

Quality from
the Original

bio
LITEC®

Introducing 1940nm

Minimally invasive laser therapy of
venous insufficiency



“Zring Radial - Evolution continues”

Why 1940nm?

The recently introduced 1940 nm diode Laser offers an even slightly higher water absorption compared to 1470 nm. Biolitec offers this laser as a 10 W device whereas the treatment protocol differs only insignificantly as tumescence is recommended.

It offers:

- Possibility to treat very superficial veins segments and reach less hyperpigmentation
- Faster resorption of treated vein segments over time and therefore reduction of invagination sensation period
- In conjunction with pullback device leading to highest homogeneity and hardly no sticking effects



With the available results and patient/physician preferences it can be said that conventional high ligation plus stripping of the incompetent saphenous vein is no longer the gold standard treatment choice. Suat Doganci and Ufuk Demirkilic, Vascular Surgery Published online 04, April, 2012 ISBN 978-953-51-0328-8

The ELVeS[®] Radial[®] procedure – a unique solution for treatment of venous incompetence

A brief history of evolution

Venous reflux disease is a common condition. Up to 55 % of women and 45 % of men suffer from symptoms such as fatigue, pain and swelling of lower limbs. Primary causes include congenital connective tissue weakness, hormonal changes and long periods of standing and sitting. Impaired veins can be more than just a cosmetic problem. Left untreated, venous reflux disease can progress to skin changes, discoloration, inflammation and even venous ulcer.

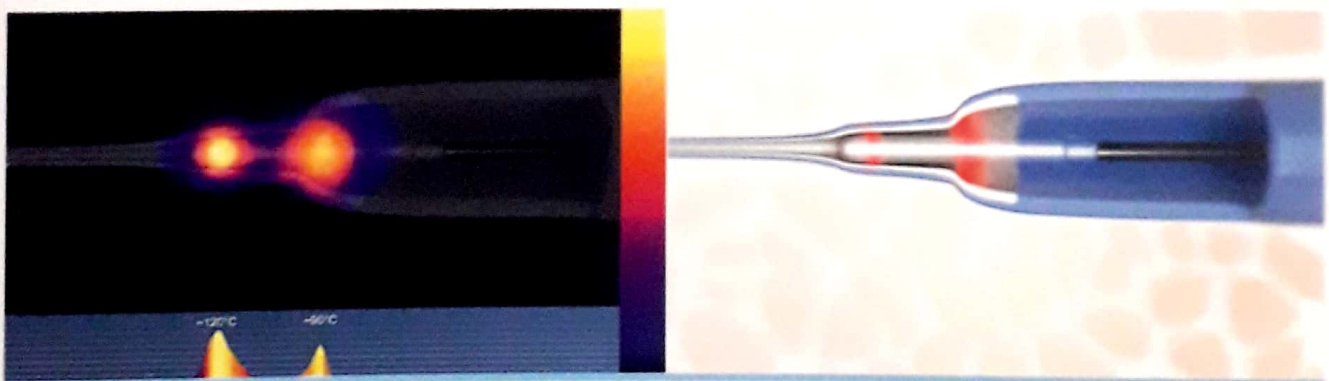
As a global pioneer in laser technique, biolitec[®] introduced the first medical 1470 nm diode laser in 2006 and the Radial[®] fiber in 2008 to improve the outcome of endoluminal laser use.

Evolution continues

The present and the future demand even more intelligent solutions. Our struggle to create an outstanding system regarding Safety and Flexibility for the endoluminal treatment of varicose lead us to the 2ring technique.

Why 2ring?

Even more flexibility in your daily routine



Results by means of using a thermocamera on the cow foot modell and ELVeS® Radial® 2ring Fiber.

The ELVeS® Radial® 2ring fiber divides the laser power into two equal portions of 50 % strength. For example, the 12 W generated by the laser is divided into two rings with 6 W each. This means that the vein irradiated by the first ring is raised from body temperature to approx. 90 °C. Through the distance of approx. 5 mm between the two rings and the constant movement of the fiber at a rate of approx. 5-7 s/cm, the vein can cool down slightly. The second ring will then raise the temperature to approx. 120 °C. The energy selected for each vein remains the same. The second ring essentially 'closes the door behind itself'.

$$1+1=2$$

ELVeS® Radial® 2ring

The 2-phase radiation with ELVeS® Radial® 2ring is the best choice for a perfect outcome, not only for experienced physicians, but also for beginners who ask for an efficient, safe and easy-to-use technique

Splitting the laser power in two phases leads to an effective closure of the vein with

- Less energy density of each ring
- Perfect centration of the fiber tip by pre-shrinking effect
- Optimal homogenous radiation to the vessel wall even for large diameter >15 mm
- Easier pullback technique

ELVeS® Radial® 2ring slim

The ELVeS® Radial® 2ring slim fiber provides the easiest access to the veins. It is characterized by a very small outer diameter of only 1.2 mm. When using commercially available 16 G IV catheters, the fibres can be introduced without the need for expensive insertion instruments.

