



Precision, Quality, Innovation

## METROLOGY SYSTEMS

Vision Measurement Systems

Video Inspection

Optical Comparators

Custom Solutions

Software





PRECISION,  
QUALITY,  
INNOVATION

For more than 145 years, the Starrett name has been associated with exceptional quality when it comes to optical, vision and multi-sensor metrology systems, force and material testing, laser measuring, granite tables, precision hand tools, gage blocks, saws and power tool accessories. These systems and products have been expertly crafted with the user in mind with a focus on accurate, reliable, and repeatable results that can be depended on for years to come. Starrett stands behind their commitment to excellence with expert technical assistance with all of our products in order to achieve maximum customer satisfaction.

This catalog has been updated for 2025 to feature the latest Starrett metrology solutions, their characteristics, and their applications.

Starrett

VISION MEASUREMENT SYSTEMS

Vision-based measurement systems combine high-resolution images, powerful intuitive software, and precision mechanical platforms to deliver superb accuracy and repeatable measurement results for a wide range of precision measurement applications.

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OPTICAL COMPARATORS

Optical comparators provide time tested, cost effective solutions for non-contact measurement. Optical comparators are used for an exceptionally wide range of dimensional measurement and inspection applications.

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METROLOGY SYSTEMS

Starrett Kinematic Engineering, Inc. is an A2LA Certified Company. See QR Code (right) to view scope of work and certificate.



Starrett Kinematic Engineering, Inc. is an ISO9001:2015 Certified Company. See QR Code (right) to view certificate.





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2 - Laguna Hills, California USA



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FACTORIES



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PRECISION MAKES THE DIFFERENCE

## TRUST IS IN THE NAME.

Offering more than 5,000 products including precision tools, vision systems, force measurement systems, non-contact measurement systems, optical comparators, granite tables, band saw blades, band saw machines, hand tools and power tool accessories.

Learn more: [www.starrett.com](http://www.starrett.com)

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The new **Starrett W4900-1** Touchscreen Electronic Indicator combines innovation and versatility with unparalleled ease of use. Built for shop floors, quality labs, inspection areas and in-process applications, this highly capable IP67 indicator can also be used in OEM applications on custom build and design tools and machinery.



**Starrett®**  
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Our broad range of metrology systems are ideal for use in QC labs, research, engineering, and manufacturing environments where small to large scale high-precision measurement is critical.

Many systems are available in either manual or CNC configurations.

VISION SYSTEMS



# MANUAL VISION METROLOGY SYSTEM

## MVR

### MVR200 AND MVR300

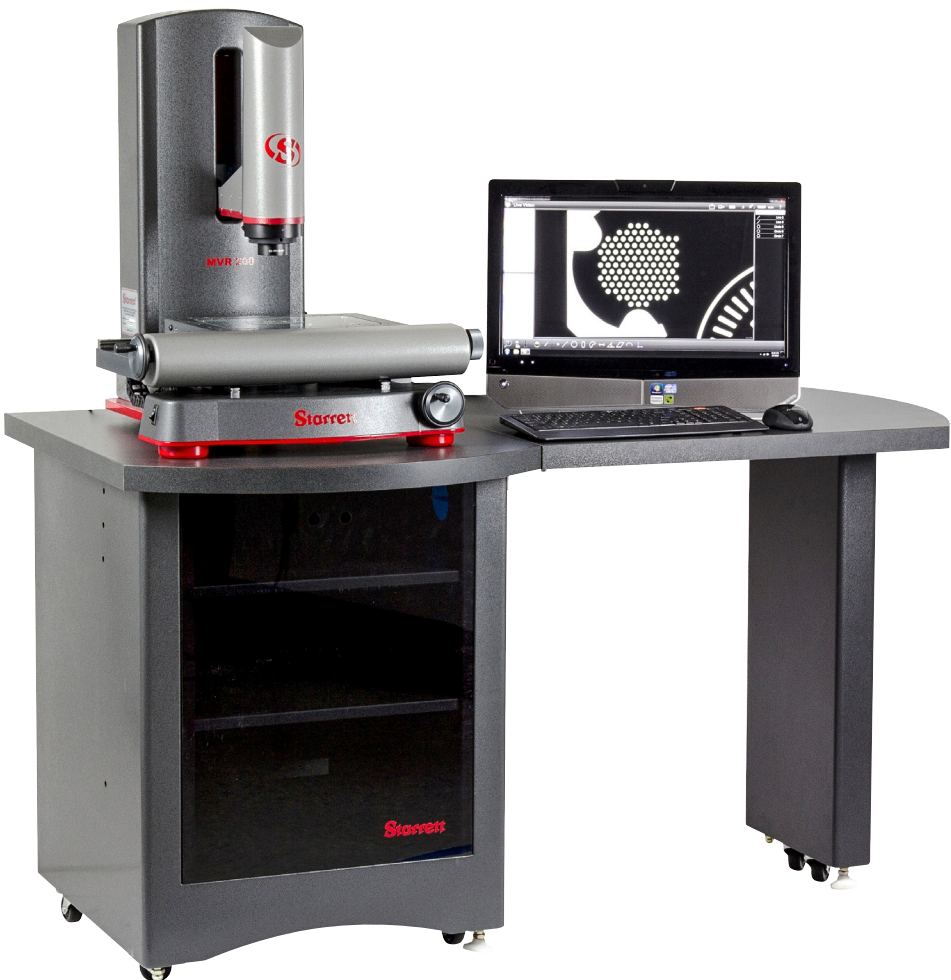
The MVR Manual Vision Systems are ideal when quick measurements for quality control are needed. The systems are available with dedicated zoom optics or a quick-change bayonet lens mount which accepts interchangeable zoom optics or telecentric lenses for micron-level resolution. With a maximum field of view (FOV) of 1.1" (28mm), and seamlessly integrated stage motion, the MVR Series is capable of measuring parts with a length up to 8" (200mm) or 12" (300mm) for the MVR 200 and 300, respectively. The operator interface is MetLogix™ M3 software which 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 touching a feature on the touch-screen monitor. MVR hardware features include a granite base for maximum stability, precision linear guides for smooth, accurate stage motion, and a motorized Z-axis with variable speed control.

### FEATURES AND SPECIFICATIONS

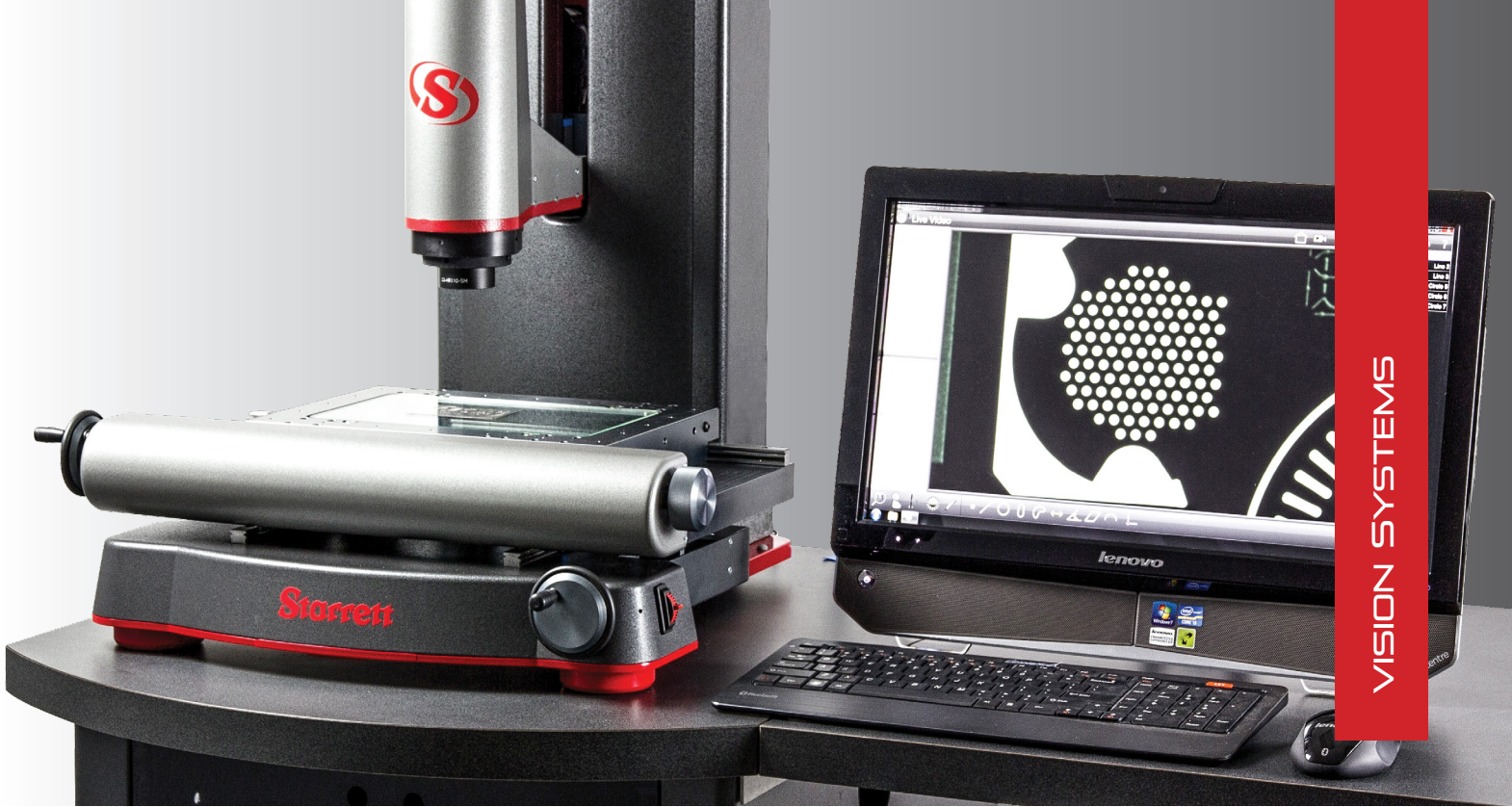
- Z travel: 8" (200mm)
- Manual X-Y positioning via hand wheels
- Motorized Z-axis positioning with variable speed control
- MetLogix™ M3 metrology software
- Video edge detection (VED)
- Field-of-view (FOV) measurements integrated with stage motion
- Renishaw scales for 20µin (0.5µm) of X and Y resolution
- Color digital video camera
- Collimated LED sub-stage illumination
- Ring light LED surface illumination
- Granite base

### OPTIONS

- Dedicated or interchangeable 6.5:1 zoom lens
- Quick-change bayonet lens mount for interchangeable zoom or telecentric optics
- Auxiliary lenses for zoom optics: 0.5x, 1.5x, and 2.0x
- Interchangeable telecentric lens magnifications including 0.3x, 0.5x, 0.8x, 1.0x, 2.0x, and 4.0x
- DXF/FOV option for automatic comparison to CAD files
- Optional software modules including profile fitting, thread inspection, wire insulation inspection, DXF to PDF conversion, and spur gear modules
- Modular system workstation
- Calibration standards
- Part fixtures and work holding devices



Click the QR code link to view the MVR series



### MVR200/300 Optics

Optical Parameters	Interchangeable Telecentric Optics						MVR 6.5:1 Zoom Optics
Optical magnification on CCD	0.3x	0.5x	0.8x	1.0x	2.0x	4.0x	0.7x to 4.5x
Total magnification on monitor	13x	22x	36x	45x	89x	178x	31x to 198x
Field of view width	0.93" (24mm)	0.55" (14mm)	0.35" (8.9mm)	0.27" (7mm)	0.14" (3.5mm)	0.07" (1.8mm)	0.39" to 0.06" (10mm to 1.6mm)
Field of view height	0.76" (19mm)	0.45" (11mm)	0.29" (7.4mm)	0.22" (5.6mm)	0.12" (3mm)	0.06" (1.5mm)	0.32" to 0.05" (8.1mm to 1.3mm)
Working distance	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	3.47" (88mm)
Camera CCD	1/1.8"	1/1.8"	1/1.8"	1/1.8"	1/1.8"	1/1.8"	1/1.8" (2MP)

### Specifications

	MVR200	MVR300
Net Weight	145lbs 90kg	230lbs 113kg
Shipping Weight	375lbs 170kg	450lbs 205kg
X-Y-Z Travel*	8" x 4" x 8" 200mm x 100mm x 200mm	12" x 8" x 8" 300mm x 200mm x 200mm
X-Y Accuracy**	1.9µm + 5L/1000	1.9µm + 5L/1000
Z Accuracy**	2.5µm + 5L/1000	2.5µm + 5L/1000

\*Z value only applicable when configured with 3-axis option.

\*\*X-Y-Z specific accuracies are dependent on lens configuration setup.

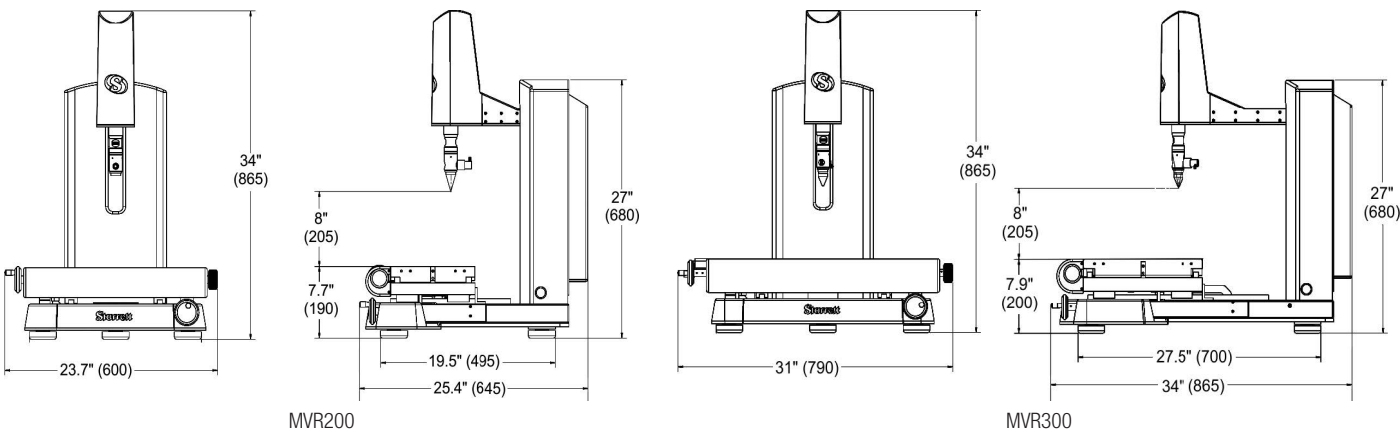
### Operator Interface

Feature	All-in-One PC with M3 DXF/FOV Software
24" (60cm) color graphic touch-screen monitor and PC	x
Windows®-based operating system	x
Wi-Fi network connectivity	x
Video edge detection	x
X-Y-Z measurements*	x
2D geometric constructs plus height	x
FOV measurements integrated with X-Y stage motion	x
CAD file import and export	x
Automatic comparison of measurements to CAD files**	x
Software developer	MetLogix™

\*X-Y-Z measurements only available when configured with 3-axis option.

\*\*Only available when equipped with M3 Digital Comparator module in FOV models.

### MVR DIMENSIONS





# AUTOMATIC VISION METROLOGY SYSTEM

## AVR

### AVR400

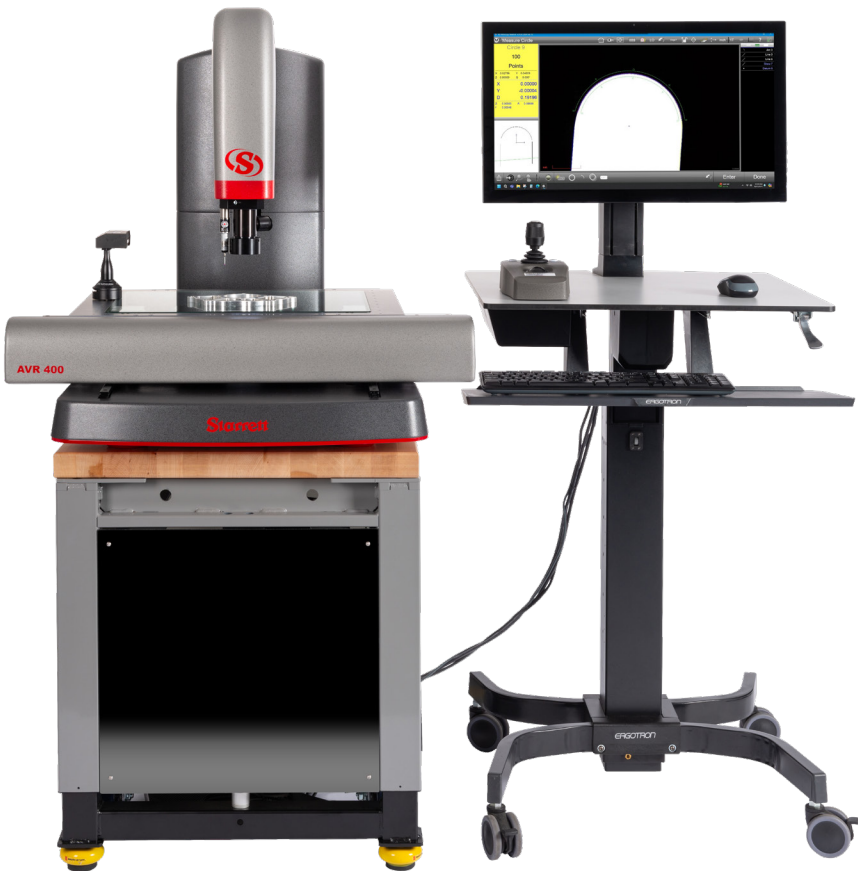
The AVR400 CNC Vision System is an update to the existing AVR series of benchtop Vision systems. With a stage travel of 400mm x 300mm x 200mm (15.7" x 11.8" x 7.9") in the XYZ axes, this is the largest benchtop platform to date from Starrett®. Stage travel speed has also doubled from previous editions, with a travel speed capability of up to 120mm/sec. Coupled with existing CNC capabilities of the AVR line as well as the complete line of zoom and telecentric lens options, the AVR400 gives users the option to measure a broad range of part sizes, or larger runs of multiple parts, while simultaneously reducing inspection time. All without having to compromise accuracy. The operator interface is the MetLogix™ M3 software which 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 touching a feature on the touch-screen monitor. M3 software capabilities also include 3-axis measurements and 2D geometric constructs (points, lines, angles, rectangles, slots, blobs). Systems are also touch probe compatible to incorporate multisensor measurement capabilities.

#### FEATURES AND SPECIFICATIONS

- Full CNC XYZ positioning or motorized manual positioning using a pendant with joystick and track ball
- MetLogix™ M3 software
- Video edge detection (VED)
- Pattern recognition capability for automated inspection
- Field-of-view (FOV) measurements integrated with stage motion
- Renishaw scales for 20µin (0.5µm) of X and Y resolution
- Color digital video camera
- Collimated LED sub-stage illumination
- Ring light LED surface illumination
- Granite base

#### OPTIONS

- Dedicated 6.5:1 or 12:1 zoom lens
- Auxiliary lenses for zoom optics: 0.5x, 1.5x, and 2.0x
- Interchangeable telecentric lens magnifications including 0.3x, 0.5x, 0.8x, 1.0x, 2.0x, and 4.0x
- Programmable darkfield quadrant LED surface illumination for zoom optics
- Optional touch probe capability for multisensor measurement
- Optional CNC rotary axis fixture
- DXF/FOV option for automatic comparison to CAD files
- Optional software modules including profile fitting, thread inspection, wire insulation inspection, DXF to PDF conversion, and spur gear modules
- Modular system workstation
- Calibration standards
- Part fixtures and work holding devices
- APT60 rotary indexing table (see page 25)



Click the QR code link to view the AVR400 series



AVR400 Optics								
Optical Parameters	Interchangeable Telecentric Optics						6.5:1 Zoom Optics	12:1 Zoom Optics
Optical magnification on CCD	0.3x	0.5x	0.8x	1.0x	2.0x	4.0x	0.47x to 3.0x	0.58x - 7.0x
Total magnification on monitor	10x	16.4x	27x	33x	69x	137x	31x to 198x	22.8x to 220x
Field of view width	1.1" (28mm)	0.67" (17mm)	0.41" (10.5mm)	0.33" (8.4mm)	0.16" (4.2mm)	0.08" (2.1mm)	0.39" to 0.06" (10mm to 1.6mm)	0.49" to 0.05" (12.6mm to 1.3mm)
Field of view height	0.94" (24mm)	0.56" (14mm)	0.35" (8.9mm)	0.28" (7.1mm)	0.14" (3.7mm)	0.07" (1.8mm)	0.32" to 0.05" (8.1mm to 1.3mm)	0.41" to 0.04" (10.55mm to 1.08mm)
Working distance	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	3.47" (88mm)	3.47" (88mm)
Camera CCD	2/3" (5MP)	2/3" (5MP)	2/3" (5MP)	2/3" (5MP)	2/3" (5MP)	2/3" (5MP)	1/1.8" (2MP)	2/3" (5MP)

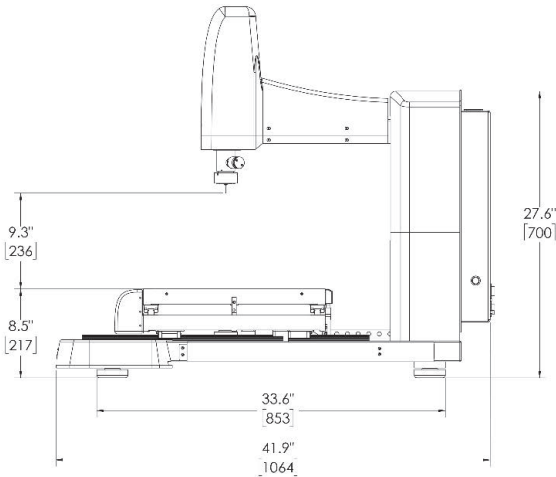
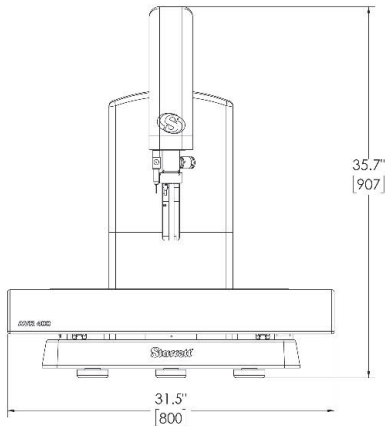
Specifications	
	AVR400
Net Weight	330lbs 150kg
Shipping Weight	900lbs 409kg
X-Y-Z Travel*	15.7" x 11.8" x 7.9" 400mm x 300mm x 200mm
X-Y Accuracy**	2.5µm + L/200
Z Accuracy**	2.5µm + L/200

\*Z value only applicable when configured with 3-axis option.  
\*\*X-Y-Z specific accuracies are dependent on lens configuration setup.

