



For further information on the ROMDAS road measurement system please visit [www.romdas.com](http://www.romdas.com)

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**ROMDAS**  
 Manufactured by  
 Data Collection Ltd.  
 New Zealand

*providers of innovative technology for  
 measuring and managing roads*

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## Z-250 Reference Profiler

### Overview

The ROMDAS® Z-250 Reference Profiler has been developed to measure high accuracy reference profiles. The linear elevation profiles it measures are analysed and used to determine the road roughness in terms of IRI (m/km). This Class 1 profiler can easily be packed into a suitcase and is an excellent tool for measuring roughness profiles on calibration/validation sites.



### Application

Reference profile surveys are generally done for:

- ◆ Calibrating or validating a roughness measurement system (e.g. the ROMDAS® or TRL Bump Integrator);
- ◆ Quality control for large scale construction and infrastructure projects such as car parks, bridges, airport runways etc...;
- ◆ Collecting data for research purposes such as developing a new roughness deterioration model or calibrating/testing the existing HDM roughness model.



Survey Screen



Plot Survey Data Feature



### Operation

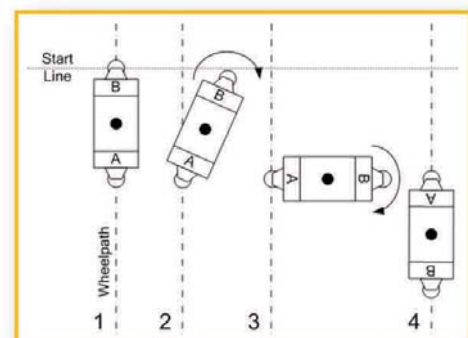
The Z-250 is 'walked' along the road by rotating the Z-250 on its 'feet', as shown in the figure below. This action produces a set of elevation measurements for every foot placement.

During the survey the Z-250 displays the chainage data along the section (in metres), the elevation (in mm) as well as the IRI (metres/km).

The survey can be paused or, if an error is made, can be erased and the data re-measured. 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:

- ⇒ **Text file:** A text file with 3 columns; distance, logged elevation data and summed or longitudinal profile data.
- ⇒ **.ERD file:** An .erd file that can be imported into ProVal or RoadRuf freeware software for further analysis of the road profiles.





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## Z-250 Reference Profiler

### Components

The Z-250 consists of two main components; a measuring unit and a hand held Pocket PC which acts as a data logger.

The measuring unit contains a battery, precision inclinometer and power circuitry. The inclinometer outputs a serial signal which is recorded and processed by the data logger.

The data is stored and can be downloaded to a PC for further analysis using ProVal software.

#### The following components are provided with the Z-250:

- ⇒ Z-250 unit with 3 piece extendable handle and Bluetooth module;
- ⇒ ROMDAS CD with software (including Proval) and manuals;
- ⇒ A durable carry case;
- ⇒ RS-232 cable for Z-250 to PC;
- ⇒ Calibration shims;
- ⇒ Operator headphone
- ⇒ Spare adhesive friction paper for feet
- ⇒ Maintenance tools and oil.



### Technical Specifications

<b>Sampling Interval</b>	250 mm (other lengths available)
<b>Display Output</b>	IRI (m/km)
<b>Operating speed</b>	Controlled walking pace with audible placement prompt
<b>Method of Measurement</b>	High Accuracy Inclinometer
<b>Height Measurement Resolution</b>	0.05 mm
<b>Battery Life</b>	14 Hours (with continuous operation)
<b>Weight</b>	3.5 Kg incl. battery/10 Kg in packing case
<b>Dimensions (excl. handle) Length x Width x Height</b>	250 mm x 80 mm x 140 mm
<b>Foot Diameter</b>	38 mm

### Validation

The Z-250 was validated against a Face Dipstick® and the two instruments were found to have excellent correlation. The validation report is available for download from [www.ROMDAS.com](http://www.ROMDAS.com)