Starrett®

VISION METROLOGY SYSTEMS

NEW!

Horizontal Digital Video Projector

Vision Systems

HDV

HDV300 AND HDV400

HDV300 CNC AND HDV400 CNC

The HDV horizontal digital video comparators combine the best features of a horizontal optical comparator and a vision metrology system. With a rigid steel design, they are configured like a traditional horizontal comparator. The workstage is the same as the Starrett field-proven HB400 and HD400 comparators, with a 110lb (50kg) load capacity. The heart of the system centers on a uniquely designed interchangeable lens mounting system coupled to a hi-resolution color digital video camera (patent pending). The system is available with a choice of seven telecentric lenses for micron-level resolution and optical distortion as low as 0.001% for accurate field-of-view (FOV) measurements. Lenses provide a maximun FOV of up to 2.44" x 1.85" (62mm x 47mm). Stage movement can be related to the imported file allowing part comparison up to 16" (400mm) long.

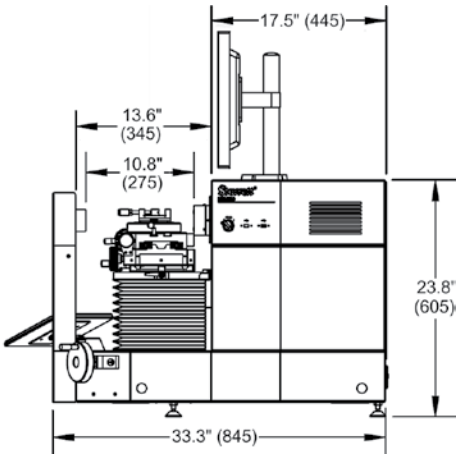
The HDV systems house a powerful 64-bit PC, which runs MetLogix M3 Metrology software. With this software, DXF CAD files can be imported and 2D Go/No-Go gages can be developed directly from the CAD files. Video edge detection (VED), allows real-time interaction of the imported file with the video image of the part being inspected. Productivity, speed and accuracy are all enhanced. Systems are available in manual or CNC control.

Features

- Steel construction with hard anodized X Y stage
- 12" x 6" (300mm x 150mm) of stage travel for HDV300
- 16" x 6" (400mm x 150mm) of stage travel for HDV400
- 21.3" x 5.1" (540mm x 130mm) workstage
- 110lb (50kg) maximum load capacity
- 2" (51mm) of focus travel
- Helix angle adjustment with ±15° Vernier scale
- Manual X-Y and focus positioning via hand wheels or CNC with joystick and trackball positioning
- Heidenhain glass scales for 0.5µm (.00002") X and Y resolution
- LED illumination for surface and profile lighting
- 5 megapixel color camera (2448 x 2058 pixels)
- Ultra-low distortion to 0.001% for telecentric FOV measurements
- 64-bit Intel® Processor
- Windows® 7 Professional operating system
- MetLogix M3 software with DXF/FOV option pack
- Parts displayed on 24" (60cm) touch-screen color monitor (1920 x 1080 pixels)

Options

- 7 interchangeable telecentric lenses for fields of view from 2.36" x 1.77" to 0.09" x 0.07" (patent pending)
- 6.5:1 zoom optics
- 23" or 32" high cabinet stands
- Calibration standards optional



