



SURFACE SYSTEMS & INSTRUMENTS, INC.

Custom Test Equipment • Mobile Technology Solutions

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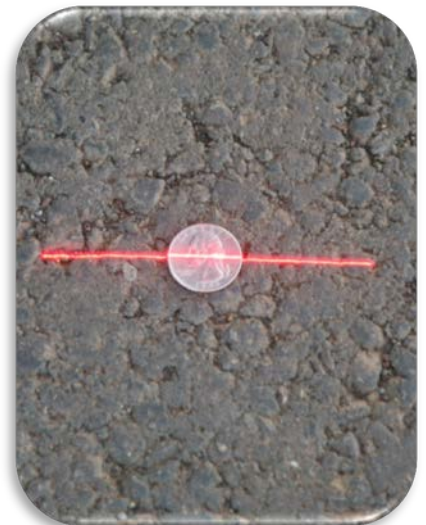
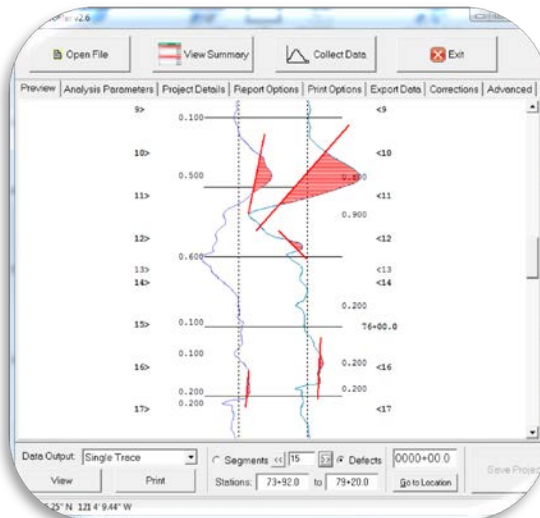
www.smoothroad.com

CS9100 Mid-Mount Profiling System



▲ CS9100 Profiling System –Mid-Vehicle Modules Configurable Onto Many Standard Trucks ▲

COLLECT PRECISION PROFILE DATA AND REMOVE MODULES IN MINUTES



▲ In-Cab Touch-Screen Computer ▲



▲ Full Featured Collection & Analysis Software ▲



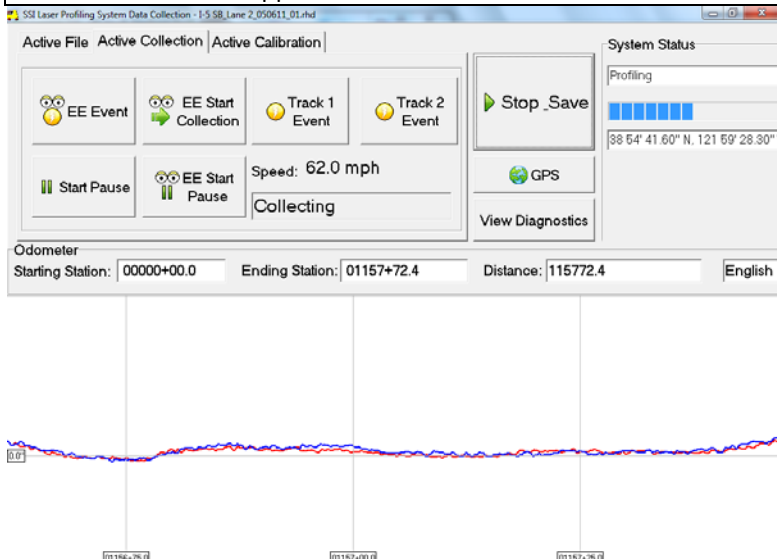
▲ Wide-Footprint Laser ▲

HARDWARE FEATURES

SOFTWARE FEATURES

- Hardware supplied for removable profiling modules at mid-vehicle
 - ASTM E950 Class I profiling system at all collection speeds.
 - Guaranteed to meet or exceed agency requirements (State DOT, Transport Ministry, FHWA, AASHTO M328, R054, R056-R057).
 - On-site assistance with installation and training.
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- Modular design. All core components field replaceable with express shipment as spare parts.
 - 100% non-contact inertial system—no sensors touch road surface.
 - Sensor modules detachable for safe storage off vehicle.
-
- Professionally engineered mounts are vibration free and allow for vertical and horizontal repositioning of sensor modules.
 - Choice of current model [Toughbook 19](#) or [Toughbook 31](#) fully rugged computer with daylight readable Touchscreen controls.
-
- Single or dual systems available. (*Single track module attaches to either side and can output dual track profiles*).
 - All-in-Cab operation—collect/analyze data without leaving vehicle.
 - Wide range of speeds (5-70 mph / 8-112 kph).
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- Multiple triggers for collection, pauses and events: (1) SSI reverse direction mode collects exact stations without pre-marking test sections, (2) right and left electric-eye sensors trigger by reflective tape, and (3) on-screen push button for manual triggering.
-
- Optional wide footprint laser reduces impact of single point sensor on grooves, concrete tines, and coarse textures on ride index values and areas of localized roughness.
-
- GPS subsystem with real-time display of GPS position, GPS correlation with profile stations, and Google Earth integration.
 - Survey option combines profile data, corrected GPS, and cross-slope to generate topographies and cross-sections for road design and machine control applications.

