



## Profilometers

Englo designs and manufactures a wide array of profilometers. These road roughness and profile measuring devices range from simple hand-held products to measure surface unevenness, to intelligent road roughness measuring systems that display the various profile parameters, for example, the average angle of inclination, the rut depth of a road and International Roughness Index (IRI) and more.

Handheld, walking and vehicle-mounted profilometers are available.

Englo's profilometers are rated IP65 under the international IEC 60529 standard and are splash and dust proof.

### Handheld Profilometers

Englo's handheld profilometers are easy to use by a single operator. They include an aluminum bar and a wedge for measuring both dips and bumps on a surface. For transport the wedge is placed inside the bar. The bar is conveniently marked as a ruler with decimeter (dm) scale to help determine the precise location of the dip or bump from a reference point. The wedge is used to measure the height of the actual dip or bump.

The latest models include an intelligent electronics unit with built-in inclinometer and can additionally be used for surface slope measurement. The LCD display can rotate to 180° for slope measurement of walls and ceilings. A sound signal is available to help determine the 0-slope of the surface.

The surface roughness measuring method corresponds to the building standard of Finland RT 14-10373.

#### TM-1: Handheld Profilometer

- Lightweight
- Compact
- Bar and wedge

#### TM-2: Handheld Digital Profilometer and Inclinometer

- Lightweight
- Compact
- Includes built-in inclinometer
- LCD with slope measurement results
- Bar and wedge

Product	Weight (kg)	Ruler Bar Length (m)	Measuring Range (mm)	Measuring Accuracy (mm)	Size (cm)
TM-1	1.56	2	+/-10	1+/- 0.5	2050 x 120 x 18 bar + 360 x 36 x 16 wedge
TM-2	2.38	2	+/-10	1+/- 0.5	2050 x 120 x 18 bar + 360 x 36 x 16 wedge

## Walking Profilometers

In addition to standard profile measurements, Englo's walking profilometers include a mode for IRI measurement. In this mode the profilometers display the average IRI value of the last covered surface meter.

The portable walking profilers include a control and a sensor module that are connected by an adjustable length handle. The devices is on wheels and can easily be rolled across the measured surface by a single operator.

The control module includes a number of setup and control options, and displays the recent measurement results. Different measuring modes can be selected to determine how to calculate the value and position of the maximum deviation for the profile.

These profilometers come with an integrated GPS module that stores the coordinates of each measurement location. All measured data is stored and can be downloaded to a computer via USB or Bluetooth connection.

### GAPMAN: Walking Profilometer

- Lightweight
- Wheeled across a measured surface by a single operator
- Selectable setup and control options
- IRI measurement mode
- Real-time calculation and display of surface profile parameters
- Integrated GPS unit determines and stores measurement locations
- USB or Bluetooth computer connection

Product	Total Weight (kg)	Data Storage Capacity (km)	Profile Measuring Step (mm)	Profile Height Measuring Resolution (mm)	Maximum Slope (°)	Size (cm)
GAPMAN	3	40	100	0.1	+/-30	70 x 40 x 20 + handle

## Vehicle-Mounted Profilometers

Englo's vehicle-mounted road roughness measuring devices measure the International Roughness Index (IRI) of different road surfaces.

These vehicle mounted profilometers include a control unit with graphic LCD display, one or two wireless inertial sensors and a roof magnet-mounted GPS antenna. The inertial sensors are mounted to MacPherson type front suspension of the vehicle. Depending on the model, the connectivity of the sensors to the rest of the system is made via cables or is wireless.

The products can be used on paved or unpaved roads. Wet, snowy or dusty road surface do not influence the accuracy of measurement.

All measured data together with measurement location is stored and can be downloaded to a computer via USB connection and can be viewed as graphs, tables and maps. Software is provided for easy processing and display of the data.

The sensor bodies of the devices are rated IP67 under the international IEC 60529 standard and are splash and dust proof.

### IRIMETER-1: Vehicle Mounted IRI Measurement System

- Compact and easy to set up and use
- Real-time calculation and display of measurement results on LCD
- GPS unit to determine and store measurement location
- Control, central and sensor units
- Sensor unit(s) connected with cable
- Optional crossfall inclination sensor

### IRIMETER-2: Vehicle Mounted IRI Measurement System

- Compact and easy to set up and use
- Real-time calculation and display of measurement results on LCD
- GPS unit to determine and store measurement location
- Control and sensor units
- Wireless connection to sensor unit(s)
- Optional crossfall inclination sensor

Product	Total Weight (kg)	Data Storage Capacity (km)	Average IRI Calculation Setting (m)	Allowed Vehicle Speed (km/h)	Size of Control and Sensor Units (mm)
IRIMETER-1	2	1,100	5, 20, 100	20 - 100	90 x 120 x 60 (control) 90 x 160 x 60 (central) 100 x 55 x 50 (sensor)
IRIMETER-2	2	15,000	5, 20, 25, 100	20 - 100	90 x 120 x 60 (control) 100 x 55 x 50 (sensor)



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