ARRB SYSTEMS · ROAD ROUGHNESS MEASUREMENT

Roughometer III

Portable road roughness meter with integrated GPS



The Roughometer III is a cost-effective, easy-to-install device that gives objective and repeatable roughness results on both sealed and unsealed roads. It is a World Bank Class 3 roughness device that measures axle movement directly with a precision accelerometer, so results are not affected by the vehicle's suspension or passenger load, and no experimental calibration is needed to produce a true International Roughness Index (IRI).

Key Features

- ✓ Accurate, repeatable results regardless of vehicle type, suspension or load
- ✓ Integrated, time-stamped GPS with on-screen satellite status
- ✓ High-accuracy, wheel-mounted Distance Measuring Instrument (DMI)
- ✓ Fast USB download to a laptop or PC
- ✓ Reports as tables, graphs, GPS maps and CSV files
- ✓ True IRI output with no periodic calibration required
- ✓ Stores up to 13,000 km of survey data
- ✓ Non-contact, axle-mounted inertial sensor
- ✓ Fits most vehicles; no in-vehicle computer needed
- ✓ Outputs in IRI or NAASRA counts

Applications

Road Condition Assessment
Objective data for a true evaluation of road roughness

Maintenance Planning
Compare roads and prioritise those that need repair

Trend Monitoring
Track roughness deterioration over successive surveys

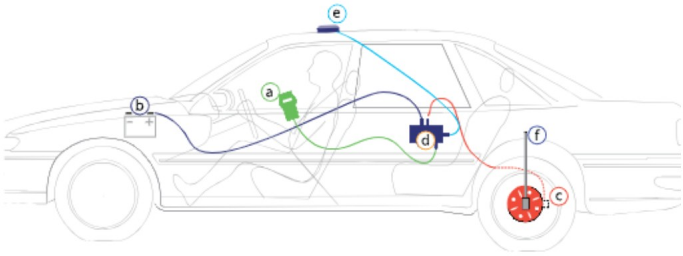
Technical Specifications

Parameter	Specification
Data storage capacity	13,000 km (2 GB memory)
Communication	USB cable adaptor
Power source	12 V DC; cables for cigarette-lighter or direct battery connection
Data sampling interval	50 mm
Inertial sensor	Single sensor on the inside of the driver's-side rear wheel; mounting brackets (live axle and IRS) and clamps supplied
Roughness units	International Roughness Index (IRI); NAASRA counts
Accuracy (roughness)	IRI: within ±0.5 of true IRI (within design parameters); NAASRA: ±12 counts
Resolution	IRI: 0.1 · NAASRA: 5 counts
Survey speed	Optimal 40–60 km/h, depending on road condition
Software	Roughometer processing software supplied (PC not supplied)
Distance measurement	Wheel-mounted Distance Measuring Instrument (DMI)
Distance units	Selectable: metric (km) or imperial (miles)
Distance accuracy	Better than 0.1%
GPS position accuracy	±3 to 15 m (subject to WAAS availability)
GPS update rate	1 second
GPS antenna mounting	Magnetic roof mount (supplied)

What's in the Kit

- Handheld controller
- Interface module
- Inertial module with mounting brackets
- Vehicle power cables and USB cable
- Distance Measuring Instrument (DMI) kit
- GPS antenna with magnetic roof mount
- User manual
- Roughometer processing software

Vehicle Installation



a · Handheld controller
b · Power supply
c · Inertial sensor on axle
d · Interface module
e · GPS receiver
f · DMI

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Fifty Years of Precision

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