

Super pulsed power  
meets efficiency



**Pulvis 60<sup>+</sup>**

60 W Thulium Fiber Laser (TFL)

# Pulvis 60<sup>+</sup>

One Laser – Multiple Indications

The Pulvis 60+ is a thulium fiber laser (TFL) which can be used both for lithotripsy and for precise soft tissue surgery. Over the last few years, TFL technology has emerged as a new alternative to Holmium:YAG lasers. As well as being particularly suitable for the treatment of stones, the unique benefits of TFL technology also prove their worth in the case of anatomical endoscopic enucleation of the prostate (AEEP) and transurethral (laser) resection of bladder tumors (TUR-B).

Richard Wolf offers a complete portfolio of products for this technology, providing the ideal framework for this innovative laser to perform to its fullest potential.



System blue

(Laser) TUR-B / PDD



Laser lithotripsy

Percutaneous universal nephroscopes

Semi-rigid ureterorenoscopes

RIWO   
**D-URS**

**Boa**  
VISION

**COBRA**  
VISION

**mamba**  
VISION

**FLUID CONTROL 2225**

**Shark**

 **Piranha**

BPH / AEEP

# Pulvis 60<sup>+</sup>

Everything from a single source

## Thulium fiber laser technology features in many different applications

Richard Wolf offers a complete product portfolio and provides users with the right instruments for a whole host of surgical techniques and indications.

The Pulvis 60+ TFL laser and its thulium fiber laser technology complete this portfolio.



## Laser lithotripsy



Page 6-7

## Enucleation / AEEP

Page 10-11



# Pulvis 60+

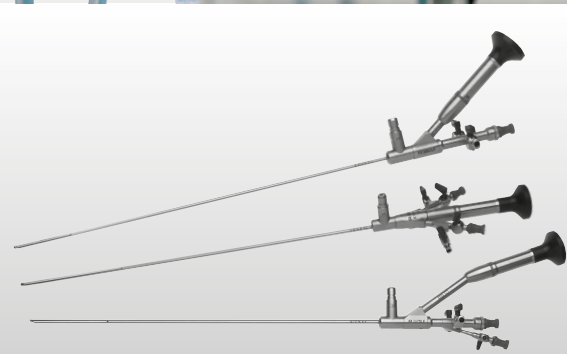
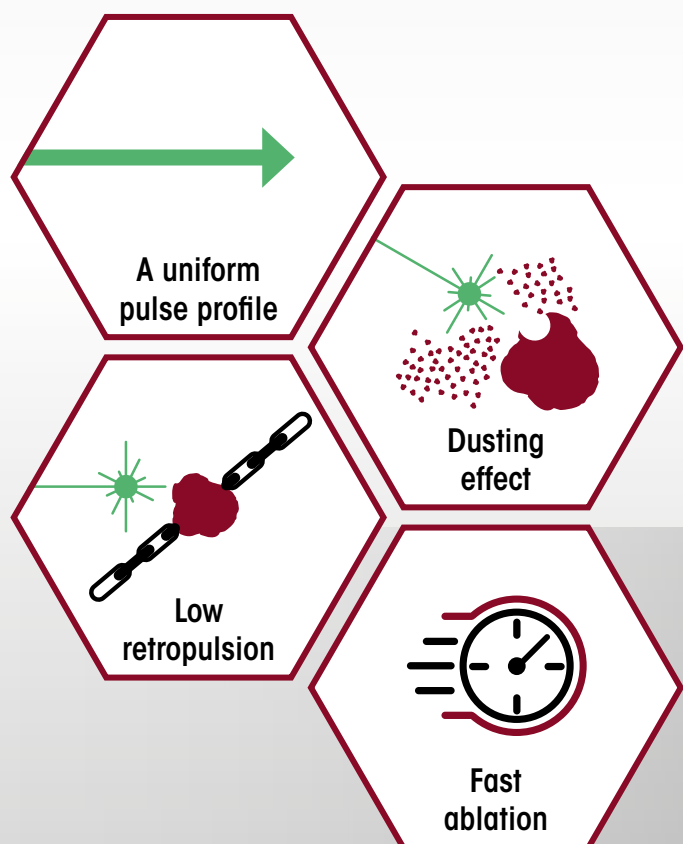
Everything From a Single Source for Laser Lithotripsy

