We supply the right laser for your ENT applications

DIODE  810, 980, 1064, 1470 nm
CO₂ Laser 10,600 nm
Argon green 514 nm
TruBlue
A.R.C. Laser is the synonym for laser technology, research and development “Made in Germany”. The roots of our privately held company located in Nuremberg ranges back into the long history of laser application in medicine. We work to enable healthcare professionals worldwide to enhance vision and improve lives quality of their patients. We will continue our constant growth and development within the laser sector. We operate in more than 50 countries, with almost 80 employees and represent a high power of innovation.

Today’s patient expectations are more demanding than ever. We’ve brought together an experienced team of engineers that knows how to meet and exceed patient expectations by utilizing advanced technology.

A.R.C. Laser is a technology company specialized in the development, production and sales of laser systems for ENT, Dentistry, Ophthalmology, Aesthetic Surgery, Dermatology and Phlebology.
Most clinics and surgery centers are using lasers in their daily routine. Based on our affordable diode lasers FOX/WOLF we are able to offer an inexpensive laser solution - EXPAND YOUR RANGE OF TREATMENTS. Invest in new technology for more success in your practice. Get in touch with laser technology „Made in Germany“.

Combine a wide range of lasers ranging from the brand new TruBlue over the Argon green 514 nm up to the powerful CO₂ 10.6 µm C-LAS. The A.R.C. Laser platform allows stacking multiple laser systems on top of each other. The result is a rainbow of choices and possibilities.

Angela Thyzel
CEO A.R.C. Laser
The unique benefit of a laser is its ability to have an effect on tissue without any contact at all.

WE THINK, LASER IS A MUST.

See the laser as a central tool inside your OR

In surgery we would like to use instruments to cut and coagulate at the same time.

Surrounding tissue should stay unaffected to achieve healing without visible scaring.

Sometimes there is the necessity to apply thermal effect “behind” a liquid layer, i.e. for papilloma treatment.

In some cases a total absorption in water is necessary, i.e. when treating a tumor tissue - comparable to a CO₂-Laser.
<table>
<thead>
<tr>
<th></th>
<th>TruBlue</th>
<th>FOX 514</th>
<th>FOX 980</th>
<th>C-LAS NUVOLAS</th>
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<tbody>
<tr>
<td>Papilloma</td>
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<tr>
<td>Zenker’s Diverticulum</td>
<td>😊</td>
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<tr>
<td>Carcinoma resection</td>
<td>😊</td>
<td>😞</td>
<td>😞</td>
<td>😞</td>
</tr>
</tbody>
</table>
WAVELENGTH COMPARISON

Wavelengths have own characteristics. Each one provides a unique benefit. None is like the other.

An essential feature for diode lasers is the wavelength of the laser beam. The lasers color has a great influence on the characteristics in surgical applications like for example, cuts in soft tissue.

Modern blue lasers open up a new prospective based on their intensive coupling to hemoglobin. The cutting performance compared to conventional infrared diode lasers is significantly higher without widening the coagulation zones. A significant benefit for surgeon and patient is the high efficiency of the new blue-light diode laser for mucosal incisions. It exceeds the cutting power of infrared-Lasern (810 nm – 1064 nm) compared to the same settings.

Shown here are four incisions into gingival soft tissue - under the same morphological conditions - which allows a direct comparison of the cutting efficiency (as the sole variable). The histological representations clearly show the influence of the wavelength on its cutting behavior.

On the right page side, a standardized test tube comparison with hemoglobin in liquid protein demonstrates the effects of different laser wavelengths:

Histology in Gingiva with 1.5 W CW-Mode (Diameter of the fiber = 320 µm). Source: Priv. Doz. Dr. J. Meister, University Bonn, Germany
**Truly Convincing:** TruBlue allows to cut like a CO₂ laser whilst coagulating like a KTP laser – thanks to its peak absorption in hemoglobin and its permeability in transparent liquids like water/protein.

**Convincing:** 514 nm, the first “Argon like” wavelength in a portable laser system. Effective in hemoglobin and permeable through protein.

**Convincing:** Two combinable laser systems 514 nm and CO₂ with all their benefits regards to size and manœuvrevability.
IDEAL FOR ANY CLINIC

Greater flexibility, happier patients.

