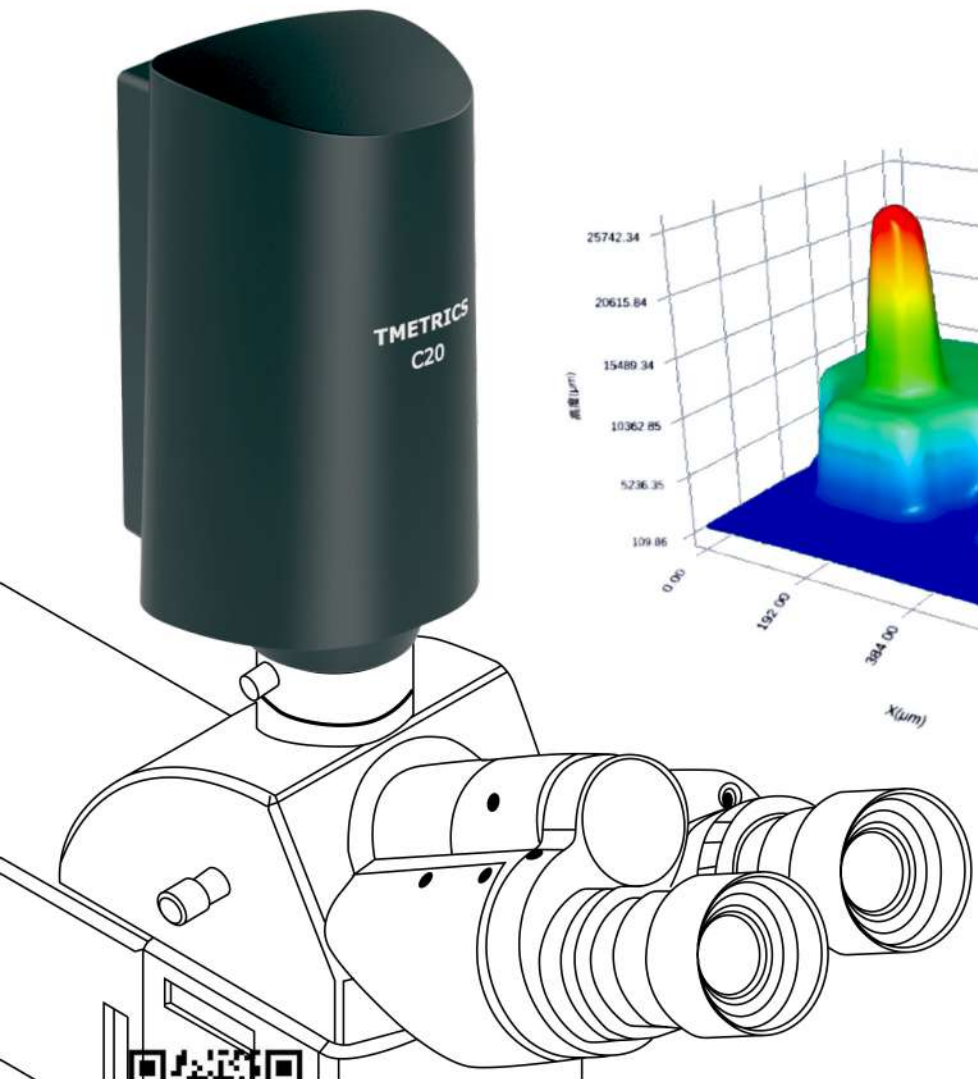
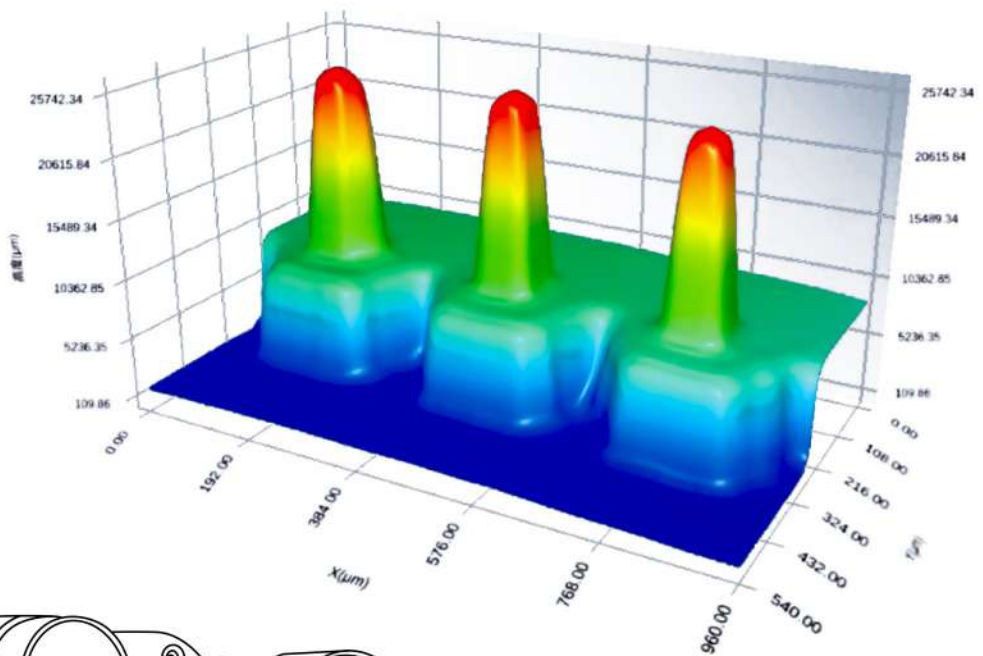
Tmetrics C20

