



OPTO EDU A13.0915 Trinocular Metallurgical Microscope Semi-APO Motorized Nosepiece

Our Product Introduction

Basic Information

- Place of Origin: China
- Brand Name: CNOEC, OPTO-EDU
- Certification: CE,
- Model Number: A13.0915
- Minimum Order Quantity: 1 pc
- Price: FOB \$1~1000, Depend on Order Quantity
- Packaging Details: Carton Packing, For Export Transportation
- Delivery Time: 5~20 Days
- Payment Terms: T/T, West Union, Paypal
- Supply Ability: 5000 pcs/ Month



Product Specification

- Optical System: Infinity Color Corrected Optical System
- Observation: Bright Field (BF)/Near-infrared (NIR)
- Viewing Head: NIR 30° Trinocular Head (Erect Image)
- Eyepiece: WF PL10X/23mm, Diopter Adjustable, High Eyepoint
- Objective: Infinity Plan Semi-APO NIR Objective
- Nosepiece: Motorized Sextuple Nosepiece With DIC Slot
- Highlight: **Motorized Nosepiece Metallurgical Microscope, Trinocular Metallurgical Microscope, Semi APO Metallurgical Microscope**



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A13.0915

NIR Near-infrared Industrial Metallurgical Microscope





An NIR microscope is a type of microscope that uses near-infrared radiation (NIR) to image samples and obtain spectral information about their chemical composition. This technology combines the spatial resolution of microscopy with the spectral analysis of NIR spectroscopy to provide a powerful tool for analyzing materials at the microscopic level.

A13.0915 NIR microscopes use broadband light sources to illuminate the sample, and a detector collects the reflected or transmitted light. The resulting spectra provide information about the molecular structure and composition of the sample, including the presence and concentration of various chemical compounds.

A13.0915 NIR microscopy has a broad range of applications, including the analysis of biomedical samples, pharmaceuticals, polymers, and geological samples. The technique is particularly useful for non-destructive analysis of biological tissues, as it can provide detailed information about the chemical composition of cells and tissues without the need for staining or other invasive techniques.



Non-destructive inspection
for CSP/SIP

Non-destructive analysis
of bad chip packaging

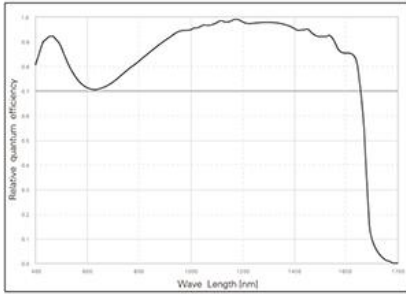
Near infrared detection
of MEMS devices



A13.0915-6R, -8R
NIR Industrial Microscope
6" Reflected, 8" Reflected

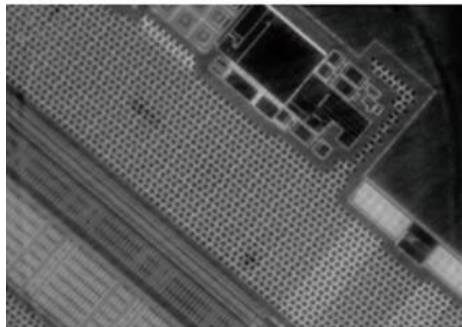


A13.0915-12R, -12RT
NIR Industrial Microscope
12" Reflected, 12" Reflected & Transmitted

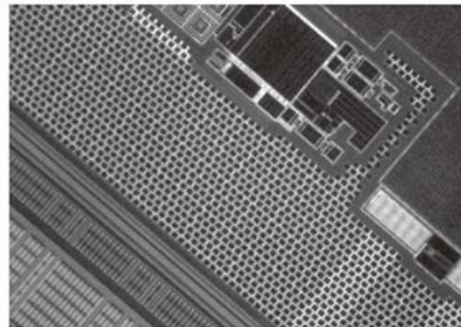


NIR Camera For Wide Spectrum Range

A13.0915 series uses a wide spectrum dedicated infrared NIR camera, covering bright field and infrared observation. Field illumination, wide imaging field of view and high resolution. Used with bandpass color filter for area array detection. It can respond to different parts of the chip inside the silicon wafer to meet the needs of different customers. Wide-field illumination, area array detection to achieve wide spectrum, large field of view and high-resolution imaging.



