



# GREENWOOD LASERPROF

## COMPACT AND PORTABLE PROFILER

**LaserProf** is a compact and portable profiler for reading texture (MPD) and/or roughness (IRI), and can be mounted on a standard tow hitch. It can have one or two laser sensors, reading in the wheel paths, and is designed to be a tool for the pavement supervision engineer making quality control.

LaserProf has been implemented in the LaserProf BikeLaneTrailer for measuring bicycle lanes. GPS and Right-of-Way camera (ROW) can be added to the LaserProf.

### Technical Description

- Measures the longitudinal profile of any pavement at high speed, high reliability and high accuracy.
- Post processing software, allowing the simulations of other types of profiling instruments.
- Powerful software suite, which allows real-time calculation of IRI, displayed on the on-board laptop.
- The main sensor of a LaserProf is a LMI laser, which measures the distance to the road to give a longitudinal MPD profile of the road. This data is synchronized with input from a highly precise odometer sensor and an accelerometer.



### 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 and/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.



## 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)

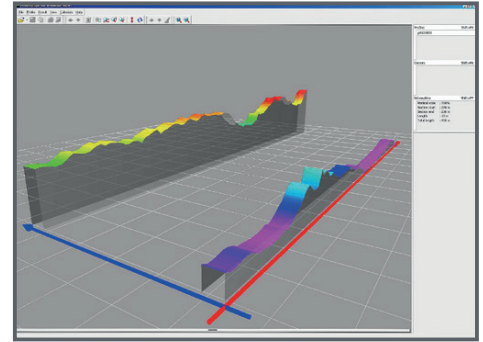
In addition, custom designed filters can easily be built into the software. The output can be shown as both 2D and 3D graphs. It is also possible to arrange the results into intervals chosen by the user, typically 10m-100m.

## Specification

- Under normal configurations maximum speed can exceed 150 Km/h
- LMI laser with a sampling frequency of 32 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



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
...	...



GREENWOOD ENGINEERING

For more information, please contact: Karsten Jensen, Sales Director  
Mail: [kj@greenwood.dk](mailto:kj@greenwood.dk) • Phone: +45 60 55 98 99