

LASEROBARIA 2.0_S is a multifunctional therapeutic system that supports treatment allowing application of topical oxygen therapy with increased pressure, ozone therapy, red and ultraviolet light therapy and alternating magnetic field therapy. The abovementioned 5 different physical methods combined in one device directly results in great benefits for patients, thanks to the synergy created by using several medical procedures in one device and one therapy. The skin is exposed to ozone, oxygen, red and ultraviolet light, as well as alternating magnetic fields, these healing factors being used individually, or sequentially, or in predefined modes where selected therapies are combined simultaneously or sequentially. Examples of intended medical indications:

- Diabetic complications: diabetic foot, diabetic microangiopathy
- Hard-to-heal limb wounds
- Post-amputation wounds
- Venous leg ulcers
- Post-operative wounds
- Pressure ulcers
- Chronic wounds related to venous and arterial insufficiency
- Purulent skin infections
- Burn-related skin lesions
- Reduction of oedema of lymphatic origin
- Musculoskeletal system disorders
- Nervous system conditions (ex.: neuralgia, nerve pain, phantom pain)



- 1) Power and Control Unit on mobile support
- 2) Oxygen concentrator
- 3) Therapeutic Chamber with cart
- 4) Treatment table

POWER AND CONTROL UNIT

The Power and Control Unit manages the entire treatment session by determining the activation and deactivation timing of individual therapies and their parameters via electronic control systems. The Power and Control Unit includes a colour touchscreen display interface, which serves as a communication panel between the system and the operator. It allows for designing treatment programs and monitoring the therapy process. Once started, the therapy runs autonomously and does not require operator intervention, although it can be interrupted at any time using the emergency stop button. The Power and Control Unit delivers ozone and oxygen to the therapeutic chamber; also it supplies electric power to the other system components — the therapeutic chamber and the oxygen concentrator (for the whole system functioning only one electrical plug is required). Ozone is generated inside the Power and Control Unit by a built-in ozoniser and routed to the chamber through tubing. After therapy, the ozone is returned from the chamber to the Power and Control Unit and is safely released into the ambient environment via filters. Oxygen is supplied from the oxygen concentrator, delivered to the chamber through the Power and Control Unit. The oxygen concentrator is delivering flow 5 litres/minute, with oxygen purity 93 %, and can be ergonomically placed on the mobile base support under the Power and Control Unit or in other place due to the available 4 wheels. The Power and Control Unit is supplied with a mobile base support on wheels, and can be ergonomically placed in the treatment room.

THERAPEUTIC CHAMBER

The therapeutic chamber contains executive components responsible for therapy delivery, including: light-emitting elements for phototherapy, gas delivery components (oxygen and ozone), and electromagnetic coils capable of generating low-frequency magnetic fields within a therapeutic induction range. The chamber is a reusable device and can be disinfected by itself (using UV light and ozone as disinfection factors).

TREATMENT TABLE

The universal treatment table designed for performing procedures and preventive examinations in lying, sitting, or intermediate patient positions. It is enabling various positions, assured by headrest tilt: 0° to 40°, backrest tilt: 0° to 75°, two lateral leg section downward tilt: 0° to 90° (one section per one side).

THERAPY FACTORS

- Hyperbaric oxygen therapy
- Red light phototherapy
- UV light phototherapy
- Ozone therapy
- Magnetotherapy

TOPICAL OXYGEN THERAPY

Process: In a chamber filled with oxygen at a concentration of 90-95% and at a pressure higher than atmospheric pressure, oxygen penetrates the red blood cells, plasma and lymphatic system.

Results: Improving physiological processes in the body, accelerating tissue regeneration, wound healing, reduction of inflammation.

Application: Used in the treatment of various diseases and conditions that require intensive tissue regeneration and reconstruction.

OZONE THERAPY

Process: Ozone acts as a powerful bactericidal, fungicidal and virucidal agent, improving circulation and oxygen transport, while red blood cells have a lower tendency to aggregate with each other

Results: Increased cell metabolism, improved circulation, healing of infected wounds.

Application: Treatment and prevention of various inflammatory, infectious conditions.

ALTERNATING MAGNETIC FIELD

Process: It acts on the structures of cell membranes, changing their properties, has anti-inflammatory and anti-edema effects. Stimulates the immune enzymatic response.

Results: increase oxygen absorption, accelerate tissue regeneration by stimulation of angiogenesis, strong analgesic effect.

Application: Supporting regeneration and healing processes, pain and inflammation treatment.

PHOTOTHERAPY – RED LIGHT AND ULTRAVIOLET LIGHT

Process: Red light stimulates wound healing processes by activation of cells by using photons. Ultraviolet light has a destructive effect on bacteria.

Results: Acceleration of tissue regeneration processes by stimulating the production of cellular ATP, pain reduction, bactericidal effect.

Application: Stimulation of natural skin healing processes, reduction of pain intensity, supporting bactericidal processes.

MAIN TECHNICAL SPECIFICATIONS

- Power supply: 220–230 V AC/50 Hz
- Rated power: 800 W (excluding oxygen concentrator)
- Red light fixed wavelength within range: 600 – 700 nm
- Ultraviolet light fixed wavelength within range: 310 – 400 nm
- Oxygen pressure: up to 3 kPa (above atmospheric pressure)
- Oxygen concentration in chamber: 75-87% (within 15–30 minutes)
- Ozone production rate: 400 mg/h
- Magnetic field adjustable frequency range: 1 Hz to 100 Hz
- Magnetic field induction: adjustable up to 4.3 mT

Product dimensions:	Length (cm)	Width (cm)	Height (cm)	Weight (kg)
Therapeutic chamber	61	40	43	35
Power and control unit	96	56	106	75
Treatment table	200	72	60	45
Device cart	82	49	98	40