

DESIGNED, BUILT, AND SUPPORTED IN THE USA



**IN-LINE
RENEWAL
SOLUTIONS**

LIGHTRAY™
BUILT IN THE USA

LR2

LR3

LRI

LRS

LRM

REVOLUTIONIZING 2-INCH TO 12-INCH UV PIPE LINING



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<https://in-linetrenchlessshop.com>

LIGHTRAY LR2 SYSTEM

The LightRay **LED UV** system is an advanced UV cast-in-place pipe technology, allowing complete operator control of the casting process. Our patent-pending, state-of-the-art technology can significantly reduce your costs and risks when compared to traditional thermo setting or ambient-cast liners, creating new opportunities for plumbers and municipal contractors.

THE KIT INCLUDES

- LightRay LR2 control box and power pack
- LightRay LR2 pneumatic accessories pack
- LightRay LR2 packer in 5-, 10- or 20-foot length with reel and 100 foot hose

PULL IN PLACE

The LightRay non-VOC resin is pre-impregnated into the high-performance fiberglass liner and shipped ready to install for no-dig pipe infrastructure repairs. Once the install site is prepped, casting times in under 10 minutes can be achieved, eliminating the risk of premature or prolonged casting times due to temperature variations.



FEATURES

- ✓ No complex parts or computer regulated movement
- ✓ Repairs all types of 2" and 3" drain pipes
- ✓ The packer is incredibly flexible easily navigating bends and p-traps
- ✓ Casting times of 10 minutes or less
- ✓ All liner materials arrive ready to install and can be stored for up to 6 months
- ✓ All systems sold come with a 1-year limited warranty and training included
- ✓ Designed, built, and supported in the USA



**THIS SYSTEM IS A SIMPLE UPSSELL FOR PLUMBERS AND
DRAIN CLEANERS MAKING A HOUSE CALL. THE REPAIR
IS PERFORMED IN MINUTES DURING THE SAME SERVICE CALL.**



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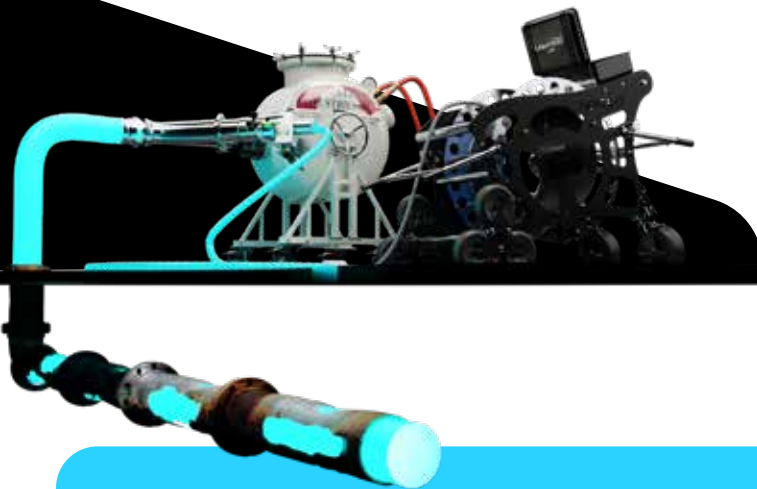


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LIGHTRAY LR3 SYSTEM

The LightRay LR3 LED UV system is an advanced UV cast-in-place pipe technology, allowing complete operator control of the casting process. Our patent pending, state-of-the-art technology can significantly reduce your costs and risks when compared to traditional thermo-setting or ambient cast liners, creating new opportunities for plumbers and municipal contractors.

The LR3 is both a push and pull-in-place spot repair system, giving you the flexibility to perform both operations by only changing the proprietary cold LED repair packer. The LightRay non-VOC resin is pre-impregnated into the high-performance fiberglass liner and shipped ready to install for no-dig-pipe infrastructure repairs. Once the install site is prepped, casting times in under 10 minutes can be achieved, eliminating the risk of premature or prolonged casting times due to temperature variations.



