

MIPS

Computer Connectivity
with USB2 Port

Connectivity to LCD Projection
for Teaching and Training
Application

Can be Mounted on a
Binocular Microscope

Large Field of View

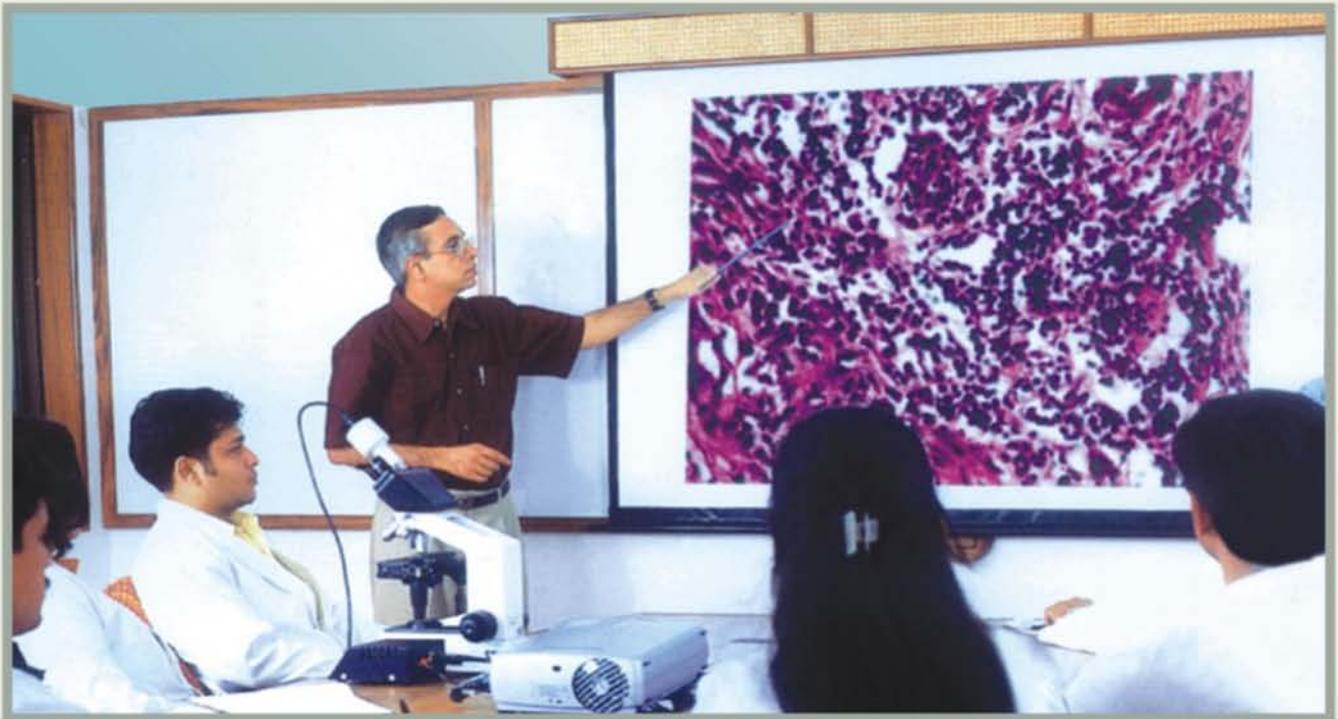
Plug and Play Design

Option of Built-in Micrometer Scale

Option of Software for Image Analysis



MICROSCOPE IMAGE PROJECTION SYSTEM



The Perfect Educational Tool



Models available : • MIPS for direct connectivity to TV • MIPS-USB for USB 2 connectivity

MLX-B

Parfocal & Centered Optics

Minimises use of the fine focusing and stage-control knobs during objective change-over

Optics with Multi-layer Coating

Maximises transmission of light for crisp & bright image

Illumination

Efficient light collector-lens system for optimum brightness

Micron Sensitive Movements

Enables easy manipulation of specimen

Options Available

- With halogen or LED light source
- Freedom series with LED light & battery backup



Also available in Trinocular version MLX-Tr
Digital Camera Attachment (Optional)

MICROSCOPES FOR EDUCATION & LABORATORIES

Specifications :

