



WOLF TruBlue—the all-rounder seeking for its equal

Since 2016 the Wolf 445nm laser – also known as Wolf TruBlue or “the blue” – conquers every operating room worldwide. All the advantages you are used to from a KTP laser and from a CO2 laser are combined in this device. With its specific absorption properties (behavior in tissue) the Wolf 445nm proves its skills in sensitive phonosurgical applications up to large tumor resections. Due to its small dimensions, it is possible to easily change between practice and operating room if necessary. Not bigger than a shoe box, the Wolf 445nm is a flexible all-rounder.



Clinical Applications

Laryngology

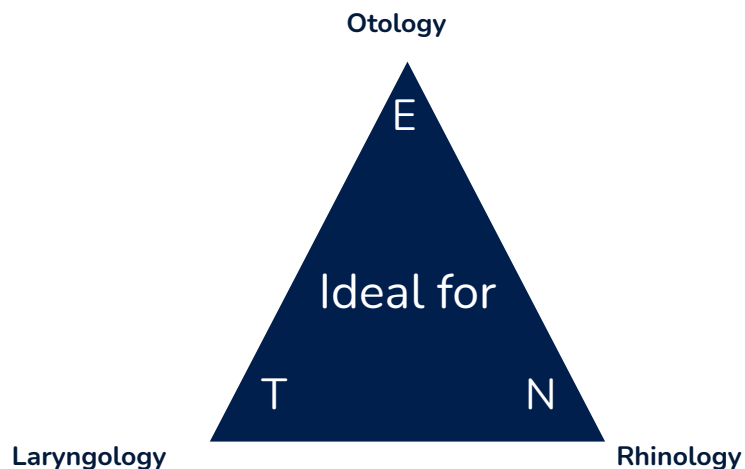
- Papilloma
- Teleangiectasia
- Polyps
- Granuloma
- Reinke's Edema
- Cysts
- Scars
- Dysplasia
- Synechia
- Stenosis
- Benign lesions
- Laryngofissure
- Leukoplakia
- Biofilm
- Edema
- Carcinoma
- Chordectomy/Chordotomy
- Tonsillotomy/Tonsillectomy
- Lymphatic tongue lesion
- Varicosity

Rhinology

- Polyps
- Turbinates
- Septoplasty
- Nasal teleangiectasia
- DCR
- HHT

Otology

- Stapedotomy
- Glomus Tumor
- Congenital Atresia
- Tympanic mastoid
- Eustachian Tuboplasty





Wolf TruBlue brings ENT laser surgery to the next level

Despite its inconspicuous appearance, the Wolf TruBlue offers the widest range of applications of all our lasers. From laryngology and phonosurgery to otology and rhinology. Everything is possible!

Powerful and safe all at once

TruBlue with 10 W of laser power in a lightweight, portable unit enables procedures in local or general anesthesia in treatment rooms (office-based) but also in the operating room.

At higher power in cw-mode, the helium gas management - FlowControl - ensures powerful and safe treatments .

The ideal device for Phonosurgery

The specific high absorption in blood compared to the transparency in water allows a tissue-sparing treatment of lesions on the vocal cord thanks to the photoangiolytic effect. The application can be performed gently on the awake patient in just a few minutes using flexible endoscopes.

Application Benefits

- Safe and effective treatment
- Precise, selective tissue interaction
- Contact or non-contact application
- Photoangiolytic effect
- Low energy input
- Low penetration depth of radiation into tissue
- Less to no pain
- Minimal to no bleeding
- Less to no complications
- Less operating time

Device Benefits

- Small footprint and ultra portable
- Lightweight 2.8 kg
- Affordable Consumables due to A.R.C. patented click connectors
- Transportation box included with space for all device accessories



Wolf 445 nm

The all-rounder in ENT surgery



A.R.C.
L A S E R
made in Germany

TruBlue EAR - NOSE - THROAT

WOLF TruBlue, 10 WATT BASIC		
Amount	Order #	Description
1 x	LS11000-GWAA	WOLF Diode Laser 445nm green aiming beam foot switch 1



EYE SAFETY		
AS01033	safety goggle	PCS=1
	445/810/980 1064 nm	
BG06649	TruBlue Zeiss	
BG06650	TruBlue Leica	
BG11200	445 nm, endo-scope, rigid	

EAR-NOSE-MOUTH use in OPD + OT (Operation Theatre)

