ARRB SYSTEMS · LASER ROAD PROFILING

Hawkeye 1000

Digital Two-Laser IRI Profiler

HKE-1000-2L-0C



The Hawkeye 1000 Digital Laser Profiler measures longitudinal profile, roughness and macrotexture (MPD and SMTD) at highway speeds. A World Bank Class 1 profiler, it uses precision laser sensors sampling 32,000 times a second, with low-noise accelerometers that compensate for vehicle body movement. The portable, detachable beam can be front or rear mounted on most vehicles, and an accurate Distance Measuring Instrument (DMI) and GPS link every reading to distance and position.

Key Features

- ✓ World Bank Class 1 profiler with two precision lasers
- ✓ Installs without special tools or technical personnel
- ✓ Lightweight aluminium beam in a weatherproof housing
- ✓ Data linked to chainage and GPS coordinates
- ✓ Upgradeable with HD cameras, DGPS and Gipsi-Trac geometry
- ✓ Surveys at highway speeds, reducing survey time and cost
- ✓ Results are independent of vehicle type
- ✓ Detachable beam for front or rear mounting; easily shipped
- ✓ Simple turnkey operation
- ✓ Includes the Hawkeye Processing Toolkit software

Technical Specifications

Digital Laser Profiler	Specification
Model	HKE-1000-2L-0C (two-laser configuration)
Longitudinal profile accuracy	±0.5 mm
Profile wavelengths	100 mm to 100 m
Laser type	Digital, 32 kHz (32,000 samples per second)
Laser position	Wheel paths, typically 1.5 m apart, or as specified
Macrotexture	SMTD (5 mm) and MPD (1 mm)
Profile sampling rate	IRI 25 mm · texture 1 mm
IRI resolution	0.01 IRI
Beam width (2 lasers)	1.682 m
Beam material	Anodised aluminium
Survey speed	1–115 km/h (roughness accuracy may be affected below 20 km/h; a low-speed IRI algorithm is provided in the Processing Toolkit)
Distance measurement	Distance Measuring Instrument (DMI), wheel-mounted sensor
GPS accuracy	5–15 m

Available Outputs

- Longitudinal profile (CSV, ERD, PPF formats)
- Roughness (IRI, NAASRA, Ride Number, HATI)
- Macrotexture (MPD and SMTD)
- Advanced wavelength filtering
- GPS location and distance

Applications

- Pavement condition assessment
- Accurate paving quality assessments
- Quality control and dilapidation surveys
- Contract validation

Compliance with Standards

ASTM E950 Class 1 – longitudinal profile

AASHTO PP37 – pavement roughness

ASTM E1845 – macrotexture (MPD)

ISO 13473 – Mean Profile Depth

World Bank TP 46 – Class 1

EN 13036-6 – Class 1

TRL Lab Report 639 – SMTD

AUSTROADS guidelines (where applicable)

Hawkeye Software Suite

A professional combination of real-time acquisition and data analysis software, with multi-language support including Arabic and English.

ACQUISITION

Onlooker Live

- Real-time control of all Hawkeye inputs from one application
- Runs on a laptop with a fully customisable screen layout
- Live display of profile, speed, distance and GPS maps
- Navigation tools, reference points and event recording
- Spoken system warnings for the operator

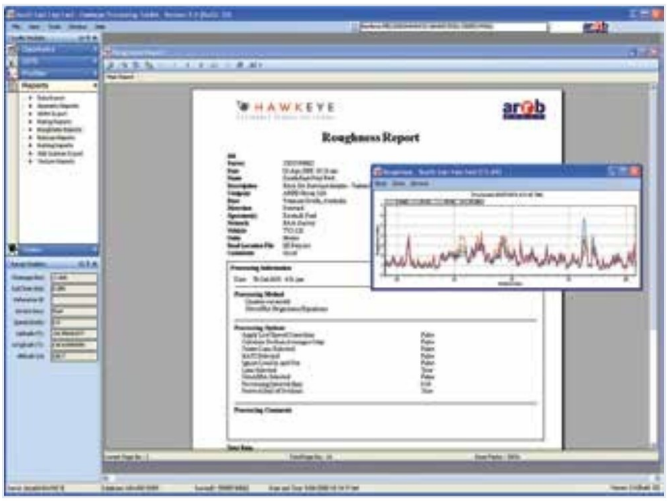
ANALYSIS

Processing Toolkit

- Calculates IRI, MPD/SMTD and longitudinal profile
- Extensive analysis and reporting with batch processing
- Mapping interface with Google background maps
- Exports to CSV, PDF, Word, Excel, KML and SHP
- Advanced HDM-4 export; works with most PMS and GIS tools
- Windows 64-bit compatible

What's in the Package

2×	Precision lasers with mounting beam
1×	Distance Measuring Instrument (DMI)
1×	GPS receiver (5–15 m accuracy)
1×	Hawkeye software
1×	Laptop



Roughness report in the Hawkeye Processing Toolkit

Expandable System

Fully compatible with other Hawkeye products. Can be expanded with up to two HD digital imaging cameras, DGPS and the Gipsi-Trac road geometry system.

1976 - 2026

Fifty Years of Precision

شركة البرقان للمعدات

BURGAN EQUIPMENT CO.

KUWAIT

P.O. BOX : 4148, Safat Kuwait

+965 22437670
+965 22446832

contact@burganequip.com

burganequipment.com

DUBAI (UAE)

P.O. BOX : 47817 ,Dubai

+971 42724759
+971 50 8708303, +971 50 9033564

burgandubai@burganequip.com

burganuae.com

QATAR

P.O. BOX : 22036, Doha, Qatar

+974 44987832, +974 44310790
+974 66003993, +974 33468825

burganqatar@burganequip.com

burganequipment.com

ABU DHABI (UAE)

UNIT NO-47, MUSAFFAH

+971 564022059

burgandubai@burganequip.com

burganuae.com