Operator Interface	
Feature	All-in-One PC with M3 DXF/FOV Software
24" (60cm) color graphic touch-screen monitor and PC	x
Windows®-based operating system	x
Wi-Fi network connectivity	x
Video edge detection	x
X-Y-Z measurements*	x
2D geometric constructs plus height	x
FOV measurements integrated with X-Y stage motion	x
CAD file import and export	x
Automatic comparison of measurements to CAD files**	x
Software developer	MetLogix™

\*\*Only available when equipped with M3 Digital Comparator module in FOV models.

#### AVR400 DIMENSIONS



AVR400



# AUTOMATIC VISION METROLOGY SYSTEM

## AVR

### AVR200 AND AVR300

The AVR CNC Automatic Vision Systems are ideal for repetitive measurements and automatic comparisons to CAD files. Systems are available with interchangeable telecentric or dedicated zoom lenses for micron-level resolution and accurate field-of-view (FOV) measurements. With a maximum FOV of 0.93" (24mm), the AVR series is capable of measuring parts with length up to 8" (200mm) or 12" (300mm) for the AVR 200 and 300, respectively. A large 2.36" (60mm) FOV-dedicated 0.14x lens is now available. The operator interface is the MetLogix™ M3 software which 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 touching a feature on the touch-screen monitor. M3 software capabilities also include 3-axis measurements and 2D geometric constructs (points, lines, angles, rectangles, slots, blobs). Systems are also touch probe compatible to incorporate multisensor measurement capabilities.

### FEATURES AND SPECIFICATIONS

- Z travel: 8" (200mm)
- Full CNC X-Y-Z positioning or motorized manual positioning using a pendant with joystick and trackball
- MetLogix™ M3 metrology software
- Video edge detection (VED)
- Field-of-view (FOV) measurements integrated with stage motion
- Renishaw scales for 4µin (0.1µm) of X and Y resolution
- Color digital video camera
- Collimated LED sub-stage illumination
- Ring light LED surface illumination (dome light on FOV 0.14x)
- Granite base

### OPTIONS

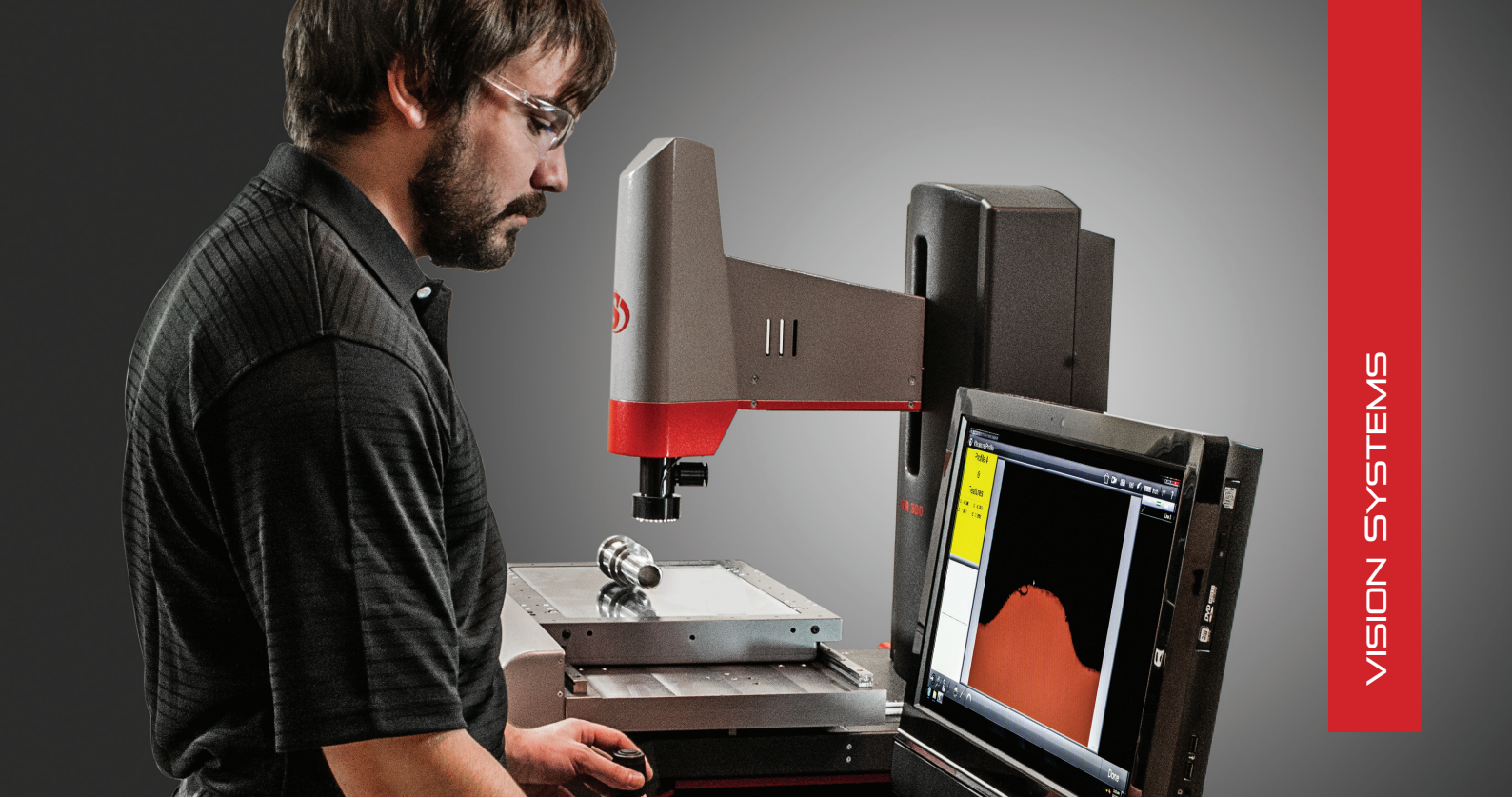
- Dedicated 6.5:1 or 12:1 zoom lens
- Auxiliary lenses for zoom optics: 0.5x, 1.5x, and 2.0x
- Interchangeable telecentric lens magnifications including 0.3x, 0.5x, 0.8x, 1.0x, 2.0x, and 4.0x
- Dedicated 0.14x telecentric lens
- Programmable darkfield quadrant LED surface illumination for zoom optics
- Optional touch probe capability for multisensor measurement
- Optional CNC rotary axis fixture
- DXF/FOV option for automatic comparison to CAD files
- Optional software modules including profile fitting, thread inspection, wire insulation inspection, DXF to PDF conversion, and spur gear modules
- Modular system workstation
- Calibration standards
- Part fixtures and work holding devices
- APT60 rotary indexing table (see page 25)

### TRUSTED BY



AVR-FOV 0.14x

Click the QR code link to view the AVR series



### AVR200/300 Optics

Optical Parameters	Interchangeable Telecentric Optics						6.5:1 Zoom Optics	12:1 Zoom Optics	AVR-FOV 0.14X Telecentric Optics
Optical magnification on CCD	0.3x	0.5x	0.8x	1.0x	2.0x	4.0x	0.47x to 3.0x	0.58x - 7.0x	0.14x
Total magnification on monitor	10x	16.4x	27x	33x	69x	137x	31x to 198x	22.8x to 220x	4.7x
Field of view width	1.1" (28mm)	0.67" (17mm)	0.41" (10.5mm)	0.33" (8.4mm)	0.16" (4.2mm)	0.08" (2.1mm)	0.39" to 0.06" (10mm to 1.6mm)	0.49" to 0.05" (12.6mm to 1.3mm)	2.36" (60mm)
Field of view height	0.94" (24mm)	0.56" (14mm)	0.35" (8.9mm)	0.28" (7.1mm)	0.14" (3.7mm)	0.07" (1.8mm)	0.32" to 0.05" (8.1mm to 1.3mm)	0.41" to 0.04" (10.55mm to 1.08mm)	1.9" (48mm)
Working distance	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	3.47" (88mm)	3.47" (88mm)	4.3" (110mm)
Camera CCD	2/3" (5MP)	2/3" (5MP)	2/3" (5MP)	2/3" (5MP)	2/3" (5MP)	2/3" (5MP)	1/1.8" (2MP)	2/3" (5MP)	2/3" (5MP)

### Specifications

	AVR200	AVR300
Net Weight	145lbs 90kg	230lbs 113kg
Shipping Weight	375lbs 170kg	450lbs 205kg
X-Y-Z Travel*	8" x 4" x 8" 200mm x 100mm x 200mm	12" x 8" x 8" 300mm x 200mm x 200mm
X-Y Accuracy**	E2 = 1.9µm + 5L/1000	E2 = 1.9µm + 5L/1000
Z Accuracy**	E1 = 2.5µm + 5L/1000	E1 = 2.5µm + 5L/1000

\*Z value only applicable when configured with 3-axis option.

\*\*X-Y-Z specific accuracies are dependent on lens configuration setup.

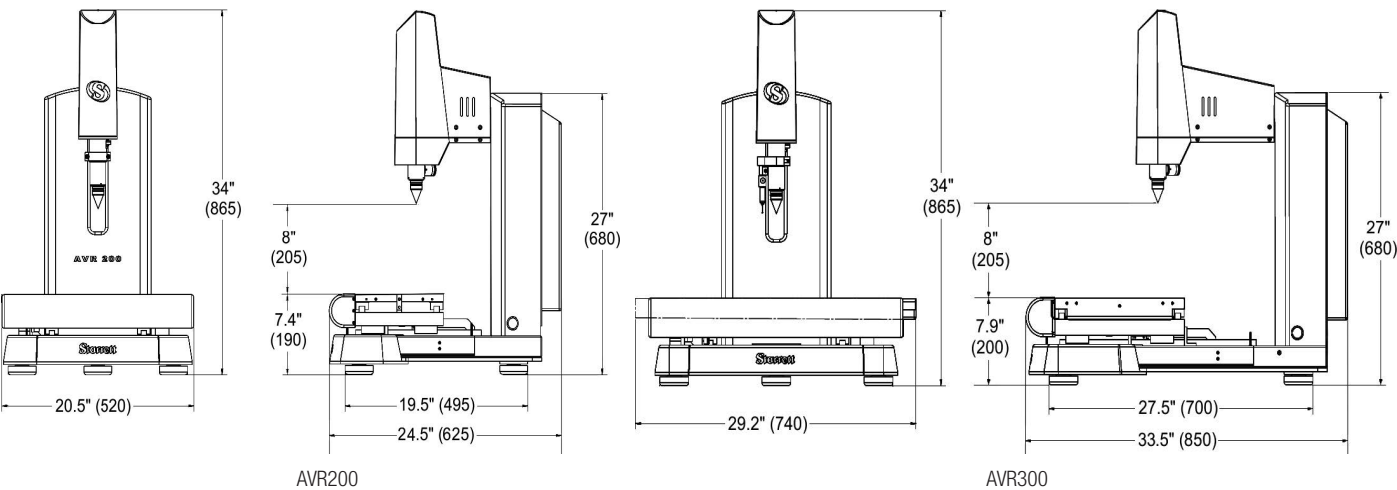
### Operator Interface

Feature	All-in-One PC with M3 DXF/FOV Software
24" (60cm) color graphic touch-screen monitor and PC	x
Windows®-based operating system	x
Wi-Fi network connectivity	x
Video edge detection	x
X-Y-Z measurements*	x
2D geometric constructs plus height	x
FOV measurements integrated with X-Y stage motion	x
CAD file import and export	x
Automatic comparison of measurements to CAD files**	x
Software developer	MetLogix™

\*X-Y-Z measurements only available when configured with 3-axis option.

\*\*Only available when equipped with M3 Digital Comparator module in FOV models.

### AVR DIMENSIONS





# AUTOMATIC VISION METROLOGY SYSTEM

## LARGE FORMAT AVX

### AVX550

The AVX550 CNC Automatic Vision System offers a large format X-Y-Z travel: 22" x 16" x 10" (550mm x 400mm x 250mm). New to the AVX line is the option to configure dual camera inputs, allowing the user to seamlessly integrate both a telecentric lens for large field-of-view (FOV) measurements and a zoom lens for high-magnification measurements of small features in the same inspection routine without the need to stop to change lenses or re-calibrate. Ideal for use in QC labs, research, engineering, or manufacturing environments where large parts with many intricate features need inspection. AVX models use linear guide X-Y transport for ultra-smooth, high speed positioning and are driven by precision lead screws and servo motors. The operator interface is the MetLogix™ M3 software which 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 touching a feature on the touch-screen monitor. M3 software capabilities also include 3-axis measurements and 2D geometric constructs (points, lines, angles, rectangles, slots, blobs). Systems are also touch probe compatible to incorporate multisensor measurement capabilities.

#### FEATURES AND SPECIFICATIONS

- Transports are driven by high-speed, low maintenance, precision mechanical linear bearings
- Substantial granite base and bridge for superior machine stability and precision
- MetLogix™ M3 metrology software
- 24" touchscreen PC
- Video edge detection (VED)
- LED surface ring illumination
- LED transmitted illumination
- LED coaxial illuminator
- Digital video color camera: 1.3MP, 1/3" SXVGA sensor

#### OPTIONS

- Choice of dual camera inputs
- Dedicated 12:1 zoom lens
- Auxiliary lenses for zoom optics: 0.5x, 1.5x, and 2.0x
- Interchangeable telecentric lens magnifications including 0.14x, 0.3x, 0.5x, 0.8x, 1.0x, 2.0x, and 4.0x
- Programmable darkfield quadrant LED surface illumination for zoom optics
- Optional touch probe capability for multisensor measurement
- Optional CNC rotary axis fixture
- DXF/FOV option for automatic comparison to CAD files
- Optional software modules including profile fitting, thread inspection, wire insulation inspection, DXF to PDF conversion, and spur gear modules
- Modular system workstation
- Calibration standards
- Part fixtures and work holding devices
- APT120 horizontal rotary indexing table (see page 25)



Click the QR code link to view the AVX550 series



AVX550 Optics								
Optical Parameters	Interchangeable Telecentric Optics							12:1 Zoom Optics
Optical magnification on CCD	0.14x	0.3x	0.5x	0.8x	1.0x	2.0x	4.0x	0.58x - 7.0x
Total magnification on monitor	4.7x	10x	16.4x	27x	33x	69x	137x	22.8x to 220x
Field of view width	2.36" (60mm)	1.1" (28mm)	0.67" (17mm)	0.41" (10.5mm)	0.33" (8.4mm)	0.16" (4.2mm)	0.08" (2.1mm)	0.49" to 0.05" (12.6mm to 1.3mm)
Field of view height	2.0" (51mm)	0.94" (24mm)	0.56" (14mm)	0.35" (8.9mm)	0.28" (7.1mm)	0.14" (3.7mm)	0.07" (1.8mm)	0.41" to 0.04" (10.55mm to 1.08mm)
Working distance	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	3.47" (88mm)
Camera CCD	2/3" (5MP)	2/3" (5MP)	2/3" (5MP)	2/3" (5MP)	2/3" (5MP)	2/3" (5MP)	2/3" (5MP)	2/3" (5MP)

Specifications	
	AVX550
Net Weight	1450lbs 658kg
Shipping Weight	1850lbs 839kg
X-Y-Z Travel*	22" x 16" x 8" 550mm x 400mm x 200mm
X-Y Accuracy**	E2 = 2.5µm + 5L/1000
Z Accuracy**	E1 = 2.5µm + 5L/1000

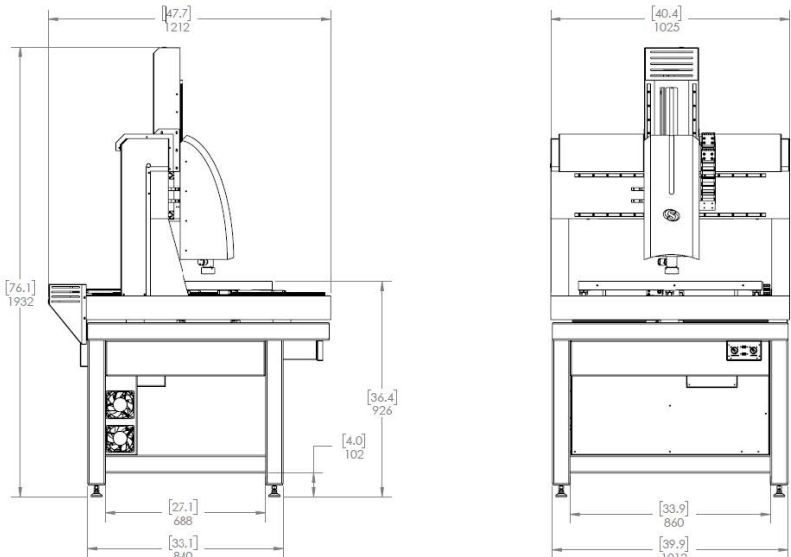
\*Z value only applicable when configured with 3-axis option.

\*\*X-Y-Z specific accuracies are dependent on lens configuration setup.

Operator Interface	
Feature	All-in-One PC with M3 DXF/FOV Software
24" (60cm) color graphic touch-screen monitor and PC	x
Windows®-based operating system	x
Wi-Fi network connectivity	x
Video edge detection	x
X-Y-Z measurements*	x
2D geometric constructs plus height	x
FOV measurements integrated with X-Y stage motion	x
CAD file import and export	x
Automatic comparison of measurements to CAD files**	x
Software developer	MetLogix™

\*\*Only available when equipped with M3 Digital Comparator module in FOV models.

#### AVX550 DIMENSIONS



AVX550



# HORIZONTAL DIGITAL VIDEO COMPARATOR

## HDV

### HDV300 AND HDV400

The HDV Horizontal Digital Video Comparators combine the best features of a horizontal Optical Comparator and a Vision metrology system. The HDV is configured like a traditional horizontal comparator. The workstage is the same as the Starrett field-proven comparators. The heart of the HDV system centers on a uniquely patented designed interchangeable lens mounting system coupled to a hi-resolution 5 mega-pixel digital video camera. 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. With MetLogix™ M3 software, DXF CAD files can be imported and 2D Go/No-Go digital overlays 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.