The Pulvis 60+ features an extensive pulse setting range as well as a very uniform pulse profile with adjustable peak power and pulse lengths. These technical properties ensure that the laser is emitted in a uniform and focused manner with very low stone retropulsion.

This results in very effective and fast ablation of stones when using the Pulvis 60+, producing very fine stone fragments and creating what is known as the dusting effect.

## Targeted and uniform

Holmium:YAG laser technology has also become the gold standard in laser lithotripsy in recent years. However, in recent years, users have become increasingly interested in laser lithotripsy with lower pulse energy and the finer stone fragmentation that results from this. The advantage of these finer stone concretions is that – in a best-case scenario – they can be removed and excreted spontaneously, eliminating the need to collect them with a stone basket. And it is here that the Pulvis 60+ plays to its technical strengths.



Semi-rigid ureterorenoscopes from Richard Wolf

# LASER LITHOTRIPSY

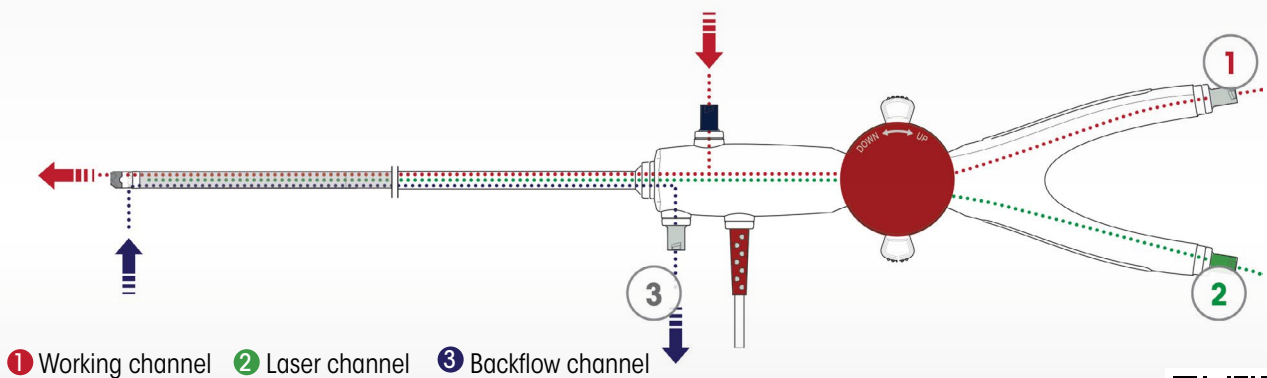
## Fast and effective

TFL technology generates three to four times as much stone dust as a conventional Holmium:YAG laser. With its extensive and flexible setting range, the Pulvis 60+ is also capable of carrying out stone dusting, popcorning, and fragmentation.

To ensure a clear endoscopic view when using TFL technology, the endoscope must provide excellent irrigation properties. The RIWO D-URS disposable sensor ureterorenoscope with its 3 channels is ideal for this particular application.