3D Super EDF Microscope Camera

A smart camera that can directly obtain microscopic 3D images and measure them, upgrading your microscope's observation and analysis competence!





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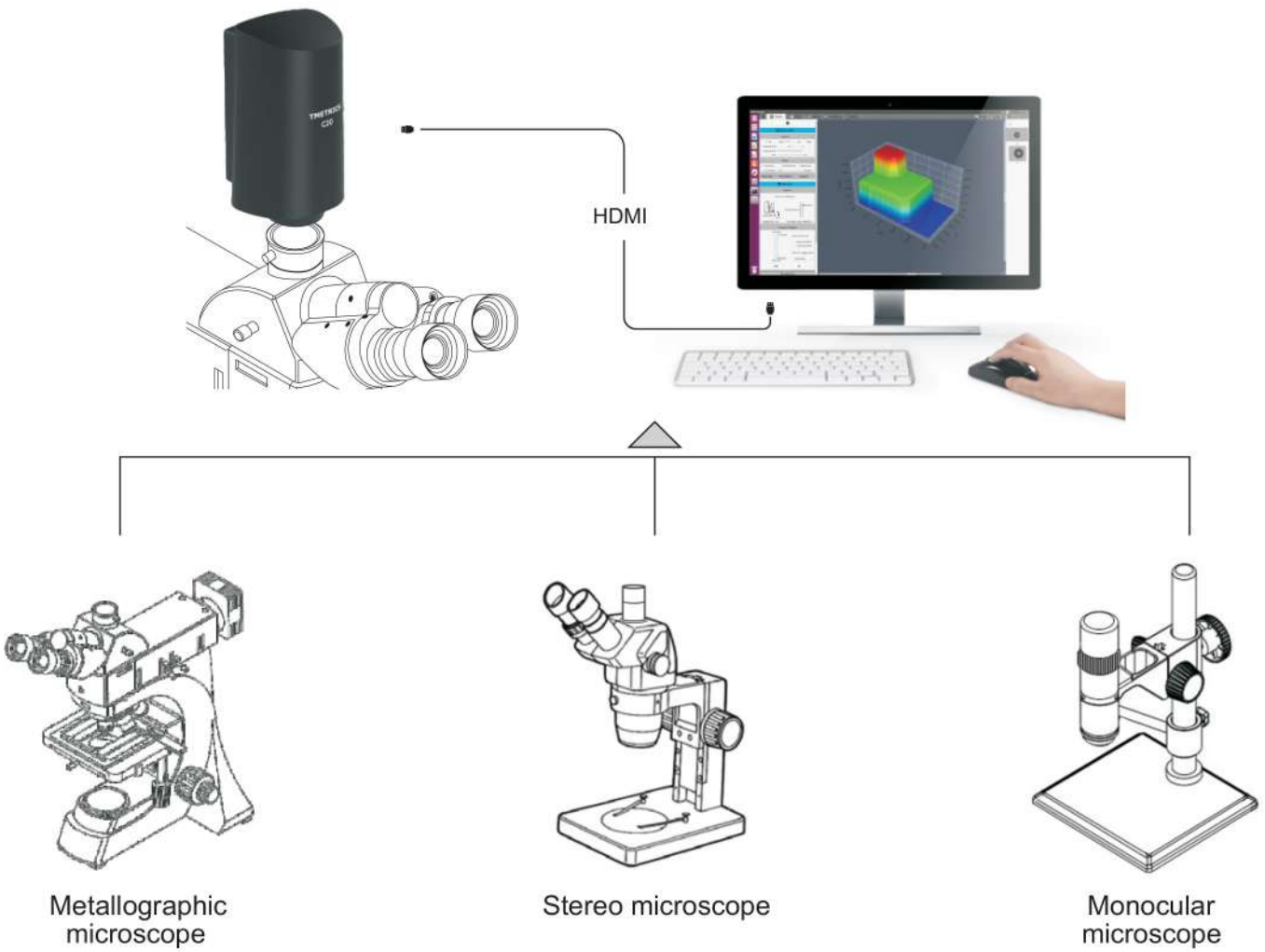
3D Super EDF Microscope Camera - Tmetrics C20

