



# KEEPING TRAINS ON TRACK

with high-speed rail cleaning laser technology

## LPS

We are LPS, a laser technology scale-up based in Amsterdam, The Netherlands. We have been creating safe and reliable rail cleaning solutions since 2016.



Equipment Laser End,  
LaserTrain Contraption (LTC)



## Product Features

### Control System

Combines all hardware and software for an easy autonomous clean, so no manual operator is required.

### Control System

Enables the Laser End of the system to switch automatically between two modes, *Transport* where the system is raised, and *Cleaning* where it is at the top of the railhead. This prevents the system from hitting rail obstacles.

## Wave goodbye to delays

Our products help rail networks to detect and improve Coefficient of Friction (COF) levels during slip-slide conditions and minimize the impacts of weather events.

### THE LASERTRAIN

The LaserTrain is an advanced system that uses laser technology to eliminate friction loss and provide ideal COF at speeds up to 100kph.

It uses laser ablation to 'vaporize' contamination from the rail heads without any damage, keeping rails free of slip-slide conditions for 24 hours.

Improved friction levels prevent train wheels from blocking, reducing the number of flat spots, low adhesion delays and maintenance costs.

We are the most sustainable rail cleaning option in the market with the lowest CO2 running emissions, pure energy and no consumables or by products.

This technique also works to clear rust, oil and waste from the rails.

### Laser Safety

To prevent lasering on the same spot, the system will automatically shut off at speeds under 2mph.

### Client Dashboard

To keep track of the LaserTrain our partners access detailed analysis including the live position of the train, where it has been, slip slide results, a rain tracker and miles cleaned.

Every autumn, tonnes of leaves fall on railway lines. When they're crushed, a dangerous oily layer forms that causes trains to lose grip. Drivers can't effectively and safely accelerate and brake, meaning severe delays, unsafe journeys, and high maintenance costs.

## Customer Benefits



### Safety

Optimal braking and acceleration, detectable trains and SPAD



### Maintenance

Reduction in flat spots and damaged track



### Capacity

Fewer cars removed from service and speed restrictions lifted



### Service

Reduced delays and cancellations for passengers



### Energy

Low energy consumption



### Punctuality

Trains operate to schedule due to optimal braking and acceleration

## Tailored to meet your requirements

### Model Type

The technology can either be built into a pre-existing train wagon or installed onto a separate wagon with a container. Both models are pulled by locomotives while the lasers clean both rails simultaneously.

**Cleaning speeds:** 25 mph / 40 kph  
45 mph / 70 kph  
60 mph / 100 kph

### Contract

The LaserTrain can be purchased outright or on a lease contract. Please contact us for more details.

*Pricing is based on individual requests. To receive a confirmed price, please contact us.*

Pre-Existing Wagon:  
The Budd M3 passenger train



Separate Wagon: Half height  
container on Y25 bogie



## TRIBOMETER

The Tribometer measures the COF level of the train tracks. It can be mounted on to any train and provides real-time data on the friction levels by measuring the wheel slip while (de)accelerating a train.

This allows operators to see where contamination exists, and the precise level of friction loss at that location. COF on the rail can also be checked after it has been cleaned to determine whether it has been treated effectively.

We offer a basic and premium model depending on the level of accuracy and scale required.

## TCDS: TRACK CONTAMINATION DETECTION SYSTEM

By utilizing pre-existing track circuits in the railway network, the TCDS turns each 500-1000m section of the network into a sensor.

Real time data indicates the condition of the rail with every train pass over, allowing you to monitor demanding network areas around the clock.

Due to the variation in pre-existing track circuits in the field, we have a selection of non-invasive and invasive options to choose from.

Each product allows us to create a heat-map showing key problem areas. This can be used to tailor cleaning operations and maximize efficiency of the LaserTrain and other treatments. When a section is not optimal, a treatment can be sent for cleaning.

The Tribometer and TCDS are both at prototype stage TRL 6-7. Please contact us for more details.

*"We know we cannot control Mother Nature but we can take steps to better prepare and mitigate the impacts. Having these LaserTrains in our toolbox is a gamechanger."*

**LIRR President Phillip Eng**

## Contact

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## Our Clients



Long Island Rail Road



Metro-North Railroad