

UROLASE SP+

Urology laser 2 in 1:

Lithotripsy + Soft Tissue Surgery

SuperPulsed
Tm Fiber Laser



Applications

Lithotripsy:

- Fragmentation
- Dusting
- Popcorning

Soft tissues:

- BPH enucleation
- BPH vaporization
- Resection of bladder tumor
- Vaporization of bladder and upper urinary tract tumors
- Stricture dissection



Features



8 times more compact
than solid-state power
lasers



Low maintenance cost



Connection to the
standard power grid



Air cooling

LITHOTRIPSY

2 times faster lithotripsy



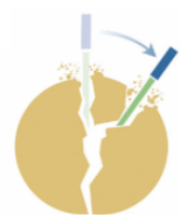
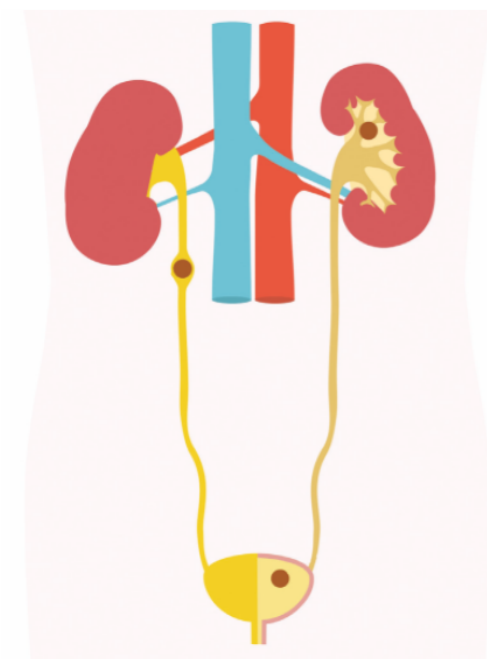
Stone fragmentation into micro fragments is twice as fast as with Holmium-YAG lasers¹

Water absorption level is 4 times higher

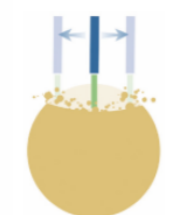


A distinctive feature of 1.94 μm wavelength radiation is high absorption in water, which ensures maximum efficiency in lithotripsy²

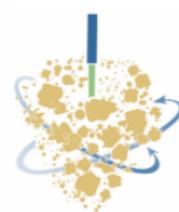
LITHOTRIPSY MODE



Fragmentation allows to quickly fragment the stone for lithoextraction



Dusting stones into the micro dust particles facilitate removing the stones without use of extractors⁴



Popcorning effectively destroys residual fragments during kidney surgery

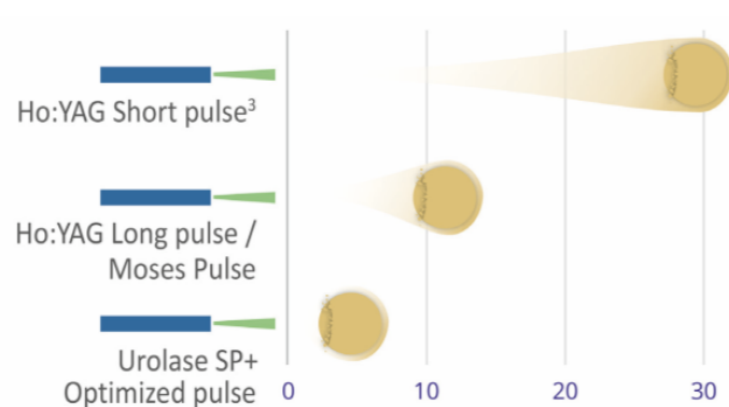
Surgical Fiber

Urolase SP+ allows the use of the thinnest fiber – Surgical Fiber with a diameter of 150 μm for flexible endoscopes, which:

- Does not affect the bending of the endoscope
- Increases the flow of irrigation fluid in the endoscope



