OPTO-EDU (BEIJING) CO., LTD.

OPTO-EDU

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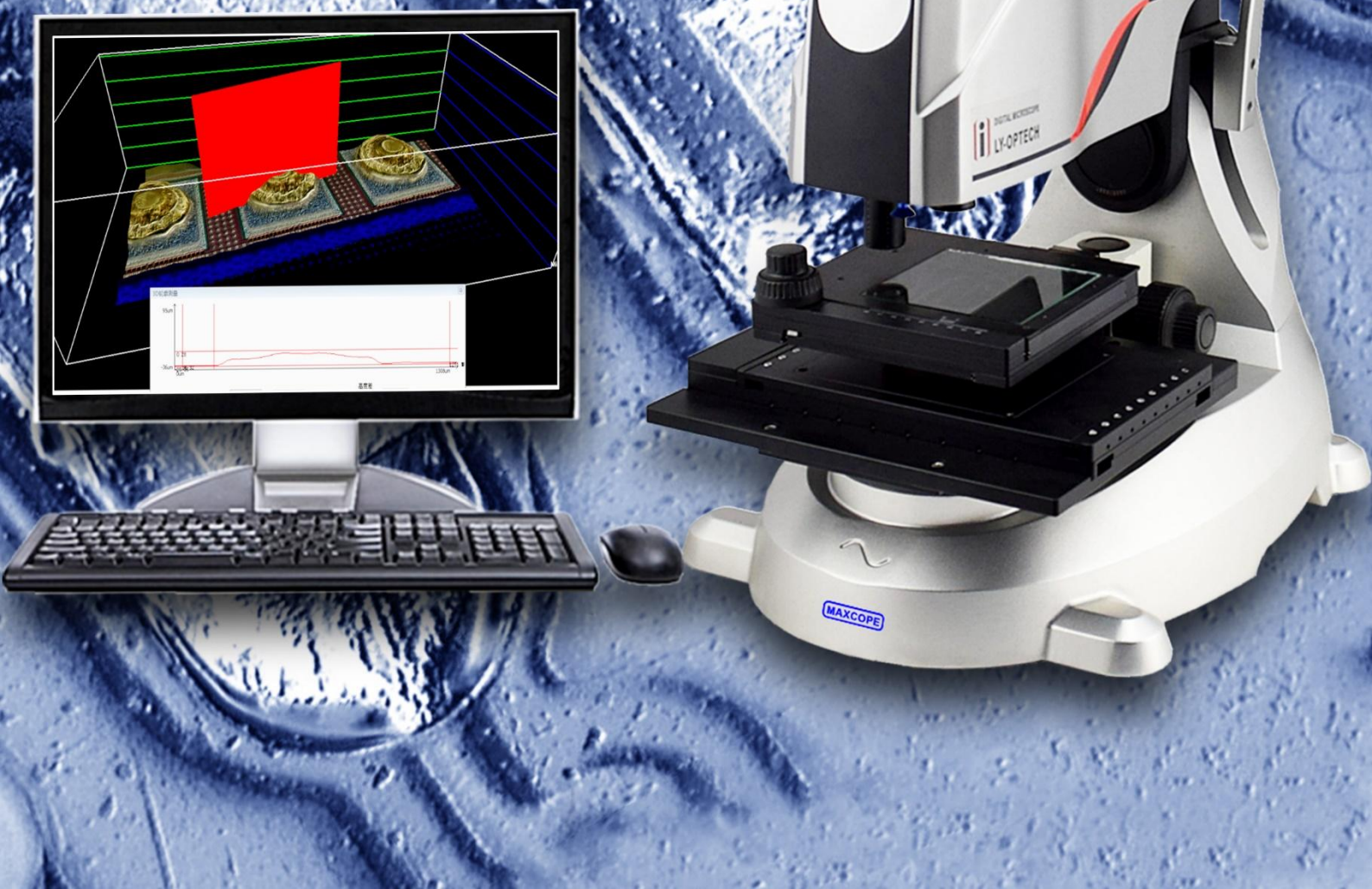
MAXCOPE M20.5830

All-in-One Full Auto Industry Microscope, Motorized XYZ + Motorized Nosepiece + Tilt Stand



M20.5830 All-in-One Industry Microscope

MAXCOPE

Features

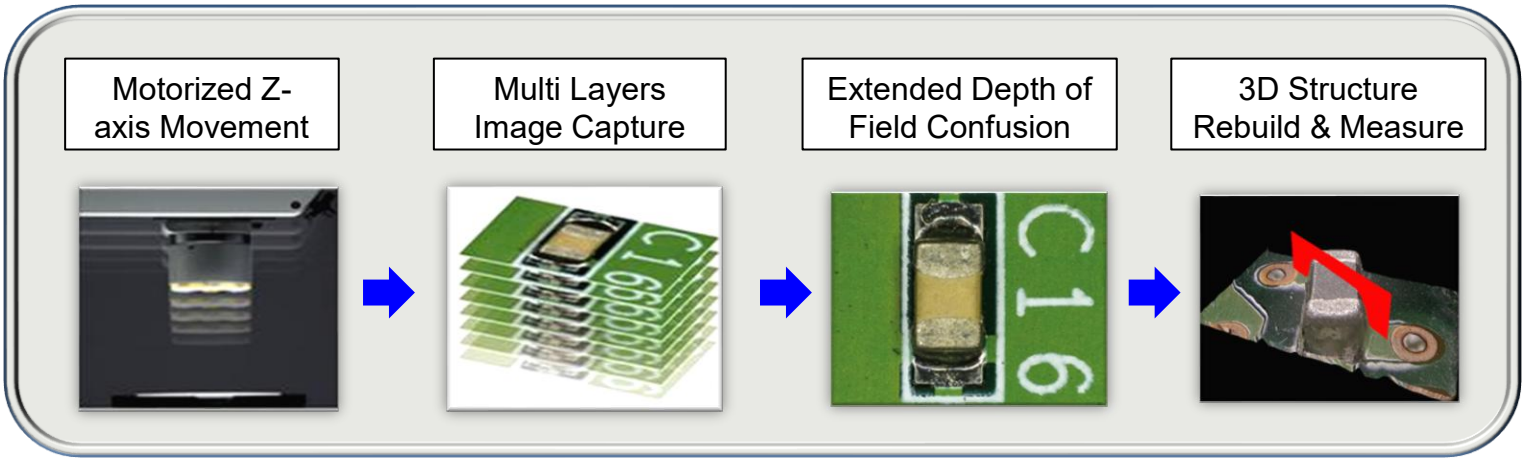
- Total 12x-8000x Large Magnification
- Built-in Motorized Zoom Body 0.5x-8x, Zoom Ratio1:16
- Real Time Magnification & Tilt Angle Display On Screen
- Manual & Auto Focus Controlled By Software
- Motorized Z Axis Move Range 100mm, Z Resolution 0.1um
- +/-90° Tilt Stand Support Multi-Angel Free View
- Manual Stage Moving 70x50mm,
- Motorized Stage Moving XY 100x100mm, Resolution 0.05um,
- Lower Power 0.5x, 1.0x Lens
- Handheld 1x-250x Microscope
- High Power Infinity Plan LWD APO Objective 5x10x20x50x
- Bright Field (Coaxial), Dark Field, Inclined 4 Zones, Polarizing Light
- Optional DIC, Optional Transmit Light Source
- Built-in 12.0M USB 3.0 Digital Camera

Lens Technology

- 12x-8000x Magnification Realizes Precise Zoom Function
- Anti-glare Design Ensures The Accuracy of Image Capture
- Spectral Confocal Technology Greatly Improves Z Resolution
- Fast Objective Lens Turret Improves Inspection Efficiency
- Motorized Lens Zooming Prevents Human Error

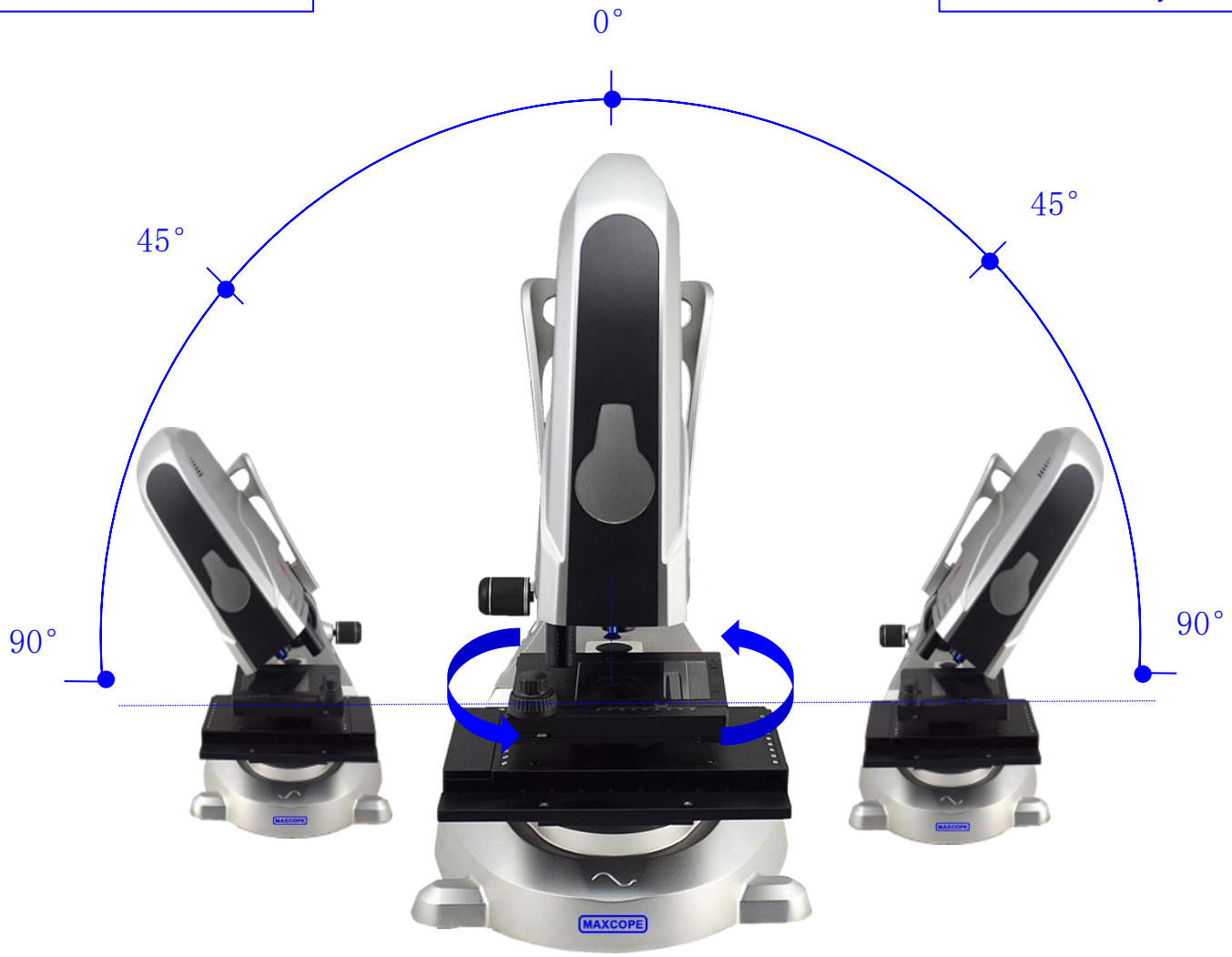
Functional Accessories

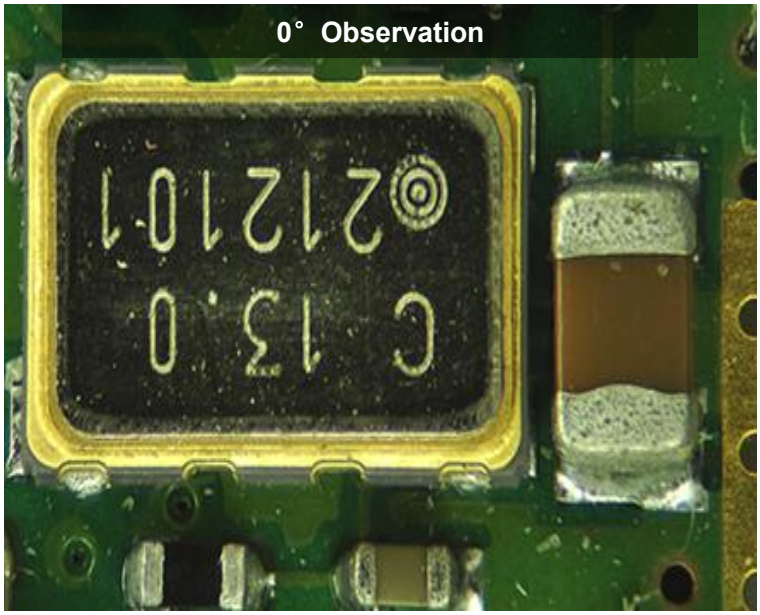
- 3D Optical Imaging, Stitching, Measurement Software
- Spectral Confocal Large Area 3D Scanning Function
- Handheld Auto Focus & Measurement Microscope
- Multi-angle Tilt Viewing Stand
- Quick Operation Joystick & Control Box

