

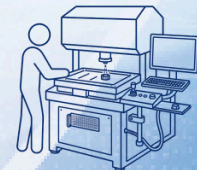


**TVSA713**  
Video Measurement System  
711 mm x 610 mm x 200 mm Range  
Shown with Adjustable Quadrant Light

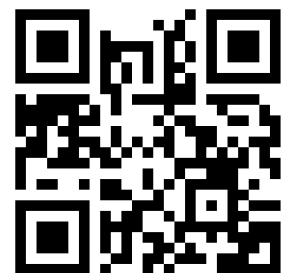
# RAPID, MULTISENSOR VIDEO MEASUREMENT MACHINES

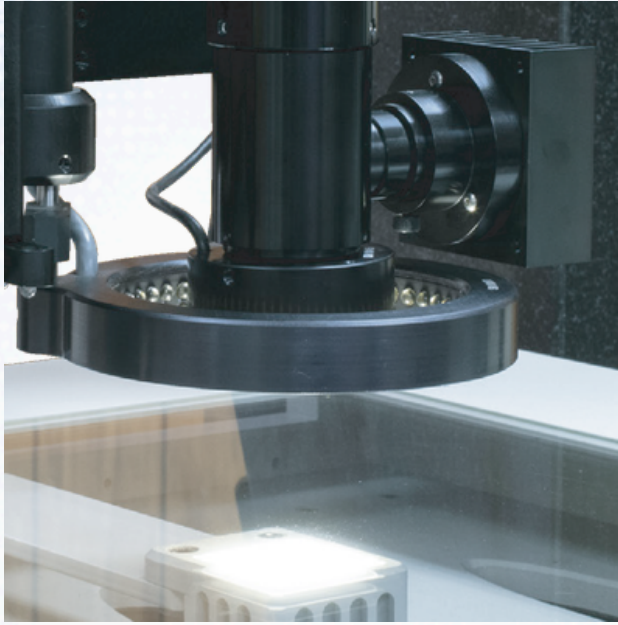
Thorlabs' VideoMic® Video Measuring Systems provide high-speed, non-contact 3-axis coordinate measurement with industry-leading accuracy. These multisensor measuring machines can easily verify critical dimensions on first articles, production samples, or entire runs. Automated inspection protocols utilize the system's large field of view and high-resolution sensors to easily inspect large volumes of components sequentially or simultaneously. The system's tolerance reports and export utilities allow for setting thresholds, enabling timely corrections to the production process or, when necessary, interruption of production to minimize scrap. Images are collected on a high-resolution CCD camera and analyzed with sub-pixel algorithms enabling submicron measurements. Once measured, the feature coordinates and statistics can be stored, analyzed, and exported for additional analysis and reporting.

With a significant worldwide install base and modularity to tackle a wide variety of applications, the VideoMic® line of measurement systems has a proven track record of reliability. It is guaranteed to meet the quality assurance requirements of your production facility.

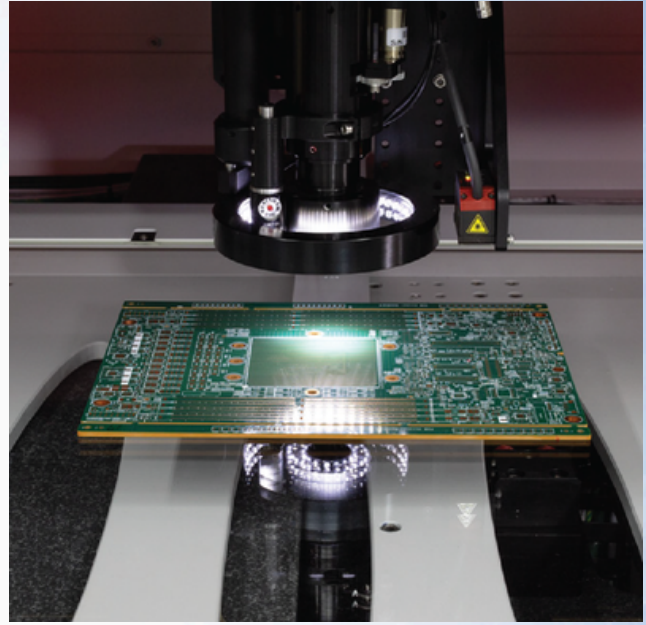


[Schedule Demo](#)





