

Total Vu™ Process Improvement Software

...is ready to
work for you!





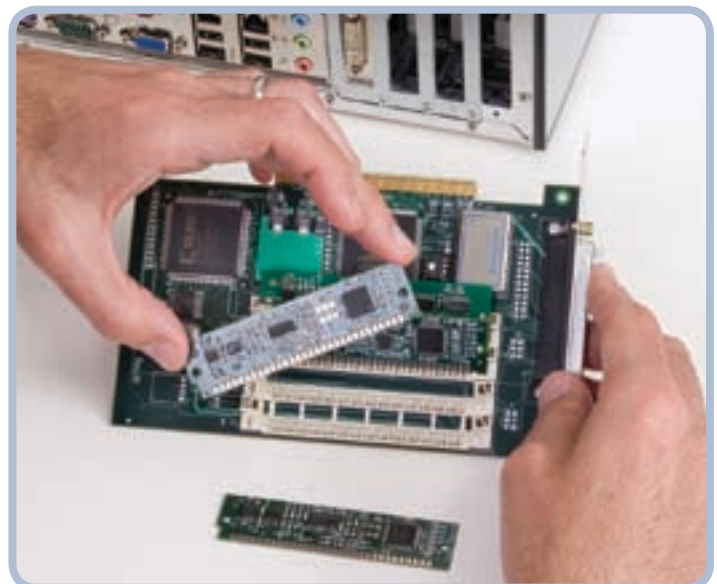
Total Vu Software—Ready To Optimize Your Production Line, Increase Your Bottom Line

Increasing production efficiency leads directly to increased profits. That's why LaserLinc's PC-based measurement system—combining the TLAser400™ micrometer interface card and Total Vu™ software—is delivering such a quick return on investment for so many manufacturers.

Each plug-and-play TLAser400 card can connect your standard PC with up to four micrometers, and up to four interface cards can be installed in one PC—to handle as many as 16 micrometers per PC.

The best news, however, is that LaserLinc is ready with equally powerful and versatile Total Vu software to fully capitalize on all this data-gathering power and versatility.

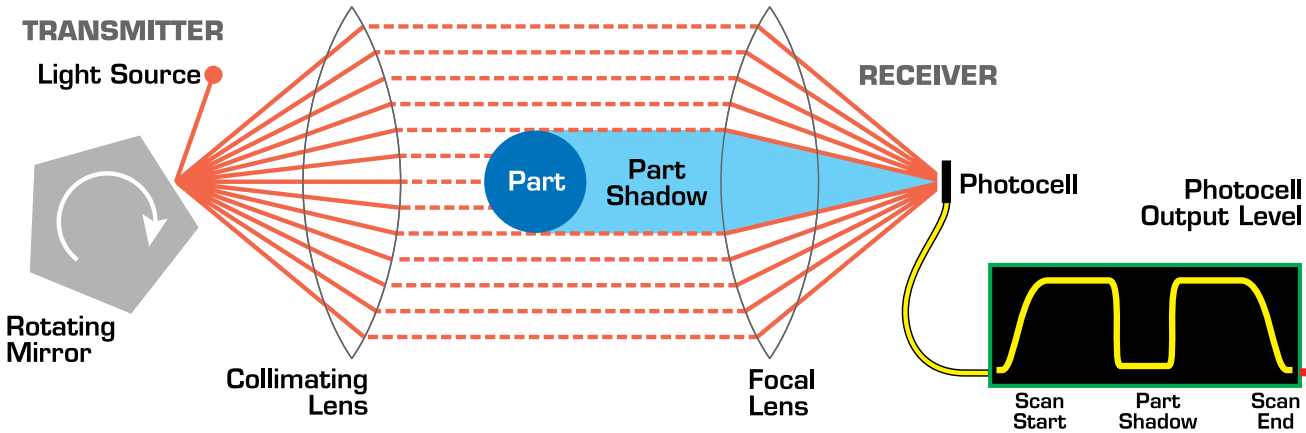
On the next page you see how data from every measurement point on your line is instantly processed by the TLAser400 card and Total Vu software to deliver a wealth of operator-friendly screen displays, automatic quality controls, and better cost management tools.



