Quick Guide ENERGY-LASER PRO™

Model: L500 PRO – 500 mW / 808 nm Model: L800 PRO – 4 x 200 mW / 660 nm Model: L2000 PRO – 4 x 500 mW / 808 nm



Low Level Laser Therapy – LLLT PhotoBioModulation – PBM





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NOTE: Please read the User Manual thoroughly before use!

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Laser therapy for wounds and pain

ENERGY-LASER™ is developed and designed for the professional clinicians for clinic use, for example with chiropractors, physiotherapists, wound clinics, and others.

ENERGY-LASER PRO is approved as Laser Class 3B equipment, that is produced and registered as medical CE approved equipment (CE 2274).

ENERGY-LASER™ is the latest generation of powerful LLLT / PBM lasers with the latest technology, for the benefit of both therapist and patient.

ENERGY-LASER™ is designed for the treatment of pain, muscle, and joint disorders, and for wounds.

ENERGY-LASER™ provides a painless treatment and quick results.

ENERGY-LASER™ is designed for battery operation, with Li-Ion battery technology, which has a large capacity of energy, up to 1½ hours of treatment per fully charged battery.

ENERGY-LASER™ is with electronic control for overheating.

ENERGY-LASER™ has a built-in Light guide with red LED light (650 nm) so you can clearly see the treatment area.

ENERGY-LASER™ is easy to operate and the processing time and laser power setting is easily and quickly done via an ENERGY-LASER tablet.

ENERGY-LASER™ provides a whole new range of opportunities to work effectively with laser light in pain, joint and tissue treatment.

Indications for laser treatment includes:

- Musculoskeletal disorders (Pain intensity)
- Chronic nonspecific low back pain (Pain reduction)
- Shoulder tendinopathy (pain relief)
- Knee osteoarthritis (pain reduction)
- Temporomandibular myofascial pain (pain intensity)
- Fixed orthodontic therapy (pain reduction)
- Complication after mandibular third molar surgery (pain reduction)
- Recurrent aphthous stomatitis (pain and wound healing)

General Precautions: LLLT/PBM laser treatment

- Always perform clinical assessments before any treatment!
- Only use the laser indoors!
- The laser may only be operated by an adult!
- Do not treat through, or upon, clothing.
- Do not activate the laser before it is placed onto the treatment area!
- The treatment area should be void for creams and lotions prior to starting therapy!
- Treat only on clean skin without tattoos and dark spots.
- Lasers are NOT toy and should be kept away from children out of their reach! Always make sure that the laser equipment is stowed away safely after each session.
- Laser equipment used for any purpose other than that intended (namely skin, pain, and healing treatment) or if incorrectly operated will be the user's responsibility and the possible consequences thereof.

General Safety Warnings LLLT/PBM laser treatment



WARNING NOTICE!

- Never look directly into the laser light!
- The sight may be permanently damaged!
- When treating the face with laser light, always use laser safety goggles!

WARNING!

Avoid infection! Always clean the laser and optics before and after use with the recommended disinfection method!

TIP!

Clear plastic wrap (cling film) can be used as a protective layer on the laser and/or optics, as to avoid contaminating the laser with biohazardous materials!



Disinfection of laser probe, battery and optics:

Wipe with isopropyl alcohol or pure (100% ethanol) alcohol and then wipe afterwards with chlorhexidine.

The laser probe and the battery must <u>not</u> be boiled or autoclaved! Laser and optics are provided non-sterile!



Laser Guide:

1. Use a fully charged battery (6.) and twist it clockwise onto the laser probe. Keep twisting until the laser switches on. 3 short beeps will sound followed by 1 long beep before the laser starts up.

 \rightarrow **MODE:** <u>LASER ON.</u> When the laser is on the LED light is continuously green (4.)

- 2. The LED light (4.) will be continuously green. Short beep every 10 sec. The lasers effect = 100% The laser is active for 300 sec. (5 min) after which the laser stops automatically while giving off a long beep followed by a high / low beep. This indicates that the laser has automatically gone into → MODE: <u>STANDBY</u>. The indicator LED light will change from a continuous green (4.) to flashing a yellow light.
- To turn the laser off unscrew the battery (6.) in a counter-clockwise direction
 → MODE: LASER OFF. If you wish to restart the laser re-attach the battery to the laser → MODE: LASER ON.