- Self-instructing programs for calibration, collection and analysis.
 - Safe operation on touch-screen Toughbook computer.
 - On-Screen user's manual.
 - Real time diagnostics monitor profiling system health and facilitate prompt resolution of support issues.
-
- Instant test results and on-screen view of profile traces and reports.
 - Collection system pauses when speed drops below <5mph (8 kph).
 - Add new profile data to existing files for comparison of original condition with constructed surfaces.
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- All industry standard profile indexes supported [International Roughness Index (IRI and MRI), Half Car Ride Index (HRI), Profile Ride Index (PRI or PI), and Ride Number (RN)].
 - User-adjustable parameters to meet specifications (project details, data filters, bump/dip templates, blanking band, and user defined).
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- Unmatched precision in detecting surface features exact dimensions of localized roughness—*Proven and Guaranteed!*
 - Localized roughness reported by adjustable height and length templates, or by IRI thresholds.
 - Length and peak amplitudes of grind/fill areas separately calculated.
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- Profile results available on-screen and in PDF, ERD, PPF, and spreadsheet formats (with populated Excel templates supplied).
 - Colorized traces and highlighted areas of bonus/penalty.
 - Fully compatible with ProVal software.
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- SSI Validation Engine software supplied for assessing same surface repeatability, accuracy and cross-correlation.
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- License supplied for use of Profiler software on desktop or multiple computers (allows viewing, analyzing, printing and emailing of profile data by multiple users).
 - Raw data encrypted for security and unlimited post-processing.



▲ Computer Instructed Calibration and Data Collection Routines ▲

Segment	Station	PRI	Average	Defects	Notes
Summary	0+00.0 112+29.0	26.8	26.7	17	17
Speed (Ave, Max, Min)	= 52.7, 56.6, 43.9				
1	0+00.0 5+20.0	34.0	33.5	2	2 38 53' 36.10" N
2	5+28.0 10+56.0	23.0	20.0	21.5	0 38 53' 33.56" N
3	10+56.0 15+84.0	26.0	24.0	25.0	0 38 53' 43.81" N
4	15+84.0 21+12.0	22.0	22.0	0	0 38 53' 47.18" N
5	21+12.0 26+40.0	32.0	30.0	31.0	0 1 38 53' 50.11" N
6	26+40.0 31+68.0	17.0	18.0	17.5	0 38 53' 53.63" N
7	31+68.0 36+96.0	38.0	44.0	41.0	4 38 53' 57.56" N
8	36+96.0 42+24.0	23.0	23.0	25.5	0 3 38 54' 1.53" N
9	42+24.0 47+52.0	26.0	24.0	25.0	0 38 54' 5.48" N
10	47+52.0 52+80.0	23.0	23.0	26.0	0 38 54' 9.60" N
11	52+80.0 58+08.0	26.0	23.0	24.5	1 0 38 54' 14.43" N
12	58+08.0 63+36.0	20.0	20.0	0	0 38 54' 19.50" N
13	63+36.0 68+64.0	21.0	18.0	19.5	0 38 54' 24.72" N
14	68+64.0 73+92.0	19.0	20.0	19.5	0 38 54' 29.77" N
15	73+92.0 79+20.0	44.0	43.0	43.5	7 4 38 54' 34.04" N
16	79+20.0 84+48.0	28.0	29.0	28.5	0 0 38 54' 37.63" N
17	84+48.0 89+76.0	30.0	19.0	24.5	1 1 38 54' 41.54" N
18	89+76.0 95+04.0	29.0	29.0	29.0	0 0 38 54' 46.05" N
19	95+04.0 100+32.0	20.0	23.0	21.5	0 38 54' 50.29" N
20	100+32.0 105+60.0	21.0	24.0	22.5	0 0 38 54' 54.23" N
21	105+60.0 110+88.0	21.0	14.0	17.5	0 0 38 54' 58.17" N
22	110+88.0 112+29.0	101.1	116.1	108.6	2 2 38 55' 2.00" N

▲ Immediate Results and Advanced Data Analysis Functions ▲

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