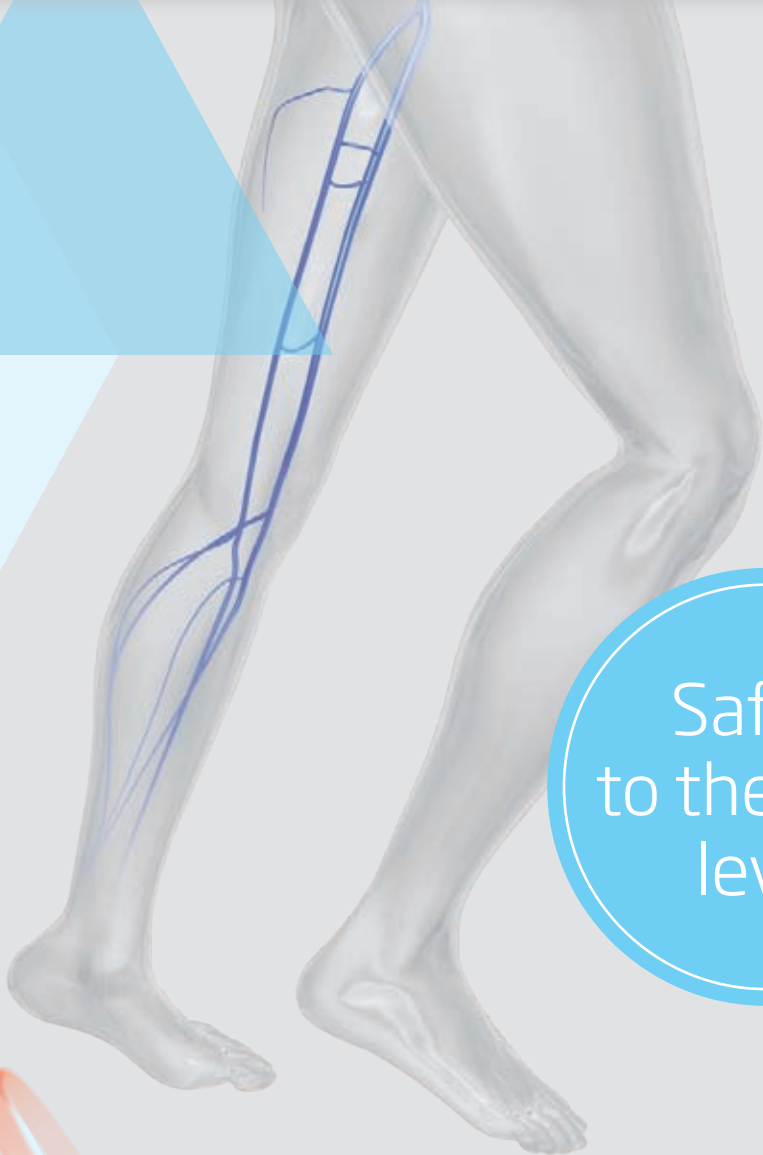
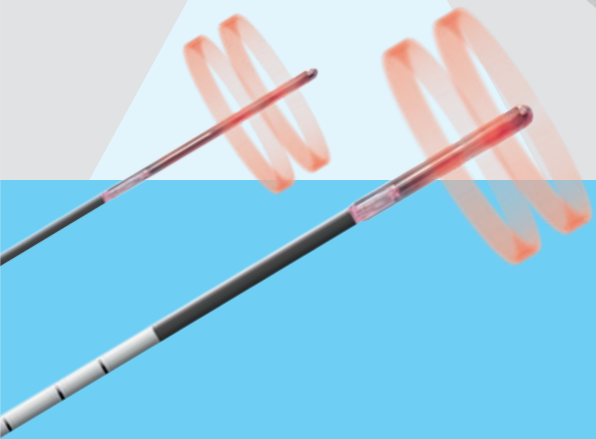


# ELVeS® Radial®

Minimally invasive laser therapy  
of venous insufficiency

An anatomical illustration of a human leg, showing the venous system in blue. The veins are depicted as a network of lines, with the main saphenous vein running along the inner side of the leg. The background features a geometric pattern of overlapping triangles in shades of blue and grey.