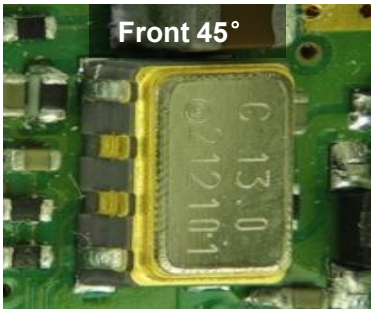


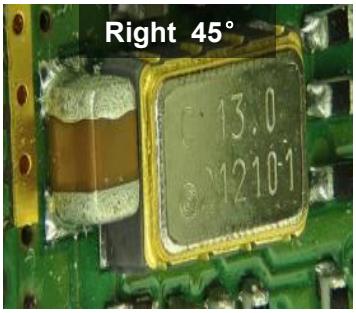
Motorized X/Y/Z Stage Work With +/-90° Tilt Stand

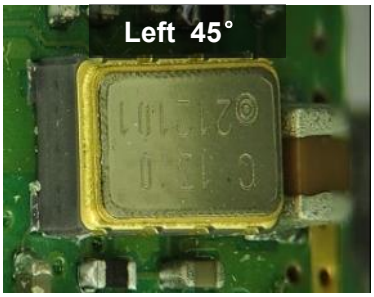
Manual Working Stage Can Rotate 360º Freely

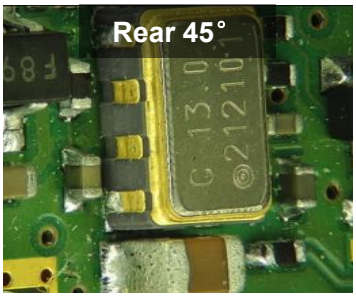




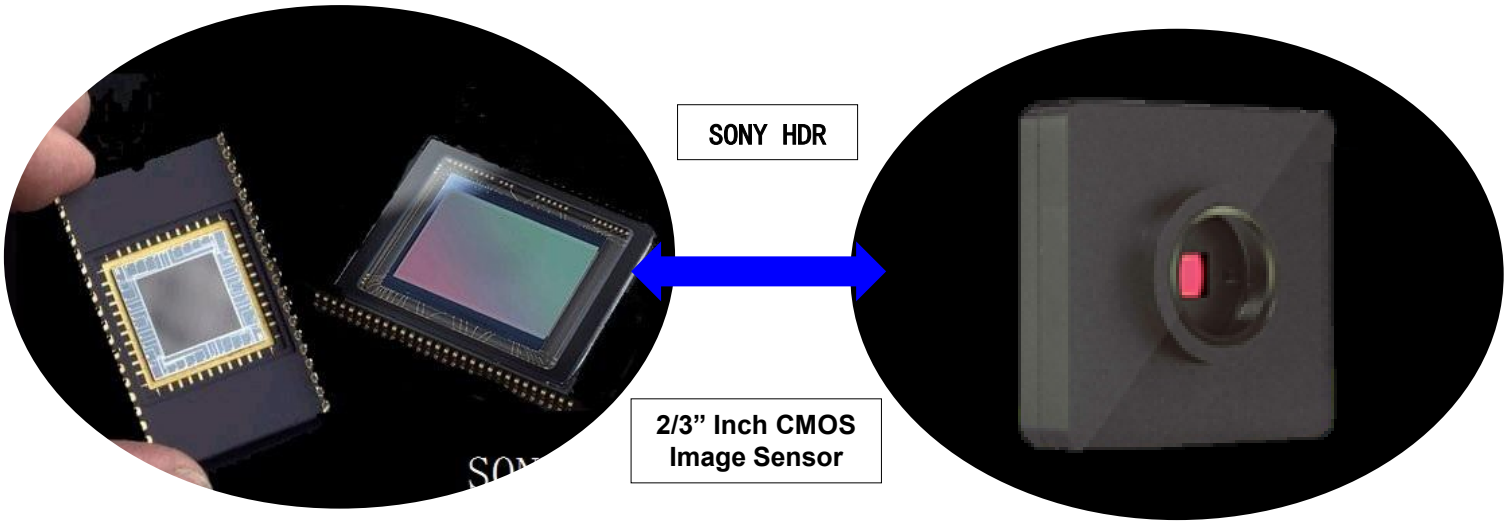








Free tilt stand support inclined observation, coupled with the 360º rotation of working stage, the lens can be observed around the sample, so as to obtain images from different angles, and comprehensively grasp the side details of the sample

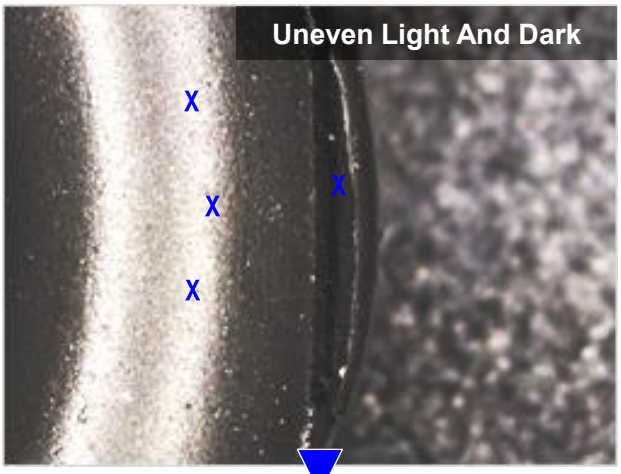


High Grade Camera For Microscope

Obtaining high-definition microscopic pictures under a high-quality microscope imaging system is The basis for ultra-depth-of-field imaging and fast image stitching, high-quality microscopy. The mirror imaging system should include high-resolution, high-quality color reproduction, Low noise, good operability, and dynamic image HDR function

HDR Technology Provides Uniform Images

HDR technology effectively addresses uneven illumination within the field of vision. Through digital processing, it reveals details that are typically indiscernible under standard conditions, thereby significantly reducing interference caused by inadequate lighting.

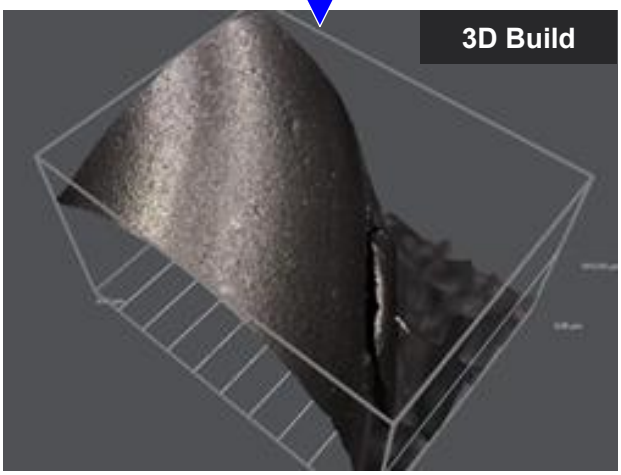


Advantages Of SONY CMOS

SONY CMOS image sensors, combined with professional-grade DSP backend processing circuits, along with the top-tier Ultra-Fine™ digital optimization technology for high-performance color processing, patented noise reduction, and dynamic HDR capabilities, enable users to effortlessly experience the boundless enjoyment brought by professional-grade video products.

Precise 3D Image Rebuild

Precise 3D reconstructed imagery, with sharp boundaries, ample detail, and high-fidelity color technology, is capable of displaying the three-dimensional morphology of microscopic samples in a lossless manner.



M20.5830 High Resolution Lens

MAXCOPE

Encoded motorized zoom lens support automatically identifies and displays magnification in real time.

Research level APO Chromatic Objectives For All Kinds Applications Available

MPLSAPO Infinity Plan APO LWD Objective, OFN=26.5, M26 Screw Thread							
Magnification	Model	N.A.	W.D.	Resolution	Depth of Field	Tube Length	Parfocal
			(mm)	(μm)	(μm)	(mm)	(mm)
1x	Plan Apo-1X	0.015	80	10	1480	F=200mm	95mm
2x	Plan Apo-2X	0.05	34	5	91		
5x	Plan Apo-5X	0.15	11-34	2	14		
10x	Plan Apo-10X	0.3	9.5-34	1	3.5		
20x	Plan Apo-20X	0.45	3.4-20	0.7	1.6		
50x	Plan Apo-50X	0.55	7.5	0.5	0.9		
100x (Optional)	Plan Apo-100X	0.8	2.1	0.4	0.6		

Wide N.A. Objectives

Microscope objective resolution is the fundamental guarantee of microscopic imaging. The M20.5830 adopts numerical apertures (N.A.) ranging from 0.015 to 0.9 (in air medium). With proper illumination, it delivers high-resolution microscopic images with sharp edges and rich detail.

APO Apochromatic Objectives

The APO (Apochromatic) color-correction technology effectively resolves chromatic aberration, dispersion, and secondary spectrum in the lens, further enhancing imaging quality and bringing optical resolution close to its theoretical limit.

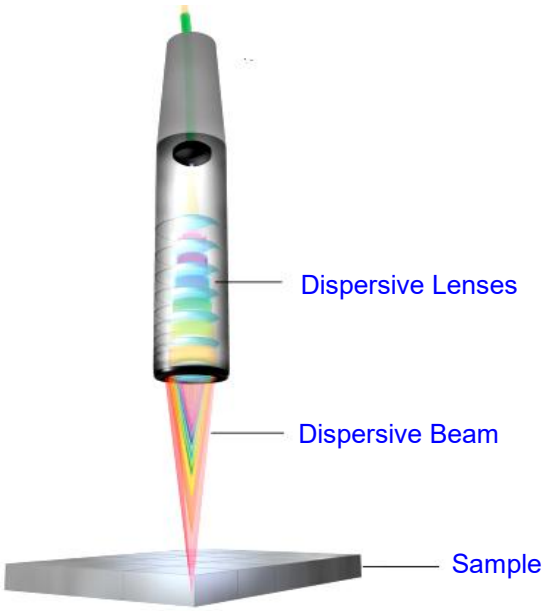
Long Working Distance Technology

The ultra-long working distance lens, while maintaining a resolution of 1 μm, achieves a working distance of 34 mm. In addition to preventing damage and enabling observation of deep holes or grooves, it also provides a solid foundation for system expandability

Spectral Confocal Lens (Optional)

The spectral confocal lens, based on white light dispersion technology, offers the broadest measurement adaptability. Even on smooth glass surfaces or polished mirror materials, it can achieve effective measurements. Its Z-axis resolution can reach below 10 nm, and when paired with a high-precision piezoelectric displacement stage, it enables large-area, accurate profile measurements of samples. The resulting model can be further fused with optical depth-of-field images to ultimately produce a metrology-grade color 3D model.

