Mikrosize®

VMC-Series

CNC Video Measuring System

Video

Contact us

Mikrosize Precision Instrument Co.,Ltd
A-4035 RuiFeng Business Expo, Wuhu City, China , 241000.
Web:www.mikrosize.com
Email: mikrosize@mikrosize.com

Features and Applications

VMC-Video Measuring System is a high-precision and high-efficiency photoelectric measuring instrument composed of high-resolution CCD color camera, continuous zoom objective lens, color display, video crosshair generator, precision optical scale, multi-functional data processor, 2D data measurement software and high-precision workbench and other precision mechanical structures, which is mainly used for two-dimensional measurement and can also be used for three-dimensional measurement. It is widely used in various precision industries, such as precision processing industries of electronic components, precision molds, precision tools, springs, screws, plastics, rubber, oil seal stop valves, camera parts, bicycle parts, automobile parts, conductive rubber, PCB, etc. It is one of the indispensable measurement and detection equipment in the metrology rooms, laboratories and production workshops of machinery, electronics, instruments, clocks, light industry, plastics and other industries, colleges and universities, research institutes and metrology verification departments.

Product Features

- Integrated man-machine engineering design of the whole machine for convenient operation and measurement;
- Adopting high-precision "00" grade blue granite worktable and column, which are characterized by high precision, corrosion resistance, high strength, no stress deformation, ensuring the machine has high stability;
- X, Y, Z three-axis CNC full-automatic precise control for accurate positioning, the transmission adopts precision linear guide rails and grinding-grade ball screws to ensure the accuracy of the motion system;
- The imaging system adopts imported high-quality optical components, which are coated with multiple layers of optical films, with minimal optical attenuation, ensuring clear and distortion-free image quality;
- Programmable 5-ring 8-zone LED surface light source and parallel LED contour light source system, intelligently realizing 256-level brightness adjustment;
- Independently developed measurement software with functions like fast focusing, automatic edge finding, and diversified output reports, enabling online SPC data processing and analysis, allowing setting of automatic measurement tasks to efficiently complete batch detection.