Starrett®

MVR200

MVR200

MVR MANUAL VISION SYSTEM

Manual Vision Metrology Systems

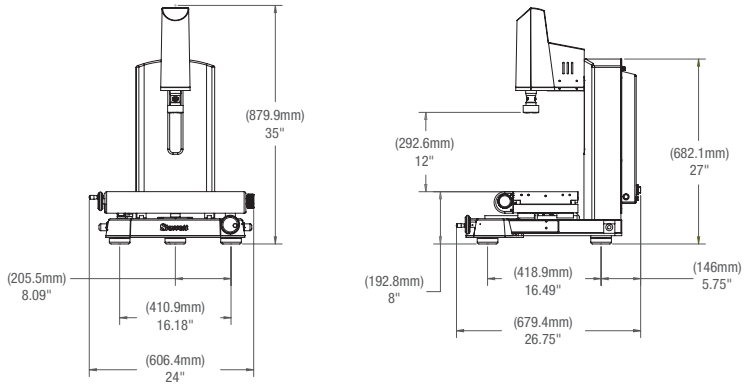
MVR

MVR200 AND MVR300

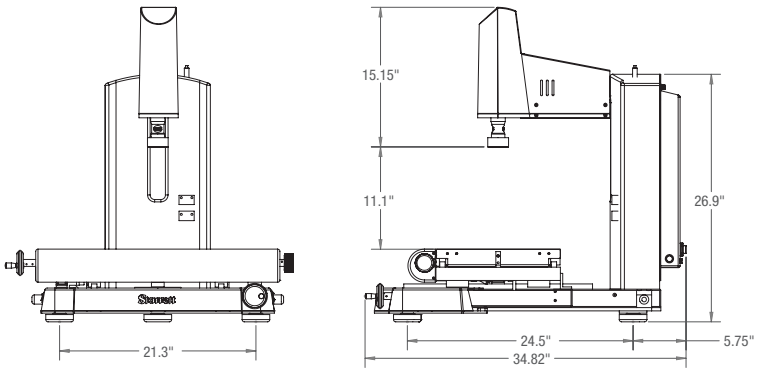
The MVR manual vision metrology systems are ideal for individual measurements or short runs. They are available with dedicated 6.5:1 zoom optics or a quick-change bayonet lens mount which accepts zoom optics or telecentric lenses for micron-level resolution and optical distortion down to 0.001% for accurate field-of-view (FOV) measurements. These can encompass an entire small part up to 2.00" x 1.50" or a feature of a larger part and be seamlessly integrated with stage motion to measure parts with a length up to 8" (MVR200) or 12" (MVR300). The operator interface is a 21.5" all-in-one touch screen PC which runs MetLogix M3 FOV software under Windows® 7 Professional. The screen displays a live video image of the part plus geometry tools and digital readings. The image of the part can be resized using zoom, and measurements can be taken by simply tapping a feature on the screen.

MVR hardware features include a granite base for maximum stability, recirculating ball linear guides for smooth and precise stage motion, and a motorized Z-axis with variable speed control.

MVR200



MVR300



Features

- X-Y travel for MVR200: 8" x 4" (200 x 100 mm)
- X-Y travel for MVR300: 12" x 8" (300 x 200 mm)
- Z travel: 8" (200 mm) with 2.0x auxiliary lens
- Manual X-Y positioning via hand wheels
- Motorized Z-axis positioning with variable speed control
- Windows® 7 Professional operating system for network connectivity
- MetLogix M3 metrology software with DXF/FOV option pack
- Video edge detection (VED)
- Field-of-view (FOV) measurements integrated with stage motion
- Renishaw scales for .00002" (0.5 µm) of X and Y resolution
- Accuracy: 2.5µm + 5L/1000 for X and Y, 2.5µm + 5L/1000 for Z
- Color digital video camera
- Collimated LED sub-stage illumination
- Ring light LED surface illumination
- Granite base

Options

- Dedicated 6.5:1 zoom optics
- Quick-change bayonet lens mount
- Quadrant LED Ring Light
- Bayonet-mountable 6.5:1 zoom optics
- Bayonet mountable 0.30x, 0.50x, 0.80x, 1.0x, 2.0x, and 4.0x telecentric optics
- 0.5x, 1.5x, and 2.0x auxiliary lenses for zoom optics
- Calibration standards
- Coaxial LED surface illumination for zoom optics
- DXF/FOV option pack for automatic comparison to CAD designs
- Modular system workstation

Weight and Dimensions

	MVR200	MVR300
Net Weight	200lbs 90kg	250lbs 113kg
Shipping Weight	250lbs 115kg	300lbs 135kg

Manual Vision Metrology Systems

MV

MV300 AND MV350

MV metrology systems are easy-to-use, general purpose, and video-based with position control via hand wheels. Available with zoom optics, X and Y dimensions are measured by moving the stage horizontally. Z height is measured by moving an optical video probe vertically to maintain focus. A highly stable mechanical design and precision linear bearings achieve superb performance. The MV machines are ideal for QA, parts inspection, and short runs.

The operator interface is an M3-equipped PC. The part image, measuring marks, and readings are displayed on a color touch-screen. Video edge detection (VED), single and multi-point measurements of 2D geometries, and report generation are standard.

MV350

Features

- Zoom optics 6.5:1
- MetLogix M3 control system software
- Video edge detection
- Easy manual X-Y-Z positioning
- Fiber Optic or LED illumination
- All in-one-PC with 21.5" (55cm) color touch-screen
- Windows® 7 Professional operating system
- Sub-stage bottom illumination and ring light surface illumination
- X-Y-Z travel for MV300: 12" x 6" x 5.5" (300 x 150 x 135 mm)
- X-Y-Z travel for MV350: 14" x 14" x 8" (350 x 350 x 200 mm)
- Manual X-Y-Z positioning via hand wheels on MV300, Motorized Z axis on MV350.
- Machine stand and control cart is standard with MV350

Options

- Workstation
- 0.5x, 1.5x, and 2.0x auxiliary lenses for zoom optics
- Coaxial LED surface illumination
- Calibration standards
- DXF/FOV option pack for automatic comparison to CAD designs
- Modular workstation for MV300

MV300

Weight and Dimensions

	MV300	MV350
Net Weight	115lbs 53kg	900lbs 409kg
Shipping Weight	345lbs 157kg	1,275lbs 579kg

Automatic Vision Metrology Systems

AV

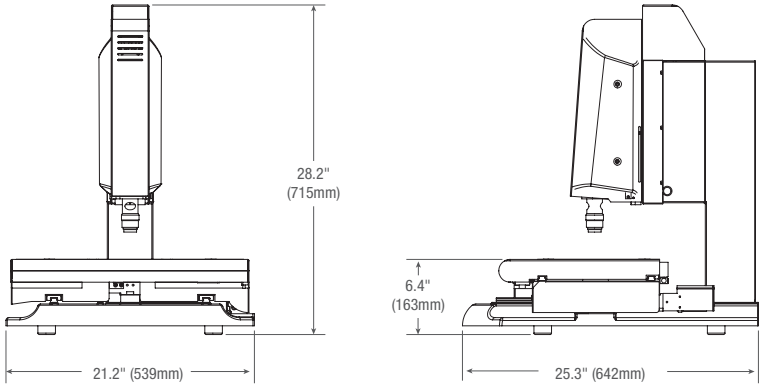
AV300 AND AV350

The AV automatic vision (or video-based) metrology systems provide accurate 3-axis measurement capability (X-Y-Z) with hi-resolution video zoom optics. The systems can be pre-programmed (CNC) for repetitive part inspection, or driven manually via a joystick and trackball for individual measurements. Superb performance is achieved by a highly stable mechanical design, with precision linear bearings. Throughput is maximized with either QC5000 or Metlogix M3 software controlling all aspects of Video Edge Detection (VED) and multiple channel Fiber Optic or LED illumination.