The first and only 3-channel URS with a semi-rigid sheath and flexible tip



Get to know our  
RIWO D-URS:



Flexible sensor endoscopes and cystoscopes



Percutaneous universal nephroscopes

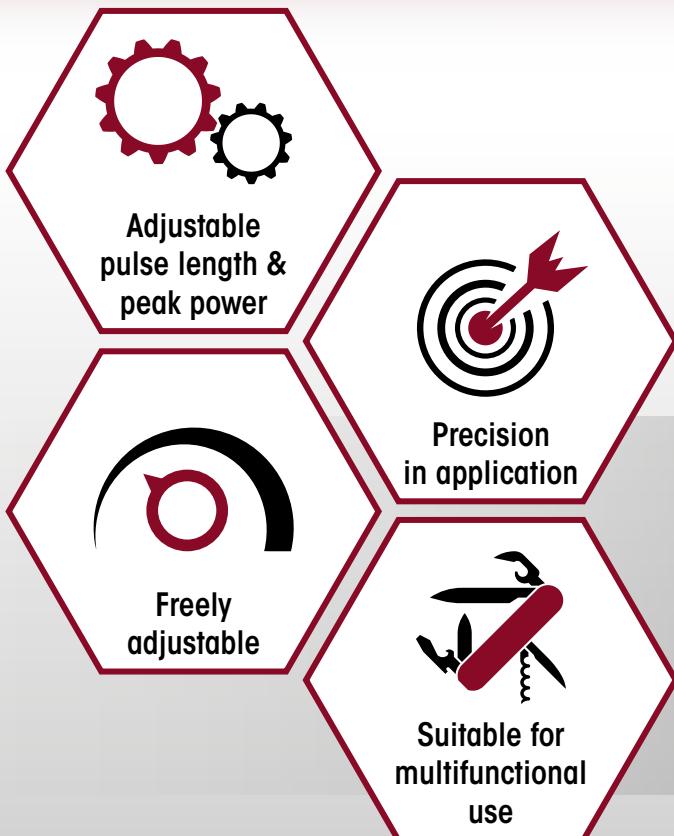
# Pulvis 60+

## Everything From a Single Source for Transurethral En Bloc Resection of Bladder Tumors (ERBT) and Photodynamic Diagnostics (PDD)

The current treatment for non-muscle-invasive bladder cancer (NMIBC) is conventional transurethral resection of bladder tumors (TUR-B). In recent years, however, transurethral en bloc resection of bladder tumors (ERBT) has gained in popularity due to the improved integrity of specimens. The ERBT procedure demonstrates better pathological results and may contribute to a lower rate of complications. Using TFL technology has the advantage of excellent vaporization and efficient tissue hemostasis. Due to the technical properties of the laser, it is emitted to the tissue in a highly precise and controlled manner.

### Precision in perfection

The specific wavelength of the TFL laser, the low depth of penetration of the laser energy, the variation of the pulse lengths, and its peak power make the Pulvis 60+ a true precision machine for transurethral en bloc resection of NMIBC tumors. The ability to make precise incisions, along with effective coagulation and vaporization, help the user to carve out the tumor carefully from benign tissue.



Adjustable pulse lengths and peak power allow for adaptation to the specific properties of the tissue



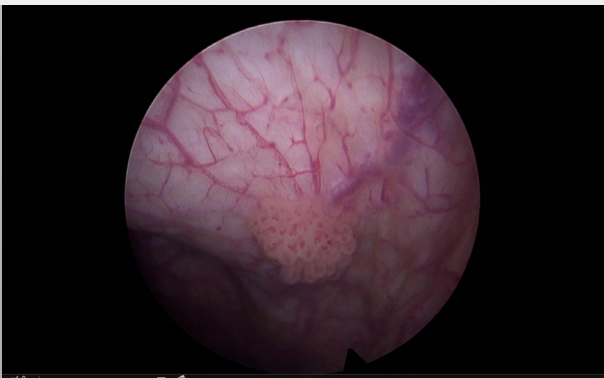
## (LASER) TUR-B / PDD



### More clarity for efficiency

Thanks to the new TFL technology combined with photodynamic diagnostics (PDD), Richard Wolf is setting a new standard in the detection and resection of NMIBC. System blue using Hexvix® allows users to perform the laser resection under blue light, significantly improving their ability to differentiate between malignant and benign tissue. At the same time, the site appears brighter and more natural than under white light. During laser resection, this technology improves the visual delineation of the tumor edges, which allows them to be mapped out even more efficiently.

