

EVOLVE™

in ENT surgery



The laser system to expand your range of applications

bio[®]
LITEC
biomedical technology

www.biolitec.de

EVOLVE™

**represents evolution, development
and genesis**

Procedure

EVOLVE™ is an innovative diode laser system with a compact, maintenance-free design for effective and safe use in ENT surgery. Specifically designed for various applications, this sophisticated system by Biolitec offers a wide range of possibilities for minimally invasive laser therapy of ear, nose and throat ailments.

Useful in the OR, out-patient clinic and in private practice: You will be able to expand your range of applications individually according to your individual requirements.

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

Endonasal surgery

Paediatrics

Oropharynx

Dacryocystorhinostomie (DCR)

Otology

Vascular lesions

Larynx

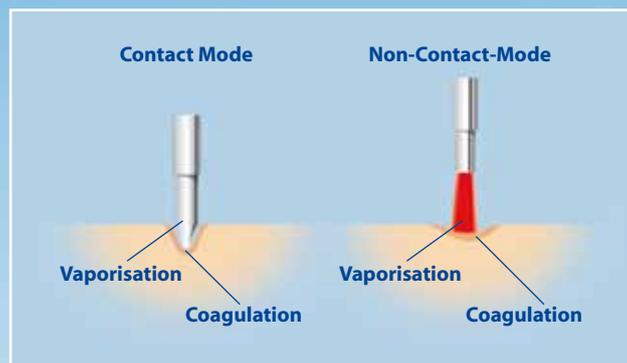
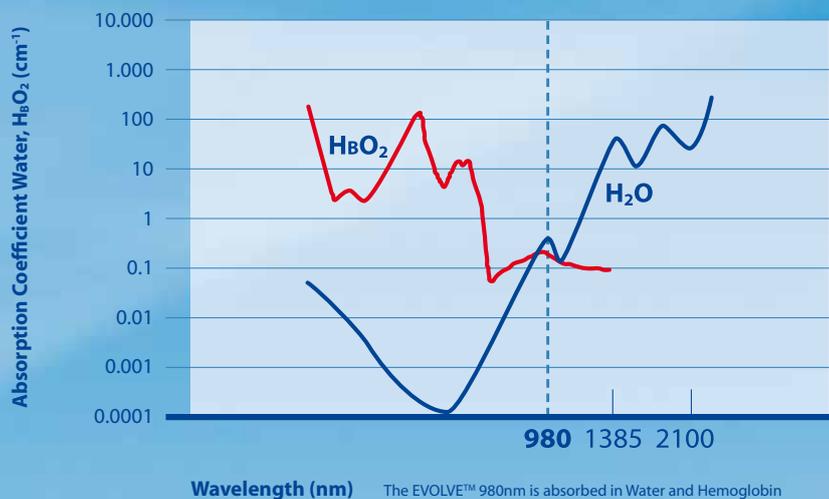
Treatment of tumors

Laser-tissue interaction of the in the EVOLVE™ system

The wavelength of 980nm has a high absorbance in water and haemoglobin. The thermal penetration depth is less than in the Nd:YAG laser. 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 exhibits a significantly better haemostasis and prevents bleeding during the operation, even in hemorrhagic structures such as nasal polyps and haemangioma.

With the EVOLVE™ system, precise excisions, incisions and vaporisation of hyperplastic and tumorous tissue can be performed effectively with next to no side effects.

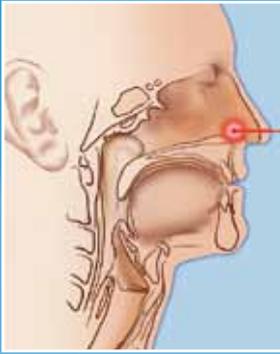
Absorption spectrum



The 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*

EVOLVE™ diode laser system applications that can be carried out on an out-patient basis under local anesthesia



Areas of application:

- Nasal muscular hyperplasia
- Septal spur, septal deformation
- Epistaxis, Morbus Osler
- Synechias, stenoses in endonasal structures
- Concha bullosa
- Paranasal surgery
- Polyposis nasi et sinuum
- Cysts, mucoceles

Endonasal 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 the ideal laser-tissue interaction of the 980nm wavelength, adjacent tissue is protected optimally. This leads to rapid re-epithelialisation of bone areas that had been opened up.

