



ML7000 Series

METALLURGICAL MICROSCOPES

INFINITY OPTICAL SYSTEM

An infinity optical system for reflected light brightfield and simple polarization technique.

Features

Eyepieces:

Paired DIN KHW10X super wide 20mm field of view eyepieces.

Viewing head:

The ML7000 Series Metallurgical microscope is equipped with either an erect image binocular or non erect image trinocular viewing head inclined at 30° and rotatable through 360° for comfortable viewing. Each eyetube is provided with a graduated diopter adjustment. Interpupillary distance is adjustable between 52mm and 72mm (Erect image trinocular optional.)

Objective Changer:

Smooth operating, revolving quintuple ball-bearing nosepiece.

Objectives:

Infinity corrected, S.Planachromat objectives, M4X/0.10, M10X/0.25, M20X/0.40, and M40X/0.65

Stage:

Rectangular mechanical stage 172mm x 130mm top plate with 100mm X 100mm travel. Equipped with precision ball bearing guides and low position drop down coaxial controls for X-Y movement.

Illuminator:

Vertical illuminator with full Koehler design equipped with 6V 30W Halogen light source, infinity system lens, field iris, aperture iris and filter slots. Capable of brightfield or simple reflected light polarization technique. Includes blue clear, green clear, polarizing and neutral density filter (ND8) in mounts. Transformer and variable rheostat control are built in the microscope base.

Focusing Movement:

Coaxial low positioned coarse and fine focus controls, graduated to 2 microns per division, are fitted with tension adjustment and safety auto stop. The focus range is 35mm. The movement runs in extra wide precision ball-bearing hardened steel tracks.

Size and Weight:

ML7000 Binocular 200mm(W) x 270mm (D) x 472mm(H), Net weight 6.8kg.
ML7100 Trinocular 200mm (W) x 270mm(D) x 500mm(H), Net weight 6.9kg.

ISSCO

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ML7000

Components & Accessories

Viewing Heads

- MA401/05 Binocular Head, erect image, with quartz depolarizer. (Same as MA657/05)
 MA603/05 Trinocular Head, non erect image, with quartz depolarizer. A two position beam splitter directs 100% of the light to the eyepieces or directs 80% of the light to the trinocular tube and 20% of the light to the eyepieces.
 MA495/05 Inclined Trinocular Head, erect image, with quartz depolarizer. A two position beam splitter directs 100% of the light to the eyepieces or directs 100% of the light to the trinocular tube. (Same as MA655/05)

Eyepieces

- MA407 KHW Compensating 10X Eyepiece, Field number 20mm (Included).
 MA408 HWF 15X Eyepiece, High eyepoint, Field number 12.2mm.
 MA489 HWF 12.5X Eyepiece, High eyepoint, Field number 15mm.
 MA409 HWF 20X Eyepiece, High eyepoint, Field number 9.2mm.

Objectives (Infinity corrected)

- MA336 MET 4X / 0.10 S. Planachromat, W.D. 20mm. (Included)
 MA330 MET 5X / 0.10 S. Planachromat, W.D. 20mm.
 MA337 MET 10X / 0.25 S. Planachromat, W.D. 7.48mm. (Included)
 MA338 MET 20X / 0.40 S. Planachromat, W.D. 5.28mm. (Included)
 MA339 MET 40X / 0.65 S. Planachromat, W.D. 0.81mm. (Included)
 MA344 MET 50X / 0.70 S. Planachromat, W.D. 0.36mm.
 MA349 MET 1WD 50X / 0.50 S. Planachromat, W.D. 6.0mm.
 MA329 MET 60X / 0.85 S. Planachromat, W.D. 0.38mm.
 MA328 MET 100X / 0.75 S. Planachromat, W.D. 0.27mm.

Illuminators (With infinity tube lens FL=200mm)

- MA651/100 Vertical Illuminator 6V 30W Halogen, full Koehler design for bright-field illumination and simple polarization techniques. Main voltage: 115 Volts.
 MA651/200 Vertical Illuminator 6V 30W Halogen, full Koehler design for bright-field illumination and simple polarization techniques. Main voltage: 220/240 Volts.
 MA651/05 Transformer with intensity control for MA651/100, 115V.
 MA651/15 Transformer with intensity control for MA651/200, 220/240V.

Filters

- MA475/05 Blue clear filter, 15mm diameter in mount for MA651/100. (Included)
 MA476 Green clear filter, 15mm diameter in mount for MA651/100. (Included)
 MA479 Polarizing filter, 15mm diameter in mount for MA651/100. (Included)
 MA198 ND8 Neutral density filter, 15mm diameter in mount for MA651/100. (Included)

Other Items

- MA326 Spare halogen lamp, 6V 30W.
 MA327 Fuse 3A.
 MA711 Dust cover.