CONSUMABLES C		
C PCS=5 LL28062s 	C PCS=25 ZU01156s Blunt end needle 22 G, 40 mm, sterile	C PCS=25 ZU01157s Blunt end needle 22 G, 70 mm, sterile
3 PCS=1 WE01436s ceramic blade, sterile		
ACCESSORIES		
PCS=1 HS11018 	PCS=1 WE01440 HiFlex fiber stripper 300 µm	

LARYNX use in OPD + OT (Operation Theatre)

CONSUMABLES C		
C PCS=5 LL28066s 	C PCS=1 WE01436s ceramic blade, sterile	C PCS=25 ZU01162s Blunt end needle 18 G, 250 mm, sterile
4 PCS=1 WE01432 HiFlex fiber stripper 400 µm	2 PCS=1 ZU01155 Laser application instrument STORZ, 23 cm	PCS=1 HS11018 surgical hand piece
ACCESSORIES		



Wolf 445 nm

The all-rounder in ENT surgery



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L A S E R
made in Germany





TruBlue EAR - NOSE - MOUTH

WOLF TruBlue, 10 WATT BASIC

Amount	Order #	Description
1 x	LS11000-GWAA	WOLF Diode Laser 445nm green aiming beam foot switch 1







EYE SAFETY

<p>AS01033 safety goggle PCS=1</p>  <p>445 / 810 / 980 1064 nm</p>	
<p>BG06649</p>  <p>TruBlue Zeiss</p>	<p>BG06650</p>  <p>TruBlue Leica</p>
<p>BG11200</p>  <p>445 nm, endo- scope, rigid</p>	

EAR-NOSE-MOUTH use in OPD + OT (Operation Theatre)

CONSUMABLES **C**

<p>C PCS=5 LL28062s</p>  <p>6 HiFlex Fiber 300µm, u.c. sterile</p>	<p>C PCS=25 ZU01156s</p>  <p>5 Blunt end needle 22 G, 40 mm, sterile</p>	<p>C PCS=25 ZU01157s</p>  <p>3 Blunt end needle 22 G, 70 mm, sterile</p>
<p>C PCS=1 WE01436s</p>  <p>ceramic blade, sterile</p>		

ACCESSORIES

<p>PCS=1 HS11018</p>  <p>4 surgical hand piece</p>	<p>PCS=1 WE01440</p>  <p>HiFlex fiber stripper 300 µm</p>
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DCR use in OT (Operation Theatre)

CONSUMABLES **C**

<p>C PCS=5 LL28067s</p>  <p>2 DCR Probe, 400µm, u.c., sterile</p>		
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Wolf 445 nm

The all-rounder in ENT surgery



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TruBlue LARYNX

WOLF TruBlue, 10 WATT BASIC		
Amount	Order #	Description
1 x	LS11000-GWAA	WOLF Diode Laser 445nm green aiming beam foot switch ①



EYE SAFETY		
AS01033	safety goggle	PCS=1
	445/810/980 1064 nm	
BG06649	TruBlue Zeiss	
BG06650	TruBlue Leica	
BG11200	445 nm, endo- scope, rigid	

LARYNX use in OPD + OT (Operation Theatre)

CONSUMABLES ③		
PCS=5 LL28066s 	PCS=1 WE01436s 	PCS=25 ZU01162s
③ HiFlex Fiber 400 µm, u.c. sterile	ceramic blade, sterile	Blunt end needle 18 G, 250 mm, sterile
ACCESSORIES		
PCS=1 WE01432 	PCS=1 ZU01155 	PCS=1 HS11018
HiFlex fiber stripper 400 µm	② Laser application instrument STORZ, 23 cm	surgical hand piece

Wolf TruBlue VOICE

WOLF TruBlue, 10 WATT BASIC		
Amount	Order #	Description
1 x	LS11000-GWAA	WOLF Diode Laser 445nm green aiming beam foot switch ①



EYE SAFETY		
AS01033	safety goggle	PCS=1
	445/810/980 1064 nm	

LARYNX use in OPD (office based)

CONSUMABLES ③		
PCS=5 LL28066s 	PCS=1 WE01436s 	
③ HiFlex Fiber 400 µm, u.c. sterile	ceramic blade, sterile	
ACCESSORIES		
PCS=1 WE01432 		
HiFlex fiber stripper 400 µm		





Laser safety goggles for TruBlue

AS01033 is a lightweight laser safety goggle for blue laser spectrum with an excellent fit, also suitable for the use over prescription glasses. The economic full plastic design with flex temples offers high visible light transmission for a brilliant field of view.