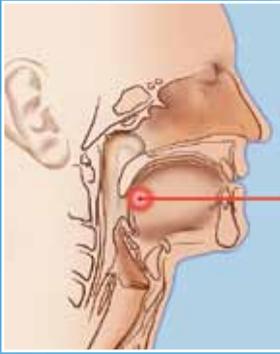
As a result of the good haemostatic effect, precise procedures can be undertaken with a clear view of the operating area. Using the fine and flexible biolitec optical laser fibers with core diameters of up to 220µm, optimal access to all nasal areas is guaranteed.

The 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

Application accessories:

- Laser handpiece set with applicators in various shapes and lengths (autoclavable)
- Dual-channel handpiece with additional channel for smoke ventilation (autoclavable)
- Laser fibers of various diameters (220µm - 600µm), compatible with all commercially available laser endoscopes



OROPHARYNX

One of the most frequent operations in the oropharynx area is laser tonsillotomy in children (KISSING TONSILS). In paediatric symptomatic tonsillar hyperplasias, LTT represents a sensible, gentle and very low risk alternative to tonsillectomy (children up to 6 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 anaesthesia) and the leaving behind of a tonsillar parenchyma are significant advantages to laser tonsillotomy.

Laser-assisted uvulopalatoplasty (LAUP) can be performed for snorers using the EVOLVE™ system.

Due to the ideal laser-tissue interaction, tumours or dysplasias can be removed bloodlessly while keeping the adjacent tissue unaffected.

A partial GLOSSECTOMY can only be done under general anaesthesia in a hospital operating room.

Areas of application:

- Tonsillotomy
- Laser assisted Uvulopalatoplasty (LAUP)
- Partial glossectomy
- Tumour vaporisation

The advantages:

- Outpatient operation possible
- Minimal invasive, bloodless Procedure
- Short recovery time with little postoperative pain

Application accessories:

- Laser handpiece set with applicators in various shapes and lengths (autoclavable)
- Dual-channel handpiece with additional channel for smoke ventilation (autoclavable)
- Laser fibers of various diameters (220µm - 600µm), compatible with all commercially available laser endoscopes

y treatment



Dacryocystorhinostomie (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 patented application set 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 pain-free 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.

The advantages:

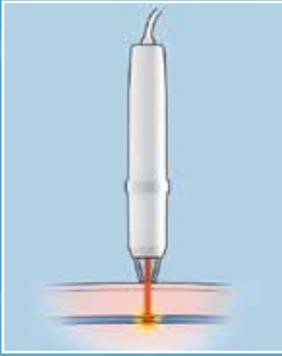
- *Atraumatic procedure*
- *Limited complications and side effects*
- *Local anesthesia*
- *No post-operative bleeding or oedema formation*
- *No infections*
- *No scars*

Application accessories:

Special DCR handpiece set, consisting of:

- *Intubation handpiece (patented)*
- *Laser fiber 220µm or 360µm*
- *DCR handpiece for endonasal access, compatible with all commercially available laser endoscopes*

Ambulatory



Vascular lesions, haemangioma

With the powerful EVOLVE™ system, aesthetically undesirable vascular lesions such as spider veins and telangiectasias can also be effectively treated. A focusing handpiece and a special Derma mode of the biolitec Laser is used for transcutaneous treatments.

Larger cavernous haemangioma should be treated interstitially. Following puncture using a thin cannula, the laser fiber is introduced and the haemangioma is coagulated at low laser energy in a controlled manner.

Areas of application:

- *Telangiectasia*
- *Spider nevi*
- *Haemangioma*



before



after

Telangiectasia



before



after

Lip haemangioma

y treatment

The advantages:

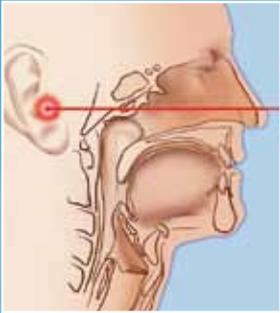
- *Painless treatment, usually no anesthesia required*
- *Good aesthetic result, often after a single treatment*
- *Minimal side effects*

Application accessories:

Laser handpiece for the treatment of vascular malformations:

- *3 different Spot diameters: 0.6mm, 1.0mm, 1.5 mm*
- *Narrow, ergonomically designed grip for precise guidance of the laser beam*
- *High-quality lens optics for homogeneous energy distribution in the laser spot*

EVOLVE™ diode laser system applications that can be carried out on an out-patient basis under general anesthesia in the hospital operating room



Areas of application:

- Stapedectomy
- Myringotomy (Paracentesis)

Otology

With its extremely thin laser fiber (220µm), the EVOLVE™ 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.