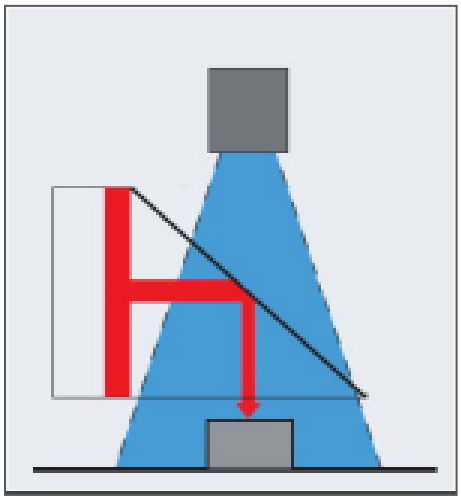
Spectral Confocal Based on Dispersive Technology & Measurement Fundamentals

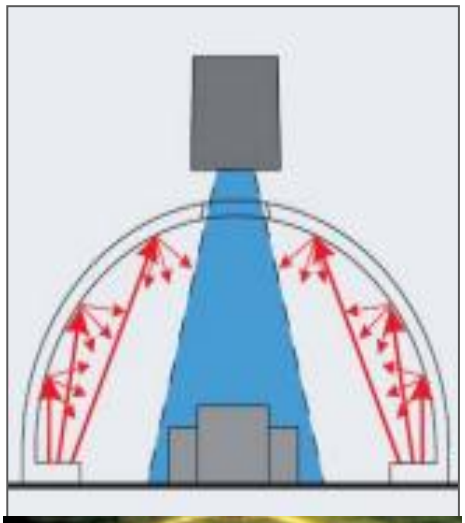


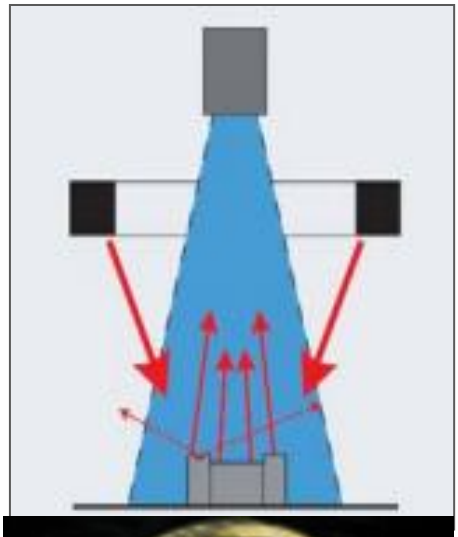
Spectral confocal detection method, based on coaxial dispersion technology, can handle the most demanding material and environmental challenges.

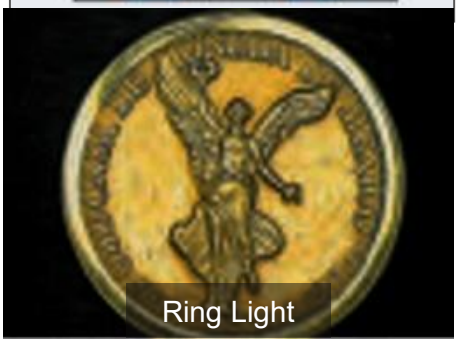
Microscopic Illumination Technical

High-quality light sources are one of the foundations of digital imaging, and properly matched illumination modes are essential for revealing sample details. The illumination devices used in the M20.5830 are all light sources designed for machine vision systems. They feature a broad spectral range, true color reproduction, diverse form factors, and long lifespan (over 30,000 hours). The various lighting configurations of the M20.5830 allow for the implementation of composite illumination techniques tailored to different observation requirements. Combined with digital extinction technology (HDR), they perfectly reveal sample details.





