

Dermillume Phototherapy

## *The Salon Healing Red*

The *optimum wavelengths* and the *right intensity*  
required by medical studies



Now

An FDA-cleared, affordable instrument

*For*

Skin Toning

Reduction of Fine Wrinkles, Pitting & Pore Size

Reverse Sun Damage

Hyper pigmentation

Scar Reduction

Stretch Marks

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## What is Phototherapy?

Phototherapy uses intense single color light to change biological properties of the skin.

- **Near infrared (NIR)** wavelengths promote healing.
- **Red** wavelengths reverse skin damage such as wrinkles, sun damage.
- **Blue** wavelengths are anti-bacterial.
- **Amber** wavelengths promote lymphatic drainage.
- **Green** wavelengths heal damaged capillaries in Rosacea.

## How is Phototherapy Different from Laser Therapies?

LED devices are safer and easier to use than laser devices

- No heating or skin damage.
- No penetration into the deep muscle, bone or organ areas.
- Much less concern about safety for operator.
- Available to licensed aestheticians.
- Does not require physician supervision.

## What Does **Red Light** Phototherapy Do?

- Red light (660 nm) stimulates skin cell turnover.
- Red light promotes increases in skin cells in areas where there are not enough.
- Stimulates production of collagen and other important skin proteins,
- Near Infrared light (940 nm) improves blood flow in capillary beds under skin.



## What Does This Mean for My Client?

- Promotion of skin cell turnover means
  - Hyper-pigmentation reduced
  - Quicker clearing of *mask of pregnancy*
  - Reduction in sun damage
  - Reduction of scar patterns
  - Reduction or elimination of stretch marks
  
- Increases in skin cells means
  - Smoothing of wrinkles & pits
  - Improved skin surface damaged by exposure
  - Reduces Pore Size
  
- Increased skin cell proteins means
  - Firmer, more elastic skin results.
  - Skin follows contours of bone and muscle better.
  
- Improved blood flow means
  - Promotes faster healing of abrasions and small breaks in the skin by improving tissue oxygenation.
  - Promotes effectiveness of red light by bring more nutrients and growth factors to the skin.
  - Promotes faster recovery from strong chemical peels.

✚ **Reduced blood flow in skin is an underlying problem** ✚  
**for your more senior clients.**



## Can I Use Healing Red Phototherapy with Other Treatments?

**Absolutely**

### *Add Dermillume Phototherapy to Your Current Anti-Aging Treatment*

- **Use with collagen peptide wrinkle reduction creams after red light treatment for an even better result**
- **Perform Dermabrasion before red light treatments**



## **Dermillume devices meet scientific requirements**

- Dermillume devices are designed to meet the requirements of recent medical studies.
- The current line of Dermillume devices includes:

**Dermillume Healing Red**, providing red (660 nm) and near infrared (940 nm) light for accelerated wound healing. The Dermillume Healing Red is recommended for photo rejuvenation treatments for your clients who are age 48 and more senior.

**Dermillume Pro1000**, providing blue (414 nm) and Red (660 nm) for acne treatment or Red only treatments for photo rejuvenation treatments.

- Both Dermillume devices meet UL 60601-1 standards for medical device electrical safety and are FDA-cleared for use

## **Dermillume Healing Red illuminates a large skin surface for**

- Uniform, repeatable, efficient treatments
- Minimal use of aesthetician time
- Sanitary use – the device does not touch the patient

## **Dermillume Healing Red is safe and easy to use**

- No special protection is needed for the aesthetician
- Aesthetician can provide simultaneous services, such as hand treatments
- No operator decisions about intensity or time
- Minimal training
- Failsafe timer delivers an exact treatment every time

## **Dermillume Healing Red is affordable for the average salon**

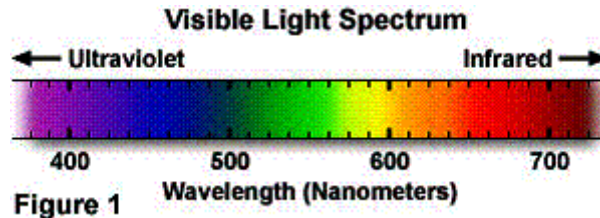
**✚ Dermillume Healing Red can be used in a Red-Only mode ✚  
for clients with advanced Rosacea.**

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## Light is Energy

The human eye responds to a narrow band of energy in the electromagnetic spectrum called the visible light spectrum. The visible spectrum ranges from deep violet (~ 390 nm) to deep red (~ 750nm). Human eyes cannot distinguish individual wavelengths but can discriminate multiple colors and shades.



The electromagnetic spectrum can be described as an infinite number of slices. Each slice is a wavelength. The wavelength tells something about its energy. The energy contained in visible light is just as real as the energy of other wavelengths that are employed for common uses. Radio and TV, Microwave ovens, germicidal and heating lamps are common devices that exploit specific portions of the electromagnetic spectrum.

