

MADE IN
GERMANY

vela[®] QI

The 1.9 μ m desktop thulium laser

Precision and flexibility – redefined

Next generation surgical cutting





About StarMedTec

Our goal is to meet the demands of physicians for efficient surgical lasers that cover a wide range of therapy options.

The innovative laser systems provided by StarMedTec GmbH offer numerous advantages for doctors and patients. Low-impact treatment achieves significant improvements in terms of health and quality of life.

With know-how accumulated over more than 20 years and a large installed base, StarMedTec is the technology leader in the surgical laser segment. More than 1,000 standalone and desktop lasers have been successfully deployed around the world.

Our company stands for the development and production of trendsetting and reliable laser systems – made in Germany. Among other things, the world's first 1.9 μ m thulium laser for medical use came from StarMedTec.

Thanks to a global network of competent service and distribution partners, we guarantee optimum conditions for the highest customer satisfaction.



Flexible application – precise cutting

- Flexible application and handling:
Broad and interdisciplinary
use in urology, gynecology, ENT,
pneumology and surgery

- Cool Cut®:
For greater precision
and safety

- Optimized wavelength:
Precise and secure cutting with
defined hemostatis
Open surgical applications as well
as flexible and laparoscopy use

- Positive cost-benefit factor:
Effective treatment, economical
acquisition and maintenance,
low electricity consumption

- Intuitive user guidance:
Ease of operation and secure
application

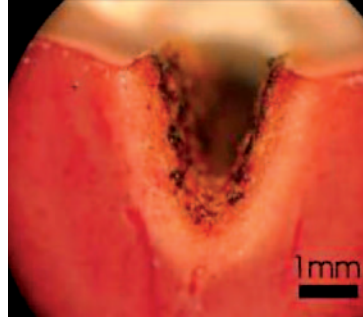
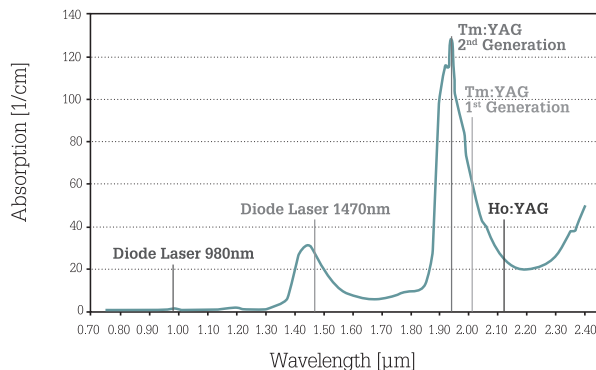


Wavelength 1.9µm – efficiency of the next generation

The wavelength is the key parameter for an efficient laser system. Biological tissue contains a large proportion of water. This is why high absorption of the laser light in water results in extremely efficient tissue treatment, even at low output.

1.9µm – the wavelength of the 2nd generation thulium laser – allows the maximum water absorption of laser light to be utilized in combination with highly flexible applicators.

The chart illustrates the light absorption coefficient of water dependent on the wavelength. It shows a significant difference compared to other laser systems such as the diode laser (980nm): the wavelength of 1.9µm generated by the vela[®] QI is absorbed approximately 300 times better by water compared to diode lasers at around 1µm. The absorption and therefore the effectiveness of thulium lasers with a wavelength of 2.0µm (1st generation) is exceeded by a factor of 2 thanks to the unique wavelength of the vela[®] QI!



vela[®] QI – the 1.9µm thulium laser Key benefits at a glance:

High absorption at the wavelength of 1.9µm results in a defined penetration depth of laser light in tissue. This means the precise cutting effect creates a defined coagulation zone. Tissue underneath is not affected. Undesirable tissue damage, which may occur with other laser methods (e.g. KTP) is avoided.

The outstanding cutting and hemostatis properties of the 1.9µm thulium laser permit the virtually bloodless dissection of tissue with a precision that is otherwise possible only with the CO₂ laser.

Compared to conventional dissection methods (HF surgery and CO₂ laser), the highly flexible LightTrail[®] applicators of the vela[®] QI permit minimally invasive laser deployment and offer new solutions to treatment problems in endoscopy and modern surgery.

vela[®] QI versus CO₂:

The areas of application for the CO₂ laser are limited by the disadvantages of the rigid articulated mirror arm.

