



# Smart systems

A new generation  
of Thulium fiber lasers

*UROLASE™*

*UROLASE™  
PREMIUM*





# Smart thulium fiber laser systems

## Urolase+

 Lithotripsy



## Urolase+ Premium

 Lithotripsy  Soft tissue



**Modulated MRP Mode** – optimized pulse to minimize retropulsion



**FinePulse Mode** – ultra-fast fragmentation into microfragments



**UltraPulse Mode** – fragmentation into larger stone fragments



**DissectPulse Mode** – thermomechanical enucleation of soft tissue



**BloodlessPulse Mode** – advanced coagulation with wide-area effect



**Tissue Sensor** – automatic tissue/stone detection



## OnePush connector

The OnePush fiber connector with automatic shutter is designed to prevent contamination and enable fast, secure, and user-friendly connections.

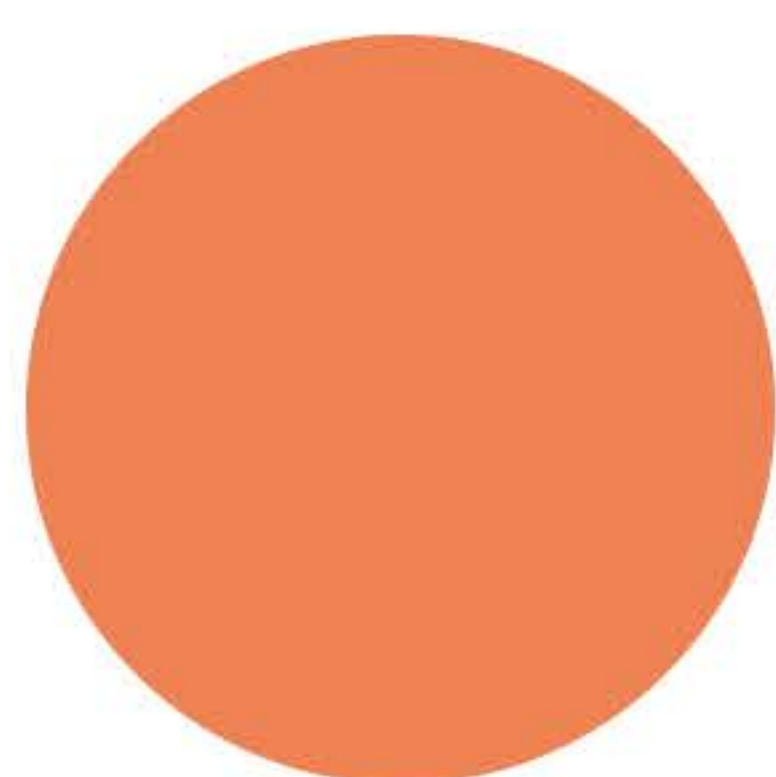
### VPG OnePush Surgical fiber

Single use

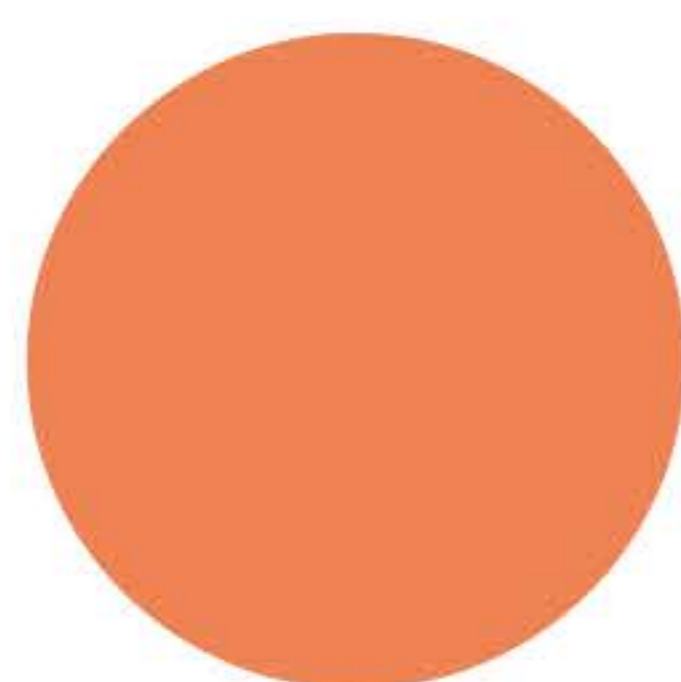
Multiple use



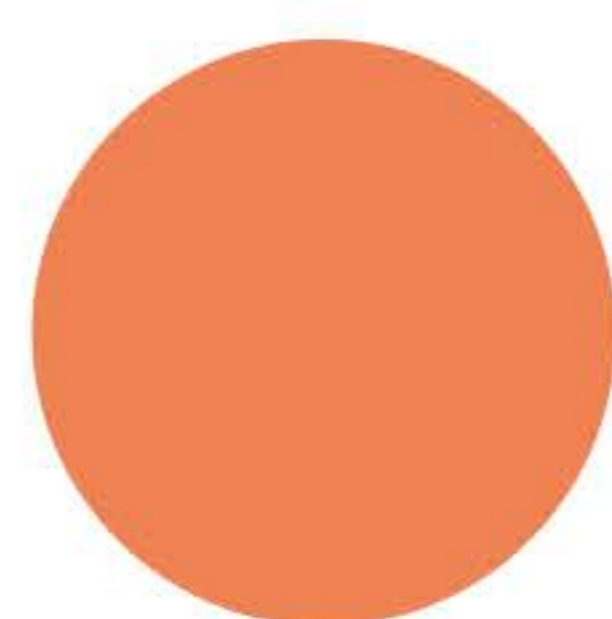
### Available diameters, $\mu\text{m}$



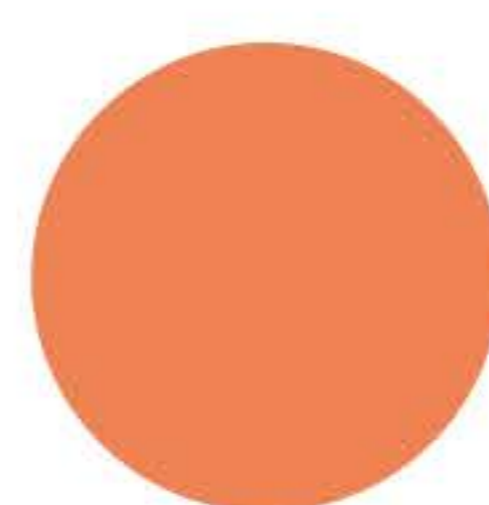