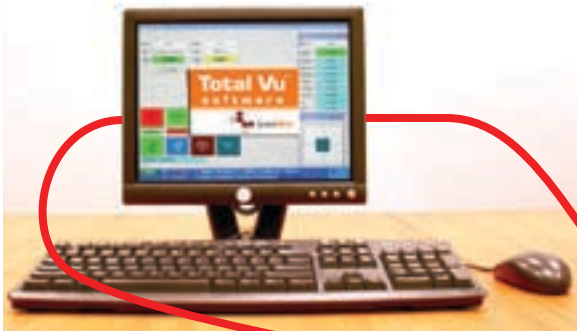
All the TLAser400™ card requires to process data from any brand of laser micrometer is the appropriate LaserLinc compatibility module, which is added to the card before installing it into your PC. The result is more data processing capacity than any other measurement system can offer.

Total Vu™ Software allows you to manage all your production data for total process management.

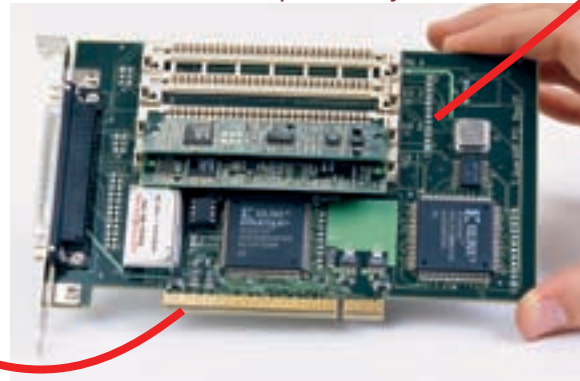
The transmitter in the laser micrometer scans a laser beam across the path of a part. This creates a shadow that persists for a time proportional to the size of the part. A photocell in the receiver picks up the light or absence thereof and passes it on to the TLaser400™ micrometer interface card to continue the conversion of a highly accurate measurement.



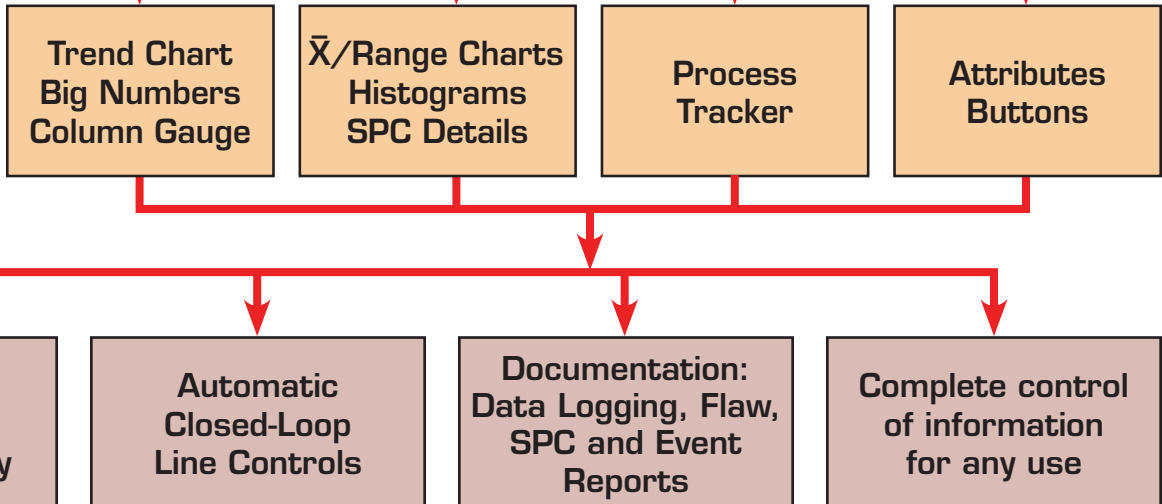
Standard PC Computer Running Total Vu™ Software



TLaser400™ Micrometer Interface Card With Compatibility Modules



Real-Time Screen Displays of All Process Data (see pages 4-7)



Total Vu Software From LaserLinc Provides Multiple Ways To Boost Profits

The quickest way to appreciate the potential power and profitability of Total Vu™ software is to watch the PC screen as it continuously follows the performance of an entire production process in real-time, with user-friendly and easy-to-understand graphic displays.

For any quality-conscious, profit-minded observer, it's an exciting show. It also signals where your business and your industry is headed in terms of system-wide (as well as enterprise-wide) production monitoring, cost control, and information flow.