Safely  
to the next  
level

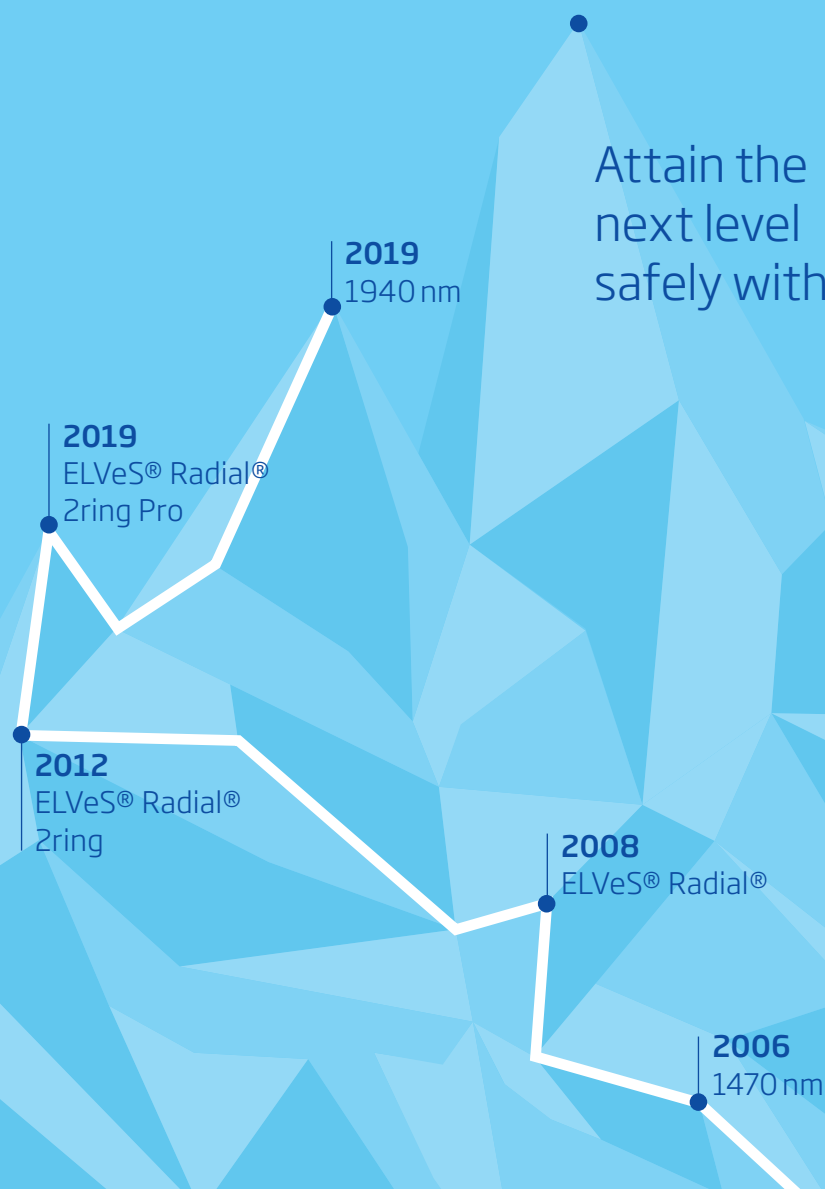
- 
- Two ELVeS Radial laser probes are shown in the bottom left corner. They are thin, black, and flexible, with a red light at the tip. The probes are shown in a slightly curved position, with one probe in the foreground and another slightly behind it.
- Vena saphena magna
  - Vena saphena parva
  - Tributary veins
  - Perforator veins
  - Recurrences

# The ELVeS® Radial® procedure – the unique solution for the treatment of venous insufficiency

## The evolution of laser therapy

As one of the world's leading pioneers in the field of medical laser therapy, biolitec® launched the first medical 1470 nm diode laser in 2006 and the patented Radial® fiber in 2008 and has continued to improve endoluminal laser therapy ever since.