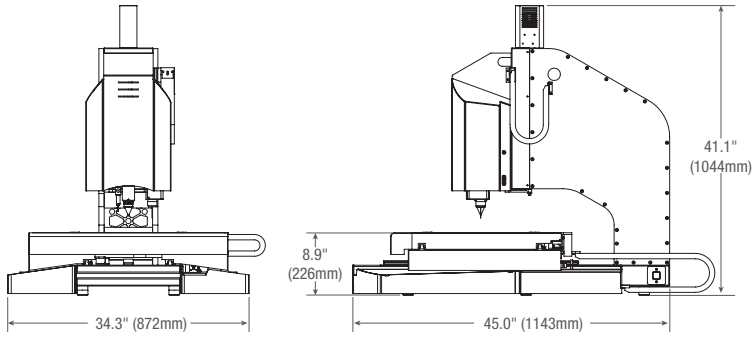
These automatic vision systems are ideal for quality assurance, inspection, and production runs. Flexible and powerful, the AV series allows users to cost effectively achieve maximum throughput of their inspection process. Measured data is effectively archived or networked to other devices.

Also see our AV+ multi-sensor metrology systems, which can provide vision metrology operation with travel up to 50" x 36" x 8" (1270 x 915 x 200mm).

AV300



AV350



Features

- CNC operation or manual operation via joystick and trackball
- AV300 12" x 6" x 5.5" (300mm x 150mm x 140mm)
- AV350 14" x 14" x 8" (350mm x 350mm x 200mm)
- AV300, E2 = 1.9 µm + 5L/1000 accuracy for X and Y, E1 = 2.5 µm + 5L/1000 for Z
- AV350, E2 = 2.5 µm + 5L/1000 accuracy for X and Y, E1 = 2.5 µm + 5L/1000 for Z
- Reading resolution 4µin (0.1µm)
- Magnification on 24" monitor, 1:1 pixel setting: 37x to 240x with 6.5:1 zoom, 25x to 240x with 12:1 zoom
- Multiple channel Fiber Optic or LED Illumination
- Cast aluminum base for AV300. Granite base on AV350
- 1.3 megapixel color camera

Lens Options

- 6.5:1 or 12:1 zoom optics
- Optional 0.5x, 1.5x and 2.0x auxiliary lenses

Options

- Ergonomic workstation (standard with AV350)
- Calibration standards
- 0.5x, 1.5x and 2.0x auxiliary lenses for zoom optics
- LED darkfield quadrant illuminator

Weight and Dimensions

	AV300	AV350
Net Weight	115lbs 53kg	900lbs 409kg
Shipping Weight	345lbs 157kg	1,275lbs 579kg