The simple use of several of these standard cannulas makes access much easier –even for highly convoluted or duplicated veins. Also when treating perforating veins or recurrences, access is easily facilitated.

Applications

ELVeS® Radial® procedure*

- Great saphenous vein
- Small saphenous vein
- Tributary veins
- Perforators
- Recurrences

* Only to be used with 1470 nm



Placing the catheter



Starting laser treatment

ELVeS® Radial®
Original quality



Evolution continues
ELVeS® Radial®
2ring



New
for small
veins

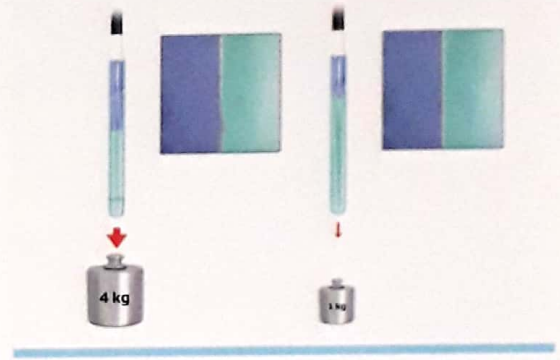


Why Fusion®?

Because quality matters

biolitec® has always placed high standards on safety. The distal quartz caps and laser fibers of biolitec® are therefore welded together using the Fusion® technology. This means we can absorb the highest tensile forces on the probe through the combined welding and bonding (see diagram). The pure bonding meets the applicable standard for these products (DIN EN ISO 10555-1 Annex B) but not the high demands of modern minimally invasive laser medicine. biolitec® has developed the Fusion® procedure and thus set worldwide standards.

On the right are the standard tensile forces that a catheter must meet. On the left, you can see the tensile strength achieved through the Fusion® technology (internal biolitec® tests).



The ELVeS® Radial® 2ring procedure – how does it work?

The ELVeS® Radial® 2ring procedure is performed on an outpatient basis under ultrasound guidance and Tumescant Local Anesthesia (TLA). However, some centers prefer to work without TLA using a sensory femoral nerve block or a mild sedation with some reported advantages (see below). Following percutaneous entry into the saphenous vein, the ELVeS® Radial® 2ring fiber is advanced towards the saphena-femoral junction. The laser procedure is carried out along the entire length of the incompetent vein under continuous pull back of the ELVeS® Radial® 2ring fiber. The complete treatment takes about 30 minutes; patients can return to normal activities immediately. Bi-lateral ELVeS® Radial® 2ring treatments or combined GSV and SSV procedures can be performed during the same session.

“ We use ELVeS® Radial® and perform procedures without tumescant anaesthesia and our favourite protocol is the use of the quick Sensory Femoral Nerve Block. This gives a better US image enabling real time visualization of the vein closure, which improves results as we can respond according to the individual anatomy. Patients report none or little discomfort and less post procedure pain and side effects. ”

Safe and simple – the all-around solution with a built-in safety concept

The ELVeS® Radial® 2ring procedure offers the optimum treatment solution for an effective and gentle endovenous laser therapy and is setting new standards for patients and users. Performing an endovenous laser therapy has never been more convenient. Delivering homogenous laser emission based on a **unique** and **patented** distal design, ELVeS® Radial® 2ring minimizes the risk of vein perforations and assures high echogenic visibility. The 1470 nm laser energy is preferentially absorbed in the intracellular water of the vein wall and in the water content of blood. The irreversible photo-thermal process induced by the laser energy results in a complete occlusion of the treated vein. The ELVeS® signal software mode guides the user throughout the procedure. So individually addressable energy deposition for any length and diameter of the vein is facilitated.

The ELVeS® Radial® 2ring procedure is ...

