

Select from a wide variety of lenses and adapters to easily inspect the samples you want to see.

Applicability

Lenses

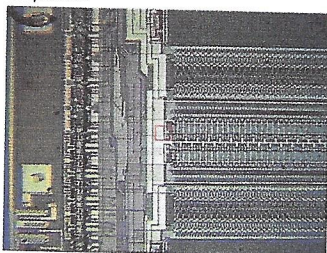
200x to 4,000x Co-axial Zoom Lens

Maximum magnification of 4,000x!!

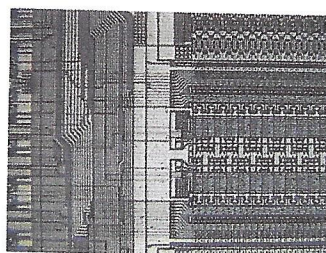
Our 200x to 4000x Co-axial Zoom Lens provides an incredibly wide range of magnification, making it possible to choose exactly the correct magnification for your sample while maintaining a sharp, clear image under co-axial lighting.

High resolution maintained through the full range of magnification.

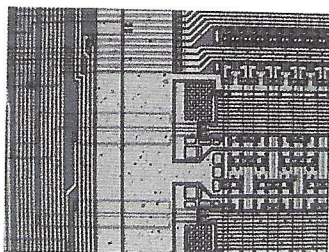
IC pattern



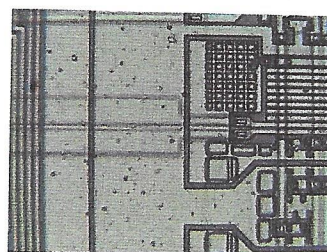
(200x)



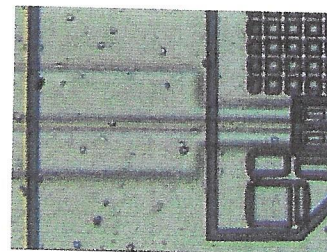
(500x)



(1,000x)



(2,000x)

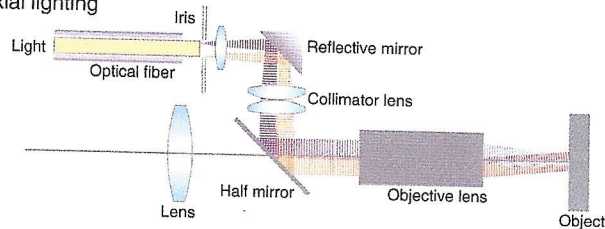


(4,000x)



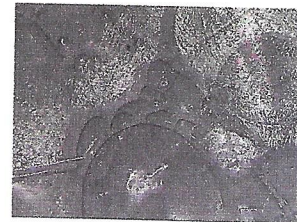
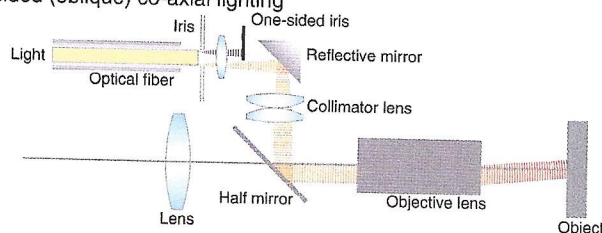
Either ordinary co-axial lighting or one-sided co-axial lighting can be used to bring out different aspects of the same sample.

■ Co-axial lighting



Plastic surface using co-axial lighting (750x)

