



**Starrett®**



**VIDEO INSPECTION SYSTEMS**

# VIDEO INSPECTION SYSTEMS

## KINESCOPE

A digital video camera with precision optics and LED lighting, in a microscope that fits in the palm of your hand. The KineScope has 40-140x magnification, which lets you zoom in on the fine details of electronics, product parts, or anything else too small to see.

Place the KineScope over the object and view the image on your computer screen instead of looking into a small eyepiece. Capture images or video and easily add labels, make measurements, and draw on the live image. The KineScope connects to your computer's USB port and includes VLink imaging software.

### FEATURES

- View live and captured images on a computer screen (or use a computer projector for large groups)
- 40-140x magnification
- Completely portable with your laptop computer
- Save still images, movies and time lapse
- Apply labels, markers, time stamps and measurement
- Draw directly on the live image
- Includes VLink imaging software



KMR with D1

## KINEMIC™ - KMR

### VERSATILE, AFFORDABLE, EASY TO USE

KineMic video microscopes are a family of seven versatile and affordable inspection and vision metrology systems. They are ideal for receiving inspection, quality assurance, training, manufacturing assembly, research, and documentation – wherever easy setup and a range of magnifications are required. Our XGA models set the standard for quick setup and ease of use by not requiring a computer, while the D1 and M3 models offer the power of a color touch-screen PC with MetLogix D1 or M3 inspection and metrology software. Depending on the size of the parts to be measured, measurements can be all electronic within the field of view, or be integrated with stage motion for parts up to 8" (200mm).



### SPECIFICATIONS

- Image Sensor: 1/4" CMOS
- Pixel Resolution: 640 x 480
- Power Req. USB Port, 2.0 or greater
- Minimum Operating System Requirements: Windows® 2000, XP or Vista with DirectX 8.1 and Pentium III 500MHz (also compatible with Windows® 7 and 8 in either 32 or 64 bit. MAC versions are also available)
- Illumination: Super-Bright LED

<b>System Type</b>	Hand Held
<b>Illumination - Standard</b>	LED and IR
<b>Magnification Range</b>	40x and 140x
<b>Field of View at Low Magnification</b>	7.5mm x 10mm
<b>Field of View at High Magnification</b>	1.8mm x 2.5mm
<b>Video Camera</b>	2 MP Digital
<b>Control System/Software</b>	VLink
<b>Display PC and Monitor</b>	Required (not included)
<b>Image Capture</b>	Standard
<b>Resolution</b>	4 microns (at High Magnification)
<b>Base Stand</b>	Optional
<b>Boom Stand</b>	Optional
<b>Power Requirement</b>	USB
<b>Calibration Standards</b>	Optional



Kinescope

### FEATURES

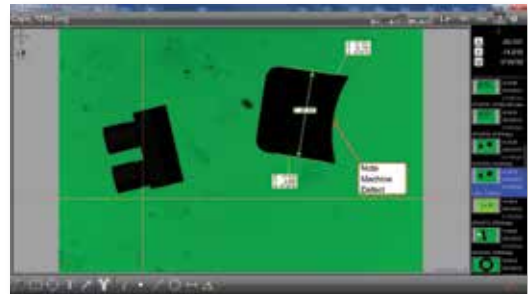
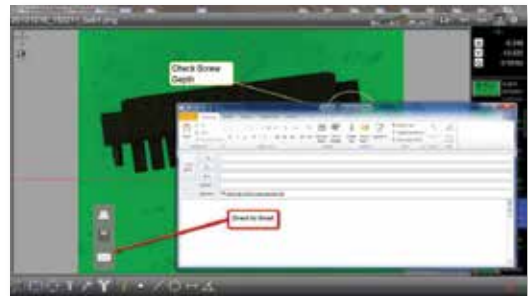
- XGA models set the standard for quick setup and ease of use by not requiring a computer
- D1 and M3 models offer the power of a 21.5" color touch-screen PC with MetLogix D1 or M3 inspection and metrology software
- LED surface and transmitted illumination
- Small footprint takes up minimal space



# D1 DIMENSIONING SOFTWARE

## FEATURES

- View and manipulate live and static images from a variety of inspection devices on any Windows® 7 or Windows® 8 PC. Mouse/Keyboard and touchscreen systems are supported.
- A simplified operating interface requires only a few quick clicks to capture, mark up, export, print and email images directly from your inspection equipment
- Zoom and Pan the camera feed until the desired image is displayed. Add custom text, and graphic elements to generate detailed image capture for defect reporting and to improve overall visual communication of parts and component characteristics.
- Perform basic calculations of feature size, position, and orientation using a simple crosshair tool. Translate or rotate the crosshair tool within the image window to probe circle, line, point, and angle features within the field of view.
- Add feature annotation directly to selected features to display size, position and orientation results on either the video frame or within a blank part view space
- Access previously stored images easily in the thumbnail image list. Convenient date and time stamps are added to help sort and review collections of images.