Advantage of the vela[®] QI: the 1.9µm thulium laser can be used like a CO₂ laser. The vela[®] QI offers far more flexibility and application possibilities thanks to the use of highly flexible LightTrail[®] application fibers from StarMedTec. Naturally the laser is therefore also suitable for endoscopy and laparoscopy use!

vela[®] QI versus Nd:YAG (1064nm) and diode (980/940nm):

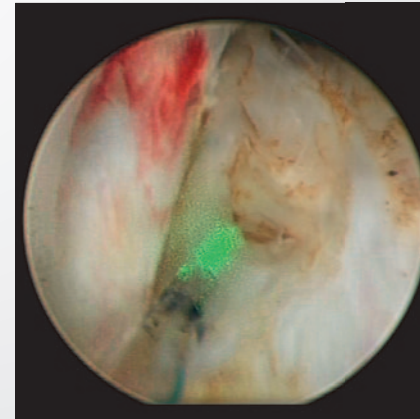
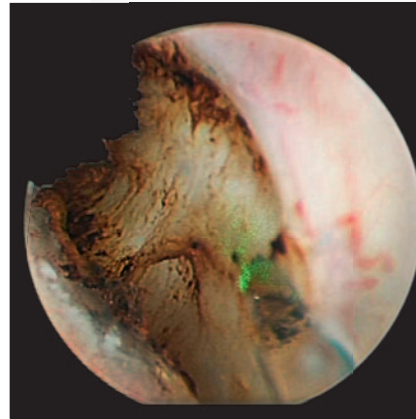
Using the Nd:YAG or diode laser is associated with risks due to depth coagulation. The vela[®] QI offers high flexibility and outstanding cutting performance. Thanks to its optimized wavelength of 1.9µm, the vela[®] QI does not cause uncontrolled deep tissue damage.

vela[®] QI versus HF:

When using an HF device, a neutral electrode is often needed but can cause burns or irritation on the skin. The flexible, thin application fibers of the vela[®] QI permit highly precise and safe application, even with small, flexible, minimally invasive instruments. Easy handling of the laser device is guaranteed by the intuitive user guidance of the vela[®] QI.

Cool Cut® – unique for greater precision and safety

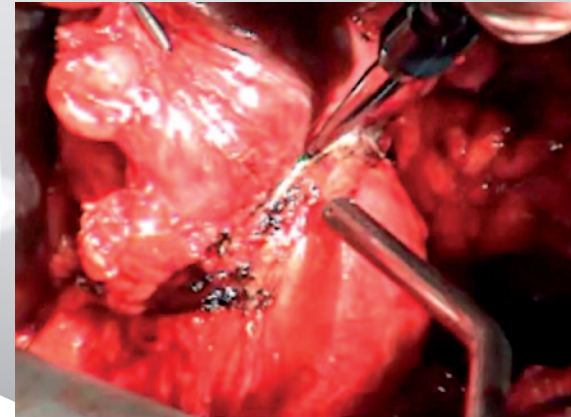
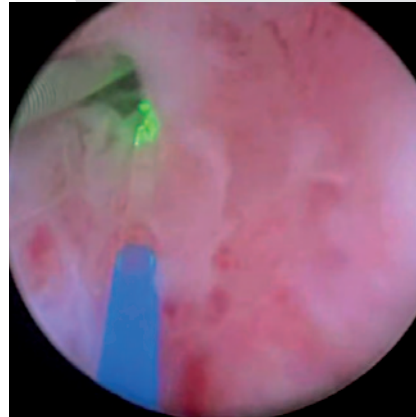
While a maximum thermal effect leads to the desired, pronounced hemostasis in the treatment of many patients, this thermal effect may be too pronounced or even result in undesirable side effects in other cases. With the help of the newly developed Cool Cut® system, the thermal effect can be reduced in stages for optimum adaptation to the respective situation.