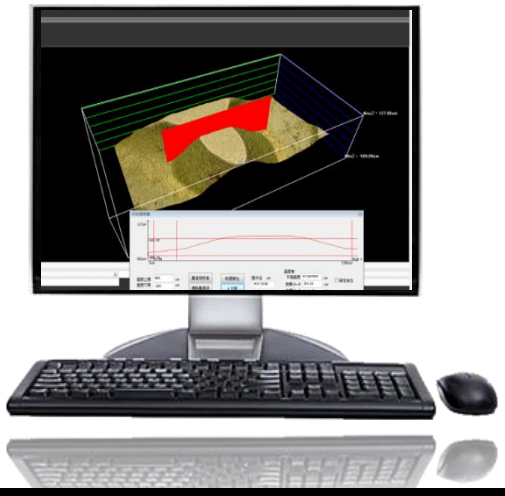


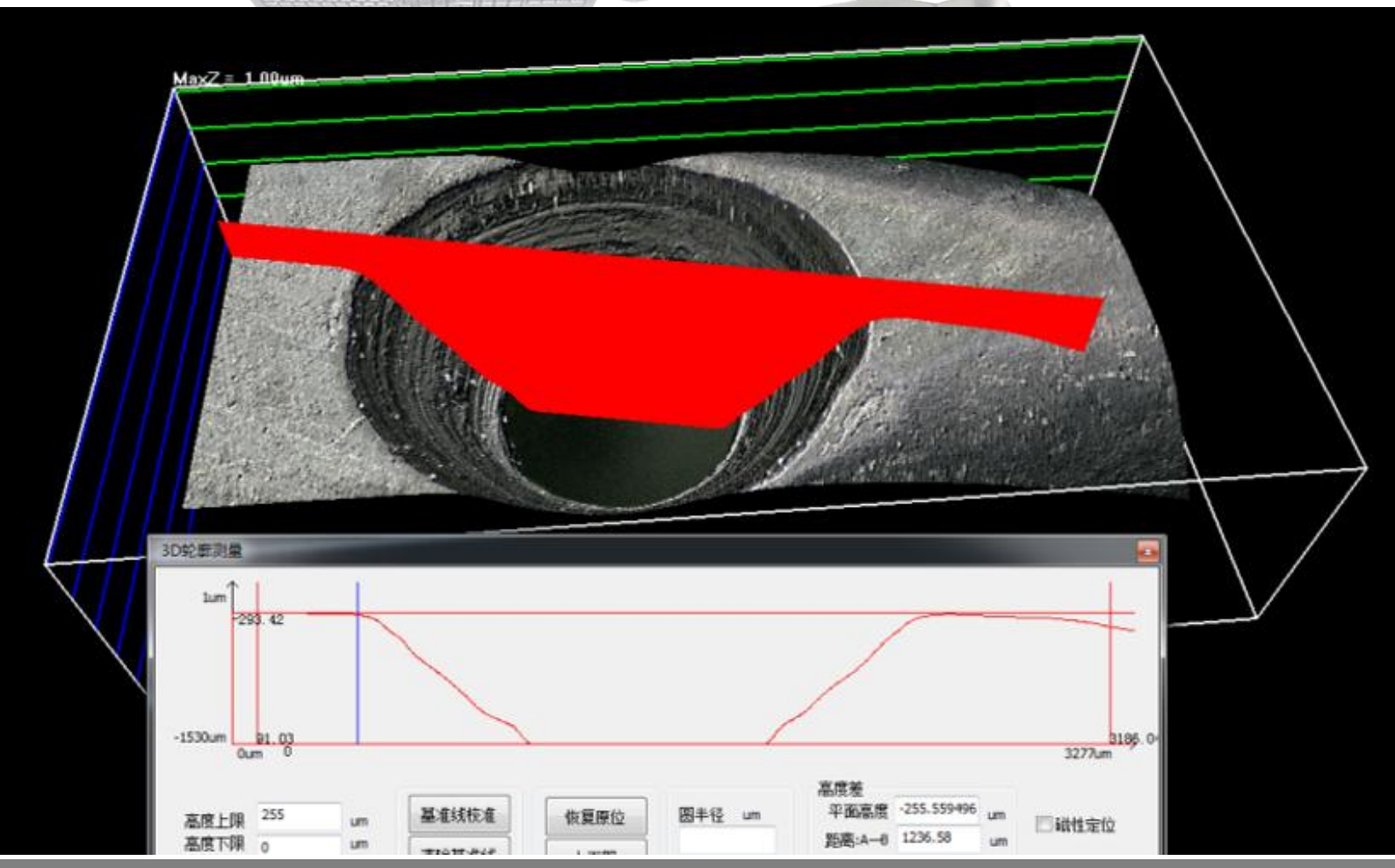


Coax Light & Ring Light

Coax Light & Polarized Light

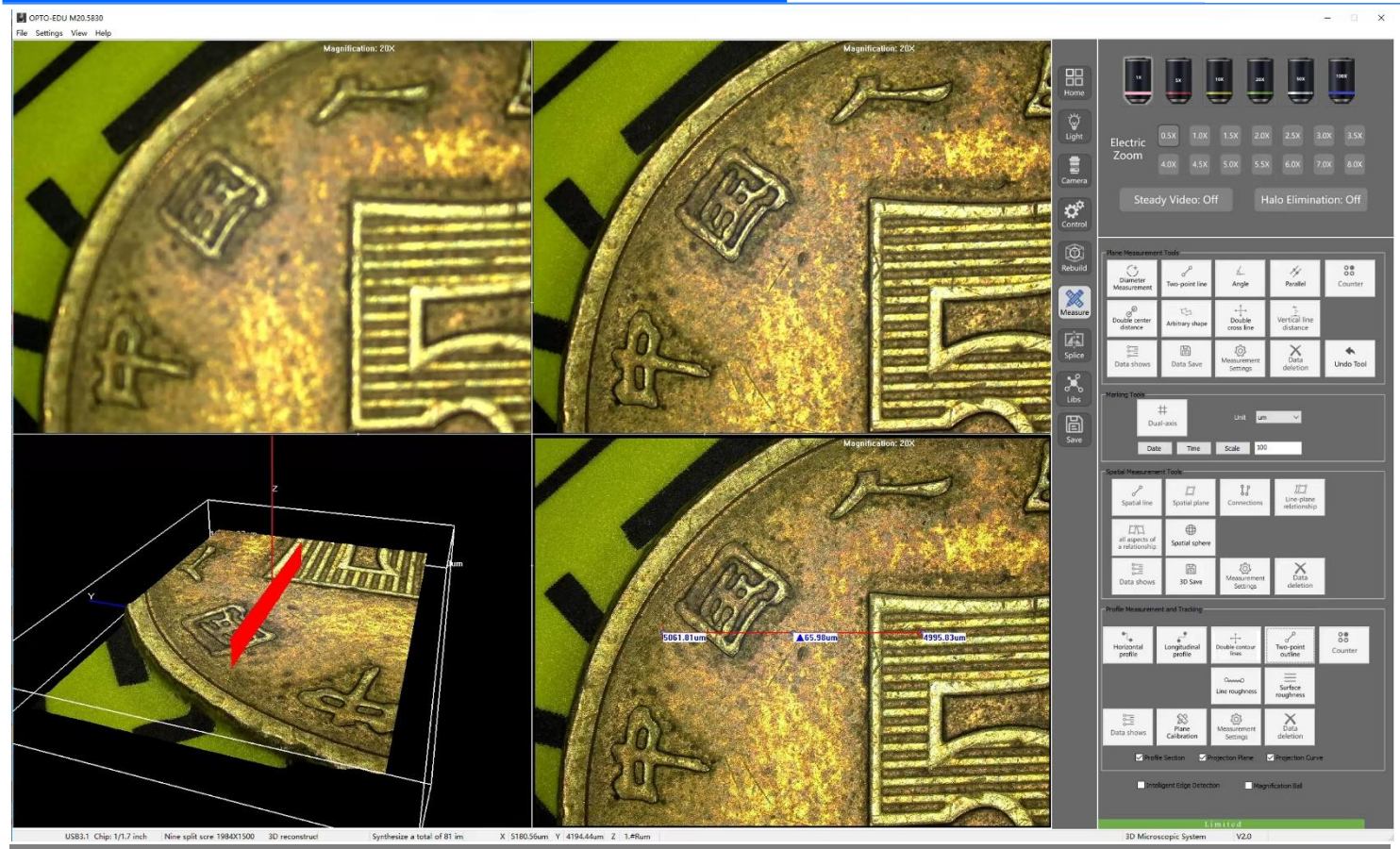
MAXCOPE
M20.5830





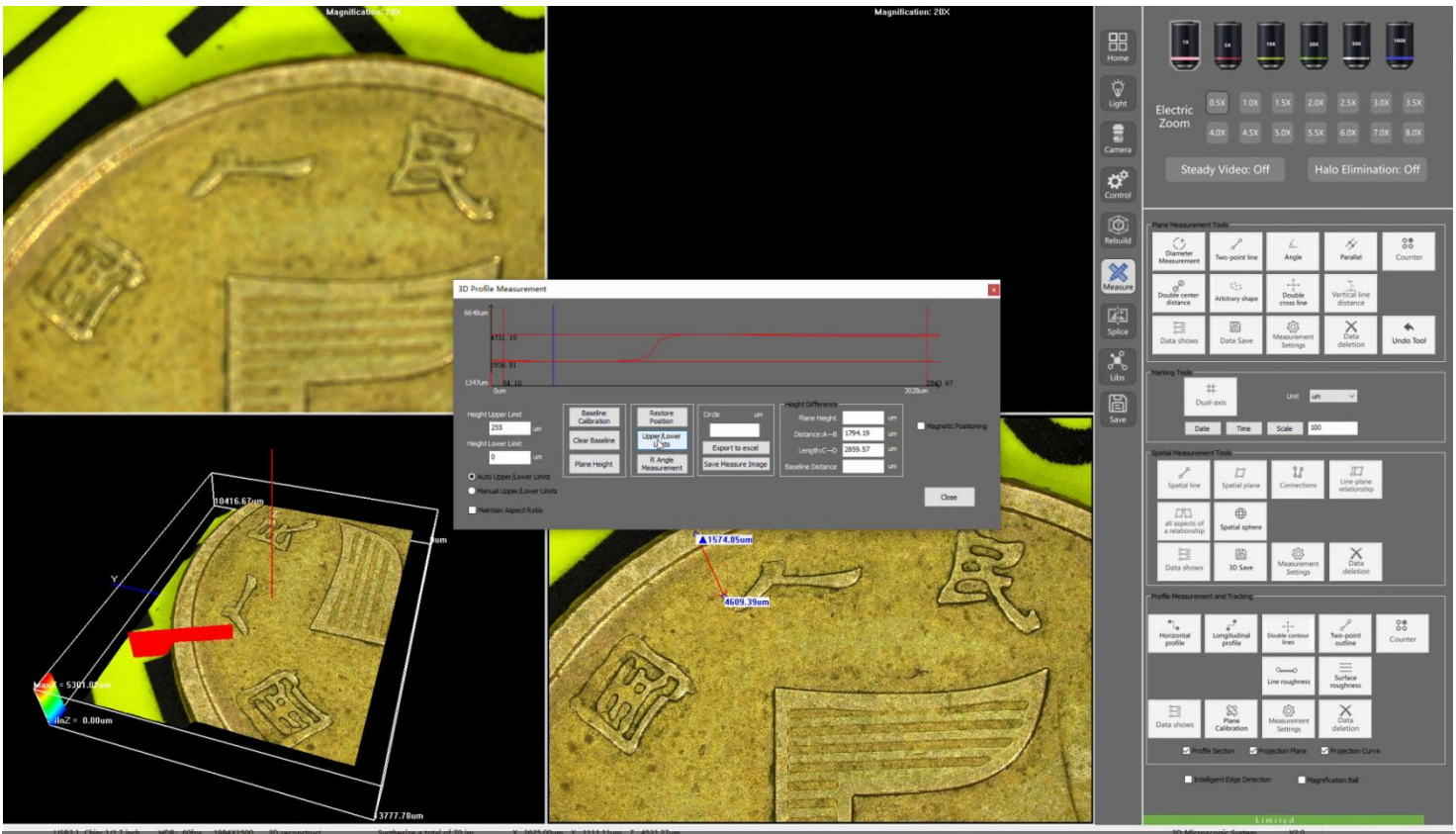
High-Speed Scan of Ultra High-Resolution Images

3D super depth of field microscopy system completely breaks through the optics of microscopes inherent limitations. A three-dimensional image of the sample can be obtained within 10 seconds. High-quality samples at different heights can be easily Imaging, get a high-quality plane picture, and then build a 3D model, and accurately measure the three-dimensional space scale through the intelligent measurement mode. Inch. While obtaining high-quality plane images/3D images, the system also provides 3D observation of confocal cloud models with full degrees of free do It enables users to observe samples from any angle, and the system can realize high-speed automatic microscope 3D observation through the integrated design. observe, measure. This system software adopts the latest displacement correction and edge recognition, edge correction technology, which can completely eliminate the image Jagged edges. It is an ideal replacement for electron microscopy at low magnification (optics <2000X. Video <10000x). far beyond the norm The scope of surface inspection (including electron microscopy). Take the use of light microscopy to new heights.



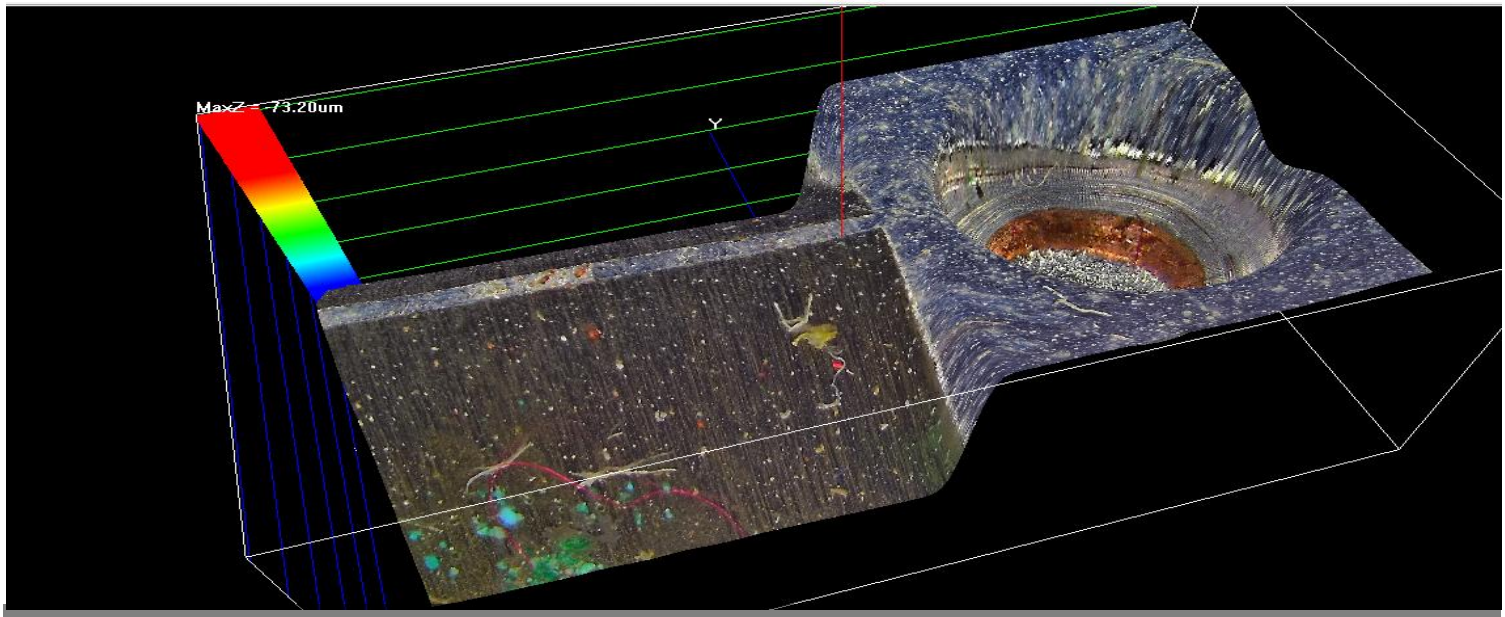
Fully Automatic Control

The objective lens of the ultra-depth-of-field 3D microscope can be moved to a designated position through program control, and the user can adjust the height of the objective lens by turning it up and down. The zoom body can be adjusted electrically to obtain different magnifications, and the brightness of the light source can be adjusted during the observation process.



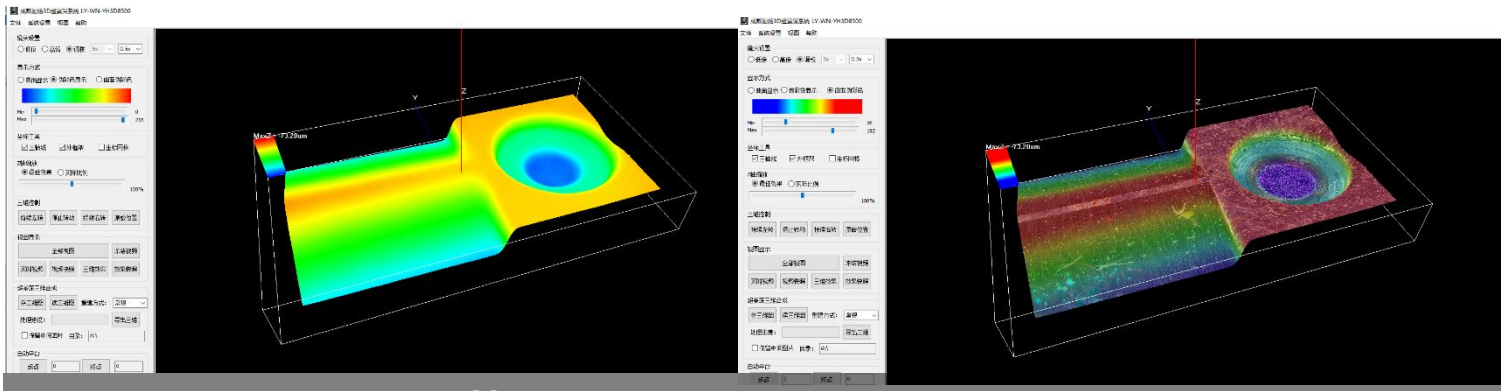
Super-large Depth Of Field Observation

The depth of field of the super-depth-of-field 3D microscope system is 20 times larger than that of the original microscope, and clear images can be obtained at any position even if the workpiece surface has large unevenness.



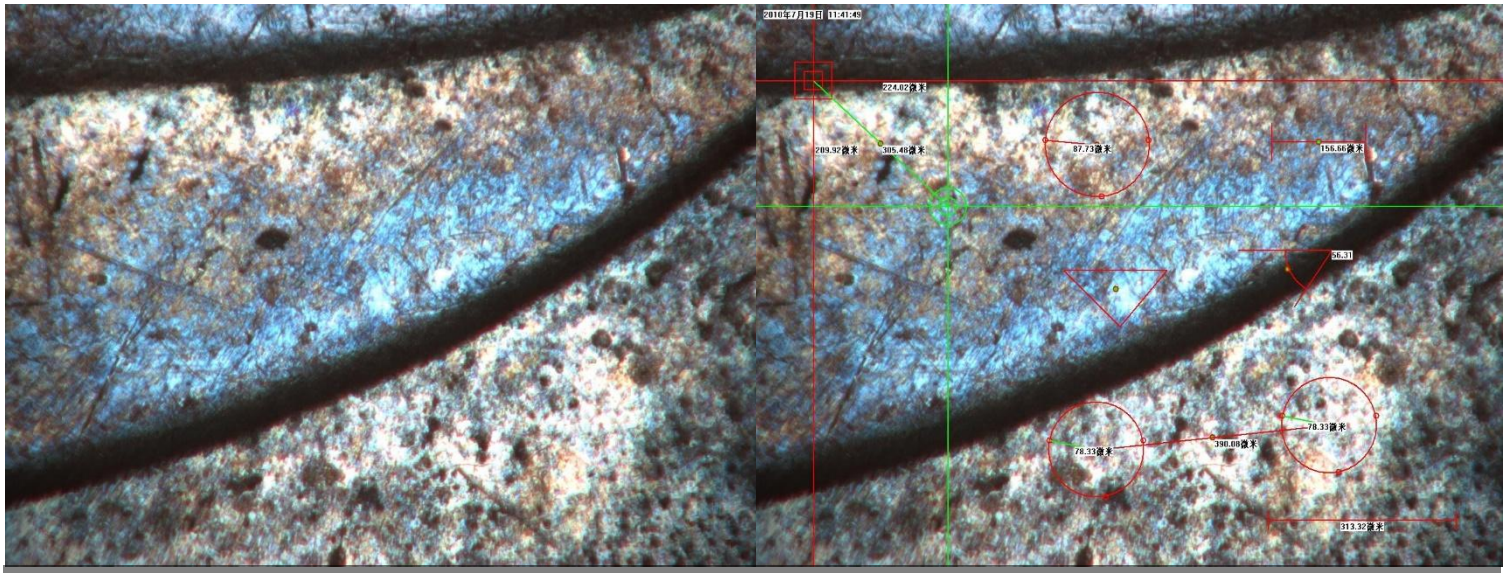
The Super Depth Of Field 3D Microscope

Reconstructing the three-dimensional topographic features of microscopic objects, the user can automatically reconstruct the three-dimensional image of the object surface through the unique image processing function of the system through a few simple settings.

