Thoracic Surgery and Pulmonology

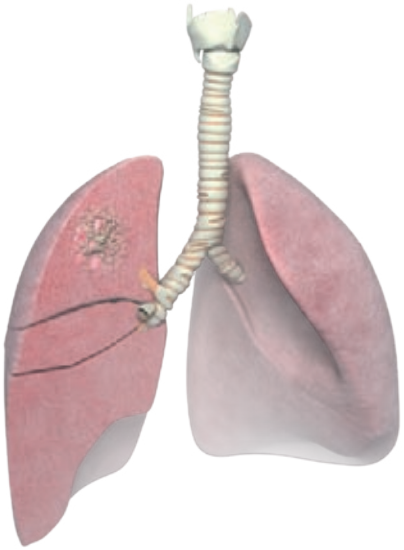
Minimally invasive laser surgery for lung metastases and bronchial tumors

- Precision
- Minimal loss of parenchyma
- Coagulation and sealing

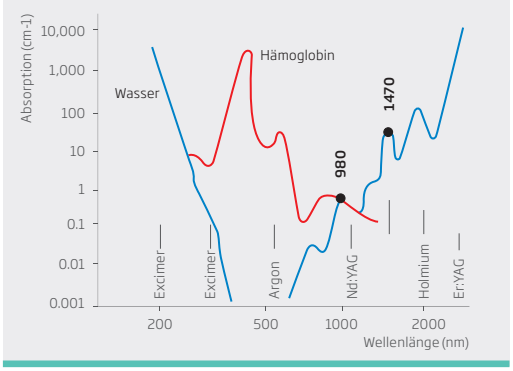
Laser technology for thoracic surgery and pulmonology

The use of laser technology in thoracic surgery has proven to be clinically effective and beneficial for the patient. During the last decades, laser development with modern semiconductor technology has demonstrated excellent performance with wavelengths in the range of 1318–1350 nm. This laser wavelength has proven ideal for parenchymal tissue (lungs and kidney).

biolitec® has followed its tradition of developing new minimally invasive treatment methods to join the proven results of the 1350 nm laser. By combining the dual wavelength mixture of 980 nm and 1470 nm, a new clinical approach with supurb intra-operative efficiency and excellent post-operative outcome has resulted. The dual wavelength diode laser system is characterized by high economic efficiency and reliability with high quality fiber optic fibers to provide secure and cost-efficient care for patients by the medical specialists.



Highly developed diode laser technology from biolitec®



DUAL wavelength 980 + 1470 nm – new approach and progress in thoracic surgery

Why?

LEONARDO® DUAL wavelength diode lasers offer a combination of advantages. The 980 nm wavelength provides equal light absorption in both hemoglobin and water which offers an excellent coagulation effect. The 1470 nm wavelength is highly absorbed in water to generate an excellent cutting and vaporization.

The LEONARDO® DUAL 100-watt laser allows the clinician to direct a laser beam with mixed wavelengths onto or into lung tissue that has very high water content awnd low density. Users are able to observe that the laser achieves high ablation rates in the lung and tumor tissue with a simultaneously low and elastic coagulation zone to minimize post-operative side effects.

The diode laser device with proven long-term wavelengths 1350 nm for the minimally invasive laser surgery in the thorax region is alternatively available.

Advantages

- Simultaneous cutting and coagulation
- Sealing properties for a smooth tissue surface
- Parenchyma and lung lobe preservation
- Deep and centrally positioned metastases can be uncovered
- Follow-up treatment possible in recurring metastases
- Precise resection of multiple metastases in only one procedure
- Best hemostasis
- Post-operative drains can be removed shortly after the treatment

Applications

Examples of open surgery and laser-supported VATS / Uniportal VATS (video assisted thoracoscopic surgery)

- Metastasectomy
- Vaporization of tumors
- Wedge excision of lung tissue
- Resection of multiple and deep lung metastases
- Recurring metastases and tumors
- Hemostasis and fistula sealing
- Adhesiolysis
- Tissue resection for histological examination

