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SENSOR medica®
Technology in Motion

PowerLaser Pro1500

Instruction Manual

Edition 1.22US, October 2019

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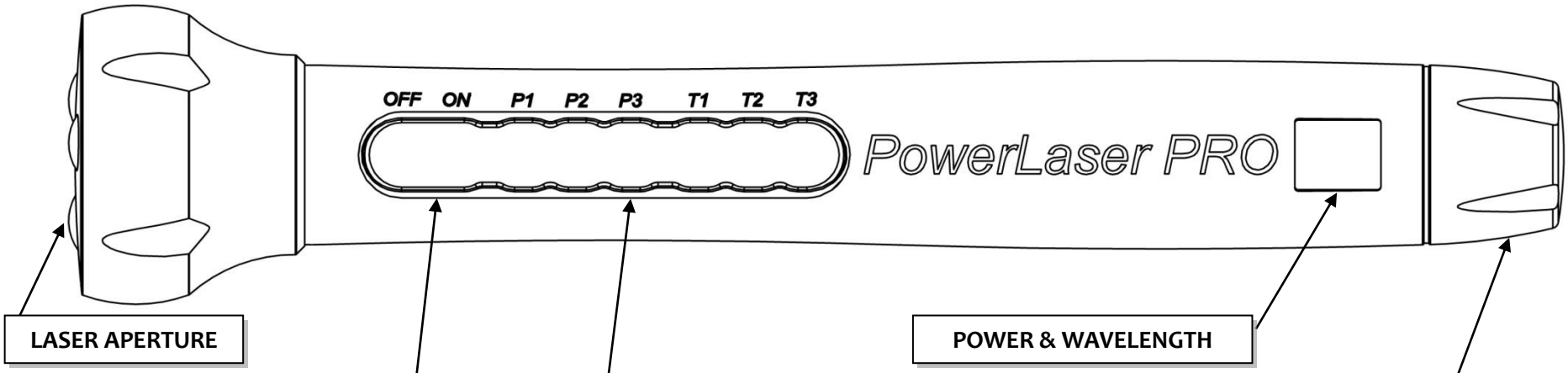

LASER APERTURE

POWER & WAVELENGTH

ON/OFF

- **Red light OFF, "breathing":** the laser is Standby
- **Blue, constant light in ON:** the laser is Ready
- **Blue, flashing light in ON:** the laser is ON and laser light is emitted

Slidebar / touch screen

- **Selection of output power: P1, P2, P3**
- **selection of exposure time: T1, T2, T3**

When the laser is Ready or ON, there will be a blue light in one of the P-settings and in one of the T-settings, indicating the settings selected.

Change selection: put your finger on the active setting and **slide** your finger to the setting of your choice. Your will hear a tone that is unique for each setting.

POWER KEY

KEY CONTROL:
When taken out, the laser cannot be operated.

POWER SOURCE:
Contains a rechargeable battery cartridge.

Recharges in drop-in table stand, the SmartCharger.

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Warnings and Safety Instructions

Caution: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure or cross contamination.
The use of the laser requires no special educational background but it should be operated only by personnel properly acquainted with the instructions put forth in this manual.
When not in use the laser unit should be protected from unauthorized use by removal of the POWER KEY.

Protective eyewear

The PowerLaser Pro1500 has a very large divergence compared to laser equipment for other purposes. This is designed with the purpose of maximizing the safety of both user and patient, while maintaining the maximum therapeutic effect. As a result intrabeam viewing is perfectly safe at any distance and the **use of protective eyewear is not necessary**.

Precautions

When treating all kinds of surface problems, the laser must be held at a distance of 2-3 cm from the surface in order to avoid contact.

Cleaning

The laser probe, especially the tip, should be cleaned with alcohol between individual patients.

Introduction

PowerLaser Pro1500 is a compact and efficient therapy laser indicated for the indications listed on next page.
PowerLaser Pro1500 has all the control circuitry and power source built into the probe and is totally independent. The power source is a rechargeable POWER KEY that interchanges within seconds with the second POWER KEY.
The POWER KEY contains a battery and recharges in the SmartCharger PRO.