Spectral range: > 315 - 466 nm

Protection level: OD 8+

Suitable for A.R.C. Laser devices: FOX 980 | FOX IV 445 | FOX IV 980 | Wolf 445 | Wolf 980

Eye safety microscope filters for TruBlue

Easy adaption to ZEISS or LEICA type Microscopes with an unimpaired visual view for perfect surgeons



Zeiss type (BG06649)



Leica type (BG06650)

Why A.R.C. Laser?





Accompanying documents of Wolf 445 are available for download at our [Partners and Friends area](#) -

Product documents

- Brochure
- Product Sheet
- Product Folder
- User Manual
- Device QuickGuide
- Regulatory Documents



Application documents

- Application Guide
- Reference Literature
- Reference Sites
- Fundamentals TruBlue



KONFORMITÄTSERKLÄRUNG / DECLARATION OF CONFORMITY	
Name und Adresse der Firma Name and address of the firm	A.R.C. Laser GmbH Bessemerstr. 14 90411 Nürnberg Germany
Wir erklären in alleiniger Verantwortung, dass / We declare under our sole responsibility that das Medizinprodukt: the medical device	Wolf Codebase / Code base 445 nm, 860 nm, 1470 nm
der Klasse / of class	II b, Regel 9 / II b, rule 9 non-energy or non-thermal (category 2) non-invasive (non-invasive device)
Laserklasse / laser classification UMD/3	4 15-757
Allen Anforderungen der Medizinprodukte-Richtlinie 93/42/EWG entspricht, die anwendbar sind / meets all the provisions of the directive 93/42/EEC which apply to it.	
Angewandte harmonisierte Normen, nationale Normen oder andere normative Dokumente	Dem Gerät wurden die betreffenden harmonisierte Normen gemäß der Richtlinie 93/42/EWG Anhang I zu Grunde gelegt.
Applied harmonised standards, national standards or other normative documents	The device is based on the relevant harmonized standards of Directive 93/42/EEC Annex I
Konformitätsbewertungsverfahren Conformity assessment procedure	MDD 93/42/EEC, Anhang II ohne (4) MDD 93/42/EEC, Annex II excluding (4)
Konformitätsbewertungsstelle (falls bezogenes) Notified Body (if consulted)	TÜV SÜD Product Service GmbH (CE 0123) Röhrenstraße 65 / D-80339 München / Germany
Zertifikats Nr. / Registration No. gültig bis / Valid through	G1 1902 02946 003 30.09.2023





Techn. Specification

Laser	Diode Laser
Laser class	4
Wavelength	445 nm
Power	500 mW up to 10 W
Pulse Duration	1 ms up to 45 s; SP
Pulse Pause	1 ms up to 45 s; CW
Aiming Beam	Green 532 nm; adjustable brightness; continuous or flashing mode
Fiber Coupling	A.R.C. Laser U.C. Coupling
Power Supply	100—240 V, ~47-63 Hz, 1.06—0.45 A
Dimensions W x D x H	24.6 cm x 20.3 cm x 10.0 cm
Weight	2.8 kg





System	
Laser	Diode Laser
Laser class	4
Wavelength	445 nm
Power	500 mW up to 10 W
Trigger	Footswitch
Fiber coupling	A.R.C. Laser U.C. Coupling
Output Modi	
Pulse Duration	1 ms up to 45 s; SP
Pulse Pause	1 ms up to 45 s; CW
Pulse Frequency	0.011 Hz to 500 Hz
Aiming	
Aiming Beam	Green 532 nm; adjustable brightness; continuous or flashing mode
Aiming Beam Frequency	1 to 6 Hz
Aiming Beam Power	< 1 mW; adjustable brightness
Aiming Beam Class	2
Electrical Specifications	
Power Supply	100—240 V, ~47-63 Hz, 1.06—0.45 A Max. Power consumption 90 W Protection category: II
Operating Conditions	
Operating temperature	+10°C to +40°C
Humidity	< 75% without condensation
Max. Altitude	2000 m
Pressure	1080 hPa — 750 hPa
Cooling	Active with internal fan
Dimensions	
Dimensions W x D x H	24.6 cm x 20.3 cm x 10.0 cm
Weight	2.8 kg