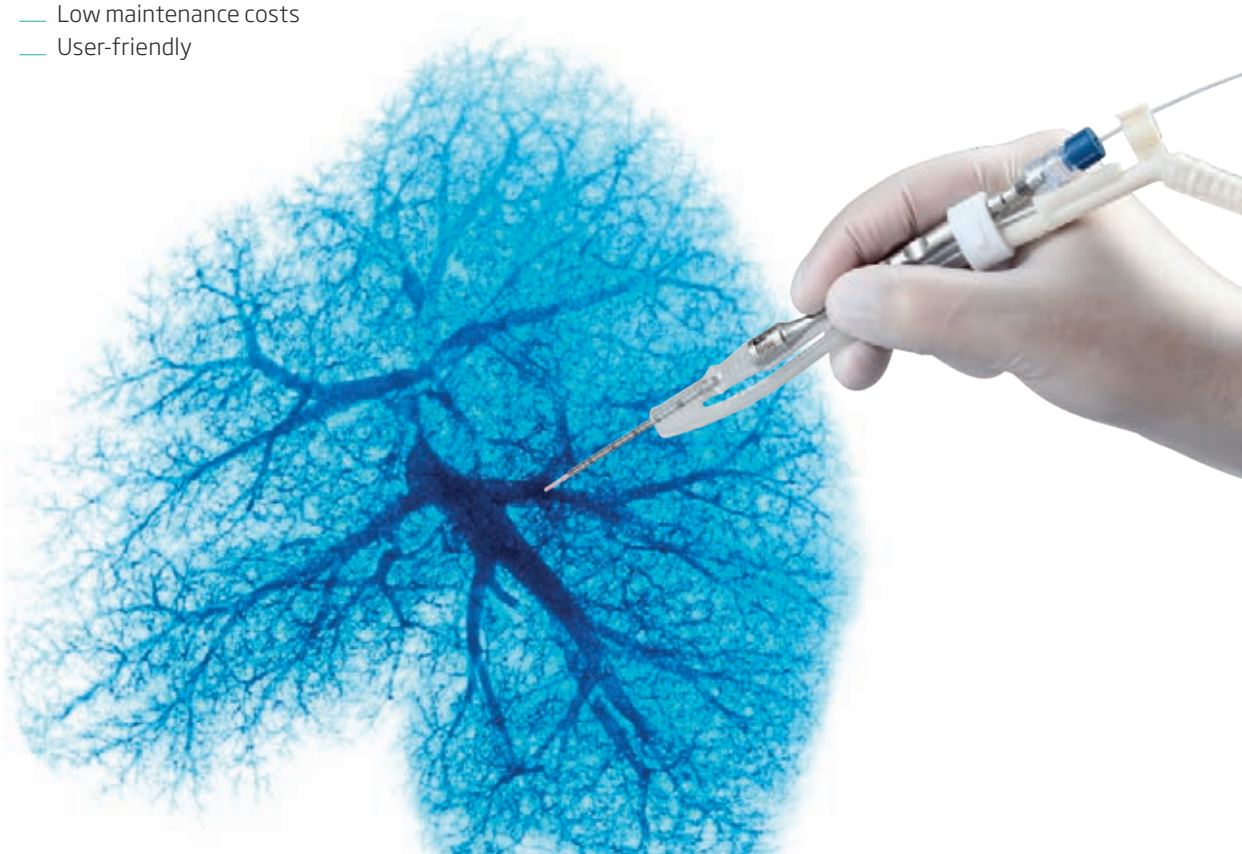
Pulmonology

- Coagulation and ablation of endobronchial tumors and stenosis
- Removal of bronchial obstruction and fistulas
- Separation of tracheal stenoses
  (treatments can be performed with rigid or flexible endoscopes)

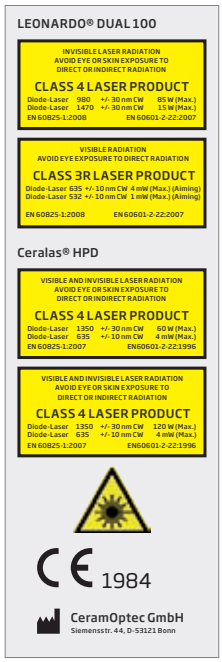
biolitec® Laser Systems

Advantages

- Multi-disciplinary use for numerous surgical applications
- Simple set-up (no additional external cooling or high voltage necessary)
- Reliable diode technology
- Low maintenance costs
- User-friendly