940  $\mu\text{m}$



550  $\mu\text{m}$



365  $\mu\text{m}$



200  $\mu\text{m}$



150  $\mu\text{m}$

## System advantages



Up to 4x more compact and lighter than Ho:YAG systems



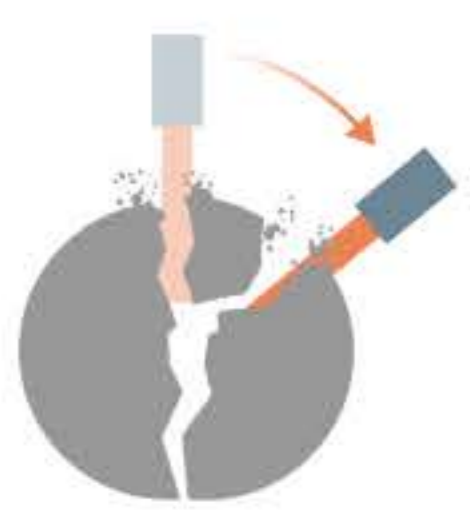
Easy installation with standard electrical connection



Air-cooled, no external cooling unit required



No routine maintenance required



# Lithotripsy

## Modulated pulses

The modulated pulse architecture of the **Urolase+ and Urolase+ Premium laser systems** enables flexible lithotripsy modes – from ultra-fine stone dusting to high-energy fragmentation into large pieces for efficient lithoextraction and lithoevacuation.



10 mm



### The new FinePulse mode

enables high-speed lithotripsy, allowing the surgeon to efficiently pulverize urinary stones into ultra-fine dust.



10 mm



### The specialized UltraPulse mode

delivers high-impact energy, instantly breaking even dense calculi into large fragments for efficient lithoextraction.