AV350

AV300

AV AUTOMATIC VISION SYSTEM

Automatic Vision Metrology Systems

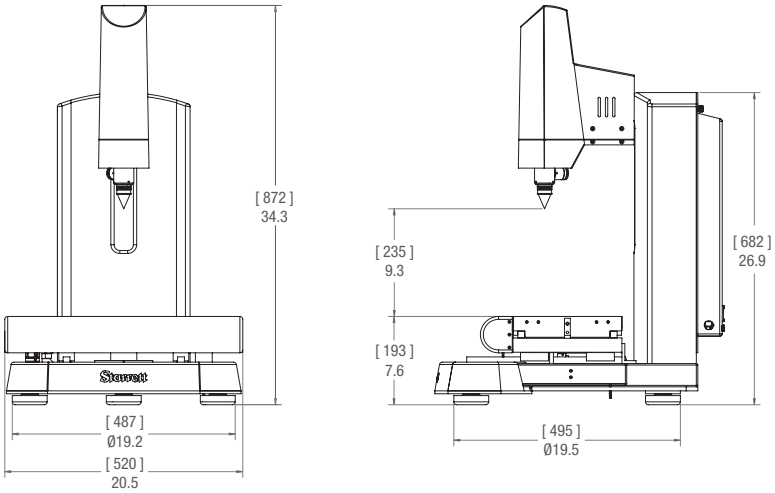
AVR

AVR200 AND AVR300

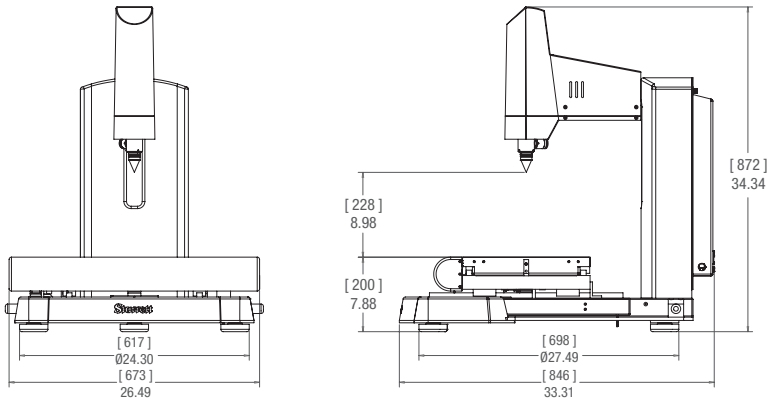
The AVR CNC automatic vision metrology systems are ideal for repetitive measurements and automatic comparison to CAD files. They are available with dedicated zoom optics or a quick-change bayonet lens mount which accepts a choice of telecentric lenses for micron-level resolution and optical distortion down to 0.001% for accurate field-of-view (FOV) measurements. These can encompass an entire small part up to 2.00" x 1.50" or a feature of a larger part and be seamlessly integrated with stage motion to measure parts with a length up to 8" (AVR200) or 12" (AVR300).

AVR hardware features a granite base for maximum stability, recirculating ball linear guides for smooth and precise stage motion, and full CNC control for high throughput. The AVR line is built around a 21" all-in-one touch screen PC which runs MetLogix M3-CNC software under Windows® 7. M3 software capabilities include 3-axis measurements and 2D geometrical constructs (points, lines, angles, rectangles).

AVR200



AV300



For more information please see the Options and Specifications table at the end of this section.

Features

- X-Y travel for AVR200: 8" x 4" (200 x 100 mm)
- X-Y travel for AVR300: 12" x 8" (300 x 200 mm)
- Z travel: 8" (200 mm) with 2.0x auxiliary lens
- Full CNC X-Y-Z positioning or motorized manual positioning using a pendant with joystick and trackball
- Windows® 7 Professional operating system for network connectivity
- MetLogix M3 CNC metrology software
- Video edge detection (VED)
- Field-of-view (FOV) measurements integrated with stage motion
- Renishaw scales for .00002" (0.1µm) of X,Y and Z axis
- Accuracy: 2.5µm + 5L/1000 for X and Y, 3.5µm + 5L/1000 for Z
- Color digital video camera
- Collimated LED sub-stage illumination
- Ring Light LED surface illumination
- Granite base
- AVR200 H x W x D: 34" x 20.5" x 27" (863 x 520 x 685mm)
- AVR300 H x W x D: 34" x 29.2"x 35" (865 x 740 x 890mm)

Options

- Dedicated 6.5:1 or 12:1 CNC zoom optics
- Quick-change bayonet lens mount for telecentric optics
- Bayonet mountable 0.30x, 0.50x, 0.80x, 1.0x, 2.0x, 4.0x telecentric optics
- 0.5x, 1.5x and 2.0x auxiliary lenses for zoom optics
- Quadrant LED surface illumination for zoom optics
- DXF/FOV option pack for automatic comparison to CAD designs
- Modular system workstation
- Calibration standards

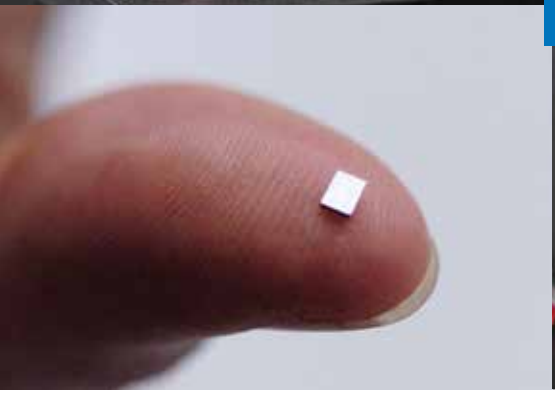
Weight and Dimensions

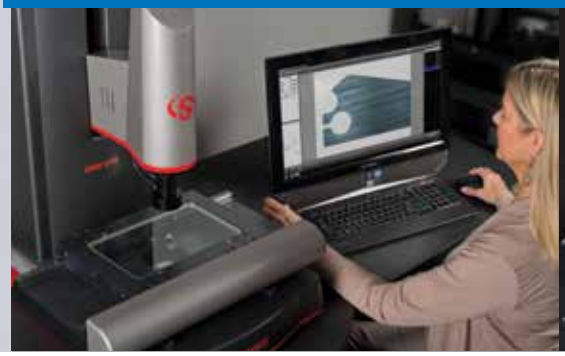
	AVR200	AVR300
Net Weight	200lbs 90kg	250lbs 113kg
Shipping Weight	250lbs 115kg	300lbs 135kg

