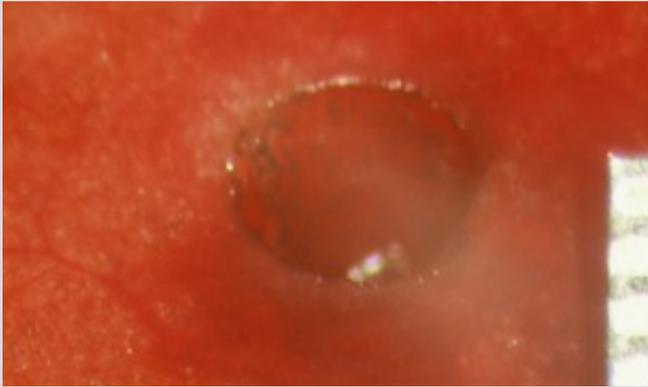


ERASER

Diode Laser 1318 nm | 150 Watt
MEDICAL LASER FOR SURGERY

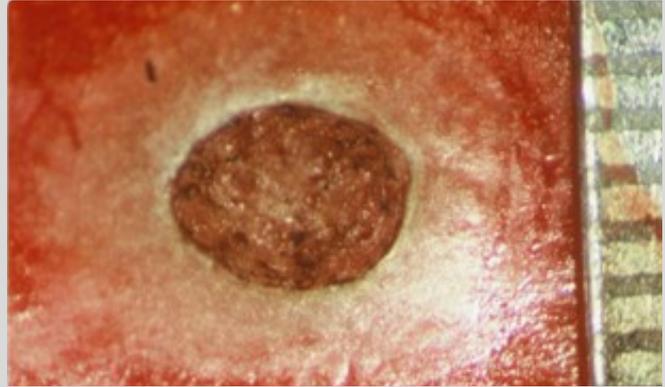


1064 nm Laser



- Poor hemostasis
- Deep penetration

ERASER



- Superior hemostasis
- Reduced penetration

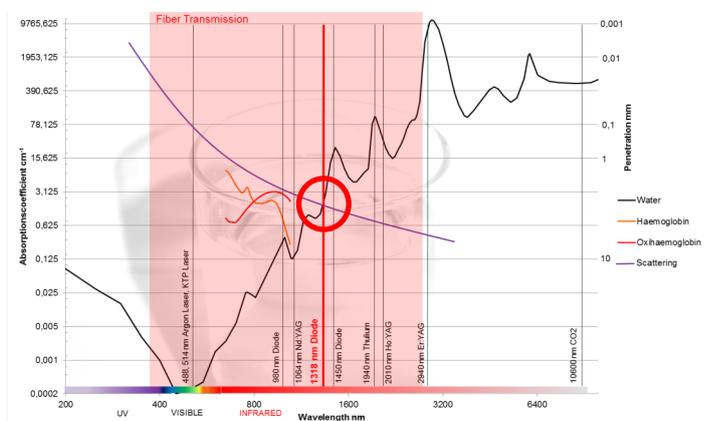
Why Laser?

Only through laser light does the opportunity arise to select very specific wave lengths and to utilise their highly specific interaction with a target tissue.

The application area of the eraser system focuses on parenchyma-like organs such as the lungs, kidneys and prostate.

These organs are characterised by a very low segmentation that makes a resection difficult from strong bleeding. They have a high degree of water, only the tissue thickness varies strongly.

The wave length of the eraser system was selected such (1318 nm) that **optimal mix of absorption and scattering arises** compared to other laser systems which, in turn, give rise to the good cutting properties and **outstanding blood coagulation and sealing performance of the eraser system.**



Areas of application

The eraser has been successfully used in surgery in various disciplines for years - this makes it a real multifunctional surgery laser that offers an outstanding return on investment.

Thoracic surgery

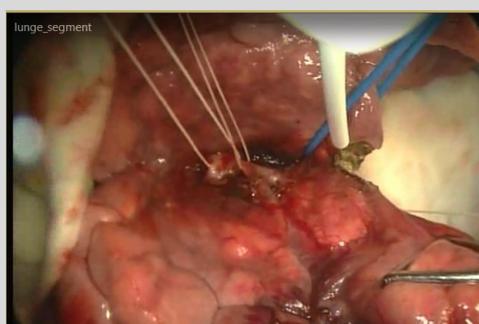
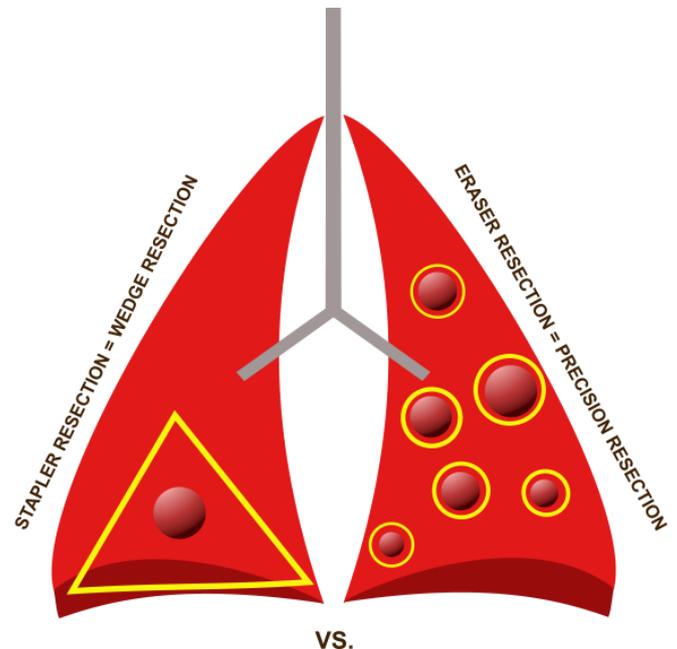
On the lungs, the eraser is the **gold standard in metastasis surgery**. It allows unmatched tissue-saving, gentle and cost-effective as well as complete removal of central and multiple tumours.