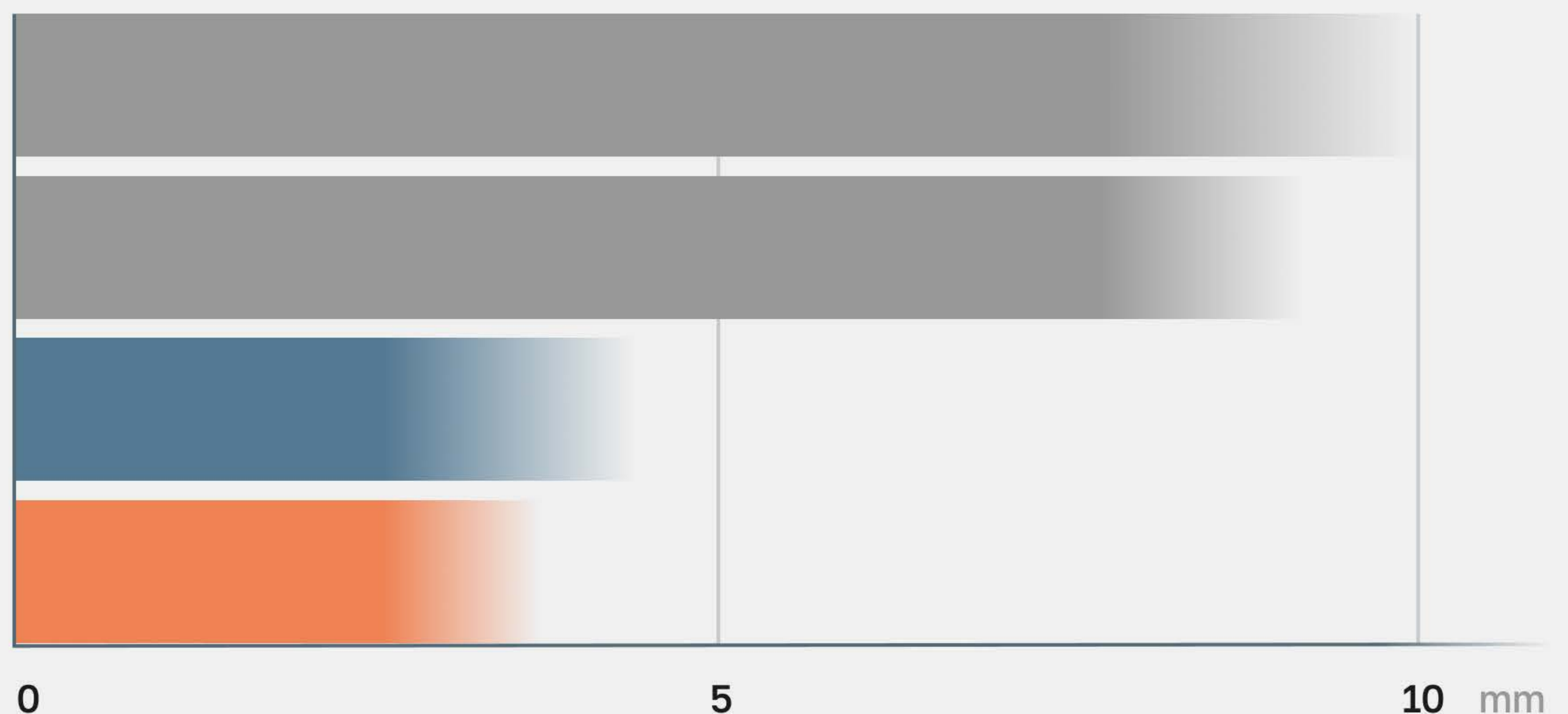
**MRP\* mode** – minimizes stone retropulsion during lithotripsy compared to holmium lasers and standard pulse modes of the Urolase thulium fiber laser series.