- **Easy to use:** No computer required, perform 3D observation and measurement.
- **Wide applications:** Equip with metallographic, stereo and other reflective microscopes.
- **Accuracy measurement:** ±2um measuring accuracy for 2D&3D with 10x objective lens.

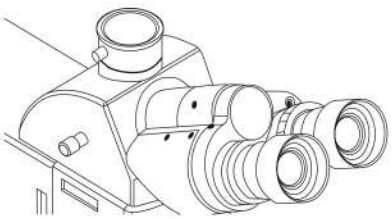


The C20 camera integrates features of high integration and flexibility, it can be directly used on reflective microscopes without any additional modification, the operation is easy to be done and all functions can be completed via mouse. Its built-in core technology can offer strong smart linkage performance guarantee for microscopic system: built-in intelligent heterogeneous host can replace computer to carry out plenty of calculating works directly, and the operation is speedy and stable. Real-time super depth of field and 3D moulding algorithm can contribute microscopic system to achieve comprehensive three-dimensional observation and measurement analysis. Meanwhile, the automatically edge recognition algorithm can also further improve the efficiency of microscopic observation and batch operation.

Core technology creates a strong linkage performance

■ A Heterogeneous system

Possess ability for high speed data calculation



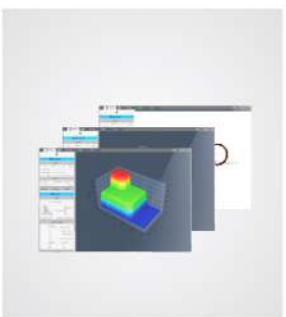
■ Three computing algorithms

- Super depth of field
- 3D moulding
- Edge recognition

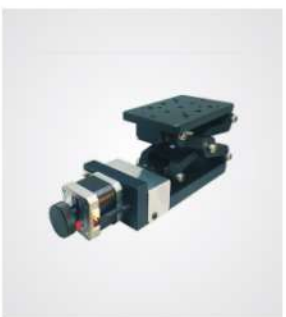
■ Four in one systems

High-speed camera

Imaging analysis software



Z-axis motorize stage