ML7100

Accessories For Measurement

- MA414 Filari Micrometer Eyepiece with inclined monocular head.
 MA255 Linear micrometer, 10mm divided into 100 units, 21mm diameter for KHW10X eyepiece.
 MA256 Linear micrometer, 5mm divided into 100 units, 21mm diameter for KHW10X eyepiece.
 MA284 Cross-line reticule, 21mm diameter for KHW10X eyepiece.
 MA540 Cross-line with 0.1mm graduations, 21mm diameter for KHW10X eyepieces.
 MA292 Metal stage micrometer, 1mm divided into 100 units, 0.01mm.

ORDERING INFORMATION FOR ML7000 SERIES

Model	Body	Eyepieces	Objectives	Illuminator
ML7000	Binocular [Erect Image]	KHW10X 20mm field of view	S.PLAN NET 4X, MET 10X, MET 20X, MET 40X	Vertical Koehler, 6V 30W halogen with clear blue, clear green, neutral density [ND8] and polarizing filter in mounts.
ML7100	Trinocular [Non-erect Image]			

Supplied in Styrofoam case with dust cover and operations manual.

Note: Please specify voltage when ordering.

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ML7500 Series

METALLURGICAL MICROSCOPES

INFINITY CORRECTED OPTICS

An infinity optical system for reflected light brightfield, darkfield and simple polarization technique

Features

Eyepieces:

Paired DIN KHW10X super wide 20mm field of view eyepieces.

Viewing head:

The ML7500 Series Metallurgical Microscope is equipped with either an erect image binocular or non-erect image trinocular viewing head inclined at 30° and rotatable through 360° for comfortable viewing. Each eyetube is provided with a graduated diopter adjustment. Interpupillary distance is adjustable between 52mm and 72mm. (Erect image trinocular optional.)

Objective Changer:

Extra large, revolving quadruple ball-bearing nosepiece.

Objectives:

Infinity corrected, S. Plan Brightfield/Darkfield objectives. B.D. S. Plan MET 4X, B.D.S. Plan MET 10X, B.D. S. Plan MET 20X, and B.D. S. Plan MET 40X. (Non standard thread.)

Stage:

Rectangular mechanical stage 172mm x 130mm top plate with 100mm x 100mm travel. Equipped with precision ball bearing guides and low position drop down coaxial controls for X-Y movement.

Illuminator:

Vertical illuminator with full Koehler design equipped with 12V 50W Halogen light source, infinity system lens, field iris, aperture iris and filter slots. Capable of brightfield, darkfield, or simple reflected light polarization technique. Includes blue, green, yellow and neutral density filters (ND2 and ND8) in mounts. Transformer and variable rheostat control are built in the microscope base.

Focusing Movement:

Coaxial low positioned coarse and fine focus controls, graduated to 2 microns per division, are fitted with tension adjustment and safety auto stop. The focus range is 35mm. The movement runs in extra wide precision ball-bearing hardened steel tracks.

Size and Weight:

ML7520 Binocular 200mm(W) x 410mm(D) x 480mm(H), Net weight 10.75kg.
ML7530 Trinocular 200mm(W) x 410mm(D) x 525mm(H), Net weight 10.73kg.

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ML7520

Viewing heads

- MA401/05 Binocular Head, erect image, with quartz depolarizer. (Same as MA657/05)
 MA603/05 Trinocular Head, non erect image, with quartz depolarizer. A two position beam splitter directs 100% of the light to the eyepieces or directs 80% of the light to the trinocular tube and 20% of the light to the eyepieces.
 MA495/05 Inclined Trinocular Head, erect image, with quartz depolarizer. A two position beam splitter directs 100% of the light to the eyepieces or directs 100% of the light to the trinocular tube. (Same as MA655/05)

Eyepieces

- MA407 KHW Compensating 10X Eyepiece, Field number 20mm. (Included)
 MA489 HWF 12.5X Eyepiece, High eyepoint, Field number 15mm.
 MA408 HWF 15X Eyepiece, High eyepoint, Field number 12.2mm.
 MA409 HWF 20X Eyepiece, High eyepoint, Field number 9.2mm.

Objectives (Infinity corrected)

- MA331 BD S-Plan MET 4X / 0.10, W.D. 16mm. (Included)
 MA332 BD S-Plan MET 10X / 0.25, W.D. 7.4mm. (Included)
 MA333 BD S-Plan MET 20X / 0.40, W.D. 5.2mm. (Included)
 MA334 BD S-Plan MET 40X / 0.65, W.D. 0.8mm. (Included)
 MA335 BD S-Plan MET 60X / 0.85, W.D. 0.3mm.