- ✓ Repairs pipe diameters of 4-inch to 12-inch, including transitions
- ✓ 8-, 10- and 12-inch diameter packers for 5-foot and 10-foot repairs
- ✓ The 150-foot hose couples with 5-, 10-, or 20-foot packers to perform repairs
- ✓ Casting times of 10 minutes or less
- ✓ Liner materials arrive ready to install
- ✓ Easily navigates 45- and 90 degree bends
- ✓ Training included and 24/7 support

- ✓ No complex parts or computer regulated movement
Casts lateral lengths of 150 ft. up to 6.3 ft./min. in all types of pipes
- ✓ The 25- or 50-foot length light train incorporates cold LED lights for industry leading cast times and does not rely on heat to cast the liner
- ✓ Our proprietary design allows the light train to be incredibly flexible, navigating multiple bends up to 90 degrees
- ✓ Liner material is available in 3-, 4-, 6- and 8-inch diameters, including transitional flex
- ✓ All liners arrive ready to install and can be stored for up to 6 months
- ✓ All systems sold come with a 1-year limited warranty and training included

HAVING MULTIPLE PACKERS ALLOWS THE USER TO PRE-LOAD THEM BEFORE JOBS, ENSURING THE REPAIR PROCESS GOES QUICKLY AND SMOOTHLY ON EACH JOBSITE



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LIGHTRAY LRI SYSTEM

The LightRay LRI system is the most advanced entrant to the UV cast inversion liner market. Our simple design allows complete operator control over the process and closely resembles traditional ambient cast inversion methods. The difference is that we can accomplish throughout up to 6.3 feet per minute of casting with the proprietary light train, which incorporates cold LED lights that requires no heat to cast the liner. The light train comes in 25- or 50-foot options, operates on a low-voltage DC platform, and is internally protected to accommodate bends in pipes up to 90 degrees.



No more carrying hazardous materials in your truck or trailer and no need to measure and mix on-site. Light-Ray liners arrive ready to install. This dramatically reduces the variability from mixing and preparing liners and eliminates the requirement for extra equipment in the field, allowing for rapid system deployment. The LRI system uses non-thermal UV casting resin that is temperature-stable and only activated by UV light coupled with high-strength flexible fiberglass coated liners. No matter the temperature in the working environment, the casting times are consistent every time.

“
**ONCE THE CASTING PROCESS STARTS, THE Y-CONNECTOR CAN BE
CAPPED OFF AND THE INVERSION DRUM DISCONNECTED TO
RELOAD FOR THE NEXT JOB.**



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LIGHTRAY LRS SYSTEM

The LightRay LRS is a revolutionary system designed around the LMK Shorty T-Liner product. Instead of relying on ambient or heat assist methods, the Shorty UV liner is cast in place with the LRS using a proprietary UV activated resin paired with a fiberglass Shorty liner. The liner casts only when exposed to our proprietary cold LED light launcher and light train which are required to cast the liner. Our simple system bolts onto an existing LMK ambient system and allows the operator complete control over the casting process, very closely resembling the procedure for installing a standard Shorty. The system does not create excess heat and a Shorty UV liner can be cast in as quickly as 10 minutes.

Shorty UV liners arrive fully assembled and ready for field impregnation. This greatly reduces the variability from preparing liners and also eliminates the requirement for extra equipment in the field allowing for rapid deployment of the system. The LRS system uses non-thermal UV casting resin that is temperature stable and only activated by UV light reducing the risk of the liner cooking prematurely. The liners are customer configurable that arrive complete with Insignia™ O-rings and Hydro-hats. No matter the temperature in the working environment, the casting times are consistent every time.

- ✓ No complex parts or computer regulated movement
- ✓ The UV cast Shorty is available in mainline diameters of 8-, 10- and 12-inches with lateral diameters of 4- and 6- inches
- ✓ Insignia™ hydrophilic O-rings included with every liner for leak free installations and the translucent liner verifies no leakage once cast in place
- ✓ The control box, reel and power supply are cross compatible with the LRM system
- ✓ Our proprietary UV launcher and light train casts the full mainline wrap and up to 10 feet up the lateral
- ✓ All liners arrive ready for field impregnation and installation
- ✓ All systems sold come with a 1-year limited warranty and training included



THE LAUNCHERS COME IN PAIRS TO KEEP THE TEAM MOVING DURING MULTIPLE INSTALLATIONS. LOAD THE SECOND LAUNCHER DURING THE CASTING PROCESS FOR THE FIRST LINER AND REPEAT THE PROCESS AS THE CREW MOVES FROM HOUSE TO HOUSE.