3.2 M view



1.3 M view

NIR Camera	Pixel	Band	Frame rate	Pixel size
A59.0971-3.2M (Standard)	3.2M	400~1100nm	120fps@2064x1544	3.45 μm
A59.0971-1.3M (Optional)	1.3M	400~1700nm	72fps@1280X1024	5 μm



NIR Reflect Epi-illuminator

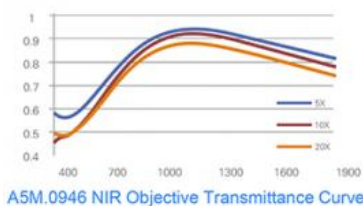
- For optical elements in illuminators. The device increases in the 400-1700nm band Transparent, you can choose between bright field (BF) and infrared (NIR) field selection, wide spectral range, small scattering, suitable for silicon wafers (Germanium sheet) has strong penetrating performance.
- The aperture diaphragm and objective lens magnification vary from automatic matching, no need for manual adjustment, fast and efficient, suitable for different user same view observe the effect.



NIR Infinity Plan Semi-APO Objectives

With special designed A5M.0946 NIR objectives, you can observe the interior of packaged chips and wafers in real time, show clearer ultra-wide spectrum imaging easily.

- A13.0915 series industrial infrared microscope imaging system is equipped with 5X-50X professional infrared objects Mirror that provides aberration correction from visible to near-infrared wave lengths, suitable for conventional brightfield and dedicated infrared observation.
- For high-magnification objectives with larger numerical apertures, a correction ring is added to correct the overlay. Aberrations caused by different cover sheet thicknesses enable high-definition and accurate detection in the near-infrared band.



A5M.0946	Magnification	N.A.	W.D. (mm)	Cover Glass Thickness
Infinity Plan Semi-APO NIR Objective	5x	0.15	19.58	-
	10x	0.30	12.2	-
	20x	0.45	7.31-7.57	0-1.2, Correct Ring
	50x	0.7	2.68-2.93	0-1.2, Correct Ring

NIR Filter Sliders

A13.0915 designed multi-hole filter sliders, 1100nm, 1200nm, 1300nm bandpass near-infrared color filters for option Users can quickly switch bands, realize responses of different structures in the same area through narrow-band width secondary filtering, and obtain sharp images.



Large Mechanical Stage With Quick Moving

- A13.0915 series industrial infrared microscope imaging system uses a clutch handle. The user can move the platform flexibly after presses the clutch button. To press the clutch button to cancel the quick move. Free the users during long-term operation and speed up observation.
- The stage has precision rail mechanism, which makes the movement lighter and smoother, and the product is more stable and reliable.
- A13.0915-6R with 6" stage size 445x240mm, moving range 158x158mm
- A13.0915-8R with 6" stage size 525x330mm, moving range 210x210mm
- A13.0915-12R/12RT with 12" stage 420mmx710mm, moving range 305 x356mm.



Ergonomics Design Provide The Highest Working Efficiency



High Speed Motorized Nosepiece

- Equipped with forward and backward moving modes to quickly and accurately locate the required objective with high repeatable positioning accuracy.
- Mechanical switching mode effectively improves extend the working life of the nosepiece.



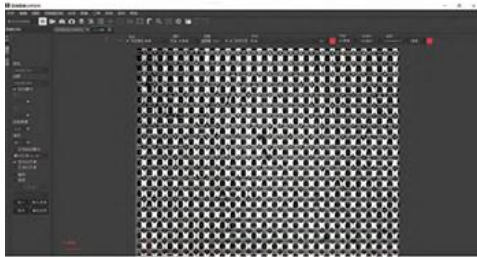
Independently Developed Software with More Operating Functions

A13.0915 series adopts Mv Image software. On functional modules such as management, measurement, image collection, and layer management, additional With the unique infrared image enhancement function, it can also be customized according to customer needs.