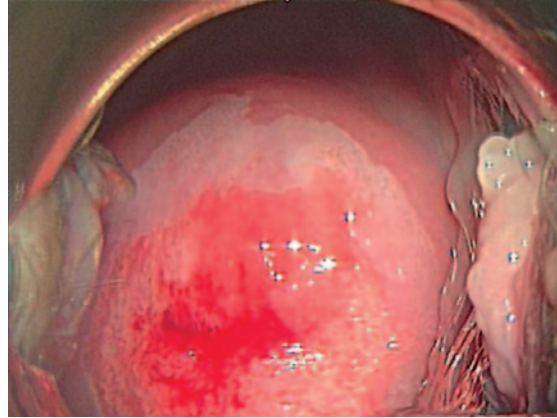


Urology

Numerous application possibilities for endoscopic, laparoscopic and open operating methods are supported in urology:

- Opening strictures
- Bladder neck incisions
- Operative therapy of urogenital tract tumors from the kidney to the bladder
- Kidney tumors
- Condylomas
- Radical prostatectomy
- Partial kidney resection (open and laparoscopic)





Gynecology

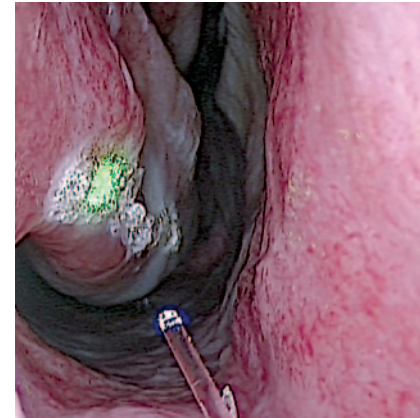
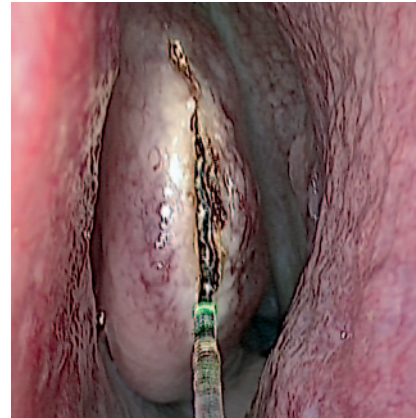
Application flexibility allows the laser to be used in gynecology, in areas that were previously unreachable for anatomical reasons due to the mirror arm of the CO₂ laser. The unique properties of the 1.9μm wavelength expand the range of therapy options for:

- Endometriosis (open/laparoscopic)
- Portioectomy
- Adhesiolysis
- Excision of polyps and tumors
- Condylomas

ENT

Precision and defined hemostasis reduce operating times and expand the therapy spectrum:

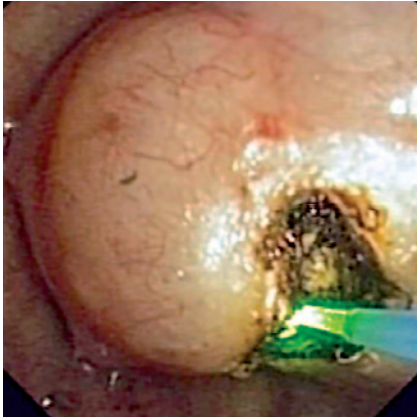
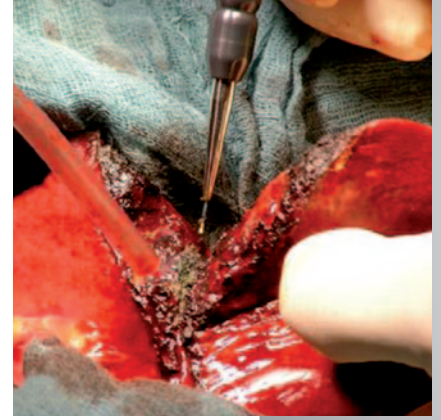
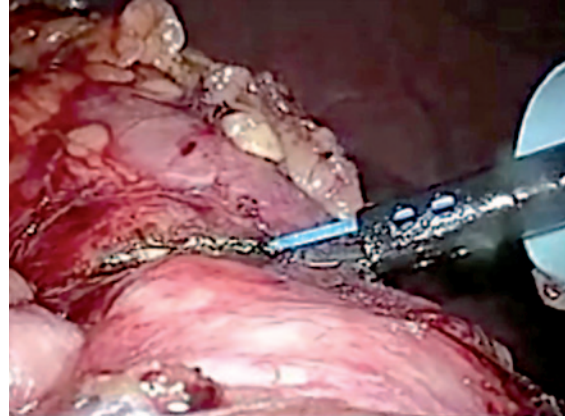
- Nasal concha hyperplasia
- Polyps
- Contactless incision of synechia
- Tumor excision
- Tonsillectomy
- Oral surgery



