SURVEYOR® LASER PROBES

www.laserdesign.com

The Leader in 3D Laser Scanning Since 1987

Surveyor® LASER Probes:

- ***Flexible laser probes with standard USB interface***
- ***Compatible with FARO, Romer, PH-10, any CMM***
- ***Included with Laser Design Surveyor 3D systems***
- ***Part-checking against CAD***
- ***Height or flatness checking***
- ***Steep side wall and deep groove scanning***
- ***Sharp edge determination***
- ***Complex 2D profile and In-line process measuring***

PROBE FEATURES

Our award-winning technology leads the industry with a new family of line-range laser probes that are ideal for complex-profile contour scanning. Capturing up to 144,000 points per second, the Surveyor Laser Probes (SLP) are your answer for high-accuracy, high-speed, non-contact 3D scanning. The SLP probe line features digital (ASCII) coordinate output, a visible beam, a Class II rating for safe and easy-to-see operations and a long standoff to prevent crashes during part scanning. Its large measurement range, enhanced specularity performance and automatic adjustments for surface color and finish ensure excellent results time after time. Dual CMOS receptors featuring simultaneous scanning are standard to assist with steep sidewall and recessed geometry capture. Other features include easy integration and a Non-Gaussian, beam spreader design to eliminate hot spot syndrome. With no moving parts and a completely solid-state construction using the latest CMOS technology, the SLP probe line is built to last with minimum maintenance.

SYSTEM INTEGRATION

SLP laser probes are fully integrated with Laser Design's Surveyor 3D scanning systems. Offering 3-5 axes of programmable CNC motion control, Laser Design offers a broad range of Surveyor systems in varying sizes and accuracies. SLP laser probes are also available individually for in-line applications and for easy integration with 7-Axis Faro Platinum/Titanium arms or Romer Infinite/3000iSC arms as well as with any traditional CMM.

PC and SOFTWARE INTERFACE

SLP laser probes interface to PCs using a standard USB connection. A high-end PC with ample memory, Windows 2000 or Windows XP and a high-end Open GL graphics video card are recommended. Refer to the Laser Design website for current specifications on PCs provided with our integrated Surveyor 3D scanning systems. SLP probes are fully supported by our powerful Surveyor Scan Control software providing motion control capability and managing all the functions associated with the laser scanning process.

WIDE RANGE

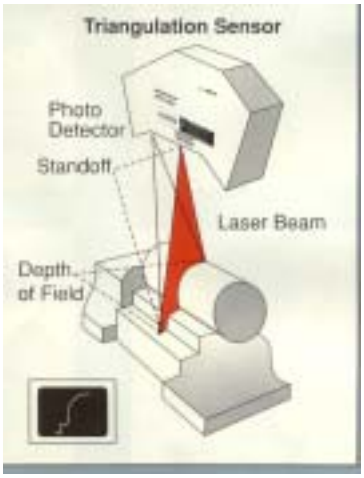
SLP probe models are available in a variety of laser line lengths with varying accuracy levels. With the ability to scan everything from small, highly detailed parts all the way up to large automotive and aerospace parts, SLP probes are your answer for precise laser scanning.

APPLICATION TOOLS LIBRARY FOR INTEGRATORS

The Application Tools Library contains all the tools essential for data capturing, buffering, and outputting profile data. Consisting of ActiveX controls and available in object form for all the popular PC-based development environments, the library provides a straightforward integration path for application software developers and system integrators.

SURVEYOR® LASER PROBE SPECIFICATIONS

	SLP-330	SLP-450	SLP-2000
Laser Type	Laser Diode	Laser Diode	Laser Diode
Laser Power Output	<1mW, Class II	<1mW, Class II	<1mW, Class II
Laser Wavelength	670 nm	670 nm	670 nm
Beam Spreader	Passive optical, no moving parts, uniform dispersion	Passive optical, no moving parts, uniform dispersion	Passive optical, no moving parts, uniform dispersion
Standoff distance Near Mid Far	 94 mm 132 mm 170 mm	 71 mm 137 mm 242 mm	 218 mm 363 mm 508 mm
Depth of field	76 mm	171 mm	289 mm
Line Length Near Mid Far	 25 mm 33 mm 40 mm	 31 mm 51 mm 83 mm	 218 mm 363 mm 508 mm
Accuracy (per point with averaging)	25µm	31µm	127 µm
Sample count	480 point / line	480 point / line	480 point / line
Sample Rate[1] (points, full field activated, 4mS exp)	24,000 / sensor 48,000 total points per sec.	24,000 / sensor 48,000 total points per sec.	24,000 / sensor 48,000 total points per sec.
Sample Rate (points, WOI[2]=120 x 480, 3mS exp.)	144,000 points per second	144,000 points per second	144,000 points per second
Sample Rate (frames) depends on WOI	50 Hz to 150 Hz	50 Hz to 150 Hz	50 Hz to 150 Hz
Sample Density[3] (mid standoff dist., variable density)	69µm, 137µm, 275µm, 550µm	106µm, 212µm, 425µm, 850µm	TBD
Detectors (dual)	640 x 480, CMOS	640 x 480, CMOS	640 x 480, CMOS
Weight (probe only)	400 g	400 g	2250 g
Size (h x w x d)	60 mm x 200 mm x 35 mm	60 mm x 200 mm x 35 mm	60 mm x 300 mm x 35mm
Minimum angle of incidence of laser beam to scanned surface	20 degrees	20 degrees	20 degrees
Typical Application	Small to medium parts	Medium to large parts	Medium to large parts
Ambient Light Rejection	Interference filters on sensors	Interference filters on sensors	Interference filters on sensors



[1] Sample rates assume simultaneous dual sensor operation mode.

[2] WOI: Window of Interest.

[3] Variable sample density because the array can be read every line, every 2nd, every 4th, or every 8th line.

Physical Connection to Probe: Front-mounting holes. Adapter mounts available for standard Laser Design pucks, Faro Articulated-arm 7th axis, all Renishaw shanks and PH-10 auto-joint.

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