SMART^M

1940nm Wavelength

VARICOSE VEINS / EVLT / EVLA

...BE SMART... YOU CAN HEAL AS WELL !

Lasotronix
LASERS FOR GENERATIONS

HANDY GRIP

TOUCH SCREEN INTERFACE

PROFESSIONAL FIBERS

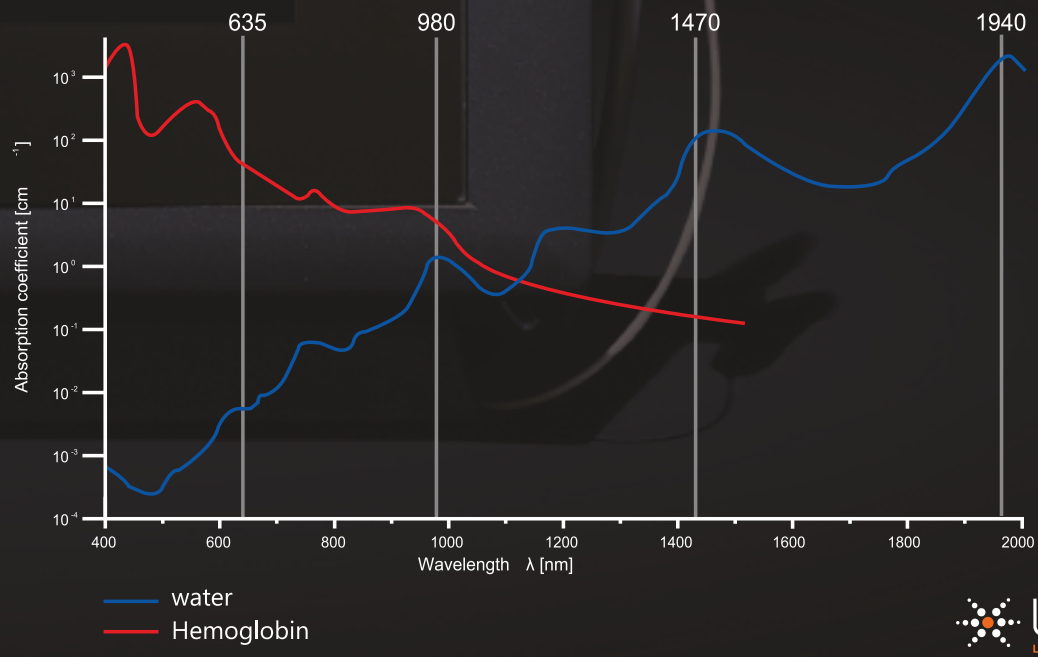
WHAT WAVELENGTH IS RECOMMENDED?

For minimally invasive endovenous laser ablation - EVLT, Lasotronix offers diode lasers emitting radiation at different wavelengths: 980nm, 1470nm or 1940nm with the possibility of their further expansion with additional light sources.

As can be seen in the diagram, for 980nm radiation, the absorption coefficient is higher for hemoglobin than for water. For 1470nm, especially 1940nm, the opposite is true and water absorbs light radiation many times better than hemoglobin. Both of these chromatophores are components of human tissues, including blood and vascular walls. Lasers with a wavelength of 980nm have been used on a large scale for over 20 years and the average power used during treatments is 10-12W. Using 1470nm wavelength, smaller powers are needed - at 6-8W, and for 1940nm wavelengths 4-6W is enough to perform an effective surgery. Reducing the amount of power needed, makes these lasers much safer and predictable tools for the doctor, while giving patients faster and more comfortable recovery.

A novelty among the medical devices manufactured by Lasotronix is the two-wave, universal SMART 980 / 1470nm surgical laser, which in addition to varicose veins and proctology is widely used in dermatosurgery, ENT and gynecology.

In addition - as the first and only in the world, diode lasers from the SMART family, each of the above configurations can be extended by additional wavelength - 635nm, which, thanks to biomodulation effects, has a very beneficial effects on morphotic elements in human blood. It significantly improves the soft tissue regeneration process, rebuilds blood vessels, reduces postoperative pain and swelling, stimulates blood and lymph flow and strengthens local immunity. The use of the 635nm laser is especially recommended for patients undergoing inflammation hard-healing wounds or ulcers and after each surgery to accelerate healing, reduce pain and swelling.



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ADVANTAGES & SPECIFICATION

There are many advantages to choosing EVLT to treat your varicose veins including:

- Immediate relief of symptoms
- Immediate aesthetic results
- Little to no downtime – patients are able to walk and resume normal activities the same day
- Minimal to no visible scarring
- High success rate
- Lower percentage of recurrence compared to more invasive treatments such as vein stripping
- Completed in under an hour
- Performed as an outpatient procedure in an office setting
- No general anesthesia or sedation required
- Fewer complications

SMART™ CONFIGURATION	APPLICATIONS			
	EVLT	MICRO	BIO	AESTHETIC
980nm	✓	✓✓✓		✓
1470nm	✓✓	✓		✓
1940nm	✓✓✓			
980nm + 635nm	✓	✓✓✓	✓✓✓	✓✓✓
1470nm + 635nm	✓✓	✓	✓✓✓	✓✓✓
1470nm + 980nm	✓✓✓		✓✓✓	✓
1940nm + 635nm	✓✓	✓✓✓		✓✓
1470nm + 980nm + 635nm	✓✓	✓✓✓	✓✓✓	✓✓✓