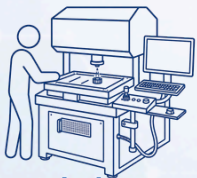
Multiple Lighting Options Available



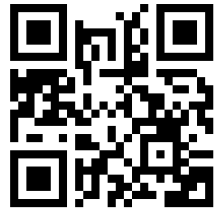
PCBA Measurement

## SYSTEM OPTIONS

Six base systems are available, each utilizing a granite, split-axis base and gantry design. These measurement systems are offered in two product lines with air bearings and mechanical bearings, respectively. The VSA product line utilizes balanced linear motors with air bearings to position each axis of travel, while the VSM product line utilizes servo-driven ground ball screws to position each axis of travel. Each of the three motor axes and associated encoders is bonded directly to the granite, creating a system that is extremely accurate, stable, and resistant to environmental factors. The powerful M3 metrology software enables all the measurement, dimensioning, and reporting capabilities needed for the qualification of materials.

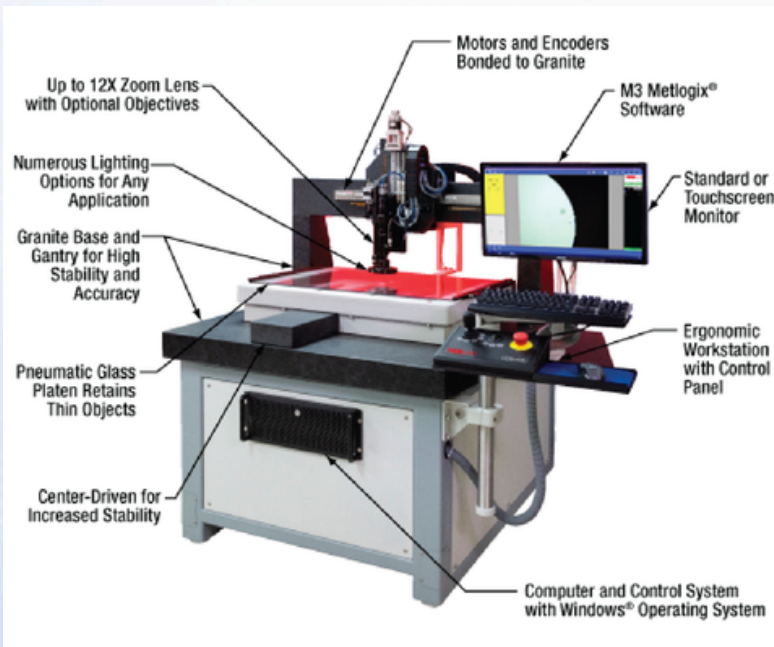


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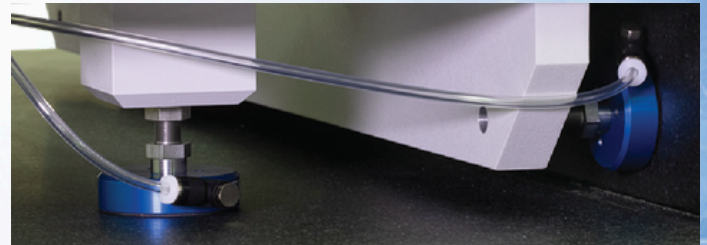


- Advanced Metrology Software with a High Degree of Flexibility for Programming
- Enhanced Video Edge Detection (VED) for Selective Feature Measurement
- Simultaneous Measurement of Multiple Features within the Field of View for Quick Program Execution
- 3D Measurement Capabilities in Video, Laser, and Touch Modalities
- Program Creation from Automatic CAD Data Import
- Easy-to-Use Interactive Feature Creation for Manual Program Recording
- Report Generation with Drawing Markups and Customizable Output Table Information
- Data Compatibility with Advanced PCB Analysis Software