Pulse 120 H  
Long pulse\*

Pulse 120 H  
Moses pulse

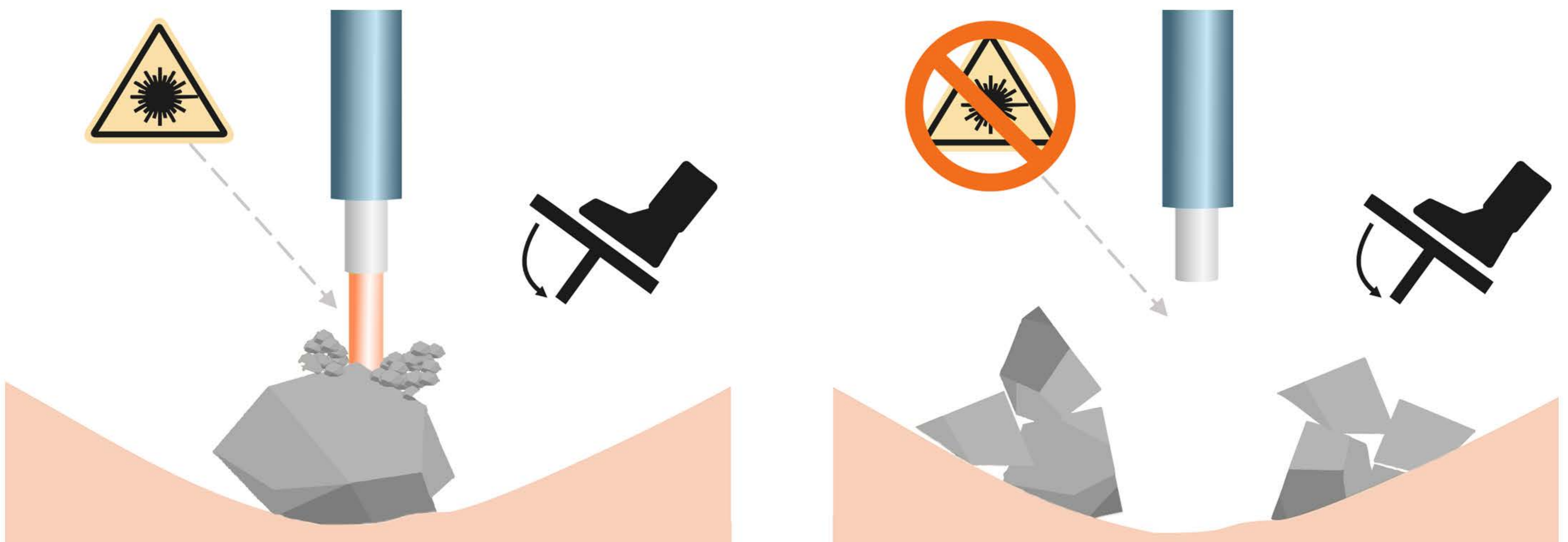
Urolase SP+  
Optimized pulse

Urolase+  
series



## Tissue Sensor – stone vs tissue recognition

Tissue Sensor is an innovative safety technology developed by VPG LaserOne. It automatically detects soft tissue during lithotripsy and instantly stops laser emission, minimizing the risk of unintentional damage.



Tissue Sensor operates on the principle of real-time tissue differentiation. The system detects whether hard (stone) or soft tissue is in front of the surgical fiber tip. During lithotripsy, it automatically halts laser emission upon soft tissue detection – significantly reducing the risk of injury or perforation.