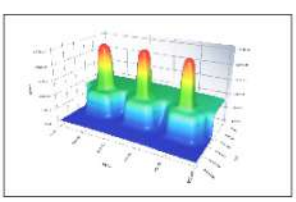
High-performance host

■ Upgrading your microscope's capability

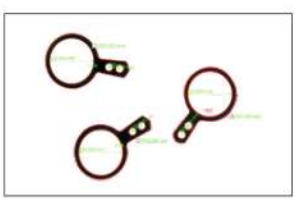
2D observation

Super depth of field

3D measurement

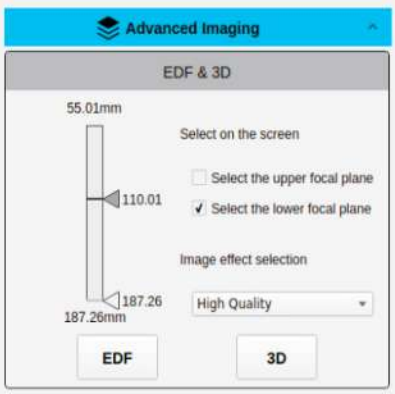


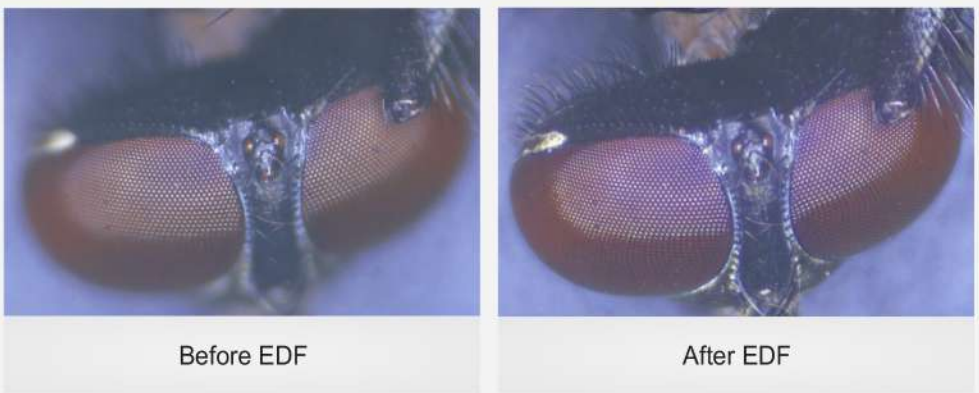
2D auto measurement



Super depth of field to get all features on the same plane

Open “Capture-Advanced imaging-EDF&3D” function module in the software, confirm the position of the upper and lower focal planes to be observed in the image via mouse, click "EDF", then the C20 will automatically fulfill the depth of field, show all features on the image.



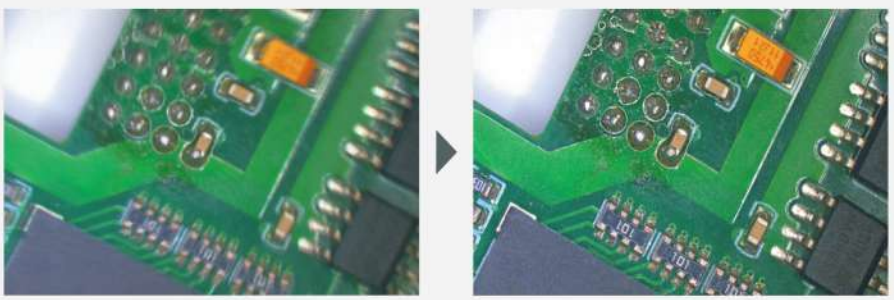


Before EDF

After EDF

■ Real-time EDF for clear microscopic observation

Ordinary microscopes cannot focus on multiple layers at the same time under high magnification. It is easy to cause angle deviation, rotation and uneven focal plane by using third party software and hardware systems to expand the depth of field. The C20 inner smart EDF algorithm can help solve these problems, capture a clear and correct full-frame focusing image.

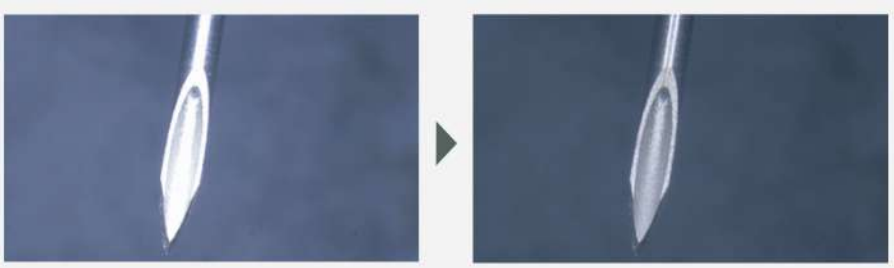


The EDF image of third SW and HW system

The EDF image of C20

■ Real-time WDR to eliminate strong reflection

Strong reflections on the metal surface may lead to misjudgment of details. The C20 provide its WDR function to capture the perfect exposed images by calculating data in real time from multiple images of different brightness levels.

