3D Laser Scanning Systems

SURVEYOR® DS-Series

AUTOMATED SCANNING—Customized software and hardware allows automated 3D scanning and data processing.

RAPID INSPECTION—Compare and scan data from actual parts to 3D CAD models for computer aided verification.

QUALITY CONTROL—Obtain discrete dimension information directly from 3D scan data.

CMM CAPABILITY—Optional CMM software for touch probe measurements is available along with the full line of Renishaw touch probes.
Surveyor DS-Series systems are the next-generation scanning technology with the dual-scan technology. Available in a broad array of system sizes, the DS-Series scans parts from all orientations, and then easily rotates the data back into a common coordinate system. Operators can quickly scan free form surfaces and parts of all sizes, especially those with complex geometry. Typical parts include plastic and rubber components, EDM electrodes, extrusions, molds, dies, and castings.

Our unique technology dramatically reduces scanning time by collecting data significantly faster than conventional non-contact measuring technologies. Laser Design offers a wide variety of laser probe options which use a direct encoder interface to maximize scan data throughput. Surveyor Scan Control software adds versatility and functionality to the DS-Series systems. It controls scanning motion and laser probe settings, and contains advanced data-editing and automation features.

DS-Series systems are built on a substantial granite base and use non-contact optical steel scales on steel members for dimensional and thermal stability. The DS-Series design emphasizes powerful bearing ratios and precision pre-loaded mechanical bearings on hardened and ground steel ways. Its straight and square construction using a dual-beam steel bridge ensures mechanical accuracy making calibrations simple and saving you money. The DS-Series features the ultimate drive system eliminating the heat, vibration, wear, backlash and cogging of other CMM-type systems.

The system package includes Surveyor Scan Control Software, choice of laser probes, deluxe joystick controller, training and one year parts and labor warranty. Options include rotary stages and specialized fixturing used for automated scanning.

### Dual-Camera Sensors

SLP lasers feature two cameras that collect data simultaneously. If one camera is occluded, the other most often is not. This capability helps reduce processing time.

### System Accuracy

Laboratory tests show overall system accuracy on a DS-2030 with PH10M and SLP250 to be 0.00898mm when performing an ANSI B89 ballbar test.
Software and Applications

Laser Design supports scan data processing software from our solutions partners for reverse engineering and inspection applications.

**REVERSE ENGINEERING**
Quickly create 3D CAD surface models or low-cost production of STL files for rapid prototyping.

Laser Design offers the world’s leading data processing software packages for sale including: Geomagic, PolyWorks, Rapidform, and Verisurf. Our turnkey 3D scanning system solutions include application-specific software for output of:

- Inspection / verification reports
- 3D color error maps
- CAD models (parametric, non-parametric, parasolids, surface NURBS, etc.)
- STL meshes
- Point clouds
- Isolated key design features
- Many other analytic or geometric formats

Full training is offered either in the LDI classroom or at the customer site, along with maintenance support, upgrades, webinar interactive support, phone support, and website-based tutorials.

**INSPECTION**
Measure and analyze the variance from CAD nominal with 3D color error mapping.

Revolutionize your inspection process by implementing complete part characterization / analysis based upon millions of coordinates defining the part’s shape rather than the few hundred coordinates of touch probe measuring. Any part geometry out of compliance with the CAD model is immediately revealed. The color-coded results are graphic and readily understood: green areas are within specifications; red, yellow, and blue areas are not.

Locations of critical datums and full GD&T dimensions are quickly displayed and included in easy-to-read graphic reports. Laser scan data can be combined with touch probe data in the same inspection report. Full dimensional spreadsheets can be output to conventional SPC as desired. Once an inspection report is created, it can be automated for second part output without operator involvement, making multiple part inspections much faster and more thorough than ever before.

**Surveyor Scan Control**
Surveyor Scan Control software has a simple Windows interface that makes laser scanning easy.

- Easy to use - Scanning wizards automate most day-to-day tasks.
- Detailed accuracy reporting - Know the accuracy of your machine before you start collecting data.
- Automated scanning - Control up to 7 axis of motion for complete coverage from a single program.

**System Work Volumes**
System Work Volumes range from 25” X 30” X 15” to 50” X 144” X 40”
See LDI Sales for configuration/ size that best fits your needs for 3 Axis to 6 Axis programmable CNC 3D scanning.
ABOUT LASER DESIGN INC.

Laser Design’s Surveyor® line of automated and portable scanning systems are ideal for inspection and reverse engineering applications involving complex-shaped parts of virtually any size, color, complexity, or material. The company’s patented laser-line probe and white light projection technology dramatically reduces scanning time by collecting data substantially faster than conventional metrology methods.