Lower wavelength light in the violet region is more energetic than longer wavelength light in the red region. The color of a wavelength smoothly changes from one slice to the next.

Wavelength Range (nanometers)	Perceived Color	Common Uses
180 - 340	Ultraviolet (invisible)	Germicidal
340-400	Near Ultraviolet (UV; Invisible)	
400-430	Violet	Acne treatment
430-500	Blue	
500-570	Green	
570-620	Yellow to Orange	
620-670	Bright Red	Skin regeneration
670-750	Dark Red	
Over 750	Near Infrared (IR; Invisible)	Improved blood flow & pain relief
Over 1200	Infrared (invisible)	Surgical uses

LEDs can supply precise, high-intensity light to produce specific medical changes in tissue.



## How Does Red Light Promote Healing?

Aging skin is marked by decreased blood flow and decreased ability to make new skin cells and produce youthful levels of collagen.

The Dermillume Red works in two ways to slow or reverse the aging process.

### Red Light (640 - 660 nm)

- Reduces wrinkles and softens pitted areas  
Increases production of mobile fibroblasts and keratinocytes in the edges of damaged areas. New cells add bulk.

Fibroblasts	Provide structure and bulk to the inner layers of the skin.
Endothelial cells	Make up the walls of the capillaries
keratinocyte	Major skin cell which makes up the dermis
- Produces stronger, more elastic skin  
Increases production of collagen and other structural proteins in skin.
- Reduces hyper pigmentation and sun damage and Rosacea  
Increases number of immune cells, leading to digestion and removal of colored deposits within the skin.

### Near Infrared Light (880 – 940 nm)

- Improves blood flow improvements in blood flow in skin
- Increases tissue oxygenation and entry of essential nutrients into the skin.



# Dermillume Healing Red Device Specifications

## Specifications

The Dermillume Healing Red phototherapy lamp contains an array of red and near infrared LEDs that pulse at 5 kHz. During operation, the near infrared LEDs do not emit visible light, so every other row will be dark.

The large areas of face, both hands, or the *decolletage* area may be evenly illuminated.

Effective Distance: 4-5 inches from skin surface

Useful treatment area: 5.5 x 7.5 inch oval

## Touch-Free

No cleaning is required between uses

## Light Characteristics

	Peak Wavelength (nm)	# LEDs	Bandwidth (nm)	Energy output* (mWatt/cm <sup>2</sup> )	Energy at skin* (mWatt/cm <sup>2</sup> )
<b>Red</b>	660	98	+/- 10	<b>3890</b>	<b>29.8</b>
<b>Near Infrared</b>	940	104	+/- 20	<b>1558</b>	<b>11.9</b>

This mixture of red and near-infrared light is uniform throughout the treatment area.

## Automatic Timer

The device is set to deliver a 20-minute treatment.

## Red-only Mode

The Red-only setting is used for treatments on clients with pronounced Rosacea

## Safety and Comfort

There is no sensation of heat during the treatment. A slight tickling sensation is perceived, probably due to the increased blood flow.

Use of IPL eye shields when illuminating directly over the eyes.

## Description

The Dermillume Healing Red lamp is attached to a weighted rolling stand for superb stability and ease of positioning. The lamp is mounted on a



mechanical arm, which allows it to be positioned precisely over the area to be treated. At full extension, the arm extends 30 inches from the center of the stand.

The pole on the rolling stand is extendable, and the unit folds into a convenient, compact configuration for easy storage.

The Dermillume Healing Red lamp is provided with a failsafe timer that counts down from the time that the lamp is turned on. A buzzer sounds and the unit shuts off when the treatment is complete. The control is mounted separately from the device so that the lamp can be positioned prior to activating it.

### Warranty

Care Electronics, Inc. provides a 2-year parts and labor warranty. Lamp life is 100,000 hours of constant use.

### Operations Manual and Instructional Materials

The Dermillume Healing Red phototherapy lamp is provided with an Operations Manual, educational materials for your staff and a laminated card summarizing the use.

#### Explanation of Energy Terms

The wavelength of light is specified in nm (nanometers), which is the size of an individual wavelength. Visible light extends from deep violet (~ 390 nm) to deep red (~ 750nm). Smaller wavelength light contains proportionally more energy than longer wavelength light.

A is slightly smaller than a yard. There are 100 centimeters (cm) in a meter (2.5 cm to an inch). Metric measurements are divided into steps of 1000. There are 1000 millimeters (mm), 1,000, 000 micrometers (um) and 1,000,000,000 (a billion) nanometers (nm) to a meter. So the measurements of wavelength used to describe visible light are quite small.

The amount of energy deposited on a surface is defined as Watts. It is made more comparable by specifying the Watts in a unit of area. For intense light, the common units of phototherapy are mWatt/cm<sup>2</sup>. (There are 1000 mWatts in a Watt).

