

ClearPetra®

The Next Generation Ureteral Access Sheath

Aspirates stones from the
pyelocalyceal system



"Suction revolutionizes the way
of stone management"

"Suction shapes the future of
flexible ureteroscopy"



"There is some evidence of using
suction during PNL to reduce
intra-renal pressure and increase
stone-free rate."¹



"Several centers have conducted experimental and
clinical studies on suctioning use during PCNL,
mPCNL, and ureteroscopy and concluded that it is
an effective and safe adjustment that improves
stone-free rates and limits complication rates after
these procedures. Suctioning use during common
endourological procedures led to improved safety
and efficacy among several indications"²

Well Lead has the patents for the Suction - Evacuation devices.
ClearPetra® is a registered trademark of Well Lead.

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PROBLEMS DURING ENDOSCOPIC LITHOTRIPSY

Stone
retropulsion

Obscured
visual field

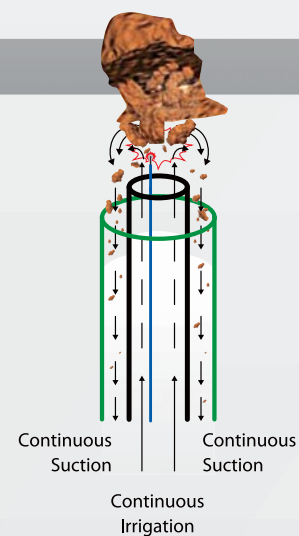
Difficulties in
extracting stone
fragments

High
intrarenal
pressure

The **ClearPetra® Ureteral Access Sheath**, also referred to as **Vacuum Assisted Ureteral Access Sheath** or **Suction Ureteral Access Sheath** in the literature, has an oblique side branch with pressure vent, that can be connected to negative pressure aspiration, and a flexible tip that can be passively deflected 180° to the lower pole calyces by the flexible ureteroscope, allowing for efficient and effective treatment of urinary stones.

Mechanism

- The inflow of irrigation is through the endoscope.
- The outflow of irrigation is between the scope and the sheath.
- A vortex is created at the distal end of the sheath.
- The irrigation fluid, the stone fragments, dust, and blood, etc. in the vortex can be aspirated out.
- The aspiration pressure can be adjusted by the pressure vent on the oblique side branch of the sheath.



Tips

- Use disposable flexible Ureteroscope (URS) with the ClearPetra® Ureteral Access Sheath.
- Make sure the shaft of the flexible URS is at the least 2 Fr smaller than the sheath.
- Set the continuous negative aspiration at the least 200 mmHg.
- Use the continuous pressurized irrigation at the least 60 cc/minute.
- Withdraw the URS to the red band on the sheath to open an unimpeded channel for the passage of larger stone fragments.

Benefits

1 Maintaining Low Intrarenal Pressure and Temperature

A vortex is created by the continuous irrigation and aspiration. The irrigated fluid can be effectively evacuated, thus always maintaining low intra-renal pressure and temperature, ensuring less complications and thermal damage.

2 High Stone Clearance Rate

The deflectable tip can be safely placed in the pyelocalyceal system for better aspiration of the stone fragments even in the lower pole.

3 High Surgical Efficacy

Stone dust can be aspirated out during laser lithotripsy.

4 Reduced Retropulsion

Stone fragments will aggregate at the distal end of the ClearPetra® sheath instead of scattering.