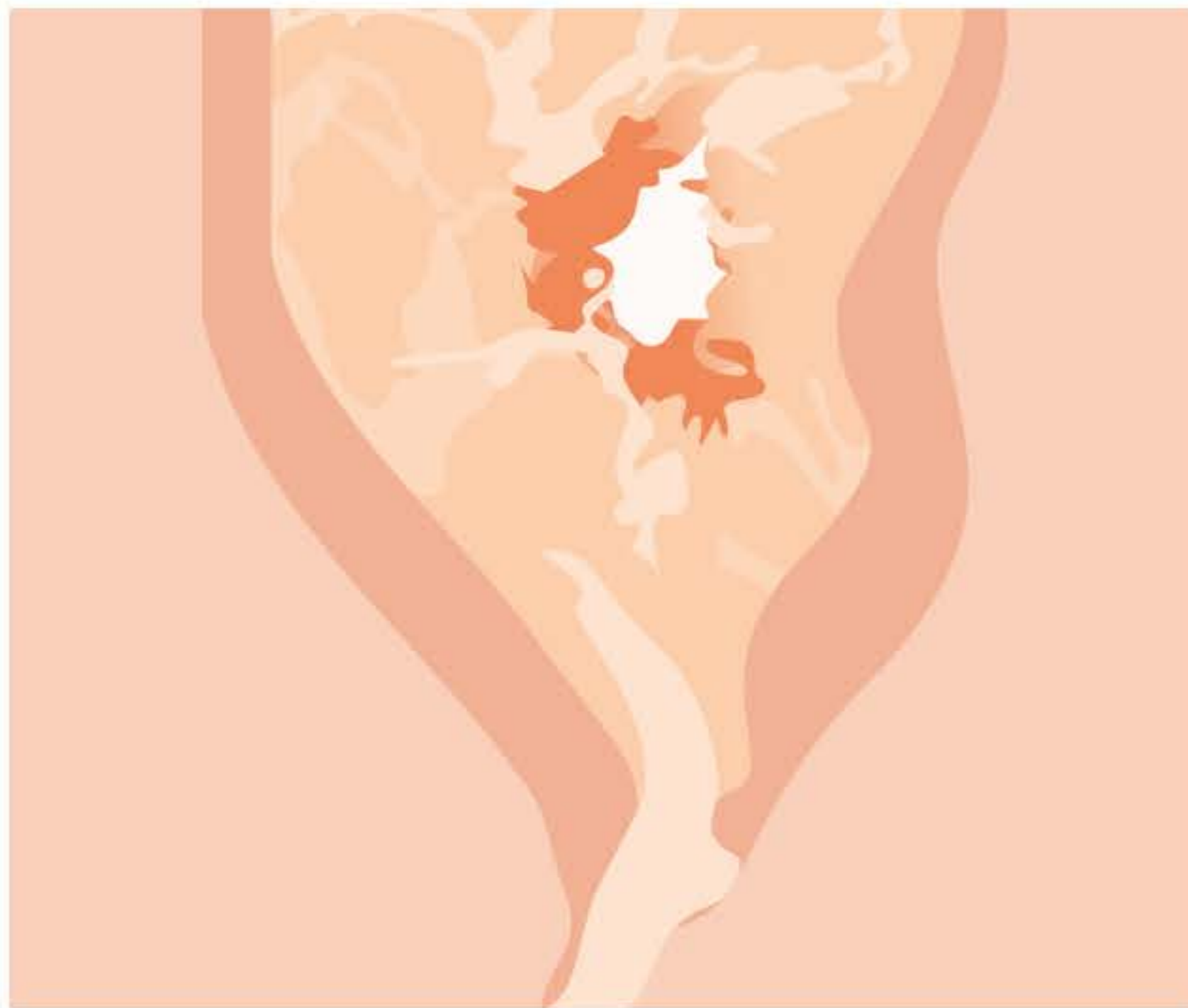
\*Ventimiglia E., et al. (2020) Effect on Temporal Pulse Shape on Urinary Stone Phantom Retropulsion Rate and Ablation Efficiency Using Holmium:YAG and Superpulse Thulium Fiber Lasers. BJU Int. 2020 Jul;126(1):159-167



# Soft tissue

## Two enucleation modes in one system

With two enucleation modes built in, Urolase+ Premium offers enhanced versatility for customized, high-precision urological surgeries.