Attain the  
next level  
safely with us



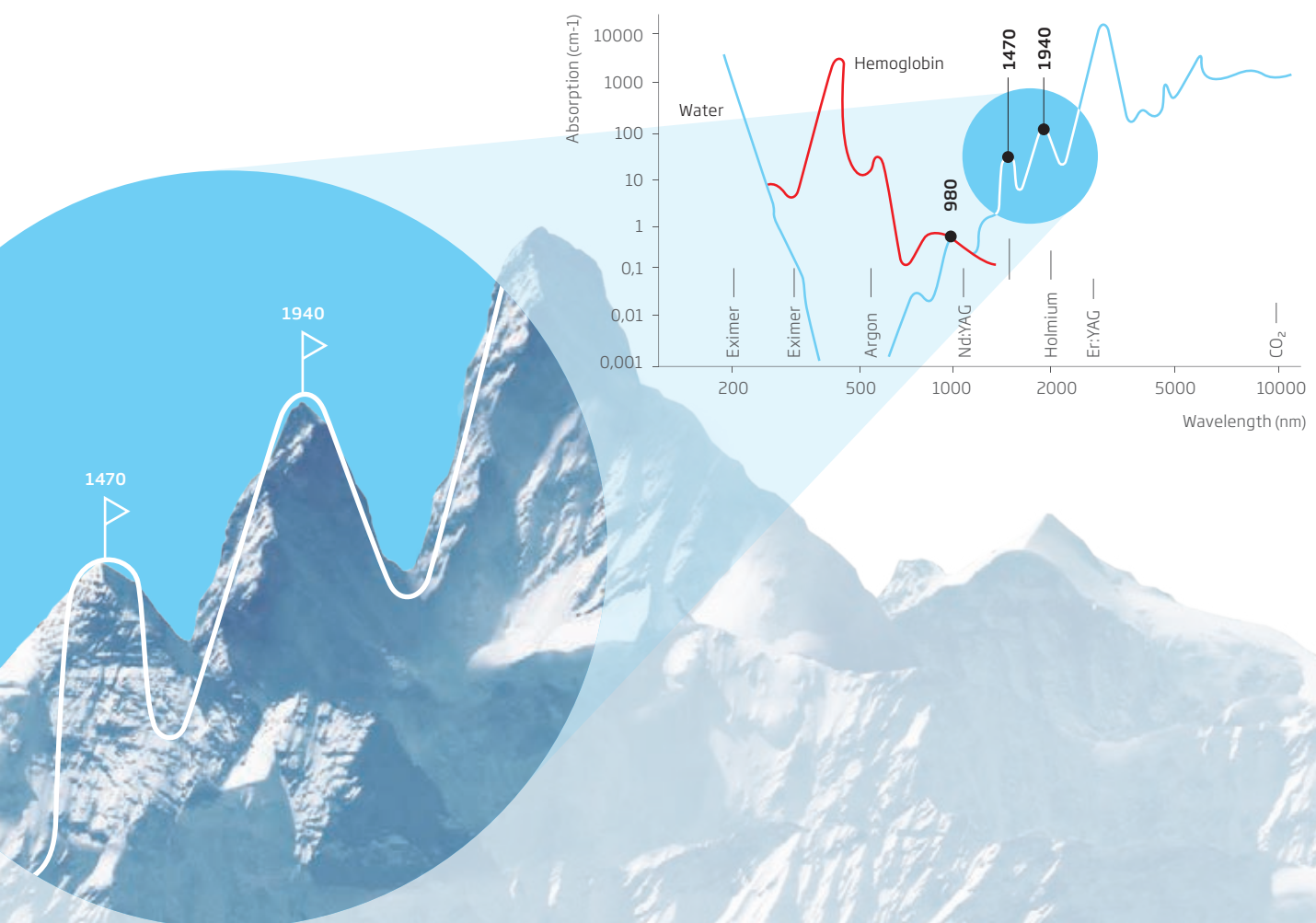
# The evolution continues

Present and future call for even more intelligent solutions. Our striving to develop an outstanding system with respect to safety and flexibility for the endoluminal treatment of varicose veins has led us to Zring technology.

**This principle, combined with the safest Fusion® fiber optics, the latest diode laser generation and treatment software, which can also incorporate a pulling device, offers:**

- a high degree of standardization of your treatment
- always the right equipment for each of your approaches
- therapy also for complex vascular courses

## We are reaching the next peak



# ELVeS® Radial® 2ring

The dual-phase radiation with the ELVeS® Radial® 2ring fiber is the best choice for a perfect result, not only for experienced physicians but also for new users who demand efficient, safe, and easy-to-use technology.

**With this laser fiber the energy is split into two rings.**

**This allows safe closure of the vein with**

- a low energy density in each ring
- a perfectly centered fiber tip due to the pre-shrinkage effect
- optimal, homogeneous radiation on the vessel wall (even with a large diameter >15 mm)
- a simple retraction technique (possible with the push of a button)

## ELVeS® Radial® 2ring slim and ELVeS® Radial® swift

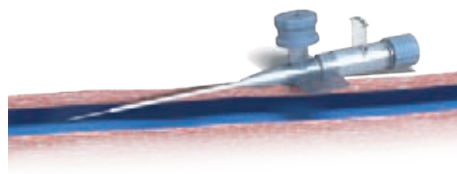
The great variety of the ELVeS® Radial® family offers you many combinations from direct puncture or the use of introducer sets for tailored treatment of your patients almost without limitations. Due to their very small external diameter of only 1.2 / 1.5 mm the slim or swift fibers are introduced via conventional 16 GA or 14 GA indwelling catheters into the vein, so no complete introducer set is needed. Of course, depending on the findings (e.g., very tortuous veins), several such accesses can be placed or obstacles overcome when using the ELVeS® Radial® Pro-Fiber.