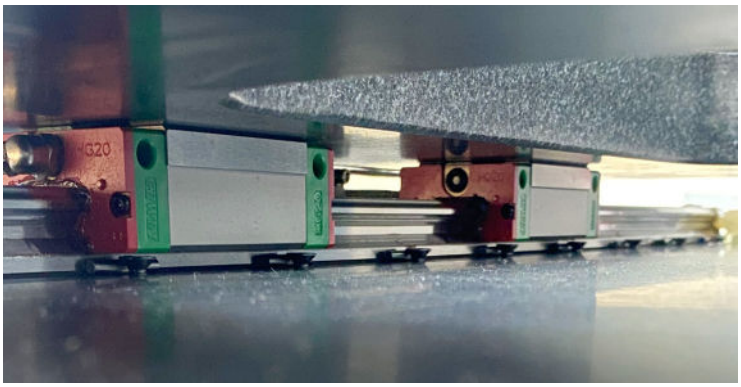
Features and Applications

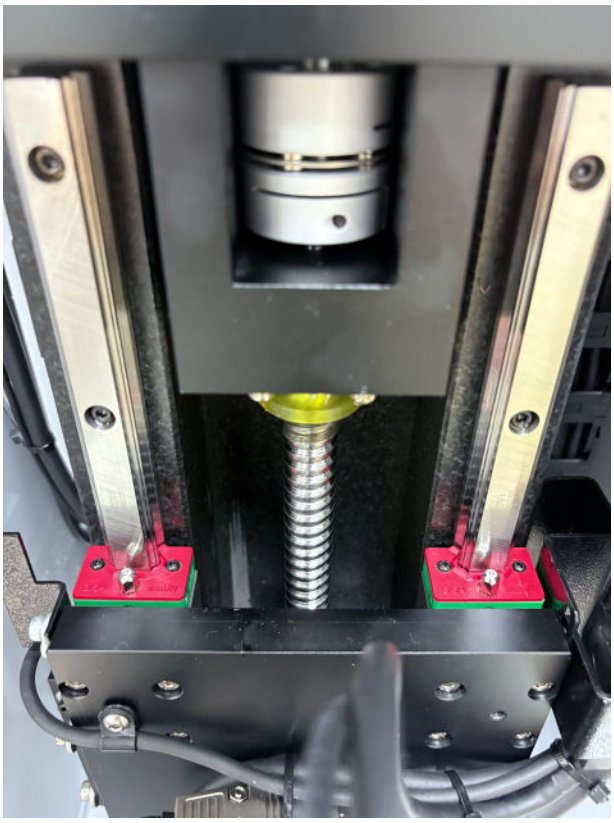
Product Applications

- In the electronic manufacturing field, it can measure the dimensions of electronic components with high precision and detect the quality of PCB boards, ensuring the reliability of electronic products;
- In the field of mechanical processing, it can accurately detect the dimensions of complex parts and the conditions of cutting tools, helping to improve processing accuracy and effect;
- In mold manufacturing, it comprehensively inspects the mold cavity and provides a basis for its repair and improvement, ensuring the molding quality of products and extending the service life of molds;
- In automobile manufacturing, it accurately measures automotive parts and body appearance, ensuring vehicle performance and appearance quality;
- In the field of scientific research and teaching, it meets the needs of precise scientific research measurement and can also be used for teaching demonstrations and training.