ITEM	SPECIFICATIONS	MLX-B Binocular Version	MLX-Tr Trinocular Version
Body	Aluminium die-cast body with all critical movements based on ball bearing & wire guides thereby ensuring smooth & precise manipulation	●	●
Inclined Observation Head	Binocular 45 degree inclined, rotatable through 360 degrees	●	
	Trinocular 45 degree inclined, rotatable through 360 degrees		●
Eyepiece (widefield) for observation	WF 10x (FN 18) compensating paired eyepiece. Provides relief from eye fatigue and renders color-compensated images of utmost clarity. Compatible with an optionally available eyepiece micrometer	●	●
Nosepiece	Quadruple revolving nosepiece based on precision ball-bearing mechanism with positive click stop	●	●
Objectives	<u>Achromat objectives</u>		
		<u>N.A.</u>	<u>W.D.</u>
	4X	0.10	29.0mm
	10X	0.25	6.3mm
	40X (spring loaded)	0.65	0.53mm
100X (oil, spring loaded)	1.25	0.20mm	
Mechanical stage	Stage size 125mm X 145mm with traverse area of 50mm X 76 mm with right hand low drive mechanical stage	●	●
Focusing system	Co-axial coarse & fine controls with a focus adjustment range of 25 mm	●	●
Condenser holder	Rack & pinion mounted condenser holder with height displacement upto 20mm	●	●
Condenser	Abbe condenser with aperture iris diaphragm (N.A. 1.25) focusable with rack & pinion through 20 mm and a continuously variable iris diaphragm with a removable blue filter for daylight observation	●	●
Illumination base with option	(a) Built-illumination base with pre-centered 6V 20W halogen light source coupled with an efficient collector lens system. Power supply 230V AC 50Hz single phase.	MLX-B	MLX-Tr
	(b) LED Light source High brightness, longlife (30,000hrs) 1w LED.	MLX-B LED	MLX-Tr LED
	(c) LED light source (with battery back-up) High brightness, longlife (30,000hrs) 1w LED. Battery back-up in-built NiMH Rechargeable batteries provide 6 to 8 hrs back-up on full charge.	MLX-B Freedom series	MLX-Tr Freedom series

Optional Accessories

• Simple Polarizing attachment • Eyepiece Widefield WF 15x • Image Analysis software



Micro Image Projection System
MIPS



Digital Camera System



Phase Contrast Attachment PC-4



Darkfield attachment

- Imm. DF Condenser with OBJ
- 100x having Iris Diaphragm
- Dry. DF condenser

MLX-M

Anti-Fungus treated Optics

Unique chemical treatment ensures image excellence for long periods in conditions favoring to fungus growth

Parfocal & Centered Objectives

Minimises use of the fine focussing and stage-control knobs during objective change-over

Optics with multi-layer coating

High-grade optics provides optimum brightness & contrast for long hours of comfortable viewing