Image Enhancement

Improve the image clarity of infrared penetration, making local details more obvious.



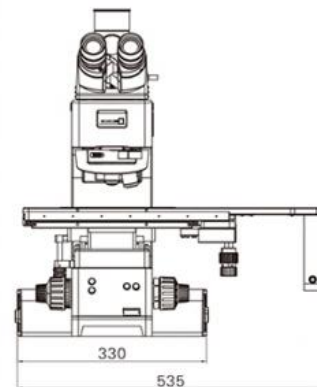
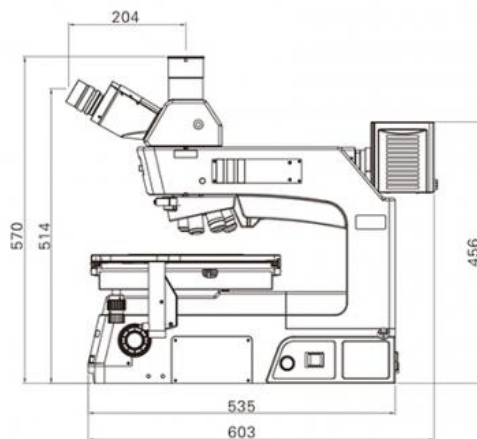
AI Software Empowerment

Self-developed AI can automatically detect defects in samples main learning function, automatic defect identification, capture, counting statistics and other functions. At the same time, according to different customers customized on demand.

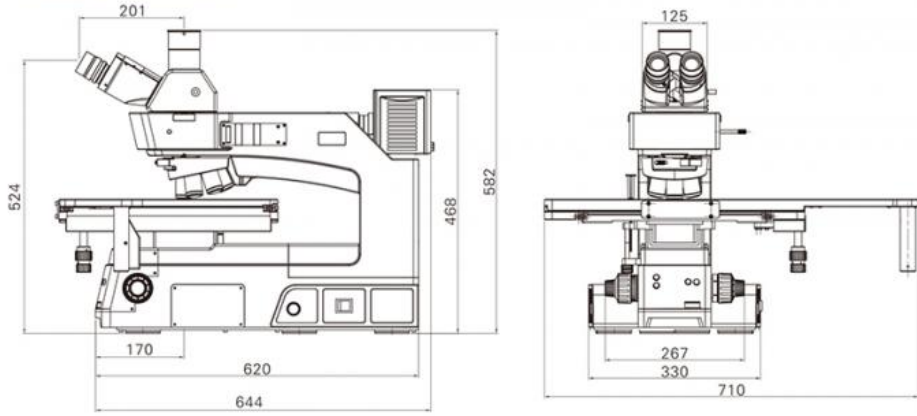
A13.0915 Dimension (Unit: mm)