Precision with bite – Our Shark resectoscopes:



Bladder tumor under white light



Bladder tumor under bluePDD



# Pulvis 60<sup>+</sup>

## Everything From a Single Source for the Treatment of Benign Prostatic Hyperplasia (BPH) and Anatomical Endoscopic Enucleation of the Prostate (AEEP)

AEEP has proven to be a safe and efficient alternative to transurethral resection of the prostate (TUR-P) and other procedures for treating benign prostatic hyperplasia (BPH).

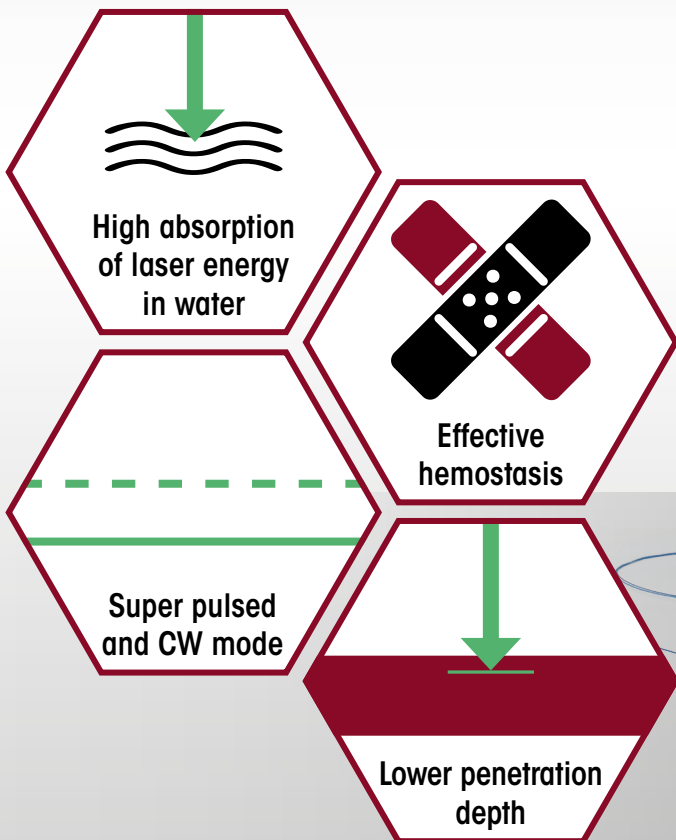
In international guidelines, this has led AEEP to be described as one of the techniques of choice in this area. The unique properties of TFL make it an appealing alternative to holmium laser enucleation (HoLEP) using a Holmium:YAG laser – previously considered the gold standard. This means that thulium fiber laser enucleation (ThuFLEP) is an option with at least equivalent properties.

### Precise and effective

The high water absorption of the laser emission at a wavelength of 1,940 nm and the associated low tissue penetration depth, combined with a constant super pulse profile, ensure both effective tissue ablation and highly efficient hemostasis. Compared to conventional Holmium:YAG lasers, which tend to produce coarser tissue incisions due to their higher peak power, TFL lasers ensure clearer and flatter incisions. The high variation of the pulse lengths and the multi-stage adjustable peak power of TFL lasers provide the basis for effective interaction between laser emissions and tissue, ensuring excellent hemostasis even during cutting.

### By way of comparison,

the absorption of laser emissions from a TFL laser in water is four times higher than that of a Holmium:YAG laser with a wavelength of 2,100 nm.



