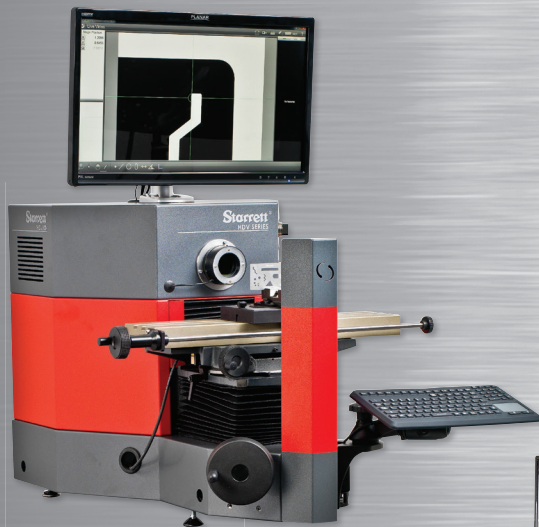


Starrett®



HDV300

HDV400

HDV500

KMic-KMR

MV SERIES

MVR SERIES

AV SERIES

AVR SERIES

AV300+

AV350+

AV300+ MICRO

LF SERIES

VISION SYSTEMS

METROLOGY **S**OLUTIONS

STARRETT VISION METROLOGY SYSTEMS

RUGGED, ACCURATE & EASY TO USE

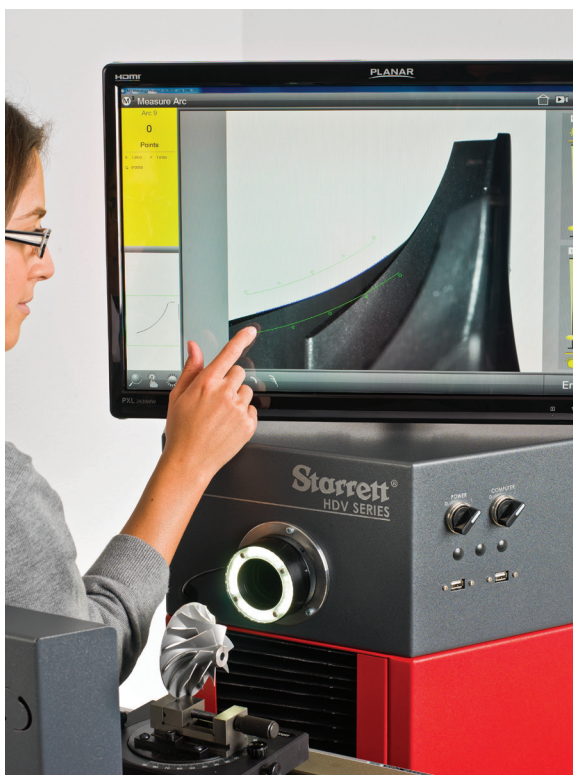
The HDV Horizontal Digital Video Projectors combine the best features of a horizontal optical projector and a vision metrology system. With a rigid steel design, the HDV is configured like a traditional horizontal projector. The workstages are the same as the Starrett field-proven HB400 bench top and HF750 floor standing projectors, with 50kg and 150kg load capacities respectively. The heart of these systems centres on a uniquely designed interchangeable lens mounting system coupled to a hi-resolution colour digital video camera (patent pending). These systems offer zoom optics or a choice of telecentric lenses for micron-level resolution and optical distortion as low as 0.001% for accurate field-of-view (FOV) measurements. Telecentric lenses provide a maximum field of view of up to 76.5 x 64mm. Stage movement can be related to the imported file allowing part comparison up to 300mm on the HDV300, 400mm on the HDV400, and up to 500mm on the HDV500.

The HDV systems house a powerful 64-bit PC, which runs MetLogix™ M3 Metrology software. With 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. HDV300 and HDV400 systems are available in manual or CNC control, while the HDV500 has CNC control as standard.



