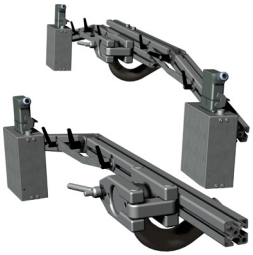
GREENWOOD ENGINEERING

Greenwood LaserProf

Greenwood LaserProf is a highly flexible road profiler, used for quality control of pavement at undisturbed traffic speed.

Greenwood LaserProf is exceptionally flexible and portable. The system can be mounted on a standard trailer hook in a few of minutes. It is possible to add additional sensors, such as texture sensors, ROW Imaging system, LineScan system and synchronize the recordings with GPS.



Greenwood LaserProf measures the longitudinal profile of any pavement at high speed, high reliability and high accuracy.

***Greenwood* LaserProf** comes with a powerful software suite, which allows real-time calculation of IRI, displayed on the on-board laptop.

Greenwood LaserProf also includes post-processing software, allowing the simulations of other types of profiling instruments, such as California type and Viagraph type.

Quick Installation

LaserProf comes in a standard suitcase, and can be installed in a normal vehicle on site without using special tools.

1. Mount the main measuring unit on a standard trailer hook or use vacuum cups on glass or any painted surface.

2. Place the odometer on the wheel of the car - it is mounted magnetically.

3. Connect the sensors to the control box inside the vehicle and add electric power from the vehicle.

Sensors

The main sensor of a ***Greenwood LaserProf*** is a digital Selcom laser profile sensor, which measures the distance to the road to give a longitudinal profile of the road. This data is synchronized with input from a highly precise odometer sensor and an accelerometer.

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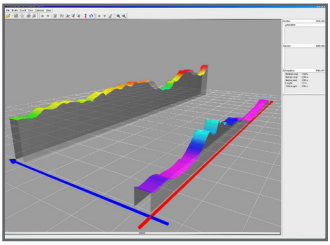

Distance [m]	IRI [m/km]
0	1,37
10	1,24
20	1,27
30	2,94
40	1,55
50	0,90
60	0,89
70	2,81
80	2,47
90	0,91
100	1,46
110	1,17
120	0,80
130	0,94
140	2,52
150	1,67
160	1,36
170	1,56
180	1,95
...	...

Results

The measured longitudinal profile can be analyzed both in real-time and in a post processing reporting module. Typical reports include:

- Raw longitudinal profile
- International Roughness Index (IRI in mm/m or inch/mile)
- Simulated California type / Viagraph type
- Proscan (without the need to printout and scan the Profilograms)
- Macro texture (MPD)
- ERD profile format

In addition, custom designed filters can easily be built into the software. The output can be shown as both 2D and 3D graphs. It is also possible to arrange the results into intervals chosen by the user, typically 10m-100m.

Specifications

- Under normal configurations maximum speed can exceed 150 Km/h.
- Digital Selcom laser profile sensors with an update frequency from 16 kHz to 64 kHz.
- Includes automatic stop and go filter.
- Meets requirements of an ASTM E950 Class 1 profiling device.
- Equidistant sampling between 1 mm and 6.5 m.
- Odometer implemented with an encoder with 1 pulse per 0.1 mm distance traveled.
- 1 g bias circuitry analogue accelerometers.
- Weighs approximately 20 kg and fits in a suitcase.

Other Features

- Web interface for easy configuration, calibration and remote support.
- Large data buffer to minimize possible data losses.
- Built in backup battery allows uninterrupted measuring at power drop-out.
- Wide voltage input range allows use in most vehicles.

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