



OPTEK
OPERATIONS TECHNOLOGY INC

VideoMic[®] VSM

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VIDEO INSPECTION AND MEASUREMENT SYSTEM

The OPTEK VideoMic VSM split-axis series provides rapid, non-contact 3-axis coordinate measurement with remarkable speed and accuracy. This capability allows the user to verify critical dimensions on first articles, production samples, or entire runs. With toleranced reporting, thresholds can be set to enable timely corrections to the process or, when necessary, interruption of production to minimize scrap.

Servo-Driven 'Ground' Ball-Screws position the stage accurately, quietly, and quickly. High magnification optics relay the image to a high resolution CCD camera and from there to the computer where our sub-pixeling algorithm permits sub-micron measurements.

A magnified view of the feature being measured is displayed on the screen and can be stored with all relevant data or printed on the optional color printer. Once measured, the feature coordinates can be stored, analyzed, and/or exported to other software programs for further in-depth analysis.

FEATURES

- Advanced metrology software provides a high degree of programming flexibility.
- Enhanced video edge detection (VED) for selective feature measurement.
- System has versatile VED tools such as Linewidth, Circle, Center-of-Mass, and Buffer that speed the measuring process.
- Transports are driven by Servo-Motors coupled to 'Ground' Ball-Screws which are close-looped to precision scales that are bonded to the granite componentry in all three axes.
- X (camera) and Y (product) transports operate independently and are guided and supported with precision linear ways and bearings.
- Closed-Loop Z-axis permits Z-axis measurement and auto-focusing as well as precision Trackball focusing.
- The Microsoft Windows environment is used with on-line help to ease training.
- The high-speed multi-tasking processor permits rapid feature detection and high-speed transport control.
- Network capability is standard. Electronic file or printout of dimensional data, as well as images, is available.
- The system reports position and size of features, allowing optimization of the user's fabrication process.
- Tolerancing to Cartesian, as well as True Position, LMC, and MMC is provided.
- Programs can be automatically created from CAD data or by recording steps while manually measuring a part.
- Large LCD color monitor for display of metrology data and video image.
- Adjustable ergonomic workstation including a compact control panel and standard keyboard maximizes operator performance.
- Massive granite base, bridge and bearing 'ways' for superior machine stability.
- High-resolution color camera provides brilliant video image.

SPECIFICATIONS

Model	463VSM	713VSM
X-Y Travel	460 mm X 305 mm (18" X 12")	711 mm X 610 mm (28" X 24")
Footprint Width	102 cm (40")	127 cm (50")
Footprint Depth	102 cm (40")	163 cm (64")
Total Height	173 cm (68")	173 cm (68")
Overhangs	Up to 635 mm (25") for Adjustable Control Station at front. 280 mm (11") for optional color printer at right.	
Weight(approx) Crated/Uncrated	1043 kg gross (2300 lbs) 726 kg net (1600 lbs)	1630 kg gross (3600 lbs) 1225 kg net (2700 lbs)
X-Y Stage Velocity	Up to 500 mm (20") per second	
X-Y Accuracy	$E2 = (2.5 + 5L/1000)\mu\text{m}$, where L = measuring length in mm. Applies to thermally stable system @ 20°C using a certified artifact, pixel value of 2 μm or less, evenly distributed load and a standard measuring plane.	
Z-Axis Stage	Travel - 200 mm (8"), Velocity up to 150 mm (6") per second. Reproducibility $\pm 3 \mu\text{m}$ ($\pm 0.00012"$) at high magnification	
Z Accuracy	$E1 = (1.5 + 5L/1000)\mu\text{m}$, where L = measuring length in mm. Applies to thermally stable system @ 20°C using a certified artifact, pixel value of 2 μm or less, evenly distributed load and a standard measuring plane.	
Environment	20 \pm 0.5°C (67°-69°F) temperature range. 0.25°C (0.5°F)/Hr maximum rate of change. 30% - 80% RH non-condensing	
Controller	Windows based high performance controller. Contact factory for latest configuration.	
Utilities	115/230 VAC, 50/60 Hz, Single Phase, 1.0 kW	
Training	Three Days On-Site, by an OPTEK Engineer (Quoted Separately)	
Warranty	One Year Parts and Labor	
OPTEK is committed to continuous improvement. Specifications are subject to change. Accuracy and reproducibility performance guaranteed per current OPTEK procedures.		

OPTIONS

- Programmable LED Quadrangle™ top lights for illumination of surface features.
- Programmable LED bottom lighting for illumination of edges and thru-holes.
- Z-Trac Lighting Module provides independent control of incident angle and height for edge enhancement.
- Choice of IK5000 (Heidenhain) or M3 (Metlogix) Metrology Software/Hardware packages.
- Choice of 6X or 12X Programmable Zoom Lenses for preset, calibrated magnifications.
- Touch Screen LCD monitor for ease of operation & training (as shown on reverse side).
- Hood Viewing Portal to observe machine operation (as shown on reverse side).
- Hinged Glass Platen holds flat samples of various thicknesses.
- Programmable Zoom Lens provides preset calibrated magnifications.
- Optical Magnifications can be specified from 25X to 2000X to match feature sizes.
- Color Printer provides archived video images and measurement reports.
- File Conversion Utilities import and export CAD, artwork, drill, and rout files.
- Powerful EXCEL based SPC Package.

Consult the Factory for additional information on configuration or applications.