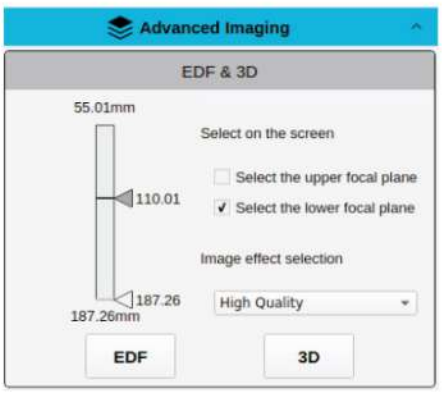


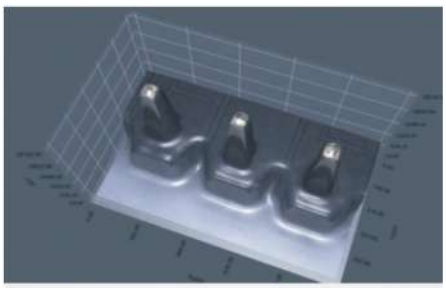
Before WDR

After WDR

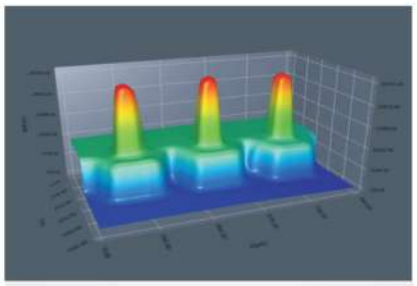
Create 3D matrix and easily measure any location

Open "Capture-Advanced imaging-EDF&3D" function module in the software, confirm the position of the upper And lower focal planes to be observed in the image via mouse, and click "3D", then C20 will automatically complete 3D moulding. You can observe the real scene or pseudo-color model with 360° rotation.





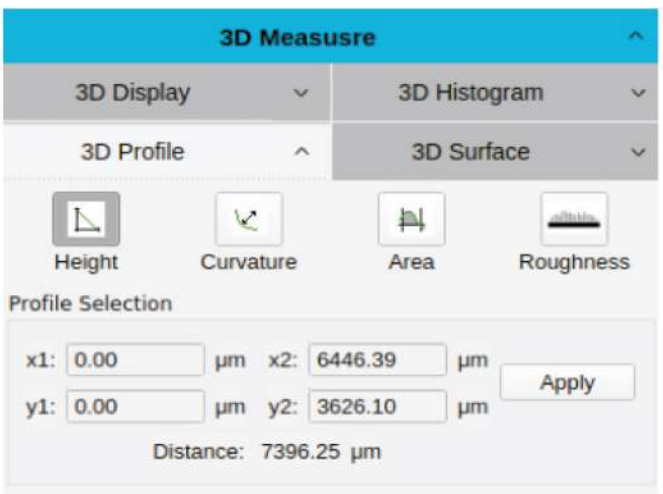
The Real scene model



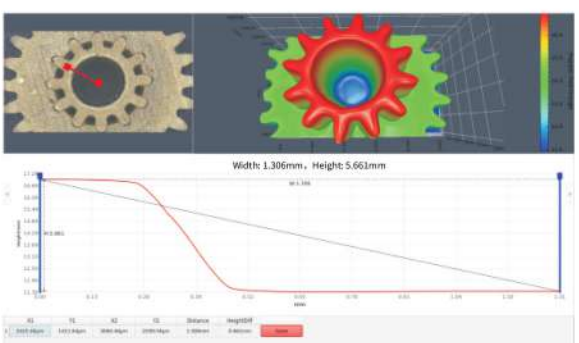
The pseudo-color model

Rich 3D Measurement functions

The C20 provides a wealth of 3D tools for easily measure any position of the 3D model and record the data in real time. With the metallographic microscope of 10 times objective lens, , the Z-axis measurement accuracy and repeatability is±2 micron and±1 micron. The higher magnification objective lens, and the higher precision data.