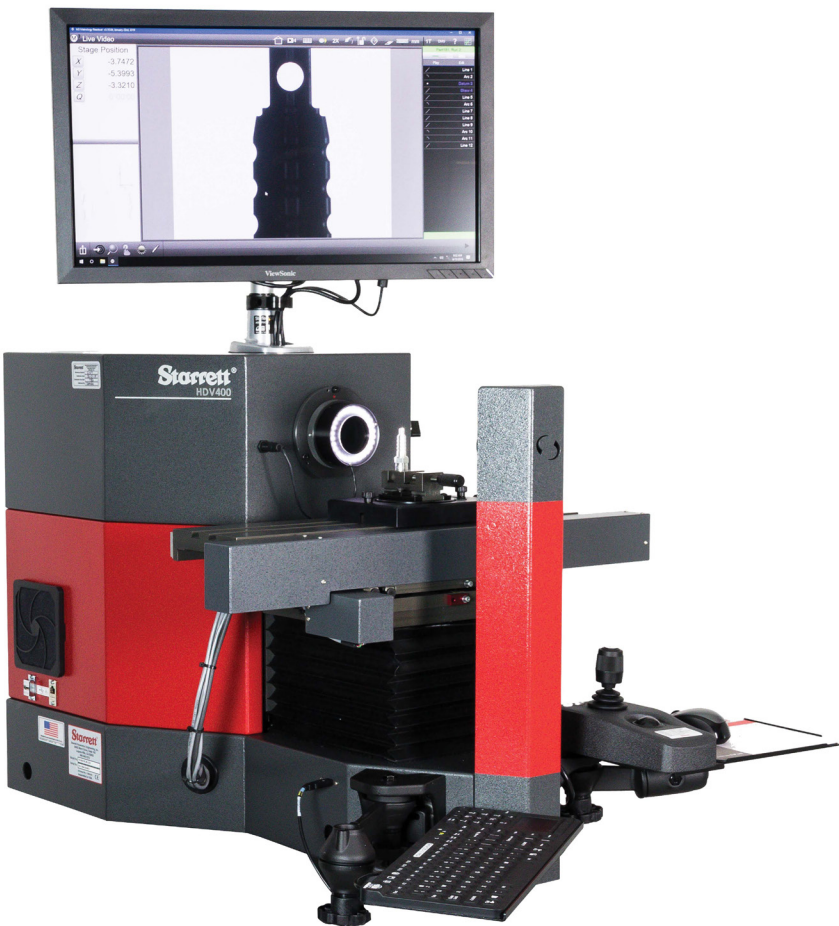
### FEATURES AND SPECIFICATIONS

- Steel and aluminium construction with hard anodized stage tooling plate and riser
- 21.3" x 5.1"(540mm x 130mm) workstage
- 110lbs (50kg) maximum load capacity
- 2" (50mm) of focus travel
- Manual X-Y and focus positioning via hand wheels or CNC with joystick and trackball positioning
- Heidenhain glass scales for 20µin (0.5µm) X and Y resolution
- LED Illumination for surface and profile lighting
- 5 mega-pixel color video camera (2448 x 2058 pixels)
- Software and part image displayed on 24" (60cm) touch-screen color monitor (1920 x 1080 pixels)

### OPTIONS

- Interchangeable telecentric lens magnifications including 0.3x, 0.5x, 0.8x, 1.0x, 2.0x, and 4.0x
- Interchangeable 6.5:1 zoom optics
- Systems are also available with fixed 0.14x lens offering
- Optional CNC controls
- Optional swing away lamp house
- Available Clean Air Kit
- MetLogix™ M3 software with DXF/FOV, Profile Fitting, Spur Gear, and Thread Measurement Modules
- 22" or 31" purpose built cabinet stands
- APT60 rotary indexing table (see page 25)
- Extensive line of calibration standards, work holding devices, and accessories

### TRUSTED BY



Click the QR code link to view the HDV series



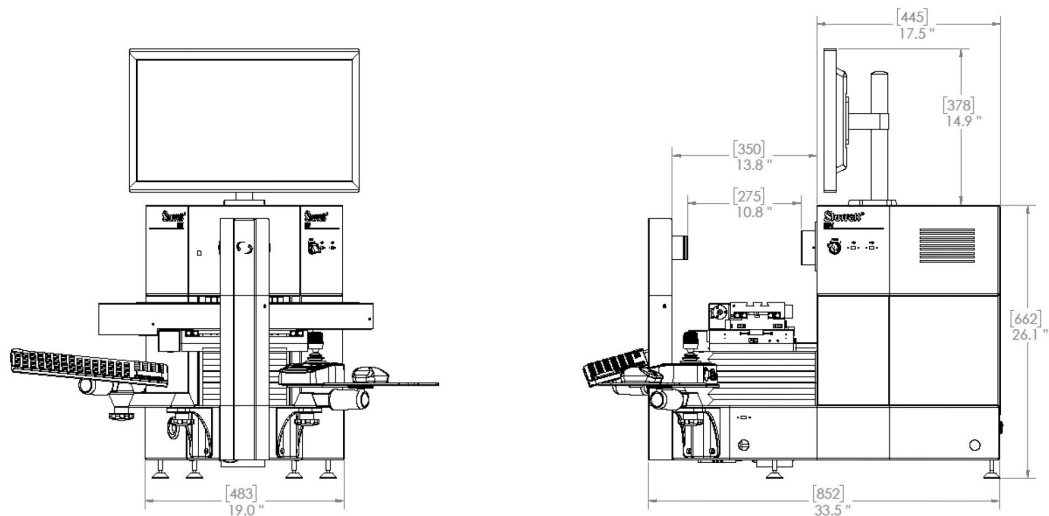
HDV300/400 Optics								
Optical Parameters	Fixed	Interchangeable Telecentric Optics						6.5:1 Zoom Optics
Optical magnification on CCD	0.14x	0.3x	0.5x	0.8x	1.0x	2.0x	4.0x	0.7x to 4.5x
Total magnification on monitor	4.7x	10x	16.4x	27x	33x	69x	137x	22x to 139x
Field of view width	2.36" (60mm)	1.1" (28mm)	0.67" (17mm)	0.41" (10.5mm)	0.33" (8.4mm)	0.16" (4.2mm)	0.08" (2.1mm)	0.47" to 0.74" (12mm to 18.8mm)
Field of view height	2.0" (51mm)	0.94" (24mm)	0.56" (14mm)	0.35" (8.9mm)	0.28" (7.1mm)	0.14" (3.7mm)	0.07" (1.8mm)	0.4" to 0.62" (10.1mm to 15.7mm)
Working distance	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	4.3" (110mm)	3.47" (88mm)
Camera CCD	2/3" (5MP)	2/3" (5MP)	2/3" (5MP)	2/3" (5MP)	2/3" (5MP)	2/3" (5MP)	2/3" (5MP)	1/3" (1.3MP)

Specifications	HDV300	HDV400
Net Weight	220lbs 100kg	230lbs 105kg
Shipping Weight	440lbs 200kg	440lbs 200kg
X-Y-Z Travel*	12" x 6" 300mm x 150mm	16" x 6" 400mm x 150mm
X-Y Accuracy**	E2 = 3.0µm + L/33	E2 = 3.0µm + L/33

Operator Interface	All-in-One PC with M3 DXF/FOV Software
Feature	
24" (60cm) color graphic touch-screen monitor and PC	x
Windows®-based operating system	x
Wi-Fi network connectivity	x
Video edge detection	x
X-Y-Z measurements*	x
2D geometric constructs plus height	x
FOV measurements integrated with X-Y stage motion	x
CAD file import and export	x
Automatic comparison of measurements to CAD files**	x
Software developer	MetLogix™

\*X-Y-Z measurements only available when configured with 3-axis option.  
\*\*Only available when equipped with M3 Digital Comparator module in FOV models.

### HDV DIMENSIONS



HDV



# HORIZONTAL DIGITAL VIDEO COMPARATOR

## HDV

### HDV500 FLOOR STANDING

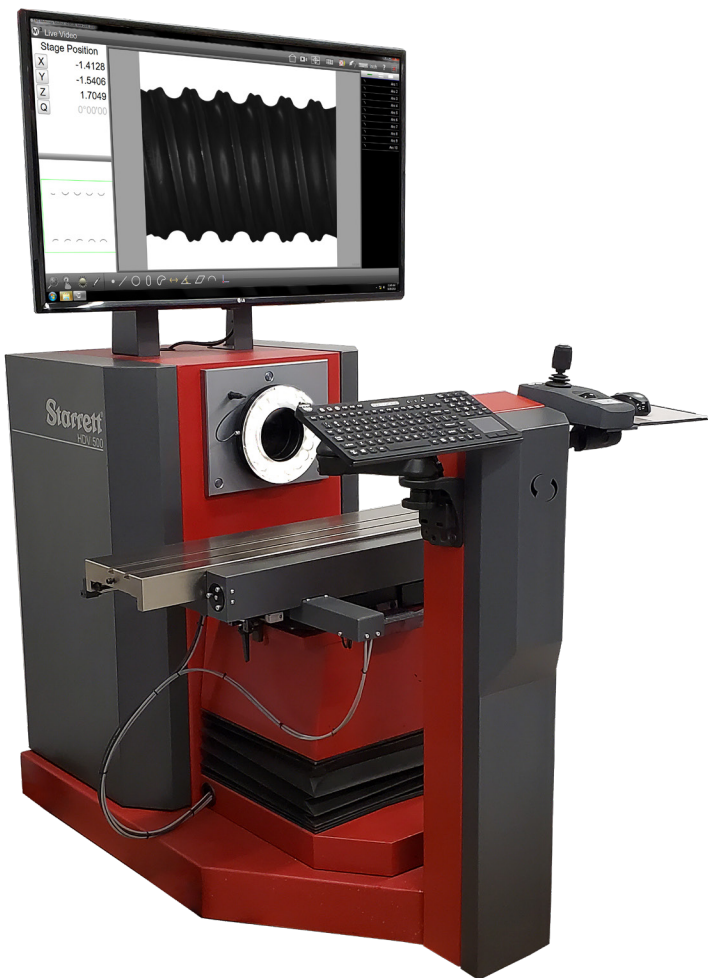
The HDV500 CNC Digital Video Comparator offers the best features of a large, floor standing, horizontal Optical Comparator and a Vision metrology system. The HDV500 has a long 20" x 8" (500mm x 200mm) X-Y stage and heavy-duty steel construction. The workstage is the same as the popular HF600 and HF750. The heart of the HDV system centers on a uniquely designed interchangeable lens mounting system (patent pending) to a hi-resolution 5 mega-pixel digital video camera. The HDV500 is available with a choice of three telecentric lens options for micron-level resolution and accurate field-of-view (FOV) measurements. With MetLogix™ M3 Metrology software, DXF CAD files can be imported and 2D Go/No-Go digital overlays 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.

#### FEATURES AND SPECIFICATIONS

- Steel construction with nickel plated stage tooling plate
- 21.3" x 5.1" (540mm x 130mm) workstage top plate
- CNC controls
- 330lb (150kg) maximum load capacity
- 3" (75mm) of focus travel
- Helix angle adjustment with ±15° Vernier scale
- X-Y and focus positioning via joystick and trackball positioning
- Heidenhain glass scales for 20µin (0.5µm) X and Y resolution
- LED illumination for surface lighting
- LED illumination for profile lighting
- 5 mega-pixel black and white digital video camera (2448 pixels x 2058) pixels
- Floor standing model

#### OPTIONS

- 3 interchangeable telecentric lenses including 0.11x, 0.16x, and 0.24x
- MetLogix™ Profile Fitting, Thread Measurement, Insulation, and Spur Gear modules
- Extensive line of accessories, work holding devices, and calibration standards
- Available Clean Air Kit
- APT60, 120, or 200 rotary indexing table (see page 25)



Click the QR code link to view the HDV500 series



Operator Interface	
Feature	All-in-One PC with M3 DXF/FOV Software
42" (1070cm) color graphics monitor and PC (installed in main housing)	x
Integrated motion control unit	x
Windows®-based operating system (1080 pixels)	x
Wi-Fi network connectivity	x
X-Y-Z (angle) measurements*	x
2D geometric constructs plus height	x
FOV measurements integrated with X-Y stage motion	x
CAD file import and export	x
Automatic comparison of measurements to CAD files**	x
Software developer	MetLogix™

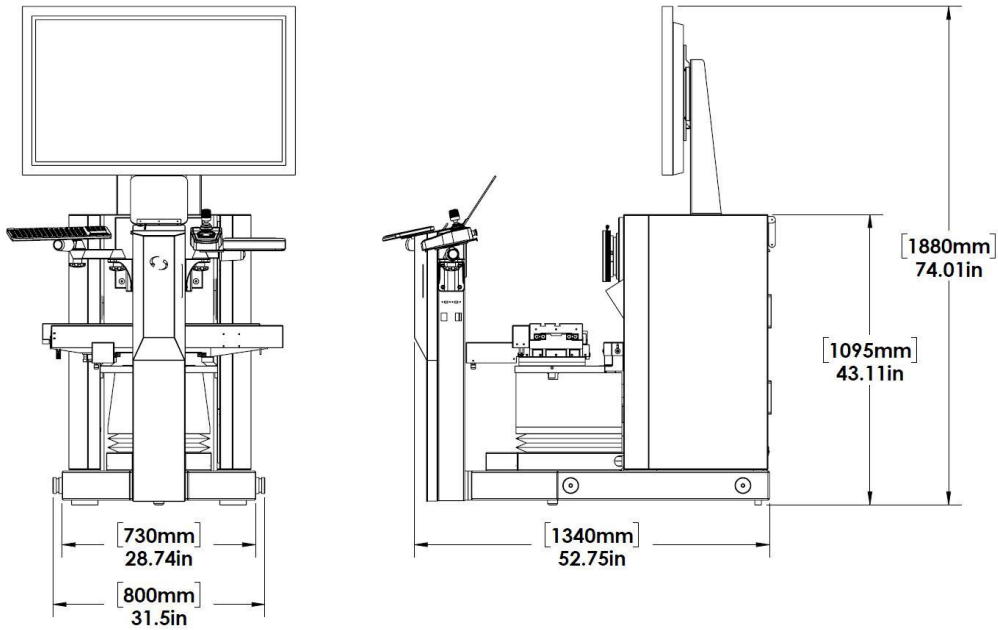
\*X-Y-Z measurements only available when configured with 3-axis option.  
\*\*Only available when equipped with M3 Digital Comparator module in FOV models.

HDV500 Optics			
Optical Parameters	Interchangeable Telecentric Optics		
Optical magnification on CCD	0.11x	0.16x	0.24x
Total magnification on 42" monitor**	6.5x	9.3x	14.7x
Field of view width	3.0" (76.5mm)	2.1" (53.8mm)	1.3" (34.7mm)
Field of view height	2.5" (64mm)	1.7" (45mm)	1.1" (29mm)
Working distance	9.0" (228mm)	6.3" (159mm)	6.0" (150mm)

\*\*Note that screen magnification is variable based upon setting in M3 software

Specifications	
Net Weight	1330lbs (600kg)
Shipping Weight	1700lbs (770kg)
X-Y-Z Travel*	20" x 8" (500mm x 200mm)
X-Y Accuracy**	E2 = 3.0µm + L/33

#### HDV500 DIMENSIONS



HDV500



# HVR100 FLIP VISION METROLOGY SYSTEM

## HVR

### HORIZONTAL AND VERTICAL VISION SYSTEM

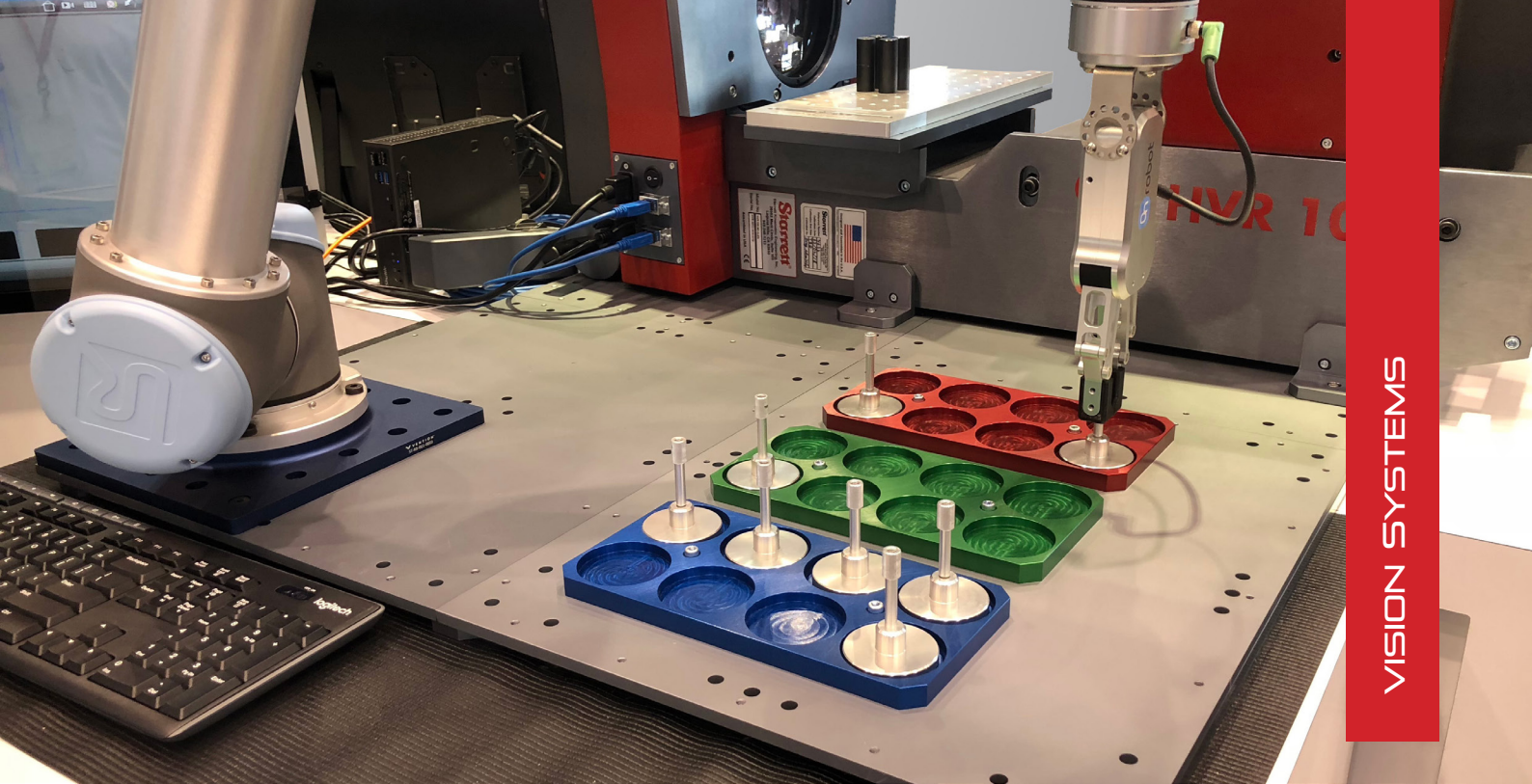
The HVR100 Flip is a unique, large field-of-view, video-based measurement system from Starrett which can be used in both a vertical and horizontal orientation. With MetLogix M3™ Metrology software, the system is capable of recognizing any part placed within the field of view which is stored in the system and automatically running the programmed inspection routine. The HVR100 Flip is ideal for quick checks of multiple parts or any facility interested in utilizing an inspection system with a robot or cobot for further automation.

#### FEATURES AND SPECIFICATIONS

- Rapidly measure parts up to 3.65" x 3" (92.7mm x 76.2mm)
- Working distance of 10" (254mm)
- Measure a single feature, an entire part, or multiple parts
- MetLogix M3™ software allows for easy one-touch feature measurement
- Auto-detect part recognition
- DXF Import - electronic overlay for quick part comparison
- Export features to DXF
- Compare complex profiles with discreet data points and comparison to CAD
- Graphic-based "Part View" constructions
- Geometric tolerancing
- Flexible report content and formatting
- System can be converted from a vertical format to a horizontal format measuring system

#### OPTIONS

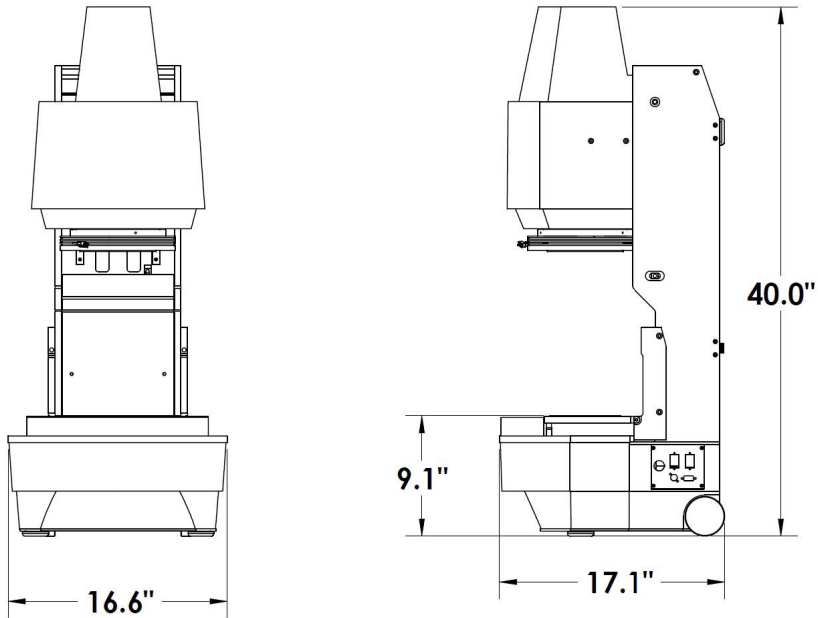
- Workstation base and extension
- Modular fixturing kit
- Calibration grid
- MetLogix™ Profile Fitting, Thread Measurement, Insulation, and Spur Gear modules



Operator Interface	
Feature	MetLogix™ M3 DXF/FOV
24" color graphics touchscreen	x
Windows®-based operating system (1080 pixels)	x
X-Y-Q (angle) measurements	x
2D geometric constructs with skew	x
Video edge detection	x
CAD file import and export	x
FOV measurements	x
Elimination of overlays	x
64-bit Intel® processor	x
Software developer	MetLogix™

Specifications	
Field of view	3.65" x 3.0" (92.7mm x 76.2mm)
Field of view accuracy	Within 0.010mm
Optical magnification	0.090x
Total magnification on monitor	3x
Working distance	10" (255mm)
Camera	5MP 2/3" CCD Monochromatic
Lighting	LED
Software	MetLogix™ M3
Net weight of HVR	100lbs (45.5kg)
Shipping weight - all components crated	206lbs (93.4kg)
Shipping crate dimensions	48" x 26" x 31" (122cm x 66cm x 78cm)

### HVR100 FLIP DIMENSIONS



HVR100

Click the QR code link to view the HVR Flip series





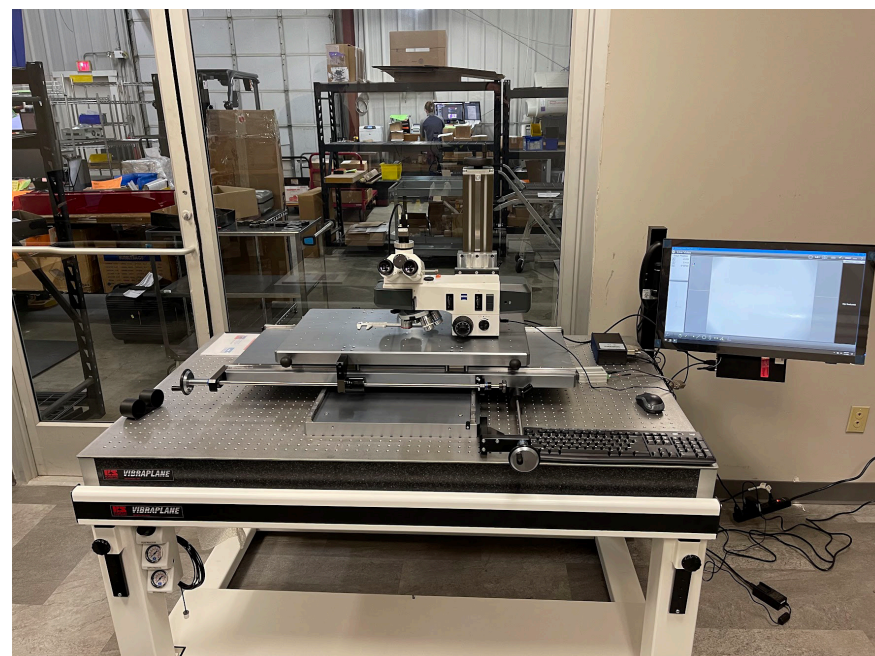
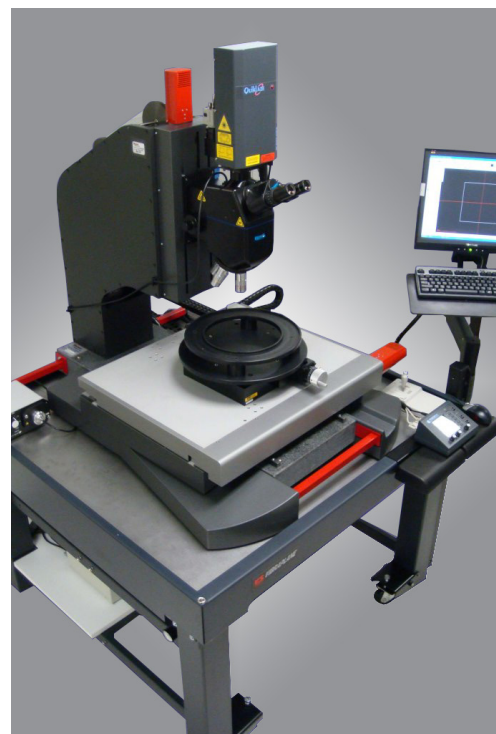
# CUSTOM ENGINEERED SOLUTIONS

## CUSTOM VISION SYSTEMS

### FROM PROBLEM, TO INNOVATION, TO SOLUTION

Addressing the special measurement and inspection requirements that go beyond the scope of standard metrology equipment, Starrett's Custom Solutions division is capable of designing and building inspection systems to address a multitude of challenging requirements including:

- Travel requirements
- Fixturing requirements
- Environmental conditions
- Unique optics or imaging requirements
- Customization of in-line Starrett products
- Full customization products
- Precision motion platforms



Starrett stands out from other Optical and Vision measurement system providers through our willingness to work directly with customers to design and manufacture custom tools for applications where standard products cannot perform. Whatever it takes, we will work with the customer to configure a system which meets the unique measurement requirements. Typical reasons for consultation with the Custom Solutions division include when unique stage travel requirements or fixturing solutions are required, when there are special environmental requirements at a facility which rule out standard metrology equipment, and when there are optical and imaging requirements that are not covered by standard Optical and Vision system cameras and lenses. Starrett will approach designing and developing a new custom solution from one of three directions: customization of a standard product, fully custom solutions, and precision motion platforms, depending on the unique needs of the customer. Industries that Starrett has served through custom solutions innovation include the medical device, aerospace, automotive, food packaging, hi-technology, plastics, energy, as well as NASA and other governmental and defense-related agencies.