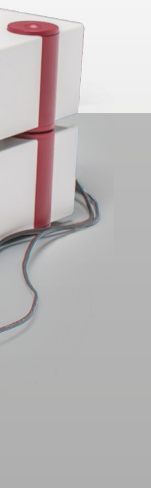
## ENUCLEATION / AEEP

### Constant and efficient

The individual temporal pulse profiles (pulse shapes in time) of TFL lasers are symmetrical and demonstrate virtually perfect square waves with uniform energy distribution over time, as well as constant peak power (super pulse). In contrast, the pulse profile of Holmium:YAG lasers is asymmetrical, presenting several initial energy peaks during the same pulse, followed by a rapid drop, but with a higher peak power by comparison. As with Holmium:YAG lasers, the user can choose between short, medium, and longer pulse durations. However, TFLs can achieve pulse durations of up to 12 ms and can also be used in continuous-wave mode.



Shark meets Piranha –  
Solutions for enucleation  
and morcellation:



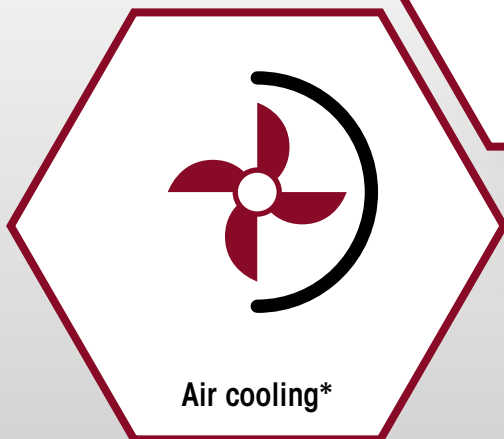
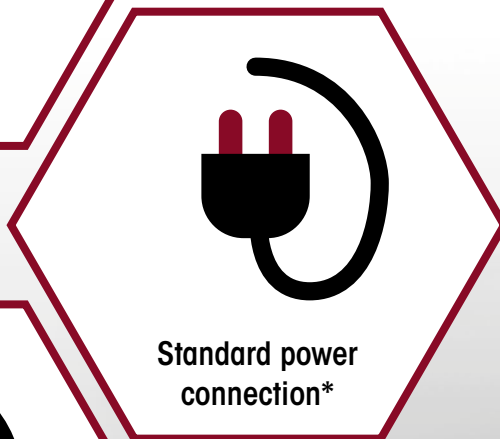
continuous-irrigation laser resectoscope sheaths with ceramic and stainless steel tips

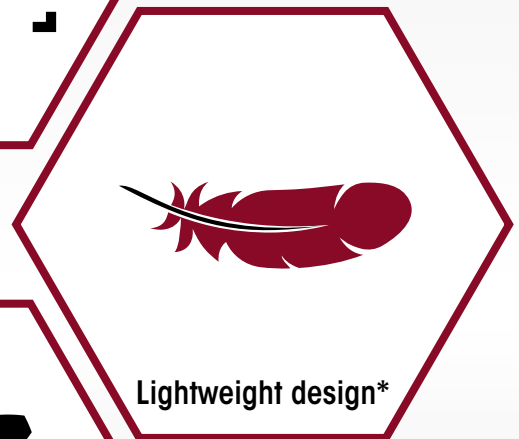
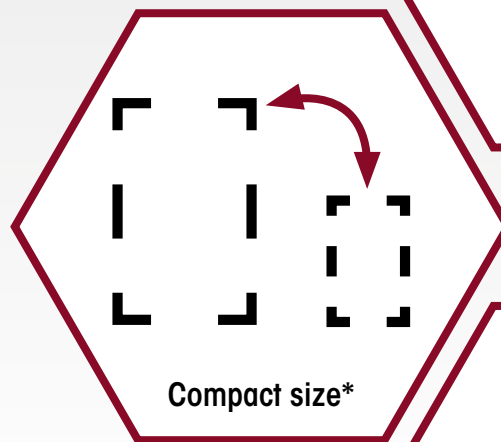


