

Pavemetrics



Laser Tunnel Scanning System (LTSS)

KEY FEATURES

- Full vault scanning
- 1mm resolution images and 3D data
- 100 times faster and 10 times more accurate than lidar scanning
- Measure tunnel features with sub millimeter accuracy
- Scanning speeds up to 50 km/h
- Detection of cables, light fixtures and other tunnel hardware
- Measurement of concrete slab alignment.



Vision Systems for the Automated Inspection of Transportation Infrastructure



Laser Tunnel Scanning System (LTSS)

The Laser Tunnel Scanning System (LTSS)

uses multiple high speed laser scanners to acquire both 2D images and high resolution 3D profiles of tunnel linings. This system can scan a full tunnel vault (24m) at 1mm resolution image and 3D data at acquisition speeds up to 50km/h.

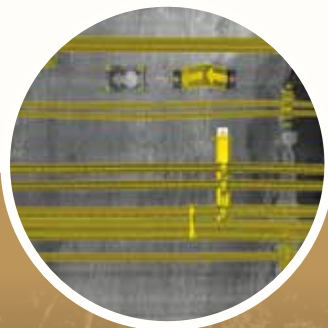
Once digitized, the tunnel data can be viewed and analyzed offline by operators using high-resolution 3D viewing and analysis software that allow the high precision measurement of virtually any tunnel feature. Automatic analysis software is available to detect cables, cracks and chips.

Using the LTSS, vaults are scanned in two passes; one half of the vault is imaged while scanning in one direction of travel and the other half is imaged while driving in the opposite direction. The two passes are automatically stitched together.

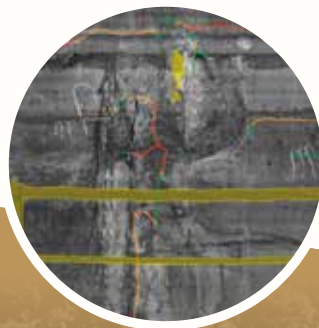
The LTSS technology has been used successfully to scan a variety of tunnel systems around the world including the London Tube in the United Kingdom, and the 28km long Guadarrama high-speed TGV rail tunnel in Spain which was scanned at a resolution of one millimeter (x,y,z) in just 3 hours.

SYSTEM SPECIFICATIONS

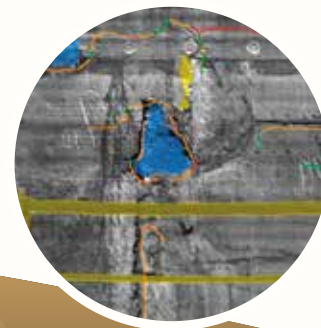
- Number of laser profilers : 6 (standard)
- Sampling rate : 14,000 profiles/s
- Points per profile : 12,000 points (2D and 3D)
- Total sampling rate : 168,000,000 points/s (2D and 3D)
- Transversal field of view : 12 m
- Transversal resolution : 1 mm
- Vertical accuracy : 0.25 mm
- Laser profiler dimensions : 428 mm (h) x 265 mm (l) x 139 mm (w)
- Weight : 13 kg per sensor head
- IP 65 Rated



Hardware Detection



Crack Detection



Chip Detection

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