The so-called **precision resection** is preferably carried out with a sterile laser fibre in contact with the tissue at a distance of a couple of millimetres from the tumour edge. The use of a laser fibre instead of a lens hand piece and the high output rating of the laser minimise the heat exposure of the lungs and guarantee a well assessable resectate. The fibre is thereby guided like a scalpel and facilitates thanks to the direct contact with the tissue the cutting procedure in comparison with a lens hand piece. The heat occurring counteracts a tumour cell spread.

Thanks to this technique, **a large number of metastases can be removed from the lung without losing hardly any healthy tissue** and even previously inoperable patients in terms of technology can be treated in a cost-effective manner.

In addition to metastasis surgery, **benefits also arise in other parenchyma resections on the lungs**, such as segment resections. Here, an anatomical resection can be carried out with the laser that is not negatively affected by the rigid geometry of an instrument such as when bracket stitch devices are used.

See H.C. Dienemann et. al. (eds.), *Chest Surgery, Springer Surgery Atlas Series*, DOI 10.1007/978-3-642-12044-2_13, Springer Verlag Berlin Heidelberg 2015



Urology

The eraser is predominantly used in urology for minimally invasive procedures. This type of treatment is becoming increasingly common thanks to the lower death rates compared to conventional surgery methods, but makes greater demands on the instruments especially as regards blood coagulation compared to conventional surgery methods.

The eraser offers precisely this benefit: thanks to the use of flexible laser fibres it can be integrated in nearly any minimally invasive instrument and offers blood coagulation that outperforms that of other instruments thanks to its wave length.

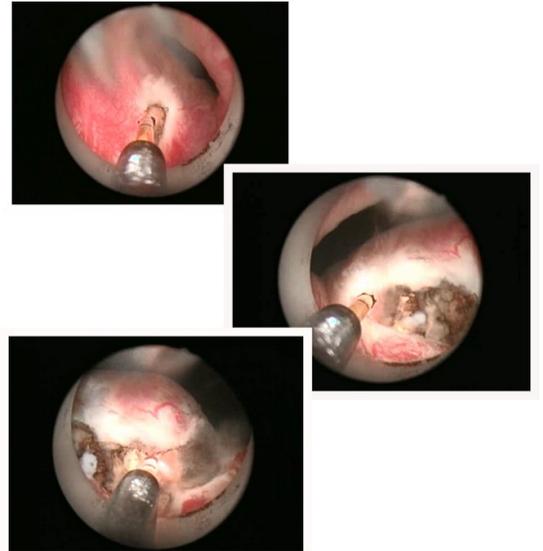
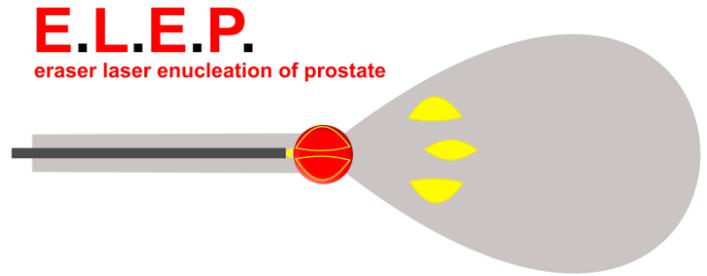
When used for enucleation of the prostate, the eraser comes with huge benefits:

- Independence from the size of the prostate to be removed,
- outstanding blood coagulation capacity, which means that patients under anticoagulation can also be treated,
- continuous release of laser light, therefore easier cutting,
- Due to the superior blood coagulation, very good layer with the final model procedure of the prostate sectate.

