

# User manual

## **Laser mitochondriak® pulse**



## About us - the Mitochondriak® brand:

The Mitochondriak® brand was born from a simple observation: modern people spend most of their time in artificial environments, cut off from natural sunlight. Our goal is therefore to bring light back indoors. Safely, meaningfully, and with respect for nature and biology.

We do not make only red light therapy products. We create a system that connects light, the rhythm of the day (circadian rhythm), regeneration and education. We design every product to be easy to use, while also remaining open to those who want to go deeper.

Learn more about our philosophy and protocols at <http://www.mitochondriak.com/>



## **Innovative laser design and features:**

The laser features a new pulsing technology that allows light to penetrate deeper into the skin while also preventing burning or overheating of the skin.

The laser includes an innovative pulsing mode for customers with thin skin to help prevent skin burns. It works on the principle of pulsing, delivering short intermittent pulses to the skin so that energy is absorbed more effectively, surface heating of the skin is reduced, and the rated power is adjusted at the same time.

The red light therapy laser has a 5-minute automatic shut-off timer and a compact size, making it practical and easy to carry. You can use it easily and effortlessly anytime and anywhere on the knees, shoulders, neck or wrists. It can also be used on the fingers, around the waist, ankles or face, or anywhere else where you feel pain. This device is also suitable for pets such as dogs, cats, etc.

**Thanks to the 10 Hz pulsing mode, the laser can also be a great alternative solution as an analgesic.**

Thanks to its practicality and battery operation, the laser is an ideal solution for local therapy, while its light penetrates deeper into the body. To reach deeply damaged tissue, the laser actively increases therapeutic energy using five LEDs with specific wavelengths:



## 4 phototherapy modes:

The first mode is red light therapy (630 + 670 nm).

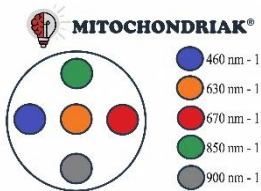
The next mode is near-infrared light therapy (NIR = 850 + 900 nm).

The third mode is blue light alone, e.g. to reduce inflammation (460 nm).

The final mode uses all 5 wavelengths at the same time. This mode combines red, NIR and blue light and can be used, for example, for pain relief and to reduce inflammation.

Notes: Each of the 4 modes can be activated in 2 modes: the so-called continuous mode (rapid pulsing, invisible to the human eye – suitable for normal use and reaching deeper tissues in the body) and the **10 Hz pulsing mode (suitable, for example, for pain relief)**.

Infrared light is invisible to the naked eye. Our laser has 2 infrared diodes (850 and 900 nm), positioned at the edges (see image).



## How the individual types of light work in the laser:

**Red light** penetrates mainly into the surface of the skin, where it can be absorbed by mitochondria in the cells.

This improves mitochondrial activity and releases more ATP, peroxidase, proteins and other nutrients, thereby increasing cell metabolism and supporting the repair of cellular tissues.

Red light at a wavelength of 670 nm also improves the viscosity of water in the mitochondria, helping your mitochondria work better and produce more energy and water.

Red light is therefore suitable for improving the condition of the skin, complexion, collagen, energy and mitochondria.

**Infrared light** can penetrate tissues and bones, supporting blood circulation, relieving pain and relaxing muscles. Thanks to the high intensity and pulsing, the light from the laser also penetrates very deeply.

Infrared light is therefore suitable for treating deeper parts of the body (bones, joints, tendons, organs, microbiome, etc.).



**Blue light** is increasingly used in skin care, as well as an effective treatment for **acne**. Propionibacterium acnes, the bacterium that causes acne, emits photosensitizers, which makes the bacteria extremely sensitive to light and susceptible to damage by specific wavelengths. It is blue light that induces the formation of free radicals, which can suppress these bacteria.

In the **laser mitochondriak<sup>®</sup> pulse** we adjusted the intensity of the blue light, and it makes up only **approx. 2% of the total light**. This makes your acne therapy, where blue, red and infrared light are used at the same time, even more effective and safe.



# How to use the mitochondriak® pulse laser:

## General recommendation:

In general, we recommend applying the laser during the day to one point (e.g. knee, palm, abdomen, etc.), from a distance of 1 to 2 cm, for 5 minutes, once or twice a day, depending on the problem.

For **treating common tissues** (skin, bones, joints, tendons, muscles, gut and microbiome), we recommend using the first “continuous mode”, from a distance of 2 to 5 cm and activating red or infrared light for 5 to 10 minutes (alternatively alternate – 5 minutes with one and 5 minutes with the other).

For **treating deeper tissues**, organs, bones, joints and tendons, we recommend using the first “continuous mode”, from a distance of 1 to 2 cm, activating infrared light and applying it for 10 to 20 minutes (that is 2 to 4 cycles).

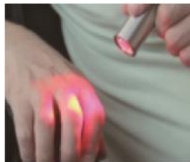
For **treating the skin, acne or antimicrobial effect**, we recommend switching on all 5 wavelengths and using the first “continuous mode” from a distance of approx. 2 to 5 cm for 5 to 10 minutes.