HORIZONTAL DIGITAL VIDEO PROJECTOR

The HDV300 and HDV400 X-Y stage travel are 300 x 150mm and 400 x 150mm respectively. Each HDV Digital Video Projector features a 5-megapixel colour video camera and a choice of zoom optics or seven telecentric lens options (US Patent No. 9,360,435) for ultra-low optical distortion field-of-view (FOV) measurements.



FEATURES

- Steel construction with hard anodised X Y stage.
- Stage Travel (HDV300): 300 x 150mm
- Stage Travel (HDV400): 400 x 150mm
- 540 x 130mm workstage
- Maximum Load Capacity: 50kg
- Focus Travel: 51mm of focus travel
- Helix angle adjustment with $\pm 15^\circ$ Vernier scale
- Manual X-Y and focus positioning via hand wheels
- Heidenhain glass scales for 0.5 μ m X and Y resolution
- LED illumination for surface and profile lighting
- 5 megapixel colour video camera (2448 x 2058 pixels)
- Ultra-low distortion to 0.001% for telecentric FOV measurements
- 64-bit Intel® Processor
- Windows® 10 Professional operating system
- MetLogix™ M3 software with DXF/FOV importing and comparison
- Parts displayed on 24" touch-screen colour monitor (1920 x 1080 pixels)
- Bench top system

OPTIONS

- 6 interchangeable telecentric lenses for field of view from 59.9 x 44.96mm to 2.29 x 1.78mm including .3x, .5x, .8x, 1.0x, 2.0x and 4.0x lens magnifications
- 6.5:1 zoom optics - interchangeable
- .14x fixed telecentric lens (FOV size) non-interchangeable - utilises black and white camera as standard
- MetLogix™ Profile Fitting software
- CNC controls
- 585mm or 812mm purpose built cabinet stands
- Extensive line of accessories, work holding devices and calibration standards

HORIZONTAL DIGITAL VIDEO PROJECTOR

The HDV500 Digital Video Projector offers the best features of a large, floor standing horizontal optical projector and a vision metrology system. Configured like a traditional horizontal projector, the HDV500 has a long travel 500 x 200mm X-Y stage and heavy-duty steel construction. The workstage is the same as the popular HF600 and HF750 Projectors with a 150kg load capacity. Much like the HDV300 and HDV400, the heart of the system centers on a uniquely designed interchangeable bayonet-style lens mounting system to a hi-resolution colour digital video camera (patent pending). The HDV500 is available with zoom optics or a choice of three telecentric lens options for micron-level resolution and optical distortion as low as 0.002% for accurate field-of-view (FOV) measurements.



FEATURES

- Steel construction with nickel plated stage tooling plate
- Stage Travel (HDV500): 500 x 200mm
- 810 x 200mm workstage top plate
- CNC controls standard
- Maximum Load Capacity: 150kg
- Focus Travel: 75mm
- Helix angle adjustment with $\pm 15^\circ$ Vernier scale
- X-Y and focus positioning via joystick and trackball positioning
- Wireless mouse
- Heidenhain glass scales for 0.5 μ m X and Y resolution
- LED illumination for surface and profile lighting
- 5 mega-pixel black and white digital video camera (2448 x 2058 pixels)
- Ultra-low distortion to 0.002% for telecentric FOV measurements
- 64-bit Intel® Processor
- Windows® 10 Professional operating system
- MetLogix™ M3 software with DXF/FOV importing and comparison
- Software and measurement image (part) displayed on 42" colour monitor (1920 x 1080 pixels)
- Floor standing system

OPTIONS

- 3 interchangeable telecentric lenses for fields of view (FOV) from 35.56 x 27.95mm to 76 x 63.5mm including .11x, .16x and .24x lens magnification
- 6.5:1 zoom optics - interchangeable
- MetLogix™ Profile Fitting software
- Extensive line of accessories, work holding devices and calibration standards

MetLogix™ M3 DXF/FOV software under Windows® 10 Professional is the power-house behind the HDV. Fully integrated with an M3 controller and a powerful 64-bit computer which runs the MetLogix™ software. The operator interface for the HDV300/HDV400 is a 24" touch-screen colour monitor and a 42" colour monitor for the HDV500. A keyboard is provided for ease of data entry and control when desired. All electronics are located in the housing for an integrated design with minimal external wiring.