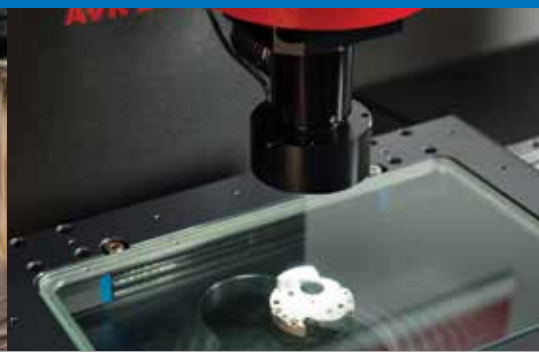
AVR300

AVR200

AVR AUTOMATIC VISION SYSTEM







Automatic Vision Metrology Systems

AV+

AV300+ AND AV350+

AV300+

An enhanced version of the popular AV300 CNC video-based measurement system. The AV300+ system improves measuring performance by utilizing a precision granite base along with an extended travel Z column, delivering 12" x 6" x 8" (300 x 150 x 200mm) X-Y-Z measuring range. The system is a servo driven motion platform for enhanced performance and includes a 12:1 zoom lens, hi-resolution digital color camera and your choice of fiber optic or LED Illumination. Complete with vibration isolation and integrated machine stand, the AV300+ delivers more capability for multi-sensor requirements. The AV300+ is powered by QC5300 software to handle a variety of measuring applications.

AV350+

Offering similar attributes and performance to the AV300+ with an expanded measurement envelope of 14" x 14" x 8" (350 x 350 x 200mm) X-Y-Z measuring range for those larger part and payload measurement requirements.

Features

- 12:1 Zoom Optics with co-axial illumination
- Precision Granite base construction
- System stand and control cart standard
- Windows® 7 Professional operating system for network connectivity
- Touch probe and laser compatible
- Touch probe change rack compatible

Microscope-Based Optics

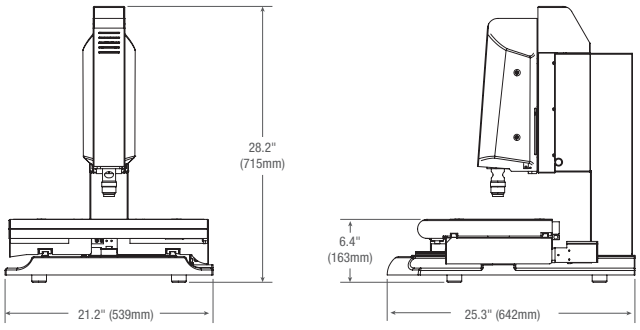
AV300+ MICRO

The AV300+ Micro is a CNC system that offers a granite base and column, 12" x 6" x 4" (300 x 150 x 100mm)travel, microscope optics, a lens turret which accepts up to Five Olympus M plan objectives, a choice of powerful QC5300 or PAXIT software control systems, video edge detection (VED), LED or fiber optic illumination options, standard machine pedestal and computer cart. With PAX-it imaging software, an operator can measure, image analysis software is available to detect objects by shape, size, color and other criteria. PAX-it can measure, annotate, and analyze the images, and then create a written report that includes the images. Processing options include image stitching, fusion, blending, and background subtraction. These systems are ideal for automated measurements of microscopic features, such as semiconductors, microelectronic and biomedical components.

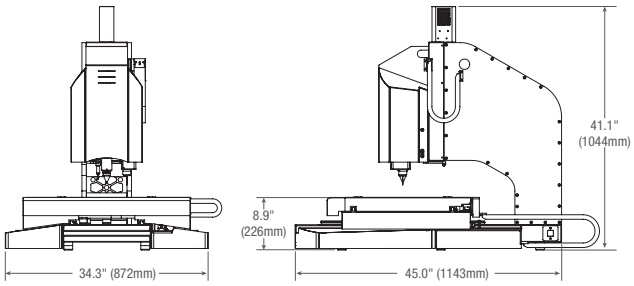
Features

- QC5000 or PAXIT software
- X travel of 12" (300mm), Y 6" (150mm), Z 4" (100mm)
- Turrett holds up to 5 Olympus lenses
- Scale resolution up to 5nm
- Adaptable to your applications

AV300+



AV350+



Weight and Dimensions

	AV300+	AV350+	AV300+ MICRO
Net Weight	115lbs 53kg	900lbs 409kg	115lbs 53kg
Shipping Weight	345lbs 157kg	1,275lbs 579kg	345lbs 157kg

For more information please see the Options and Specifications table at the end of this section.

AV350+

AV300+ MICRO

AV300+

AV+ VISION SYSTEMS

Large Format Premier

Large Format premier vision line

EXCEPTIONAL SPEED AND ACCURACY

Our LF Premier machines offer X-Y travel from 12" (305mm) to a generous 50" (1273mm). Z travel is 8" (200mm). Increased accuracy helps you verify critical dimensions. Ideal for use in QC labs, research, engineering, or manufacturing environments.

Features

- Transports are driven by hi-speed (up to 30" per second), zero maintenance, balanced linear motors which are close-looped to precision hi-resolution scales in all three axes
- Adjustable ergonomic workstation including a compact control panel and standard keyboard maximizes operator performance
- Massive granite base, bridge and air-bearing ways for superior machine stability and precision
- QC5300 or MetLogix M3 Software
- 21.5" touchscreen with M3 software
- 24" monitor with QC5300

Options

- Optional Renishaw contact probe and laser scanner allows these systems to be configured to meet a variety of measurement needs (with QC5300)
- Optional touch probe spotter camera for viewing critical placement of touch probe points as well as a touch probe changing rack
- LED Surface Ring Illumination
- LED Transmitted Illumination
- LED Coaxial Illumination
- Digital Video Color Camera: 1.2 MP, 1/3" SXVGA sensor

