

ENT

Minimally invasive
laser therapies in ENT



- Precision
- Excellent hemostasis
- Multi-purpose and versatile

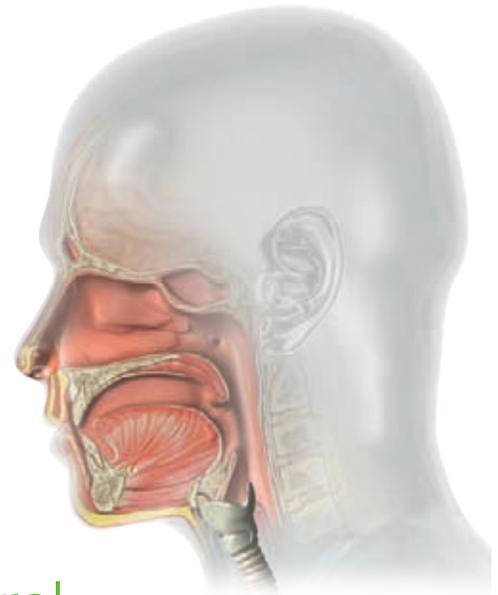


Laser solutions for outpatient ENT surgery

The biolitec® laser and fiber systems have a compact, maintenance-free design for effective and safe use in ENT surgery. Specifically developed for various applications, this sophisticated system offers a wide range of possibilities for minimally invasive laser therapy of ear, nose and throat ailments. Whether in the OR, in out-patient clinic or in private practice - the range of applications can be extended according to individual requirements.

Effective, precise, minimally invasive with dedicated solutions in the following areas:

- Endonasal surgery
- Oropharynx
- Dacryocystorhinostomy (DCR)
- Otology
- Larynx
- Pediatrics

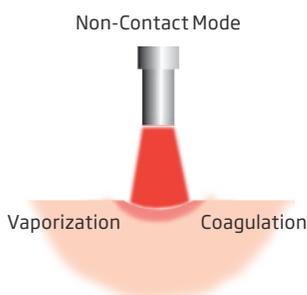
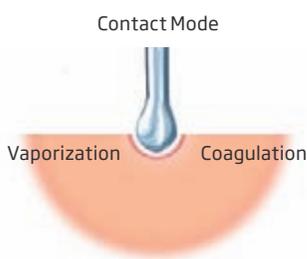


Significantly better hemostasis and control

The wavelength of 980 nm has a high absorbance in hemoglobin whereas the 1470 nm has a high absorbance in water. The thermal penetration depth of the Leonardo DUAL Laser therefore can be adjusted to the needs of the particular ENT application by just a finger tip. This allows safe and precise procedures to be performed close to delicate structures while protecting the surrounding tissue. Compared to the CO₂ laser, this special wavelength set exhibits a significantly better hemostasis and prevents bleeding during the operation, even in hemorrhagic structures such as nasal polyps and hemangioma. With the biolitec® Leonardo DUAL laser system, precise excisions, incisions and vaporization of hyperplastic and tumorous tissue can be performed effectively with almost no side effects.

Advantages

- Microsurgical precision
- Tactile feedback from the laser fiber
- Minimal bleeding, optimal in situ overview during the operation
- Few post-operative measures required
- Short recovery period for the patient



Applications

- Turbinate hyperplasia
- Septal spur, septal deformation
- Epistaxis, Morbus Osler
- Synechias, stenoses in endonasal structures
- Concha bullosa
- Paranasal surgery
- Polyposis nasi et sinuum
- Cysts, mucoceles
- Tonsillotomy
- Laser assisted Uvulopalatoplasty (LAUP)
- Partial glossectomy
- Tumor vaporization

Ambulatory treatment

Endo Nasal surgery

Endoscopic surgery is an established, modern process in the treatment of nasal and paranasal sinuses. However, due to the strong bleeding tendency of the mucosal tissue, surgical treatment in this area is often challenging. A poor operating field of vision due to bleeding often results in imprecise work; prolonged nasal packing and significant patient and doctor effort is usually unavoidable. The main imperative in endonasal surgery is to maintain the surrounding mucosal tissue as much as possible. Due to ideal laser-tissue interaction of wavelength 980 / 1470 nm, adjacent tissue is protected optimally. This leads to rapid reepithelialisation of bone areas that had been opened up. As a result of the good hemostatic effect, precise procedures can be undertaken with a clear view of the operating area. Using the fine and flexible biolitec® optical laser fibers with core diameter of min. 400 µm, optimal access to all nasal areas is guaranteed.