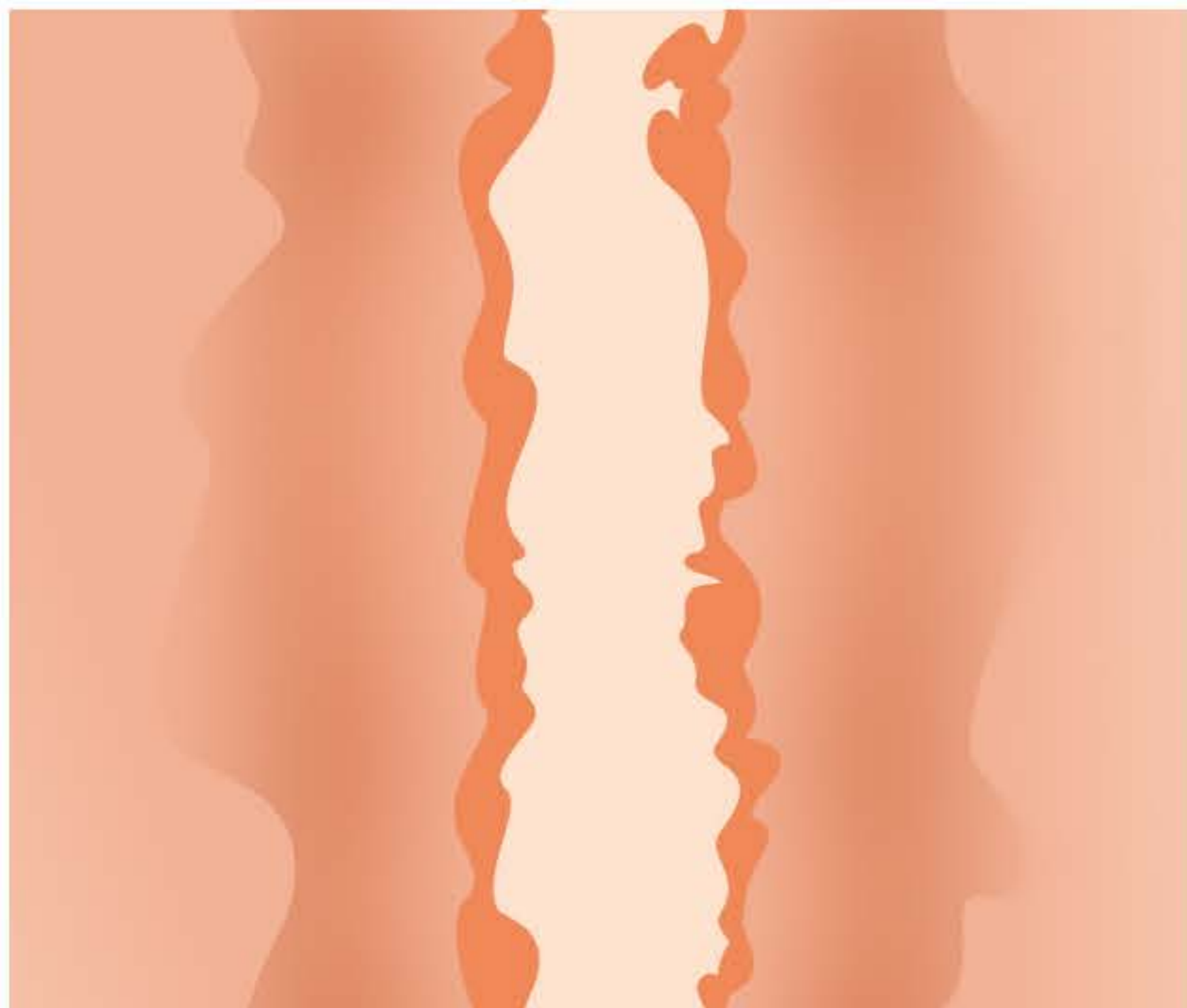


1 mm



### **DissectPulse mode** – modulated enucleation

- Delivers superior hemostasis, significantly outperforming HoLEP
- Enables precise dissection of adenomatous tissue, similar to HoLEP
- Carbonization-free