Benefit from the advantage, to now perform relevant treatments in-office with a reduced effort.
In Detail: The TruBlue laser coagulating like a green KTP-laser, thanks to its high absorption in Hemoglobin. The advantage is its permeability through clear liquids like water or protein. The test tube proofs the TruBlue is a superior laser.
ENJOY MAXIMUM FLEXIBILITY

Reach treatment areas where no scalpel has gone before.

The smallest “CO$_2$ + KTP”-like laser unit for coagulation, vaporisation and bloodless surgery, with all the benefits of a razor sharp scalpel inside an extremely flexible glass fiber.

Versatility meets Efficiency
The Wolf TruBlue gives you a vast versatility in applications which no laser has reached so far. The laser is supporting a variety of fibers with 300, 400 or 600 micron, providing you with high flexibility. Advances in fiber optics have made them ideally suited for endoscopic use, to travel through routes in the human body where no hand or scalpel has gone before.
Modern fiber based lasers ease your surgery and enable ambulatory surgery to improve patient care.
Join the TruBlue revolution. We want to highlight the advantage that our TruBlue is as efficient as a CO₂ laser at even lower prices for fibers and handpieces.

**LARYNGOLOGY**
- 1) Office-based treatment with flexible endoscope
- 2) Operation in general anesthesia via handpiece
  - Papilloma ¹ ²
  - Leukoplakia, Biofilm ¹ ²
  - Reinke’s edema ¹ ²
  - Capillary ectasia ¹
  - Polyps ¹ ²
  - Dysplasia ²
  - Partial larynx resection ²

**RHINOLOGY**
- Synechia
- Bleeding, morbus osler, epistaxis, etc.
- Cutting, coagulating
- Turbinates, polyps, septum sporn

**OTOLOGY**
- Stapedotomy, Stapedectomy
- Cholesteatoma surgery
- Radiation of the wound after mechanical removal of the Cholesteatoma
- Glomus tumor
- Hemostasis

**PHARYNGOLOGY**
- Tumor resection e.g. tongue, tongue base, oral cavity, tonsils
- Uvulopalatoplasty
ADVANTAGES
TruBlue is the Revolution in Larynx and Otology:

- best coagulation for bloodless surgery
- non-contact cutting, low necrosis zone
- minimal bending radius to target any treatment area
- Lower costs of accessories and maintenance

Versatility meets Efficiency
The Wolf TruBlue gives you a vast versatility in applications which no laser has reached so far. You are also free to apply the laser in contact or non-contact mode to meet the most beneficial requirements of your desired application.

- Convincing wavelength properties and flexibility.
- Allows outpatient treatment – anywhere.
- Lower costs of accessories and maintenance.

TruBlue – Don’t call it CO₂
The shockproof and portable WOLF offers unprecedented design, size and function. Advances in fiber optics have made them ideally suited for endoscopic use, to travel through routes in the human body where no hand or scalpel has gone before.
The battery powered FOX 514 nm laser is lightweight and portable, bound to replace the KTP in Otology.

“Argon”-514 is a green wavelength, which is highly absorbed by hemoglobin. This enormous advantage is delivering precise coagulation and leaves the surrounding tissue unaffected. It is ideal for the following applications:

OTOLOGY

- Stapes
- Cholesteatoma
- Hemostases
- Micro surgery
- Myringotomy
ADVANTAGES
Green 514 nm (ARGON) is the hidden champion:

- Ideal hemostasis and vaporization
- Precise superficial coagulation
- Highly absorbed in melanin and hemoglobin
THE NEW KTP
ARGON is the hidden champion.

This laser system for a wide range of soft tissue clinical applications offers performance, precision and cw-power in a versatile, reliable platform.