Components

1. PowerLaser Pro1500 main unit incl. POWER KEY
2. Extra POWER KEY
3. SmartCharger PRO recharging station
4. AC-adapter type PLV7.1
5. Instruction Manual
6. Laser Therapy Manual

Specifications laser unit

Max output power, peak:	3000 mW +/- 10%
Max output power, average:	1500 mW +/- 10%
Beam divergence horizontal:	40°
Beam divergence vertical:	8°
NOHD:	90 mm
Pulse duration, max:	0.5 msec
Laser class	3B
Operating temperature:	5 - 35°C / 41 - 95°F
Protection degree:	Type B

Program settings

Power settings:	**P1**	**P2**	**P3**
Output power, average [mW]	300	675	1500
Output power, peak [mW]	600	1350	3000
Energy dose [Joule] per beep in **T1**	3	6.75	15
Energy dose [Joule] per beep in **T2**	6	13.5	30
Energy dose [Joule] per beep in **T3**	18	40.5	90

Time settings:	**T1**	**T2**	**T3**
Exposure time [sec.]	60	200	600
Beep for every: [sec.]	10	20	60

Cleared indications

Indications for Use:
The PowerLaser is intended to emit energy in the visible and near infrared spectrum to provide topical heating for the purpose of elevating tissue temperature for a temporary relief of minor muscle and joint pain and stiffness, minor arthritis pain, or muscle spasm; the temporary increase in local blood circulation; the temporary relaxation of muscle.

Quality standards and regulations

ISO 9001:2000
CMDR (Medical Devices Regulations (SOR/98-282))
Medical Device Directive 93/42/EEC
FDA Code of Federal Regulations Cite: 21CFR820

Contra indications

Do not treat patients with:

- Heart problems
- Pregnancy
- Epilepsy
- Cancer

Do not treat areas with:

- Melanomas
- Tattoos
- Dark skin

If the patient feels a burning sensation, stop the laser stimulation immediately.

Getting started

Place a POWER KEY in the probe. Notice the red light in OFF starts “breathing”. This is the Standby mode. If the battery is already inserted and the laser is OFF (i.e. no breathing light), release the battery and screw it in again.
Place your finger on OFF and slide it to ON. Notice the red light turns off and the blue ON indicator turns on. At the same time, a

blue light will turn on in one of the Power Settings and one of the Time Settings. This is the **Laser Ready** mode.

Selection of program

Place your finger on the active setting (Power or Time) and **slide** your finger to the desired setting. Watch the blue light move to the selected setting.

Starting laser emission

In Laser Ready mode, place your finger on OFF and slide it to ON. Laser emission will now start and the ON light starts flashing. If Vibration is selected, this will start as well.
This is the **Laser ON** mode.
During laser emission an audible beep will be heard for every (sub) time period, indicating that a certain energy dose has been reached. (If Audio OFF is selected, there will be no beep).
A blue light flashing indicates that laser emission is occurring.

Stopping laser emission

Laser emission stops automatically after the selected (total) time period and a long audible signal is heard.
In addition, laser emission can be stopped at any time by sliding the finger from ON to OFF.

Turning off the laser

In Laser Ready mode, slide the finger from ON to OFF. The laser will go to Standby mode. Further, if the laser has not been activated for 8 minutes, it will go to Standby automatically.
In Standby mode, slide the finger from ON to OFF. The laser is now completely turned off, and can only be restarted by releasing the battery and screwing it in again. If the laser is left in Standby for 10 hours, it automatically turns off completely.

Low Battery & Empty Battery

When the battery has less than 10-20% capacity left, the OFF light will emit short red flashes.
When the battery is nearly empty, the OFF light will emit a short flash for every 5 seconds, and the laser can no longer be activated.

Vibration & Audio selection

Make sure that the laser is in Standby. Place 2 fingers, so one finger is covering T3 and the other P3. With a third finger, slide from OFF to ON. Notice that there is light in OFF, ON and *one* of the P-settings as well as *one* of the T-settings. Now you can release the 3 fingers.
Vibration and Audio can then be selected as follows:

Vibrator OFF:	touch P1 (sliding is not necessary)
Vibrator 50%:	touch P2
Vibrator 100%:	touch P3
Audio OFF:	touch T1
Audio 50%:	touch T2
Audio 100%:	touch T3

When the desired selection is done, slide from ON to OFF.

Specifications charging system

POWER KEY / battery pack:	4.2 V, LiIon
Capacity:	more than 2.5 hours continuous use
AC-adapter:	
Input:	100 – 250 VAC
Output:	5.0 VDC, 2.0 A
SmartCharger:	
Output:	4.2 VDC, 2.0 A

Recharging

Place the AC-adapter PLV7.1 in a wall outlet. Connect the cord to the SmartCharger PRO.

The SmartCharger PRO has 2 indicators:

1. Green Power On indicator
2. Yellow Charging indicator

When first connected, both indicators will light up constantly. If no battery is inserted within the first minute, the Charging indicator will start flashing.

Place a battery in the SmartCharger PRO with a little pressure, until a soft click is felt. The Charging indicator will now emit a solid yellow light, indicating that the battery is recharging.

When the battery is fully recharged, the Charging indicator will start flashing. Normal recharge time for a fully discharged battery is 3-4 hours.