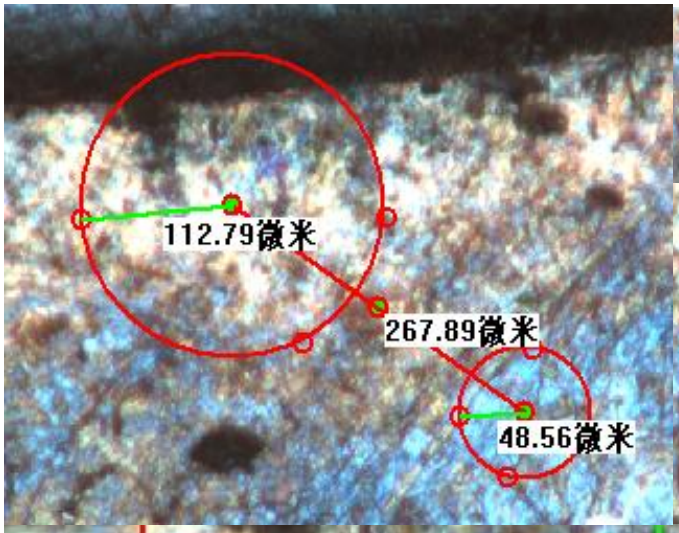


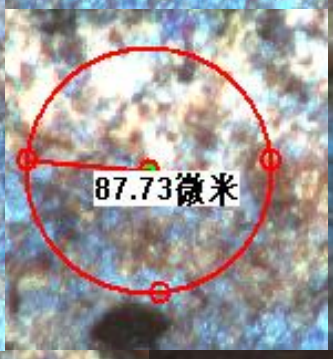
Various 3D Display Effects

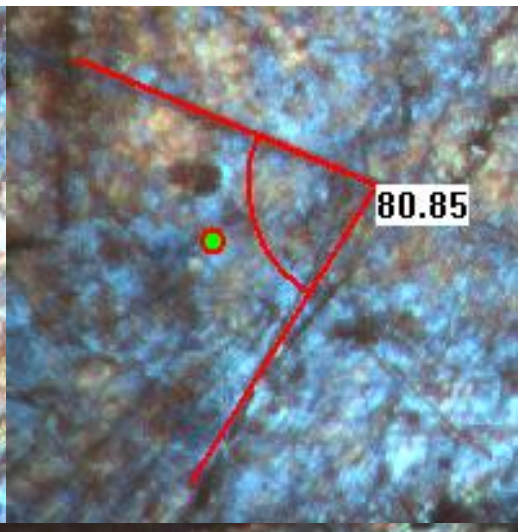
The super depth of field 3D microscope system reconstructs the 3D image of the workpiece surface by measuring the height of each position on the workpiece surface. The system provides true color 3D, surface map and false color map, users can observe the workpiece from all directions and grasp the shape of the workpiece.

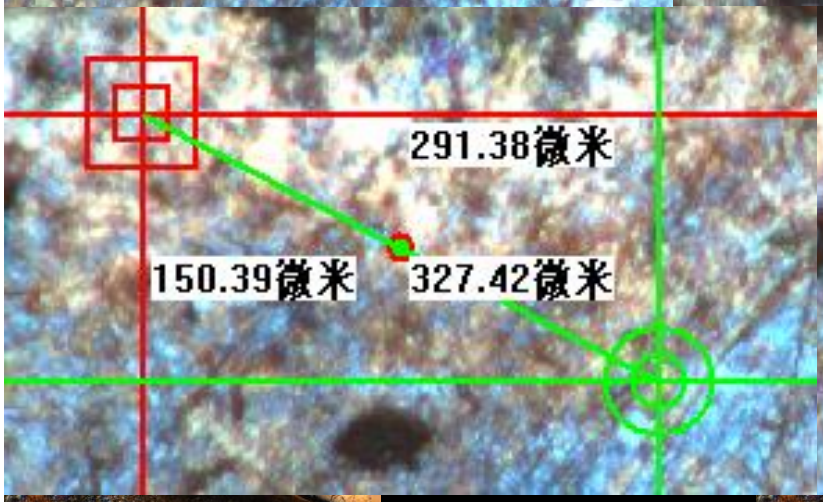


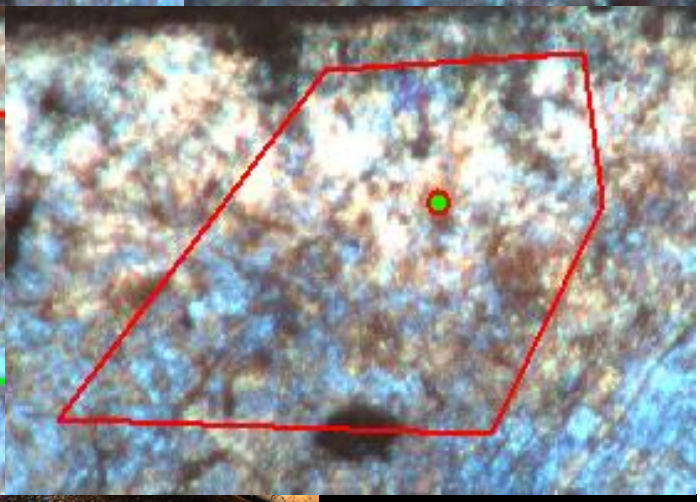
Perfect Measurement & Labeling Functions