LARYNGOLOGY
1) Office-based treatment with flexible endoscope
2) Operation in general anesthesia via handpiece
   - Papilloma ¹ ²
   - Leukoplakia, Biofilm ¹ ²
   - Reinke’s edema ¹ ²
   - Capillary ectasia ¹
   - Polyps ¹ ²

PHARYNGOLOGY
- Tumor resection e.g. tongue, tongue base, oral cavity, tonsils
- Uvulopalatoplasty

RHINOLOGY
- Synechia
- Bleeding, morbus osler, epistaxis, etc.
- Cutting, coagulating
- Turbinates, polyps, septum sporn

OTOLOGY
- Stapedotomy, Stapedectomy
- Cholesteatoma surgery
- Radiation of the wound after mechanical removal of the cholesteatoma
- Glomus tumor
- Hemostasis
ADVANTAGES

Green 514 nm (ARGON) is the hidden champion:

- Ideal hemostasis and vaporization
- Precise superficial coagulation
- Highly absorbed in melanin and hemoglobin
- Effective coagulation of papillomatosis

The NUVOLAS precisely limits the depth of penetration for increased control while providing excellent hemostasis, vaporization and cutting power.

The A.R.C. Laser technology allows continuous application with up to 8 W.

"Argon"-514 is a green wavelength, which is highly absorbed by hemoglobin. This enormous advantage is delivering precise coagulation and leaves the surrounding tissue almost unaffected.

Thus, recurrent papillomatosis can be treated with today’s technology in your outpatient practice. This means a bearable treatment and - if possible - comfort for the patient.
The wavelength of 980 nm with a smaller thermal penetration depth than a Nd:YAG laser, the 980 nm wavelength is outstandingly safe and precise – protecting the surrounding tissue.

Compared to the CO2 laser, the diode laser 980 nm exhibits a significantly better hemostasis and therefore prevents bleeding during the treatment. This guarantees optimum results with modern laser technology. The small diode laser is the ideal system for outpatient laser treatments such as Conchotomy, Epistaxis or Hemangioma. The physician benefits from a tactile feedback of the laser fibers and the patients benefit from the short recovery period. You can choose from a battery-powered system up to a dual-wavelength combination.

**OUTPATIENT PROCEDURES**
- Conchotomy/ Turbinectomy
- Polypectomy
- Septal Spur ablation
- Epistaxis, Morbus Osler
- Synechias, Stenosis in nasal structures
- Laser Assisted Uvulopalatoplasty (LAUP)
- Tonsillotomy
- Vascular Lesions, Hemangioma
- Teleangiectasia

**SURGICAL PROCEDURES**
- Tonsillectomy
- Fibroma, Granuloma resection
- Cysts, Mucoceles
- Septoplasty
- Laser Assisted Tuboplasty of Eustachian Tube (LETP)
- DacryoCystoRhinostomy (DCR)
- Lacrimal Duct Stenosis
- Stapes surgery
- Stapes prosthesis fixation
- Paracentesis, Myringotomy
- Partial Glossectomy
- Tumor vaporization
Stackable perfection
High Power 980 nm and innovative 1470 nm in one modular unit.

ADVANTAGES

- Classical wavelength
- Good hemostasis
- Deep penetration

THE CLASSIC WAVELENGTH

Red 980 nm is the laser for your office with deep coagulation.

Compared to the CO₂ laser, the diode laser 980 nm exhibits a significantly better hemostasis and therefore prevents bleeding during the treatment. This guarantees optimum results with modern laser technology. The small diode laser is the ideal system for outpatient laser treatments such as Conchotomy, Epistaxis or Hemangioma.

The physician benefits from a tactile feedback of the laser fibers and the patients benefit from the short recovery period. You can choose from a battery-powered system up to a dual-wavelength combination.
Have you ever heard of a laser platform that is entirely modular? We’ve just told you about a Green Laser or TruBlue – let’s go on with our CO$_2$ laser now. It has never been easier to unite both laser worlds to one system.

The A.R.C. CO$_2$ laser technology offers you much more than you would have expected. The sealed ceramic tubes make it one of the most stable system worldwide. And it is the most mobile and portable CO$_2$ Laser system worldwide.