Micron Sensitive mechanical movements

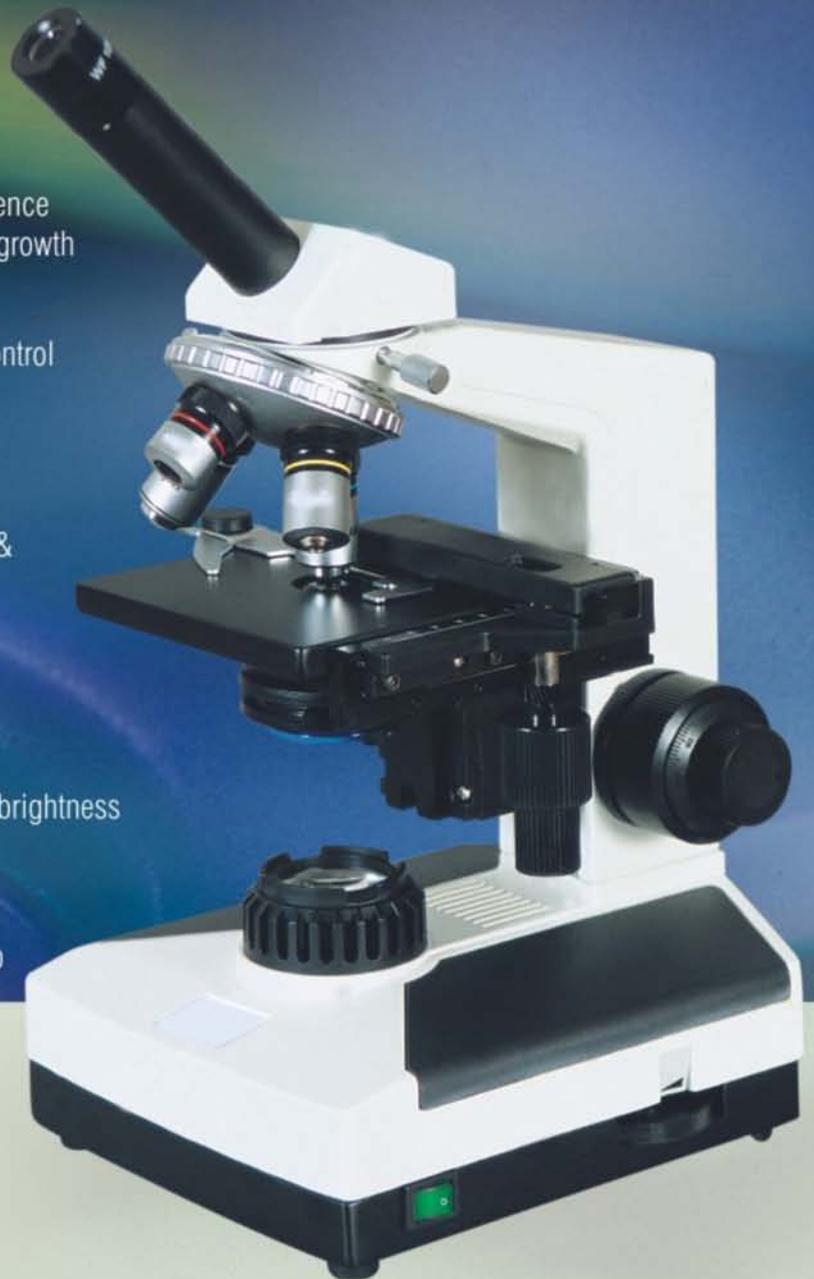
Enables easy manipulation of specimen

Illumination

Efficient light collector-lens system for optimum brightness

Options Available

- With halogen or LED light source
- Freedom series with LED light & battery backup



Excellent optical clarity and compact size – which keeps all the key controls within easy reach – makes the Magnus MLX-M an ideal choice of microscope for education

MICROSCOPES FOR EDUCATION & LABORATORIES

Specifications :

ITEM	SPECIFICATIONS			MLX-M Monocular Version	
Body	Aluminum die-cast body with all critical movements based on ball-bearing & wire-guides thereby ensuring smooth & precise manipulation			●	
Mechanical Stage	Co-axial low drive mechanical stage (125mm x 145mm) with traverse area of 50mm x 76mm			●	
Focussing System	Co-axial coarse & fine focusing control with a focus adjustment and find adjustment knobs.			●	
Condenser Holder	Rack & pinion mounted condenser holder.			●	
Illumination base with option (a), (b), (c)	(a) Built-illumination base with pre-centered 6V 20W halogen light source coupled with an efficient collector lens system. Power supply 230V AC 50Hz single phase.			MLX-M	
	(b) LED Light source High brightness, longlife (30,000hrs) 1w LED.			MLX-M LED	
	(c) LED light source (with battery back-up) High brightness, longlife (30,000hrs) 1w LED. Battery back-up in-built NiMH Rechargeable batteries provide 6 to 8 hrs back-up on full charge.			MLX-M Freedom series	
Nose Piece	Quadruple nosepiece based on precision ball-bearing mechanism, enables smooth objective change.			●	
CONDENSER	Sub-stage Condenser With its compound lens system ensures that the traverse of light along the microscope's optical path is optimised. The built-in iris diaphragm enables maximum contrast of the specimen under observation.	Abbe condenser with aperture iris diaphragm, N.A. 1.25, provided with a filter holder and blue filter.		●	
OBJECTIVES	Achromatic Objectives <ul style="list-style-type: none"> • Anti fungus treated • Made from high quality Japanses optical glass • Precision engineered for parfocal & centred viewing 	Achromat objectives	N.A.	W.D.	●
		4X	0.10	29.0mm	
		10X	0.25	6.3mm	
		40X (spring loaded)	0.65	0.53mm	
		100X (oil, spring loaded)	1.25	0.20mm	
MONOCULAR INCLINED OBSERVATION HEAD	<ul style="list-style-type: none"> • 45 degree inclined • Rotatable through 360 degree a) With a special anti-fungus treatment b) With anti-reflection optical coatings of prisms to enhance the brightness of the image	A unique design of observation head provides uniform illumination for ease of observation & eye comfort during extended usage.			●
WIDEFIELD EYEPIECE	WF 10x (F.No.18) compatible with an optionally available eyepiece micrometer	Unique compensating eyepiece provides relief from eye fatigue & renders color-compensated images of utmost clarity. Color corrected in all magnifications including high power objective, resulting in better defined images.			●

Optional Accessories Eyepiece WF 15x, Phase contrast, dark field and polarization accessories & imaging solutions with micro image projection system, Image analysis Software etc.