Because LaserLinc's Total Vu software runs on a standard PC, it offers several unique and very important benefits:

- Lower costs;
- Easy for line operators to understand and use;
- Interfaces any PC with up to 16 laser micrometers—in any combination of existing gauges you now own or new ones from LaserLinc;
- Provides the full picture by monitoring not only product measurements but process variables, such as pressures, temperatures, loads, RPMs, length, and speeds.

Total Vu software begins by requesting your choice of set-up/start-up data such as line, operator, part number, material, or customer.

Trend Chart, Column Gauge and Large Number Display

Your operators need to see how the line is running. With scalable displays of product and process measurements presented as a number or a bar graph, and color-coded to show tolerance status, the operator can see—even from a distance—what is happening at any moment.

A single number, however, is not enough. An operator needs to view recent product and process history. Trend charts provide the recent product history, from which the operator can quickly interpret whether corrective action is necessary. As with the measurement displays, trend charts are scalable and configurable. Trend up to eight measurements at once on each chart and make as many charts as your process requires.

These displays are completely configurable using only the mouse. For the most

effective operator interface, select which measurements you want to display as well as their size and position. An informed operator assures performance, efficiency, and job satisfaction.



Your operator may also select a recipe from a comprehensive list. You are then ready to instruct Total Vu software to display charts, statistics, and measurement data from one or more micrometers. You can monitor other process variables such as pressures, temperatures, loads, RPMs, and speed; control the process; detect and report flaws; identify out-of-spec product; track process events; log data for post analysis, reporting, and archiving, and track virtually every aspect of production.

With Total Vu software, you can use your measurement data to reduce scrap, avoid product-quality problems, automate with closed-loop control, improve process speed and performance, enhance operator effectiveness, and provide complete and accurate process history.

You can also tailor your displays to serve your operators most effectively, by presenting only the information they need to perform their tasks. Using the standard PC's ability to support multiple monitors, you can put as

much information on display for the operator as needed with minimum expense.

Total Vu software is fully Windows-compatible, and the familiar Windows graphical user interface is a big help for operators while they are learning to use the system. Even if your production line includes several different brands or types of micrometers, your operators can easily control them through a single unified interface.

Another major cost benefit of installing LaserLinc's TLaser400™ interface card and Total Vu software is the opportunity to install high-performance LaserLinc micrometers on your production line.

Our line of micrometers covers a wide range of product diameters, from .035µm (.0014") to 120mm (4.7"), and includes very compact models and also the highest measurement rates available. Split transmitter/receiver models offer flexibility and precision for multi-strand

Process Tracker™ Event Reporting

To compete in a global market, you must continually improve your manufacturing systems. Process Tracker takes you well beyond the hard-wired limits of traditional dedicated processors without getting into the complex and costly realm of large-scale enterprise systems. Because Total Vu software is tailored to a specific set of manufacturing applications, there is no need to cope with a raft of menus, tool bars, and configuring to put Process Tracker to work.

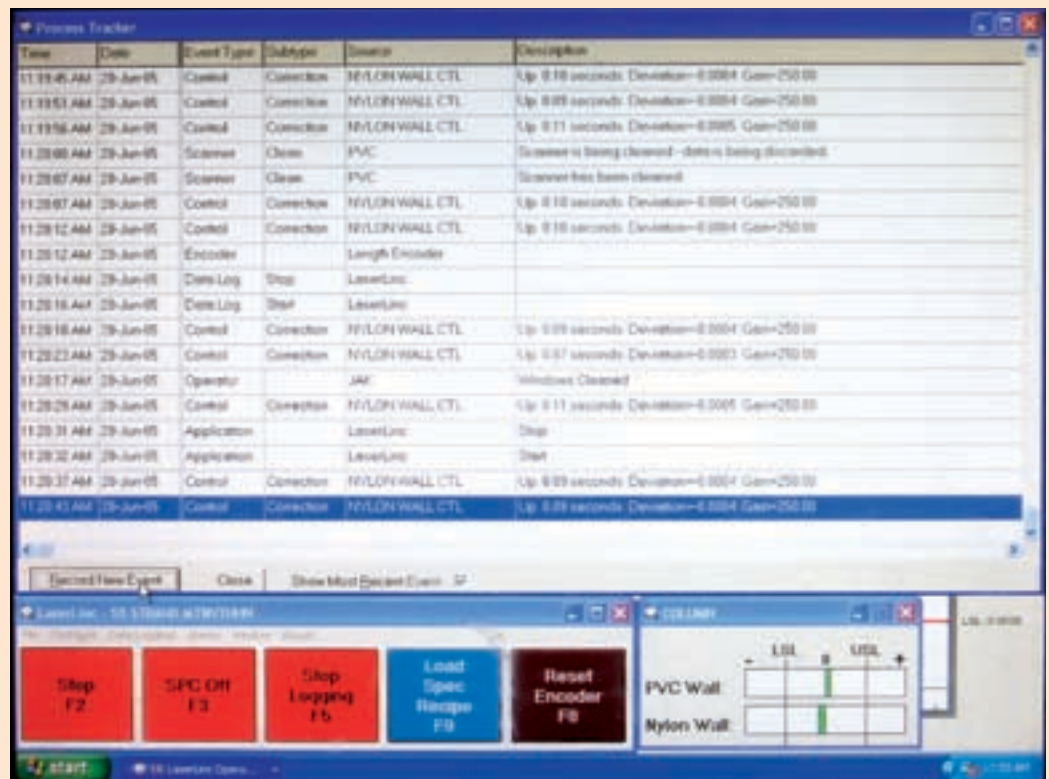
Process Tracker provides the overall context you need to interpret all the available data and extract its full meaning. Process Tracker logs essential process events including:

- Lumps and neckdowns;
- Tolerance reports;
- Control actions;
- Operator input;
- Spool changeovers;
- Recipe changes;

- Encoder reset;
- Events from external devices.

Each event is tagged with the time, date, and length so that you can easily correlate the event to your data logs.

Now, with Process Tracker, you can review all your available data in a more complete way and make more fully informed decisions.



By performing up to 8000 non-contact measurements per second, this LaserLinc dual-axis micrometer provides the higher speed and accuracy required for full control of your products and processes. Dual-axis scans provide pairs of readings 90 degrees apart to define diameter, part position, and ovality, and solve many tough flaw detection challenges.



applications, and the three-axis Triton series provides accurate ovality measurement regardless of product orientation.

With the addition of our new ultrasonic wall thickness measurement device, the UltraGauge+, you can measure wall thickness at up to eight positions with over 2000 measurements per second.

LaserLinc micrometers and ultrasonic devices are designed specifically to do one thing—provide precise real-time measurements of your product.

Closed-loop control is another important way your Total Vu system can optimize your production by automatically adjusting the process in response to real-time data on product dimensions and process parameters. Total Vu software's Control feature can automatically monitor the

\bar{X} /Range Charts, Histograms and SPC

Real-time statistical process control (SPC) charts offer additional information that is extremely useful to engineers and skilled operators. The \bar{X} /Range chart presents data in a graphical way so that the user can instantly interpret process behavior and easily identify patterns that can be attributed to assignable causes. Once a cause is identified, the problem can be fixed and the process improved.

The histogram offers a complete chart of the production run. With a quick glance, the operator or an engineer can determine the overall quality of the production run.

Statistical data, including average, maximum, minimum, range, standard deviation, Cp, CpK, Pp, and PpK—as well as subgroup average, maximum, minimum, and range—provide summary information about the quality of the product

or process you are monitoring. This information can be supplied to your quality and process engineers, management, or your customers as documentation of the run.

SPC data is another key element to gathering a complete view of not just the product but the process that makes the product. With the ability to analyze the process from yet another perspective, process engineers are empowered to continually improve the process and enhance your overall competitiveness and profitability.



trend in your product and change the designated parameter—such as line speed, extruder RPM, vacuum level, or roll stand position—to maintain the desired product size.

You can also benefit by applying the Profit Maximizer™ feature to monitor your process statistically in real time, and intelligently change the product's target dimension to minimize material usage while ensuring that the product remains within customer specifications.

LaserLinc's Total Vu software quickly wins the confidence and praise of line operators, production and process engineers, and plant managers wherever it's on the job. Why wait?



In this highly-controlled clean-room application, operators monitor their process using the TLaser203™ and Total Vu software. The TLaser203 mounts in any position (shown here inverted) and makes 2400 high-precision measurements per second of opaque and/or transparent products.