Product Details

Instrument Configuration

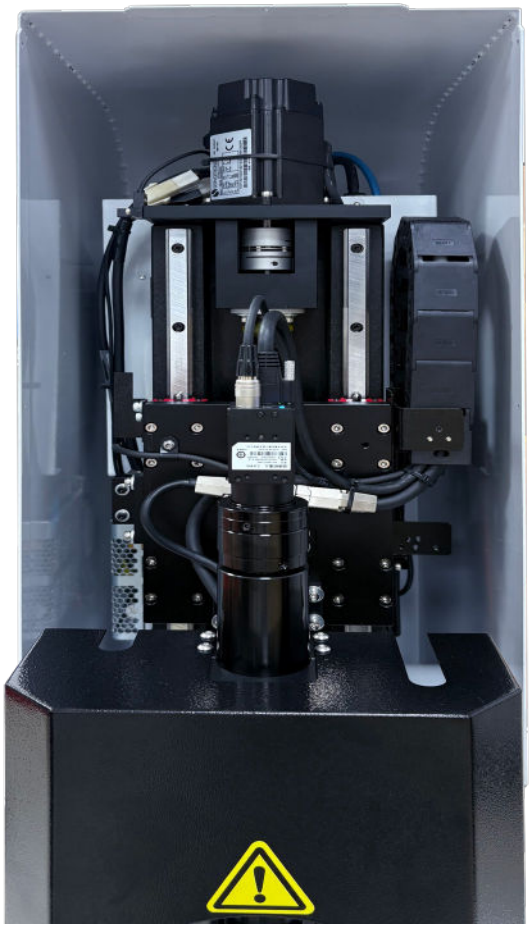


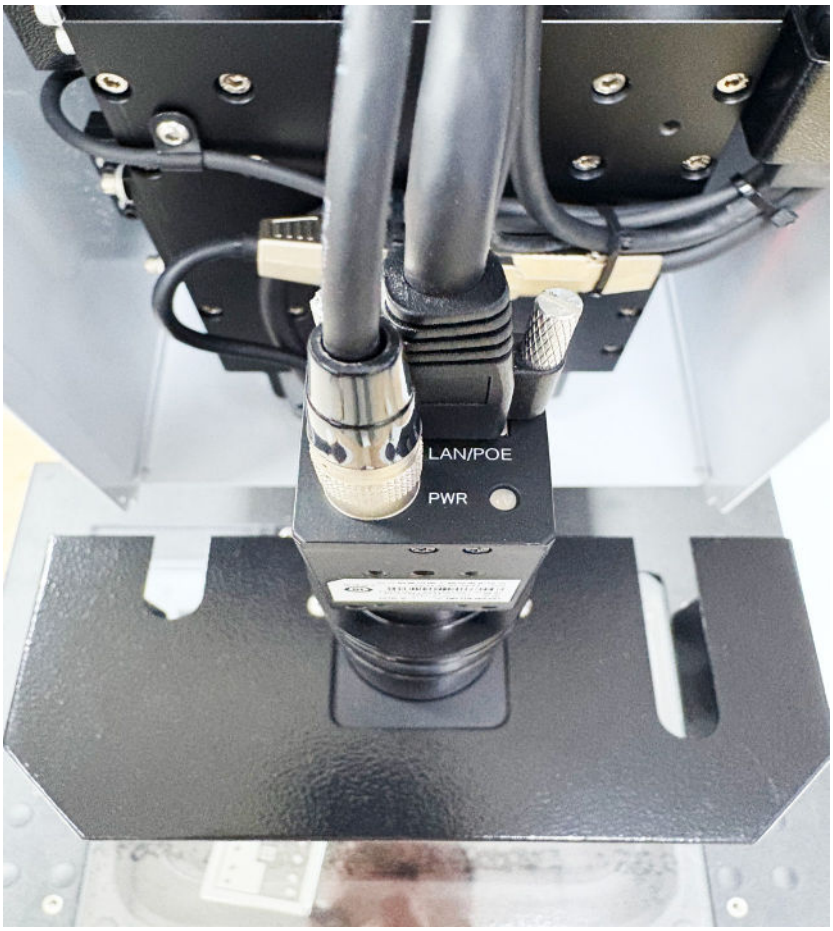


- Equipped with high-precision grating ruler, the resolution reaches 0.001mm, which can meet the needs of various high-precision measurement tasks;
- Adopting advanced optical and electronic technologies, it has good stability and reliability; during long-term use, the measurement accuracy of the grating ruler will not be affected by environmental factors such as temperature, humidity, and vibration, and can maintain stable measurement performance;
- It has a very fast response speed and can provide real-time feedback on the position information of the workbench, enabling the control system of the imaging instrument to respond quickly and achieve precise measurement and positioning of workpieces;
- It is simple to install and maintain without requiring complex mechanical structures or adjustment processes;

Product Details

Imaging System

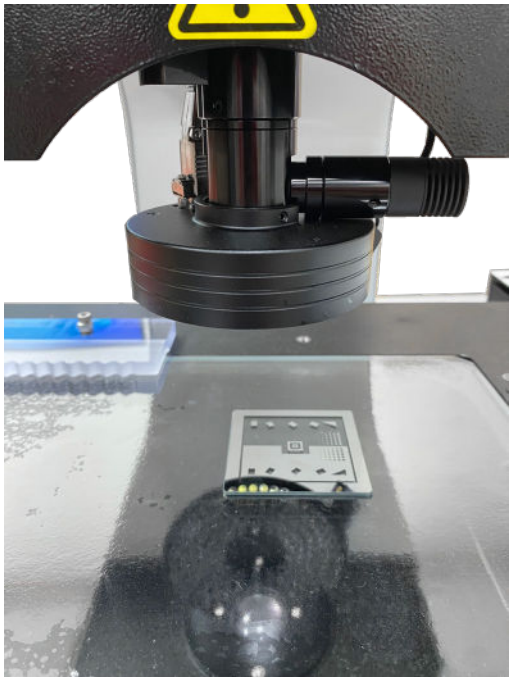




- It can provide high-resolution images; with high pixel density, it can capture the subtle details of the measured object, clearly presenting complex geometric shapes, tiny surface defects, or fine pattern textures;
- The color CCD sensor can accurately restore the true color of the measured object;
- As an industrial-grade camera, it has higher stability and durability; it can work stably in various harsh industrial environments, such as high temperature, high humidity, dusty, and high-vibration environments;
- 0.7~4.5X manual zoom lens, with a total video magnification of 23.5~148X. The wide range of image magnification enables the imaging instrument to adapt to various measurement tasks and workpiece sizes. Whether for large mechanical parts or tiny electronic components, the best measurement effect can be obtained by adjusting the magnification.

Product Details

Observation System



Automatic Zoom Lens

- It is easy to operate and responds quickly, allowing zoom operations to be easily completed to improve measurement efficiency;
- With a large zoom range, it can meet the focal length requirements for measuring objects of different sizes and details;

With high imaging quality, it ensures clear and accurate images by virtue of precise optical design and coating technology;

With high intelligence and stability, it helps reduce measurement errors and maintain stable imaging effects.

Drive System

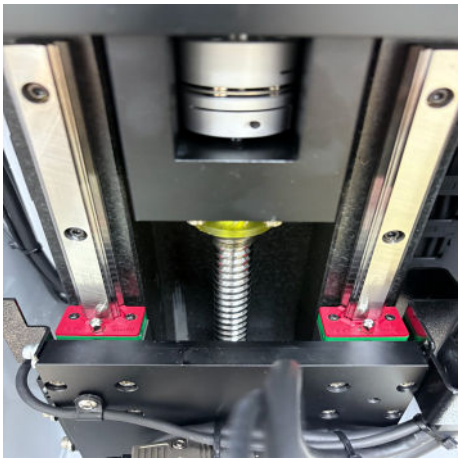
Self-patented Cnc Servo Motion Control System:

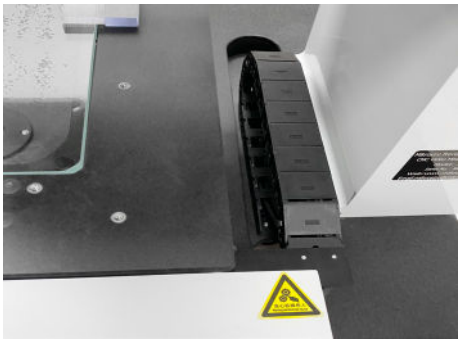
- Transmission adopts precision linear guide rails and grinding-grade ball screws to ensure the accuracy of the motion system;
- CNC servo motors achieve high-precision control to ensure the accuracy of the imaging instrument's measurement data and high repeatability;
- It has fast response capability, can quickly switch measurement positions, and improve measurement efficiency;