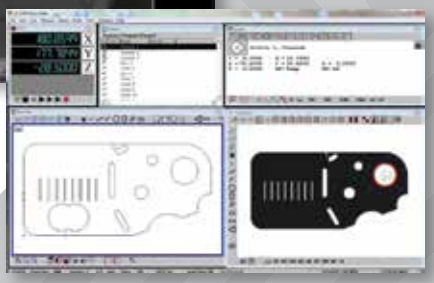
1. **User Programmability**. Over-movement, focus, magnification, lighting, data acquisition tools, and reporting. Automating these tasks eliminates operator error and speeds throughput.
2. **Accurate Positioning** of samples obtained from high acceleration, linear motors, and high accuracy scales to determine position. Path optimization may improve throughput.
3. **Non-Linear Error Correction (NLEC)** software feature allows any errors detected in the measurement system to be corrected automatically. The entire measurement area is mapped and compensated for inherent mechanical errors.
4. **Video Edge Detection (VED)** is user programmable feature, which allows the choice of how the software sees a feature. Setting the threshold strength and the VED method provides great flexibility in the types of features that can be measured.
5. **Powerful software choices**. QC5300 provides a flexible solution that allows a user to run up to 3 sensors on the system; video, touch probe and laser. MetLogix M3 software offers powerful simplicity with a touchscreen operator interface and a wide range of software measuring functionality.

These five concepts, combined with other principles, make the LF Vision Line a teachable, automatic, and accurate measuring device.

Weight and Dimensions

Model		LF313	LF463	LF713	LF963	LF1273
Dimensions (W x D x H)		34" x 40" x 68" (87 x 102 x 173cm)	40" x 40" x 68" (102 x 102 x 173cm)	50" x 64" x 68" (127 x 163 x 173cm)	69" x 80" x 71" (176 x 204 x 180cm)	85" x 93" x 71" (217 x 235 x 180cm)
Weight	gross	1950lb (885kg)	2300lb (1043kg)	3600lb (1630kg)	4600lb (2087kg)	6600lb (2994kg)
	net	1300lb (590kg)	1500lb (726kg)	2700lb (1225kg)	3500lb (1588kg)	5400lb (2450kg)

M3 Software display



QC5000 display

LARGE FORMAT PREMIER

NEW!

MetLogix™ Software

M3

FOR VISION SYSTEMS (VIDEO)

Multi-touch software control that can pan and zoom with pinch, swipe, or touch. Works with active part views and live video feeds (or use the conventional mouse interface). Custom "Eye Measure" probe captures complex edges generated by a finger path drawn on the touch screen. Measure Logic probe intelligence provides instant feature determination and measurement with a single touch.

Features

- DXF CAD file import for comparing parts being inspected to the actual design file; no need for cumbersome Mylar overlays
- "Vtouch" Probe has video touch probe functionality – just click for simple acquisition of points on a feature's edge
- Part View can generate distance and tangent lines from within the graphical part view. The "Gesture Menu" can be used for feature creation and manipulation tools.

Features

- "Quick Annotate" allows data on several features to be displayed simultaneously with smart marquee feature selection
- Application of universal tolerance value entry according to feature resolution groupings
- Feature Detail Graphics: Individual feature views display point cloud distributions, nominal deviations, and tolerance results. Scroll through Actual, Nominal, Tolerance, Deviation and Data Fit Type information.
- Simple machine/camera calibration with popular machine and video correction methods
- Windows® 7 Professional-based, globally recognized OS for flexible data exporting and interface with Windows applications

M3

SOFTWARE

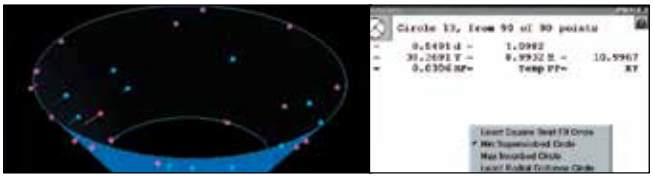
Starrett®

QC5200

Metrology software is a Windows® 7 Professional 32-bit based PC inspection system for video measuring machines.

The QC5200 supports a wide range of industries that require precise measurement and inspection of 2D parts using a single sensor. This product features an intuitive user interface and simple, meaningful visual displays. The design reflects a deep understanding of the user's needs along with a process model that supports the operator at every stage in the measurement process.

- Powerful yet intuitive video edge detection tools
- Auto-Focus
- "XY" 2D measurements with optional "Z" axis for height measurements
- Image capture with drag and drop data reporting
- Image processing tools
- Continuous edge mode
- Patented Measure Magic
- Alternative algorithms
- Auto program from CAD files
- Pattern recognition
- Integrated runs database
- Geometric tolerancing
- Advanced calculation
- Data cloud analysis



Data Cloud Alternate fits

QC5300

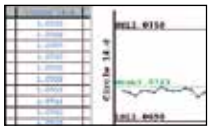
Metrology software picks up where the QC5200 leaves off. This product offers multi-axis dimensional measurement of 2D and 3D parts. The QC5300 integrates an innovative user interface, state of the art ergonomics, powerful data import, export and data analysis tools.