- Extremely Flat Granite Bases Provide an Ideal Plane for Stage Motion
- High-Speed Air Bearing Stage Positioning Permits Rapid Feature Detection and Program Execution
- High-Resolution CCD Cameras for Optimal Image Quality
- Variety of Lighting Options for Enhancing Features for Processing
- Customizable Zoom Lenses Enable Large Field of View or High Resolution
- Auxiliary Sensor Options for Laser and Touch Probes Compliment Video Measurements
- Includes Compact Control Panel and Standard Keyboard to Maximize Operator Performance



**A VSA713 Video Coordinate Measurement System with the Hood Removed.**



**VSA Series systems include frictionless air bearings that do not wear or require lubrication.**



**VSA Series' Non-Contact Magnetic Track Shown Above the Gold 0.10 µm Encoder.**

# VideoMic® Video Measurement System Specifications

Base System Item #		VSA713	VSA963	VSA1273	VSM713
<b>XYZ Control</b>					
Stage Bearings		Air			Mechanical
Stage Motors		Linear			Servo
Measurement (Travel) Range	X-Y	711 mm x 610 mm (28" x 24")	965 mm x 760 mm (38" x 30")	1270 mm x 915 mm (50" x 36")	711 mm x 610 mm (28" x 24")
	Z	200 mm (8")			
Accuracy	X-Y (E2)	(1.5 + 5L/1000) µm			(2.5 + 5L/1000) µm
	Z (E1)	(1.5 + 5L/1000) µm			
Velocity	X-Y	≤760 mm/s			
	Z	150 mm/s			
Repeatability	Z	±3 µm (±0.00012") at High Magnification			
Granite	Flatness	≤0.005 mm (Over Any 700 mm Area)			
	Roughness	Ra0.4 (Equivalent to RMS16)			
	Waviness	≤0.001 mm / 100 mm x 100 mm			
<b>Unit Dimensions</b>					
Footprint	Width	1270 mm (50")	1520 mm (60")	2140 mm (85")	1270 mm (50")
	Depth	1630 mm (64")	1880 mm (74")	2350 mm (93")	1630 mm (64")
Total Height		1730 mm (68")	1860 mm (73")	1800 mm (71")	1730 mm (68")
Approximate System Weight (Crated / Uncrated)		1630 kg (3600 lbs) / 1225 kg (2700 lbs)	2041 kg (4500 lbs) / 1588 kg (3500 lbs)	2994 kg (6600 lbs) / 2450 kg (5400 lbs)	1630 kg (3600 lbs) / 1225 kg (2700 lbs)
Approximate Footprint Overhang	Control Station	Up to 635 mm (25")			
Top Clearance		Allow for Approximately 1220 mm (48") for Servicing			
Rear Clearance		Allow for Approximately 610 mm (24") for Servicing			
<b>General</b>					
Operating Temperature	Range	20 ± 0.5 °C (67 to 69 °F)			
	Rate	0.25 °C/hr (0.5 °F/hr)			
Relative Humidity (Non-Condensing)		30% - 80%			
Line Voltage		115 / 230 VAC, 50 / 60 Hz, Single Phase, 1.0 kW			
Air Supply	Velocity	85 L/m (3 CFM) Dry Air			
	Pressure	7 - 8.25 Bar (100 - 120 PSI)			

- a. The base item number indicates the unit size, measurement range, and bearing/motor type of the chosen system. The magnification optics, camera, and lighting options can then be customized to suit a specific application. Contact TMS-Sales@thorlabs.com for help in selecting system options and specifications.
- b. L is the point-to-point travel distance, or diagonal travel distance. This applies to a thermally stable system at 20 °C using a certified artifact, pixel value of 2 µm or less, evenly distributed load, and a standard measuring plane.
- c. The control station includes the monitor, keyboard, mouse, and control pad; it is mounted at the front of the unit. The printer tray is an optional accessory that is mounted at the rear of the unit.