Transportation and Storage Conditions

Transportation Temperature	-10°C to +60°C
Storage Temperature	+5°C to +40°C
Relative Humidity	5% - 85% without condensation
Time for acclimatization (after transportation at room temperature 20°C)	4 hours unpacked with destinated environmental conditions

Additional Features

Control / User Interface	Color touch display
Interlock	Door-Interlock
External Warning Light	External warning light can be connected
Disinfection	Wipe disinfection possible





System

The **Blue Spectrum Diode Laser** is an important tool in **General surgery or ENT surgery, more exactly in Otolaryngology and Phonosurgery** for treatments requiring coagulation or carbonization/ vaporization of tissue, bony structures or blood. A special feature of the Blue Spectrum Laser is the **photoangiolytic effect**, which enables gentle and precise treatments in Phonosurgery. The consumable, single-use fibers must be versatile for the use with oral, nasal or laryngeal handpieces and endoscopes.

Blue spectrum Laser

Diode laser technology

Laser wavelength 440—450 nm

The laser must be compact (smaller than 30 x 30 x 12 cm) and lightweight (less than 3 kg) for transportation.

For transportation purposes a suitable transportation case should be available, if possible with a mountable/ demountable trolley function

Control / User interface consists of color touch display

Laser parameters for applications are preset, individual programmable surgeon profiles are supported

The laser device is secured by changeable password

For safety reasons the laser need to be equipped by a laser-stop button, which is easy to reach

Laser is triggered by the use of foldable footswitch

The laser device offers connection of a door-interlock as well as connection to an external warning light

Wipe disinfection of the housing, touch display and foot switch is possible

Accessories for Wolf 445

Laser delivery via quartz fiber

Fiber coupling should be an easy click connection without screwing

Ready to use fibers and surgical probes with integrated fiber in a special design for Otolaryngology and DCR, are available as single-use consumables

Easy-Click flexible fibers are available in dimension between 300 to 600 µm

The highly flexible fibers of the laser should be compatible with endoscopes and handpieces with blunt end needles in different sizes

Variety of blunt end needles / cannula, ranging from 40 - 250 mm

Endoscope filter in wavelength range 440 - 450 nm for ridged endoscopes to keep a clear visual sight

Laser safety equipment

Laser glasses to suit Laser wavelength >315 nm to 466 nm; OD 8+ with Visible Light Transmission (VLT) value > 45 %

Microscope filter in wavelength range 440 - 450 nm are available for microscopes - ZEISS and LEICA type





Laser Output

Power output between 500 mW up to 10 W

Output mode can be selected; available modes are continuous wave (cw), pulsed/ chopped/repeated mode (pulse on/ pulse off) and single pulse emission (one single laser pulse)

Pulse Duration for pulse on time is adjustable between 1 ms up to 45 s and cw mode can be selected; overview of stepwise increments is shown at end of this table

Pulse Pause for pulse off time is adjustable between 1 ms up to 45 s and Single Pulse mode can be selected; overview of stepwise increments is shown at end of this table

The pulse frequency in pulsed/ chopped/ repeated mode can be displayed and is a result of adjusted pulse on and pulse off time and can range between 0.011 Hz to 500 Hz

Aiming Beam

The aiming beam should have a green color (532 nm) for better visibility in tissue and the brightness is adjustable; continuous emission or flashing mode option available

The aiming beam frequency can be adjusted between 1 to 6 Hz

Electrical Specifications

Power Supply 100—240 V, ~47-63 Hz, 1.06—0.45 A,
Max. Power consumption 90 W, Protection category: II

Operating Conditions

Minimum air temperature for operation is +10°C

Maximum air temperature for operation is +40°C

Humidity must be below 75 %, below condensation

Max. Altitude where the laser device should be used is 2000 m above sea level

Atmospheric pressure can range between 1080 hPa—750 hPa

Heat dissipation of system/ Cooling is realized by an active internal fan

Transportation and Storage Conditions

Transportation Temperature must range between -10°C to +60°C

Storage Temperature must range between +5°C to 40°C

Relative Humidity during transport and storage is 5% - 85% without condensation

Time for acclimatization (after transportation at room temperature 20°C) the laser need to be placed at least 4 hours unpacked with destined environmental conditions