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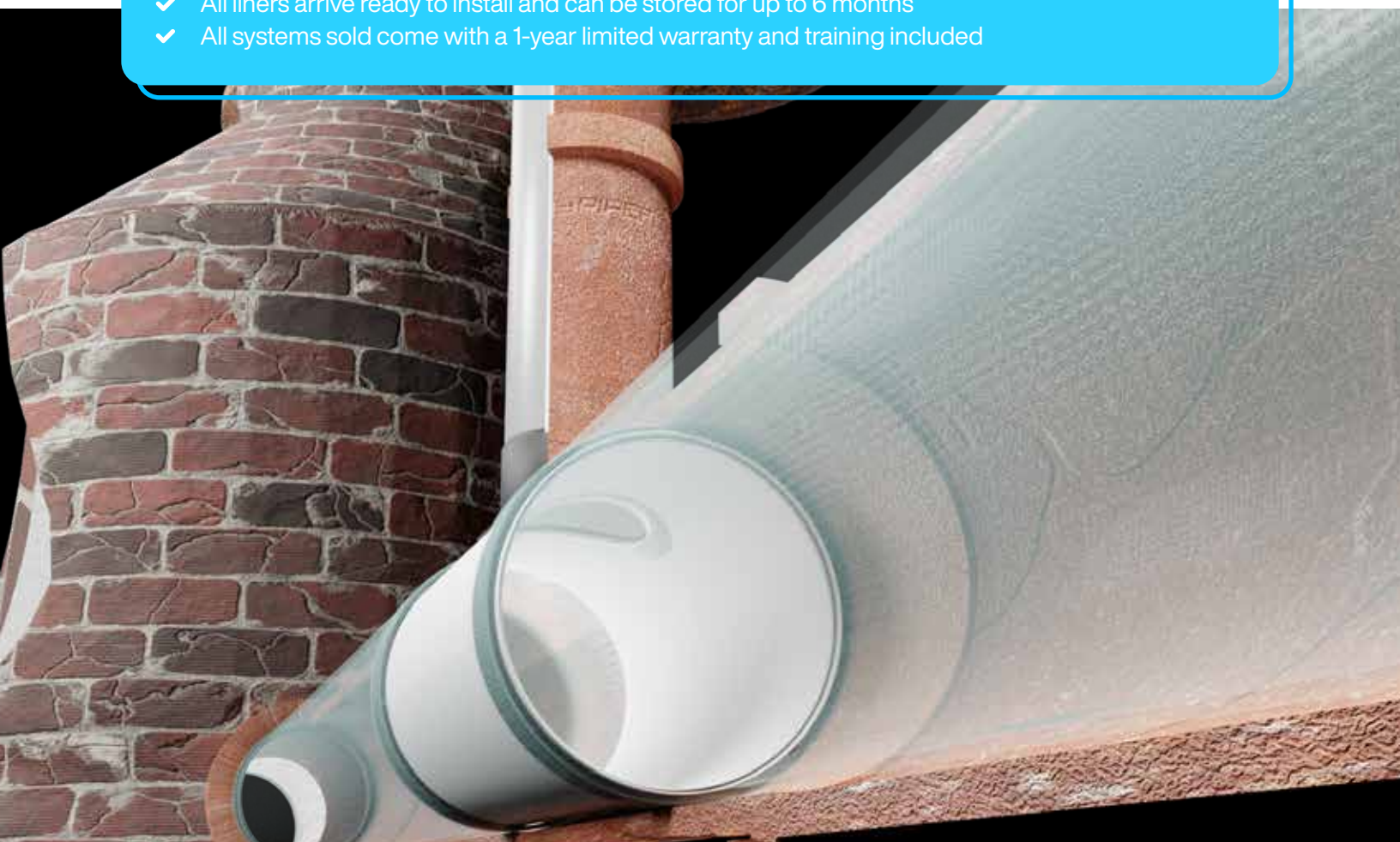
LIGHTRAY

LRM SYSTEM

The LightRay LRM system is your go to for mainline spot repair. The LRM works like a traditional spot repair system but with the added benefit of LightRay technology. The LRM uses the same large diameter LR3 packer, with a proprietary adapter, and is flexible enough to fit through a manhole into the mainline for repair lengths up to 10-feet. The LRM allows the operator complete control over the casting process with no stress over resin kicking off before positioning the packer is complete. The system does not create excess heat and can cast the liner in place in as little as 15 minutes depending on diameter.

LightRay takes away the anxiety of lining with its rapid deployment capabilities. No more carrying hazardous materials in your truck or trailer and no need to measure and mix on-site. LightRay liners arrive ready to install without any need for refrigeration. This dramatically reduces the variability from mixing resin and preparing liners in the field also eliminating the requirement for extra equipment. All LightRay technology uses flexible fiberglass liner coupled with a non-thermal UV casting resin that only activates when exposed to the specific light wavelength of the LightRay packer. LightRay doesn't care about the temperature in the working environment or the presence of water, only providing you with a quick and consistent repair, every time.

