulcers, venous ulcers, bedsores, mouth ulcer, fractures, tendon ruptures, ligament tear, torn cartilage, etc).
- Pain control (e.g., back pain, neck pain, and pain associated with inflammatory conditions).
- Arthritis pain, bursitis, bruising, burns, edema, deep muscle problems, hematomas, inflammation, tight or sore muscles and infections.
- Ankle problems, bone chips, inflammation, ligament soreness, tendon problems, sore backs, splints, strains, sprains, swelling, shoulder pain, hip pain, sore backs, sore necks, salivary gland problems, wounds, cuts, scrapes and for stimulating trigger points and acupuncture points.

## Contraindications

There is a mass of scientific evidence that light therapy, when used at appropriate doses, is not contraindicated for any condition.

However, experience and prudence suggest the following:

- Cancer (tumors or cancerous areas).
- Direct irradiation of eyes.
- Treatment of patients with idiopathic photophobia or abnormally high sensitivity to light.
- Patients who have been pre-treated with one or more photosensitivity enhancing agents, as for example, patients undergoing photodynamic therapy (PDT).
- Direct irradiation over the fetus or the uterus during pregnancy.
- Direct irradiation of the thyroid gland.
- Generally, do not apply any device operating in a pulsed mode to the chest area if a pacemaker is present.

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TheraLED™ is not a substitute for medical care; if you have a concern, always contact your physician.

## **Brief Overview of the Operating Features and Power Supply**

The TheraLED™ has been designed to have the versatility of being portable and hand held or strapped in place. For your comfort and convenience an internal non-removable rechargeable long life lithium battery powers it. The available treatment time is approx 180 minutes with a fully charged battery.

Timed treatments may be applied in most cases without the need to shave hair or fur.

To enhance the TheraLED™'s high treatment efficacy, we have added a timed treatment function. This is intended to help you keep track of your treatment times.

The detailed operating features and functions are listed, described, and illustrated below.

## **TheraLED™ Operation Instructions**

### **TheraLED™ Application**

TheraLED™ is configured to be user friendly.

To enhance the TheraLED™'s high treatment efficacy, we have added a timed treatment function. This is intended to help you keep track of your treatment times.

The illumination is an indication of the operation of the infrared treatment; as infrared is not visible to the human eye.

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## TheraLED™ Component Description and Function

- The green LED illuminates to indicate the start of the 10 minutes timed treatment.
- After approximately 10 minutes the green LED goes out and the yellow LED next to it illuminates, this indicates a pause to the treatment.
- To continue with a timed treatment simply press the push button. The green LED will light once again and the yellow LED will go out.
- You may stop and restart the treatment at any time by pressing the start/stop button.
- After approximately 20 treatments of 10 minutes the green LED will flash, this indicates a recharge opportunity.
- You may recharge at anytime due to the lithium battery characteristics.
- Simply plug in the power adapter provided with your TheraLED™.
- When completely discharged the recharge takes approximately 4 to 6 hours to charge.
- Please do not substitute any other charger.
- Each recharge provides approximately 3 hours of treatment time.
- Please allow at least 4 to 6 hours of recharge from a fully discharged state.
- The red LED at the end of the device will light while being recharged and go out when the battery has been fully charged.
- The third (red) LED indicator will light and remain illuminated when the lithium battery is fully recharged.
- This high quality lithium battery can be recharged approximately 500 to 1,000 times providing approximately 1,500 to 3,000 treatment hours or 9,000 to 18,000 10 minute treatments.
- Do to the characteristics of the lithium battery, you do not need to wait for the battery to be fully discharged; and may recharge at your convenience.
- The battery recharge port is at the end of the indicator LEDs.
- Please only use the adaptor provided.
- Refer to more detailed battery information in the section “Battery Care”.

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TheraLED™ LED light therapy

This device has one start/stop push button and 4 indicator LEDs. Green, Yellow, Red & Red.

**The Start/Stop Push Button:**

**You may press at anytime to start or stop the timed 10-minute treatment.**

NOTE: You may NOT use the A/C D/C adaptor to power the product while charging simultaneously.

