The world leader in advanced metrology solutions

XD LASER MEASUREMENT SOLUTION

The XD™ Laser Measurement System is the newest iteration on the famous 5/6D™ Laser Measurement System. Like the 5/6D™, it also has the ability to simultaneously measure all axis errors for rapid machine tool error assessment. Measurement is accomplished in 3 to 4 hours instead of days. The XD™ Laser provides fast, accurate measurement of machine positioning capability to allow complete machine assessment with 80% less downtime. Simultaneous measurement produces a true picture of all axis errors not possible with single parameter systems, and the single setup for each axis is the secret to dramatically reduced downtime. The XD6™ is the only laser measurement system to provide "roll" measurement around an axis automatically along with linearity, X & Y straightness, pitch and yaw measurements. Complete measurement of all 21 error parameters of the work area teamed with our exclusive Volumetric Error Compensation package enables users to dramatically reduce bad parts and prolong the useful life of their machining centers.

The XD™ Laser is a fully wireless system with Ethernet connectivity and is available in multiple configurations with corresponding price points to better meet the needs of API's diverse customer base. The XD™ Laser Class System is available in two grades of accuracy, the standard and the precision models. API also produces a high precision system specifically for higher accuracy situations demanded by certain applications and customers. This system is most commonly used in the compensation and calibration of CMMs. The High Precision system still allows simultaneous data collection of up to six degrees of freedom at once but employs specific technologies to enable a higher level of beam stability and accuracy.

XD™ Laser Measurement System features:

- ✓ Availability in 1, 3, 5, and 6 Degree of Freedom Configurations
- ✓ Completely Wireless Operation
- ✓ Control Box Integrated into Laser Head for Ultimate Portability
- ✓ Ethernet Connectivity
- ✓ Ability to Send Data Wirelessly to Remote Computer
- ✓ Modular Weather Station Expandable to 5 Material Temp Sensors
- ✓ Available Humidity Sensor

Plus the same great features of the previous generation API 5/6D™ Laser Measurement Systems:

- ✓ Measures all error parameter from a single setup for each axis
- ✓ Simultaneous measurement of linear, straightness, pitch, yaw, and roll
- ✓ Data displayed in real-time along with other measured data
- ✓ Laser mounting and quick alignment fixtures
- ✓ Hand-size head with base plate
- ✓ Weather Station compensates for real-time environmental changes
- ✓ Single Optic Squareness Setup
- ✓ Ability to evaluate Velocity, Acceleration, Parallelism, and Flatness
- ✓ All Operations in Accordance with ASME B5.54

Software features

API's XD™ Laser Measurement Software sets the standard for laser measurement systems. From the initial alignment of the system, to the reviewing of results, to the compensation of machine tools, API software does it all and makes it easy. API's software is designed around:

- ✓ Ease of use - We understand that our customers are constantly dealing with

training currency issues as well as workforce turnover. API's software has been designed to specifically be intuitive and broad ranging to minimize the effects of these business realities.

- ✓ Efficiency - The most efficient measurement with the greatest accuracy is what API's Laser Measurement Systems are about and the software makes the processing of this information just as efficient. From the viewing of the linear, straightness, angular, and squareness data to easily generating CNC programs and generic CNC compensation (absolute and incremental), the software is the key component to enabling efficiency in your organization and on your shop floor.
- ✓ Functionality - API customers have direct input into the software and help us to make it the best available. API customers are often polled for their input in making the software easier to use, more efficient, and further reaching

Below are some of the features of API software:

- ✓ Intuitive User Interface
- ✓ Large Text Alignment Screen for Shop Floor Use
- ✓ CNC Program Generation for Runs
- ✓ Velocity Measurement
- ✓ Acceleration Measurement
- ✓ Flatness Measurement
- ✓ Squareness Measurement
- ✓ Easy to Use Post-Processing of Laser Data
- ✓ Environmental Recalculation Toolset
- ✓ Generic Compensation Generation
- ✓ ASCII Datafile for Offline Postprocessing
- ✓ Image Exporting for Reporting
- ✓ File conversion works with existing software for other laser platforms
- ✓ Data Trending for Pre and Post Compensatory Run Comparison
- ✓ Viewing Options in Compliance with Latest Standards (ISO, VDA, ASME and More!)

API manufactures a variety of accessories to meet the varied needs of customers across the globe. From diagonal optics to flatness measurement kits, API has the solution for you!

Available accessories include:

- ✓ Squareness Optics
- ✓ Diagonal Optics
- ✓ Wireless Ethernet Communication Bridge
- ✓ Lathe Kit
- ✓ Flatness Measurement Kit
- ✓ Way Parallelism Kit
- ✓ Rotary Measurement Kit
- ✓ ASME B5.54 Standard Document

API Laser Measurement Systems are used worldwide for a variety of applications by most well known manufacturers.

API customers utilize these systems for:

- ✓ CMM and CNC Calibration, Compensation and Diagnostic
- ✓ Complete Error Mapping of Machine Tools and CMMs
- ✓ Parallelism of machine ways, rails, and axis of travel
- ✓ Rotary Axis Measurement
- ✓ Squareness Measurement
- ✓ Diagonal Measurement
- ✓ Metrology Laboratory Baseline Laser
- ✓ CNC Feedback
- ✓ Velocity and Acceleration Verification
- ✓ Robotic Location Feedback

API Laser Measurement Systems may be found across many different industries. From the who's who in automotive to the leading aerospace manufacturers, API products are giving production companies the leading edge in efficiency and insight to their operations.

API Laser Measurement Systems are proudly used in:

- ✓ Automotive
- ✓ Aerospace
- ✓ General and Precision Machine Shops
- ✓ Metrology Calibration Laboratories
- ✓ CMM OEMs
- ✓ Machine Tool OEMs

XD1, XD3, XD5 and XD6 Specifications

	Accuracy	Standard
XD1	Linear (ppm)	0.5
XD1	Linear Range (meter)	40 (80m optional- call)
XD1	Straightness (µm)	± (1.0 + 0.2/m) or 1% whichever greater
XD3	Max. range (µm)	+/- 500
XD3	Pitch & Yaw (arc-second)	± (1.0 +0.1/m) or 1% whichever greater
XD5	Maximum. range (arc-second)	+/- 800
XD6	Roll (arc-second)	+/- 1 or 1% whichever greater
	Squareness (arc-second)	+/- 1
	Temperature (°C)	0.2
	Humidity (%)	5
	Pressure (mmHg)	1