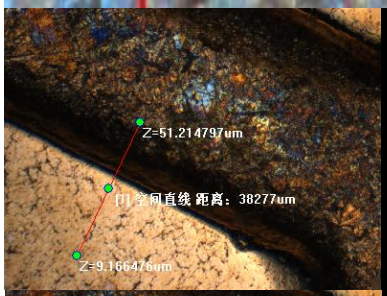


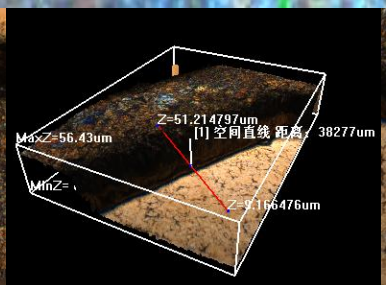


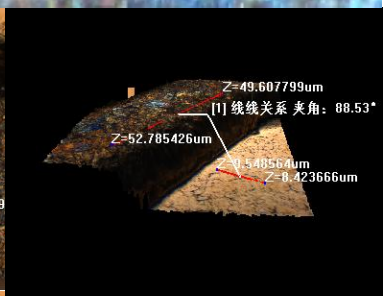


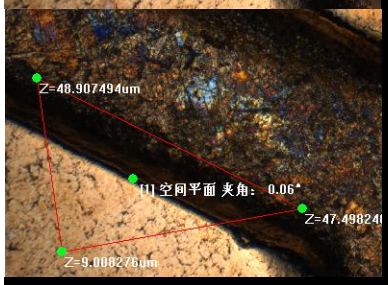


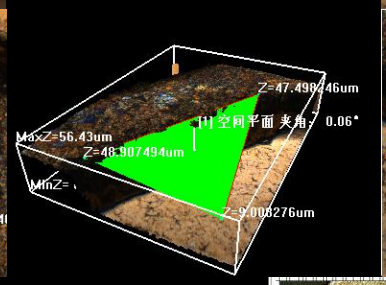


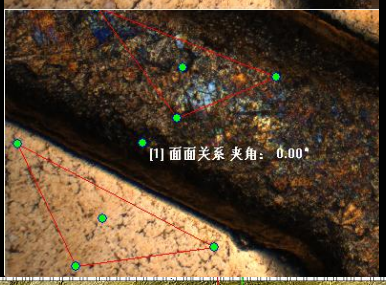


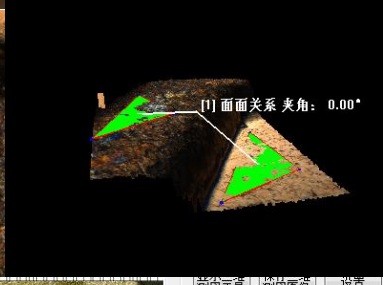


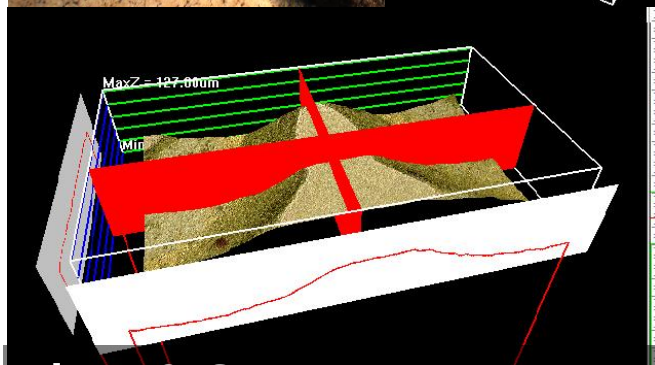


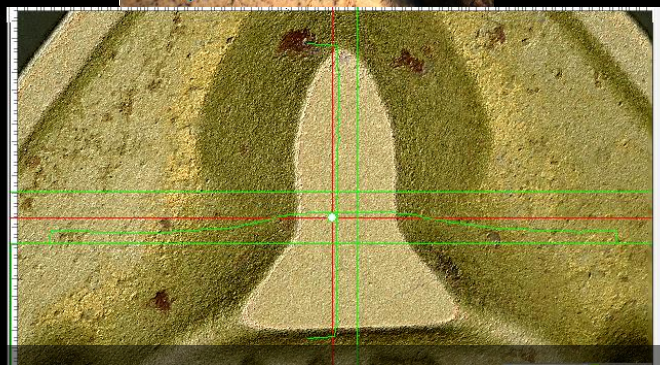






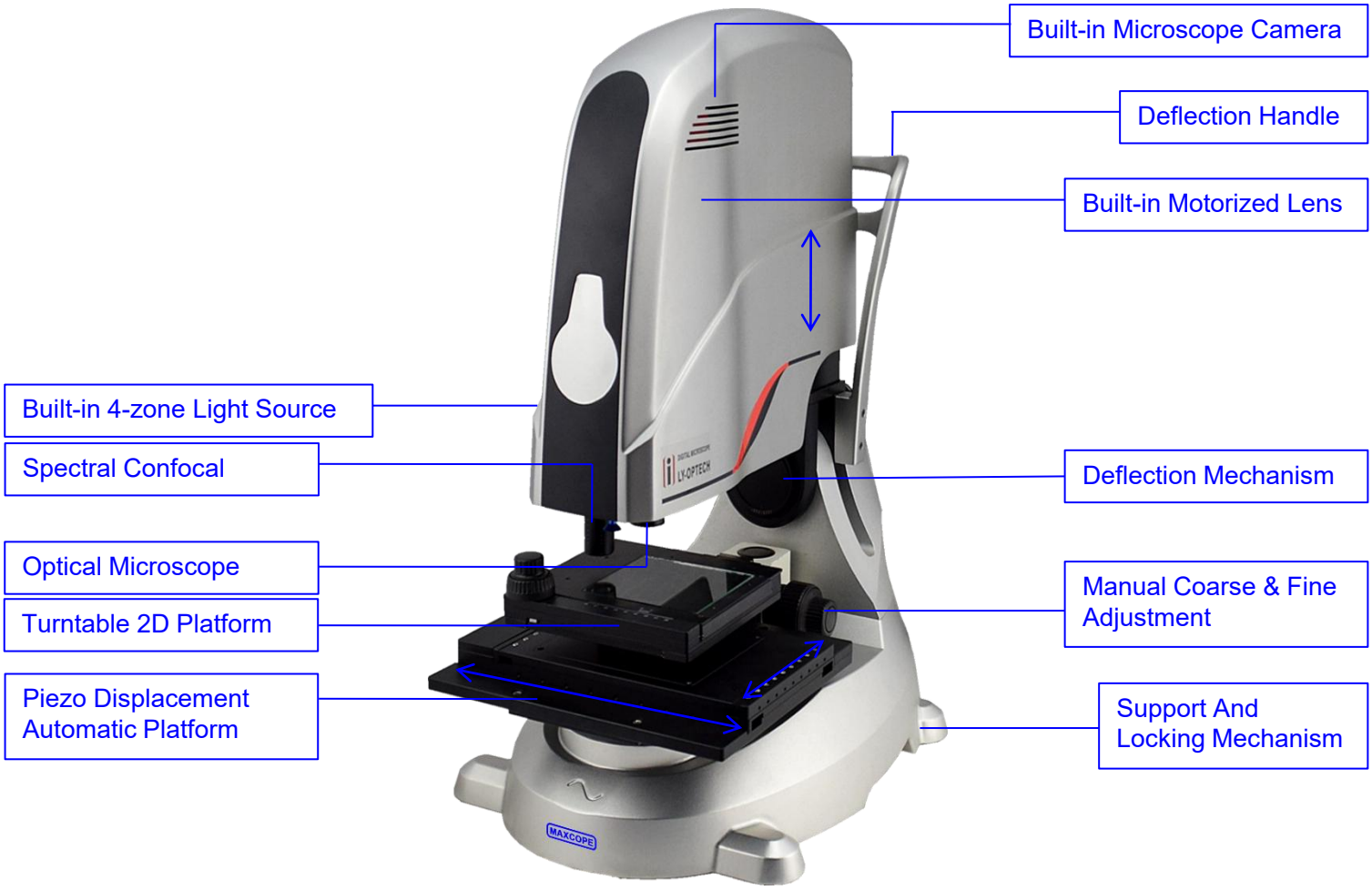






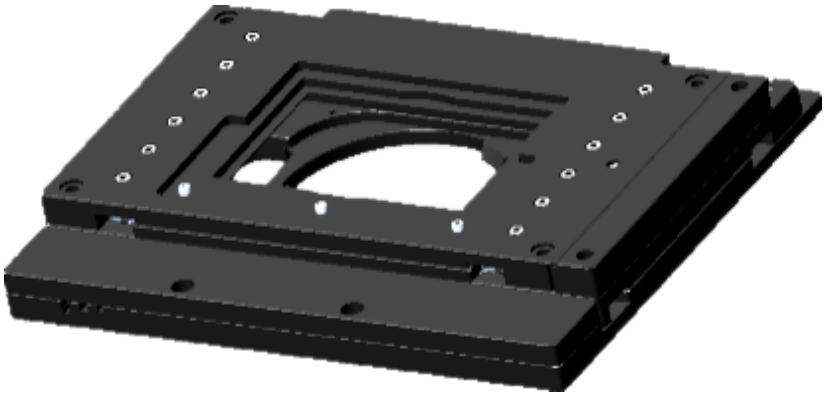
Plane & Stereo Measurement

Including two-dimensional measurements such as straight lines, parallel lines, circles and rectangles; three-dimensional measurements such as cross-sectional area, cross-sectional volume and height curves. Users can annotate objects in videos, images, panoramic depth maps, and 3D views, respectively.



High-precision Piezoelectric Displacement Stage Achieves Nanoscale Motion

The new piezoelectric displacement stage enables nanoscale high resolution and precision, millisecond to sub-millisecond fast response speeds, simplified control methods, and reduced overall weight through an ultra-thin design, ensuring exceptional accuracy during operation. It achieves seamless integration with spectral confocal technology, enabling large-scale, high-precision scanning and delivering metrology-grade results.



XY Displacement Accuracy 50 nm

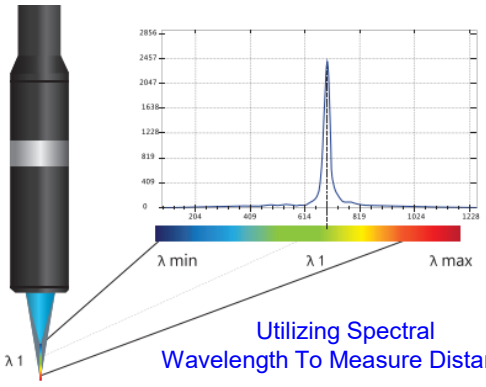
Mirror Surface, Large Diameter-depth Ratio Hole Groove, Smooth Arc Surface, Transparent Body, Large-angle Inclined Surface

Broad Material Adaptability, Exceptional Stability, High Detection Efficiency.

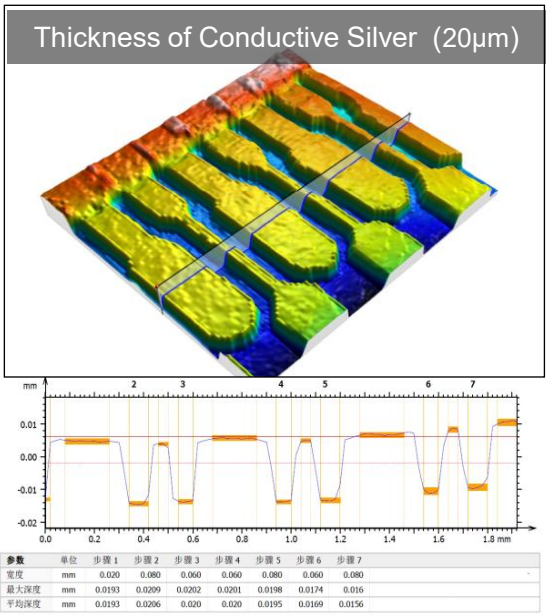
The spectral confocal lens based on white light dispersion technology offers the broadest measurement adaptability. In addition to conventional materials, it can effectively measure even smooth glass surfaces, polished mirror materials, transparent adhesive layers, and thin film materials. Its Z-axis resolution can reach below 10 nm. When paired with a high-precision piezoelectric displacement stage, it enables large-area, accurate contour measurement of samples. The resulting contour model can be fused with optical depth-of-field images, ultimately producing a metrology-grade color 3D model.

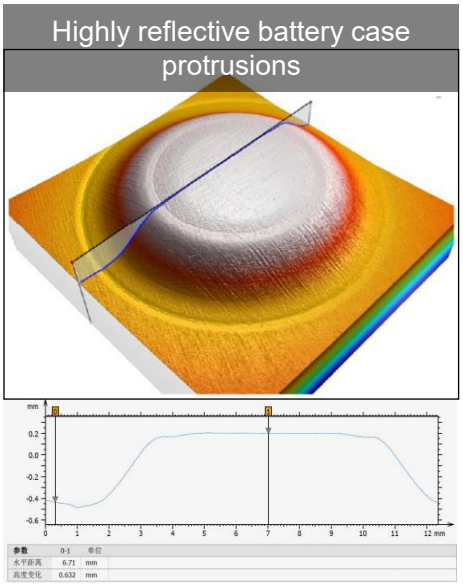
Detection Principle & Basic Spectral Feedback

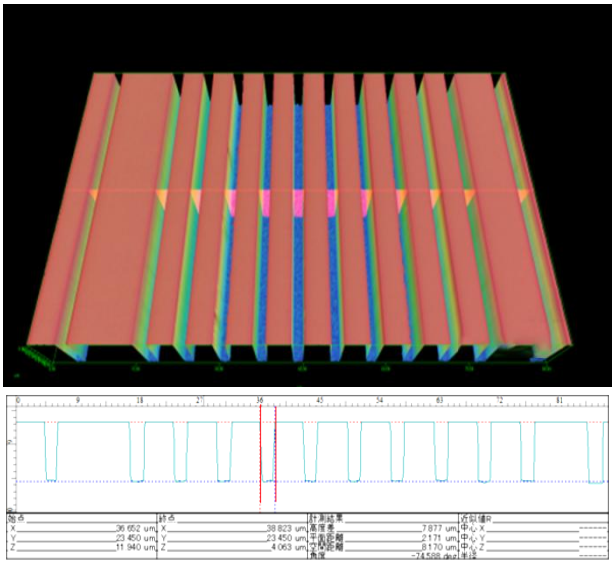
The spectral confocal lens based on white light dispersion technology offers the broadest measurement adaptability. In addition to conventional materials, it can effectively measure even smooth glass surfaces, polished mirror materials, transparent adhesive layers, and thin film materials. Its Z-axis resolution can reach below 10 nm. When paired with a high-precision piezoelectric displacement stage, it enables large-area, accurate contour measurement of samples. The resulting contour model can be fused with optical depth-of-field images, ultimately producing a metrology-grade color 3D model.



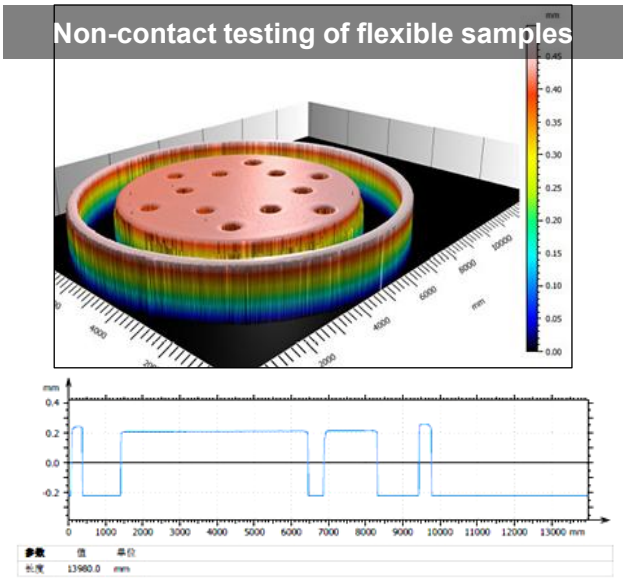
Utilizing Spectral Wavelength To Measure Distance.