- **Opposite top left:** Starrett Vision system, customized with with workstation to isolate system and PC from vibrations
- **Opposite bottom left:** Custom laser ablation system built on Starrett Vision system platform
- **Opposite bottom right:** precision multi-axis motion platform for battery inspection
- **Top right:** Starrett Vision system customized with multi-lens high magnification turret
- **Bottom Left:** precision motion platform designed to work in conjunction with inspection microscope

Have a special measurement requirement? Let our application engineering team assist with a solution. Please contact us with your requirements.  
[www.starrettmetrology.com/customsolutions](http://www.starrettmetrology.com/customsolutions) | (949) 348-1213

Click the QR code link to view Custom Solutions





## ACCESSORIES



Workstations

Purpose built cabinet stands

Vises

Touch probe kits and change racks

NIST Traceable Calibration Standards



### Part Holding Fixtures

Part holding fixtures available through commercial partners or through Starrett

### Other options include

- VED mag checkers
- Clean air kits (HDV series)
- Dust covers
- Replacement stage glass
- Software modules
- Manual quad light (MVR series)
- Auxiliary lenses (Zoom models)
- Centers & Vees (HDV series)
- Glass plate work holders (HDV series)

## APT ROTARY STAGES: APT 60, 120, 200

Starrett Vision systems now have three rotary options - the APT 60, 120, and 200. These stages provide numerous benefits including increased radial load stability and moment load rating. In addition, the rotary stages are ideal for positioning small cylindrical parts such as shafts, cutting tools, and threaded parts. APT rotary stages provide the capability of mounting the indexers in a horizontal or vertical part view orientation.

### APT 60 FEATURES

- Available on all CNC AVR/HDV systems
- Great for positioning small cylindrical parts (shafts, cutting tools, threaded parts)
- Includes an axial load rating of 13lbs (57.8N) and a radial load rating of 4.4lbs (19.6N)
- Includes a 2.25" (57mm) diameter circular face
- Provides encoder resolution to 0.001 degrees
- Includes options for 1" (25mm) collet set or a 1.57" (40mm) collet set
- The 1" (25mm) collet set holds parts up to 5/8" (16mm) in diameter.
- The 1.57" (40mm) collet set holds parts up to 1" (25mm) in diameter
- Can be paired with a tailstock and live center for increased radial load stability
- Includes option for 90 degree mounting bracket

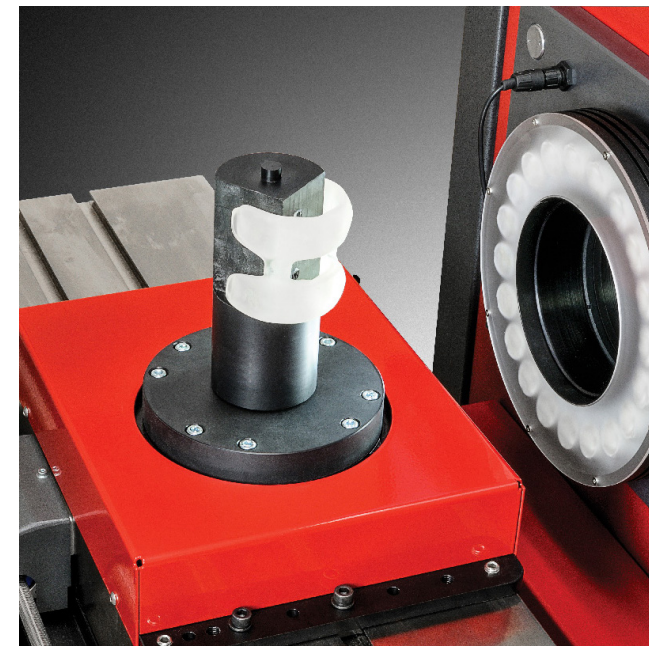
### APT 120 FEATURES

- Available on the HDV500 system
- Provides significantly increased moment load rating of 10.8lbf (14.7Nm)
- Includes an axial load rating of 33.7lbs (150N)
- Includes a 3.82" (97mm) diameter circular face
- Minimized runout (wobble) and radial runout of 10 microns
- Operates at a maximum speed of 300 rpm
- Includes the option for a 90 degree mounting bracket

### APT 200 FEATURES

- Available on the HDV500 system
- Provides significantly increased moment load rating of 40lbf (55.2Nm)
- Includes an axial load rating of 67lbs (300N)
- Includes a 7" (182mm) diameter circular face
- Minimized runout (wobble) and radial runout of 10 microns
- Operates at a maximum speed of 300 rpm
- Includes the option for 90 degree mounting bracket

	APT60	APT120	APT 200
Rotational Accuracy	+5 arc minutes	+30 arc seconds	+30 arc seconds
Load Capacity, Axial	13lbs (57.8N)	33.7lbs (150N)	67lbs (300N)
Face Diameter	2.25" (57mm)	3.82" (97mm)	7" (182mm)
Maximum Speed (RPM)	10	300	300
Runout (µm)	10 (100 with collet set)	10	10
Rotary Stage Weight	2.7 lbs (1.2 kg)	16lbs(7kg)	23lbs (10kg)





SPECIFICATIONS AND OPTIONS

Model	MVR200	MVR300	AVR200	AVR300	AVR300-FOV-0.14X	AVR400	AVX550	HVR100-Flip	HDV300	HDV400	HDV500
Bench-Top System	X	X	X	X	X	X	—	X	X	X	—
Floor-Standing System	—	—	—	—	—	—	X	—	—	—	X
Part View Orientation	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Horizontal/Vertical	Horizontal	Horizontal	Horizontal
X-Y-Z Travel (in)	8" x 4" x 8"	12" x 8" x 8"	8" x 4" x 8"	12" x 8" x 8"	12" x 8" x 8"	15.7" x 11.8" x 7.9"	22" x 16" x 10"	—	12" x 6"	16" x 6"	20" x 8"
X-Y-Z Travel (mm)	200mm x 100mm x 200mm	300mm x 200mm x 200mm	200mm x 100mm x 200mm	300mm x 200mm x 200mm	300mm x 200mm x 200mm	400mm x 300mm x 200mm	550mm x 400mm x 250mm	—	300mm x 150mm	400mm x 150mm	500mm x 200mm
Z Axis Measuring	Optional	Optional	Standard	Standard	Standard	Standard	Standard	—	2" (50mm) focus travel	2" (50mm) focus travel	3" (75mm) focus travel
CNC	—	—	Standard	Standard	Standard	Standard	Standard	—	Optional	Optional	Standard
X-Y Accuracy (µm)	E2 = 1.9µm + 5L/1000	E2 = 1.9µm + 5L/1000	E2 = 1.9µm + 5L/1000	E2 = 1.9µm + 5L/1000	E2 = 2.5µm + 5L/1000	E2 = 2.5µm + L/200	E2 = 2.5µm + 5L/1000	Within 0.010mm	E2 = 3.0µm+L/33	E2 = 3.0µm+L/33	E2 = 3.0µm+L/33
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 + L/200	E1 = 2.5µm + 5L/1000	—	—	—	—
Scale Resolution	20µin (0.5µm)	20µin (0.5µm)	4µin (0.1µm)	4µin (0.1µm)	4µin (0.1µm)	4µin (0.1µm)	4µin (0.1µm)	—	20µin (0.5µm)	20µin (0.5µm)	20µin (0.5µm)
Multi-Sensor Compatible	—	—	Yes	Yes	Yes	Yes	Yes	—	—	—	—
Base	Granite	Granite	Granite	Granite	Granite	Granite	Granite	Aluminum	Steel	Steel	Steel
Control System/Software	M3	M3	M3	M3	M3	M3	M3	M3 FOV	M3	M3	M3
Display	24" Touchscreen PC	24" Touchscreen PC	24" Touchscreen PC	24" Touchscreen PC	24" Touchscreen PC	24" Touchscreen PC	24" Touchscreen PC	24" Touchscreen PC	24" Touchscreen PC	24" Touchscreen PC	42" Touchscreen PC
Zoom Optics - Standard	6.5:1 - 2LED	6.5:1 - 2LED	6.5:1 - 2LED	6.5:1 - 2LED	—	12:1 - 3LED	12:1 - 3LED	—	6.5:1 2LED	6.5:1 2LED	—
	6.5:1 - 3LED	6.5:1 - 3LED	12:1 - 3LED	12:1 - 3LED							
Zoom Optics - Optional	—	—	12:1 - 7LED	12:1 - 7LED	—	12:1 - 7LED	12:1 - 7LED	—	—	—	—
Telecentric Optics	On FOV models, choice of 0.3x, 0.5x, 0.8x, 1.0x, 2.0x, 4.0x interchangeable telecentric lenses.	On FOV models, choice of 0.3x, 0.5x, 0.8x, 1.0x, 2.0x, 4.0x interchangeable telecentric lenses.	On FOV models, choice of 0.3x, 0.5x, 0.8x, 1.0x, 2.0x, 4.0x interchangeable telecentric lenses.	On FOV models, choice of 0.3x, 0.5x, 0.8x, 1.0x, 2.0x, 4.0x interchangeable telecentric lenses.	Dedicated 0.14X telecentric lens	On FOV models, choice of 0.3x, 0.5x, 0.8x, 1.0x, 2.0x, 4.0x interchangeable telecentric lenses.	On FOV models, choice of 0.3x, 0.5x, 0.8x, 1.0x, 2.0x, 4.0x interchangeable telecentric lenses. Optional- 0.14x fixed.	0.090x telecentric	On FOV models, choice of 0.3x, 0.5x, 0.8x, 1.0x, 2.0x, 4.0x interchangeable telecentric lenses. Optional- 0.14x fixed.	On FOV models, choice of 0.3x, 0.5x, 0.8x, 1.0x, 2.0x, 4.0x interchangeable telecentric lenses. Optional- 0.14x fixed.	Choice of 0.11x, 0.16x, or 0.24x interchangeable telecentric lenses.
Digital Video Camera	1MP color with zoom or 2MP color with telecentric	1MP color with zoom or 2MP color with telecentric	1.3 MP color with fixed, 2MP color with interchangeable	1.3 MP color with fixed, 2MP color with interchangeable	5.0MP black and white	1.3, 2.0 MP color with fixed, 2MP color with interchangeable	1.3 MP color with zoom, 2MP color with telecentric, 5MP black and white with 0.14x	5MP black and white	5MP color; black and white for 0.14x telecentric	5MP color; black and white for 0.14x telecentric	5MP black and white
Surface Illumination	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED
Profile Illumination	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED	LED
Coaxial Illumination - Optional	LED	LED	LED	LED	—	LED	LED	—	—	—	—
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	—	—	—	—
Rotary Fixture	—	—	Optional	Optional	Optional	Optional	Optional	—	Optional	Optional	Optional
Renishaw Touch Probe	—	—	Optional	Optional	Optional	Optional	Optional	—	—	—	—
Renishaw Touch Probe Change Rack	—	—	Optional	Optional	Optional	Optional	Optional	—	—	—	—
Dual Camera	—	—	—	—	—	—	Optional	—	—	—	—
Machine Pedestal and Point of Control Cart	—	—	—	—	—	Optional	Optional	—	—	—	—
Cabinet Stand	—	—	—	—	—	—	—	—	Optional	Optional	—
Workstation Base and extension	Optional	Optional	Optional	Optional	Optional	—	—	Optional	—	—	—
Part Fixturing	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Dark Field Quadrant Illumination (LED only)	Optional	Optional	Optional	Optional	—	Optional	Optional	—	—	—	—
Video Pixel Calibration Standard	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Calibration Standards	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
FOV, Linear and 2D Calibration Standards	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional



# KMR-MX200 VIDEO INSPECTION SYSTEM

## KMR-MX200

### VERTICAL VIDEO INSPECTION SYSTEM

New to Starrett, the KMR-Mx200 Video Inspection system is a unique platform which fills the gap for companies who want the speed and accuracy of a video-based platform but do not want or need a PC-based system. The KMR-MX200 is based upon the KMR-200 Vision system, with an 8" x 4" (200mm x 100mm) X-Y stage. The system utilizes a manual 6.5:1 zoom lens paired with a Metlogix™ Mx200 digital readout and a 14" (355mm) 1080P monitor in a stacked display, allowing end users to take video measurements without the need for a PC. The KMR-Mx200 is an ideal solution for medical, aerospace, defense industries, as well as any environment which requires a simple yet powerful measurement system which conforms to a wide range of security needs.

#### FEATURES AND SPECIFICATIONS

- 14" (355mm) 1080P monitor paired with MetLogix™ Mx200 digital readout in stacked display
- Precision 8" x 4" (200mm x 100mm) X-Y stage
- Z travel: 5" (125mm)
- 6.5:1 manual zoom lens
- Scale resolution: 20 µin (0.5µm)
- LED profile and ring light with manual control
- USB mouse to interface with camera software
- Built-in color restoration and image acquisition
- Horizontal and vertical image flip capability
- Digital zoom capability on monitor
- Color-customizable digital cross hair for and features in readout
- Screenshots can be collected and stored for use with built-in comparison tool
- SD card for image storage
- Flexible reporting capabilities



Click the QR code link to view the KMR-Mx200

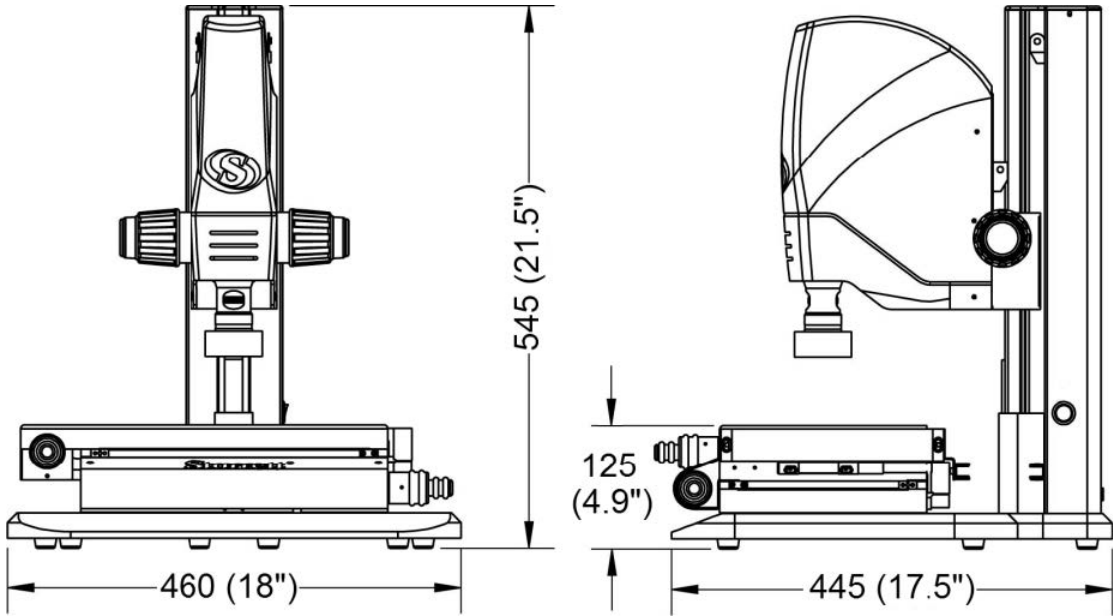


Operator Interface	
Feature	MetLogix™ Mx200
Color graphic 1080P monitor	x
Operating sytem	MLX Android™
Color graphics	x
Touchscreen operation on digital readout	x
X-Y measurements	x
Point, line, angle, distance, radius, diameter measurement	x
JPEG image capture and exporting with camera software	x
Export to Excel, text file	x
SPC system connectivity	x
Software developer	MetLogix™

KMR-Mx200 Optics	
Optical Parameters	Manual 6.5:1 Zoom
Optical magnification on CCD	0.7x to 4.5x
Total magnification on monitor	25x to 155x
Field of view width	0.07" to 0.45" (1.78mm to 11.43mm)
Field of view height	0.04" to 0.25" (1.02mm to 6.60mm)
Working distance	3.47" (88mm)
Camera CCD	1/2.8" Array (2MP)
X-Y Accuracy**	E2= ± (4µm + L/50)

\*\*As measured at high magnification using chrome on glass standards.

#### KMR-MX200 DIMENSIONS



KMR-Mx200



# KMR-200 VIDEO INSPECTION SYSTEM

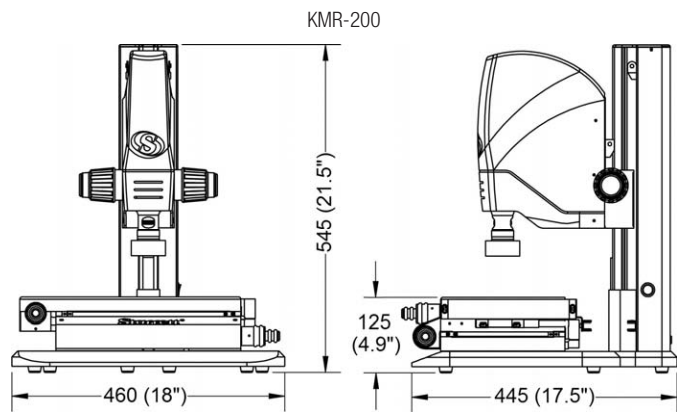
## KMR-200

### VERTICAL VIDEO INSPECTION SYSTEM

The KMR-200-M3 video-based inspection and measurement system is ideal for inspection, quality assurance, training, manufacturing assembly, research and documentation - wherever easy setup and operation is required. The KMR-200 features an 8" x 4" (200mm x 100mm) X-Y stage. M3 models offer Field-Of-View measurement, powerful image processing, and DXF imports for direct comparison to the work piece for accurate and repeatable measurements.