FEATURE	MetLogix M3
PC installed in main housing	x
Colour graphics	x
Windows® 10 Professional	x
X-Y-Q (angle) measurements	x
2D geometry software with skew	x
Video edge detection (VED)	x
CAD file import and export	x
FOV measurements	x
Elimination of overlays	x
Optional MetLogix™ Profile Fitting software	x
Software developer	MetLogix™



HDV300/HDV400 OPTICS

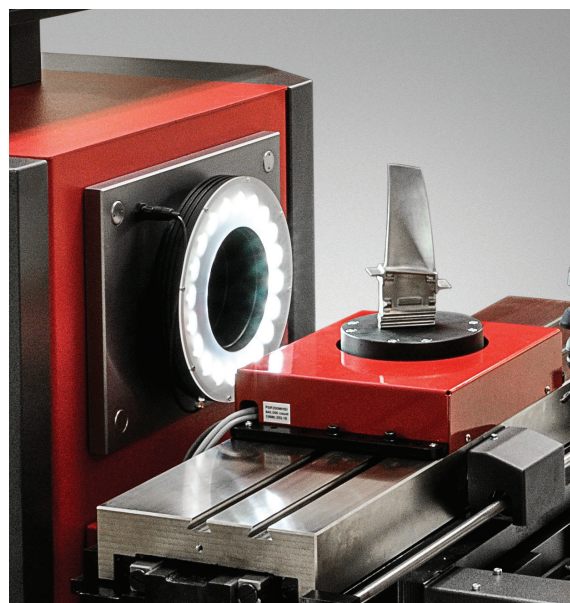
The HDV300 or HDV400 are available with a choice of seven telecentric lenses and a 6.5:1 zoom lens. Six of the telecentric lenses are interchangeable using a bayonet-style lens mounting system (US Patent No. 9,360,435) which allows quick changeover between magnifications and between FOV or zoom operation by the user. The 0.14x fixed telecentric lens has a dedicated mounting configuration and illuminators.



SYSTEM PARAMETER	TELECENTRIC LENSES							6.5:1 ZOOM LENS	
Optical Magnification	0.14x	0.3x	0.5x	0.8x	1.0x	2.0x	4.0x	0.7x	4.5x
Magnification on 24" Monitor	4.7x	10x	16.4x	27x	33x	69x	137x	23x	145x
Field of View Width and Height	63 x 51mm	28 x 24mm	17 x 14mm	10.5 x 8.9mm	8.4 x 7.1mm	4.2 x 3.7mm	2.1 x 1.8mm	12 x 10.1mm	1.87 x 1.56mm
Working Distance	110mm							88mm	

HDV500 OPTICS

The HDV500 is available with a choice of three interchangeable telecentric lenses and a 6.5:1 zoom lens. Lenses are installed using a bayonet-style lens mounting system (patent pending) which allows quick changeover between magnifications and between FOV or zoom operation by the user.



