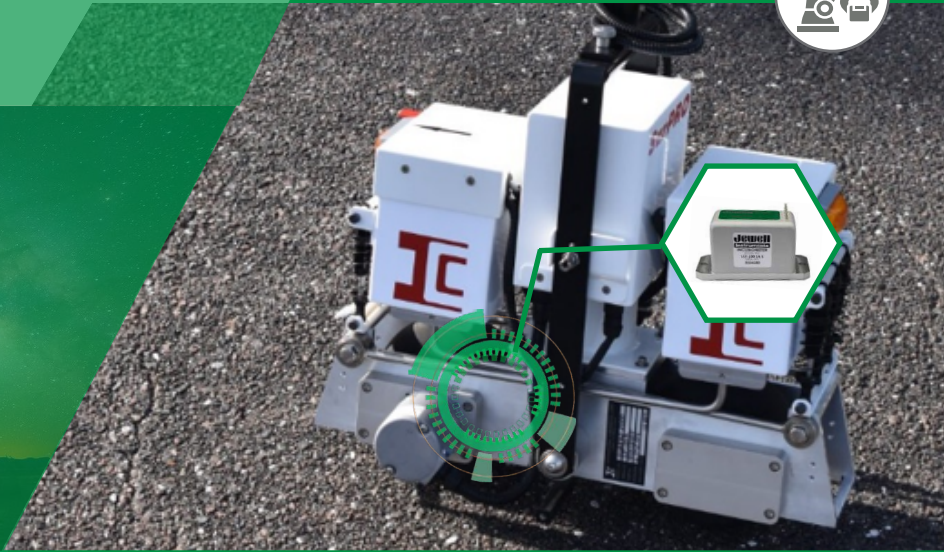


A Fully Automated, Portable Profiler Using An LCF-100



- **Objectives:** Accurately measure surface roughness
- **Solution:** Jewell Instruments LCF-100
- **Benefits:** High-precision and repeatability
- **Results:** Reliable and detailed surface profiles

Overview

International Cybernetics Company, L.P. (ICC) designs and builds equipment for road condition surveys, construction quality control, road asset inventory, and calibration site setup. Their equipment is sold globally to Department of Transportations (DOTs), Engineering and Consulting Firms, University and Educational Institutes, and Transportation Agencies. In addition to their equipment division, they also provide services with their fleet of equipment

throughout USA and Canada.

The ICC SurPRO 5000 Walking Profiler (Title Picture) is a highly accurate and effective reference device for measuring surface profile and roughness characteristics of any placed surface, including roads, structures, runways, and floors. It is a Class 1 profiling unit and uses patented inertial technology.

The SurPRO 5000 is a fully automated, portable unit. It weighs just 42 pounds and comes in a ruggedized transport case for easy deployment to the job site. Once on the location, the system can collect data in a matter of minutes. The SurPRO 5000 collects true elevation profiles, displays the results, saves the data, and executes user-configurable analysis to provide a numerical and graphical representation of the profile and several common roughness indices, such as IRI (International Roughness Index).

ICC's SurPRO 5000 uses a forward and transversely mounted Jewell Instruments LCF-100-14.5 Inclinometer (Figure 1) in the SurPRO to measure slope and grade to calculate a profile of the surface the unit



Figure 1 - Jewell Instruments LCF-100



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Figure 2 – ICC SurPRO 5000 Software Interface

travels over. The LCF-100-14.5 Inclinometer is a general-purpose $\pm 0.5g$ to $\pm 5g$ device which is DO-160 approved for aerospace applications. These linear accelerometers are designed and ideal for industrial, commercial, and aerospace sensing requirements.

The SurPRO 5000 uses the same proven hardware as in previous models but has an all-new touchscreen interface running on a Windows OS tablet (Figure 2). The new software is simple to operate, displays data in real-time, and makes sharing the data with field supervisors and office staff quick and easy.

Applications for the SurPRO:

- Management and maintenance of any traveled surface
- Capable of testing bridges before approaches are in place
- Identification and correction of traveled surface defects to achieve target roughness indices (using bump/dip analysis)
- Calibration site establishment and equipment performance verification
- Testing road cross and drainage slopes

Features for SurPRO include:

- Class 1 profiling performance
- Fully automated data collection for longitudinal and transverse profiles
- Wheel Spacing supports for ASTM Standards: 250mm or 12"
- Sample distance interval: 1 mm (0.04")
- Provides unfiltered true elevation profiles
- Permanently stores calibration
- Report multiple roughness indexes (IRI, PI, RN)
- Durable and weather resistant
- Generates .PPF, .ERD, and .PRO files

About Jewell Instruments

Jewell Instruments is a world leader in the design, manufacture, and distribution of high-precision products. Our expertise includes acceleration and tilt sensors, electronic compasses, avionics components, solenoids, and panel meters. The extensive application knowledge we have obtained through decades of experience allows us to provide custom solutions for a diverse group of industries. In fact, customers from all over the globe contact us for solutions to aerospace, medical, industrial, and telecommunications applications - to name a few.

To find out more, visit our website!



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