#### FEATURES AND SPECIFICATIONS

- Precision 8" x 4" (200mm x 100mm) X-Y stage
- MetLogix™ M3 software including Digital Comparator (DC)
- Color digital video camera
- PC with 24" touchscreen monitor
- 6.5:1 zoom lens
- LED ring light and substage illumination
- Screen resolution 1920 x 1080
- Auxiliary lens options: 0.5x and 2.0x
- Video edge detection



KMR-200 DIMENSIONS

	KMR 200
Part Number	KMR-200-M3
Optics	6.5:1 Zoom
CCD Sensor	1.33 M Pixel
Camera Interface	USB Cable
Computer	PC
Software	Metlogix™ M3
Video Screen	24" Touchscreen Monitor
Screen Resolution	1920 x 1080
Lens Magnification	0.7x to 4.5x zoom lens with magnification level feedback through M3 software.
Screen Magnification	35x to 225x
Auxiliary lenses	0.5x, 2x
Field of view width	0.055" to 0.35" (1.4mm to 9.0mm)
Field of view height	0.045" to 0.29" (1.1mm to 7.4mm)
X-Y Stage Motion	8" x 4" (200mm x 100m)
Z Travel	5" (125mm)
Metrology Means	X and Y Encoders
Measurement Resolution	20µin (0.5µm)
Measurement Accuracy	2.5µm + 5L/1000
Basic Stand	Standard
Boom Stand	N/A
LED Back Light	Standard
LED Ring Light	Standard
Lighting Control	Via M3 Software
Video Inspection	Yes
Basic Dimensions	Yes, VED- FOV Stage Measurement
Geometric Constructs	Yes
Image Annotation	Yes
Image Archiving	Yes
Video Edge Detection	Yes

# KMR-FOV 0.14 VIDEO INSPECTION SYSTEM

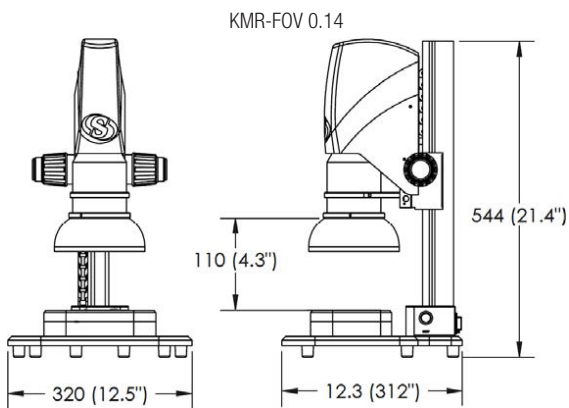
## KMR-FOV 0.14

### VERTICAL VIDEO INSPECTION SYSTEM

The KMR-FOV 0.14 video-based inspection and measurement system is ideal for receiving inspection, quality assurance, training, manufacturing assembly, research and documentation - wherever easy setup and operation is required. The KMR-FOV 0.14 features a large field-of-view (FOV) 0.14x telecentric lens. M3 models offer Field-Of-View measurement, powerful image processing, and DXF imports for direct comparison to the work piece for accurate and repeatable measurements.

#### FEATURES AND SPECIFICATIONS

- 0.14x telecentric lens
- MetLogix™ M3 software including Digital Comparator (DC)
- Color digital video camera
- PC with 24" touchscreen monitor
- LED ringlight and substage illumination
- Screen resolution 1920 x 1080
- Video edge detection
- Automatic part recognition when placed within FOV



KMR-FOV 0.14 DIMENSIONS

	KMR-FOV .14
Part Number	KMR-FOV-M3-0.14x
Optics	Telecentric Lens
CCD Sensor	5 M Pixel
Camera Interface	USB Cable
Computer	PC
Software	Metlogix™ M3
Video Screen	24" Touchscreen Monitor
Screen Resolution	1920 x 1080
Lens Magnification	0.14x
Screen Magnification	4.7x
Auxiliary lenses	N/A
Field of view (width x height)	2.36" x 2 " (60mm x 51mm)
X-Y Stage Motion	None
Metrology Means	M3 FOV Software
Measurement Resolution	Up to 3µm
Measurement Accuracy	Up to ±3µm*
Basic Stand	Milled
Boom Stand	N/A
LED Back Light	Narrow Angle
LED Ring Light	Dome
Lighting Control	Via M3 Software
Video Inspection	Yes
Basic Dimensions	Yes, VED- FOV Stage Measurement
Geometric Constructs	Yes
Image Annotation	Yes
Image Archiving	Yes
Video Edge Detection	Yes

Our KMR systems line provide high performance for low cost. These machines are simple to operate without compromising performance.

With six models to choose from, we can customize to your specific needs.

Call (949) 348-1213 for an exact quote.

Click the QR code link to view the KMR-200



Click the QR code link to view the KMR-FOV 0.14





# KMR-M3 VIDEO INSPECTION SYSTEM

## KMR-M3

### VERTICAL VIDEO INSPECTION SYSTEM

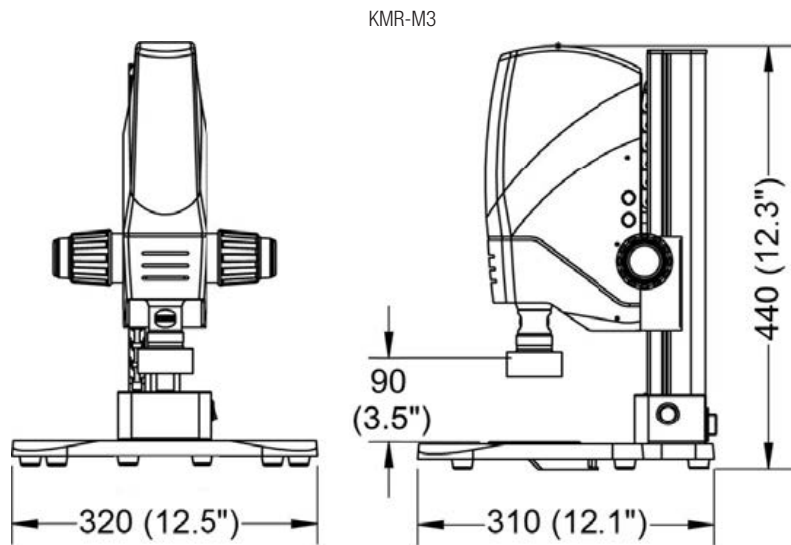
KMR video measurement and inspection systems are a family of four versatile and affordable inspection and vision measurement systems. They are ideal for receiving inspection, quality assurance, training, manufacturing, assembly, research, documentation - wherever easy setup and a range of magnifications are required. Depending on the size of the parts to be measured, measurements can be all electronic within the M3 software.

### FEATURES AND SPECIFICATIONS

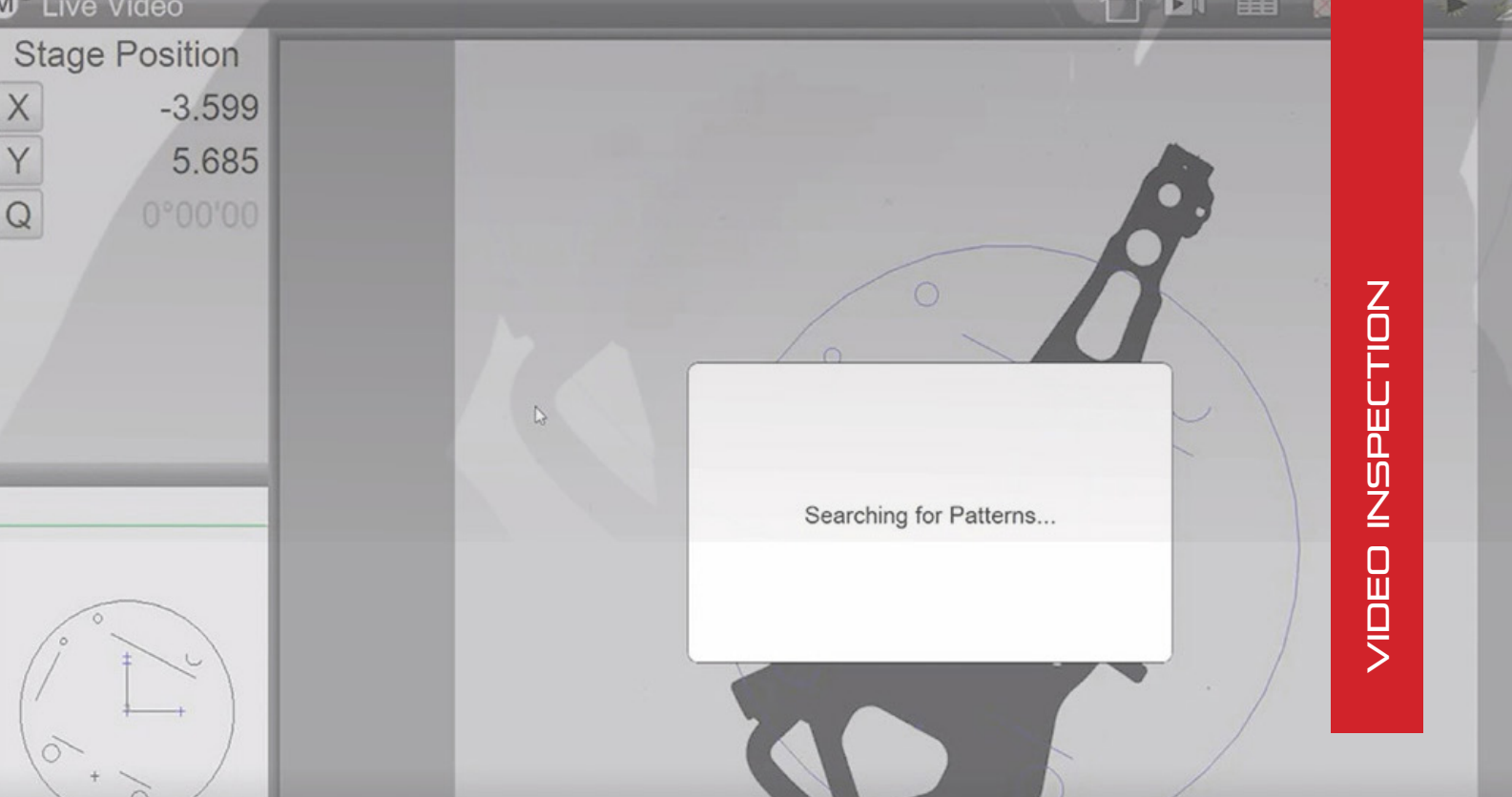
- MetLogix™ M3 software including Digital Comparator (DC)
- Color digital video camera
- PC with 24" touchscreen monitor
- LED ring light and substage illumination
- Screen resolution 1920 x 1080
- Video edge detection
- Equipped with 6.5:1 zoom lens or choice of 0.3x, 0.5x, or 1.0x telecentric lens
- Auxiliary lens options of 0.5x, 2.0x for use with 6.5:1 zoom option
- Automatic part recognition when placed within FOV



KMR-M3 DIMENSIONS



Click the QR code link to view the KMR-M3



Our KMR systems line provide high performance for low cost. These machines are simple to operate without compromising performance.

With six models to choose from, we can customize to your specific needs.

Call (949) 348-1213 for an exact quote.

	KMR	KMR FOV-0.3x	KMR FOV-0.5x	KMR FOV-1.0x
Part Number	KMR-Zoom-M3	KMR-FOV-M3-0.3x	KMR-FOV-M3-0.5x	KMR-FOV-M3-1.0x
Optics	6.5:1 Zoom	Telecentric Lens	Telecentric Lens	Telecentric Lens
CCD Sensor	1.33 M Pixel	2.02 M Pixel	2.02 M Pixel	2.02 M Pixel
Camera Interface	USB Cable	USB Cable	USB Cable	USB Cable
Computer	PC	PC	PC	PC
Software	Metlogix™ M3	Metlogix™ M3	Metlogix™ M3	Metlogix™ M3
Video Screen	24" Touchscreen Monitor	24" Touchscreen Monitor	24" Touchscreen Monitor	24" Touchscreen Monitor
Screen Resolution	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080
Lens Magnification	0.7x to 4.5x Zoom Lens	0.3x	0.5x	1.0x
Screen Magnification	35x to 225x	13x	22x	45x
Auxiliary lenses	0.5x, 2.0x	N/A	N/A	N/A
Field of view width	0.055" to 0.35" (1.4mm to 9.0mm)	0.93" (24 mm)	0.56" (14mm)	0.28" (7.1mm)
Field of view height	0.045" to 0.29" (1.1mm to 7.4mm)	0.76" (19mm)	0.46" (11mm)	0.23" (5.8mm)
X-Y Stage Motion	None	None	None	None
Metrology Means	M3 FOV Software	M3 FOV Software	M3 FOV Software	M3 FOV Software
Measurement Resolution	Up to 2µm*	Up to 2µm*	Up to 2µm*	Up to 2µm*
Meas. Accuracy	Up to ±2.5µm*	Up to ±2.5µm*	Up to ±2.5µm*	Up to ±2.5µm*
Basic Stand	Standard	Standard	Standard	Standard
Boom Stand	Optional	N/A	N/A	N/A
LED Back Light	Standard	Standard	Standard	Standard
LED Ring Light	Standard	Standard	Standard	Standard
Lighting Control	Via M3 Software	Via M3 Software	Via M3 Software	Via M3 Software
Video Inspection	Yes	Yes	Yes	Yes
Basic Dimensions	Yes, VED- FOV Stage Measurement	Yes, VED- FOV Stage Measurement	Yes, VED- FOV Stage Measurement	Yes, VED- FOV Stage Measurement
Geometric Constructs	Yes	Yes	Yes	Yes
Image Annotation	Yes	Yes	Yes	Yes
Image Archiving	Yes	Yes	Yes	Yes
Video Edge Detection	Yes	Yes	Yes	Yes

\*These are best values. Actual values will depend on the zoom lens setting or the selected telecentric lens.  
Disclaimer: Due to continual product improvements, specifications may change without notice.





PRECISION MAKES THE DIFFERENCE

## TRUST IS IN THE NAME.

The Starrett FMS Series incorporates new performance-based capabilities and user-friendly features to help you perform critical force tests with greater accuracy and efficiency. It can perform all of your basic force measurement tests, as well as more complex multi-stage tests to international standards. With multiple travel options, load capacities, and hundreds of compatible fixtures to choose from, there is a configuration available for virtually any application requirement.

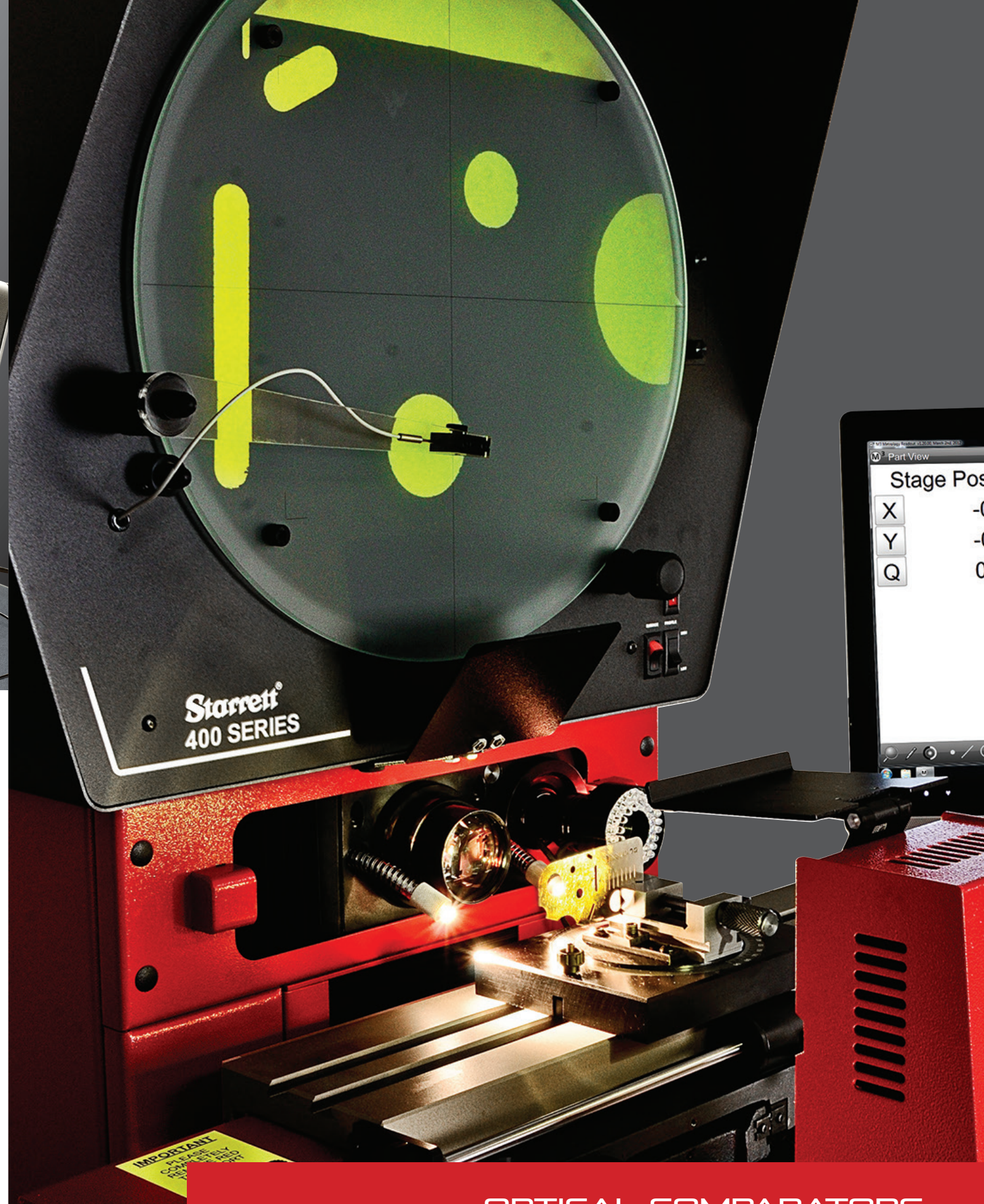
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OPTICAL COMPARATORS



# BENCHTOP OPTICAL COMPARATOR

## HE400

### HORIZONTAL BENCHTOP OPTICAL COMPARATOR

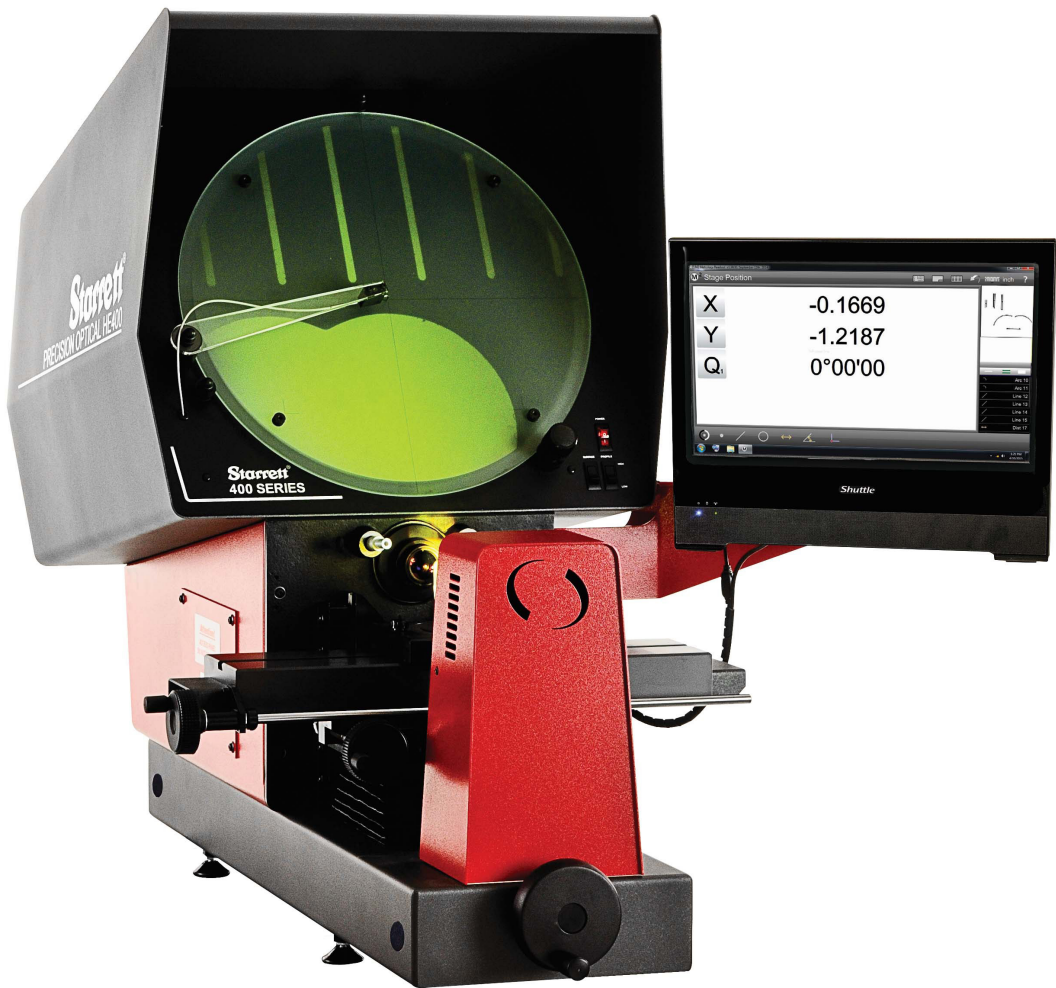
The most economical of our benchtop comparators, the HE400 offers a 16" (400mm) diameter screen, 10" x 4" (254mm x 101.6mm) X-Y stage travel, LED lighting, choice of five bayonet-style interchangeable lenses, and Q-axis angular readout: all to improve capability and performance. Their latest horizontal comparators are fitted with choice of MetLogix™ M2 or Mx-Series measuring software digital readout systems, making them simple to use, but having the power to satisfy the most complex measuring requirements.