- Fast
- Safe
- Homogenous
- Effective
- Evidence-based



LEONARDO®

Model	LEONARDO® Mini 1470	LEONARDO® 1470	LEONARDO® 1940
REF	SL1470nm8W	SL1470nm15W	SL1940nm10W
Wavelength	1470 nm	1470 nm	1940nm
Power	8 W (1470 nm)	15 Watt	10 Watt
Fiber diameter	≥ 360 µm	≥ 360 µm	≥ 360 µm
Aiming beam	635 nm, max. 4 mW	532 nm and 635 nm, green 1 mW, red 4 mW, user controlled intensity	635 nm, red 4 mW, user controlled intensity
Treatment mode	CW, Pulse Mode (optional), ELVeS® Signal	CW, Pulse Mode, ELVeS® Signal, ELVeS® Segment, Derma Mode	CW, Pulse Mode, ELVeS® Signal, ELVeS® Segment, Derma Mode
Pulse duration/-break	0.01–60 sec / 0.01–60 sec	0.01–60 sec / 0.01–60 sec	0.01–60 sec / 0.01–60 sec
Power supply	110–240 VAC, 50–60 Hz (7.2 VDC @ 36 W)	110–240 VAC, 50/60 Hz, 450 VA	110–240 VAC, 50/60 Hz, 450 VA
Batteries	Li-ion batteries	-	-
Dimensions (H×W×D)	6.0 cm×9.0 cm×21.5 cm	approx. 28 cm×37 cm×9 cm	approx. 28 cm×37 cm×9 cm
Weight	900 g	approx. 8.5 kg	approx. 8.5 kg

All laser sets incl. 3 safety goggles, foot switch, interlock connector, power cord and manual in a carrying case.

Fibers

REF	Product	PU	length [m]	ø fiber tip [mm]	Cl
503100150	ELVeS Radial slim Fiber, IC	5	2.5	1.25	4 Fr
503100100	ELVeS Radial Fiber, IC	5	2.5	1.85	6 Fr
503100170	ELVeS Radial 2ring Fiber, IC	5	2.5	1.85	6 Fr
503100155	ELVeS Radial 2ring slim Fiber, IC	5	2.5	1.25	4 Fr

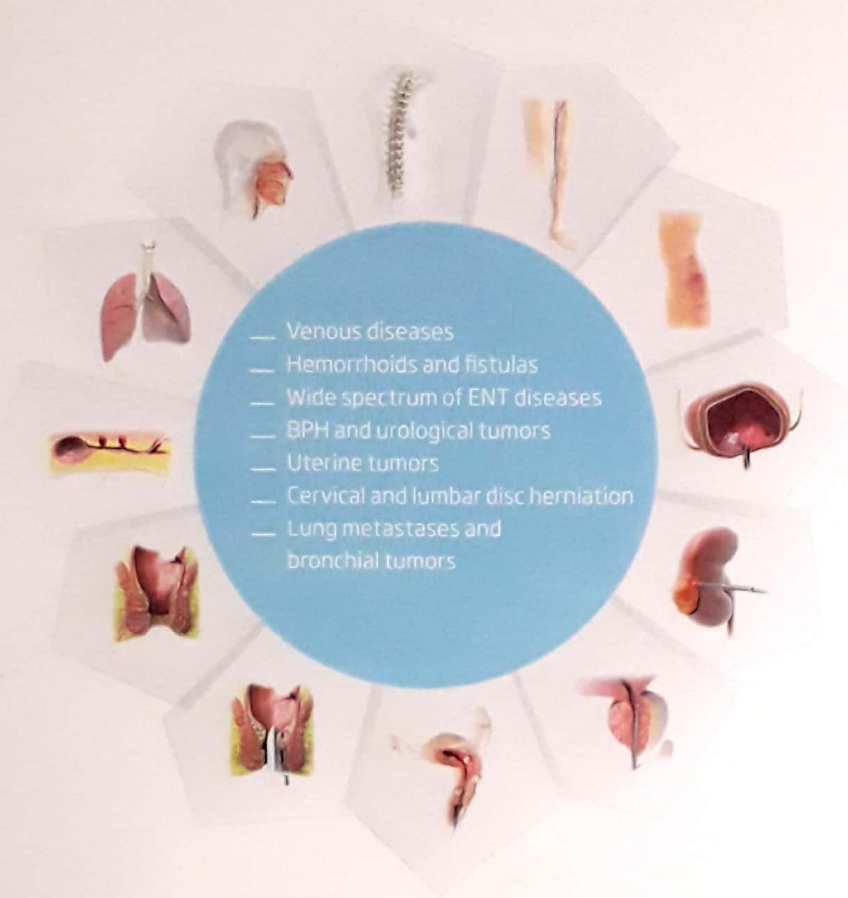
Kits

503100160	ELVeS Radial slim Kit / Venflon, IC	5	2.5	1.25
503100130	ELVeS Radial Kit 6F, IC	5	2.5	1.85
503100185	ELVeS Radial 2ring Kit 6F	5	2.5	1.85
503100156	ELVeS Radial slim 2ring Kit, IC	5	2.5	1.25



Contact us

to learn more about a whole new world
of minimally invasive laser therapies



- Venous diseases
- Hemorrhoids and fistulas
- Wide spectrum of ENT diseases
- BPH and urological tumors
- Uterine tumors
- Cervical and lumbar disc herniation
- Lung metastases and bronchial tumors

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All fibers are free of latex and DEHP. Our fibers are single use products (unless otherwise indicated) delivered sterile for immediate use.

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