LATRONIX
Laser Systems



# Latronix Track Measurement LTM

Track Geometry | Rail Profile & Wear | Rail Corrugation

# Latronix Track Measurement

*Rugged design to withstand challenging conditions*

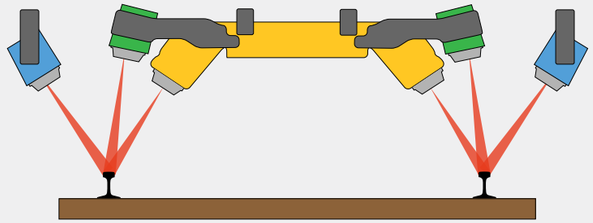
*Quick, flexible installation or full vehicle conversions*


*Non-contact optical and inertial measurements*

*Operation from the vehicle or remotely*

## FLEXIBILITY, RELIABILITY, AFFORDABILITY

***Latronix Track Measurement*** (LTM) is a series of internationally deployed products for track measurement. LTM can operate day and night, in a wide range of weather conditions and in harsh environments. When installed on a vehicle with an axle load of more than 5 tonnes the measurement fulfills Track Geometry Standard EN 13848-2 or -3.



LTM Compact | Corrugation extension | Full Rail Profile extension

More details are available in the LTM Technical Specification. Contact us for more information.

## Configurations

LTM comes in two configurations; Compact and Flex. *LTM Compact* is a transferable kit that can be commissioned quickly. *LTM Flex* is a distributed system, typically used in measurement train conversions and narrow gauge applications.

| MEASUREMENT | LTM COMPACT | LTM FLEX |
|---|---|---|
| *Track Geometry* | ✓ | ✓ |
| *Rail Profile, inner* | ✓ | ✓ |
| *Rail Profile, full* | (✓) | ✓ |
| *Corrugation* | ✓ | ✓ |

## A Safe and Reliable Railway

Monitoring track condition is essential for planning necessary maintenance to ensure that the railway is safe and reliable. LTM can be used to monitor the condition of the track over time, providing early indications of potential issues, allowing maintenance efforts to be deployed in exactly the right place and at the right time.

The system can be installed on most railway vehicles, including construction vehicles such as excavators. This enables rapid follow-up on completed maintenance actions, using the same vehicle for maintenance and measurement. In this way, the traffic can quickly and safely be resumed after an interruption.

**Safety**
LTM can identify issues that need to be remedied before accidents, such as derailment, occurs.

**Reliability**
Deficiencies of the railway causes delays. LTM improves the preventive and remedial maintenance, contributing to the railway reliability.

**Economy**
The cost of preventive measures is lower than the consequential costs of disrupted traffic.

**Credibility**
Our products for measuring track quality meet the requirements stated by the European Standard EN 13848.

## Advantages

### High Speed and Resolution
LTM is able to measure track geometry at speeds up to 300km/h.

### Compact, modular, portable
The units are compact and can be moved between various rail vehicles.

### IoT
The 5G connection enables cloud storage of measurement data, remote support, updates and more.

### Proven and Robust Design
LTM has been designed to operate in a wide range of weather conditions. The equipment is robust and well protected from impacts. It has been tested for EMC in accordance with EN 50121-3-2 and vibration with EN 61373.

## Vehicle requirements

The system can be fitted on most railway vehicles, including trains, RRVs and maintenance vehicles.

## Measurement data

### Base System
Track Geometry parameters

- Longitudinal level
- Alignment
- Gauge
- Cant / Cross-level
- Twist
- Curvature

+ more

### Extended system
- Rail Profile and Wear
- Equivalent Conicity
- Rail Corrugation

*Temporary LTM installation for validation of newly laid track*

*On permanent installations the LTM Protect fan system keeps the lenses clean*

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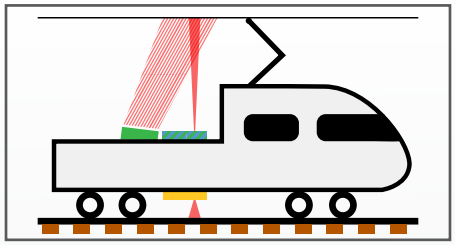

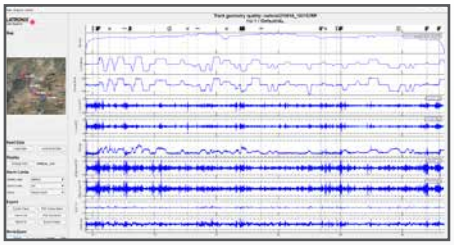

## System Principles

The LTM platform uses lasers, optical sensors and inertial measurement technology to obtain data. This enables calculation of the true path of the rails through space.

Our technology has several advantages over traditional chord-based measurement platforms, such as avoiding mechanical wear, as well as easy calibration. Furthermore, it provides a solution to the wavelength issue that is inherent to chord-based measurements.

## Catenary Measurement

Latronix also provides measurement technology for the overhead contact line.

*LCM Geometry* measures the alignment of the overhead line to the rails. The measurement is contactless and can be performed at high speeds.

*LCM Wear* measures the overhead line wear with high accuracy. The measuring system can monitor the width of the worn part of the contact line and thereby calculate the wear. It can also identify damaged sections.

## Software

LTM and LCM systems are provided together with the *Latronix Metis* software suite. Key components include:

- Metis Collect | User interface for measurement operation
- Metis Calc | Post-processing
- Metis Viewer | Analysis of post-processed data
- Metis Live | Concurrent view and analysis

# Learn more

Latronix is a Swedish company with international experience, passionate in providing efficient measurement solutions. We would love to hear more about your needs and discuss how we can help you realising a better railway.

Visit our website or contact us for more information.

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