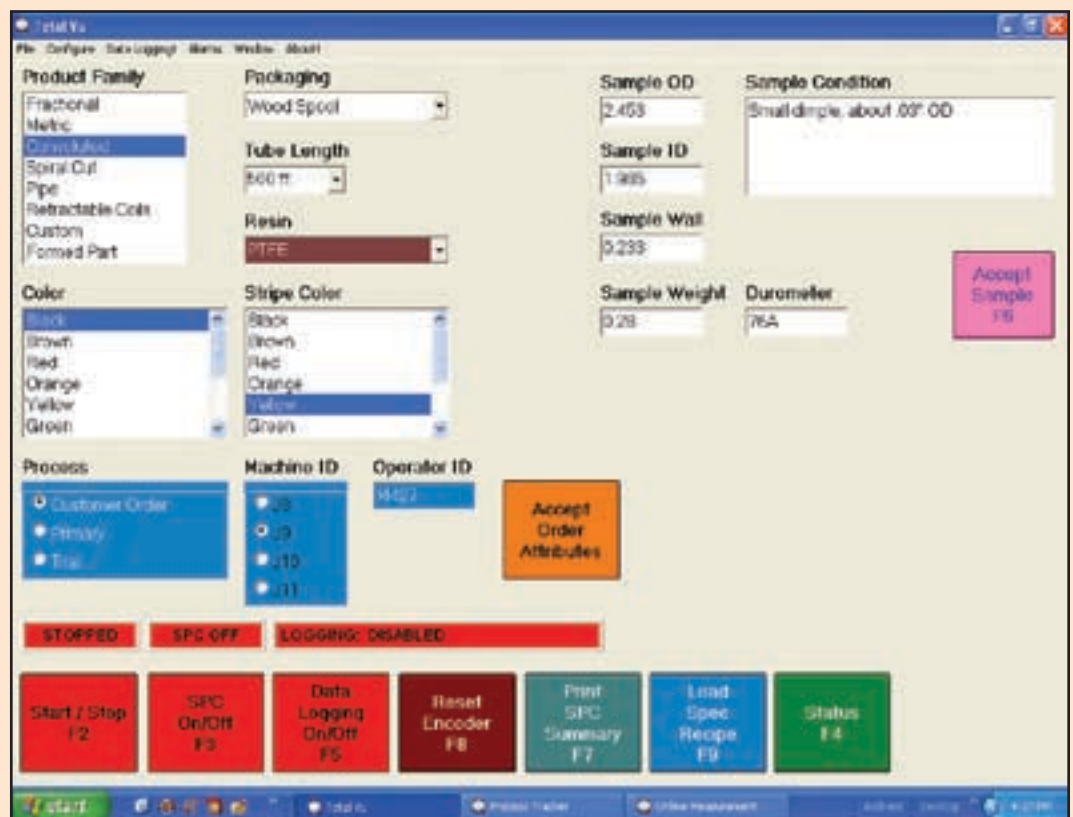
Attributes and Buttons

The final part of your Total Vu solution allows you to choose whatever information you want and how you want it supplied: order information, process setup information, manufacturing line and operator identification, product descriptions, operator comments, and manual entry of off-line measurements. This information, or attribute, can be presented either as lists, radio buttons, list or drop-down boxes, edit boxes, or memo text entry controls. Attributes may be logged to disk like measurements. They can also document conditions under which various saved files were created by incorporating the attribute value into the file name.

Now you can go entirely paperless—no fussing with handwritten setup or log sheets. The use of attributes, along with data logging, process tracker, and SPC charting and reporting allows you to document the “total view” of your product and your process.

Also shown here are examples of configurable buttons. You can define actions—such as Accept Attributes, Reset SPC, Reset Encoder, Start Data Log, Turn On Control—or sequences of these actions, that will be initiated when an operator clicks a button.

By configuring the interface for your operators in this way, you can simplify their tasks—another way to take advantage of the power of your Total Vu software.





LaserLinc/Total Vu™ Software Deliver The Total View

As more and more manufacturers have adopted LaserLinc's unique PC-based measurement system, we have learned a great deal about serving your specific needs. What's more, LaserLinc continues to apply what we learn to further refine our micrometers, TLAser400 card, and Total Vu software.

It's time to improve your production-line and bottom-line results with a Total Vu solution. Let us help:

- Reduce your scrap and material costs;
- Improve product quality and production flow;
- Give your operators better information;
- Control and record your process variables;
- Enhance reporting and documentation.



Get LaserLinc on the line today, or visit us online at www.laserlinc.com



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