Red line part width: 2.1 μm, height: 7.9 μm



The ratio of hole depth to diameter is: 3.5:1

M20.5830 Sample Pictures

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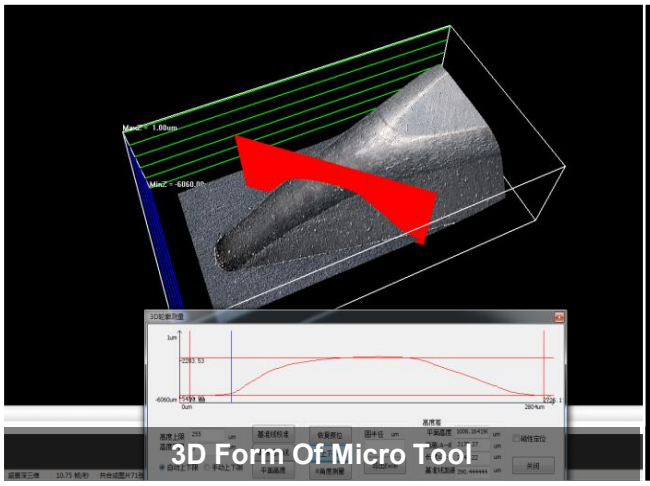
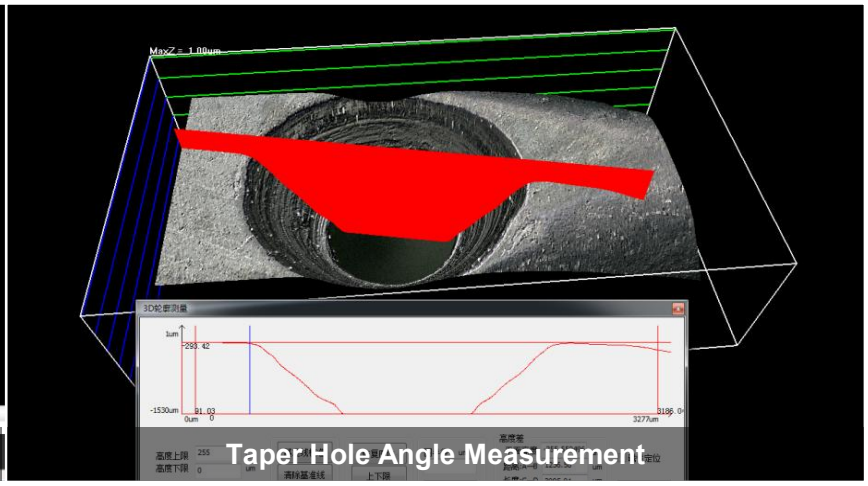
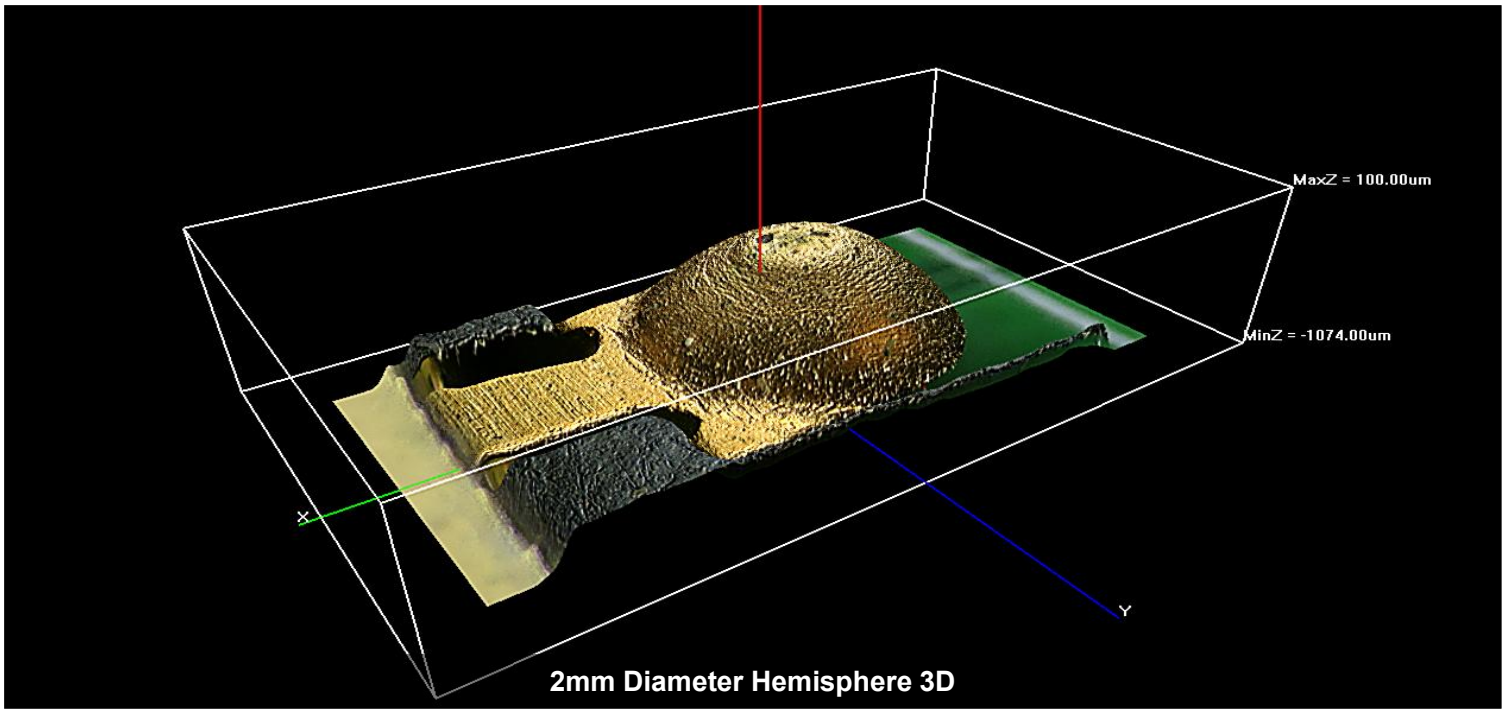
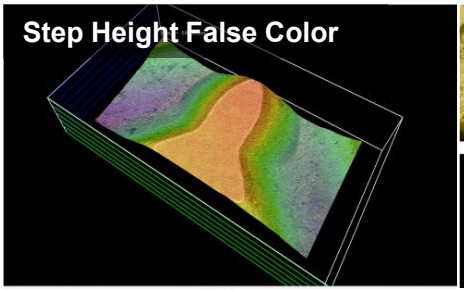
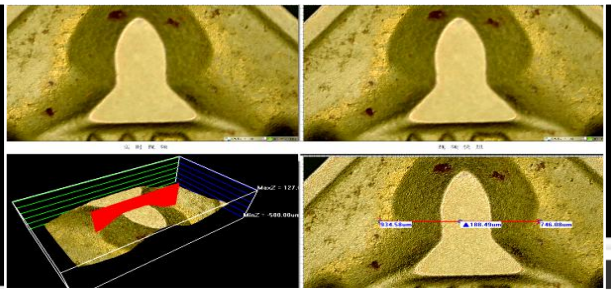
Materials, Corrosion, In-situ, Finishing And Other Industries

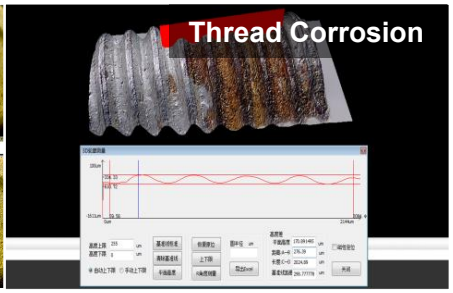


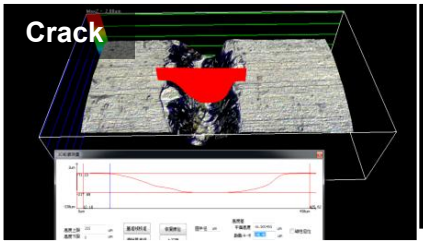


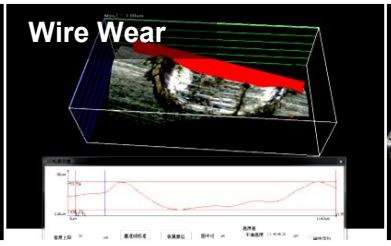


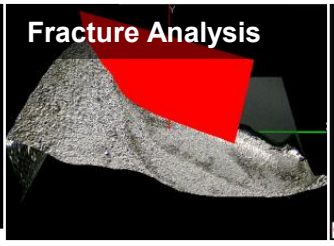


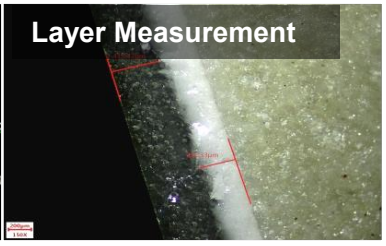












M20.5830 Sample Pictures

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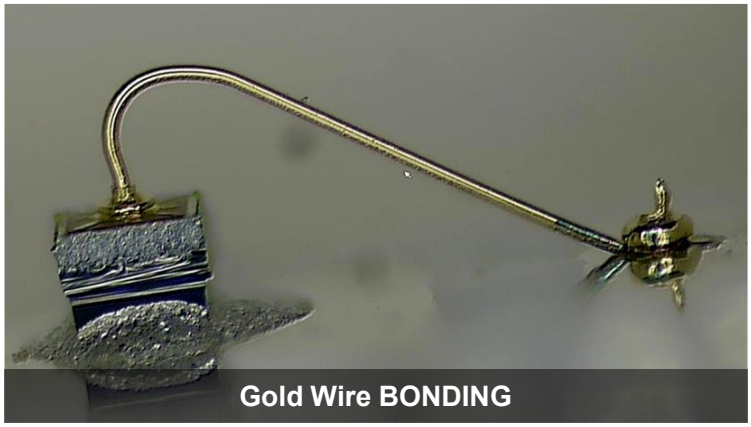
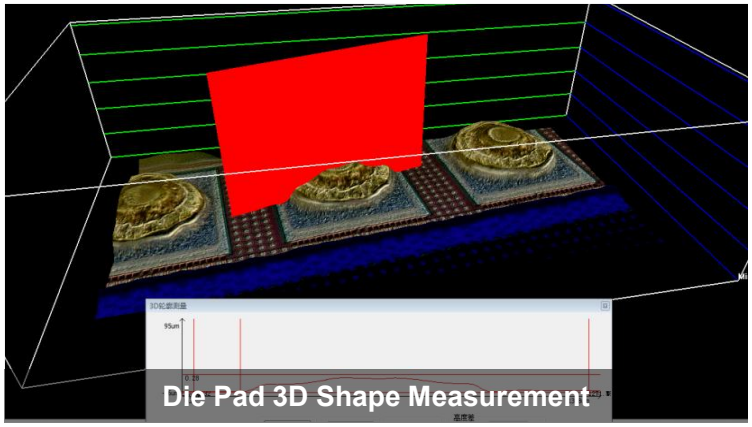
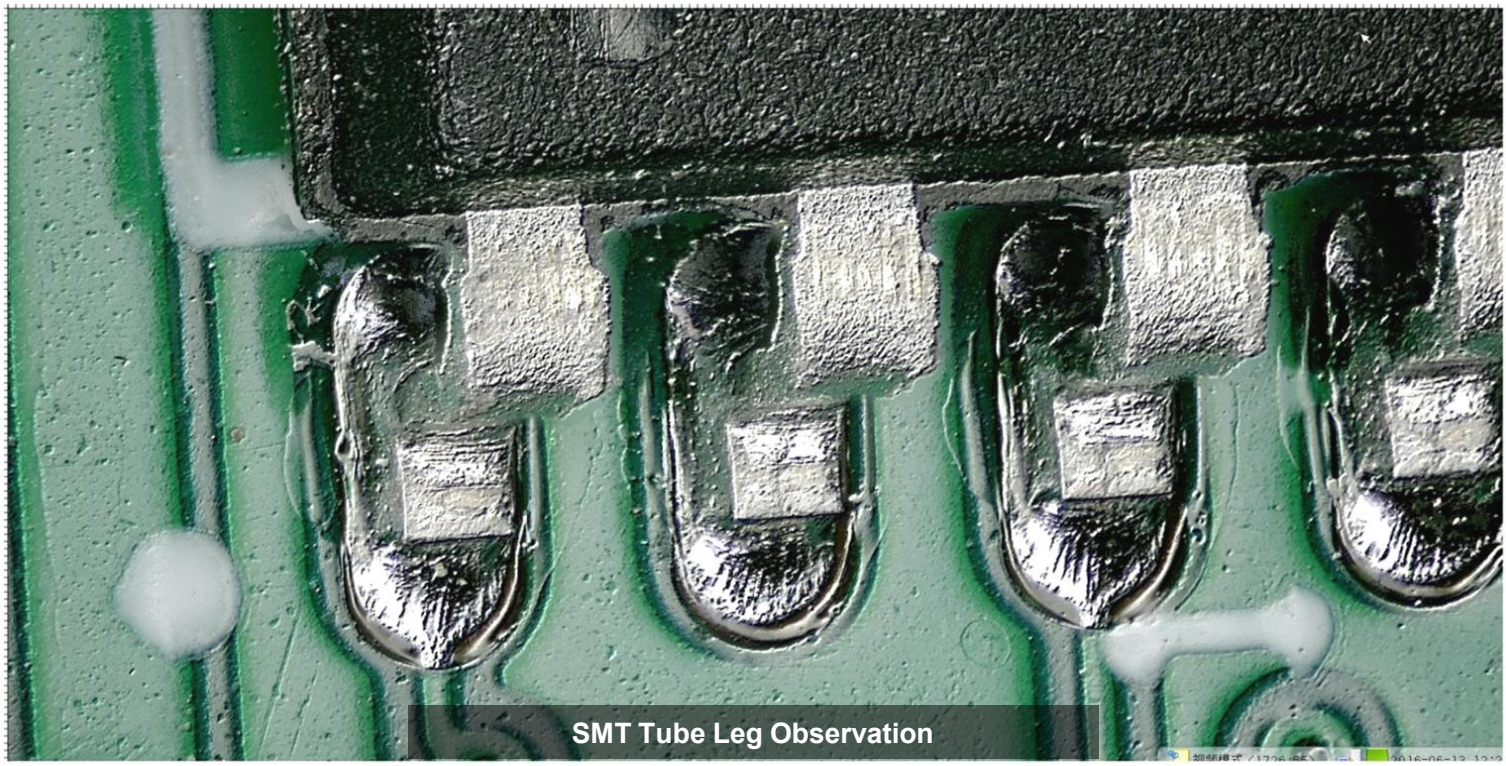
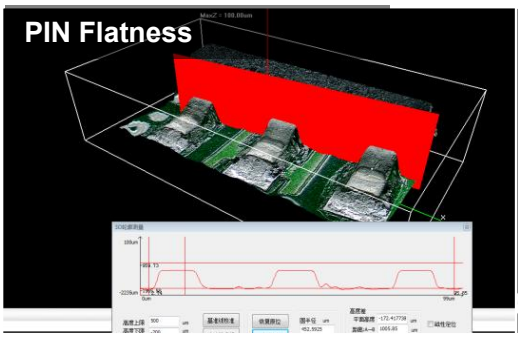
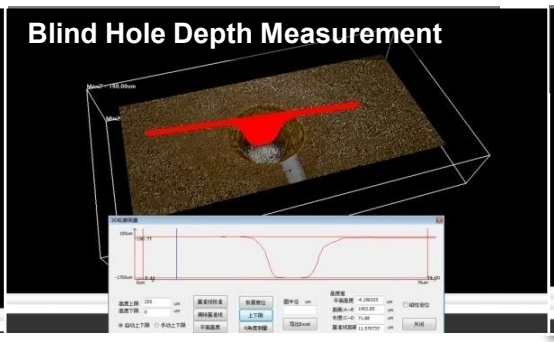
Electronics, Semiconductors, MEMS, New Energy And Other Industries