## TheraLED™ Technical Specs

The treatment side illuminates to indicate the “timed treatment” has started. The illumination is an indication of the operation of the infrared treatment; as infrared is not visible to the human eye. The treatment head is configured with leading edge electronics, consisting of a patented array configuration.

- 12 infrared LED's approx-65 mw/cm<sup>2</sup>
- Multi-modal wavelength output from 830nm, 850nm &-890nm
- 630-660nm
- Large treatment area of 15 square centimeters
- Approximately 180 minutes of “timed treatment” per recharge
- Fully rechargeable long life lithium battery

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## TheraLED™ Power Calculations

10 minutes of treatment:

- Power Density=  $12 \times 65 \text{ mW/CM}^2 / 15 \text{ CM}^2$   
= 52mW
- Energy Density=  $52\text{mW} \times 10 \text{ Min.} \times 60 \text{ SEC}$   
=31,200mW/SEC  
=31.2 Joules
- A typical 10 minute timed treatment would provide approximately 30 joules.

## TheraLED™ LEDT

### Treatment Theory

The TheraLED™ is designed to reflect the latest research in light therapy applications. It is simple to use and has high treatment efficacy.

Early researchers diverged greatly, resulting in many devices and configurations. Devices varied in power output, wavelength, pulsed output and treatment time. Results are often confusing and vary in therapeutic value.

Present research has shown that energy density is the primary factor in achieving therapeutic results. Wavelength plays a secondary, but important role. All other factors are dependent on energy density and wavelength.

Energy density is the amount of incident energy delivered to a treatment area in a given time. Studies have shown that therapeutic effects require an energy density of 10 to 60 joules. Individual variations and conditions affect the actual energy required.

This energy may be delivered in 1 or 2 treatments or 10 plus treatments. Each will give similar results. Pulsing a diode results in a reduced energy density. The diode is turned on for brief periods of time at a very high-energy output. The pulsed frequency has minimal therapeutic effect and the required treatment time is increased.

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The TheraLED™ is configured to operate in a continuous mode. This delivers a high energy density in the shortest possible time, giving effective treatments in 10 minutes or less.

In each of the timed treatments of 10 minutes each, the energy density will be approximately 30 joules.

When treating multiple areas on your pet, allow approximately 3 to 4 hours before going back to the same specific location.

Penetration of the light energy into the tissue is governed by the wavelength. Visible red is absorbed in the top 2 to 3 centimeters. Infrared will penetrate tissue much deeper. Energy is diffused from the treatment area into surrounding tissue. A visible red wavelength is best utilized for acute or chronic skin conditions, ulcerated tissues, post-operative pain and acute soft tissue injuries.

An infrared wavelength will be best utilized in conditions of chronic pain, inflammation of joints and soft tissues, old injuries and scars that are painful or weather sensitive. Infrared is also useful in treating fractures and injuries involving ligaments and tendons.

TheraLED™ may be utilized for both skin conditions and muscle and joint pain. Treatment without a general or specific diagnosis as to the cause of the pain or dysfunction is not recommended.

TheraLED™ is not a substitute for personal medical or veterinary care; if you have a concern, always contact your physician or health care professional.

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# Treatment Protocol

## General Treatment Considerations

Some individuals may experience an aggravation of symptoms with the initial treatment, as circulation is being restored to areas starved for some time.

This would normally subside after treatment and cease to be an issue after the first 2 or 3 treatments. If the aggravation is severe, a reduction in the treatment time per session will allow the therapy to proceed. Continued aggravation of symptoms would require further medical evaluation.

You may hold the unit in place by hand or use one of the straps provided. The shaving of hair is usually not necessary.

Apply the treatment to the area of concern, after approximately 10 minutes move to the next area in proximity. You may treat the same area several times a day allowing 3 to 4 hours between treating the same specific area.

## Treatment Recommendations

1. One or more treatments per day
2. Multiple treatments to the same specific area should be separated by approximately 3 to 4 hours.
3. Joints flexed to near right angle if possible.
4. Begin treatments with the area most affected i.e. most pain, and then treat other areas with improvement.
5. Joints (ligaments, chronic pain, injury, rehabilitation, and repetitive strain injury) can be treated for 10 to 30 minutes each side, 1 to 3 times a day.