If a fully or nearly fully recharged battery is inserted into the SmartCharger PRO, no recharging will take place and the Charging indicator will continue flashing.

When the recharged battery is taken out of the SmartCharger PRO after a complete recharge, the Charging indicator will continue flashing, indicating that it is ready for a new battery.

Battery disposal

The battery type is Lithium Ion (LiIon). Contact your local government for disposal or recycling practices in your area.

Cleaning

It is recommended that the laser aperture be cleaned regularly for any foreign matter that might be blocking the laser beam. The unit itself may be cleaned with a mild detergent or alcohol on a cloth.

Calibration

According to the international laser standard IEC 60825-1 it is recommended that a laser be calibrated regularly by means of a laser power meter capable of measuring up to 1W @808nm. The output should not deviate by more than +/- 20%. However, the PowerLaser PRO is equipped with an internal surveillance circuit, constantly measuring the output power. If the output power deviates by more than +/- 10%, the OFF indicator will immediately give a rapid flashing signal. This feature renders the calibration procedure redundant.

Temperature surveillance

The PowerLaser PRO is protected against activation at both too high and too low temperatures. If the laser is started at temperatures below 5°C / 41°F, the protection circuit automatically reduces the output power until normal operating temperature is reached. If the internal temperature exceeds the preset limit, the laser output is blocked immediately, and at the same time, the OFF indicator will start flashing. If this happens, it is recommended to cool down the laser.

Error detection

PowerLaser PRO PLp1500 is equipped with an advanced surveillance circuit, ensuring safe and effective functioning of the laser. If an error state occurs, the OFF indicator will start flashing and the unit cannot be operated. If this situation – or any of below listed conditions – occurs, the unit must be handed in to the supplier for repair.

1. No laser emission
2. The laser cannot be activated
3. No light in ON or OFF indicator
4. No light in Power or Time indicators
5. No audible signal even if selected
6. No vibration even if selected
7. The laser cannot be activated in certain program settings

Storage

The PowerLaser Pro1500 should be kept on storage under following limiting conditions:

Storage temperature:	5 - 35°C / 41 - 95°F
Storage humidity:	20-85% RH

Warranty

The PowerLaser Pro1500 carries a 2-year warranty covering all malfunctioning directly resulting from material or manufacturing faults.

Disclaimer

Any damage or injury resulting from failure to observe guidelines or precautions put forth in this manual falls outside the liability of the seller and/or producer of the equipment covered by same manual.

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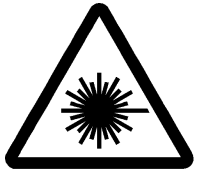
Reproduction of labeling

Information box

Read Manual

INVISIBLE LASER RADIATION
AVOID EXPOSURE TO BEAM
EN 60601-2-22:1996

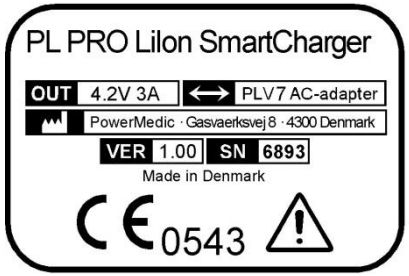


Laser warning symbol

Type B insulation

mW 1500	Output power:	1500 mW
nm 808	Wavelength:	808 nm
VER 6.80	Version:	6.80
SN 4711	Serial number:	4711
PowerMedic· 4300 Denmark		Manufacturer

Reproduction of labeling



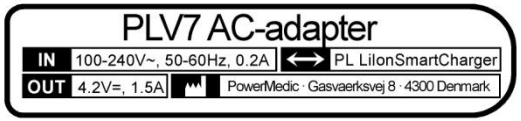
Information box

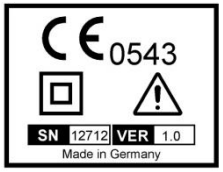
Read Manual

OUT 5V=, 0.9A	Output voltage and current
PLV6 AC-adapter	Use only with PLV7.1 AC-adapter
VER 5.15	Version: 5.15
SN 4711	Serial number: 4711
PowerMedic· 4300 Denmark	Manufacturer

CE 0543 CE-mark with number of notified body

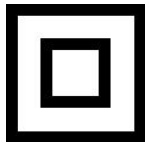
Reproduction of labeling



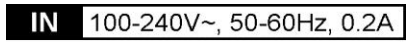


Information boxes

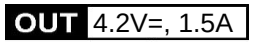
Read Manual



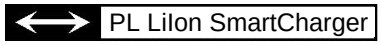
Class II equipment



Input voltage, frequency and current



Output voltage and current



Use only with PL SmartCharger

Version: 1.0

Serial number: 4711

Manufacturer

CE-mark with number of notified body