- ✓ No complex parts or computer regulated movement
- ✓ The LRM can perform spot repairs up to 10-feet long in mainline pipes of 8, 10 and 12 inches
- ✓ Our proprietary packer is designed to also work with the LR3 system
- ✓ All liners arrive ready to install and can be stored for up to 6 months
- ✓ All systems sold come with a 1-year limited warranty and training included



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STANDARD LR3 PACKERS WITH SILICONE EXPANSION BLADDERS

The LightRay LR3 packer is the most advanced cold LED casting packer on the market today. Available in 5', 10', and 20' repair lengths, the packer is designed to use minimal, low-voltage DC power for delivering maximum lengths of casting productivity. The specialized silicone bladder material is reinforced for multiple uses and durability, allowing maximum light exposure to our UV resin liners. In addition, we supply a disposable outer foil, which helps prolong the life of the bladder and reduces the time needed to clean the packer.

The leading-edge navigation spring assists in going around bends and can house a radiofrequency device for easy location and tracking below ground or behind walls and floors. In addition, the spring is removable, allowing the hook to be exposed for all pull- in-place applications. The rear connector comes equipped with a securing harness to allow safe retrieval without damaging the air/power hose connection when the packer is being pulled back from an installation.

FEATURES

- ✓ 2-inch to 12-inch diameter LightRay LED cast-in-place packer
- ✓ Cold cast LED UV lights
- ✓ UV light energy requirement
- ✓ Reinforced, multiple-sized silicone bladders
- ✓ Leading-edge removable spring guide
- ✓ Cutting-edge hook for pull-in-place
- ✓ Retrieval harness for pulling back on the packer without straining the air/power hose connector assembly
- ✓ Specialized air/power connector for easier reconnection on other sized packers



PRE-MIXED GLASS FIBER SEAMLESS UV LINER

No more measuring, mixing, and carrying hazardous materials in your truck or trailer. No more wet-out tables or vacuum pumps needed. No heaters or chillers required, and no more costly mistakes or messes. LightRay liners arrive ready to install and without any need for refrigeration.

- ✓ Eliminates downtime, wasted resources and equipment, and all the risks associated with on-site wet out (resin impregnation)
- ✓ Dramatically saves time, as the operator has complete control of when to start the casting process
- ✓ Reduces all cleanup on the job — no additional chemicals needed and no refrigeration necessary
- ✓ Eliminates the risk of premature or prolonged casting times due to temperature variations and traditional thermal casting mechanisms

FEATURES

- ✓ Resin-impregnated liners in 2-inch to 12-inch diameters, including transitional flex
- ✓ Casting times between 5 and 15 minutes depending on application
- ✓ For host pipes of any material and in diameters of 2-inch to 6-inch
- ✓ Navigates multiple 45- and 90-degree bends
- ✓ No refrigeration necessary
- ✓ 6-month shelf life when stored in a controlled environment 50-70°F
- ✓ Standard UV resins are non-VOC (no odor)
- ✓ Portable tote packaging with UV liner protection
- ✓ Exceeds the structural requirements of ASTM F1216
- ✓ Sold in rolls of 100 foot rolls of uncoated material for the LR3 system
- ✓ Sold in 100 and 150 feet rolls of coated material for the LRI system





LIGHTRAY TURN-KEY UV TRAILER

The LightRay Turn-Key UV Trailer will help simplify your business by giving you a portable work space and the capability to transport all the equipment needed to perform LightRay repairs. The trailer comes complete with a LightRay tool and safety package in addition to the workstation, ample storage and tie downs for a LR3, LRI and Inverter. Not to mention, you can also transport your Picote cleaning system and RIDGID camera.

If LightRay takes away the anxiety of lining, then the new LightRay trailer takes away the anxiety of finding a workspace on the job site. Our specialized LightRay trailers are equipped with a workstation and ample storage space for working with LightRay products before installation. The trailers are air conditioned for crew comfort and the rear features UV blocking curtains to ensure the environment is perfect for loading LR3 packers or an inverter with LRI materials.