It has good stability and reliability, ensuring the imaging instrument runs stably for a long time and adapts

- to various working environments;

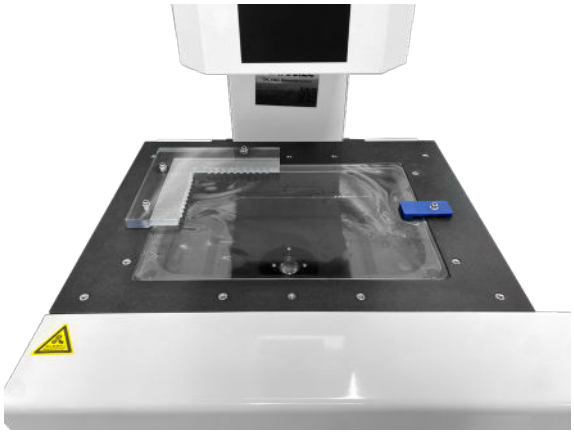
It is easy to program and operate, can realize automatic measurement as required, and is convenient and easy to use;

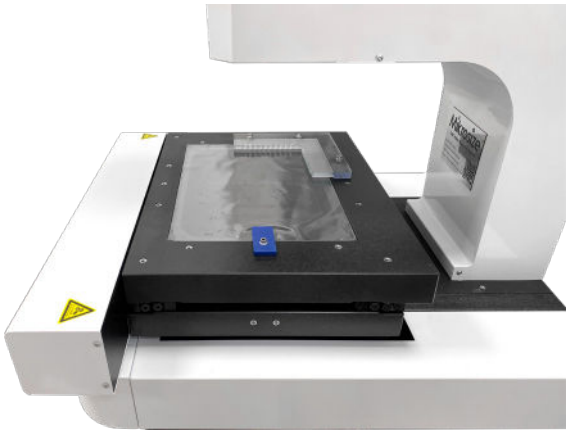




Product Details

Work Platform





Work Platform size: 360*260mm Work Platform load-bearing: 25kg

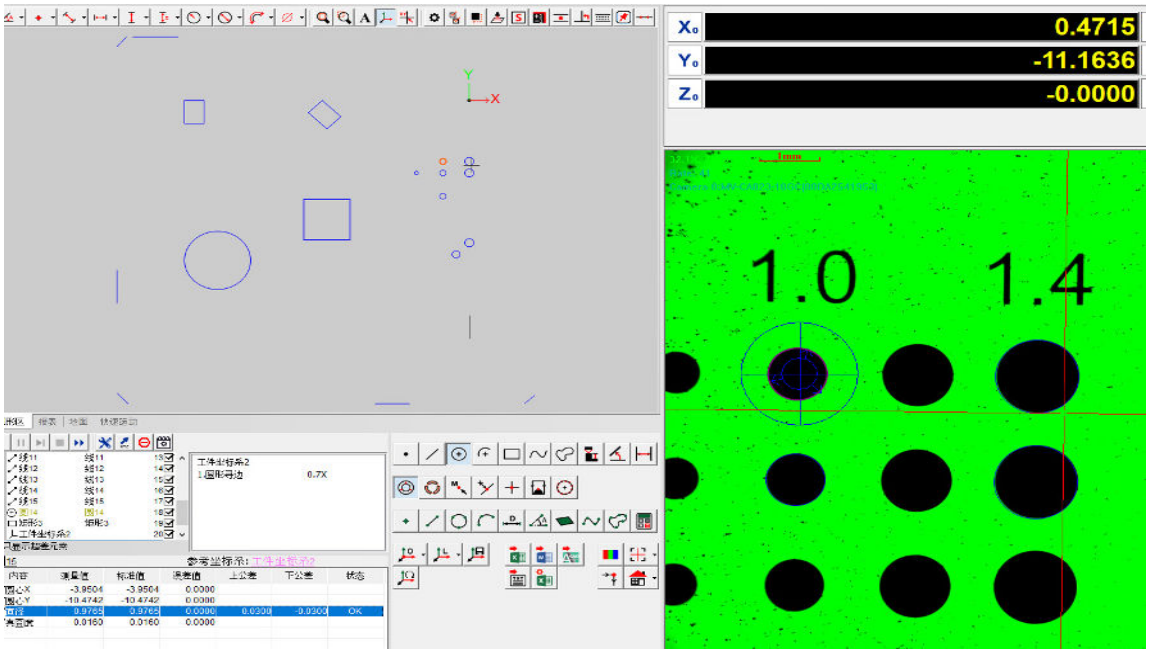
- It can be adapted to many types of measured objects. Whether small electronic components such as mobile phone motherboards and chips, or some medium-sized mechanical parts and mold samples such as small hardware stamping parts and micro mold inserts, they can be well placed on the worktable for measurement.
- In the field of mechanical processing, some slightly larger parts, metal mold components with high density, etc., as long as their weight is within the specified range, can be stably placed on the worktable for measurement. There is no need to worry that the worktable will shake or deform due to insufficient load-bearing, affecting the normal measurement.