MS13/MS24

Superior Optics for Enhanced Image
Flatness and Contrast

Ergonomic Design for Ease of Operation

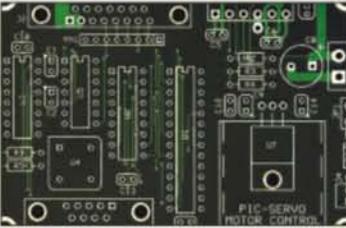
Long Working Distance of 105 mm

Parfocal Objectives

Smooth Magnification
Changeover between
1X/3X or 2X/4X



STEREO MICROSCOPES FOR BIOLOGICAL & INDUSTRIAL USE



Gems - Inspection Accessories
Darkfield attachment (with specimen holder) for inspection of Gems & Micro samples under transmitted light



Micro Image Projection System

Specifications :

		MS 13		MS 24	
Microscope Body	Objective	1X/3X		2X/4X	
Eye Piece	Working Distance	105mm			
	Diopter Adjustment	+/- (left side)			
	High Eyepoint Super Widefield eyepiece SWH 10X with Field Number 23				
Field of View	Objective	1X	3X	2X	4X
	Visual field (mm)	23	7.7	11.5	5.7
Light Source	Reflected	6V 10W lamp with adjustable brightness			
	Transmitted	5W fluorescent lamp			
Optional Accessories		Fluorescent ring light			
		Eyepiece 15X and 20X			
		MIPS (Micro Image Projection System)			
		Gems inspection accessories			



THE NEW BENCHMARK IN HEALTHCARE



Discover a new way to work with Freedom

Magnus brings you convenience and performance in one single exciting package. Equipped with the LED light source, the Freedom series gives the user multiple benefits in the day-to-day operation :

- Long Life High Brightness LED Light source – The Light of the Future
- Battery back-up through re-chargeable battery pack
- In-built battery pack allows cordless operation and mobility to the user
- Low Battery indication
- Universal voltage input SMPS
- Option of Solar Panel Charging

Freedom is currently available in the following models:

MLM



MLX-B



MLX-i



ICON



THE NEW BENCHMARK IN HEALTHCARE

invi

Long Working Distance (LWD), Plan Infinity Optics

4x, 40x Objectives & Phase 10x, 20x as Standard

Pre-centred Phase Annulus

Trinocular Port in
Standard Unit

FOV 22mm with 10x Eyepiece

Optional Items :

Phase 40x Objective

Attachable Mechanical Stage

Warm Plate

Terasaki, Petri Dish

& Slide Glass Holders



Digital Camera Attachment (Optional)

INVERTED MICROSCOPE FOR TISSUE CULTURE APPLICATIONS

Specifications :

MODEL INVI	MODEL DESCRIPTIONS	
VIEWING HEAD	Trinocular Head Inclined at 30 deg., Interpupillary distance 48 - 75mm	
EYEPIECE	High-point, Extra Wide Field Eyepiece EW10X/22	
OBJECTIVE	LWD Plan Infinity Objective	4X/0.1 WD 18mm
		40X/0.6 WD 2.6mm (Cover Glass 1.2mm)
	LWD Plan Infinity Phase Objective	PH10X/0.25 WD 10mm
		PH20X/0.4 WD 5.1mm
NOSEPIECE	Quintuple Nosepiece	
CONDENSER	ELWD Condenser NA 0.3, LWD 72mm, (without condenser 150mm)	
PHASE ANNULUS	10X - 20X Phase Annulus Plate	
STAGE	Plane Stage 160 x 250mm	
	Glass Insert	
	Auxiliary Stage 70 x 180mm	
FOCUSING	Coaxial Coarse and Fine Adjustment	
	Coaxial Stroke: 37.7mm per Rotation, Fine Stroke: 0.2mm per Rotation	
ILLUMINATION	Halogen Lamp 6V30W	
FILTER	Blue, Green and Frosted Glass, 45mm dia	
OPTIONAL ITEMS	PH40X/0.6 WD2.6mm (Cover Glass 1.2mm) Phase Contrast Objective	
	Attachable Mechanical Stage, X-Y Co-axial Control, Moving Range 120 x 78 mm	
	Terasaki Holder, 38mm dia Petri Dish Holder, 54mm dia Slide Glass Holder	
	Warm Plate	
	Digital Camera / MIPS (Micro Image Projection System) Attachment	
	Time Lapse Recording System	