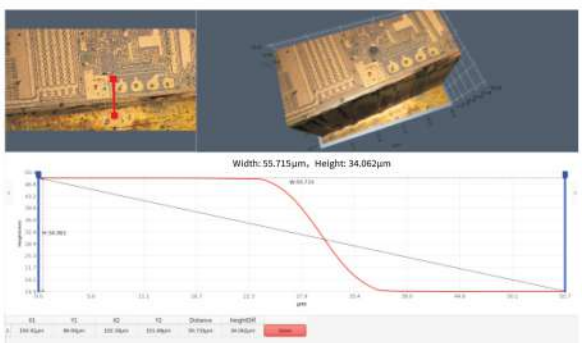


■ The inner height measurement



Microscope: stereo
Model: Clock gear
Height: 5661mm

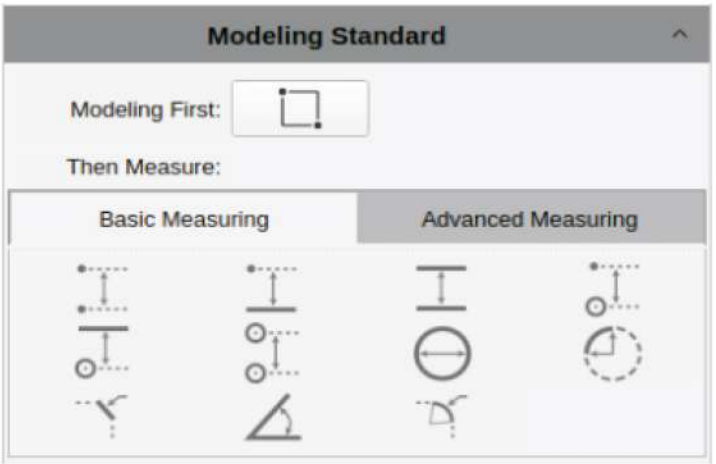
■ The precision structure analysis



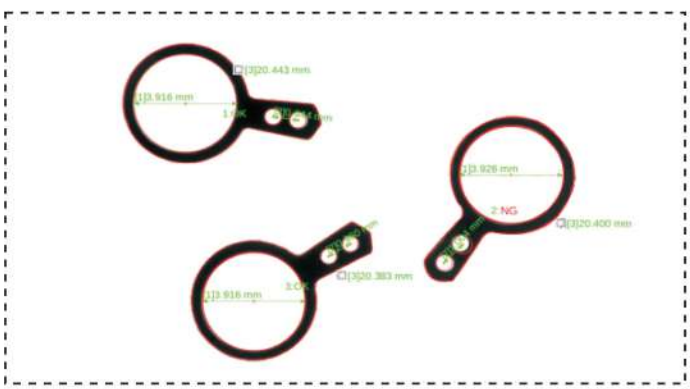
Microscope: metallographic
Model: sensor chip
Height: 34062µm

Automatic 2D measurement for your batch operations

The C20 also features 2D intelligent image recognition to help you quickly set up the standard measurement pattern without manual precise positioning, and finish various batch measurement operations. With the stereo microscope of 2.5 times magnifying, the 2D automatic measurement accuracy and repeatability is ±5 micron and ±3 micron.

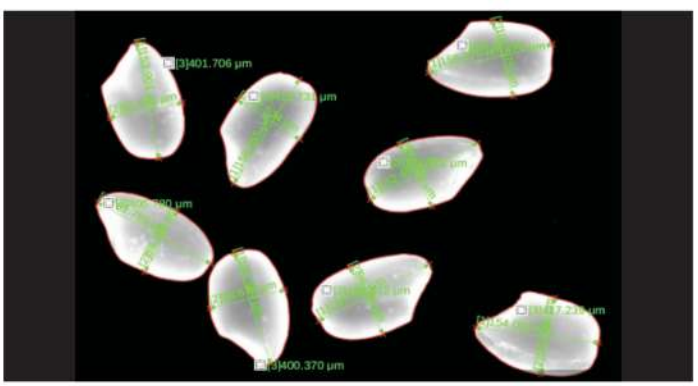


■ Quality judgment



For standard parts, C20 can automatically display OK/NG results of samples according to the set standard deviation range, improving the efficiency of quality detection.

