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Providers of Innovative Technology for Measuring and Managing Roads

ROMDAS

Z-250 Reference Profiler

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Manufactured by Data Collection Ltd

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Z-250 Reference Profiler

SPECIAL POINTS OF INTEREST:

- Record high accuracy roughness & longitudinal profiles
- Recognized class 1 roughness device
- Excellent value for money
- Non-proprietary data formats
- Bluetooth connection to Android mobile device for easy operation
- Intuitive and user friendly interface
- Simple in-built daily levelling process
- Create calibration/validation sites for vehicle mounted roughness devices

The ROMDAS Z-250 Reference Profiler has been developed to measure high accuracy longitudinal profiles. Raw profiles can be automatically processed by the Z-250 to calculate road roughness (IRI), or further analyzed using free industry standard software like ProVal.

The Z-250 unit is lightweight and can be easily packed into a suitcase. Commonly used for measuring roughness calibration/validation sites, however, this Class 1 profiler can be applied in a variety of scenarios as a low cost, yet high accuracy alternative to other roughness or profiling tools.

APPLICATIONS:

- Calibrating or validating other roughness devices (e.g. ROMDAS® Bump Integrators)
- Post-construction compliance surveying for roads, highways, bridges, etc.
- Collecting raw profiles of road sections to accurately identify high and low points needing attention
- Collecting data for research purposes such as developing new roughness deterioration models or calibrating/testing the existing HDM roughness model

Plot view after Survey Completion

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OPERATIONAL PRINCIPLE

The Z-250 is 'walked' along the road by rotating the Z-250 on its 'feet', as shown in the figure below. This action produces a set of elevation measurements for every foot placement.

During surveying the Z-250 displays the distance travelled and current elevation (in mm) to show real-time IRI results.

Upon completion of the survey the final IRI is displayed and the user has the option to plot the elevation profile.

Two files are output for each survey:

⇒ **.CSV file:** A .csv file with 4 columns; The chainage, Accumulated distance, elevation, Running IRI.

⇒ **.PPF file:** An PPF file, can be imported into free software, such as ProVal for further analysis of the road profiles.

COMPONENTS

The Z-250 consists of two main components; a measuring unit, and an Android mobile device which acts as a data logger.

The measuring unit contains a battery, precision inclinometer and power circuitry. The inclinometer outputs elevation data via Bluetooth to the Android device.

The following components are provided with the Z-250:

⇒ Z-250 unit with 3 piece extendable

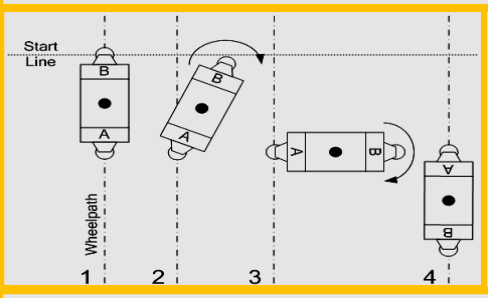
⇒ handle and Bluetooth module

⇒ Android mobile application with device

⇒ A durable carry case

⇒ RS-232 cable for Z-250 to PC

⇒ Calibration shims



Specifications

Applicable standards	World Bank Class 1 roughness device
Sampling Interval	250 mm (other lengths available)
Display Output	IRI (m/km), Raw elevation
Operating speed	Controlled walking pace with audible placement prompt
Method of Measurement	High Accuracy Inclinometer
Height Measurement Resolution	0.05 mm
Battery Life	14 Hours (continuous operation)
Weight	3.5 Kg incl. battery/10 Kg in packing case
Dimensions (excl. handle)	250 mm x 80 mm x 140 mm
Length x Width x Height	250 mm x 80 mm x 140 mm

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