- 3D measurement set
- 3D offset alignments
- Customizable screen layouts
- Multiple reference frames
- 3D part view
- Renishaw touch probe interface
- Optional laser sensor
- Vector probing
- Multiple language support
- 3D Measure Magic
- Advanced calculations
- 3D data clouds
- Alternate algorithms
- Drag and drop report generator
- Data export to a wide variety of applications

Measure Magic

Image View

Tolerance



Integrated Database

Color Key	QC-5200								QC-5300	
Configurations	**5200**	**5205**	**5210**	**5215**	**5230**	**5235**	**5240**	**5245**	**5300**	**5310**
2D Measurement										
3D Measurement										
X-axis										
Y-axis										
Z-axis										
Q-axis (Electronic Protractor)										
Optical edge detection (optional)										
Options										
Motion control system										
Video edge detection (color or b/w)										
Programmable light control										
Auto-focus (Z-axis only)										
Programmable zoom										
Non-linear error correction										

2D Measurement
3D Measurement

Specifications and Options

Model	MV300	MV350	MVR200	MVR300	AV300	AV350	AVR200
Bench-Top System	X	X	X	X	X	–	X
Floor-Standing System	–	–	–	–	–	X	–
Part View Orientation	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
X-Y-Z Travel (in)	12" x 6" x 5.5"	14" x 14" x 8"	8" x 4" x 8"	12" x 8" x 8"	12" x 6" x 5.5"	14" x 14" x 8"	8" x 4" x 8"
X-Y-Z Travel (mm)	300 x 150 x 135mm	350 x 350 x 200mm	200 x 100 x 200mm	300 x 200 x 200mm	300 x 150 x 135mm	350 x 350 x 200mm	200 x 100 x 200mm
Z Axis Measuring	Optional	Optional	Optional	Optional	Standard	Standard	Standard
CNC	–	–	–	–	Standard	Standard	Standard
X-Y Accuracy (µm)	E2 = 2.5µm + 5L/1000	E2 = 2.5µm + 5L/1000	E2 = 2.5µm + 5L/1000	E2 = 2.5µm + 5L/1000	E2 = 1.9µm + 5L/1000	E2 = 2.5µm + 5L/1000	E2 = 1.9µm + 5L/1000
Z Accuracy (µm)	E1 = 2.5µm + 5L/1000	E1 = 2.5µm + 5L/1000	E1 = 2.5µm + 5L/1000	E1 = 2.5µm + 5L/1000	E1 = 2.5µm + 5L/1000	E1 = 2.5µm + 5L/1000	E1 = 2.5µm + 5L/1000
Scale Resolution	0.5µm	0.5µm	0.5µm	0.5µm	0.1µm	0.1µm	0.1µm
Multi-Sensor Compatible	–	–	–	–	–	–	–
Base	Cast Aluminum	Granite	Granite	Granite	Cast Aluminum	Granite	Granite
Control System/Software	M3	M3	M3	M3	M3 or QC5300	M3	M3
Display	21" Touchscreen PC	21" Touchscreen PC	21" Touchscreen PC	21" Touchscreen PC	21" Touchscreen PC or 24"Monitor	21" Touchscreen PC	21" Touchscreen PC
Zoom Optics - Standard	6.5:1	6.5:1	6.5:1	6.5:1	6.5:1	12:1	6.5:1 – 2 LED 12:1 – 3 LED
Zoom Optics - Optional	–	–	–	–	–	–	–
Optics	–	–	–	–	–	–	–
Microscope Optics	–	–	–	–	–	–	–
Digital Video Camera	1.3 MP Color	1.3 MP Color	1.3 or 2.0 MP Color with Telecentric	1.3 or 2.0 MP Color with Telecentric	1.3 MP Color	1.3 MP Color	1.3 MP Color Standard; 2 MP wtih Telecentric
Surface Ring Illumination	LED or FO	LED or FO	LED	LED	LED or FO	LED or FO	LED
Transmitted Illumination	LED or FO	LED or FO	LED	LED	LED or FO	LED or FO	LED
Coaxial Illumination - Optional	LED or FO	LED or FO	LED	LED	LED or FO	LED or FO	LED