Large selection of laser guide tubes

# Pulvis 60<sup>+</sup>

Super pulsed power meets efficiency





\* Compared with a conventional Holmium:YAG laser

# Pulvis 60<sup>+</sup>

## At a Glance

### The advantages at a glance

- **Reduced energy consumption**  
High output with lower energy consumption
- **Effective lithotripsy**  
Full power output even with 200 µm fibers
- **Effective enucleation**  
"Low-power" ThuLEP with max. 60 W possible
- **Compatible with standard wall sockets**  
No high-voltage current supply required
- **Minimized retro-pulsion**  
when ablating the stone
- **Continuous and pulsed emission**  
"Traditional" ThuLEP and "super-pulsed" ThuLEP possible
- **Effective hemostasis**  
High degree of absorption of laser radiation
- **Disposable and reusable fibers**  
from 150 µm to 1,000 µm
- **Very high-frequency emission**  
up to 2,500 Hz
- **Compact design**  
Saves space in the operating theater

### Technical data

Laser classification	Class 4 – thulium fiber laser
Maximum peak output	500 W
Wavelength	1,920–1,960 nm
Laser energy	0.020–6 J
Laser frequency	Up to 2,500 Hz
Maximum output power	60 W (pulsed/CW)
Pulse duration	50 µs – CW
Smallest fiber	150 µm
Electrical requirements	100–240 VAC; 50/60 Hz; 1,000 VA
Max. operating temperature	10–30 °C
Pilot beam	Green, output can be adjusted
Device design	Tower with castors
Dimensions W x H x D	47.0 x 94.0 x 81.0 cm (display closed)
Weight	100 kg
Laser cooling system	Air

# Order Data

## Pulvis 60+



spirit of excellence

### Thulium fiber laser (TFL)

#### Pulvis 60+

Consisting of:

Thulium fiber laser, EU power cable (EAM000045.00), footswitch, 2 pedals (EBM001308.01), 2 laser protection goggles (OBM003778.00), accessories box (KBM000103.01) consisting of: door contact plug (EAM000045.00), key set (MBQ000190.00), TFL blast shield (OAM002112.00), fiber-stripping forceps Ø 300–1000 µm (OBM001079.00), fiber-stripping forceps Ø 100–400 µm (OBM001080.00), ceramic cutter with silicone pad (AGM000080.00) ..... **PFMS00006**

### Accessories

#### Interlock Conn.

Medical Devices Binder ..... **EAM000045.00**

Key ..... **MBQ000190.00**

#### Power cord – 5 m

Schuko plug 16 A EUR ..... **EAM001440.00**

#### Fiber stripper for optical fibers

Ø 300–1,000 µm ..... **OBM001079.00**

Ø 100–400 µm ..... **OBM001080.00**

#### Case salsa 1650

no brand accessories ..... **KBM000103.01**

#### Ceramic fiber cutter

with slipcase ..... **AGM000080.00**

#### Goggle protection

f18.P1d09.1003 ..... **OBM003778.00**

### Optical fibers for single use

#### Single-use optical fiber

sterile (PACK = 10 PCS.)

150 µm..... **OFJ001511**

200 µm..... **OFJ002011**

272 µm..... **OFJ702711**

ball tip 272 µm ..... **OFJ302711**

365 µm..... **OFJ703611**

550 µm..... **OFJ005511**

lateral 600 µm ..... **OFJ506011**

800 µm..... **OFJ008011**

1,000 µm..... **OFJ009911**

### Reusable optical fibers

#### Reusable 10x optical fiber

sterile (PACK = 1 PCS.)

200 µm..... **OFJ002013-01**

272 µm..... **OFJ702713-01**

365 µm..... **OFJ703613-01**

500 µm..... **OFJ005513-01**

800 µm..... **OFJ008013-01**

1,000 µm..... **OFJ009913-01**



DANGER – Visible and invisible laser radiation. Avoid eye or skin exposure to direct or scattered radiation.  
Laser class 4 / Radiated beam class 3R

Sold by R. WOLF

D718er210824