✓ - Standard

✓✓ - Gold

✓✓✓ - Platinum

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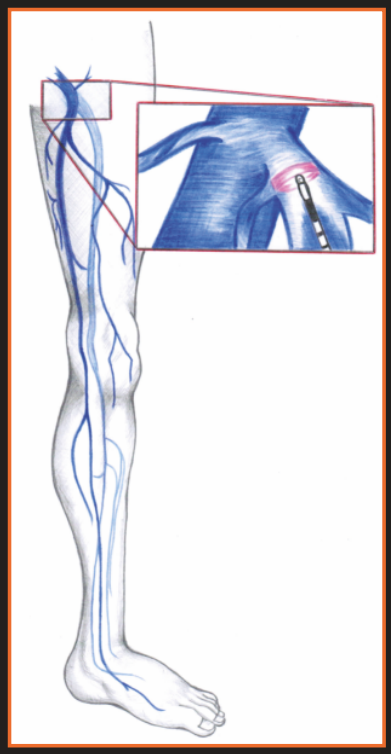
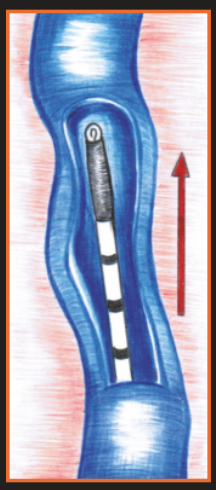
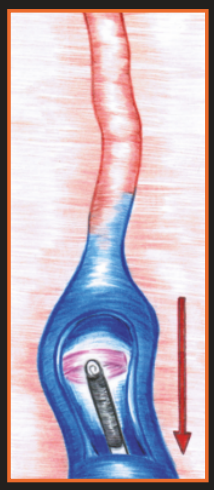
EVLT BREAKTHROUGH

EVLT (Endovenous Laser Treatment) is a procedure leading to occlusion of varicose veins. It involves putting a Fiber optic into a saphenous vein through a catheter. Then the laser is turned on and slowly withdraw from the vein. Thanks to light-tissue interaction mainly thermal effects occur, the tissue is heated and the walls of the vein shrink, because of alteration of endothelium and contraction of collagen. There are two possibilities of performing the treatment: with pulsed and continuous-wave laser operation. Using the pulsed operation also the fiber is withdraw step by step. A better choice is to use continuous-wave laser and to withdraw the fiber also continuously, what provides more homogenous illumination of the vein, less tissue damaged outside the vein and better results. The therapy is just a beginning of the occlusion process. After the treatment the veins are shrinking for several days or weeks. That's why in the long-period observation very good results are obtained. The main advantage of EVLT is that it's a non-invasive technique in contrast to surgical treatments. It also doesn't involve hospital stay and can be performed in an ambulatory conditions with local anesthesia and lasts for less than 1 hour. After the procedure patient doesn't have any unsightly incisions and scars.



Thanks to radial illumination the maximum energy density is directed to the walls of the vein near the fiber and cause immediate occlusion. The simple bare fiber is also possible to use, but the treatment is much more effective with the radial illumination.





WHY LASOTRONIX?

- Over twenty years of experience in laser technology.
- SMART™ provides choice 4 possible wavelengths: 635 nm, 980 nm, 1470 nm or 1940 nm, and 2 types of fibers with open end or radial emission.
- Cutting edge technology.
- Extendable database of predefined therapy protocols which can be modified and assigned to a patient.
- Lowest operating costs.
- Very compact and small-sized device.
- Flexibility of development other customized parameters and OEM products.

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SPECIFICATION:

Laser type	:	SMART™ Diode, Semiconductor
Wavelength	:	1940nm
MAX Power	:	6 Watts
Aiming Beam	:	635nm/1, 4Mw max or 515nm/2, 5mW max
Operating Mode	:	Continuous or Modulated
Pulse Time	:	0.05ms-1000ms
Beam delivery	:	Fiber Optic with SMA 905 Connector
Optical Fiber Connector	:	SMA 905, accepts optical fibers having a core diameter from 320µm up to 600µm, NA=0,22-0,48Beam
Emmition Initiation	:	Footswitch
Controller	:	Microprocessor
Display	:	7 TFT with touch panel
Cooling System	:	Internal, air and thermoelectric cooling
Power Supply of the Laser	:	DC 24V/8.33A from the Separate AC
Power Supply of AC Adapter	:	Single phase 100-240 VAC: 50-60 Hz; max 90 W
AC Adapter	:	DC 24v/8,33A Medical Approval EN60601-1 Class I
Laser Dimensions	:	27cm × 24,5cm × 9cm
Laser weight	:	2.5kg
Laser Case Dimensions	:	53cm × 38cm × 23cm
Weight of Laser with Cases	:	Approx 7.5kg
Class of Medical Device	:	IIB
Laser Safety Class	:	4
Electric Safety Class	:	I type B
Housing Protection Degree	:	IP20B
Footswitch Protection Degree	:	Min. IPX6
Environmental Conditions During Work	:	from +10°C to +25°C Relative humidity from 30% up to 60%
Environmental conditions during	:	Temperature from -10°C up to +40°C relative humidity from 10% up to the Storage/ Transportation 80%

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