## Applications

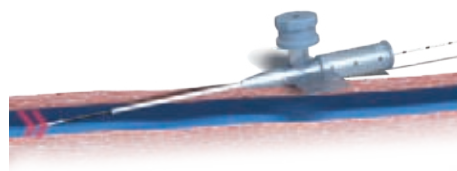
### ELVeS® Radial® procedures\*

- Vena saphena magna
- Vena saphena parva
- Tributary veins
- Perforator veins
- Recurrences
- Ulcus cruris venosum

\* for use with 1470 nm and 1940 nm only.



Introduction into the vein



Placement of the catheter

# ELVeS® Radial® Original Quality

The  
evolution  
continues  
ELVeS® Radial®  
2ring

New  
for small  
veins  
<10mm

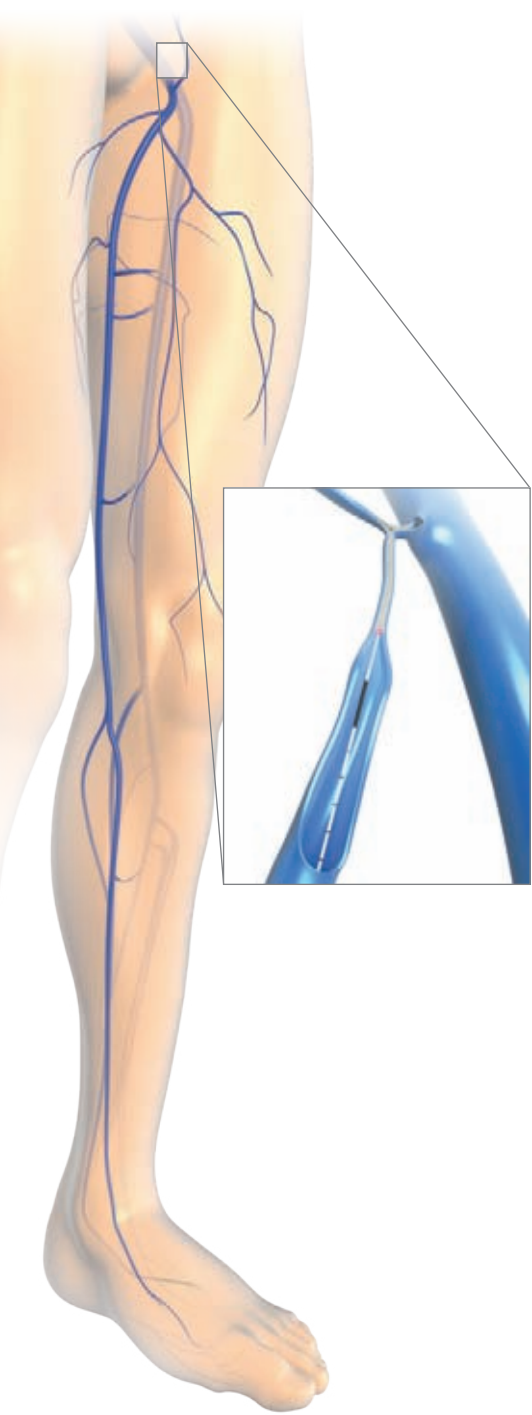


Safe through  
Fusion®

## Why Fusion®?

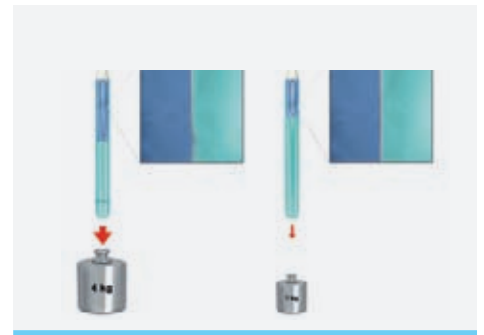
### Because quality matters

Due to its high quality standards, biolitec® has understood from the beginning what is important when it comes to safety. For this reason, all of biolitec®'s distal quartz glass caps and laser fibers are fused to one another with the help of Fusion® technology. Simple gluing does meet the current 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® process and thus set the standards worldwide.