MLX*i*

Plan Infinity Corrected Optics

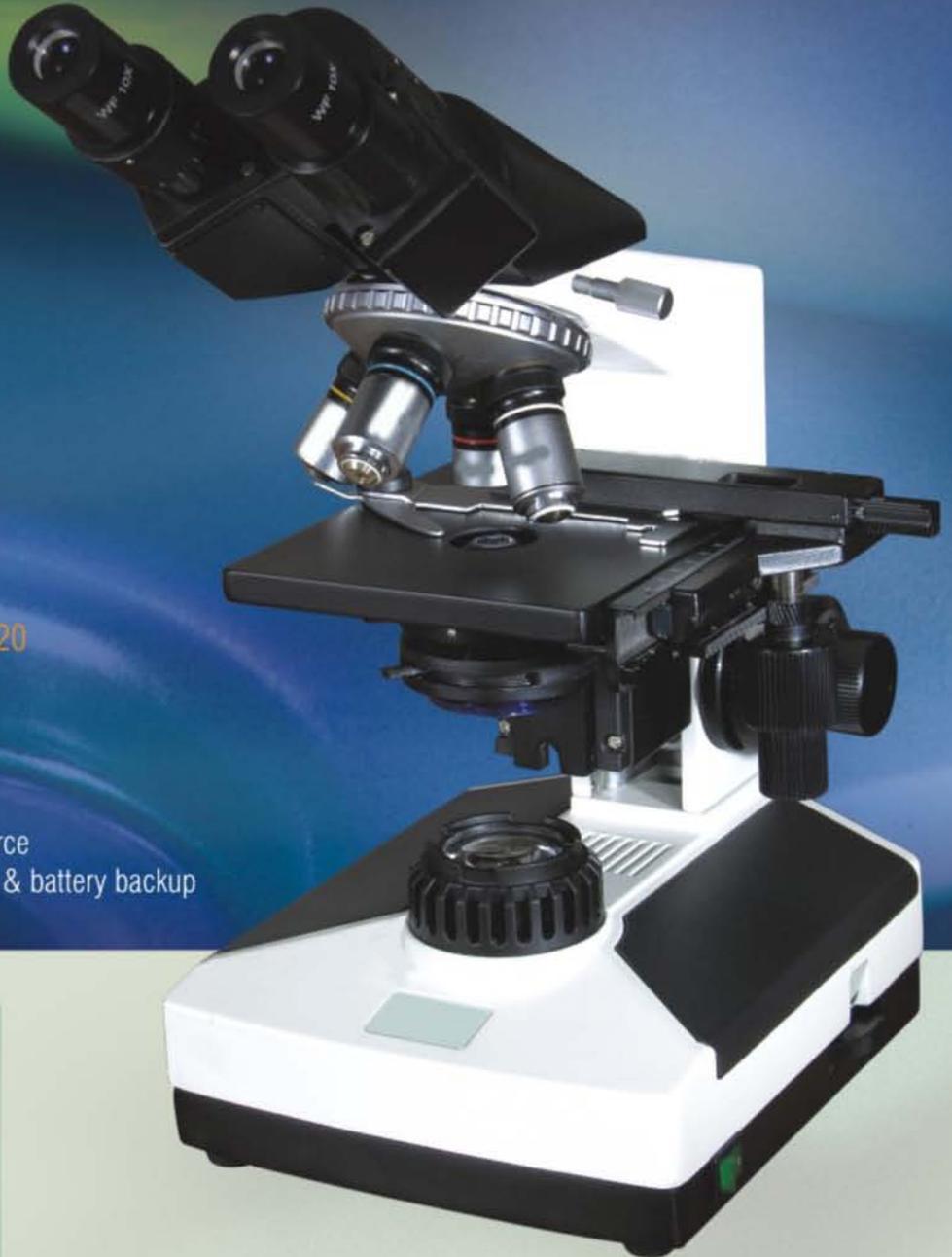
Seidentopf Head

Wide Field Eye Piece with FN 20

International Build Quality

Options Available

- With halogen or LED light source
- Freedom series with LED light & battery backup