IMPORTANT NOTICE!

- Do not fasten the battery (6.) too tightly!
- Only hold onto the bottom laser section (5.), when the battery (6.) is being screwed on or off!



- Never hold the laser by the cooling piece (2.) when the laser is ON!
- Always remove the battery (6.) from the laser probe (3.) after use!
- Never use the laser without optics!

Error Messages

Low battery

Yellow LED light (4.) flashing slowly \rightarrow **MODE:** Low battery. Battery must be charged soon. Yellow LED light (4.) flashing quickly and then switches off \rightarrow **MODE:** No battery. Battery must be charged.

High temperature (+ 45C)

Red and yellow LED light (4.) flashes alternatingly \rightarrow **MODE**: <u>Laser's temperature is too high.</u> The laser is programmed to switch off automatically. The laser should stay switched off and allowed to cool down fully before restarting the laser.

Photodiode (Laser Power test)

Red LED light (4.) continuously lit. This indicates that a laser diode error \rightarrow **MODE**: <u>ERROR</u>.

Contact Customer support: service@via-laser.dk

Selection of program by ENERGY-LASER PRO™

The laser is preprogrammed with the following settings:

Laser:	Laser Power mW:	Timer:	Joule tot.:
	(+0-10%)	(300 sec.)	+0-10%)
L500 PRO	500 mW	5 min.	150 Joule - (10 sec. = 5 J)
L800 PRO	4 x 200 mW	5 min.	240 Joule - (10 sec. = 8 J)
L2000 PRO	4 x 500 mW	5 min.	600 Joule - (10 sec. = 20 J)

Programming and operation of the laser

Start laser:

- 1. Switch on the ENERGY-LASER tablet, (optional accessory)!
- Attach the battery onto the laser probe so that it switches on. Immediately, unscrew and reattach the battery. This activates the laser's programming mode → MODE: LASER program mode.
- 3. Yellow LED light (4.) flashes and the laser beeps high / low
- 4. Wait for the laser to connect to the ENERGY-LASER tablet, (via Bluetooth).
- 5. When the beep sound stops the laser can be programmed and operated.

Laser programing:

- **1.** Set the laser power: 50 500 / 800 / 2000 mW
- **2.** Set processing time: 10 sec. to 10 minutes
- 3. Set the laser to silent mode if wanted by selecting beep off \rightarrow MODE: <u>Silent</u>
- 4. Press Send to Device

The display will show your selected settings for power and time:

 Press Start Laser → LASER ON. Long beep and green LED light (4.) is continually on. Short beep every 10 sec.

After pressing Start Laser the display shows:

- Time elapsed
- Remaining time
- Joules counted up
- **2.** Laser is active with the set laser power and time, where after the laser stops automatically with a long beep and goes into \rightarrow <u>STANDBY</u>. Green LED (4.) turns off and yellow LED (4.) flashes.
- 3. Laser restarts **ON** by pressing **Start Laser** → <u>LASER ON</u> Laser starts with the last set laser power and time!
- Laser stopped by pressing RED button → <u>STOP</u>. This is followed by a long beep and goes to STANDBY - Yellow LED (4.) flashes
- 5. Loosening the battery stops the laser \rightarrow LASER OFF.

At new start, the laser is automatically reset to the preprogrammed setting!

IMPORTANT NOTICE!

- Never switch off the laser during programming

- Always remove the battery (6.) from the laser device (3.) after use!

Battery and charger

The Li-Ion batteries are supplied uncharged and should therefore first be charged fully before use!

- **1.** Connect the AC Adapter to the charger using the USB cable. The Li-Ion battery is placed with the threaded part down with a little pressure into the charger's battery holder.
- **2.** Plug the charger into a 130/240 V outlet. This will light up the LED on the charger with red, but when fully charged the LED light will switch to green (or blue).