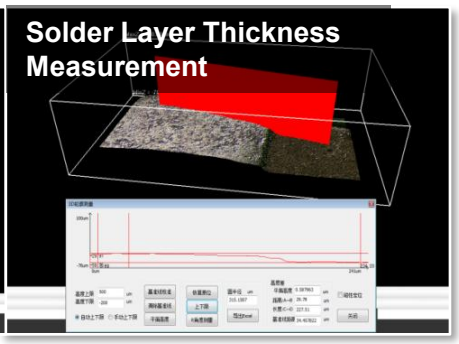


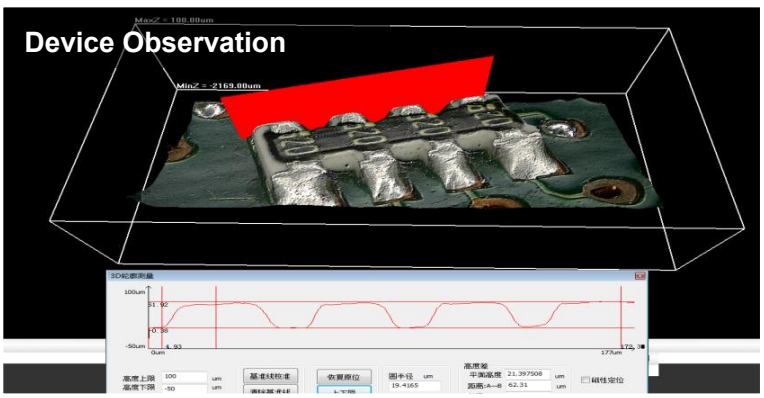


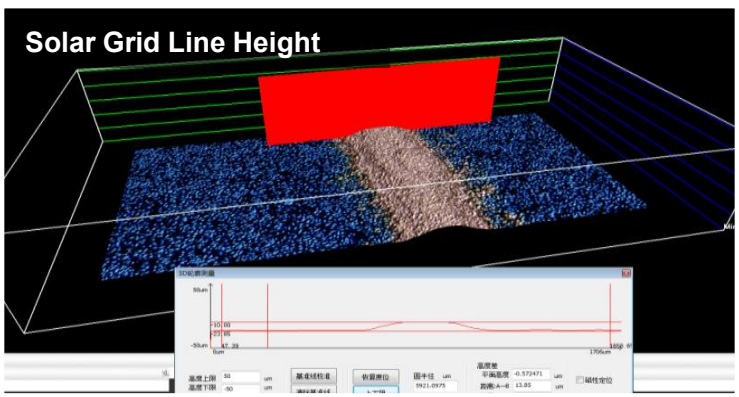








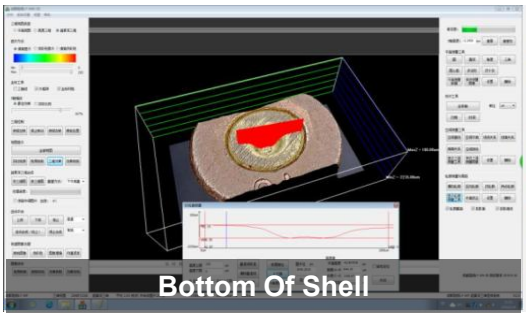




M20.5830 Sample Pictures

MAXCOPE

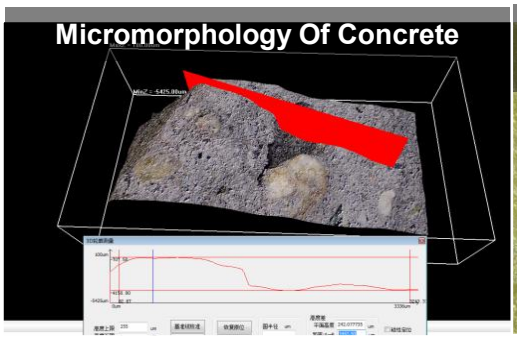
Criminal Investigation, Cultural Relics, Construction, Printing, Wood And Other Industries


Bottom Of Shell

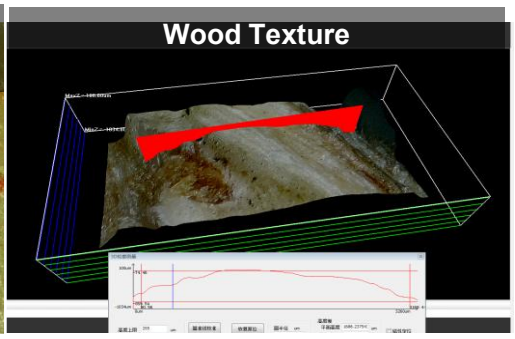

Cable Cut Marks

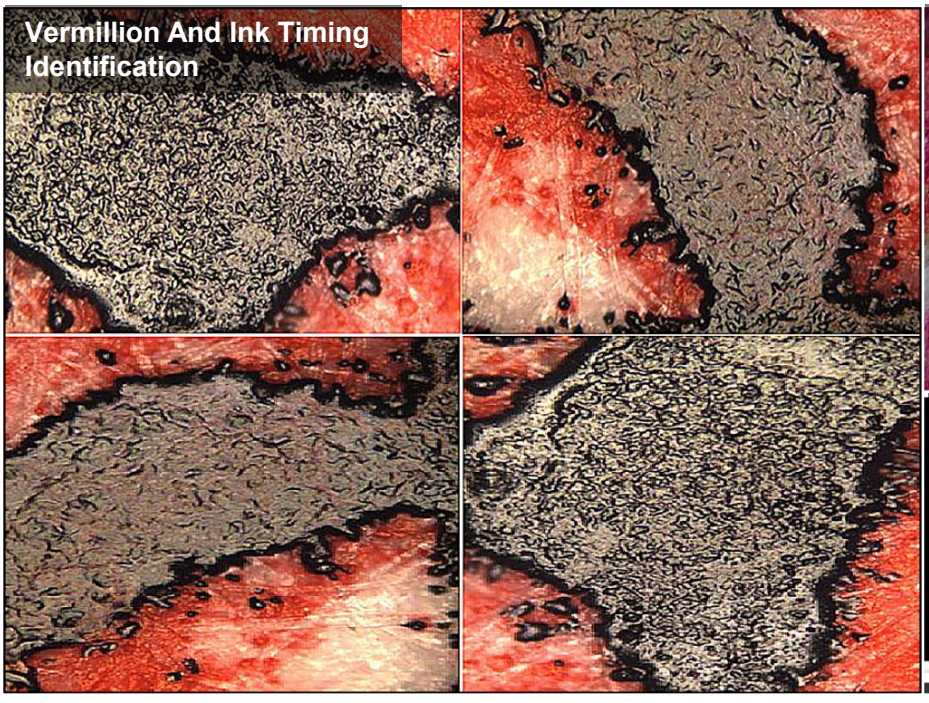

Keyhole Scratches

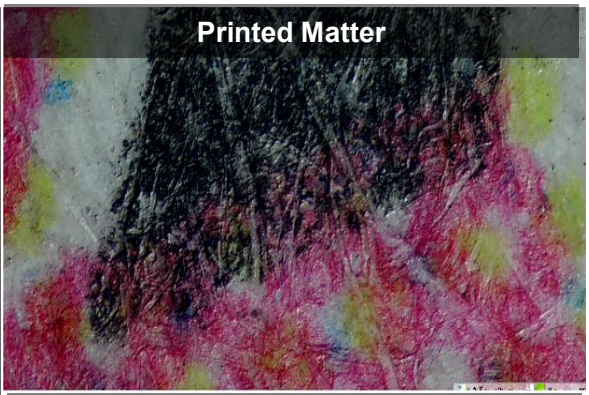

Super Depth Of Field Stitching At The Bottom Of The Bullet Casing

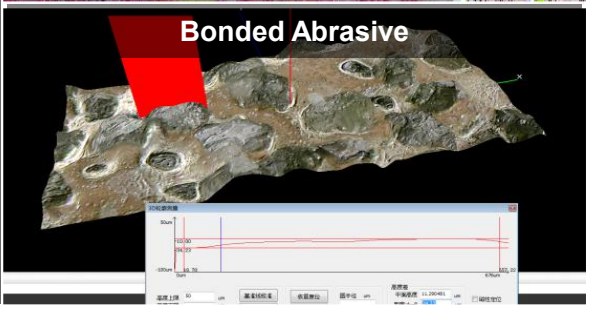

Micromorphology Of Concrete


Hetian Jade Super Depth Of Field Identification


Wood Texture


Vermillion And Ink Timing Identification


Printed Matter


Bonded Abrasive

M20.5830 Specification Sheet

MAXCOPE



		M20.5830				
Optical System	System	Infinity Plan Optical System, 12x-8000x				
	Zoom Ratio	16:1 Super Large Zoom Range				
	Zoom Mode	Motorized Zoom Control				
	Working Distance	80mm, Under 1x Objective (20x-320x)				
	Magnification	12x-8000x, Auto Display & Select Total Magnfication In Software				
Digital Camera	Sensor	1/1.7" CMOS, 12M (4000x3000)				
	Output	USB 3.0				
	FPS	60FPS				
	Color	High-performance Color Engine Ultra-FineTM Restoration Technology				
	HDR	Support				
Illumination	Light Source	Hight Brightness LED Illumination				
	Life Time	30000 Hours				
Watching Mode	Bright Field	LED Right Light Coaxial Illumination				
	Dark Field	Dark Field + Deep Hole View				
	Incline Light	4 Segment Controlled By Software				
	Polarizing	Polarzing LED Ring Light				
	DIC	(Optional)				
	Transmit	(Optional)				
Z Axis Focus	Focus Mode	Manual Focus + Auto Focus				
	Z Moving	Motorized Z Moving 100mm, Max Specimen Height 150mm				
	Z Resolution	Z 100nm				
X/Y Axis Working Stage	Manual	Manual Moving Range 70mmx50mm				
	Motorized	Motorized Moving Range 100x100mm, Resolution 50nm				
	Max Weight	2.5KG				
View Angle	Standard	Vertical View				
	Incline View	+/-90° Inclined View With Tilt Handel				
	Rotate	Manual Working Stage 360° Rotatable				
Objective	Lower Power	0.5x Objective, W.D. 140mm				
		1.0x Objective, W.D. 80mm				
	Hand-held	1-250x Zoom Handheld Microscope To Touch & View Quickly, Smart Display Magnification, One Key Auto Focus				
	High Power	MPLSAPO Infinity **Plan APO** LWD Objective, OFN=26.5, M26 Screw Thread				
		5X	10X	20X	50X	100X(Optional)
		LWD	LWD	LWD	LWD	LWD
		NA:0.15	NA:0.3	NA:0.45	NA:0.55	NA:0.8
		100x-1600x	200x-3200x	400x-6400x	1000x-8000X	2000X-16000X
Spectral Confocal	White Light Spectrum	0.1mm-25mm Measuring Range, Max Resolution 0.2nm (Optional)				
Software	System	Windows 11 System With 3D Microscope System Software Pre-Installed				
	Light	Control 4 Zones Light , Bright Field, Transmit Light, etc.				
	Camera	Brightness, Contrast, Sharpness, Exposure, HDR, etc.				
	Control	Auto X/Y/Z 3D Moving Real Time Control, Show Real Time Titl Angel & Magnification				
	Rebuild	Auto 3D Rebuild, Auto Focus Control				
	Measure	2D Measure, 3D Measure, Spatial Measure				
	Stitch	Full Auto 2D Large Image Stitch, 2D + 3D Multi Layers Image Stitch				
	Save	Save 3D Image, Save Stitch Image, Output Report Word File				
Computer		Computer, 4K Monitor, Keyboard, Mouse				
Accessory	Control	Control Box, Joy Stick				
	Anti-Vibration	Anti-Vibration Foot Set of 4				
	Accessories	Stage Micrometer, Installation Tools Kit, Cleaning Kit				

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Tel: +86 10 88696085 Emai: sale@cnoec.com