■ One-sided (oblique) co-axial lighting



Plastic surface using one-sided

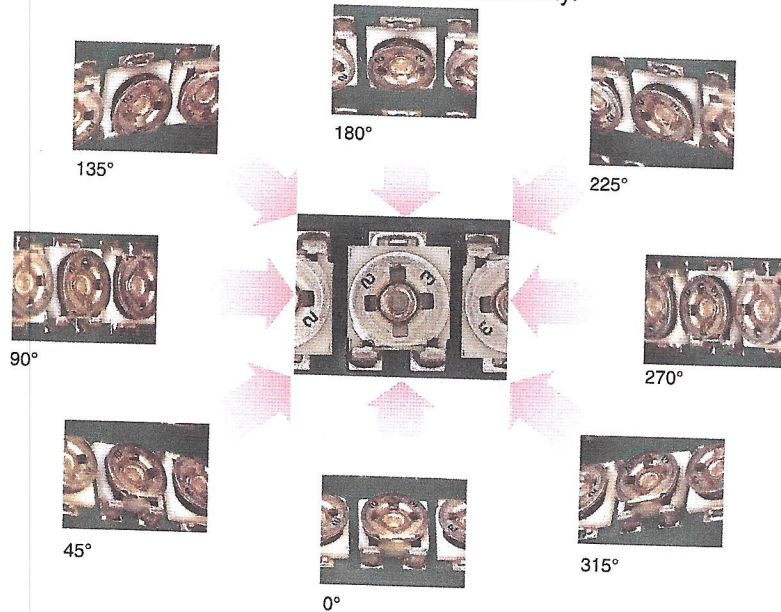
Adapters

3D Rotary-Head Adapter

*For Low- and High-range Zoom Lenses and Snap-on Lenses

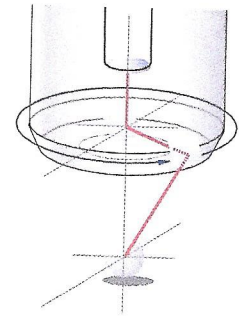
Rotating mirrors allow 3D inspection from any angle.

3D inspection can be performed easily without tilting the sample, so the desired point of view can be found immediately.



Design of the 3D Rotary-Head

The 3D Rotary-Head is constructed so that a series of precision mirrors rotate in front of the lens. These mirrors are used not only to surpass the level of inspection provided by a conventional one-line Newtonian view, but the rotating optical system also provides a precision to within 0.02° of the optical axis.



Variable-angle Rotary-Head Adapter

*For snap-on lenses only

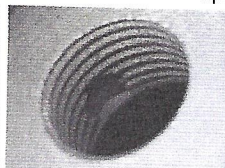
The inspection range can be extended by changing the viewing angle.

Different sides of a screw hole can be inspected by changing the viewing angle.

Screw hole (50x)



25°



45°



55° (Photo made with auxiliary lighting.)

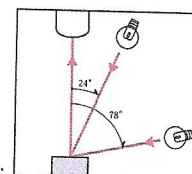
The new 3D Rotary-Head, with a variable inspection angle, is now available as well as our very popular 45° and 25° type Rotary-Heads. A samples can be observed at any angle from 25° to 55°.

Variable Lighting-Angle Adapter

*For the Low-, Medium-, and High-range Zoom Lenses and Fixed Magnification Lenses

Vary the lighting angle to inspect samples with the best possible lighting conditions.

The appearance of a sample can change substantially by varying the lighting angle.



Variable Lighting Adapter images

24° Vertical lighting ~

Variable optical lighting

~ Side lighting 78°

Coin



Specifications

Main Unit: KH-1000

Camera	Capture device	1/2" Interline Transfer CCD RGB true color filter
	Effective pixel count	850(H) x 984(V) Approx. 900,000 pixels
	Shutter speed	AUTO(1/60 to 1/100000) 1/30, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000
	Resolution	H: 550 TV lines, V: 350 TV lines
	Edge emphasis	ON, OFF
	Color emphasis	4 settings (Normal, Red Emphasis, Green Emphasis, Blue Emphasis)
	Video output	RGB/SYNC, Y/C, VBS
General specifications	Light source	Lamp
	Power supply	100 to 240 VAC $\pm 10\%$ (50/60Hz)
	Dimensions	200(W) x 110(H) x 250(D) mm (7.87 x 4.33 x 9.84 in)
	Weight	Main Unit: approx. 4.7 kg

Lenses

Name		MX-2010Z	MX-1060Z	MX-5030RZII	MX-5030SZII	MX-2525CS	MX-2005C
Magnification range *		20 to 100	100 to 600	50 to 300	50 to 300	250 to 2500	200 to 4000
Monitoring range (mm)	Horizontal	14.5 to 2.9	3.0 to 0.5	6.2 to 1.1	6.2 to 1.1	1.2 to 0.12	1.5 to 0.075
	Vertical	12.0 to 2.0	2.3 to 0.4	4.6 to 0.8	4.6 to 0.8	0.9 to 0.09	1.1 to 0.05
	Diagonal	20.0 to 3.4	3.8 to 0.6	7.7 to 1.4	7.7 to 1.4	1.5 to 0.15	1.86 to 0.09
Depth of field (mm)	115 TV lines	14.6 to 3	0.66 to 0.234	Varies with the F stop. 21.6 max.	Varies with the F stop. 21.6 max.	0.32 to 0.004	0.2 to 0.0024
	230 TV lines	7.3 to 1.5	0.33 to 0.117	Varies with the F stop. 10.8 max.	Varies with the F stop. 10.8 max.	0.16 to 0.002	0.1 to 0.0012
Working distance (mm)		41.0	3.1	55.5	64.3	14.0	14.5
Weight (g)		290	290	1,235	745	6,000 (including stand) 3,700 (lens only)	2,000

*Magnification ranges given are based on use with a 15-inch monitor.