D1 Software display

## METLOGIX SOFTWARE

### M3

#### FOR VISION SYSTEMS (VIDEO)

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

## FEATURES

- DXF CAD file import for comparing parts being inspected to the actual design file; no need for cumbersome Mylar overlays
- "Vtouch" Probe has video touch probe functionality – just click for simple acquisition of points on a feature's edge
- Part View can generate distance and tangent lines from within the graphical part view. The "Gesture Menu" can be used for feature creation and manipulation tools.
- "Quick Annotate" allows data on several features to be displayed simultaneously with smart marquee feature selection
- Application of universal tolerance value entry according to feature resolution groupings
- Feature Detail Graphics: Individual feature views display point cloud distributions, nominal deviations, and tolerance results. Scroll through Actual, Nominal, Tolerance, Deviation and Data Fit Type information.
- Simple machine/camera calibration with popular machine and video correction methods
- Windows® 7 Professional-based, globally recognized OS for flexible data exporting and interface with Windows applications



KMR-200 with M3

	MetLogix M3
<b>Mounted to comparator arm</b>	
<b>Color graphics</b>	X
<b>Touch-screen operation</b>	X
<b>MS Windows® operating system</b>	X
<b>X-Y-Q (angle) measurements</b>	X
<b>2D geometry software with skew</b>	X
<b>Optical edge detection option</b>	X
<b>Video edge detection option</b>	X
<b>CAD file import and export option</b>	X
<b>CNC drive option</b>	X



# VIDEO INSPECTION SYSTEMS



KMR-XGA



KMR-50-XGA / KMR 50-D1



KMR-D1



KMR-M3



KMR-200-M3



KMR-TFOV-M3

Model Number	KMR-XGA	KMR-50-XGA	KMR-D1	KMR-50-D1	KMR-200-M3	KMR-M3	KMR-TFOV-M3
<b>Optics</b>	6.5:1 zoom	6.5:1 zoom	6.5:1 zoom	6.5:1 zoom	6.5:1 zoom	6.5:1 zoom	6 telecentric lenses
<b>CCD Sensor</b>	0.83 MPixel	0.83 MPixel	1.33 MPixel	1.33 MPixel	1.33 MPixel	1.33 MPixel	2.02 MPixel
<b>Camera Interface</b>	VGA cable	VGA cable	USB cable	USB cable	USB cable	USB cable	USB cable
<b>Computer</b>	N/A	N/A	All-in-one PC	All-in-one PC	All-in-one PC	All-in-one PC	All-in-one PC
<b>Software</b>	N/A	N/A	MetLogix D1	MetLogix D1	MetLogix M3	MetLogix M3	MetLogix M3
<b>Video Screen</b>	19" XGA monitor	19" XGA monitor	21.5" all-in-one PC	21.5" all-in-one PC	21.5" all-in-one PC	21.5" all-in-one PC	21.5" all-in-one PC
<b>Screen Resolution</b>	1024 x 768	1024 x 768	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080
<b>Lens Magnification</b>	0.7x to 4.5x	0.7x to 4.5x	0.7x to 4.5x	0.7x to 4.5x	0.7x to 4.5x	0.7x to 4.5x	0.30x, 0.50x, 0.80x, 1.0x, 2.0x, 4.0x
<b>Screen Magnification</b>	31x to 200x	31x to 200x	31x to 200x	31x to 200x	31x to 200x	31x to 200x	13x to 178x
<b>Auxiliary lenses</b>	0.5x, 0.75x, 1.5x, 2x	0.5x, 0.75x, 1.5x, 2x	0.5x, 0.75x, 1.5x, 2x	0.5x, 0.75x, 1.5x, 2x	0.5x, 0.75x, 1.5x, 2x	0.5x, 0.75x, 1.5x, 2x	N/A
<b>Field of view (X-axis)</b>	1.4 to 9.0mm	1.4 to 9.0mm	1.4 to 9.0mm	1.4 to 9.0mm	1.4 to 9.0mm	1.4 to 9.0mm	1.8 to 24mm
<b>X-Y Stage Motion</b>	None	50 x 50 mm	None	50 x 50 mm	200 x 100 mm	None	None
<b>Metrology Means</b>	None	Micrometers	D1 software**	D1 software**	X and Y encoders	M3 FOV software	M3 FOV software
<b>Measurement Resolution</b>	N/A	1µm (.00005")	Up to 2µm*	1µm (.00005")	0.5µm (0.00002")	Up to 2µm*	Up to 2µm*
<b>Meas. Accuracy</b>	N/A	3µm per 25mm	Up to ±2.5µm*	3µm per 25mm	2.5µm + 5L/1000	Up to ±2.5µm*	Up to ±2.5µm*
<b>Basic Stand</b>	Standard	Standard	Standard	Standard	Standard	Standard	Standard
<b>Boom Stand</b>	Optional	N/A	Optional	N/A	N/A	Optional	N/A
<b>LED Back Light</b>	Standard	Standard	Standard	Standard	Standard	Standard	Standard
<b>LED Ring Light</b>	Standard	Standard	Standard	Standard	Standard	Standard	Standard
<b>Lighting Control</b>	Adjustment knobs	Adjustment knobs	Adjustment knobs	Adjustment knobs	Via M3 software	Via M3 software	Via M3 software
<b>Video Inspection</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Basic Dimensions</b>	No	Manual LCD Micrometer	Yes - Manual	Manual LCD Micrometer	Yes	VED	VED
<b>Geometric Constructs</b>	No	No	No	No	Yes	Yes	Yes
<b>Image Annotation</b>	No	No	Yes	Yes	Yes	Yes	Yes
<b>Image Archiving</b>	No	No	Yes	Yes	Yes	Yes	Yes
<b>Video Edge Detection</b>	No	No	No	No	Yes	Yes	Yes

\* These are best values. Actual values will depend on the zoom lens setting or selected telecentric lens.

\*\*D1 software basic measurements are taken by manually positioning a crosshair on the screen.

Disclaimer: Due to continual product improvements, specifications may change without notice.