5 Improving Visual Field

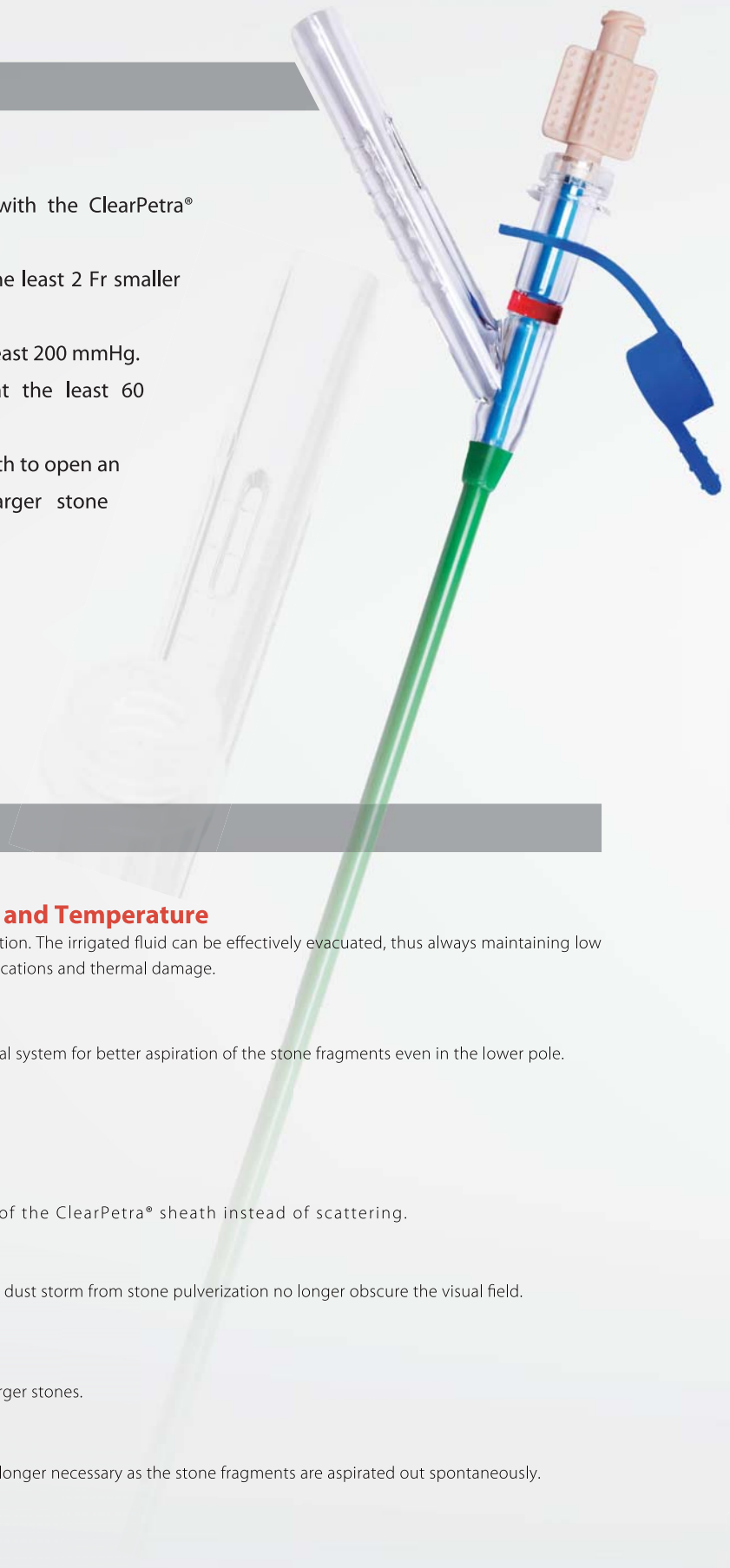
Under the continuous irrigation and suction, bleeding and dust storm from stone pulverization no longer obscure the visual field.

6 Treating Larger Stones

With the high efficacy, better vision, urologists can treat larger stones.

7 Less Accessory Device Required

Stone basket, forceps, and anti-retropulsion device are no longer necessary as the stone fragments are aspirated out spontaneously.