Light Source System

- The surface light adopts the design of LED 5-ring 8-zone annular cold light source, which can provide omni-directional and highly uniform illumination for the measured object;
- The contour light adopts LED transmitted parallel light source, which can clearly outline the contour of the measured object;
- The LED transmitted parallel light source features high stability and consistency, providing reliable lighting effects.
- Compared with traditional light sources, LED light sources have a longer service life, lower energy consumption, and higher stability, reducing measurement errors caused by light source changes.

Product Details

Measuring Software



- The software supports the measurement of multiple geometric elements, including points, lines, circles, arcs, ellipses, rectangles, etc. For each element, it provides various measurement methods, such as overall edge finding, segmental edge finding, and multiple point collection methods, to meet different measurement needs.
- At the same time, it has both a mechanical coordinate system and a workpiece coordinate system, and users can freely establish and switch between workpiece coordinate systems according to their needs.
- It provides various motion control methods, such as through the motion control panel, image area operation, fixed coordinate point movement, etc., to flexibly control the machine movement.
- It has a powerful map navigation function, which is suitable for the positioning of large-sized workpieces or workpieces with a large number of similar features.
- It has various pixel correction methods, such as four-circle correction and single-circle correction.
- The software supports light sources in various lighting modes and provides both manual and automatic focusing functions to obtain clear images for measurement.
- The software has practical measurement functions, such as element translation array measurement, CAD graphic import measurement, scanning function, etc., which can improve measurement efficiency and application range.

Product Details

Accessories

- Control handle: Users can control the worktable and Z-axis through the handle, and can also lock the X or Y axis by pressing buttons, which is convenient for users to control the movement of the table in a single direction.

Mikrosize®

Technical Specification

Model 2D		VMC-3020	VMC-4030	VMC-5040
Model 3D		VMC-3020P	VMC-4030P	VMC-5040P
Movement(mm)		300*200*200	400*300*200	500*400*200
Instrument Dimensions (L*W*H mm)		660*770*1580	960*739*1667	860×1160×1620
Maximum Load Capacity		25KG		
Net Weight		240KG	280KG	450KG
X/Y/Z Three-Axis Grating Scales (2.5D)		Resolution: 0.5μm		
Accuracy(um)		E1(x/y)=2.5+L/200		
Repeatability(um)		±2		
Motion System		X/Y/Z-axes:Lead Screws		
Motion Control		CNC Automatic Servo Motion Control		
Video System		Hikvision 1/2' Color CCD Camera		
		Manual Coaxial Zoom Lens		
		Optical Magnification: 0.7-4.5x; Video Magnification: 20-148x		
		Working Distance (Standard): 92mm		
Object View (Standard)		11.1~1.7mm		
Speed (mm/s)		X, Y Axis: 200 Z Axis: 50		
Illumination	**Contour Light**	Adjustable 256-level LED Parallel Illumination		
	Surface Light	256-level Adjustable 5-Ring 8-Zone LED Cold Illumination		
3D Measurement		3D Module and Renishaw (UK) Contact Probe		
Measurement Software		Mikromea-CNC 2.5D CNC Measurement Software		
Working Environment		Temperature: 20°C ± 2°C, Temperature Variation < 2°C/Hour, Humidity: 30~80%		
Power Supply		AC 100~220V 50/60HZ 10A		

Standard Delivery

	Qty	Photo
Instrument Mainframe	1set	/
Dell Computer Mainframe	1 pc	/
Computer Screen	1 pc	/
Keyboard	1 pc	/
Mouse	1 pc	/
HDMI Cable	1 pc	/
Network Port Conversion Interface	1 pc	/
USB Dongle	1 pc	/
Calibration Block	1 pc	/
Network Cable	1 pc	/
Software CD	1 pc	/
Working Cupboard	1 pc	/