Z+F PROFILER® 9012

The Z+F PROFILER® 9012 has a vertical 360° field-of-view and is the fastest profile imaging 2D laser measurement system in its class.

With its scan rate of more than 1 million points per second and a maximum scanning speed of 200 profiles/sec. short distances between the profiles can be achieved even at high speeds of the carrier vehicle. Because of the high point density, even small objects are registered and processed by the software.

Because the laser measurement system corresponds to laser class 1, the scanner can be used in urban environments without any restriction. A hardware-assisted pixel-by-pixel synchronization makes it possible to process signals form external devices. As a result, the position and orientation of the scan data can be determined.

Ports

With the ports it is no problem to connect GPS, positioning sensors or counters. The external signals are directly fed into the scan data stream.
The new 1-Gbit Ethernet port allows to transfer the scan data directly to an external PC in real-time.

Kinematic applications

Due to its high flexibility and the low power consumption on the Z+F PROFILER® 9012 is suitable especially for all kinds of mobile mapping applications. With its high rotation speed of 200Hz, many details are recorded very quickly and accurately.

Highlights

- laser class 1
- 119m ambiguity range
- more than 1 million points/sec
- up to 200 rps (profiles /sec)
- 360 ° field of view
- retracted reference plate

- 24 V power supply / ~170W (at 200 rps)
- 1 GBit Ethernet

- Sync interface for GPS, PPS, etc.
- Sync interface for second scanner

- 14 kg weight
- IP 54 (protected against rain /dust)
- resistant to dust stains on glass
- online data visualization
- USB data logging

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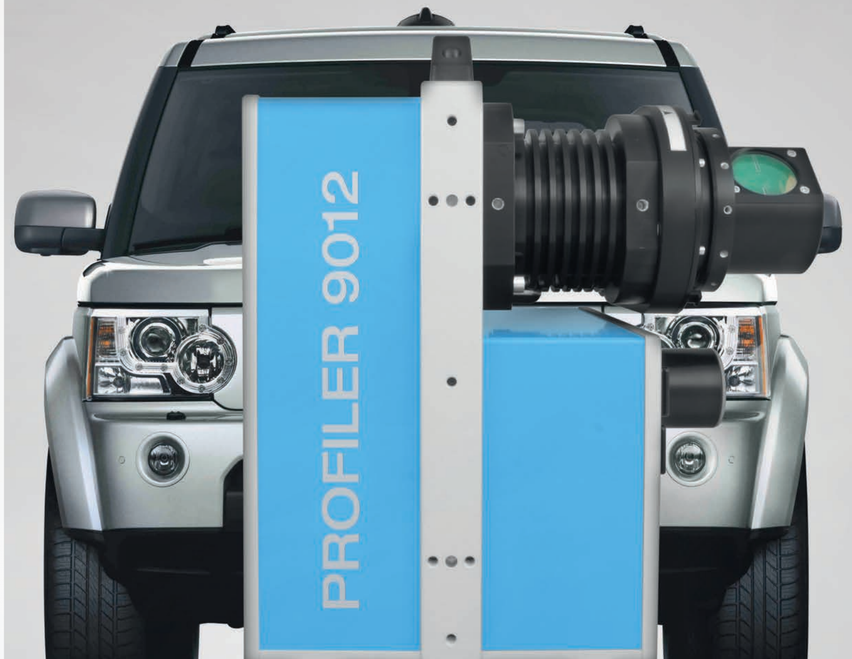

Z+F PROFILER® 9012 / M/A

Technology faces specific challenges with each application. The Z+F PROFILER® 9012 M, Z+F PROFILER® 9012 A and Z+F PROFILER® 9012 M/A optimize close range surveying and visualization of measurements even further.

The Z+F PROFILER® 9012 A is the optimal 2D laser scanner for close range applications due to its optimized range noise within 1 – 5 m.

Up to 5 scan segments can be displayed with the marker mode of the Z+F PROFILER® 9012 M.
The Z+F PROFILER® is also available as a 9012 M/A model, which combines the marker mode and close range high precision surveying.

Applications

Mobile Mapping
Because of the high data capture rate, Z+F 2D laser scanners operate accurately even from mobile platforms, at speeds of up to 120 km/h (approx. 75mph). This is particularly important for tunnel, rail track and road surveying (profiling systems).

The Z+F PROFILER® 9012 is mostly used for the surveying of rail and road networks, tunnels, towns, bridges, trees, forests (stocktaking and timber quality) and also for long-term range measuring (buildings, soil etc.).

Rail
In rail applications, Z+F 2D laser scanners are not only used for rail track surveying but also for capturing objects alongside the track like buildings, tunnels, bridges or other objects which might cause a potential danger for rail traffic.

The high resolution surveying of objects like station platforms or tunnels is necessary for clearance analysis or analysing tunnel walls. When carrying oversized loads a preflight can be performed to detect narrow points.

Due to the high measurement rate and the high rotation speed Z+F measurement systems are highly suitable for rail applications. Therefore, very short distances between profiles can be realised. The Z+F PROFILER® 9012's rotation speed for example is 200 rps.

Z+F SynCaT®

With the new software Z+F SynCaT®, Zoller+Fröhlich creates a connection between the Z+F PROFILER® 9012 and external positioning and navigation systems. SynCaT stands for synchronization, calibration and transformation - also representing the main tasks of the software. Z+F SynCat® includes all the features below:

- Calibration:
  Processing of calibration parameters due to different system integrations (translation, rotation offsets between the coordinate systems of the navigation-unit (trajectory) and the Z+F PROFILER® 9012 laser scanner)
- Synchronization:
  Synchronize Z+F PROFILER® 9012 laser scanner data with trajectory data and generate 3D point cloud files
- Transformation:
  Transform 3D point cloud data to different local coordinate systems and apply different local/global height correction models (geoid correction files)
- Correction:
  Individual offset estimation referring to predefined ground control points (GCP's)

Z+F SynCaT® is a modular structured mobile mapping software. The modularization allows to combine the software package specifically for the customer needs.