Regulatory and Classification

Classification acc. to MPG: II b Rule 9

CE and FDA Approval

Notified Body: TÜV SÜD No. 0123

IEC 60601-01 compliant

Laser safety compliant

Laser class 4

NOHD 2.8 m

Aiming Beam Class

Aiming Beam Power is max. 1 mW at 100 % setting

After Sales Requirements

A life expectancy for the item should be indicated to estimate a time frame for a replacement policy for at least 10 years

Please state life expectancy Ideal product life time is min. 7 years

Warranty is min. 2 years

Support available 24/7

Instructions for the care and maintenance of the product from the company are provided





Output Modi

Pulse Duration	1 ms up to 45 s; SP
Adjustable Pulse Durations	<p>1 ms-Steps: 1 ms, 2 ms, 3 ms, 4 ms, 5 ms, 6 ms, 7 ms, 8 ms, 9 ms, 10 ms, 11 ms, 12 ms, 13 ms, 14 ms, 15 ms, 16 ms, 17 ms, 18 ms, 19 ms, 20 ms,</p> <p>2 ms-Steps: 20 ms, 22 ms, 24 ms, 26 ms, 28 ms, 30 ms, 32 ms, 34 ms, 36 ms, 38 ms, 40 ms, 42 ms, 44 ms, 46 ms, 48 ms, 50 ms</p> <p>5 ms-Steps: 50 ms, 55 ms, 60 ms, 65 ms, 70 ms, 75 ms, 80ms, 85 ms, 90 ms, 95ms, 100ms</p> <p>10 ms-Steps: 100 ms, 110 ms, 120 ms, 130 ms, 140 ms, 150 ms, 160 ms, 170ms, 180ms, 190 ms, 200 ms, 210 ms, 220 ms, 230 ms, 240 ms, 250 ms, 260 ms</p> <p>20 ms-Steps: 260 ms, 280 ms, 300 ms</p> <p>50 ms-Steps: 300 ms, 350 ms, 400 ms, 450 ms, 500 ms, 550 ms, 600 ms, 650 ms, 700 ms, 750 ms, 800 ms, 850 ms, 900 ms, 950 ms, 1 s</p> <p>500 ms-Steps: 1 s, 1.5 s, 2 s, 2.5 s, 3 s</p> <p>1 s-Steps: 3 s, 4 s, 5 s, 6 s, 7 s, 8 s, 9 s, 10 s</p> <p>5 s-Steps 10 s, 15 s</p> <p>15 s-Steps:</p>





Pulse Pause	1 ms up to 45 s; CW
Adjustable Pulse Pause	<p>1 ms-Steps: 1 ms, 2 ms, 3 ms, 4 ms, 5 ms, 6 ms, 7 ms, 8 ms, 9 ms, 10 ms, 11 ms, 12 ms, 13 ms, 14 ms, 15 ms, 16 ms, 17 ms, 18 ms, 19 ms, 20 ms,</p> <p>2 ms-Steps: 20 ms, 22 ms, 24 ms, 26 ms, 28 ms, 30 ms, 32 ms, 34 ms, 36 ms, 38 ms, 40 ms, 42 ms, 44 ms, 46ms, 48ms, 50ms</p> <p>5 ms-Steps: 50 ms, 55 ms, 60 ms, 65 ms, 70 ms, 75 ms, 80ms, 85 ms, 90 ms, 95ms, 100ms</p> <p>10 ms-Steps: 100 ms, 110 ms, 120 ms, 130 ms, 140 ms, 150 ms, 160 ms, 170ms, 180ms, 190 ms, 200 ms, 210 ms, 220 ms, 230 ms, 240 ms, 250 ms, 260 ms</p> <p>20 ms-Steps: 260 ms, 280 ms, 300 ms</p> <p>50 ms-Steps: 300 ms, 350 ms, 400 ms, 450 ms, 500 ms, 550 ms, 600 ms, 650 ms, 700 ms, 750 ms, 800 ms, 850 ms, 900 ms, 950 ms, 1 s</p> <p>500 ms-Steps: 1 s, 1.5 s, 2 s, 2.5 s, 3 s</p> <p>1 s-Steps: 3 s, 4 s, 5 s, 6 s, 7 s, 8 s, 9 s, 10 s</p> <p>5 s-Steps 10 s, 15 s</p> <p>15 s-Steps: 15 s, 30 s, 45 s,</p>