#### FEATURES AND SPECIFICATIONS

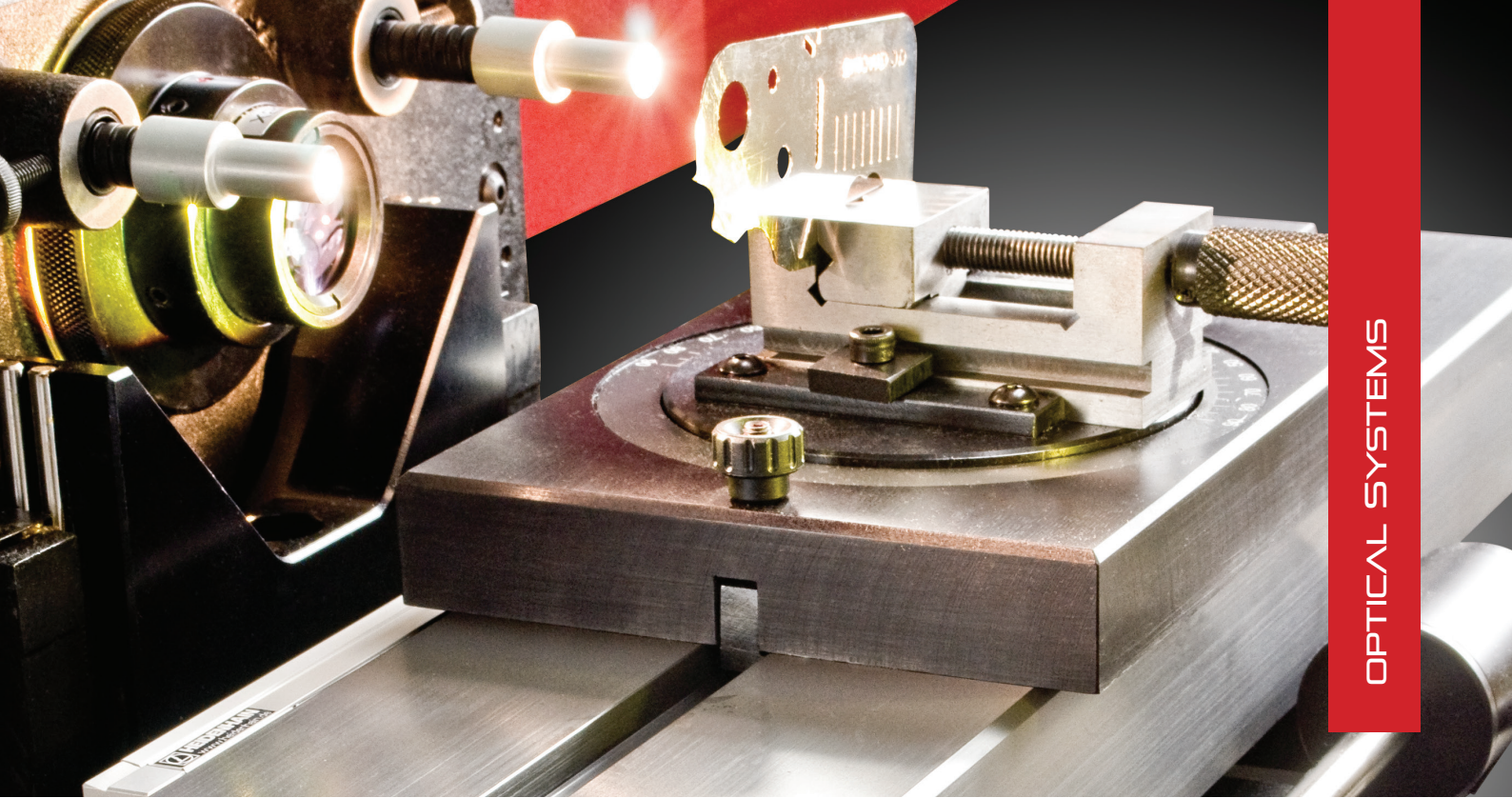
- All metal construction
- Single bayonet-style lens mounting system
- Collimating condenser with yellow/green filter and provision to mount further accessories
- Linear encoder (glass scale) with 1µm on both X and Y axes
- LED profile and surface illumination
- Fully retractable flexible duplex fiber optic surface illumination
- Digital protractor for accurate angle measurement to 1' resolution
- 55lbs (25kg) load capacity
- 18.9" x 4.7" (480mm x 120mm) precision work stage top plate with machined slot for easy fixturing
- 10" x 4" (254mm x 101.6mm) of X-Y stage travel
- 2.125" (54mm) of focus travel
- Fine adjustment on all axes
- Quick release mechanism on the X-axis

#### OPTIONS

- Five interchangeable fixed magnification lenses including 10x, 20x, 25x, 50x, and 100x
- Available with MetLogix™ M2 PC-based touchscreen measuring software, Mx100 or Mx200 digital readout system
- Automatic fiber optic edge detection
- Canopy and curtains - free standing design (see Pg. 49)
- Cabinet stand; ideal for storage
- Extensive line of accessories



Click the QR code link to view the HE400



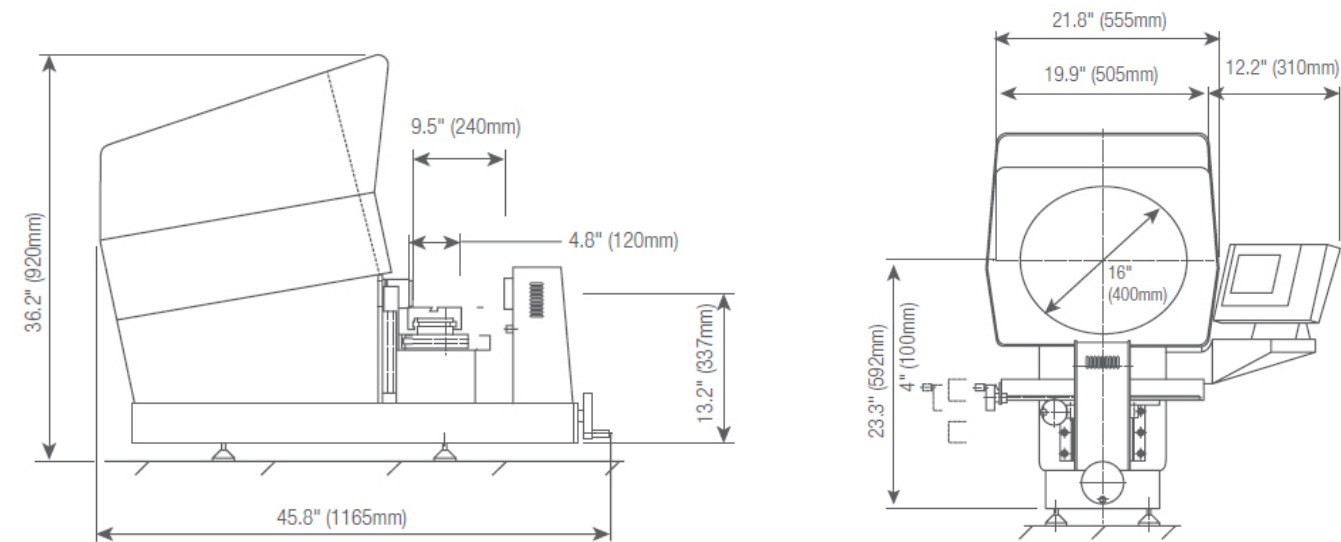
Operator Interface			
Feature	M2	Mx100	Mx200
Optical edge detection (Option)	x	—	x
Geometric Functions	x	—	x
Graphic Based Constructions	x	—	x
Tolerancing	x	—	x
Data export reporting	x	x	x
Part programming and playback	x	—	x
Operating system	MS Windows®	MLX Android™	MLX Android™
Part view display	x	—	—
Feature annotation	x	—	—
Software developer	MetLogix™	MetLogix™	MetLogix™

Weight and Dimensions	
	HE400
Net Weight	230lbs 105kg
Shipping Weight	320lbs 146kg
Shipping Dimensions	49" x 32" x 51" (125cm x 81cm x 130cm)

Specifications	
	HE400
Horizontal Travel	10" (254mm)
Vertical Travel	4" (101.6mm)
Focus Travel	2.125" (54mm)
Top Plate*	18.9" x 4.7" (480mm x 120mm)
Image	Inverted and reversed

\*With machined single slot for easy fixturing

#### HE400 DIMENSIONS





# BENCHTOP OPTICAL COMPARATOR

## HB400

### HORIZONTAL BENCHTOP OPTICAL COMPARATOR

The HB400 Optical Comparator provides exceptional performance with a 16" (400mm) diameter viewing screen, LED lighting, and 110lbs (50kg) workstage load capacity. Available optical edge detection removes operator subjectivity in locating edges of parts being measured. A bayonet-style lens mounting system enables users to quickly switch magnifications and accepts a choice of five interchangeable lenses. Motorized stage controls and swing-away lamp house are also optional features. This comparator provides performance previously only available with floor standing models.

#### FEATURES AND SPECIFICATIONS

- 16" x 6" (406mm x 152mm) X-Y travel workstage
- All metal construction with hard-anodized stage tooling plate
- 16" (400mm) diameter screen
- Single bayonet-style lens mounting system
- Collimating condenser with yellow/green filter and provision to mount further accessories
- Linear encoder (glass scale) with 20µin (0.5µm) resolution on both X and Y axes
- LED profile and surface illumination
- Fully retractable flexible duplex fiber optic surface illumination
- Digital protractor for accurate angle measurement (1' resolution) via Q-axis readout
- Fine adjustment on all axes
- Quick release mechanism on the X-axis

#### OPTIONS

- Five interchangeable fixed magnification lenses including 10x, 20x, 25x, 50x, and 100x
- Available with MetLogix™ M2 PC-based touchscreen measuring software, Mx100 or Mx200 digital readout system
- Automatic fiber optic edge detection
- Motorized X and Y axes
- Swing away lamp house
- Canopy and curtains - free standing design (see Pg. 49)
- Cabinet stand; ideal for storage
- Extensive line of accessories



Click the QR code link to view the HB400



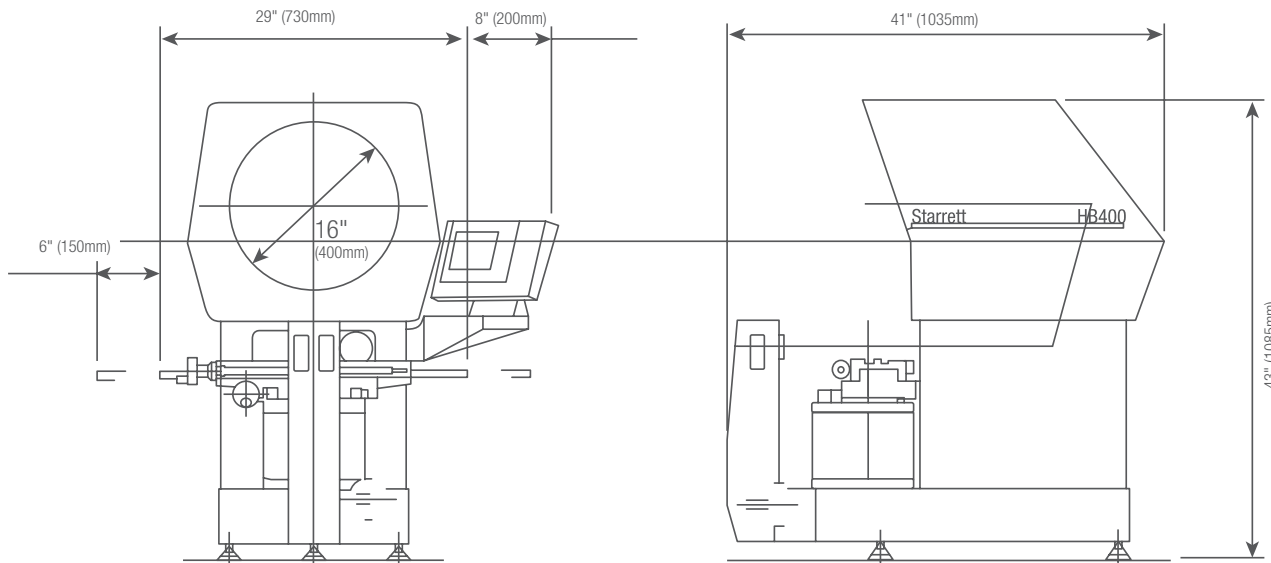
Operator Interface			
Feature	M2	Mx100	Mx200
Optical edge detection (Option)	x	—	x
Geometric Functions	x	—	x
Graphic Based Constructions	x	—	x
Tolerancing	x	—	x
Data export reporting	x	x	x
Part programming and playback	x	—	x
Operating system	MS Windows®	MLX Android™	MLX Android™
Part view display	x	—	—
Feature annotation	x	—	—
Software developer	MetLogix™	MetLogix™	MetLogix™

Weight and Dimensions	
	HB400
Net Weight	320lbs 145kg
Shipping Weight	385lbs 175kg
Shipping Dimensions	49" x 32" x 51" (125cm x 81cm x 130cm)

Specifications	
	HB400
Horizontal Travel	16" (406mm)
Vertical Travel	6" (152mm)
Focus Travel	2.1" (53mm)
Top Plate*	21.25" x 5.1" (540mm x 130mm)
Image	Vertically correct

\*With machined single slot for easy fixturing

#### HB400 DIMENSIONS





# BENCHTOP OPTICAL COMPARATOR

## HD400

### DUAL LENS HORIZONTAL BENCHTOP OPTICAL COMPARATOR

The HD400 is a dual lens Optical Comparator allowing instant switching between two magnification lenses. The HD400 is equipped with a 16" (400mm) diameter viewing screen, LED lighting, and 110lb (50kg) workstage capacity as standard. Optional automatic edge detection removes operator subjectivity in locating edges of parts being measured. A bayonet-style lens mounting system accepts choice of five interchangeable lenses and the two lens slide enable a seamless transition between two magnifications with no downtime. Motorized stage controls and swing-away lamp house are also optional features.

#### FEATURES AND SPECIFICATIONS

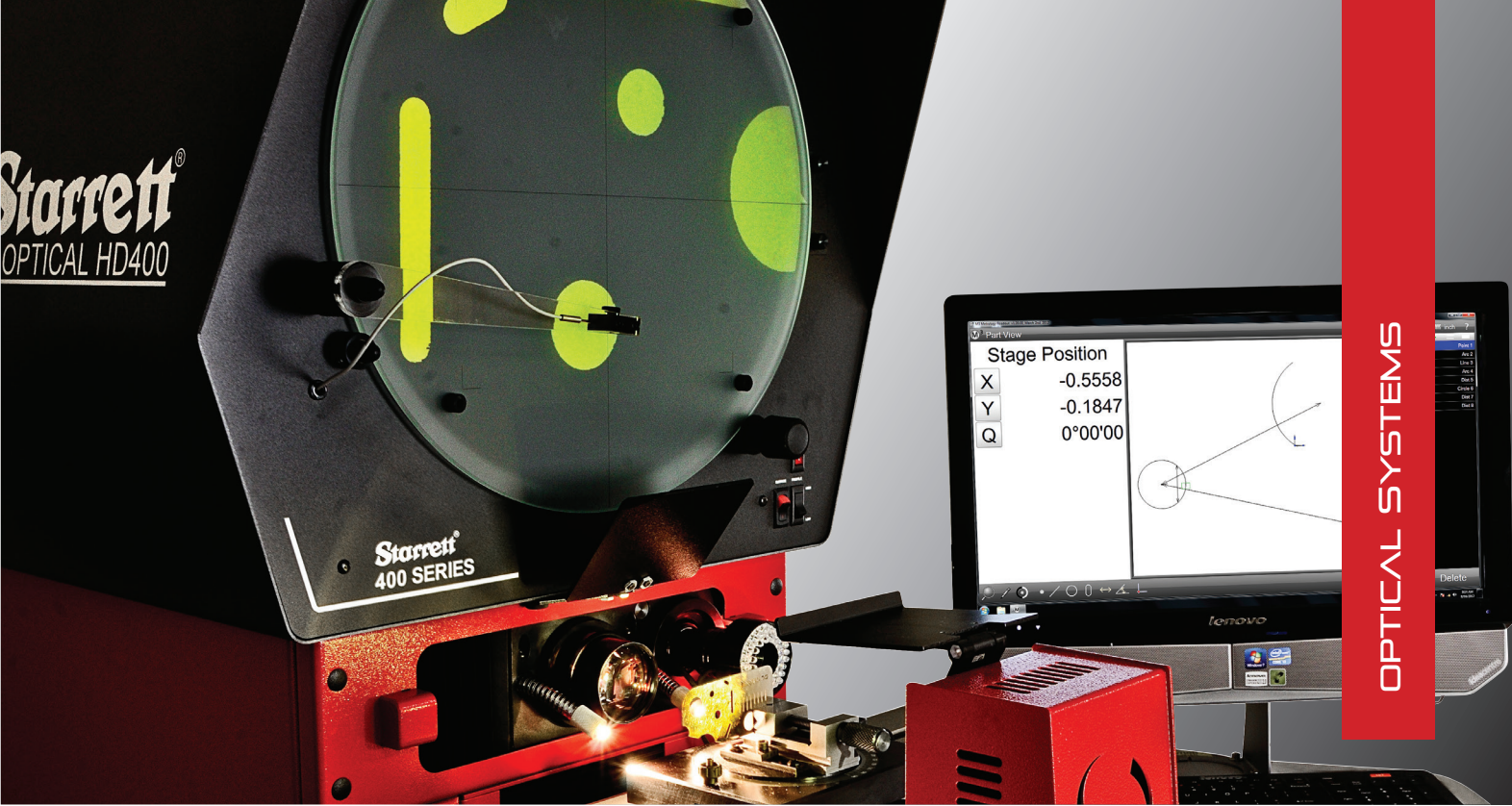
- 16" x 6" (406mm x 152mm) X-Y travel workstage
- All metal construction with hard-anodized stage tooling plate
- 16" (400mm) diameter screen
- Dual lens bayonet-style lens mounting system
- Collimating condenser with yellow/green filter and provision to mount further accessories
- Linear encoder (glass scale) with 20µin (0.5µm) resolution on both X and Y axes
- LED profile and surface illumination
- Fully retractable flexible duplex fiber optic surface illumination
- Digital protractor for accurate angle measurement (1' resolution) via Q-axis readout
- Helix adjustment for accurate thread form inspection
- Fine adjustment on all axes
- Quick release mechanism on the X-axis

#### OPTIONS

- Five interchangeable fixed magnification lenses including 10x, 20x, 25x, 50x, and 100x
- Available with MetLogix™ M2 PC-based touchscreen measuring software, Mx100 or Mx200 digital readout system
- Automatic fiber optic edge detection
- Motorized X and Y axes
- Swing away lamp house
- Canopy and curtains - free standing design (see Pg. 49)
- Cabinet stand; ideal for storage
- Extensive line of accessories



Click the QR code link to view the HD400



#### Operator Interface

Feature	M2	Mx100	Mx200
Optical edge detection (Option)	x	—	x
Geometric Functions	x	—	x
Graphic Based Constructions	x	—	x
Tolerancing	x	—	x
Data export reporting	x	x	x
Part programming and playback	x	—	x
Operating system	MS Windows®	MLX Android™	MLX Android™
Part view display	x	—	—
Feature annotation	x	—	—
Software developer	MetLogix™	MetLogix™	MetLogix™

#### Weight and Dimensions

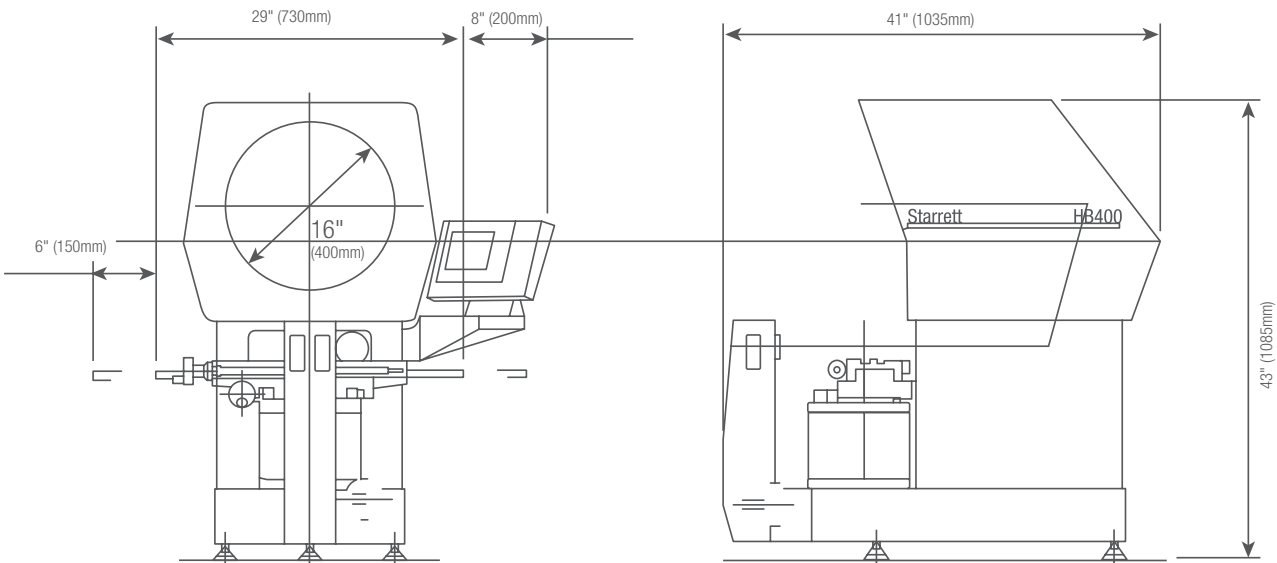
	HD400
Net Weight	320lbs 145kg
Shipping Weight	385lbs 175kg
Shipping Dimensions	49" x 32" x 51" (125cm x 81cm x 130cm)

#### Specifications

	HD400
Horizontal Travel	16" (406mm)
Vertical Travel	6" (152mm)
Focus Travel	2.1" (53mm)
Top Plate*	21.25" x 5.1" (540mm x 130mm)
Image	Vertically correct

\*With machined single slot for easy fixturing

#### HD400 DIMENSIONS





# FLOOR STANDING OPTICAL COMPARATOR

## HF600

### HORIZONTAL FLOOR STANDING OPTICAL COMPARATOR

Well known throughout the world for superior value and exceptional measuring performance across the full range and at all magnifications, the HF600 sets the standard in all applications from the QC lab to the production floor. The HF600 Comparator has a four-position turret for instant selection of optical magnification lenses. Ideal for use over a broad spectrum of industries and applications, the HF600 is designed and built to satisfy the requirements of measuring small to large work pieces with total precision, ruggedness, and efficiency. The HF600 utilizes 2D measurement software for geometries like diameters, radius, angles, lines, points, and for skew correction. Advanced software can also provide many tools such as standard and customized reporting and ethernet networking.