Name		MX-2000Z**	MX-MACROZ	MX-400C	MX-STZ
Magnification range *		2010	0 to 40	401	15 to 160
Magnification settings available		1793 to 2032	0 to 40	363 to 411	15 to 160
Monitoring range (mm)	Horizontal	0.15	280 to 7	0.8	20 to 2
	Vertical	0.11	210 to 5.3	0.6	15 to 1.4
	Diagonal	0.19	350 to 8.9	1.0	25.4 to 2.4
Depth of field (mm)	115 TV lines	0.008	Variable	0.36	38 to 2.6
	230 TV lines	0.004	Variable	0.18	19 to 1.3
Working distance (mm)		2.4	∞ to 18	13	50 to 5
Weight (g)		175	250	255	325

● Lighting angle measurement from the vertical axis

Lens	Adapters	
	Non-contact Adapter	Variable Lighting-angle Contact Adapter (vertical and horizontal lighting)
MX-20Z	6°	6° to 77°
MX-100Z	40°	31.5° to 75°
MX-2000Z	22.5°	10° to 78°

Snap-on Adapter Series provides ease-of-use and flexibility...

The Snap-on Adapter Series gives users flexibility and time-saving ease. All adapters incorporate a simple "snap-on/snap-off" mechanism for quick changes of lighting and magnification adapters - all with the same basic zoom lens!

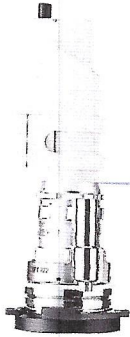
Snap-on Lens

MX-5030RZII

50x to 300x

Snap-on Lens

(Mid-Range Zoom Lens)



Snap-on Non-contact Adapter Included

* The CT-1 Rotary Motor Controller is required when using the 3D Rotary-Head

MX-5030SZII

50x to 300x

Straight-view Lens

(Mid-range Zoom Lens)



Screw-on Non-contact Adapter included

Rotary-Head and Straight-view Snap-on Adapters



AD-5030RVS

Variable-angle Rotary-Head *
For three-dimensional inspection with angle variable between 25° and 85°.



AD-5030RLS45

45° Rotary-Head *
For three-dimensional inspection at 45°.



AD-5030RLS25

25° Rotary-Head *
For three-dimensional inspection at 25°.



AD-5030LOWRLS

Low-magnification Rotary-Head *
For three-dimensional inspection with a magnification range of 20x to 120x.



AD-5030HIRLS

High-magnification Rotary-Head *
For three-dimensional inspection with a magnification range of 100x to 600x.



AD-5030SS

Variable Lighting Adapter
Allows free adjustment of lighting angle.



AD-5030LWS

Low-magnification Straight-view Adapter
Allows variation of lens magnification between 20x and 120x.



AD-5030HIS

High-magnification Straight-view Adapter
Allows variation of lens magnification between 100x and 600x.



AD-5030PS

Polarizing Adapter
Incorporates a polarizing filter to reduce surface light reflection.



AD-5030RLDS
Diffuse Lighting Adapter for Rotary-Head
Reduces reflection when using Rotary-Head.



AD-5030P

Polarizing Adapter
Incorporates a polarizing filter to reduce surface light reflection.



AD-5030LOW

Low-magnification Straight-view Adapter (Screw Type)
Allows variation of lens magnification between 15x and 75x.



AD-5030SD

Snap-on Adapter Mount
An adapter making it possible to snap-on a variety of adapters.



AD-5030SS

Variable Lighting Adapter
Allows free adjustment of lighting angle.



AD-5030LOW

Low-magnification Straight-view Adapter (Snap-on Type)
Allows variation of lens magnification between 15x and 50x.



AD-5030HIS

High-magnification Straight-view Adapter
Allows variation of lens magnification between 100x and 600x.



AD-5030PS

Polarizing Adapter
Incorporates a polarizing filter reducing surface light reflection.



AD-5030HS

Non-contact Adapter
Snap-on type

AD-5030DS
Diffuse Lighting Adapter
For use with Non-contact Adapters.
Incorporates a filter reducing light reflection.

AD-5030DS
Diffuse Lighting Adapter
Incorporates a filter to reduce light reflection.

