

ShapeGrabber

Automated 3D Scanning Systems

Fast, Accurate, and Easy to Use 3D Scanning

Automated Non-Contact Measurement

ShapeGrabber® 3D laser scanning systems deliver fast, accurate and automated 3D measurement of complex shapes such as molded plastics, castings, stampings, and machined parts that are typically time-consuming, costly, and difficult to measure.

ShapeGrabber automated scanners are well suited for situations in which speed and ease of use are important. These systems scan parts in a wide variety of materials, colors, and finishes and excel in rapid prototyping, manufacturing, quality control, and reverse engineering applications.

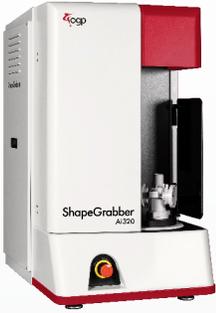
All models in the ShapeGrabber family achieve their inherent accuracy by combining a highly rigid and stable mechanical structure, with high precision vertical and rotary motion, state of the art calibration, and leading-edge optics. Using multiple motion axes, ShapeGrabber laser scanners eliminate the need for cumbersome manual software alignment and registration, ensuring fast, accurate results.

Ai320 and Ai620 include a 360° rotary table and vertical motion for part inspection. Ai620 includes a rotary table supported by a large granite base providing rigidity and vibration isolation during measurement. A 25° tilt mechanism is available on both systems and allows for faster more complete part coverage without part reorientation.

Ai820 is ideal for larger parts and includes a 360° rotary table and vertical motion. An additional horizontal axis is available where a second scanhead can be fitted and used individually or in combination with the vertical axis scanhead.

At the heart of each ShapeGrabber system is the laser scanhead which digitally captures the size and shape of objects using a line of laser light. These create high density point clouds of data from the surface of an object very quickly that is then used in combination with advanced software for dimensional measurement including GD&T.





Ai320

	Standard	Optional
Measuring Range	300 L x 100 Ø mm	
Rotary Table Motion	360°	
Tilt Adjustment	–	25°
Scanhead	SG108	



Ai620

	Standard	Optional
Measuring Range	600 L x 180 Ø mm	
Rotary Table Motion	360°	
Tilt Adjustment	–	25°
Scanhead	SG198	



Ai820

	Standard	Optional
Vertical Measuring Range	750 L x 500 Ø mm	
Horizontal Measuring Range	–	1200 mm x 400 mm x 500 mm
Rotary Table Motion	360°	
Scanhead(s)	SG508	



Scanheads

Scanhead	Wave-length (nm)	Standoff (mm)	Near FOV (mm)	Far FOV (mm)	Depth of Field (mm)	Mid-Field Point Spacing (µm)	Min Scanning Speed (pts/s)	Max Scanning Speed (pts/s)
SG108	405 (Blue)	105	55	95	100	30	155,000	1,5000,000+
SG198		125	90	170	185	50		
SG508		290	160	400	500	108		



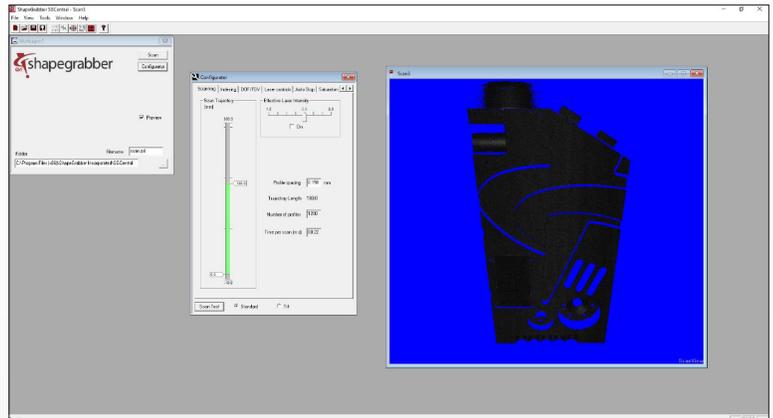
Watch the
ShapeGrabber Video

ShapeGrabber Software

SGCentral

SGCentral is a user-friendly application included with every ShapeGrabber system that lets you configure scan settings, speed, and resolution for ShapeGrabber scanning systems.

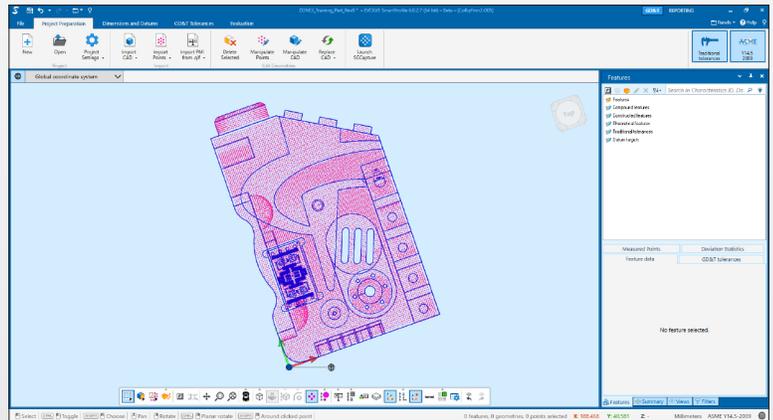
This versatile application has a number of features and controls to help customize scanning parameters to suit a particular project. Once specific selections have been made for a given part or project, SGCentral allows saving the configuration in a file for future use. The preview window shows the point cloud model being built as the scans are being collected. Should there be a need to scan the part again, merely load the file and hit the scan button.



Output file formats supported include .gpd (Geomagic), .psl (Polyworks), .stl, and xyz (ASCII generic).

SGCapture

SGCapture is a module for **OGP® EVOLVE® SmartProfile®** that allows users to both acquire and evaluate scan data in a single software package. SmartProfile is the world's leading dimensional analysis software. It combines measurement data with the CAD model of the part and automatically runs GD&T (ASME Y14.5) and GPS (ISO 1101) evaluations. Its rich set of tools allow engineers to analyze and solve complex manufacturing problems.



The CMM-like Sampler converts dense and noisy scan data to reliable, sparse, 'CMM-like' point data for standard based dimensional and GD&T evaluation.

This tool is feature and CAD model based, and samples points using the CAD model's geometry information.

Boost is a fully automatic method used to eliminate systematic measurement errors and achieve more accurate results from fast 3D scanning through software rather than slow and often expensive measurement systems.

Boost is part and method specific, based on the comparison of measurements from the same part on the 3D scanner and a reference machine. This provides a dynamic compensation that maps the accuracy of the reference machine to the data from the 3D scanner.

SmartProfile is the preferred solution for tolerance evaluation of 3D scanner data.



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