#### FEATURES AND SPECIFICATIONS

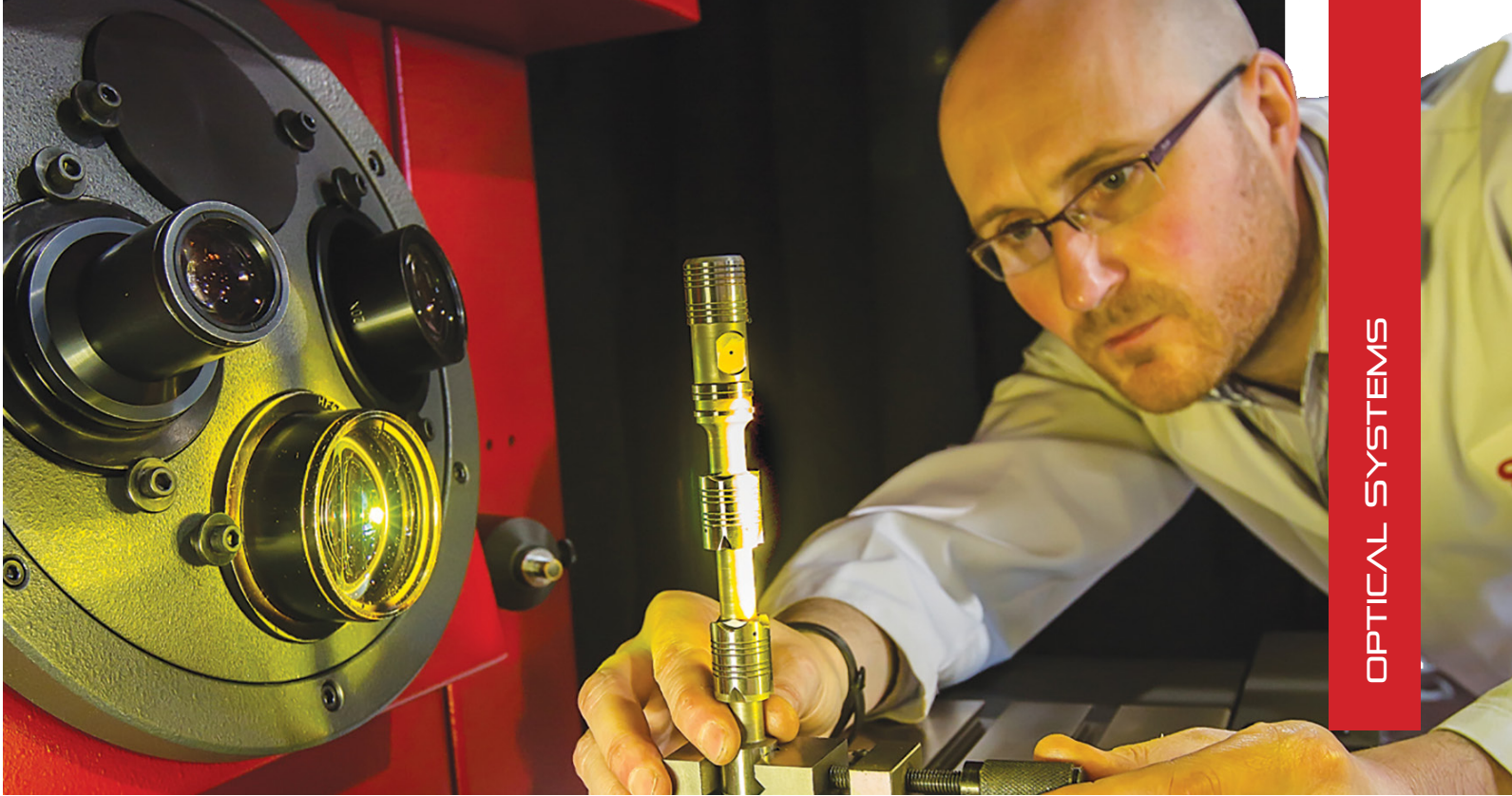
- 12" x 8" (304.8mm x 203.2mm) X-Y stage travel
- All metal construction with nickel plated stage tooling plate
- 24" (609.6mm) diameter screen
- Motorized X and Y axes
- Two-axis power drive via joystick and variable speed control for fine adjustment
- Projection lens turret with four lens capacity (lenses not included)
- Turret-mounted condenser system and yellow/green filter and provision to mount further accessories
- Stage weight capacity: 330lbs (150kg) evenly distributed
- Workstage capacity between centers: 17.5" (444.5mm)
- Fully retractable duplex fiber optic surface illumination
- 20µin (0.5µm) resolution Heidenhain linear scales
- Screen-driven rotary Q-axis with 1' resolution
- Complete with full canopy and curtains

#### OPTIONS

- Five interchangeable lens magnifications including 10x, 20x, 25x, 50x, and 100x
- Available with MetLogix™ M2 PC-based touchscreen measuring software, Mx100 or Mx200 digital readout system
- Automatic fiber optic edge detection
- Extended stage travel: 20" x 8" (508mm x 203.2mm)
- Fully automatic CNC controls
- Swing-away lamp house
- Extensive line of accessories



Click the QR code link to view the HF600



#### Operator Interface

Feature	M2	Mx100	Mx200
Optical edge detection (Option)	x	—	x
Geometric Functions	x	—	x
Graphic Based Constructions	x	—	x
Tolerancing	x	—	x
Data export reporting	x	x	x
Part programming and playback	x	—	x
Operating system	MS Windows®	MLX Android™	MLX Android™
Part view display	x	—	—
Feature annotation	x	—	—
Software developer	MetLogix™	MetLogix™	MetLogix™

#### Weight and Dimensions

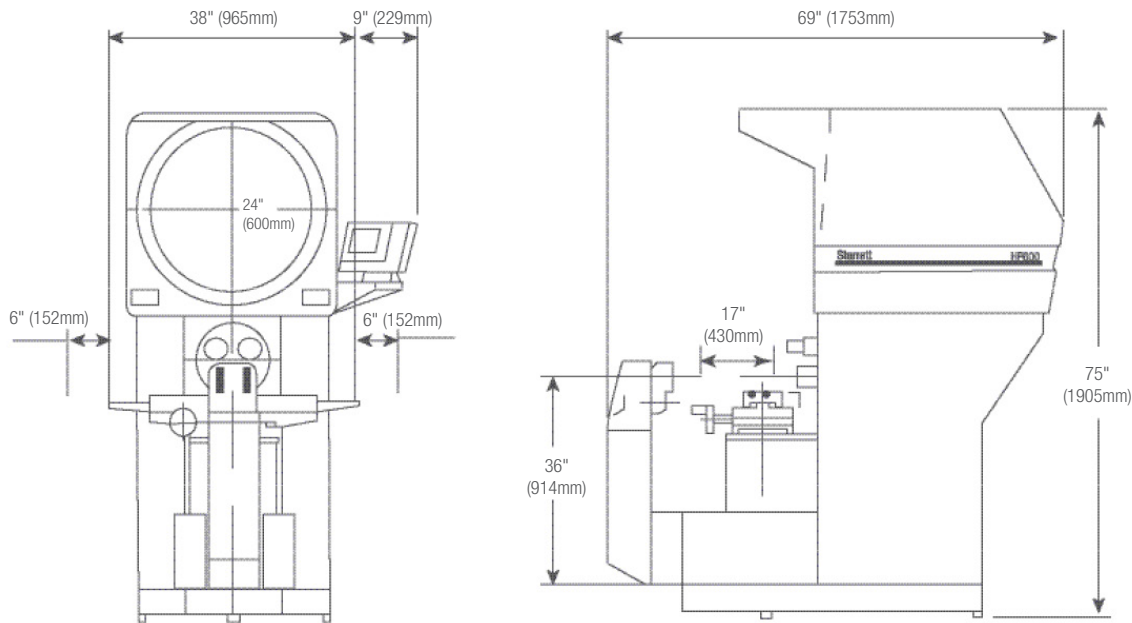
	HF600
Net Weight	1340lbs 610kg
Shipping Weight	1500lbs 680kg
Shipping Dimensions	81" x 49" x 89" (206cm x 125cm x 226cm)

#### Specifications

	HF600
Horizontal Travel	12" (304.8mm)
Vertical Travel	8" (203.2mm)
Focus Travel	3" (76.2mm)
Top Plate*	25" x 9" (635mm x 228.6mm)
Image	Erect and reversed

\*With machined single slot for easy fixturing

#### HF600 DIMENSIONS





# FLOOR STANDING OPTICAL COMPARATOR

## HF750

### HORIZONTAL FLOOR STANDING OPTICAL COMPARATOR

Utilizing the same exemplary build standards as the HF600, the HF750 super capacity Optical Comparator delivers benefits from an even larger 30" (762mm) screen, setting a new standard for clarity and brightness. Ideal for use over a broad spectrum of industries and applications, the HF750 is designed and built to satisfy the requirements of measuring small to large work pieces with total precision, ruggedness, and efficiency. The geometric software measures diameter, radius, angle, line, and point features, plus part skewing for faster setup. The HF750 is available with optical edge detection, removing operator subjectivity in locating edges of parts being measured.

#### FEATURES AND SPECIFICATIONS

- 12" x 8" (304.8mm x 203.2mm) X-Y stage travel
- All metal construction with nickel plated stage tooling plate
- 30" (762mm) diameter screen
- Motorized X and Y axes
- Two-axis power drive via joystick and variable speed control for fine adjustment
- Projection lens turret with three lens capacity (lenses not included)
- Turret-mounted condenser system and yellow/green filter and provision to mount further accessories
- Stage weight capacity: 330lbs (150kg) evenly distributed
- Workstage capacity between centers: 17.5" (444.5mm)
- Fully retractable duplex fiber optic surface illumination
- 20µin (0.5µm) resolution Heidenhain linear scales
- Screen-driven rotary Q-axis with 1' resolution
- Complete with full canopy and curtains

#### OPTIONS

- Five interchangeable lens magnifications including 10x, 20x, 25x, 50x, and 100x
- Available with MetLogix™ M2 PC-based touchscreen measuring software, Mx100 or Mx200 digital readout system
- Automatic fiber optic edge detection
- Extended stage travel: 20" x 8" (508mm x 203.2mm)
- Fully automatic CNC controls
- Swing-away lamp house
- Extensive line of accessories



Click the QR code link to view the HF750



#### Operator Interface

Feature	M2	Mx100	Mx200
Optical edge detection (Option)	x	—	x
Geometric Functions	x	—	x
Graphic Based Constructions	x	—	x
Tolerancing	x	—	x
Data export reporting	x	x	x
Part programming and playback	x	—	x
Operating system	MS Windows®	MLX Android™	MLX Android™
Part view display	x	—	—
Feature annotation	x	—	—
Software developer	MetLogix™	MetLogix™	MetLogix™

#### Weight and Dimensions

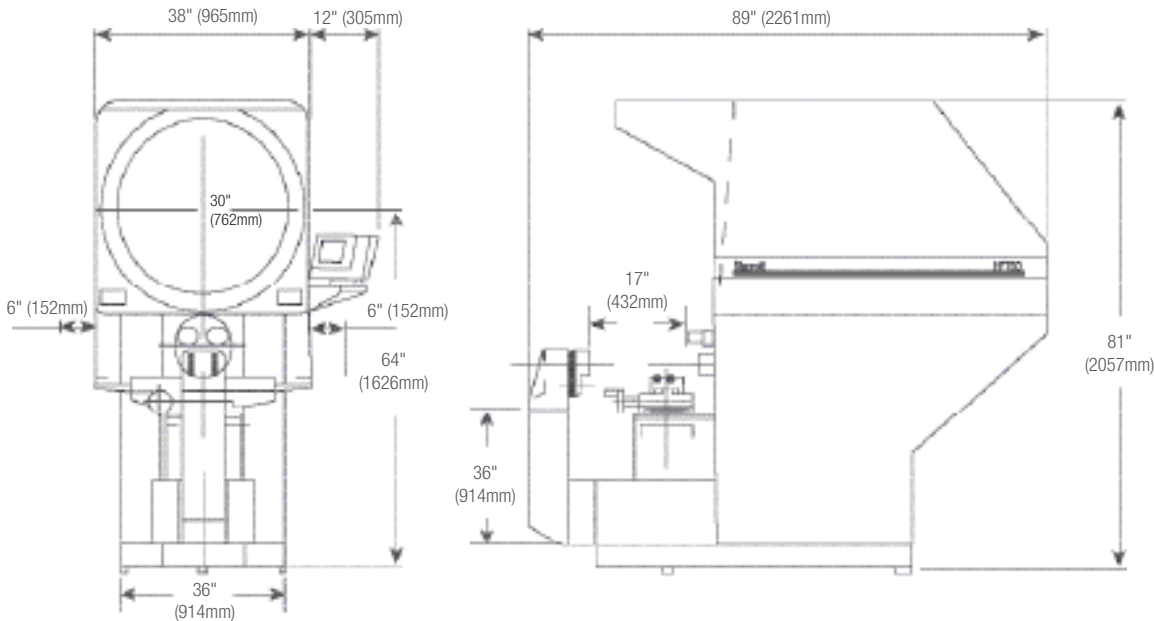
	HF750
Net Weight	1660lbs 753kg
Shipping Weight	1800lbs 817kg
Shipping Dimensions	96" x 48" x 91" (244cm x 124cm x 231cm)

#### Specifications

	HF750
Horizontal Travel	12" (304.8mm)
Vertical Travel	8" (203.2mm)
Focus Travel	3" (76.2mm)
Top Plate*	25" x 9" (635mm x 228.6mm)
Image	Erect and reversed

\*With machined single slot for easy fixturing

#### HF750 DIMENSIONS





# BENCHTOP OPTICAL COMPARATOR

## VB400

### VERTICAL BENCHTOP OPTICAL COMPARATOR

The VB400 is a benchtop Optical Comparator with a vertical part view as opposed to the traditional horizontal view. This vertical benchtop comparator is designed to meet the demands of modern industry and is ideal for the rapid inspection of small, light-weight components, stampings, plastic molding, electronic components, small turned parts and more. The VB400 allows flat parts to be simply laid on a glass insert on the workstage. Features include a 16" (400mm) diameter vertical screen, ultra-bright LED profile and surface illumination, and linear encoder scales for 4µin (0.1m) resolution.

#### FEATURES AND SPECIFICATIONS

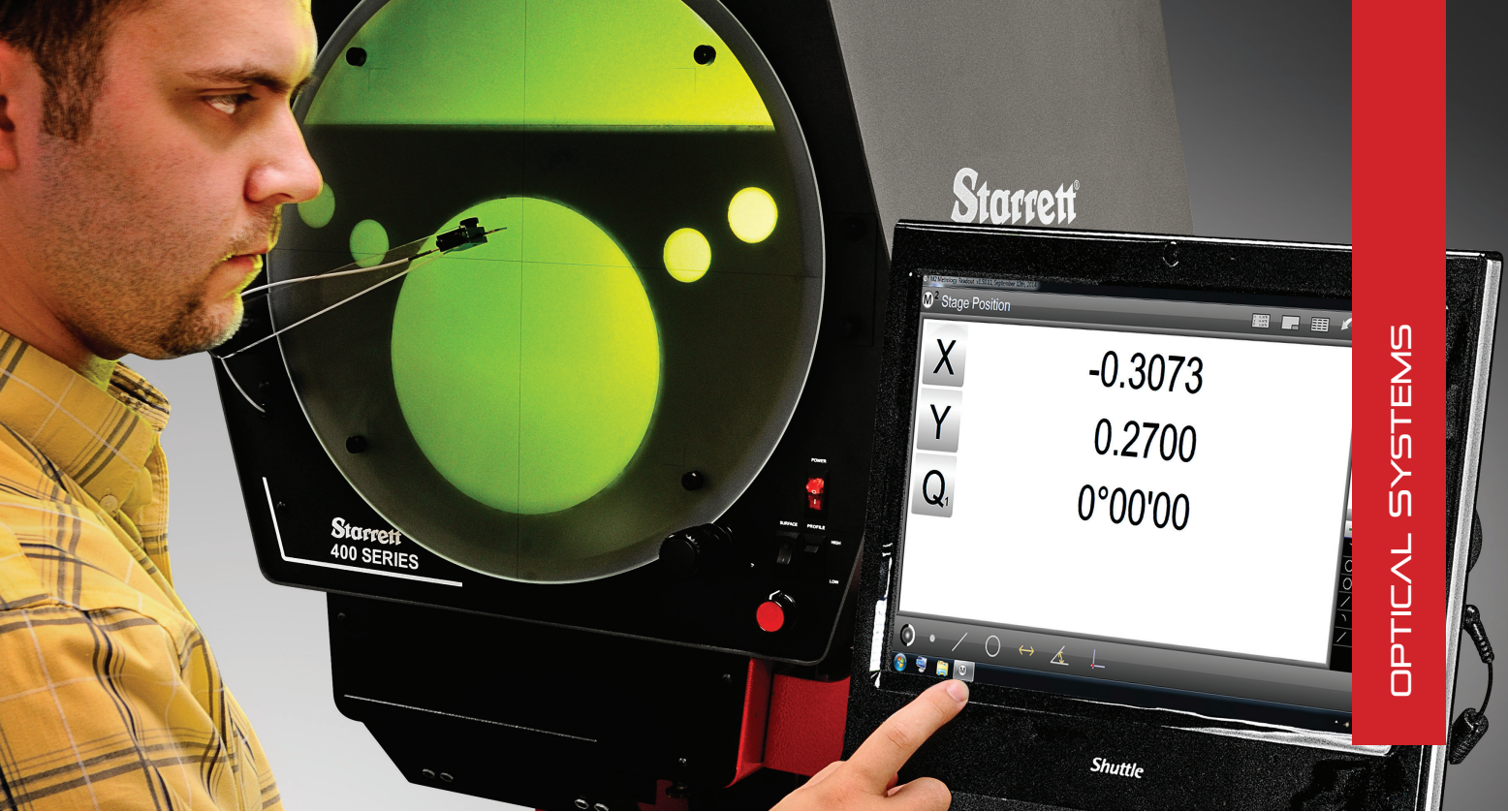
- 8" x 4" (203.2mm x 101.6mm) X-Y stage travel
- All metal construction
- 16" (400mm) diameter screen
- Single bayonet-style lens mounting system
- Collimating condenser with yellow/green filter and provision to mount further accessories
- Linear encoder (glass scale) with 4µin (0.1m) resolution on both the X and Y axes
- LED profile and surface illumination
- Digital protractor for accurate angle measurements (1' resolution) via Q-axis readout
- Fine adjustment on all axes
- Quick release mechanism on X and Y axes

#### OPTIONS

- Choice of five fixed magnification lenses including 10x, 20x, 25x, 50x, and 100x
- Available with MetLogix™ M2 PC-based touchscreen measuring software, Mx100 or Mx200 digital readout system
- Automatic fiber optic edge detection
- Canopy and curtains - free standing design (see Pg. 49)
- Cabinet stand; ideal for storage
- Work holding accessories



Click the QR code link to view the VB400



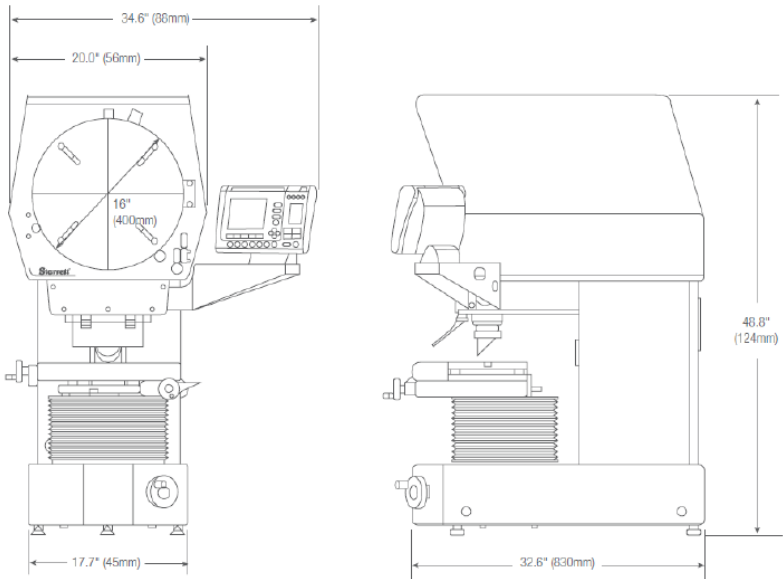
Operator Interface			
Feature	M2	Mx100	Mx200
Optical edge detection (Option)	x	—	x
Geometric Functions	x	—	x
Graphic Based Constructions	x	—	x
Tolerancing	x	—	x
Data export reporting	x	x	x
Part programming and playback	x	—	x
Operating system	MS Windows®	MLX Android™	MLX Android™
Part view display	x	—	—
Feature annotation	x	—	—
Software developer	MetLogix™	MetLogix™	MetLogix™

Weight and Dimensions	
	VB400
Net Weight	423lbs 192kg
Shipping Weight	443lbs 201kg
Shipping Dimensions	49" x 32" x 51" (125cm x 81cm x 130cm)

Specifications	
	VB400
Horizontal Travel	8" (203.2mm)
Vertical Travel	4" (101.6mm)
Focus Travel	4" (101.6mm)
Top Plate*	17.7" x 4.7" (450mm x 120mm)
Glass Insert	9-1/4" x 5-1/2" (235mm x 140mm)
Image	Reversed