The effect of energy deposited on a surface also depends on the amount of time, known as Power. The measurement of power at a surface is a Joule, defined as a Watt deposited in one second for the defined area. In phototherapy the effective range is 1 – 30 Joules/cm<sup>2</sup>.



Many manufacturers list the energy emitted at the face of the device, rather than at the surface of the skin. It is important to know that the energy declines as the inverse square of the distance ( $1/d^2$ ), which is an exponential lessening of strength.

For instance, The Dermillume Healing Red requires 3890 mWatt/cm<sup>2</sup> at the device to yield 29.8 mWatts/cm<sup>2</sup> to the treatment area.

## Pictures of the Dermillume Healing Red Phototherapy Device



The lamp face contains alternating rows of red and near-infrared LEDs.

All LEDs are active and emitting the correct intensity and wavelength when the device is packaged.

Figure 1. The face of the Dermillume Healing Red Lamp with 98 red and 104 near infrared LEDs.



Near infrared light is invisible, so these LEDs appear to be off.

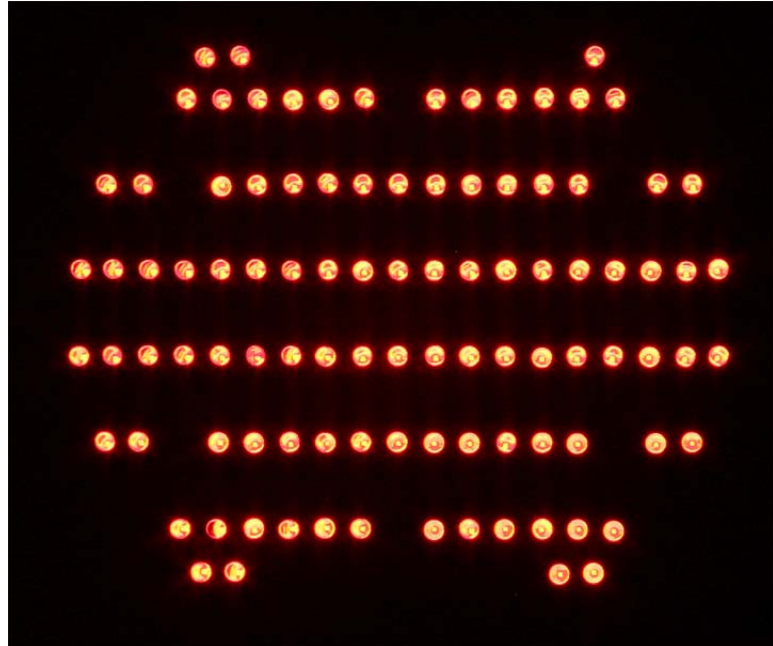
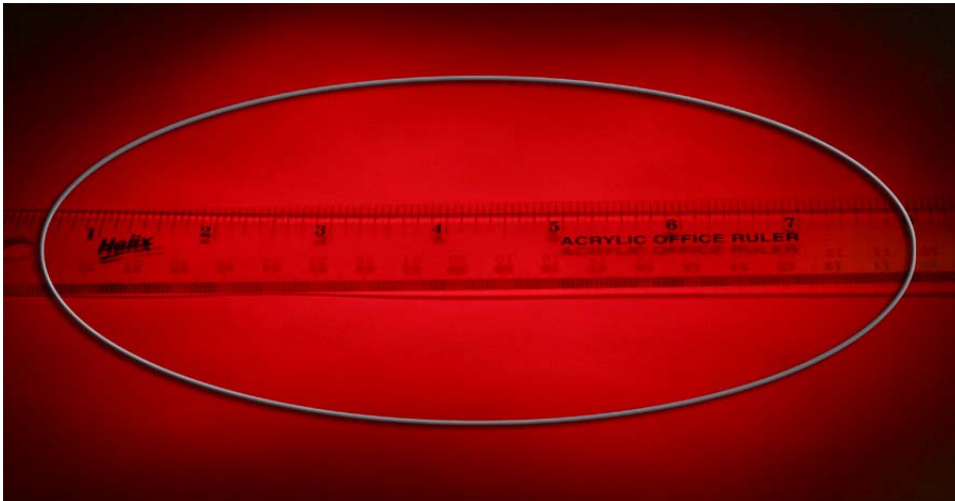


Figure 2. The lamp face with LEDs on.



The treatment area at 4.5 inches from the skin surface is a 5.5 x 7.5 inch oval (as shown).

Figure 3: Illumination pattern (red only)

The device folds to a compact shape, which is easy to roll to the storage area or next point of use.



Figure 4. The Dermillume Healing Red lamp and rolling stand folded for storage.



Figure 5. The hand held control.

The hand held control fits comfortably in the hand and allows the lamp face to be correctly positioned before the treatment is started.

The control is stored on a Velcro bracket when not in use.



Figure 6. The control storage position.