AVR300	AV300+	AV350+	AV300+ MICRO	LF Premier	HDV300	HDV400
X	–	–	–	–	X	X
–	X	X	X	–	–	–
Vertical	Vertical	Vertical	Vertical	–	Horizontal	Horizontal
12" x 8" x 8"	12" x 6" x 8"	14" x 14" x 8"	12" x 6" x 4"	12" x 12" x 8" 18" x 12" x 8" 28" x 24" x 8" 38" x 30" x 8" 50" x 36" x 8"	12" x 6"	16" x 6"
300 x 200 x 200mm	300 x 150 x 200mm	350 x 350 x 200mm	300 x 150 x 100mm	305 x 305 x 200mm 460 x 305 x 200mm 711 x 610 x 200mm 965 x 760 x 200mm 1270 x 915 x 200mm	300 x 150mm	400 x 150mm
Standard	Standard	Standard	Standard	–	–	–
Standard	Standard	Standard	Standard	–	–	–
E2 = 1.9µm + 5L/1000	E2 = 1.9µm + 5L/1000	E2 = 2.5µm + 5L/1000	E2 = 1.5µm + 5L/1000	E2 = 1.5 + 5L/1000	E1 = 3.0µm + L33	E1 = 3.0µm + L/33
E1 = 2.5µm + 5L/1000	E1 = 2.5µm + 5L/1000	E1 = 2.5µm + 5L/1000	E1 = 2.0µm + 5L/1000	E1 = 1.9 + 5L/1000 (Z)	–	–
0.1µm	0.1µm	0.1µm	5nm	0.1µm	0.5µm	0.5µm
–	Yes	Yes	–	–	–	–
Granite	Granite	Granite	Granite	–	Steel	Steel
M3	QC5300	QC5300	QC5300 or PAX–it	QC5300 or M3	M3	M3
21" Touchscreen PC	24" Monitor	24" Monitor	24" Monitor	24" Monitor or 21.5" Touchscreen	24" Touchscreen Monitor	24" Touchscreen Monitor
6.5:1 – 2 LED 12:1 – 3 LED	12:1	12:1	–	12:1	–	–
–	–	–	–	–	6.5:1	6.5:1
–	–	–	–	–	Choice of 4.0x, 2.0x, 1.0x, 0.80x, 0.50x and 0.30x interchangeable Telecentric Lenses Optional- 0.14X fixed	Choice of 4.0x, 2.0x, 1.0x, 0.80x, 0.50x and 0.30x interchangeable Telecentric Lenses Optional- 0.14X Fixed
–	–	–	Standard	Optional	–	–
1.3 MP Color Standard; 2 MP with Telecentric	1.3 MP Color	1.3 MP Color	1.3 MP Color	1.3 MP Color	5 MP Color	5 MP Color
LED or FO	LED or FO	LED or FO	–	–	LED	LED
LED or FO	LED or FO	LED or FO	LED or FO	–	LED	LED
LED or FO	LED or FO	LED or FO	LED or FO	–	–	–

Specifications and Options (continued)

Model	MV300	MV350	MVR200	MVR300	AV300	AV350	AVR200
Microscope Objectives (required on MICRO)	–	–	–	–	–	–	–
Auxiliary Lenses - Optional	0.5x, 1.5x, 2.0x	0.5x, 1.5x, 2.0x	0.5x, 1.5x, 2.0x	0.5x, 1.5x, 2.0x	0.5x, 1.5x, 2.0x	0.5x, 1.5x, 2.0x	0.5x, 1.5x, 2.0x
Rotary Fixture	–	–	–	–	Optional	Optional	Optional
Renishaw Touch Probe	–	–	–	–	–	–	–
Renishaw Touch Probe Change Rack	–	–	–	–	–	–	–
Multi-Part Touch Probe Change Rack	–	–	–	–	–	–	––
Touch Probe Spotter Camera	–	–	–	–	–	–	–
Optimet Laser	–	–	–	–	–	–	–
Machine Pedestal and Point of Control Cart/Arm	–	Standard	–	–	–	Standard	–
Cabinet Stand	–	–	–	–	–	–	–
Workstation Base, Extension and Swing Arm	Optional	–	Optional	Optional	Optional	–	Optional
Part Fixturing	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Dark Field Quadrant Illumination (LED only)	–	–	–	–	Optional	Optional	Optional
Video Pixel Calibration Standard	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Calibration Standards	Optional	Optional	Optional	Optional	Optional	Optional	Optional
FOV, Linear and 2D Calibration Standards	Optional	Optional	Optional	Optional	Optional	Optional	Optional

* Includes additional 200mm dovetail slide for increased Z working distance.

Accessories

Fiber Optic Lighting

Rotary Head with choice of collet kit

Calibration Standards

AVR300	AV300+	AV350+	AV300+ MICRO	LF Premier	HDV300	HDV400
–	–	–	5x, 10x, 20x, 50x, 100x	–	–	–
0.5x, 1.5x, 2.0x	0.5x, 1.5x, 2.0x	0.5x, 1.5x, 2.0x	–	0.5x, 1.5X, 2.0x	–	–
Optional	Optional	Optional	Optional	Optional	–	–
–	Optional	Optional	–	Optional	–	–
–	Optional	Optional	–	–	–	–
–	–	–	–	Optional	–	–
–	–	–	–	Optional	–	–
–	Optional	Optional	–	Optional	–	–
–	Standard	Standard	Standard	–	–	–
–	–	–	–	–	Optional	Optional
Optional	–	–	–	–	–	–
Optional	Optional	Optional	Optional	Optional	Optinoal	Optional
Optional	Optional	Optional	Optional	Optional	–	–
Optional	Standard	Standard	Standard	Standard	Optional	Optional
Optional	Optional	Optional	Optional	Optional	Optional	Optional
Optional	Optional	Optional	Optional	Optional	Optional	Optional

Accessories

Renishaw Touch Probe Kit

Workstation Pedestal -
Extension can be mounted left or right

Workstation Monitor Mount and Keyboard Swing Arm

Vision Systems

MV300, MV350

MVR200, MVR300

AV300, AV350

AVR200, AVR300

AV300+, AV350+, AV300+ Micro

LF303, LF463, LF713, LF963, LF1273

HDV300, HDV400

KineMic - KMR, KineScope

Specials

Specifications and Options

Software

VISION

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