On the right side is a sketch of the tensile forces that a catheter must meet according to the standard.

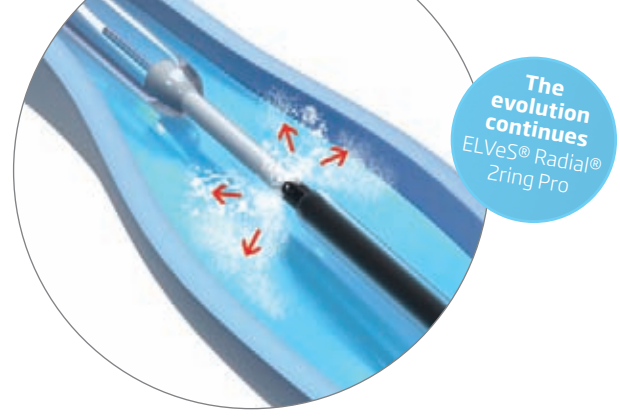
On the left, however, one sees the tensile strength, attained as a minimum by Fusion®-technology (internal biolitec® tests).



## ELVeS® Radial® 2ring – the procedure

The ELVeS® Radial® 2ring procedure is usually performed on an outpatient basis under local anesthesia and with ultrasound monitoring. After the percutaneous puncture of the vena saphena, the ELVeS® Radial® 2ring fiber is advanced to the saphenofemoral junction.

The laser treatment is performed along the insufficient vein segment; the ELVeS® Radial® 2ring fiber is continuously withdrawn during the process. The entire treatment lasts approx. 30 – 40 minutes depending on the findings. Shortly thereafter, the patient can resume his normal activities. With the ELVeS® Radial® 2ring procedure, bilateral treatments or combined treatments of the vena saphena magna and the vena saphena parva can be performed in a single session.



# Simple and Safe – The All-Round Solution with the Integrated Safety Concept

The ELVeS® Radial® 2ring process is the optimal solution for effective and careful endovenous laser therapy and sets new standards for patients and users. Performing endovenous laser therapy has never been easier. Thanks to the homogeneous laser radiation made possible by an exclusive and patented distal design, the ELVeS® Radial® 2ring procedure minimizes the risk of vein perforation and ensures high echogenic visibility. The 1470 nm laser energy is preferably absorbed by the intracellular water of the vein wall. The induced irreversible photothermic process leads to complete closure of the treated vein. The ELVeS®-Signal software mode guides the user through the procedure. The laser energy can be applied in an individual dose to any vein diameter without having to treat individual sections a second time, as is the case with other products.

The recently introduced 1940 nm diode laser with 10 watts output power even offers slightly higher water absorption compared to the established 1470 nm wavelength. It thus offers the possibility of treating even more controlled superficial (extrafascial) vein segments and, according to initial findings, leads to a faster resorption of the treated vein segments. In combination with the 2ring fiber and a fiber pullback device, this leads to unrivalled homogeneity of your treatment, all this with the push of a button, or you can continue to "handle it yourself".

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

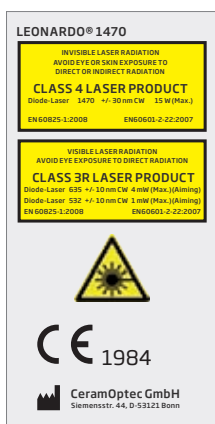
- fast
- safe
- homogeneous
- effective
- evidence-based



