MC METRUM CRYOFLEX

Phlebology laser for Varicose Veins - EVLT

SWING 15 15 W - 1470 nm

Gold standard in EVLT:

- Greater saphenous vein
- Small saphenous vein
- Perforating veins
- Recurrences
- Venous ulcer





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y 10000 1000

Biophysics



Axis y: Absorption coefficient [cm⁻¹] Axis x: Wavelength [nm]

EVLT - EndoVenous Laser Treatment

EndoVenous Laser Treatment (EVLT) was first used in the USA. Since then, the unique advantages of this method have made it increasingly popular. It is now the global method of choice in the treatment of superficial venous incompetence in large veins. This modern method of endovascular treatment enables large vein closure without making skin incisions.

EVLT - advantages of the method:

- Day case procedure
- Local anaesthesia
- Short treatment time
- No incisions or post-surgical scars
- Quick return to daily activities (usually 1-2 days)
- Excellent patient outcomes
- Great aesthetic results
- High level of treatment safety

EVLT with 1470 nm

Advantages of EVLT with 1470 nm:

- Effective vein closure using a smaller dose of energy supplied (up to 70 J/cm on average with a power range of 8 - 10 W)
- No residual tissue carbonisation ensuring homogeneous energy dose transfer along the entire vein
- Lower energy dose results in decreased pain, reduced risk of burns and skin discolouration
- Positive clinical outcomes 95% post op success rate in year 1, 97% in year 3

Biophysics of the 1470 nm wavelength

Optimal water absorption

SWING 15 laser emits energy in a 1470 nm wavelength. The wavelength has a high degree of water absorption in the tissue with simultaneous effects on blood (minimal risk of bleeding). The bio-physical property of the wave used in the SWING 15 laser means that the ablation zone is shallow and controlled and therefore there is no risk of damage to adjacent tissue. These features make the SWING 15 laser a safer and cheaper alternative to near-infrared lasers (810 nm - 980 nm, Nd: YAG 1064 nm) and far-infrared lasers (CO2 10600 nm).

Source: G. M. Hale, M. R. Querry, "Optical constants of water in the 200 nm to 200 µm wavelength region," Appl. Opt.,12, 555-563 (1973). Scott Prahl, https://omlc.org/spectra/hemoglobin/, Oregon State of Technology, USA.

SWING 15

User friendly software

The SWING 15 laser is controlled using a high definition touch screen with excellent colour quality and a wide field of view in order to provide the operator with ease of use. Individual user settings can be saved on the device, allowing for the quick and easy selection of treatment parameters. Additionally, the device has several convenient modes for EVLT.

The software allows the user to select energy emission in a continuous wave (CW) mode where the operator based on the ultrasound image (on-line), retracts the optical fibre in reaction to the visible response of the vein to the emission of energy.

The devices software includes a mode of operation (EVLT) enabling control of the vein ablation process by audibly informing the operator about delivering a programmed (or pre-set) dose of energy (J/cm) to the vein, thus determining the rate of optical fibre retraction from the treated vessel (sec/cm). After generating the desired energy dose, the laser automatically signals the optical fibre relocation time. The operator using this functionality can fully concentrate on tracking the ultrasound image without the need to operate the laser.

The use of additional equipment such as "optical fibre retractors" are unnecessary, which reduces costs and also increases the quality and safety of the procedure.

Advantages of SWING 15

- User friendly list of programs to choose from
- Several convenient modes such as: phlebology, continuous mode, quasi-continuous & impulse
- Ability to create and save bespoke programs
- Automatically signals the optical fibre relocation time for optimal control
- Premium optical fibre 360°, double sealed
- Intuitive touch screen panel with black or white interface















Optical Fibre

Radial fibre 360°

EVLT procedures should be performed using a combination of the SWING 15 laser and our unique radial optical fibre (ring emission).



This combination ensures the concentration of the laser energy on the vein wall is highly efficient. The device comes with a choice of radial optical fibres in two diameters:

- Standard 600 um e.g. GSV, SSV
- Slim 400 um e.g. perforators. The thinnest available on the market

The use of radial fibres provided by MC together with the SWING 15 laser guarantees full compatibility of the set and thus effective energy transfer into the treatment field. This means that the nominal laser energy is fully available at the optical fibre tip and thus it is equal to that delivered to the tissue. Many other lasers andoptical fibres cause losses of up to 20%, which can cause vein recanalisation due to uneven energy density and power losses during EVLT procedures.

Combination of Radial Fibre with 1470 nm laser - tissue reaction:

- Temperature max: >100°C
- Temperature of Collagen: >80°C
- Temperature of Protein: >60°C

All fibres are double sterile packed and ready to use. The storage period without the risk of losing its sterility is up to 5 years.

Additional Extras

Tumescence pump, dispenser for varicose vein laser treatment

The Dispenser DP is a specifically designed tumescence infiltration pump, delivering a high volume of tumescence liquid at an optimal pressure.

- Cost effective solution
- Easy handling with low maintenance effort
- Continuously variable and precise adjustable infiltration performance
- Delivery of tumescence liquid of up to 27 litres per hour
- Available with Vario pedal or on/off pedal
- Fast and easy fixing of tubing set
- Easy cleaning of the device due to smooth-edged design

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SWING 15

Specification

Power s	upply	
Power supply		110-230 V~ 50 - 60 Hz
Maximum power consumption		375 VA
Safety		
Class		
Laser		
Laser class		4
Wavelength		1470 nm
Max. laser power (ver. dependent)		15 W
Operation mode:		Continous (CW) Quasi continous (QCW) Pulse (REPEAT)
Dimensions:		43/46/20.3 cm
Weight:		13 kg
Treatme	nt parameters	
Ton	Laser pulse time [µs, ms]	200 µs ÷ 100 s
Toff	Pulse interval value [µs, ms]	200 µs ÷ 100 s
N	Pulse number in "package"	1 ÷ 100 and ∞
Tpause	Interval between pulse "packages"	200 us ÷ 100 s









METRUM CRYOFLEX

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