Advantages

- Microsurgical precision
- Minimal post-operative swelling of tissue
- Bloodless operation
- Clear view of operating field
- Minimal operative side effects
- Outpatient operation possible under local anesthesia
- Short recovery period
- Optimum preservation of surrounding mucosal tissue



Oropharynx

One of the most frequent operations in the oropharynx area is laser tonsillotomy in children (Kissing Tonsils). In pediatric symptomatic tonsillar hyperplasias, LTT represents a sensible, gentle and very low risk alternative to tonsillectomy (children up to 8 years of age). The risk of post-operative bleeding is minimal. The minimal amount of post-operative pain thanks to the shortened period of healing, the ability to perform out-patient operations (with general anesthesia) and the leaving behind of a tonsillar parenchyma are significant advantages of laser tonsillotomy. Laser-assisted Uvulopalatoplasty (LAUP) can be performed for snorers using the biolitec® system. Due to the ideal laser-tissue interaction, tumor or dysplasias can be removed bloodlessly while keeping the adjacent tissue unaffected. A partial glossectomy can only be done under general anesthesia in a hospital operating room.

Advantages

- Outpatient operation possible
- Minimally invasive, bloodless procedure
- Short recovery time with little post-operative pain



Dacryocystorhinostomy (DCR)

Hindered drainage of tear fluid, caused by a blockage of the lacrimal duct, is a common condition, particularly amongst older patients. The traditional treatment method is to surgically reopen the lacrimal duct externally. However, this is a lengthy, difficult procedure associated with a high potential for side effects such as strong, post-operative bleeding and scar formation. biolitec® has developed a procedure kit for DCR that makes the reopening of the lacrimal duct a safer, minimally invasive procedure. The thin cannula with its atraumatically shaped mandrel is introduced once in order to perform the treatment painless and bloodlessly. Then, the required drainage is set in place using the same cannula. The procedure can be done under local anesthesia and leaves no scars.

Advantages

- Atraumatic procedure
- Limited complications and side effects
- Local anesthesia
- No post-operative bleeding or oedema formation
- No infections
- No scars



Clinical applications

Otology

With its extremely thin laser fiber (core diameter: 360 μm), the biolitec® laser system can be used safely and very precisely on delicate structures in the inner ear using the contact method. In contrast to the CO₂ laser using the open beam method, this method almost completely eliminates the risk of laser energy inadvertently affecting other areas. The laser energy is only applied upon laser contact with the target tissue and in very short impulses, resulting in the absorption of all of the laser energy immediately at the tip of the fiber. The thermal damage depth is thus at a minimum. Laser paracentesis is a minimally invasive bloodless operation which has the advantage of the opening in the eardrum made by the laser remaining open for about 3 weeks. The healing process is much shorter.

Larynx

The main imperative in surgical treatments in the larynx area is to avoid significant scar formation and undesired tissue loss since this can significantly affect phonetic functions. The pulsed diode laser application mode is used here. This way, the thermal penetration depth can be further reduced; tissue vaporization and tissue resection can be executed precisely and in a controlled manner, even on sensitive structures, while optimally protecting the surrounding tissue. Main indications: Vaporization of tumors, papilloma, stenosis and removal of vocal cord polyps.

Pediatrics

In pediatric procedures, surgery often involves very narrow and delicate structures. The biolitec® laser system offers considerable advantages. Using extremely thin laser fibers, such as in connection with a microendoscope, even these structures can be easily reached and precisely treated. For example, recurrent papiloma, a very common indication in children, becomes a bloodless and painless operation, with postoperative measures being significantly reduced.



LEONARDO®

Model	LEONARDO® DUAL 45
REF	SL980 + 1470 nm 45 W
Wavelength	980 nm and 1470 nm
Power	max. 45 Watt (1470 nm / 15 Watt + 980 nm / 30 Watt) separately adjustable
Fiber diameter	≥ 360 µm
Aiming beam	532 nm and 635 nm, green 1 mW, red 4 mW, user controlled intensity
Treatment mode	CW, Pulse Mode, ELVeS® Signal, ELVeS® Segment, Derma Mode
Pulse duration/-break	0.01 – 60 sec / 0.01 – 60 sec
Power supply	110 – 240 VAC, 50 / 60 Hz, 450 VA
Dimensions (H × W × D)	approx. 28 cm × 37 cm × 9 cm
Weight	approx. 8.5 kg