**NEW**  
LEONARDO®  
Mini 1470 nm –  
Now with  
12 watts



## LEONARDO®



| Model                  | LEONARDO® Mini 1470                        | LEONARDO® 1470                                                     | LEONARDO® 1940                                |
|------------------------|--------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------|
| REF                    | SL1470nm12W                                | SL1470nm15W                                                        | SL1940nm10W                                   |
| Wavelength             | 1470 nm                                    | 1470 nm                                                            | 1940 nm                                       |
| Power                  | 12 Watt                                    | 15 Watt                                                            | 10 Watt                                       |
| Fiber diameter         | ≥ 360 µm                                   | ≥ 360 µm                                                           | ≥ 360 µm                                      |
| Aiming beam            | 635 nm, max. 4 mW                          | 532 nm und 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 |
| Impulslänge / - break  | 0.01 – 180 sec / 0.01 – 180 sec            | 0.01 – 60 sec / 0.01 – 60 sec                                      | 0.01 – 60sec / 0.01 – 60 sec                  |
| Power supply           | 110 – 240 VAC, 50 – 60 Hz (12 VDC @ 100 W) | 110 – 240 VAC, 50 / 60 Hz, 450 VA                                  | 110 – 240 VAC, 50 / 60 Hz, 450 VA             |
| Batteries              | Li-ion Batterien                           | –                                                                  | –                                             |
| Dimensions (H × B × T) | 6.0 cm × 9.0 cm × 21.5 cm                  | ca. 28 cm × 37 cm × 9 cm                                           | ca. 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] | CI** |
|-----------|-----------------------------------|-----|------------|------------------|------|
| 503100150 | ELVeS Radial slim Fiber, IC       | 10  | 2.5        | 1.25             | 4 Fr |
| 503100100 | ELVeS Radial Fiber, IC            | 10  | 2.5        | 1.85             | 6 Fr |
| 503100140 | ELVeS Radial swift Fiber, IC      | 10  | 2.5        | 1.5              | 5 Fr |
| 503100170 | ELVeS Radial 2ring Fiber, IC      | 10  | 2.5        | 1.85             | 6 Fr |
| 503100155 | ELVeS Radial 2ring slim Fiber, IC | 10  | 2.5        | 1.25             | 4 Fr |
| 503100145 | ELVeS Radial 2ring Pro Fiber, IC  | 10  | 2.5        | 1.85             | 6 Fr |

## Kits

|           |                                      |    |     |      |
|-----------|--------------------------------------|----|-----|------|
| 503100160 | ELVeS Radial slim Kit / Venflon, IC  | 10 | 2.5 | 1.25 |
| 503100130 | ELVeS Radial Kit 6F, IC              | 10 | 2.5 | 1.85 |
| 503100141 | ELVeS Radial swift Kit, IC           | 10 | 2.5 | 1.5  |
| 503100185 | ELVeS Radial 2ring Kit 6F            | 10 | 2.5 | 1.85 |
| 503100156 | ELVeS Radial slim 2ring Kit, IC      | 10 | 2.5 | 1.25 |
| 503100146 | ELVeS Radial 2ring Pro Fiber Kit, IC | 10 | 2.5 | 1.85 |

\* Packaging unit \*\* compatible introducers

# Contact us

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

The path  
is the goal –  
The biolitec®-  
evolution  
continues



The ELVeS®  
Radial® journey  
in a video

## biolitec® worldwide

### **biolitec AG**

Vienna, Austria  
phone: +43 1 3619 909 50  
info@biolitec.de  
www.biolitec.com

### **biolitec biomedical technology GmbH**

Jena, Germany  
Phone: +49 3641 519 53 0

### **biolitec Schweiz GmbH**

Wollerau, Switzerland  
Phone: +41 55 555 30 20

### **biolitec España**

Madrid, Spain  
Phone: +34 91 9910857

### **biolitec Italia SRL**

Milano, Italy  
Phone: +39 02 8423 0633

### **biolitec Tıbbi Cihazları Ltd. Şti.**

Istanbul, Turkey  
Phone: +90 216 574 7456

### **OOO biolitec Spb**

Saint-Petersburg, Russia  
Phone: +7 812 4493752

### **biolitec FZ LLC**

Dubai, UAE  
Phone: +971 44 29 85 92

### **biolitec laser science and technology Shanghai Ltd.**

Shanghai, China  
Phone: +86 21 6308 8856

### **biolitec Sdn. Bhd.**

Selangor, Malaysia  
Phone: +60 3 5569 7158

### **biolitec India Private Ltd.**

Bangalore, India  
Phone: +91 93275 11005

### **PT. Biolitec**

Tangerang, Indonesia  
Phone: +62 21 537 2994

### **biolitec Korea Ltd.**

Seoul, Republic of Korea  
Phone: +82 2 701 4707

### **Equipos Laser de Uso Medico y Fibra Optica SA de CV**

México City, Mexico  
Phone: +52 155 55 731800

### **biolitec BCIE LTDA**

São Paulo, Brazil  
Phone: +55 11 2093 8602

### **CeramOptec GmbH**

Bonn, Germany  
Phone: +49 228 979670

### **Ceram Optec SIA**

Riga, Latvia  
Phone: +371 653 25 994



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

#### **Imprint**

biolitec AG  
Untere Viaduktgasse 6/9  
A-1030 Wien  
Phone: +43 1 3619 909 50  
www.biolitec.com