For pain, we recommend using mainly 10 Hz pulsing.



**For acute injuries (e.g. pain, muscle strain, etc.):** we recommend applying the laser daily, for 1-2 weeks and then 3 times a week until the symptoms disappear. Improvement may be observed after the first treatment or within 1 day.

**For chronic problems/pain in a specific area:** We recommend using the laser 1 to 2 times a day, 3-4 times during the first 2 weeks and then 2-3 times a week until the symptoms disappear or are significantly reduced.



## Operating the mitochondriak® pulse laser:

The laser is controlled with one main button. Each press = the next program.

Press once: **red** (630 + 670 nm) – the so-called “continuous mode” is on;

Press twice: **red** (630 + 670 nm) - 10 Hz pulsing;

Press 3 times: **infrared light** (850 + 900 nm) - the so-called “continuous mode” is on;

Press 4 times: **infrared light** (850 + 900 nm) - 10 Hz pulsing;

Press 5 times: **blue light** (460 nm) - the so-called “continuous mode” is on;

Press 6 times: **blue light** (460 nm) - 10 Hz pulsing;

Press 7 times: all **five wavelengths** are on - the so-called “continuous mode”;

Press 8 times: all **five wavelengths** are on - 10 Hz pulsing;

Press again: the laser **turns off**.



## Light intensity of the mitochondriak pulse laser:

| <b>CONTINUOUS MODE [mW/ cm2]</b> |            |            |            |
|----------------------------------|------------|------------|------------|
| <b>Distance</b>                  | <b>RED</b> | <b>NIR</b> | <b>All</b> |
| <b>2cm</b>                       | 80-85      | 90-100     | 200-220    |
| <b>5cm</b>                       | 40-50      | 60         | 110-120    |
| <b>10cm</b>                      | 20         | 30-35      | 50-60      |
| <b>20cm</b>                      | 7-8        | 10-15      | 20-24      |

| <b>10Hz PULSING [mW/ cm2]</b> |            |            |            |
|-------------------------------|------------|------------|------------|
| <b>Distance</b>               | <b>RED</b> | <b>NIR</b> | <b>All</b> |
| <b>2 cm</b>                   | 40-42,5    | 45-50      | 100-110    |
| <b>5 cm</b>                   | 12-15      | 30         | 55-60      |
| <b>10 cm</b>                  | 10         | 15-18      | 25-30      |
| <b>20 cm</b>                  | 4          | 5-7,5      | 10-12      |

## Package contents:

Practical case

Laser mitochondriak<sup>®</sup> pulse



Protective glasses

Battery charger



Battery case

Manual + rechargeable battery



**MITOCHONDRIAK<sup>®</sup>**

## **Technical parameters of the mitochondriak® pulse laser:**

Laser dimensions: 12.5\*3\*3 cm

Package size (case): 22\*13\*5 cm

Net product weight: approximately 240 grams

Intensity: More than 200 mW/cm<sup>2</sup> at a distance of 2 cm

Number of LEDs: 5

Wavelengths: 630 nm + 660 nm (red light) / 460 nm (blue light) / 850 nm + 900 nm (infrared light)

LED beam angle: 30 degrees

Power consumption: 7.4 Wh (watt-hours)

Power supply and battery: Lithium battery 18650, 3.7V, x 2000mAh

Switch: universal stainless steel

LED lifespan: 50,000 hours

Material: Stainless steel

Warranty: 2 years

## Warnings and precautions:

Mitochondriak® products intended for light therapy are not medical devices. The use of our products does not replace a visit to a doctor or medical care under any circumstances.

- Do not look directly into the LEDs or their reflection in a mirror, as this may cause temporary eye irritation.
- We recommend wearing protective glasses when using the device (included in the package).
- Do not use the laser near water.
- Do not use the laser if you are photosensitive.
- Do not allow children to use the laser without supervision.
- The laser must not be used by sleeping or unconscious persons.
- Do not use the laser on open wounds, as heat may cause bleeding.
- Do not use the laser in combination with ointments and balms containing heat-producing ingredients, as this could cause skin burns.
- Using the laser in a manner other than described in this manual voids the warranty and may result in serious injury.



## **Warranty terms:**

We guarantee that this device will operate within its specifications for 2 years from the date of delivery.

### **What does this warranty cover?**

This limited warranty covers all defects in materials or workmanship under normal use as described above during the warranty period. During the warranty period, our company will repair or replace, free of charge, the product or parts of the product that prove defective due to faulty materials or workmanship under normal use and maintenance.

### **What is not covered by the warranty?**

The limited warranty does not cover any problem caused by damage, improper maintenance or modifications made by the user. It also does not cover damage to the product caused by natural disasters such as flooding, dropping the product from a height or other natural disasters, theft or loss of the product.



# **MITOCHONDRIAK®**

*Let us get closer to nature  
and sunlight and discover  
our full potential!*



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