For microsurgical applications, our micro-manipulator can be used to direct the beam down a rigid laryngoscope designed for surgical exposure in these regions. The C-Las offers high quality laser - tissue interaction for all standards and microsurgical applications.
ADVANTAGES

C-LAS 10,600 nm

- Highly absorbed by water
- Lowest thermal damage
- Highest precision of ablation and incision
- Perfect control in very delicate tissue

LARYNGOLOGY
- Papilloma
- Polyps
- Leukoplakia
- Partial larynx resection
- Vocal cord lesions (benign/malignant)
- Zenker’s diverticulum
- Glottis cancer resection
- Reinke’s edema
- Tracheal stenosis
- Vocal cord nodules
- Dysplasia removal

OTOLOGY
- Single-shot stapes surgery
- Stapes prosthesis fixation
- Mucosa coagulation
- Paracentesis, myringotomy
- Removal of cholesteatoma
- Ossicular preservation

PHARYNGOLOGY
- Tumor resection
- Tonsillotomy
- Uvulopalatoplasty
- Leukoplakia (tongue)
- Hemangiomas

C-PRO
High precision Micromanipulator with working distance up to 500 mm
Accessories

All you need is some handy tools to make your day a little easier.

Accessories Made in Germany.
### FOX I-III FIBERS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimension</th>
<th>Order #</th>
<th>Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bare fiber, sterile</td>
<td>400 µm</td>
<td>LL11053s</td>
<td><img src="image1.png" alt="Image" /></td>
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<tr>
<td>Otology probe long</td>
<td>300 µm</td>
<td>LL11058s</td>
<td><img src="image2.png" alt="Image" /></td>
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<tr>
<td>Otology probe short</td>
<td>300 µm</td>
<td>LL11059s</td>
<td><img src="image3.png" alt="Image" /></td>
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<tr>
<td>Bare fiber, sterile</td>
<td>300 µm</td>
<td>LL13001s</td>
<td><img src="image4.png" alt="Image" /></td>
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<td>Bare fiber, sterile</td>
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<td>LL13008s</td>
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<td>Bare fiber, sterile</td>
<td>400 µm</td>
<td>LL13017s</td>
<td><img src="image6.png" alt="Image" /></td>
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### FIBERS WOLF + NUVOLAS + CHIROLAS

<table>
<thead>
<tr>
<th>Name</th>
<th>Dimension</th>
<th>Order #</th>
<th>Image</th>
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</thead>
<tbody>
<tr>
<td>Bare fiber, sterile</td>
<td>400 µm</td>
<td>LL28005s</td>
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<tr>
<td>Otology probe long</td>
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<td>LL28058s</td>
<td><img src="image8.png" alt="Image" /></td>
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<tr>
<td>Otology probe short</td>
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<td>LL28059s</td>
<td><img src="image9.png" alt="Image" /></td>
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<td>Bare fiber, sterile</td>
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<td>LL28001s</td>
<td><img src="image10.png" alt="Image" /></td>
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<tr>
<td>Bare fiber, sterile</td>
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<td>LL28008s</td>
<td><img src="image11.png" alt="Image" /></td>
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<tr>
<td>Endoscopic fiber</td>
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<td>LL28066s</td>
<td><img src="image12.png" alt="Image" /></td>
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*Different fiber ports: 400 µm coupling, U.C. coupling for all U.C. fibers*
<table>
<thead>
<tr>
<th>Name</th>
<th>Order #</th>
<th>Image</th>
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<tr>
<td>Surgical hand piece (SHP)</td>
<td>HS11018</td>
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<tr>
<td>Hand piece for DCR</td>
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<td>cannula curved 50 mm, Ø 1 mm</td>
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<td>DCR intubation set</td>
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</table>
ABSORPTION

Laser is the superior source of energy - That is why it is beneficial
### Absorption Spectra

#### Wavelength: [nm]
- **HbO2**
- **Hb**
- **Fett**
- **Wasser**
- **Melanin**
- **Scattering**

#### Absorption Coefficient: [cm⁻¹]

- **Pigmented Tissue**
- **Unpigmented Tissue**

### Penetration Depth: [mm]
- 1000
- 100
- 10
- 1
- 0.1
- 0.01
- 0.001

### Laser Wavelengths:
- **KTP** 532 nm
- **Diode** 1064 nm
- **Diode** 810 nm
- **Diode** 980 nm
- **Er:YAG** 2940 nm
- **Argon** 514 nm
- **TruBlue** 445 nm
- **Diode** 1470 nm
- **CO₂** 10.600 nm

### Infrared and Ultraviolet
- **Infrared**
- **UltraViolet**

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**Note:**
- The absorption spectra show the interaction of light with different tissue types at various wavelengths, highlighting the differences in absorption coefficients for pigmented and unpigmented tissues.

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**Infrared**