



**SURFACE SYSTEMS & INSTRUMENTS, INC.**

**Custom Test Equipment • Mobile Technology Solutions**

**California**

1845 Industrial Drive  
Auburn, California 95603

☎ (530) 885-1482



38.9295236N, -121.0945153W

**Kansas**

307 Plymate Lane  
Manhattan, Kansas 66502

☎ (785) 539-6305



39.1852186N, -96.6082708W

[smoothroad.com](http://smoothroad.com)

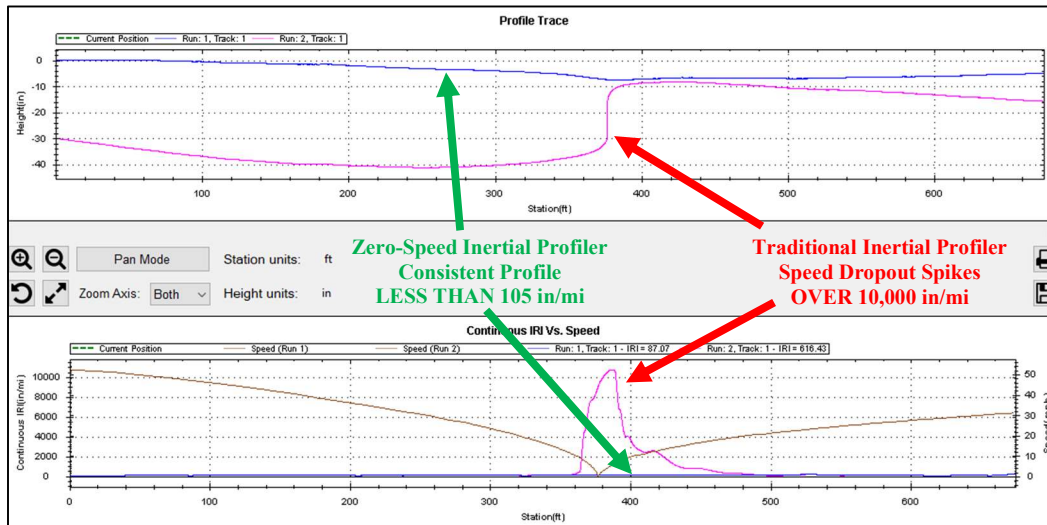
# Zero-Speed Inertial Profiler



▲ **CS9300** Front/Rear Mount Zero-Speed Configuration ▲



▲ **CS9100** Mid-Mount Zero-Speed Configuration ▲



▲ Proven Dramatic Improvement vs. Standard Inertial Profiler ▲



▲ Wide Footprint Lasers ▲

**Precise Profile Measurement Through Vehicle Stops**  
**DOT Compliant Smoothness Testing on All Pavement Types**

Meets ASTM/AASHTO Standards  No Need for Run-Up or Run-Out Sections  Patent Pending Technology


**Benefits**

- Collect accurate profiles at **ANY speed 0-100 mph.**
- **NO GAPS IN DATA** when vehicle slows or stops.
- Speed changes during collection do NOT affect data.
- **NO NEED FOR LEAD-IN, RUN-OUT SECTIONS.**
- **New:** 6.5" wide beam laser enhances performance. Also more comparable to actual vehicle tire widths.
- **New:** **INS-DMI.** Maintains accurate distance without OBD through GNSS outages. OBD supplied as 2nd backup.
- Choose Encoder/INS-DMI for highest accuracy at any speed (stopping, accelerating, decelerating, etc.)
- Available with precise cross-slope measurement (+/-0.05% accuracy).
- Longitudinal profiles match real-world elevation changes (no accelerometer drift).
- Damage a laser? Damage 2 lasers!? System has 4 lasers and can operate as a basic 2 laser inertial profiler.








**Specifications**

- Exceeds  **M328, R054, R056-057.**
- Exceeds requirements of  **ASTM E950.**
- Complies with DOT specifications and certification tests.

**Instrumentation**

-  5 kHz Gocator **wide beam lasers** neutralize texture on asphalt and concrete pavements.
- ±10g accelerometers with 0.0001g accuracy.
- High performance GNSS solution with all systems (L1/L2 GPS+Glonass+Beidou+Galileo+SBAS, dual antenna).
- **TOUGHBOOK** rugged computer on all systems.
- Docking station with driver/passenger computer access.
- Powered by host vehicle's 12-volt supply.
- **Options:** 2D/3D survey with variable depth design (CAD outputs), ROW camera, texture, rut depth, and more.

**Software: 25 Years Refined**

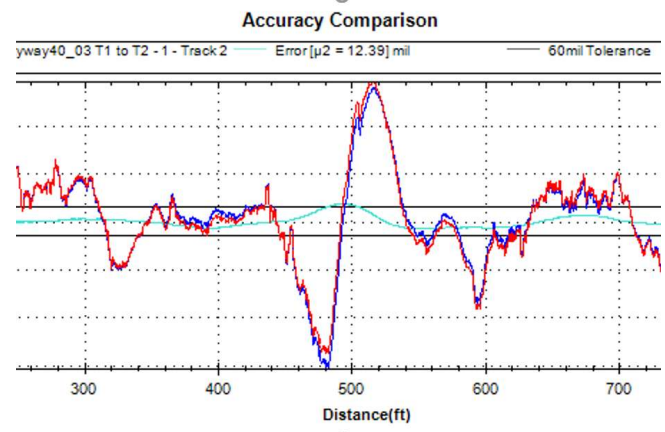
-  Windows 10 Pro software.
- Guided calibrations for bounce test, laser verification, accelerometer and distance.
- Immediate reporting of results.
- Drive to exact locations within profile data using real time **GPS Tracker** navigation feature.
- Real time display of traces, speed, position during collection.
- Electric Eye triggers on each side function at 30+ FT (10+ M).
- Configurable hot-key shortcuts.
- Real-time system health monitoring.
- Multiple Profile Indexes: **IRI** (International Roughness Index, Mean IRI (**MRI**), Half Car Ride Index (HRI), Profile Ride Index (**PRI**, ASTM E1274), Ride Number (RN).
- Multiple outputs for **Areas of Localized Roughness:** IRI with user defined thresholds; Straightedge, Profilograph must-grind bumps, Texas 1001-S method.
- Support for  Google Earth, Google Maps 
- User configurable analysis parameters and data editing.
- Rewritable raw data: change parameters at any time.
- Export data into  (PPF, ERD),  PDF,  Excel, CSV, PRO, CAD, Survey, and Text.
- Automatic software updates with SSI Profiler 3 
- Real-time error logging and web-based reporting.

**Operation, Training & Support**

- Designed for safe, one-person operation.
- Sensor modules adjust to meet different agency specifications.
- Operator training and technical support worldwide.
- Portable, modular components for in-field replacement.
- **Warranty** and rapid response **customer support.**



▲ Collect Data in Dense Traffic and Through Traffic Signals ▲



▲ DOT Certifiable Inertial Profiler ▲

**SURFACE SYSTEMS & INSTRUMENTS, INC.****California Division**

1845 Industrial Drive, Auburn, California 95603  
 Tel: (415) 383-0570 • Fax: (415) 358-4340  
[smoothroad.com](http://smoothroad.com)

**Kansas Division**

307 Plymate, Manhattan, Kansas 66502  
 Tel: (785) 539-6305 • Fax: (785) 539-6210  
[info@smoothroad.com](mailto:info@smoothroad.com)