Illuminators [With infinity tube lens, FL =200mm]

- MA275/100 Vertical Illuminator 12V 50W Halogen, full Koehler design for bright-field/darkfield illumination and simple polarization techniques. Main voltage 115V.
 MA275/200 Vertical Illuminator 12V 50W Halogen, full Koehler design for bright-field/darkfield illumination and simple polarization techniques. Main voltage 220/240V.
 MA275/15 Transformer with intensity control for MA275/100, 115V.
 MA275/20 Transformer with intensity control for MA275/200, 220/240V.

Filters

- MA275/25 LB110, Blue filter in mount for MA275. (Included)
 MA275/30 G533, Green filter in mount for MA275. (Included)
 MA275/35 Y48, Yellow filter in mount for MA275. (Included)
 MA275/40 ND2, Neutral Density filter in mount for MA275. (Included)
 MA275/45 ND8, Neutral Density filter in mount for MA275. (Included)

Other items

- MA275/05 Spare halogen lamp, 12V 50W.
 MA327 Fuse 3A.
 MA686 Adapter to mount RMS standard thread objective to BD Nosepiece.
 MA709 Dust cover.

Accessories for measurement

- MA414 Filar Micrometer Eyepiece with inclined monocular head.
 MA255 Linear micrometer, 10mm divided into 100 units, 21mm diameter for KHW10X eyepiece.
 MA256 Linear micrometer, 5mm divided into 100 units, 21mm diameter for KHW10X eyepiece.
 MA284 Cross-line reticule, 21mm diameter for KHW10X eyepiece.
 MA540 Cross-line with 0.1mm graduations, 21mm diameter for KHW10X eyepieces.
 MA292 Metal stage micrometer, 1mm divided into 100 units, 0.01mm.



ML7530

ORDERING INFORMATION FOR ML7500 SERIES

Model	Body	Eyepieces	Objectives	Illuminator
ML7520	Binocular [Erect Image]	KHW10X 20mm field of view	B.D.S. PLAN MET 4X, MET 10X, MET 20X, MET 40X	Vertical Koehler, 12V 50W brightfield/darkfield and polarization techniques. Includes blue, green, yellow and neutral density ND2 and NDB filters.
ML7530	Trinocular [Non-erect Image]			

Supplied in Styrofoam case with dust cover and operations manual.

Note: Please specify voltage when ordering.

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ML8500 Series

METALLURGICAL MICROSCOPES

INFINITY CORRECTED OPTICS

An infinity optical system for reflected light brightfield, darkfield and simple polarization technique and transmitted light brightfield work.

Features

Eyepieces:

Paired DIN KHW 10X super wide 20mm field of view eyepieces.

Viewing head:

The ML8500 Series Metallurgical Microscope is equipped with either an erect image binocular or non-erect image trinocular viewing head inclined at 30° and rotatable through 360° for comfortable viewing. Each eyetube is provided with a graduated diopter adjustment. Interpupillary distance is adjustable between 52mm and 72mm. (Erect image trinocular optional.)

Objective Changer:

Extra large, revolving quadruple ball-bearing nosepiece.

Objectives:

Infinity corrected, S. Plan Brightfield/Darkfield objectives. B.D. S. Plan MET 4X, B.D. S. Plan MET 10X, B.D. S. Plan MET 20X, and B.D. S. Plan MET 40X. (Non standard thread.)

Stage:

Rectangular mechanical stage 172mm x 130mm top plate with 94.5mm diameter clear glass insert, 100mm x 100mm travel. Equipped with precision ball bearing guides and low position drop-down coaxial controls for X-Y movement.

Condenser:

Equipped with rack and pinion focusable substage condenser with iris diaphragm and filter tray and clear blue filter.

Illuminators:

Vertical illuminator with full Koehler design equipped with 12V 50W Halogen light source, infinity system lens, field iris, aperture iris and filter slots. Capable of brightfield, darkfield or simple reflected light polarization technique. Includes blue, green yellow and neutral density filters (ND2 and ND8) in mounts. Electronic transformer with variable rheostat control are supplied in a separate case. Transmitted light Koehler illuminator with 6V 30W halogen lamp, electronic transformer, and variable rheostat are built into the base.

Focusing Movement:

Coaxial low positioned coarse and fine focus controls, graduated to 2 microns per divisions, are fitted with tension adjustment and safety autostop. The focus range is 35mm. The movement runs in extra wide precision ball-bearing hardened steel tracks.