Surgery

The vela® OI laser system supports operations with minimal bleeding in laparoscopy applications. Complications are reduced and the operating time is shortened. Open operations can also be performed precisely and with minimal bleeding. The disadvantages of conventional techniques (e.g. the flow of current with HF) are therefore eliminated.

- General laparoscopic operations
- Partial liver resection
- Excision of lung tumors



Pneumology

The defined effect of the 1.9 μ m wavelength permits precise operating in the vicinity of sensitive structures without damaging them.

- Airway recanalization
- Coagulation of tissue
- Benign and malignant malformations
- Exposure and removal of ingrown endobronchial stents

Physician and patient benefits

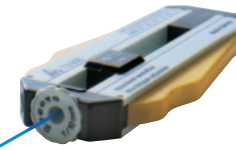
Physician

- ✓ Universal and interdisciplinary cutting and coagulation laser
- ✓ Efficient and time-saving treatment thanks to optimum wavelength
- ✓ Adjustable from 1 watt for high-precision work
- ✓ Optimized hemostasis through defined optical penetration depth
- ✓ Control of thermal effect with the CoolCut® function
- ✓ Practical, highly flexible fibers
- ✓ Compatible with common robotic surgical systems
- ✓ Intuitive user guidance
- ✓ Green aiming beam for optimum contrast on the tissue
- ✓ Handy desktop design (cart available as an option)
- ✓ Low noise system
- ✓ Minimal maintenance

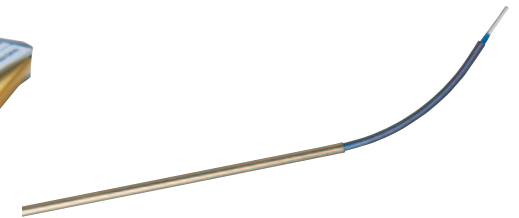
Patient

- ✓ Low-impact, safe treatment
- ✓ Minimally invasive treatment strategy
- ✓ Short hospital stay, quick recovery
- ✓ Low postoperative pain
- ✓ Good cosmetic result with minimally invasive therapy

Accessories



Fiber stripper



Flexible applicator LightTrail® Grip flexible



LightTrail® fiber for flexible ureterorenoscope



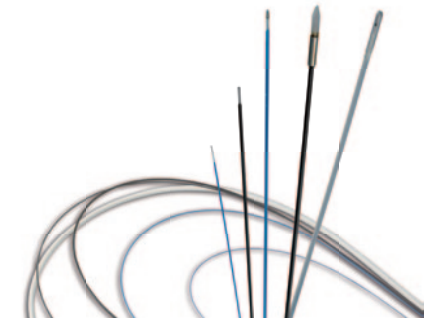
Fiber holder and diamond cutter



LightTrail®, disposable and reusable



LightTrail® side-fire and LightTrail® LITT




LightTrail® fiber for rigid ureterorenoscope

Laser data	
Laser type	Thulium laser
Wavelength	1.9µm
Output (max.)	1 – 30W
Pulse duration	1msec – cw
Aiming beam, green	532nm, < 1mW, can be fine-tuned
Device data	
Mains supply	100 – 240V 50Hz, 100 – 220V 60Hz, max. 10A (max. 1kW)
Display	WVA color display (wide view angle), touch screen
Cooling	Maintenance-free air cooling – plug and play
Dimensions (WxDxH)	51cm x 51cm x 23.5cm
Weight	20kg
Fibers	150 – 800µm LightTrail® (bare fiber, side-fire fiber)
Standards and regulatory approvals	
Protection class	1, type CF
Laser class	4
Regulatory approval	Class IIb according to Medical Device Directive 93/42/EEC
EMC class (CISPR)	Class B
Quality management	DIN EN ISO 13485



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