biolitec® Laser Systems



Model	LEONARDO® DUAL 100	LEONARDO® DUAL 45	Ceralas® HPD
REF	SL980+1470nm100W	SL980+1470nm45W	SH1350nm60W400u
Wavelength	980 nm and 1470 nm	980 nm and 1470 nm	1350 nm
Performance	max. 100 Watt (1470 nm / 15 Watt + 980 nm / 85 Watt), individually adaptable	max. 45 Watt (1470 nm / 15 Watt + 980 nm / 30 Watt), individually adaptable	60 Watt
Fiber diameter	≥ 360 µm	≥ 360 µm	≥ 400 µm
Laser class	4	4	4
Target beam	532 nm and 635 nm, green 1 mW, red 4 mW, user-defined intensity	532 nm and 635 nm, green 1 mW, red 4 mW, user-defined intensity	635 nm +/- 30 nm; PWM 4 mW (max.)
Treatment mode	CW, Pulse Mode, ELVeS® Signal, ELVeS® Segment, Derma Mode	CW, Pulse Mode, ELVeS® Signal, ELVeS® Segment, Derma Mode	CW, Pulse Mode
Impulse length/-pause	0.01 – 60 sec / 0.01 – 60 sec	0.01 – 60 sec / 0.01 – 60 sec	variabel 0.01 – 99.9 sec or continuously
Energy supply	110 – 240 VAC, 50 / 60 Hz, 600 VA	110 – 240 VAC, 50 / 60 Hz, 450 VA	100 – 240 VAC, 50 / 60 Hz, 400 VA
Cooling	–	–	Air cooled System
Measurements (H × W × D)	approx. 28 cm × 37 cm × 9 cm	approx. 28 cm × 37 cm × 9 cm	approx. 30 cm × 60 cm × 30 cm
Weight	approx. 8.5 kg	approx. 8.5 kg	approx. 30 kg

Fibers

Bare Fibers Flat Tip

REF	Product	Length [m]	Core ø [µm] / [Fr]	AD ø [µm] / [Fr]
503200745	Bare Fiber 600 µm, Flat Tip, Adj. Luer, ID (1 × 6 h)	3	565 / 1.7	860 / 2.6
503300415	Bare Fiber 1000 µm, Flat Tip, Adj. Luer, ID (1 × 6 h)	2.6	945 / 2.9	1400 / 4

Gas Liquid Cooled Fibers

503200525	GLC 180 Gas-, Liquid Cooled fiber, ID (1 × 6 h)	3	565 / 1.7	1800 / 5.4

Handpieces and Instruments

501200985	Laser Focus Handpiece
500400370	Instrument for Thoracoscopy, with smoke suction adapter, for 600 – 1000 µm fibers
400100100	Universal Dual Luer Handpiece, for 600 – 1000 µm fibers

Accessories

MP0003	Kartwagen Leonardo Laser
LA1371	Laser safety goggles DIR 804 – 1755 L3 (FULL), type: basket, clear
LA5165	Sticker Laser warning 20 × 20 cm
400100115	Medi Strip 0.7 / 1.2 BF 600 µm, autoclavable – Fiber stripper for BF 600 µm
400100120	Medi Strip 1.0 / 1.5 BF 1000 µm, autoclavable – Fiber stripper for BF 1000 µm
AB1908	Touhy Borst Adapter
AB2594	Biopsy needle 14 G, 6 cm with cm markings, sterile

Flue Gas Exhaustion

MP0025	Smoke evacuation FUMOVAC 700 Comlete unit 220/240 V 50/60 Hz / HM57525420
MP0026	Smoke evacuation filter for FUMOVAC 700 twin pack
MP0027	Tube set single use / holding device HP, 3m length, sterile / REF 57525332 / Packaging unit 10 pcs
MP0028	Laparoscopic Smoke Evacuation Tube, 3m length, sterile, REF 57525424 / PU.12 pcs
MP0019	ATMOS Air hose, ø 22 mm, L = 2.10 m, single use
MP0020	ATMOS Air hose, ø 22 mm, L = 2.10 m, reusable
MP0021	ATMOS Hose connector straight ø 22 mm to ø 10 mm

Contact us

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

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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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