No retropulsion
1 J x 15 Hz = 15 W

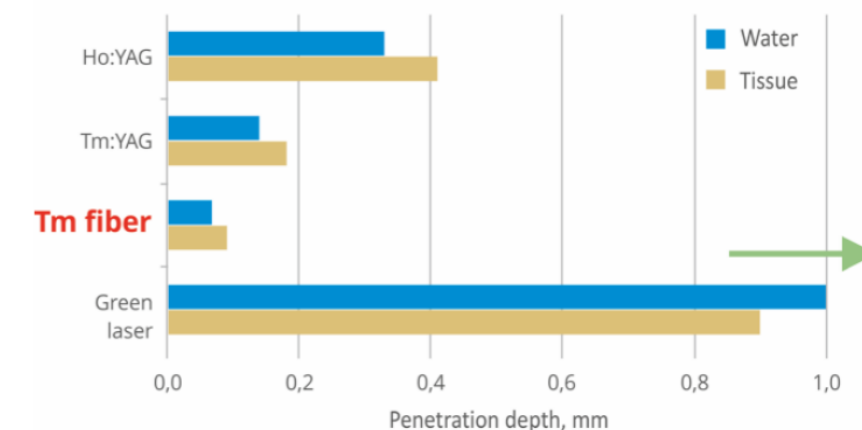


Stone retropulsion after 1 second of laser exposure, mm

No retropulsion effect during stone fragmentation due to a special optimized pulse

SOFT TISSUES

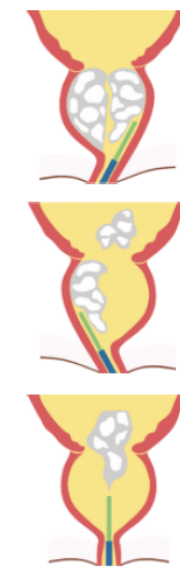
Comparison of the penetration depth of lasers with different wavelengths shows that thulium fiber lasers have a minimal penetration depth and, therefore, are more controllable and safer for surgical procedures in urology.



BPH ENUCLEATION



1.94 μm wavelength radiation has a depth of penetration into tissues of about 100 μm⁵, which is 4.5 times less than that of Ho: YAG lasers, and, as a result, provides maximum controlled removal of biological tissue to the prostate capsule. Also, this wavelength has excellent hemostatic features, thereby reducing blood loss during soft tissue surgeries. As a result, training of surgeons studying BPH laser enucleation is simple and fast⁶



TECHNICAL SPECIFICATIONS

Wavelength, micron	1.94	
Mode	SuperPulsed/Pulsed	CW
Maximum power, W	60	60
Pulse energy, J	0.025...6	-
Pulse repetition rate, Hz	2400	-
Fiber type	Single-use / Reusable	
Fiber diameter, μm	150/200/365/550/940	
Device cooling	Air	
Supply voltage, V	220 ± 10 %	
Supply frequency, Hz	50...60	
Power consumption, VA, no more	1000	
Dimensions H * W * D, mm	286*460*545	
Weight, kg	38	

1. Martov A., et al. (2021) Clinical Comparison of Super Pulse Thulium Fiber Laser and High-Power Holmium Laser for Ureteral Stone Management. J Endourol . 2021 Jan 13
2. Kronenberg P., et al. (2019) The Laser of the Future: Reality and Expectations About the New Thulium Fiber Laser-a Systematic Review. Transl Androl Urol . 2019 Sep;8(Suppl 4):S398-S417
3. Ventimiglia E., et al. (2020) Effect of Temporal Pulse Shape on Urinary Stone Phantom Retropulsion Rate and Ablation Efficiency Using Holmium:YAG and Super-pulse Thulium Fibre Lasers. BJU Int . 2020 Jul;126(1):159-167
4. Traxer O. (2019) Ureteroscopy Using Super Pulse Thulium Fiber Laser. Semi-Live surgery, WCE 2019
5. Becker B., et al. (2019) Effect of Optical Fiber Diameter and Laser Emission Mode (CW vs Pulse) on Tissue Damage Profile Using 1.94 μm Tm: fiber Lasers in a Porcine Kidney Model. World Journal of Urology. 2019 Sep 12
6. Enikeev D., et al. (2018) A Randomized Trial Comparing The Learning Curve of 3 Endoscopic Enucleation Techniques (HoLEP, ThuFLEP, and MEP) for BPH Using Mentoring Approach-Initial Results. Urology. 2018 Nov;121:51-57.



WORLD LEADER IN LASER INDUSTRY

IRE-Polus is one of the leaders in the field of fiber lasers and amplifiers, as well as devices and systems based on them. Fiber lasers have the highest performance, reliability, and practicality at a lower cost of ownership than other types of lasers.

Relying on professionalism and many years of experience in laser equipment manufacturing, "IRE-Polus" Ltd. sells medical laser devices and surgical fibers for a wide range of applications.

During the development of new medical laser devices, IRE-Polus goes through all stages: not only the device manufacturing, but also creation of methods for its application, conducting both in-vitro researches in its own research laboratories, and clinical research together with the leading clinical centers.



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