

LaserQC®

Get the Edge

**First article inspection
Statistical Process Control (SPC)
Reverse engineering**

VIRTEK

LaserQC – ‘The Edge’ in 2D inspection

LaserQC brings part inspection up to the speed of today’s advanced production technology to dramatically increase throughput in precision sheet metal fabrication. LaserQC, from Virtek, is the automated self-calibrating laser inspection system for first article inspection, Statistical Process Control (SPC) and reverse engineering of 2D materials.

LASER FAST: LaserQC captures over 500 data points per second to make part inspections laser-fast, right on the shop floor.

LASER ACCURATE: The system quickly performs 100% inspections accurate to $\pm 0.002"$ (0.05mm) in typical production environments.

SHOP-FLOOR FRIENDLY: By controlling the laser beam from a stationary position, LaserQC offers a reliable, low-maintenance solution that can operate almost anywhere you run CNC equipment. LaserQC self-calibrates and adjusts system settings to accommodate many of the environmental changes common to the shop floor.

Customer-proven performance

LaserQC has been proven and improved on the shop floor with the help of industry leaders in precision sheet metal work. Extensively tested in North America and Europe, LaserQC is now on the job in applications ranging from aerospace and high-tech manufacturing to cabinetry and heavy equipment. Our own continuous improvement program is rooted in our customers’ shop floor, where Virtek service and support teams

gain the first-hand knowledge to recognize operational needs and translate them into technical functionality.

Virtek’s commitment to customers extends to in-depth presale and aftersale support. Our team works closely with customers’ engineers, technicians and programmers to ensure the best match with production needs and full delivery of LaserQC’s capabilities.



aerospace

computers

automotive

construction

electronics

agriculture

telecommunications

“Our customers constantly bring us parts to be reverse engineered with LaserQC, this process is quick and easy. The system will pay for itself in less than two years.”

John Tempelton, General Manager, Tempelton & Sons Metal Products Ltd., Mississauga, Ontario, Canada.

“Before we had the LaserQC, we had to sit down and use calipers to check every single hole. Now, we get all that information from the system in moments. LaserQC shows you where the errors are instantly. It saves us time and has improved our quality process.”

Phu Vu, CNC Programmer, L&T Precision, Poway, California, USA.

“We chose the QC system for one overriding reason – its plant floor design.

This alone means that our operators can punch or laser cut parts and not only do the first piece inspection, but also do continuing audits as the job runs.”

Dennis Gassner, VP and General Manager, RuMar Mfg. Corp., Mayville, Wisconsin, USA.



Get the competitive edge in precision sheet metal fabrication

LaserQC delivers the kind of bottom-line benefits that help your shop to build and retain more business: faster turnaround, increased throughput, lower costs per part, reduced scrap and rework, higher customer satisfaction.

For every shop-floor application

First article inspection Putting laser inspection on your shop floor translates into more green-light time for your CNC equipment. LaserQC will inspect flat parts on the spot, completing a 100% scan in just seconds and comparing every measurement to CAD specifications. With inspections performed by the equipment operator right at the production station, you avoid QC bottlenecks and save time at every step. Your line can make more parts with current staff and equipment, and help you satisfy customer demands for fast delivery on precision work.

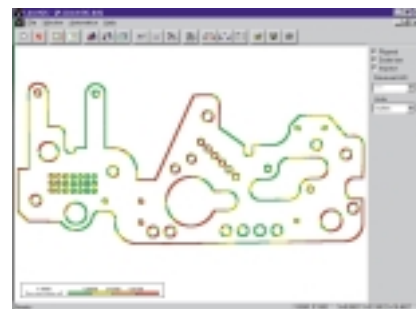
'Accuracy at-a-glance' LaserQC makes first part inspection fast and easy with no special training required. Laser inspection scans produce a color-coded visual display that shows the image of the CAD drawing and design tolerances along with the scanned part – any off-spec variance is immediately apparent, even to the untrained eye. For oversize parts, LaserQC automatically merges multiple scans to create a single image.

SPC and quality reporting Inspection data from LaserQC is saved in industry-standard .dxf files used by CAD programs. From these files, the LaserQC system generates reports to your exact specifications within seconds of completing the scan. The system automatically creates detailed, printed color inspection records and data files of the scanned part measurements including any variances from the CAD data. SPC functions include charting data in a Histogram, Run Chart, and X Bar/Range plot for analysis of part production processes over a specified period of time. You get complete, automatic documentation and traceability to meet requirements for ISO and QS reporting, plus data files you can export to common Windows®-based programs.

The speed and simplicity of LaserQC, combined with its automated documentation capabilities, enable you to upgrade your quality process with minimal cost, training and effort.