WARNING NOTICE!

Do not under any circumstances use a different USB adapter or charger other than is supplied by the manufacturer. The Li-Ion battery can be seriously damaged if charged incorrectly!



IMPORTANT NOTICE!

Li-Ion batteries should never be exposed to environmental temperature lower than -5°C! Li-Ion batteries should never be exposed to excessive heat or open flame!

Li-Ion batteries should never be exposed to water!

Li-Ion batteries should never be exposed to short circuiting!

Li-Ion batteries should never be exposed to excessive shock or vibration!

Li-Ion batteries which are defective should not be used, thrown away or disposed of!

Li-Ion batteries that are defective should not be used!

Li-Ion batteries that are defective should be returned for recycling or returned to the dealer!

Low Level Laser Therapy / PhotoBioModulation treatment - General

LLLT / PBM is approved as a medical treatment method and is today a recognized and widespread form of treatment.

Treatment with laser works through the delivery of energy to the cells in the tissue requiring treatment. The energy emitted by the laser penetrates the skin and triggers cell activity. This increased activity improves cell function, strengthens the immune system, and increases blood circulation. The positive effects of laser treatment on the body's immune system, as well as its ability to accelerate the healing process, makes it an incredibly therapeutic tool. The mechanism and science supporting 'laser therapy efficacy' makes it a valuable treatment tool in all clinical areas.

Scanning technique

The scanning technique is used with a spread laser lens attached to the laser light. The scan technique is used when treating the area around the target or when treating larger areas (wounds, eczema, psoriasis, etc.).

Treatment

Processing is carried out by pressing the optic of the laser onto the skin while the laser is moved in rectangular or circular movements on and around the affected area.

The laser can also be moved point to point with 1 - 2 cm in between each beep (10 sec.).

When treating sores and eczema the laser should be held at distance of 2-5 cm from the skin. When reaching skin just outside of the damaged area one can gently press the skin with the laser optics again.

When treating a wound, the wound should be treated with 2-5 joules / cm² (as shown in FIG. 1).

Inside the wound should be treated with 0,1 - 1,0 Joule / cm². This is achieved by holding the laser approx. 2 cm above the wound and moving it every 10 seconds as shown in Fig. 1

Outside the wound in areas with intact skin the laser should be held at a distance of a few millimeters from the skin. The red mark shows wound and circles shows laser light.

Fig. 1 - Wounds



When treating larger areas relating to tendons, joints and muscles a point-by-point method is used for treatment.

The laser is systematically beep every 10 seconds. Treat the entire area (as shown in FIG. 2).

The larger the area outside of the damaged area that is treated the better the overall result. This is motion improves cell function and blood flow and thus faster results are achieved.

In the treatment of pain, the affected area is treated directly over the specific trigger point / area until pain relief is achieved!

Fig. 2 - Muscles and Tendons



IMPORTANT NOTICE!

If the treated area starts to feel warm, then you should increase the distance to the skin!



ENERGY-LASER PRO™ dosage chart

Model:	Power mW:	Joule/ Sek.:	Joule/10 Sek.:	Joule/min.:	Joule/ 5 min.:
	100	0,1	1	6	30
	200	0,2	2	12	60
	300	0,3	3	18	90
	400	0,4	4	24	120
L500 PRO	500	0,5	5	30	150
L800 PRO	4 x 200	4 x 0,2 = 0,8	4 x 2 = 8	4 x 12 = 48	4 x 60 = 240
L2000 PRO	4 x 500	4 x 0,5 = 2	4 x 5 = 20	4 x 30 = 120	4 x 150 = 600

1 Joule = 1 W per sec. / 1000 mW per sec.

ENERGY-LASER PRO™ emits a beep every 10 seconds. Remember to change place of treatment by each beep (10 seconds). Each point is considered 1 cm ²

Treatment frequency

- The interval between treatment should be 2 3 day with a maximum of one week between each treatment.
- Recent damage/injuries benefit from more frequent treatments and can be treated alternate days.

Treatment situations with ENERGY-LASER L500 PRO™