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



Fibers

Bare Fibers Flat Tip Length

REF	Product	PU*	length [m]	OD Ø [mm]
503200740	Bare Fiber 600 µm, IC	5	2.5	0.96
503200315	Reusable Bare Fiber 600 µm, Flat Tip, IC (1 × 3 months)	5	3	0.95
503201919	Reusable Bare Fiber 600 µm, Flat Tip, IC (10 × 12 h)	5	3	0.95
503201921	Reusable Bare Fiber 600 µm, Flat Tip, IC (10 × 1 h)	5	3	0.95

Kits

503300625	DCR Procedure Kit, IC	5	2.6	2.0
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Handpieces and Instruments

REF	Single Use Product	PU*	ID
400100300	Laser surgical handpiece 9 cm with suction channel REF S165**	25	1.1
400100310	Laser surgical handpiece Larynx 20 cm with suction channel REF S165**	25	1.1
400100320	Laser surgical handpiece Pharynx 12 cm with extended angled tip REF S285**	25	1.1
	Reusable Product		
AB1326-1	Offset – Rigid 10 cm, 16 ga REF 9132***	1	1.1
AB1321-1	Curved – Rigid 11 cm, 16 ga REF 9123***	1	1.1
AB1319-1	Straight – Rigid 11 cm for 600 – 800 u Fibers REF 9113***	1	1.1
AB1481-1	Straight – Rigid 5 cm, 16 ga REF 9112***	1	1.1

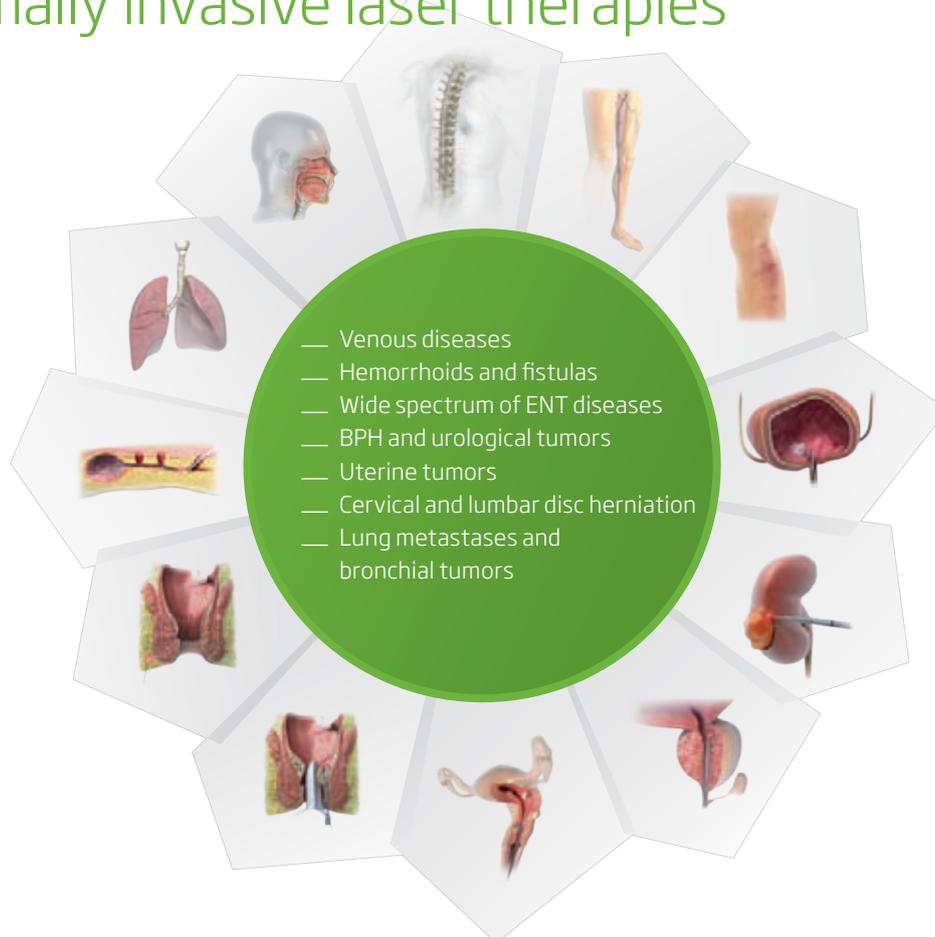
Accessories

500200980	Set of ceramic Scissors + Stripping Tool	1
LA1371	Laser safety goggle 950 – 1010 L4 + 1470 L2 (FULL)****	1

* Packaging unit ** Manufacturer: Single Use Surgical Ltd. Barnsley, UK *** Manufacturer: TTI Medical, San Ramon, USA
**** Manufacturer: Honeywell Safety Products, USA

Contact us

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



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fibers are single use products (unless
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immediate use.