Flexible Distal Segment

For deflection in the
pyelocalyceal

**Hydrophilic Coated and
Wire Integrated Shaft**

For atraumatic insertion and
good x-ray visibility

Red Band

Indicates the scope
withdrawal limit

Oblique Side Branch

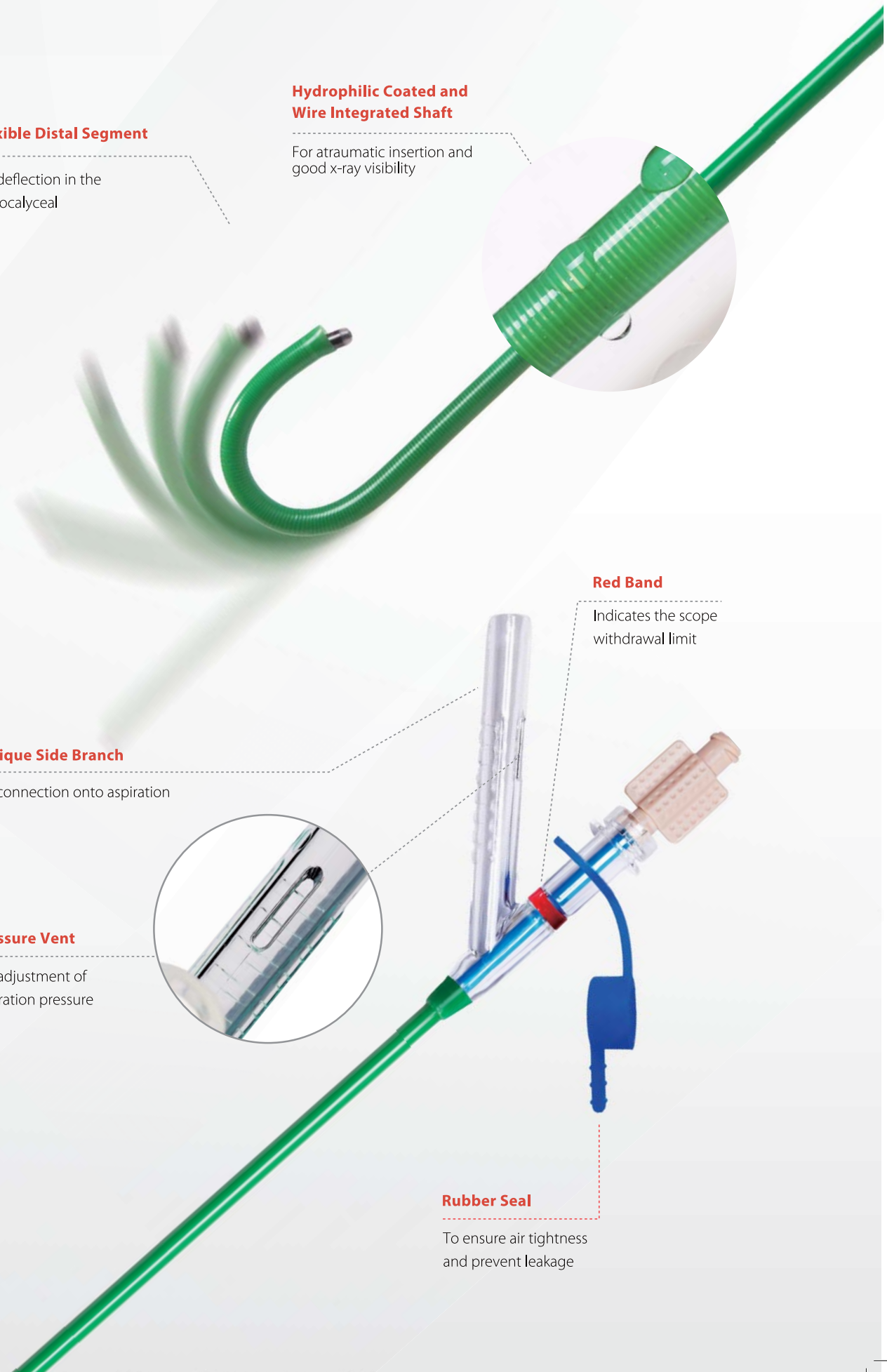
For connection onto aspiration

Pressure Vent

For adjustment of
aspiration pressure

Rubber Seal

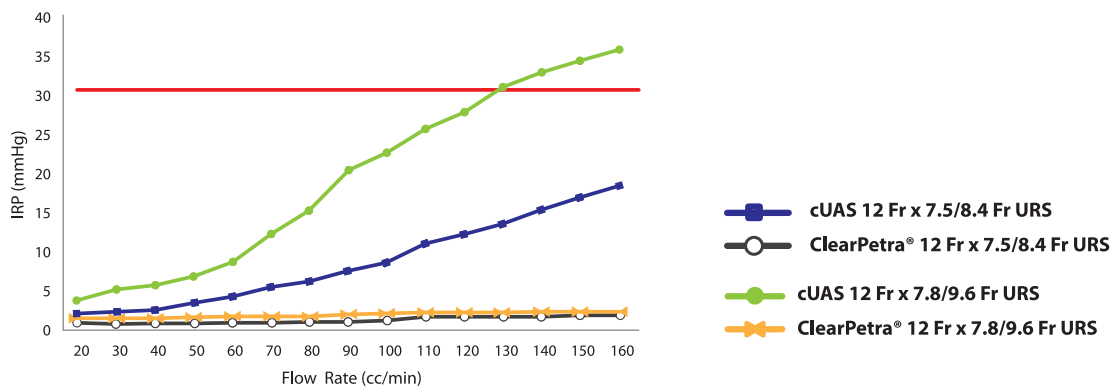
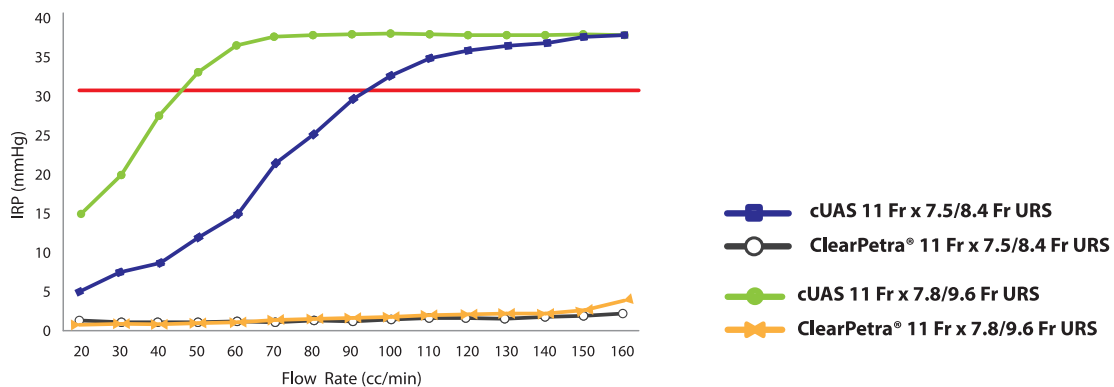
To ensure air tightness
and prevent leakage