1 mm



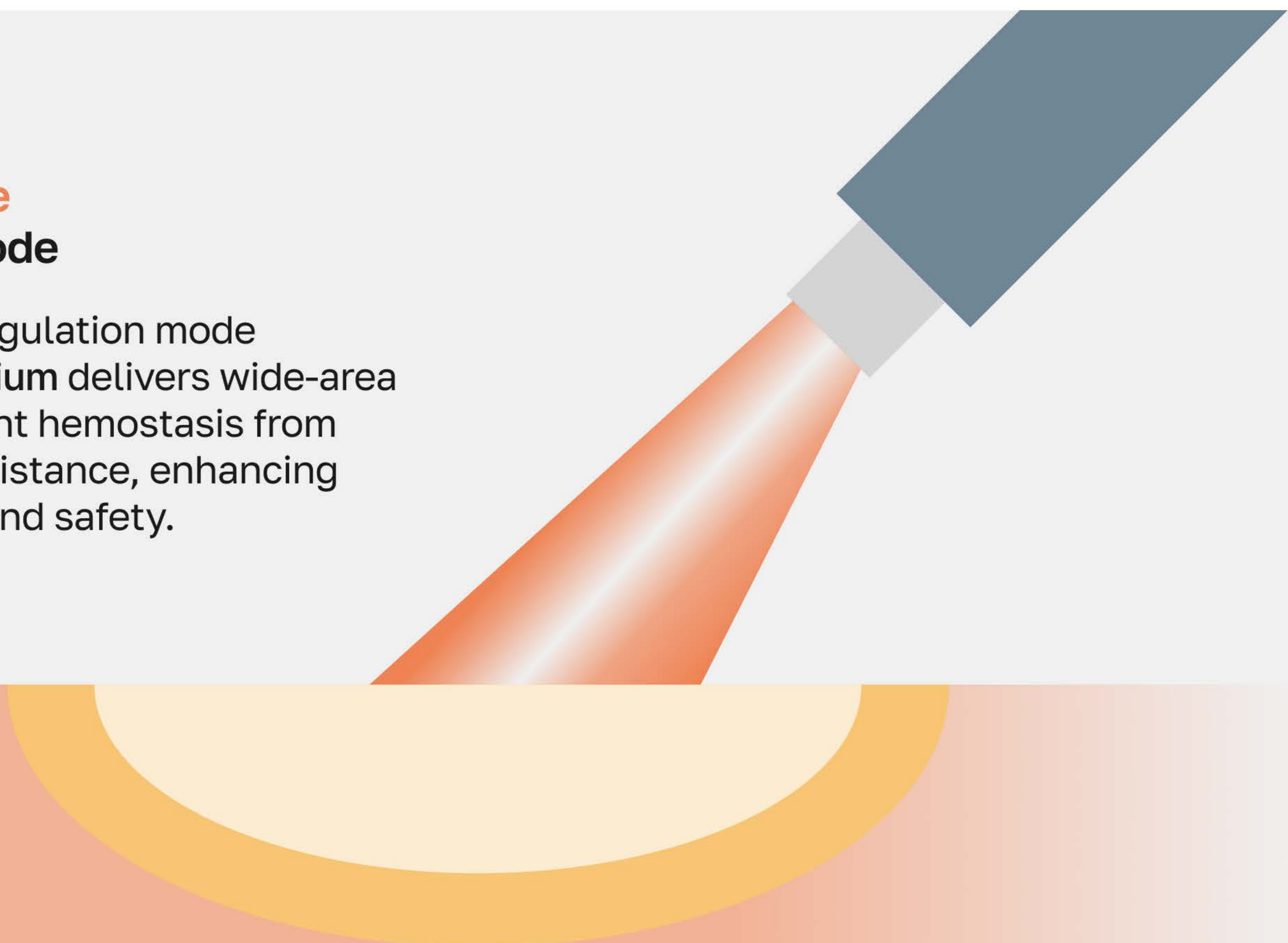
### **ThuFLEP** – classic thulium fiber laser enucleation

- High precision due to minimal penetration depth
- Excellent hemostasis with virtually no blood loss
- Efficient soft tissue vaporization



## **BloodlessPulse** coagulation mode

A specialized coagulation mode in Urolase+ Premium delivers wide-area energy for efficient hemostasis from a short working distance, enhancing surgical control and safety.



## Accessories

In addition to wireless functionality, the pedal can also be connected via cable – a wired option is included in the standard kit, ensuring flexibility and reliability in various clinical settings.



**New wireless laser activation pedal**



**Laser cart**

Not included in the standard device package

## Technical specifications

	Urolase+		Urolase+ Premium	
Wavelength, $\mu\text{m}$	1.94		1.94	
Max output power, W	40		70	
Laser type	Thulium fiber laser		Thulium fiber laser	
Operation mode	Pulsed	Continuous	Pulsed	Continuous
Pulse energy, J	0.02...6	–	0.02...6	–
Max. frequency, Hz	2000	–	3500	–
Cooling system	Air		Air	
Power supply voltage, V	220 $\pm$ 10 %		220 $\pm$ 10 %	
Network frequency, Hz	50...60		50...60	
Power cons., V*A not more than	$\leq$ 1600		$\leq$ 1600	
Dimensions L*W*H, mm	606 x 526 x 314		606 x 526 x 314	
Weight, kg	45		45	



# Pioneering precision laser technology

VPG LaserOne LLC (formerly IPG IRE-Polus Ltd.) is a vertically integrated company established by an outstanding Soviet scientist, Valentin Pavlovich Gapontsev, the founder of the international scientific and technical IPG Photonics Corporation.

VPG LaserOne is a globally recognized leader in fiber lasers and amplifiers, and devices and systems based on them. Drawing on deep expertise and decades of experience, VPG LaserOne LLC designs and supplies medical laser devices and surgical fiber for a wide range of applications.

VPG LaserOne develops advanced medical laser devices through a full-cycle process that includes device engineering, development of clinical application protocols, in-vitro research in its laboratory and clinical trials conducted with leading clinical centers.



**1991**

Year of establishment



**>1M**

Patients treated annually



**50+**

Patents in laser medical technologies



**>3000**

Medical laser systems installed worldwide since 2017