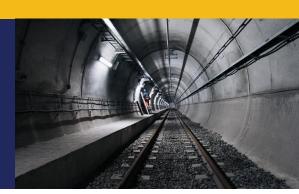


Track Geometry is the set of geometric characteristics of a railway that influence the safety, comfort and efficiency of rail transport.

Monitoring and maintaining these parameters is essential to ensure smooth and safe operations.



The system evaluates **track geometry** under varying light and environmental conditions by integrating an **Inertial Measurement Unit (IMU)** with the **Rail Profile System**.

Employing a **contactless measurement principle**, the system avoids issues related to stiffness and mechanical constraints, enabling **flexible installation on a wide range of railway assets**, including bogies, carbodies and road-rail vehicles.

Performances				
Max Sampling Frequency	Up to 350 fps			
Sampling Step	250 mm			
Operational Temperature	-25°C to + 50°C			
Laser Class	3B, 450 nm			

It measures the track geometry key parameters over a very wide speed range, including: gauge, cross level, twist, longitudinal level and alignment.

Thanks to their 350 fps acquisition rate, our laser triangulation devices can perform accurate measurements even on vehicles traveling at speeds of up to 300 km/h, while the specifically customized IMU maintains data reliability even down to the so-called "zero speed range".

		Wave Lenght Band [M]	Unit	Range	Resolution	Accuracy
II	GAUGE	0 ÷ ∞	mm	-20, +60	≦ 0.1	± 0,2 mm
	CROSS LEVEL	0 ÷ ∞	mm	± 225	≦ 0.2	± 2 mm
	TWIST	Short 0÷∞ Long 0÷∞	mm	± 15 ± 15	≦ 0.1 [mm] ≦ 0.1 [mm]	± 1/L ± 2/L
	ALIGNMENT	D1 3÷25 D2 25÷70	mm	± 50 ± 100	≦ 0.5 ≦ 0.5	± 1 mm ± 3 mm
	LONGITUDINAL LEVEL	D1 3 ÷ 25 D2 25 ÷ 70	mm	± 50 ± 100	≦ 0.5 ≦ 0.5	± 1.5 mm ± 4 mm

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