High-magnification Co-axial Zoom Lenses

200x to 4,000x Co-axial
Zoom Lens
MX-2005C

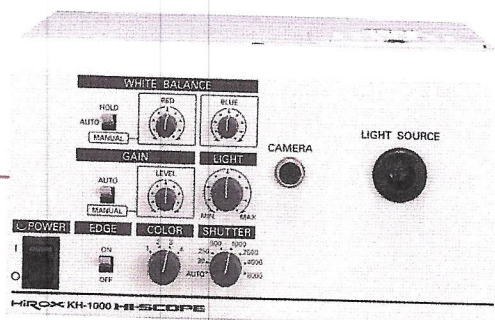


250x to 2,500x Co-axial
Zoom Lens
(75x to 750x also available)



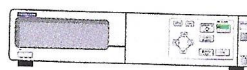
MX-2525CS

Hi-Scope
KH-1000

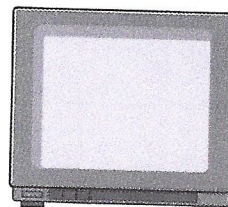


C-mount Adapter
AD-C

Inspection Only



Color Video Printer

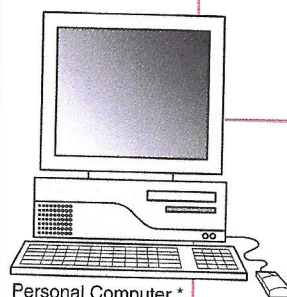
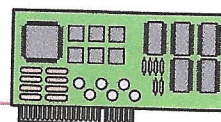


Color Monitor
14-inch monitor
with 600-line horizontal
resolution recommended.

*HIROX carries these products. Please ask your HIROX representative.

Inspection, Image Analysis, and Measurement

Capture Board



Personal Computer *

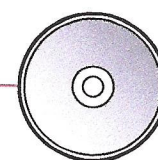
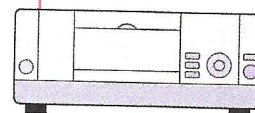


Image Analyzing Software



Digital Printer

Snap-on Lens Series

MX-5030RZII
50x to 300x Snap-on Lens
(Mid-Range Zoom Lens)



MX-5030SZII
50x to 300x Straight-view Lens
(Mid-range Zoom Lens)



System Configuration

Adapters

3D Rotary-Head AD-2010RLM

The CT-1 Rotary Motor Controller is required when using the 3D Rotary-Head.



Range Change Adapter AD-2010ZHI20



Diffuse-lighting Adapter AD-2010D2



Co-axial Vertical-lighting Adapter AD-2010C



Polarizing Adapter AD-2010P



3D Rotary-Head AD-1060RLM

The CT-1 Rotary Motor Controller is required when using the 3D Rotary-Head.



Diffuse-lighting Adapter AD-1060D



Long Working Distance Adapter AD-1060L20



Side-view Adapter AD-STL



*Only one Adapter can be used at a time with a single lens.

Lenses

Low-range Zoom Lens MX-2010Z



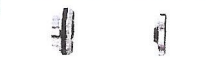
Included Adapters



High-range Zoom Lens MX-1060Z



Included Adapters



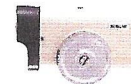
Fixed Magnification Lenses - 20x to 2500x MX-20Z to MX-2500Z



Included Adapters



Macro Lens MX-MACROZ



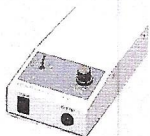
Co-axial Fixed Magnification Lens Series - 400x, 1000x and 2000x MX-400C MX-1000C MX-2000C



Straw Scope Series (various lengths) MX-STZ

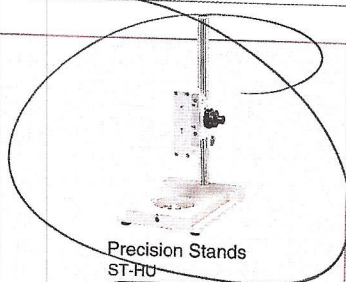


Peripheral Devices



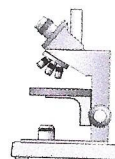
Rotary Motor Controller CT-1

* A CT-1 Rotary Motor Controller is required when using a 3D

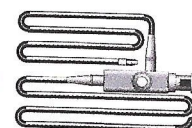


Precision Stands ST-RU

Sold Separately
● AS-XY X-Y Stage
● AS-XYB X-Y Stage



Microscope



Fiberscope