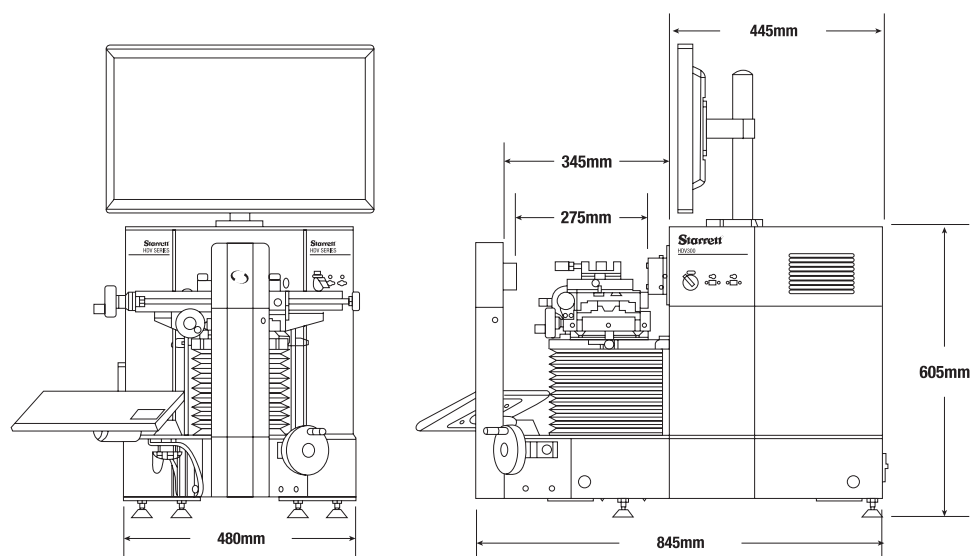
SYSTEM PARAMETER	TELECENTRIC LENSES			6.5:1 ZOOM LENS	
Optical Magnification	0.11x	0.16x	0.24x	0.7x	4.5x
Magnification on 42" Monitor	6.5x	9.3x	14.7x	41x	262x
Field of View Width and Height	76.5 x 64mm	53.8 x 45mm	34.7 x 29mm	12 x 10.1mm	1.9 x 1.6mm
Working Distance	228mm	159mm	150mm	88mm	

ACCESSORIES

Starrett manufactures a comprehensive range of fixtures and accessories for our line of optical projectors and vision metrology systems.

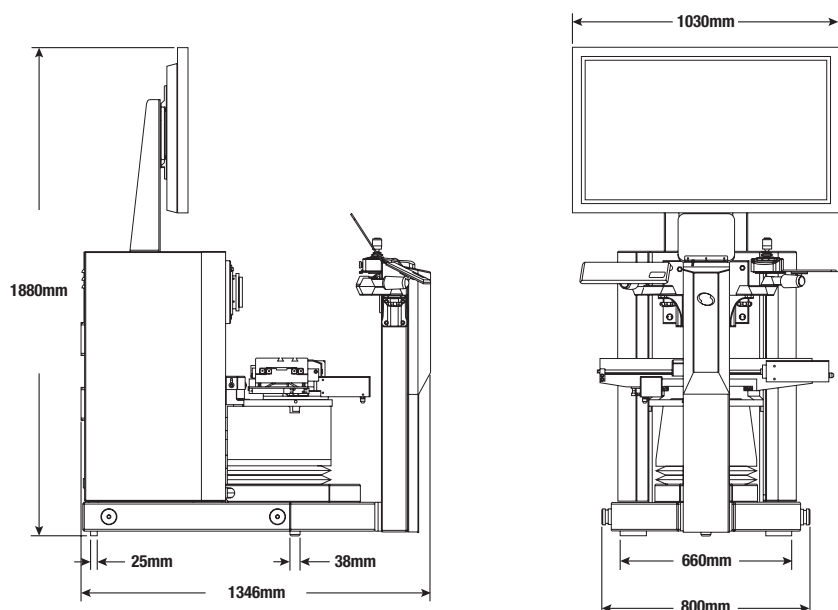
ACCESSORIES		
Precision Centres and Vees	Rotary Vee Blocks	Cabinet Stands for HDV300 and HDV400
Vertical Glass Plate Holders	Fixed Visers	
Rotary Visers	Interchangeable Lenses	

HDV300 AND HDV400 DIMENSIONS



	HDV300	HDV400
Configuration	Benchtop	Benchtop
Shipping Weight	195kg	200kg
Net Weight	100kg	105kg
Shipping Dimensions	130 x 132 x 96cm	130 x 132 x 96cm

HDV500 DIMENSIONS



	HDV500
Configuration	Floor Standing
Shipping Weight	635kg
Net Weight	600kg
Shipping Dimensions	214 x 138 x 183cm



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HDV400

HDV500

KMic-KMR

MV SERIES

MVR SERIES

AV SERIES

AVR SERIES

AV300+

AV350+

AV300+ MICRO

LF SERIES

VISION SYSTEMS

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METROLOGY  SOLUTIONS