\*With machined single slot for easy fixturing

#### VB400 DIMENSIONS



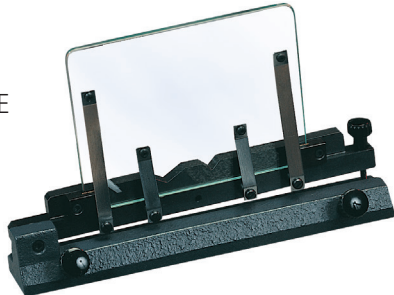


ACCESSORIES

J



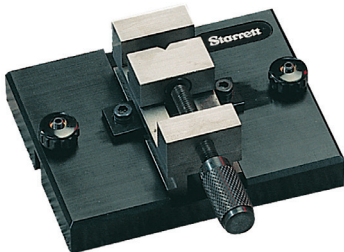
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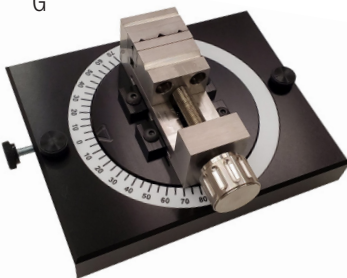
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H



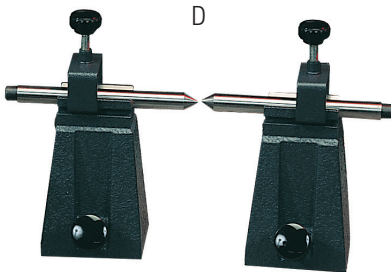
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A



D



C



L



L

M



Photo Key	Part No.	Description	For Models
A	OCN8	Large Centers and Vees	HF600, HF750, HDV500
B	ORV2*	2-1/32" Capacity Rotary Vise	HF600, HF750, HDV500
C	OCN7	Small Centers and Vees	HF600, HF750, HDV500
D	7P000	Centers and Vees	HE400, HB400, HD400
E	OVH1	Vertical Glass Plate Holder	HF600, HF750, HDV 500
F	7U000*	Vertical Glass Plate Holder	HB400, HD300, HDV300, HDV400
G	4H003-1	Rotary Vise with 1-1/4" Capacity	HE400, HB400, HD400, HF600, HF750, HDV300, HDV400, HDV500
H	4H002-1	Fixed Position Vise with 1-1/4" Capacity	HE400, HB400, HD400, HF600, HF750, HDV300, HDV400, HDV500
I	4H004-1	Universal Vee Block on Rotary Base	HE400, HB400, HD400, HF600, HF750, HDV300, HDV400, HDV500
J	7T001	Iris Diaphragm	HE400, HB400, HD400
K	0ID4*		HF600, HF750
L	8170	31" Cabinet Stand	HE400, HB400, HD400, VB400, HDV300, HDV400
M	8276	Canopy and Curtains	HE400, HB400, HD400, VB400

\*Product not shown



SPECIFICATIONS AND OPTIONS

Model	HE400	HB400	HD400	VB400	HF600	HF750
Bench Top System	x	x	x	x	—	—
Floor-Standing System	—	—	—	—	x	x
Part View Orientation	Horizontal	Horizontal	Horizontal	Vertical	Horizontal	Horizontal
Screen Diameter (in)	16"	16"	16"	16"	24"	30"
Screen Diameter (mm)	400mm	400mm	400mm	400mm	609.6mm	762mm
X-Y Measuring Range (in)	10" x 4"	16" x 6"	16" x 6"	8" x 4"	12" (20" optional) x 8"	12" (20" optional) x 8"
X-Y Measuring Range (mm)	254mm x 101.6mm	406mm x 152mm	406mm x 152mm	203.2mm x 101.6mm	304.8mm (508mm) x 203.2mm	304.8mm (508mm) x 203.2mm
Linear Glass Scale Encoder on X and Y Axis	Standard	Standard	Standard	Standard	Standard	Standard
Motorized X-Y Axis	—	Optional	Optional	—	Standard	Standard
CNC Control	—	—	—	—	Optional	Optional
Focus Range (in)	2.125"	2.1"	2.1"	4"	3"	3"
Focus Range (mm)	54mm	53mm	53mm	101.6mm	76.2mm	76.2mm
Work Stage (in)	18.9" x 4.7"	21.25" x 5.1"	21.25" x 5.1"	17.7" x 4.7"	25" x 9" (Optional 32"x 8")	25" x 9" (Optional 32"x 8")
Work Stage (mm)	480mm x 120mm	540mm x 130mm	540mm x 130mm	450mm x 120mm	635mm x 228.6mm (812.8mm x 203.2mm)	635mm x 228.6mm (812.8mm x 203.2mm)
Load Capacity with Negligible Deflection (lbs)	15lbs (6.8kg)	22lbs (10kg)	22lbs (10kg)	22lbs (10kg)	110lbs (50kg)	110lbs (50kg)
Load Capacity Maximum (lbs)	55lbs (25kg)	110lbs (50kg)	110lbs (50kg)	22lbs (10kg)	330lbs (150kg)	330lbs (150kg)
Angula Measurement Resolution	1'	1'	1'	1'	1'	1'
Profile Illumination	Standard	Standard	Standard	Standard	Standard	Standard
Surface Illumination	Standard	Standard	Standard	Standard	Standard	Standard
Quick Change Lens Mount (lenses not included)	Single	Single	Dual	Single	4 Lens Turret	3 Lens Turret
Collimating Condenser with Yellow/Green Filter	Standard	Standard	Standard	Standard	Standard	Standard
Control System Software	M2, Mx100, Mx200	M2, Mx100, Mx200	M2, Mx100, Mx200	M2, Mx100, Mx200	M2, Mx100, Mx200	M2, Mx100, Mx200
Display (control system dependent)	15" All-in-One touch screen PC, Mx DRO	15" All-in-One touch screen PC, Mx DRO	15" All-in-One touch screen PC, Mx DRO	15" All-in-One touch screen PC, Mx DRO	15" All-in-One touch screen PC, Mx DRO	15" All-in-One touch screen PC, Mx DRO
Optical Edge Detection	Optional	Optional	Optional	Optional	Optional	Optional
Lenses - Screen Magnification (one required, not included)	10x, 20x, 25x, 50x, 100x	10x, 20x, 25x, 50x, 100x	10x, 20x, 25x, 50x, 100x	10x , 20x, 25x, 50x, 100x	10x, 20x, 25x, 50x, 100x	10x, 20x, 25x, 50x, 100x
Iris Diaphragm	Optional	Optional	Optional	—	Optional	Optional
Precision Rotary Vise	Optional	Optional	Optional	—	Optional	Optional
Vee Block on Rotary Base	Optional	Optional	Optional	—	Optional	Optional
Precision Fixed Vise	Optional	Optional	Optional	—	Optional	Optional
Precision Centers and Vees	Optional	Optional	Optional	Optional	Optional	Optional
Helix Center Support System	—	—	—	Optional	—	—
Precision Rotary Work Stage	—	—	—	Optional	—	—
Glass Plate Work Holder	Optional	Optional	Optional	—	Optional	Optional
Field of View Diameter - (in)	8.2", 8.2", 8.2", 5.5", 4.1"	7.0", 7.8", 9.8", 4.9", 3.8"	7.0", 7.8", 9.8", 4.9", 3.8"	8.2", 8.2", 8.2", 5.5", 5.5", 4.1"	11.0", 11.0", 11.0", 11.0", 4.0"	15.7", 13.3", 11.0", 5.7", 6.2"
Field of View Diameter - (mm)	210mm, 210mm, 210mm, 140mm, 105mm	180mm, 200mm, 250mm, 125mm, 98mm	180mm, 200mm, 250mm, 125mm, 98mm	210mm, 210mm, 210mm, 140mm, 140mm, 105mm	280mm, 280mm, 280mm, 280mm, 104mm	400mm, 340mm, 280mm, 145mm, 160mm
Working Distance (in)	3.0", 2.9", 2.7", 1.9", 1.6"	3.1", 3.2", 2.7", 2.0", 1.6"	3.1", 3.2", 2.7", 2.0", 1.6"	3.0", 2.9", 2.7", 2.1", 1.9", 1.6"	5.4", 5.0", 4.0", 3.4", 1.7"	5.9", 3.9", 3.6", 2.3", 1.8"
Working Distance (mm)	78mm, 76mm, 70mm, 50mm,41mm	80mm, 82mm, 70mm, 52mm, 43mm	80mm, 82mm, 70mm, 52mm, 43mm	78mm, 76mm, 70mm, 55mm, 50mm, 41mm	138mm, 127mm, 103mm, 88mm, 44mm	151mm, 101mm, 92mm, 60mm, 48mm
Cabinet Stand 31"	Optional	Optional	Optional	Optional	—	—
Cabinet Stand 22"	Optional	Optional	Optional	Optional	—	—
Canopy and Curtains	Optional	Optional	Optional	Optional	Standard	Standard



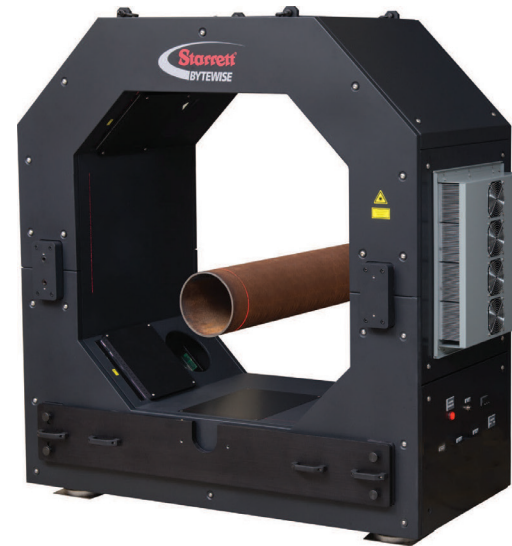
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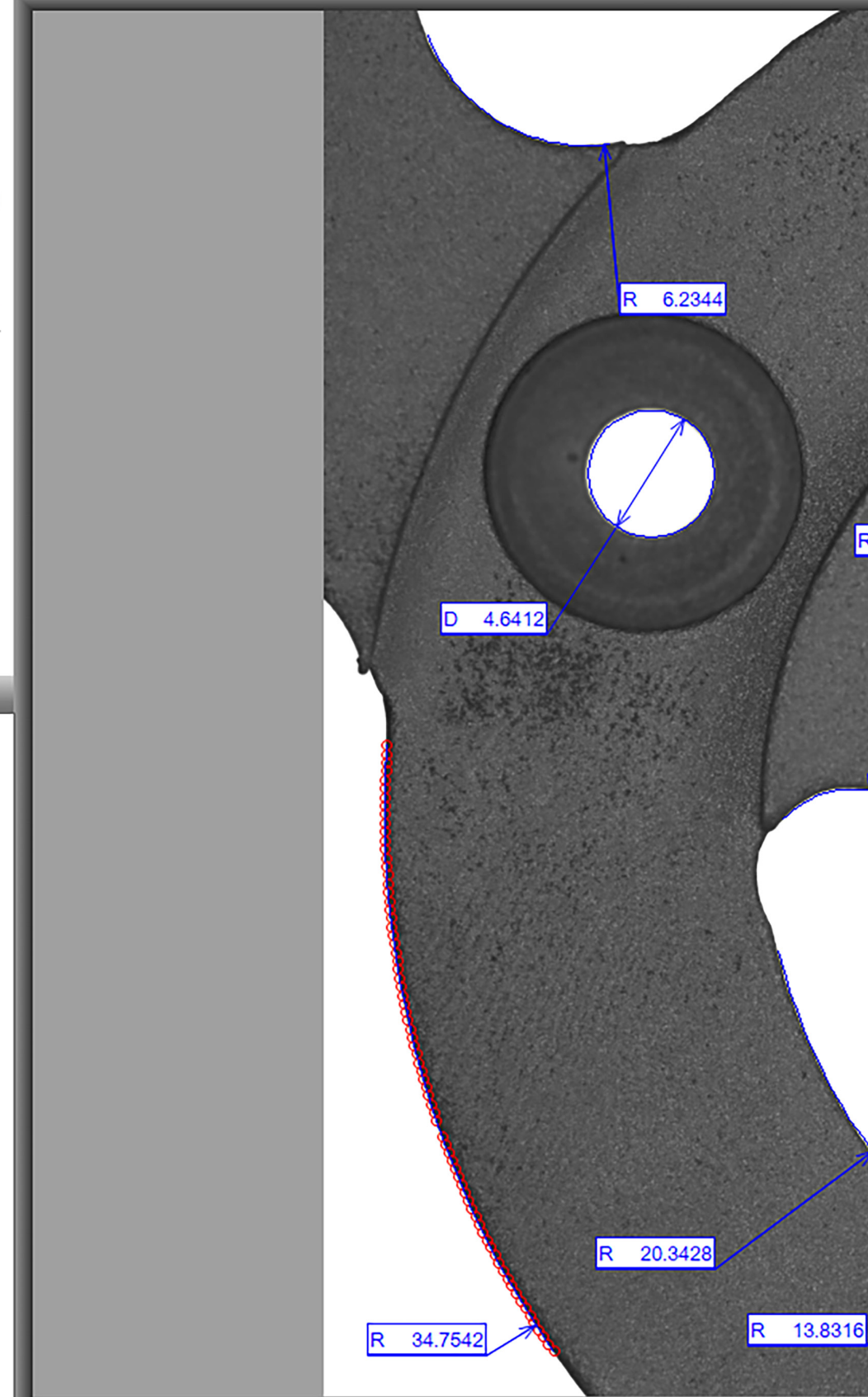
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VED



SOFTWARE



METLOGIX™ SOFTWARE

Mx100 & Mx200

FOR OPTICAL COMPARATORS

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Mx100



Mx200



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Mx-SERIES

MetLogix™ control software provides a broad range of powerful, user-friendly functions on a compact, icon-based touchscreen interface in place of the traditional control.

FEATURES

- Clean, simple and durable interface with large rubber buttons and intuitive operation
- Graphics-rich display providing instant information on feature form, tolerances, and measurement data on 7" color touch screen.
- Coordinate display for X and Y linear axes and Q angle values for screen rotation
- Easy part alignment and datum functions
- Measure and tolerance these geometric features: point, line, angle, distance, radius, diameter
- As you measure, a part view is created in the feature view. Constructions between features such as distances and bolt hole patterns can be done by simple selections from the part view.
- For repetitive part measurement, create a part program which will visually guide operators through part measurement
- Optical edge detection on Mx200 provides better throughput and removes operator subjectivity
- Four different report forms can be printed or exported to Microsoft Excel, text files, or to an SPC program
- Mx-Series utilizes customized Android™ operating system
- Fast, easy connection to printers and networks
- MxLink technology on the Mx200 model allows users to transfer measurement data instantly and wirelessly to a network Windows® printer
- Can be mounted to comparator arm or be free standing with tabletop base

	MetLogix™ Mx100	MetLogix™ Mx200
Mounted to comparator arm	x	x
Color graphics	x	x
Touch-screen operation	x	x
Operating system	MLX Android™	MLX Android™
X-Y-Q (angle) measurements	x	x
2D geometry software with skew	—	x
Optical edge detection option	—	x
Interface	MetLogix™ DRO	MetLogix™ DRO

METLOGIX™ SOFTWARE

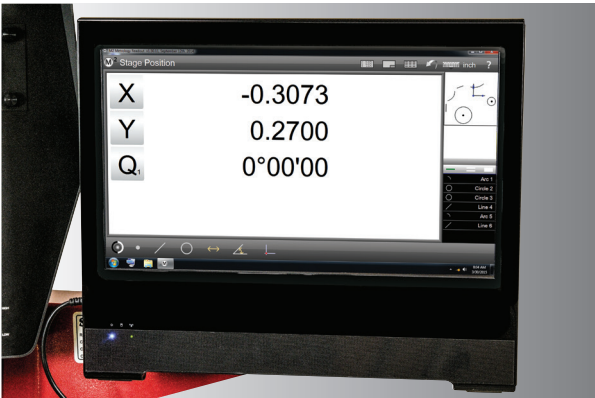
M2

FOR OPTICAL COMPARATORS

Graphics rich display, large icon buttons, and intuitive operation. Coordinate display for X and Y linear axes and Q angular values for screen rotation. Easy part alignment and datum function.



HB400 with M2E



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M2

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FEATURES

- Clean and Simple touchscreen interface with large icon buttons and intuitive operation
- Graphics-rich display providing instant information on feature form, tolerances, and measurement data
- Coordinate display for X and Y linear axes and Q angle values for screen rotation
- Easy part alignment and datum functions
- Measure and tolerance these geometric features: point, line, angle, distance, radius, diameter
- As you measure, a part view is created in the feature view. Constructions between features such as distances and bolt hole pattern can be done by simple selections from the part view.
- For repetitive part measurement, create a part program that will visually guide operators through part measurement
- Optional optical edge detection provides better throughput and removes operator subjectivity
- Four different report forms can be printed or exported to Microsoft Excel, text files, or to an SPC program
- M2 utilizes Windows®-based operating system, enabling flexible data export and interface capability
- Fast, easy connection to printers and networks

	MetLogix™ M2
Mounted to comparator arm	x
Color graphics	x
Touch-screen operation	x
Operating system	Windows®
X-Y-Q (angle) measurements	x
2D geometry software with skew	x
Optical edge detection option	x
Interface	15" All-in-one Touchscreen PC



# METLOGIX™ SOFTWARE

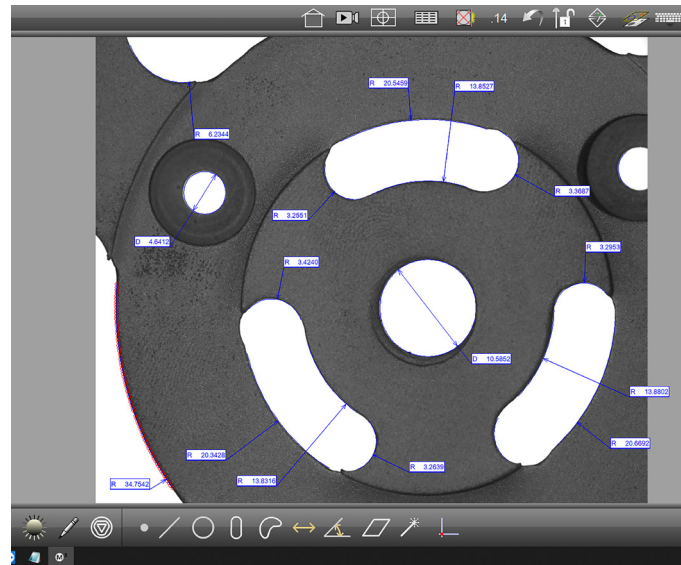
M3

## FOR VISION SYSTEMS

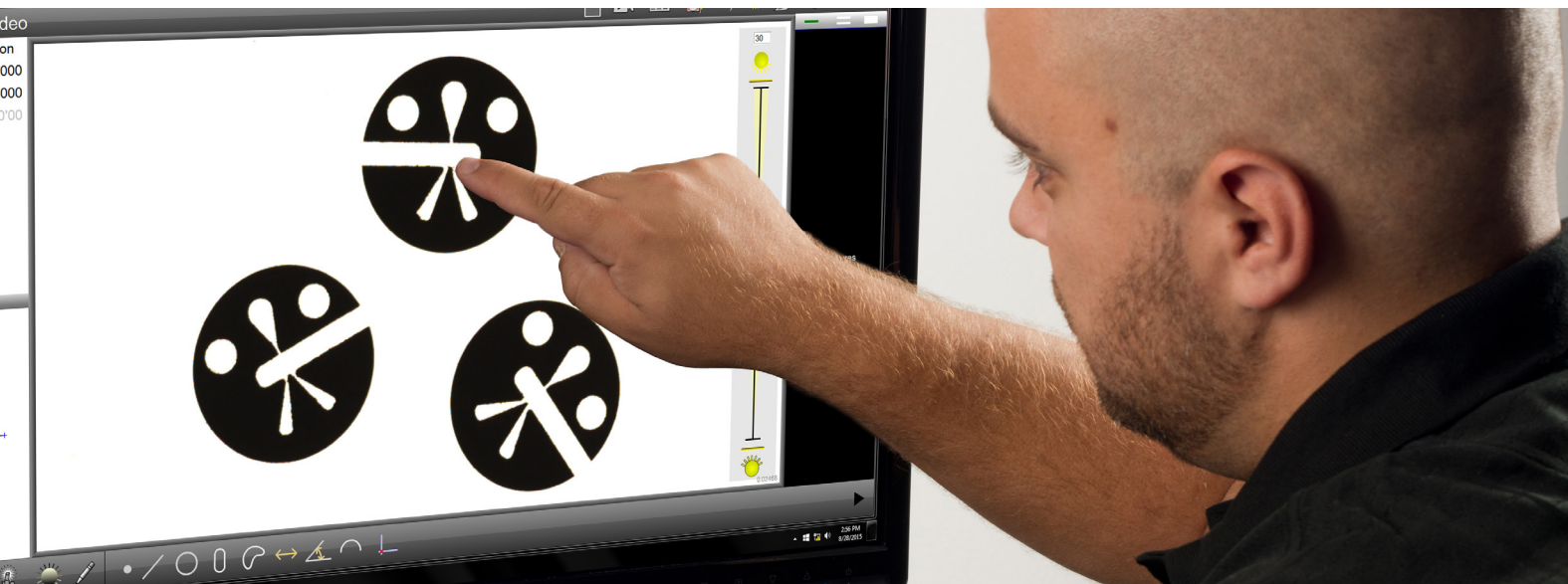
Multi-touch software control that can pan and zoom with pinch, swipe or touch. Works with active part views and live video feeds (or use the conventional mouse interface). Custom “Eye Measure” probe captures complex edges generated by a finger path drawn on the touch screen. Measure Logic Probe intelligence 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 graphic part view. The “Gesture Menu” can be used for feature creation and manipulation tools.
- “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®-based, globally recognized OS for flexible data exporting and interface with Windows® applications
- Optional software modules include DC (FOV), Profile, Thread, Insulation, Spur Gear, and PDF



TRUSTED BY



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M3

MetLogix™ control software provides a broad range of powerful, user-friendly functions on a compact, icon-based touchscreen interface in place of the traditional control.





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### CHINA

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