Intrarenal Pressure Studies

High Irrigation flow is often necessary for clear vision, to flush out stones, and to lower temperature caused by laser lithotripsy. But high irrigation rate concomitantly elevates the intrarenal pressure, which might result in pyelo-sinus, -tubular, and -venous backflow, that may result in sepsis, kidney damage, etc ^{3,4,5}.

Studies ^{6,7} are carried out to comparatively measure the Intrarenal Pressure between the conventional ureteral access sheath and ClearPetra® ureteral access sheath using an ex-vivo porcine kidney model and a Portable Irrigation Pump. The results indicated that the 11 Fr cUAS is not recommended to use with 9.6 Fr flexible ureteroscope. In contrast, the ClearPetra® UAS always maintains lower IRP than conventional UAS, especially when the irrigation rate is set above 100 cc/min.



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Illustrative Case

Patient: 49 years old male with bilateral renal stones; pre-stented for 10 days.

Right Renal Stone: 1 cm in the lower pole, treated with dusting technique. A 5 Fr stent was placed.

Left Renal Stones: 2 cm stone in the renal pelvis and 2 clusters of 2 – 4 mm stone in the middle and lower pole. All the stones were fragmented and aspirated out using ClearPetra® Ureteral Access Sheath. A 6 Fr stent was placed.

Total Operation Time For Both Sides: 120 minutes included 100 minutes of lasering time.

Hospitalization: Discharged 2 days after surgery.



Ordering Information

ClearPetra® Ureteral Access Sheath

Cat. No.	ID x Length	Cat. No.	ID x Length
90111036	10 Fr x 36 cm	90111146	11 Fr x 46 cm
90111040	10 Fr x 40 cm	90111155	11 Fr x 55 cm
90111046	10 Fr x 46 cm	90111236	12 Fr x 36 cm
90111055	10 Fr x 55 cm	90111240	12 Fr x 40 cm
90111136	11 Fr x 36 cm	90111246	12 Fr x 46 cm
90111140	11 Fr x 40 cm	90111255	12 Fr x 55 cm

Stone Collection Bottle

Cat. No.	Size (ml)
79880140	140 ml

References

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- Tzelvels, L., et al. Suction Use During Endourological Procedures. *Curr Urol Rep*, 2020. 21: 46.
- Pauchard F, Ventimiglia E, Corrales M, Traxer O. A Practical Guide for Intra-Renal Temperature and Pressure Management during RIRS: What Is the Evidence Telling Us. *J Clin Med*. 2022 Jun 15;11(12): 3429. doi: 10.3390/jcm11123429.
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- Jung H U, Frimodt-Møller P C, Osther P J, et al. Pharmacological effect on pyeloureteric dynamics with a clinical perspective: a review of the literature[J]. *Urol Res*, 2006;34(6):341-350.
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- Guan W, Liang J, Wang D, Lin H, Xie S, Chen S, He J, Xu A. The effect of irrigation rate on intrarenal pressure in an ex vivo porcine kidney model-preliminary study with different flexible ureteroscopes and ureteral access sheaths. *World J Urol*. 2023 Feb 9. doi: 10.1007/s00345-023-04295-1. Epub ahead of print.