STANDARD FEATURES

- ✓ Air conditioned trailer with work station, cabinets and shelving
- ✓ 8,000W gasoline generator
- ✓ LightRay trailer tools package
- ✓ LightRay trailer safety package
- ✓ UV blocking rear curtains

OPTIONAL FEATURES

- ✓ LightRay 2" system
- ✓ LightRay LR3 system and packers
- ✓ LightRay LRI system
- ✓ 30" inverter
- ✓ 60 CFM diesel compressor
- ✓ Picote pipe cleaning tools
- ✓ RIDGID camera system



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LIGHTRAY *RESIN*

The LightRay systems incorporate non-thermal UV casting resins along with high-strength flexible fiberglass pipe liners. No matter what the current temperature is above or below ground, the casting times are consistent anytime and every time, all in under 10 minutes.

FEATURES

- ✓ Casts in as little as 5 to 15 minutes depending on application
- ✓ No refrigeration necessary and 6-month shelf life when stored in a controlled environment between 50-70°F
- ✓ Standard UV resins are non-VOC (no odor)
- ✓ Exceeds the structural requirements of ASTM F1216
- ✓ High temperature UV resin now available!

UNDERGROUND SOLUTIONS YOU CAN RELY ON

BRANDS YOU CAN TRUST



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DRAIN CLEANING FOR REAL PROFITS

WHILE YOUR TECH IS ONSITE

WHAT IS YOUR SOLUTION

WHEN **NO** IS THE ANSWER TO A FULL LENGTH REPAIR?

SMALL MOM & POP

20

drain cleaning
calls per month
x 20% close rate
x \$2,500
per spot repair

\$10,000
in one month

\$30,000
in three months

\$60,000
in six months

MEDIUM BUSINESS

50

drain cleaning
calls per month
x 20% close rate
x \$2,500
per spot repair

\$25,000
in one month

\$75,000
in three months

\$150,000
in six months

LARGE CORPORATION

100

drain cleaning
calls per month
x 20% close rate
x \$2,500
per spot repair

\$50,000
in one month

\$150,000
in three months

\$300,000
in six months



MONTHLY PAYMENTS ARE LESS
THAN THE PROFIT
FROM ONE INSTALL PER MONTH

LIGHTRAY LR3 SYSTEM
PAYS ITSELF OFF IN 15 JOBS

Average Gross Profits from LightRay LR3 Contractors across the USA



CORPORATE OVERVIEW

Waterline Renewal Technologies is a leading provider of innovative products, technologies, and services in the trenchless rehabilitation industry. We specialize in restoring degraded infrastructure and preventing inflow and infiltration in drain, sewer, and stormwater systems through advanced, trenchless solutions.

Founded on the acquisition of LMK Technologies and Perma-Liner Industries in 2012, our company introduced groundbreaking technologies to both residential and municipal markets. These acquisitions set the foundation for our leadership in the industry.

In the municipal market, the addition of APM Permaform in 2014 further strengthened our portfolio with solutions that provide structural integrity and corrosion protection. APM's trusted brands— ConShield, CentriPipe, and Permacast— extend the lifespan of municipal storm and sewer systems. Meanwhile, LMK Technologies continues to lead with its innovative cured-in-place pipe (CIPP) products like the T-Liner® and Insignia®, setting industry standards for watertight lateral rehabilitation.

In the residential market, Perma-Liner Industries is the trusted leader, offering efficient and minimally disruptive solutions for small-diameter lateral pipeline rehabilitation. PLI's products are designed to meet the needs of contractors and homeowners, ensuring reliable and cost-effective repairs.

In 2021, we expanded our reach through the acquisition of Pipe Lining Supply, enhancing our trenchless solutions portfolio and significantly growing our West Coast distribution network. This acquisition allowed us to deliver a broader range of products to contractors nationwide, particularly in key markets requiring localized support. Around this time, we also expanded the adoption of LightRay, our advanced UV-cured repair system. LightRay combines efficiency, speed, and sustainability, enabling faster project turnaround with minimal disruption. Its state-of-the-art LED light technology ensures durable, precise repairs, setting a new standard for pipeline rehabilitation in both residential and municipal markets.

Waterline Renewal Technologies is owned by Behrman Capital, a private equity firm dedicated to driving growth in middle-market businesses. Their strategic partnership enables us to continually expand and innovate in both residential and municipal markets, with flagship products like LightRay leading the evolution of trenchless technology.

Headquartered in Ottawa, IL, with distribution facilities across the United States, Waterline Renewal Technologies is committed to delivering advanced infrastructure rehabilitation solutions nationwide.



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