Reverse engineering Precision, 'while you wait' reverse engineering is a built-in feature with every LaserQC system. The scanning process captures the complete profile of existing parts or templates at laser speed, and stores the data in CAD-compatible .dxf files. The software even allows you to manipulate the scan data and part profile on screen so that you can optimize the quality of the CAD model. LaserQC eliminates the need for costly hand measurement and CAD programming. You simply export the LaserQC-generated .dxf file for post processing or add it to your CAD library.

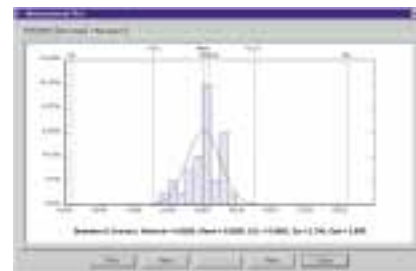
*Accuracy results are based on tests conducted on standard production machines using a laser-cut part. Results may vary. Contact Virtek for a full report.



'Accuracy at-a-glance'
LaserQC's Quick Inspect format color-codes the varying tolerances to show any off-spec variances.



Eliminate your QC bottleneck
Save time by generating a fully dimensioned Inspection Check Sheet in seconds with LaserQC and meet your customers' and your own internal quality requirements.



Analyze and improve your production processes
LaserQC generates detailed color inspection reports to your exact specifications. SPC functions include charting data in a Histogram, Run Chart, and X Bar/Range plot.

Fast and Easy:

LaserQC is designed to set up easily so your system gets up and running in less than a day. The training program provided with the system and the clear, intuitive user interface allows new operators to become fully proficient within just a few hours.

How it works The system consists of a Class IIIa/Class 3R laser projector mounted over a retro-reflective scanning table and powered by Virtek's proprietary LaserQC software. The software runs on standard Windows-based workstations.

When you start up LaserQC, an inspection window opens, and you are ready to begin scanning. Simply position the part on the scanning table, then click the "scan part" icon. The system automatically self-calibrates and a visible laser beam scans your part. LaserQC captures over 500 data

points per second, which it relays and images on the computer screen in real time. The software displays the scanned image superimposed on the CAD reference image, and the tolerances are color coded to instantly reveal any variances.

LaserQC will accurately scan flat parts up to 8" (200mm) thick. Scanning tables are available for parts up to 30" x 30" (760mm x 760mm) or 48" x 48" (1220mm x 1220mm). For parts larger than the scanning table, LaserQC automatically merges multiple scans into a single image.

As soon as the scan is complete, LaserQC saves the measurement coordinates in vector format. This format allows immediate comparison with the existing CAD model and enables you to immediately generate inspection reports, perform statistical analysis, or produce a .dxf file for reverse engineering.

LaserQC® SYSTEM SPECIFICATIONS

- Scanning Accuracy* — $\pm 0.05\text{mm}$ (0.002")
- Maximum Part Thickness — 200mm (8.0")
- Maximum Part Weight — 90kg (200lbs)
- Calibration — Automated
- Maximum Scan Zone (single scan) — LaserQC 800 - 760mm x 760mm (30" x 30")
LaserQC 1200 - 1220mm x 1220mm (48" x 48")
- Oversize Parts — Capable, with merged scan feature
- Overall Dimensions (LxWxH) — LaserQC 800 - 1575mm x 1220mm x 2440mm
(62" x 48" x 96")
LaserQC 1200 - 2007mm x 1651mm x 2440mm
(79" x 65" x 96")
- Operating Environment — 10 - 38°C (50 - 100°F)
- Power Requirements — 240V/50 Hz or 110V/60 Hz (UPS supplied)
- Laser Device & Output — Laser diode device with maximum 4.5 mW output
- Laser Class — Class IIIa, meeting the 21CFR 1040 standard for CDRH certification in North America
Class 2M, meeting the 60825-1:1993+A1:1997+A2:2001 standard for CE certification in Europe
- Software — LaserQC. Includes inspection, SPC and reverse engineering
- Computer System — Current model PC with monitor, color printer, keyboard and mouse
- Operating System — Windows® XP
- Warranty — One-year warranty on hardware and software
- Extended Warranty — Optional**
- Extended Support Program — Optional**

Due to continuous product improvements, specifications are subject to change without notice.

**Accuracy results are based on tests conducted on standard production machines using a laser-cut part. Results may vary. Contact Virtek for a full report.*

*** Contact Virtek for details.*



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Virtek is a leading provider of precision, laser-based templating, imaging, marking and engraving solutions for industrial material processing. We serve customers in the prefabricated construction, aerospace, transportation, metalworking, tool and die and mold making industries, worldwide.

We market laser inspection technology and software around the globe through direct channels and distributors, who work closely with Virtek to provide the highest level of technical support and training.