■ Batch task



For non-standard parts, C20 can output the measurement data of all samples at one time by setting the similarity tolerance to improve the efficiency of batch tasks.

Report creation function of humanity

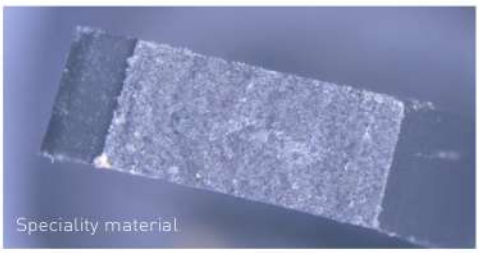
The C20 can not only save images and video data, but also automatically create test reports with pictures and texts, all 2D and 3D data in the work- flow all can be exported. The job was done when operation finished, easy and simple!

Product specification

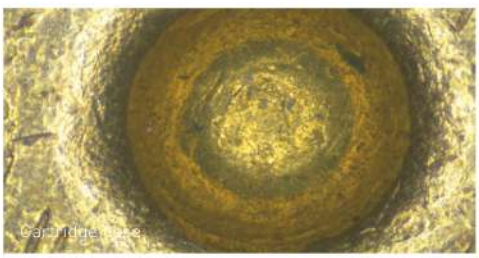
Model	Tmetrics C20	
Camera Features	Sensor	Sony 1/2"color CMOS
	Resolution	1080P(1920×1080)
	Pixel size	3.75μm×3.75μm
	Shutter mode	Rolling
	Scanning method	Progressive scanning
	Frame rate	60fps(Normal),30fps(WDR)
	Gain	Automatic / Manual
	Exposure time	Automatic: 0.1ms-16.6ms, manual: 0.0001s-1s
	White balance	Automatic/manual/area
	Image storage	TIFF/JPEG
	Video format	AVI/MP4(1080P)
Advanced Features (Embedded)	3D noise reduction	Support
	WDR	Support
	Real-time EDF	Support
	Edge enhancement	Support
	Gamma correction (contrast)	Support
	Color enhancement	Support
	Flat field correction	Support
	Effect mode	Normal/Negative/Relief/Grayscale
3D display and measurement	Online calibration	Support
	3D display	Pseudo-color/real scene display, grid lines, 360°rotation
	3D histogram	Support
	3D profile measurement	Height difference, curvature, area, roughness
	3D surface measurement	Step height, volume, surface roughness
	Z range (depth of field, 10X)	230.00μm
	3D measurement accuracy (10X)	±2μm
	3D repeatability (10X)	±1μm
	3D measurement report	Support, editable template
2D measurement	2D calibration ruler	Support
	2D manual measurement	Point-point, point-line, line-line,Parallel, perpendicular, polygon, circle, arc, concentric circle, circle-circle, angle
	Counter	Manual
	2D measurement accuracy (10X)	±2μm
	2D repeatability (10X)	±2μm
	2D measurement report	Support
Input	Mouse input	USB mouse
	Keyboard input	USB keyboard
Interface	Optics	Standard C-Mount
	Video	HDMI 2.0
	Internet connection	Fast Ethernet
	USB	USB2.0 x 3, USB3.0 x1
Others	Storage capacity	Built-in 32G Emmc
	Power supply	12V 8A
	Weight	2.5kg
	Appearance size (WxHxD)	87cm*181cm*103cm
	Working environment	5℃-40℃ (temperature), 45%-85% (humidity)

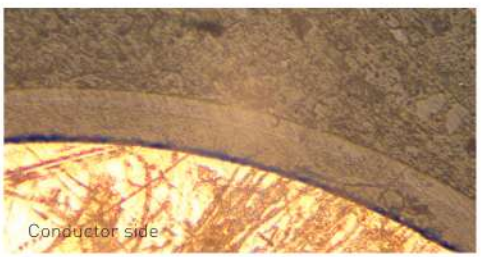
Reference case and upgrade your microscope

Material section analysis



Surface trace detection





Biology observation

Component measurement