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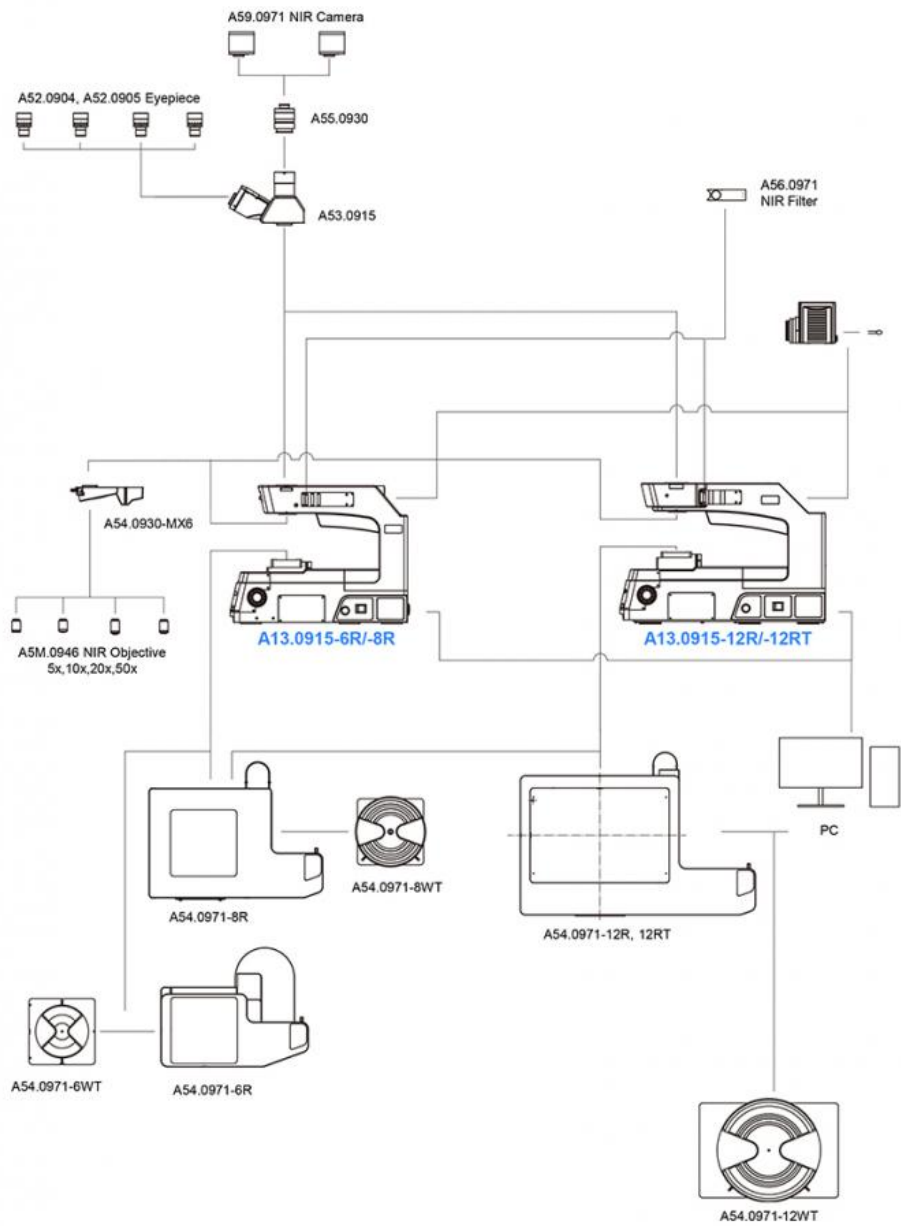
A13.0915-6R/-8R