As a treatment of a specific condition proceeds, improvement may be noted by a decrease in pain levels, increased range of motion, improvement in colour, circulation and tissue healing.

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## Battery Care

- For your safety the TheraLED™ is shipped with a fully discharged long life lithium battery.
- To begin please read all of the operation instructions and then consider charging the battery for the first time.
- Due to the nature of lithium batteries the initial charge would be 14 to 16 hours; subsequent recharges would be approximately 4 to 6 hours.
- The typical life of the lithium battery is within a range of conservatively 500 to 1,000 recharges.
- The battery run time per use is approximately 3 hours.

NOTE: You may not use the A/C D/C adaptor to power the product while charging simultaneously.

## Caring for your TheraLED™ System

Every effort has been made to ensure that your unit is of the highest quality materials and workmanship. However, observing the following general precautions will substantially prolong the life of your unit.

1. The TheraLED™ is made of electronic circuitry, hence, care should be exercised when placing it on or removing from the treatment site.
2. Do not apply if the body is wet. First allow body to dry. Electronics can be short circuited by water. Prolonged exposure to moisture can cause corrosion.
3. When cleaning, never immerse or wash with water. Always use a dry cloth when cleaning the exterior.

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## Warranty Information

Light Therapy Bio-Med Inc. warrants each new TheraLED™ to be free from defects in materials and workmanship for a period of 1 year following the delivery of equipment to the original purchaser. The obligation of Light Therapy Bio-Med Inc. under this warranty is expressly limited solely and exclusively limited to the repair or replacement for the unit(s) or any parts thereof, which to the satisfaction of Light Therapy Bio-Med Inc., shall have become defective during the warranty period. This warranty does not extend to any liability to medical or dental expenses or for any other direct, indirect or consequential damages caused by failure, defect or malfunction of any "Light Therapy Bio-Med Inc." product, except as herein provided, whether such damage claim shall be based on contract, breach of warranty or otherwise.

This warranty shall not apply to any product of "Light Therapy Bio-Med Inc." which has been repaired, tampered with or altered by someone other than a duly authorized Light Therapy Bio-Med Inc. representative, or which has not been used in accordance with the enclosed instructions or for the stated purpose. This warranty is expressly limited solely to the original purchaser (user) and does not extend to any transferee, assignee or subsequent purchaser or user of the TheraLED™ product.

This warranty is the sole and exclusive warranty made or which may deemed to have been made by Light Therapy Bio-Med Inc. and is expressly in lieu of any and all warranties of merchantability or fitness for a particular purpose. No person or entity has any authority to bind Light Therapy Bio-Med Inc. to any warranty; guarantee or representation except as specifically set forth herein. Except as provided, Light Therapy Bio-Med Inc. disclaims all warranties, either express or implied, including but not limited to implied warranties relating to the use of the product and/ or result from the use of the product and any warranties which maybe implied as a result of the purpose for which the product was manufactured. In no event will Light Therapy Bio-Med Inc. be held responsible or liable for any failure to produce claimed results arising out of the use of or inability to use any "Light Therapy Bio-Med Inc." product by therapists or any other users of the product.

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## Repairs

Repairs for all Light Therapy Bio-Med Inc. products should be sent together with name, address and phone number, accompanied by a brief explanation of the problem and form of payment, to:

Light Therapy Bio-Med Inc.  
Repair Dept.  
51 Brookstone Court  
Caledon, ON  
L7C 1C9  
Canada

All items sent either for repair or replacement in conformity with the terms of the warranty should be sent insured and properly packed. Light Therapy Bio-Med Inc. assumes no responsibility for product that has been lost or damaged during shipment.

## Disclaimer

Light Therapy Bio-Med Inc. products are not intended to diagnose, cure or prevent disease. Light Therapy Bio-med Inc. makes no claims, representations or warranties regarding the ability of its products to cure any physical or health conditions. Any information given in this document should not be taken as a substitute for qualified medical advice. A qualified medical professional should be consulted with regard to any condition requiring medical attention.

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