See Lukas Lusuardi, et. al.: Safety and Efficacy of Eraser Laser Enucleation of the Prostate: Preliminary Report; THE JOURNAL OF UROLOGY, Vol. 186, 1967-1971, November 2011

In addition, the eraser is also used very successfully for the removal of kidney tumours both in open surgery and in a minimally invasive manner. Here, blood coagulation is the key demand for the laser. At the same time, the tumours need to be removed in a careful manner and such that a minimal amount of healthy tissue is lost. Thanks to the very good blood coagulation of the eraser, these resections can be carried out with low blood losses, where applicable the ischemia period reduced and partly no ischemia is needed at all, which in turn supports the post-surgery function of the kidney .

See Wael Y. Khoder, Ronald Sroka, et. al.: The 1,318-nm diode laser supported partial nephrectomy in laparoscopic and open surgery: preliminary results of a prospective feasibility study ; Lasers Med Sci DOI 10.1007/s10103-011-0897y



KIDNEY TUMOR AFTER LASER RESECTION

Area of laser resection

OPERATION PROCEDURE - CHRONOLOGIAL

! 9 min. of ischemia !

38 mm TUMOR

PARENCHYMAL TISSUE

FAT TISSUE

BIG VESSELS

- 1 First step: laser resection along the parenchyma without ischemia
- 2 Second step: resection along kidney fat tissue during clamping of the artery with normal scissors due to big vessels under the tumor.

Due to the eraser and its special wavelength which causes good hemostasis, time of ischemia was reduced from 20 min. to 9 min.

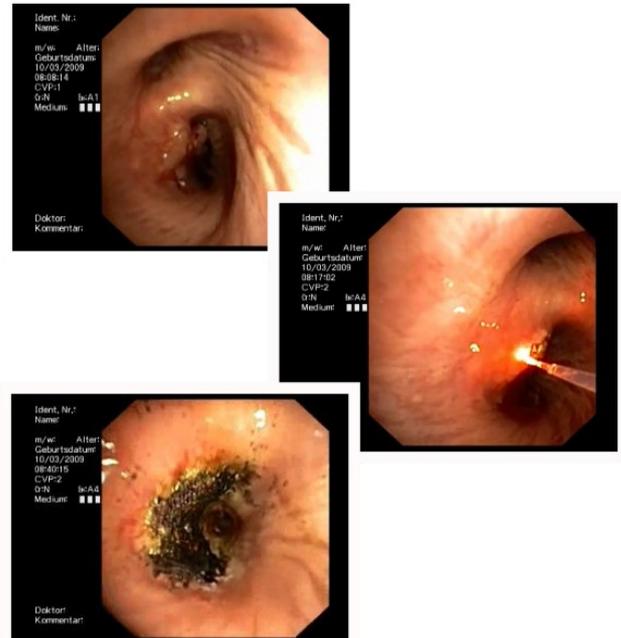
Visceral surgery

The eraser is also successfully used on the liver to remove metastases and during liver separation resections.

It enables a quick and safe cutting in particular in the parenchyma areas of the liver.

Pneumology

In pneumology, the eraser is used to remove tumours that block the respiratory tracts. Here, it offers significant benefits compared to the common argon beamer as regards speed and blood coagulation.



ERASER

Diode laser 1318 nm | 150 Watt

MEDICAL LASER FOR SURGERY



- Special wavelength for superior hemostasis
- High power output for short surgery
- Pure diode technology for highest energy efficiency
- Control via touchscreen for easy handling
- 230 Volt power supply for everywhere use
- Peltier cooling unit for long term maintenance intervals
- Electronical fiber control for best safety
- Ergonomical design for easy transport
- Integrated storage compartment for accessories

MAINLASER	
Type of laser	Diode laser
Operation type	continuous / continuous and pulsed
Wave length	1318 nm± 10 nm
Output rating (CW)	1–150 watts (1 watt levels)
Pulsed mode	Pulse duration / pause 100 ms – 10 s, Pulse energy 1-150J
Laser class	4 as per IEC 60825-1
Fibre diameter	400 / 600 µm
Divergence, numerical aperture	0.433 - 0.672 rad, 0.2 - 0.37
Focus diameter	> 400 µm
PILOTLASER	
Type of laser	Diode laser
Wave length	635 m
Output rating	5 mW
Laser class	3R as per IEC 60825-1:2007
COOLING SYSTEM	
Type	Water to air, internal, closed circuit
Cooling agent	Distiller water, glycol
System content	approx. 0.7 litres
DEVICE CART	
Dimensions (WxDxH)	413 x 471 x 896 mm
Weight	57 kg
SAFETY-RELEVANT DATA	
MDD 93/42 EEA	IIb
Protection category	1
Housing protection	IP X0
Discharge power type	BF
Nominal consumption	Type 1.7 kVA
Nominal frequency	50-60 Hz
Nominal voltage	210-240 volt
Connection type	PE, N
Fuses	F01-6A, F02-10A, F03-16A (slow trigger, output protection switch)
AMBIENT CONDITIONS	
Operating temperature, storage temperature	17°C - 30°C, 5°C - 40°C
Ambient humidity	Max. 60% relative humidity

CE 0123

CB 60601-1