A13.0915-12R/-12RT



A13.0915 Structural Diagram



A13.0915 Specification



A13.0915-6R, -8R



A13.0915-12R, -12RT

A13.0915 NIR Near-infrared Industrial Metallurgical Microscope		A13.0915				Cata. No.
		6R	8R	12R	12RT	
Optical System	Infinity color corrected optical system	●	●	●	●	
Observation	Bright field (BF)/Near-infrared (NIR)	●	●	●	●	
Viewing Head	NIR 30° trinocular head (Erect image), interpupillary 50-76mm, splitting ratio 100:0 or 0:100	●	●	●	●	A53.0915
Eyepiece	WF PL10X/22mm, diopter adjustable, high eyepoint	○	○	○	○	A51.0904-1022T
	WF PL10X/22mm, diopter adjustable, high eyepoint, with micrometer	○	○	○	○	A51.0905-1022NRT
	WF PL10X/23mm, diopter adjustable, high eyepoint	●	●	●	●	A51.0904-1023T
	WF PL10X/23mm, diopter adjustable, high eyepoint, with micrometer	○	○	○	○	A51.0905-1023NRT
Infinity Plan Semi-APO NIR Objective	NIR5X/0.15, WD=19.5mm, Wavelength 450-1700nm	●	●	●	●	A5M.0946-5
	NIR10X/0.3, WD=12.2mm, Wavelength 450-1700nm	●	●	●	●	A5M.0946-10
	NIR20X/0.45, WD=7.31-7.57mm, Wavelength 450-1700nm, cover glass 0-1.2mm with correcting ring	●	●	●	●	A5M.0946-20
	NIR50X/0.70, WD=2.68-2.93mm, Wavelength 450-1700nm, cover glass 0-1.2mm with correcting ring	●	●	●	●	A5M.0946-50
Nosepiece	Motorized sextuple nosepiece with DIC slot	●	●	●	●	
Focusing	Low position coaxial focus mechanism, coarse range 35mm, fine precision 0.001mm, with upper limit and tension adjustment.	●	●	●	●	A54.0930-MX6
Frame & Illuminator	NIR Reflect frame, 100-240V wide voltage power supply -- NIR Reflect illuminator 12V100W halogen, with variable motorized aperture diaphragm, center adjustable; with BF/NIR switch; with filter slot,	●	●	●	-	
	NIR Reflect & Transmit frame, 100-240V wide voltage power supply -- NIR Reflect illuminator 12V100W halogen, with variable motorized aperture diaphragm, center adjustable; with BF/NIR switch; with filter slot, -- Transmit illumination 5W warm LED,	-	-	-	●	
Stage	6" three-layer mechanical stage; size 445x240mm, moving range 158x158mm; with clutch handle for rapid movement; with metal plate for Reflection	●	-	-	-	A54.0971-6R
	Rotary stage with 6" wafer tray, suitable for 4", 5", 6" inch wafers	○	-	-	-	A54.0971-6WT
	8" three-layer mechanical stage, size 525x330mm, moving range 210x210mm; with clutch handle for rapid movement; with metal plate for Reflection	-	●	-	-	A54.0971-8R
	Rotary stage with 8" wafer tray, suitable for 6", 8" wafers	-	○	-	-	A54.0971-8WT
	12"x14" three layers mechanical stage; size 710x420mm, moving range 305x356mm, with clutch handle for rapid movement; with metal stage plate for Reflection	-	-	●	-	A54.0971-12R
	12"x14" three layers mechanical stage; size 710x420mm, moving range 305x356mm, with clutch handle for rapid movement; with glass stage plate for Reflection & Transmission	-	-	-	●	A54.0971-12RT
Filter	Rotating stage with 12" wafer tray, suitable for 6", 8", 12" wafers	-	-	○	○	A54.0971-12WT
	NIR Band-pass filter 1100nm	●	●	●	●	A56.0971-1100
	NIR Band-pass filter 1200nm	○	○	○	○	A56.0971-1200
	NIR Band-pass filter 1300nm	○	○	○	○	A56.0971-1300
Camera	1.3M NIR 400-1700nm monochrome camera, inGsAs, 125fps@1280x1024, camera link, pixel size 5um	○	○	○	○	A59.0971-1.3M
	3.2M NIR 400-1100nm monochrome camera, Sony IMX252, 120fps@2064 x1544, USB 3.0, pixel size 3.45um	●	●	●	●	A59.0971-3.2M
Camera Adapter	0.35X C -mount, Focus Adjustable	○	○	○	○	A55.0930-35
	0.5 X C -mount , Focus Adjustable	○	○	○	○	A55.0930-05
	0.65X C -mount , Focus Adjustable	○	○	○	○	A55.0930-65
	1X C -mount, Focus Adjustable	●	●	●	●	A55.0930-10
Others	Stage micrometer 0.01mm graticule, metallographic correction film	●	●	●	●	
	MV Image software with image processing, image acquisition, image management, measurement functions	●	●	●	●	
	PC i5 16G, 1T+256G, 2G Graphic, 23' LCD	●	●	●	●	
	Spanner M4, M6	●	●	●	●	





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