Application accessories:

- Laser handpiece set with applicators in various shapes and lengths (autoclavable)
- Laser fibers of various diameters (220µm - 600µm), compatible with all commercially available laser endoscopes



Areas of application:

- Papilloma
- Laryngeal cancer
- Strictures
- Cordectomy
- Arytenoid cartilage vaporisation
- Epiglottectomy

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 vaporisation and tissue resection can be executed precisely and in a controlled manner, even on sensitive structures, while optimally protecting the surrounding tissue.

Application accessories:

- Flexible larynx handpiece with a length of 30 cm (autoclavable)
- Special larynx handpiece with additional channel for smoke ventilation (autoclavable)
- Laser fibers of various diameters (360µm - 600µm), compatible with all commercially available laser endoscopes

plications

**Areas of application**

- Haemangioma
- Congenital and acquired laryngeal stenosis
- Neoplastic stenosis
- Laser eustachian tuboplasty (LETP) with a special micro-endoscope

Paediatrics

In paediatric procedures, surgery often involves very narrow and delicate structures. The EVOLVE™ system offers considerable advantages. Using extremely thin laser fibers, such as in connection with a micro-endoscope, even these structures can be easily reached and precisely treated. For example, recurrent papilloma, a very common indication in children, becomes a bloodless and painless operation, with post-operative measures being significantly reduced.

Application accessories

- Laser handpiece set with applicators in various shapes and lengths (autoclavable)
- Dual-channel handpiece with additional channel for smoke ventilation (autoclavable)
- Laser fibers of various diameters (220µm - 600µm), compatible with all commercially available laser endoscopes and micro-endoscopes

EVOLVE™

ENT diode laser – a dedicated system for gentle treatment in ENT surgery

The EVOLVE™ complete system by biolitec offers unique advantages:

- Special software for surgical and transcutaneous applications
- 220µm fiber to be used for microsurgical applications (only 15 watt system)
- Moving system table with drawer and integrated cable channel
- Rapid setup and simple operation via touch screen
- Low running expenses
- Reliable diode technology; maintenance-free
- Compact, portable and ideal for use in clinics and operating rooms
- Standard power connection
- Attractive optional extensions of warranty period available

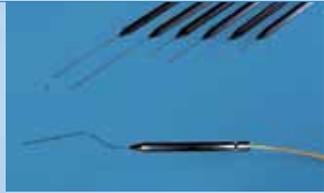
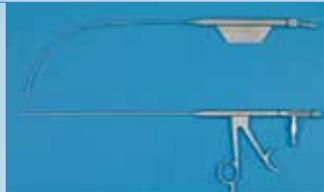


Specifications

Wavelength	980 nm
Optical output	15 watts or 30 watts at the distal end of the optical fiber (7.5 watts with a 220µm fiber)
Pilot beam	635nm, continuously adjustable brightness, max. 4 mW
Operating modes	continuous-wave (cw) or pulsed, Derma-mode
Pulse length / interval	0,01 – 100 sec
Dimensions	22cm x 26cm x 38cm (HxBxT)
Weight (less carrying case)	7,5 kg
For vein treatment extendable	

Accessories

Handpieces and laser probes

Accessories	Item No.	Description	
Endo nasal Surgery Oropharynx Otology Paediatrics	500 200 008	Standard handpiece set, curved, straight, offset, autoclavable	
	AB 1932	Dual-channel handpiece with integrated smoke ventilation (autoclavable)	
Larynx	AB 2122	Rigid 30 cm long handpiece with integrated smoke ventilation, autoclavable	
	AB 2099	Flexible handpiece, 30 cm, autoclavable	
DCR	501 300 625	DCR Procedure kit (Bare Fiber WF360MDF35DL, Needle 22 G)	
	501 200 756	CERALAS Bare fiber BFF 603 DL-750	
	AB 1983	Handpiece reusable, black	
Laser Fiber	501 201 740	CERALAS Bare Fiber BFF 603 DL ENT, Single Use	
	501 201 910	CERALAS Standard Bare Fiber BFF 603 DL ENT, Multi Use	
	501 201 911	CERALAS Premium bare Fiber BFF 603 DL ENT, Multi Use	

Training und After-Sales Support

biolitec products are sold worldwide through an extended network of subsidiaries and exclusive distributors. Regular application training and information events are held at training centres with cooperating reference physicians.



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