Size and Weight:

ML8520 Binocular 200mm(W) x 410mm(D) x 480mm(H), Net weight 10.75kg.

ML8530 Trinocular 200mm(W) x 410mm(D) x 525mm(H), Net weight 10.73kg.

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ML8520

Viewing heads

- MA401/05 Binocular Head, erect image, with quartz depolarizer. (Same as MA657/05)
 MA603/05 Trinocular Head, non erect image, with quartz depolarizer. A two position beam splitter directs 100% of the light to the eyepieces or directs 80% of the light to the trinocular tube and 20% of the light to the eyepieces.
 MA495/05 Inclined Trinocular Head, erect image, with quartz depolarizer. A two position beam splitter directs 100% of the light to the eyepieces or directs 100% of the light to the trinocular tube. (Same as MA655/05)

Eyepieces

- MA407 KHW Compensating 10X Eyepiece, Field number 20mm. (Included)
 MA489 HWF 12.5X Eyepiece, High eyepoint, Field number 15mm.
 MA408 HWF 15X Eyepiece, High eyepoint, Field number 12.2mm.
 MA409 HWF 20X Eyepiece, High eyepoint, Field number 9.2mm.

Objectives [Infinity corrected]

- MA331 BD S-Plan MET 4X / 0.10, W.D. 16mm. (Included)
 MA332 BD S-Plan MET 10X / 0.25, W.D. 7.4mm. (Included)
 MA333 BD S-Plan MET 20X / 0.40, W.D. 5.2mm. (Included)
 MA334 BD S-Plan MET 40X / 0.65, W.D. 0.8mm. (Included)
 MA335 BD S-Plan MET 60X / 0.85, W.D. 0.3mm.

Illuminators [With infinity tube lens, FL =200mm]

- MA275/100 Vertical Illuminator 12V 50W Halogen, full Koehler design for brightfield/darkfield illumination and simple polarization techniques. Main voltage 115V.
 MA275/200 Vertical Illuminator 12V 50W Halogen, full Koehler design for brightfield/darkfield illumination and simple polarization techniques. Main voltage 220/240V.
 MA275/15 Transformer with intensity control for MA275/100, 115V.
 MA275/20 Transformer with intensity control for MA275/200, 220/240V.

Accessories For Measurement

- MA414 Filar Micrometer Eyepiece with inclined monocular head.
 MA255 Linear micrometer, 10mm divided into 100 units, 21mm diameter for KHW10X eyepiece.
 MA256 Linear micrometer, 5mm divided into 100 units, 21mm diameter for KHW10X eyepiece.
 MA284 Cross-line reticule, 21mm diameter for KHW10X eyepiece.
 MA540 Cross-line with 0.1mm graduations, 21mm diameter for KHW10X eyepieces.
 MA292 Metal stage micrometer, 1mm divided into 100 units, 0.01mm.

Other Items

- MA275/05 Spare halogen lamp, 12V 50W for incident illuminator.
 MA326 Spare halogen lamp, 6V 30W for transmitted illuminator.
 MA803 Substage condenser with iris diaphragm and filter tray for ML8500 Series.
 MA686 Adapter to mount RMS standard thread objective to BD Nosepiece.
 MA709 Dust cover.
 MA327 Fuse 3A.



ML8530

Filters

- (15mm diameter in mounts for use with vertical illuminator.)
 MA275/25 LB110, Blue filter in mount for MA275. (Included)
 MA275/30 G533, Green filter in mount for MA275. (Included)
 MA275/35 Y48, Yellow filter in mount for MA275. (Included)
 MA275/40 ND2, Neutral Density filter in mount for MA275. (Included)
 MA275/45 ND8, Neutral Density filter in mount for MA275. (Included)

Filters

- (29.8mm diameter for use in tray of substage condenser.)
 MA289/05 Blue clear filter. (Included)
 MA290/05 Green clear filter.
 MA291 Polarizing filter.
 MA196 ND2 Neutral density filter.
 MA197 ND8 Neutral density filter.

ORDERING INFORMATION FOR ML8500 SERIES

Model	Body	Eyepieces	Objectives	Illuminator
ML8520	Binocular [Erect Image]	KHW10X 20mm field of view	B.D.S.PLAN NET 4X, MET 10X, MET 20X, MET 40X	Vertical Koehler 12V 50W for brightfield/darkfield and polarization techniques. Transmitted Koehler 6V 30W for brightfield observation.
ML8530	Trinocular [Non-erect Image]			

Supplied in Styrofoam case with dust cover and operations manual.

Note: Please specify voltage when ordering.

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