Also available in Trinocular version MLXi-Tr
Digital Camera Attachment (Optional)

MICROSCOPES FOR RESEARCH APPLICATIONS

Optional Accessories



LED based Fluorescence Attachment



MIPS

Specifications :

ITEM	SPECIFICATIONS	MLXi Binocular Version	MLXi-Tr Trinocular Version															
Body	Aluminium die-cast body with all critical movements based on ball bearing & wire guides thereby ensuring smooth & precise manipulation	●	●															
Mechanical Stage	Co-axial low drive mechanical stage (125mm x 145mm) (+/-5mm) with traverse area of 50mm x 76mm (+/-5mm)	●	●															
Focusing System	Co-axial coarse & fine controls with a focus adjustment and fine adjustment knobs. Coarse Focus range 28mm. Fine focus range 0.2mm	●	●															
Condenser holder	Rack & pinion mounted condenser holder	●	●															
Condenser	Abbe condenser with aperture iris diaphragm (N.A. 1.25) focusable with rack & pinion through 20mm and a continuously variable iris diaphragm with a removable blue filter for daylight observation	●	●															
Illumination base with option (a), (b), (c)	(a) Built-illumination base with pre-centered 6V 20W halogen light source coupled with an efficient collector lens system. Power supply 230V AC 50Hz single phase.	MLXi	MLXi-Tr															
	(b) LED Light source High brightness, longlife (30,000hrs) 1w LED.	MLXi LED	MLXi-Tr LED															
	(c) LED light source (with battery back-up) High brightness, longlife (30,000hrs) 1w LED. Battery back-up in-built NiMH Rechargeable batteries provide 6 to 8 hrs back-up on full charge.	MLXi Freedom series	MLXi-Tr Freedom series															
Nose Piece	Quadruple revolving nosepiece based on precision ball-bearing mechanism with positive click stop	●	●															
Objectives	<table border="1"> <thead> <tr> <th>Plan Achromat Objectives</th> <th>N.A.</th> <th>W.D.</th> </tr> </thead> <tbody> <tr> <td>4X</td> <td>0.10</td> <td>25 mm</td> </tr> <tr> <td>10X</td> <td>0.25</td> <td>5 mm</td> </tr> <tr> <td>40X (spring loaded)</td> <td>0.65</td> <td>0.5 mm</td> </tr> <tr> <td>100X (oil, spring loaded)</td> <td>1.25</td> <td>0.14 mm</td> </tr> </tbody> </table>	Plan Achromat Objectives	N.A.	W.D.	4X	0.10	25 mm	10X	0.25	5 mm	40X (spring loaded)	0.65	0.5 mm	100X (oil, spring loaded)	1.25	0.14 mm	●	●
	Plan Achromat Objectives	N.A.	W.D.															
4X	0.10	25 mm																
10X	0.25	5 mm																
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100X (oil, spring loaded)	1.25	0.14 mm																
Infinity corrected plan optics Uniformly centered, Interchangeable & Parfocal Anti fungus treated Tropicalized anti fungus treatment ensures image excellence for long periods in conditions favoring to fungus growth																		
Inclined Observation Head <small>With a special anti-fungus treatment and an anti-reflection optical coating of the prism (to enhance the image brightness)</small>	Binocular (30 degree inclined seidentopf), 360 degree rotatable, diopter adjustment	●																
	Trinocular head 30 degree inclined seidentopf		●															
Eyepiece (wide field) for observation	WF 10x (FN 20mm) paired eyepiece. The unique optical design of the compensating eyepiece provides relief from eye fatigue and renders color-compensated wide-field images of utmost clarity. Compatible with optionally available eyepiece micrometer	●	●															

MSZ

Parfocality

One Time Focus for all
Zoom Magnifications

Ergonomic Design for Ease of Operation

Zoom Ratio 1:7



MSZ-TR Trinocular Version



MSZ-BI Binocular Version

STEREO ZOOM MICROSCOPES FOR BIOLOGICAL & INDUSTRIAL USE

Features

High Performance:

The high performance MSZ Series stereo microscopes utilize a Greenough design and feature a 1: 7 zoom ratio with a 100mm working distance and a large visual field. The parfocality allows an erect image of the observed specimens to stay in focus through repeated changes in the magnification. It is ergonomically designed for ease of operation.

Durability:

In addition to performance and comfort, a highlight of the MSZ is its durability. Promoting one of the finest ball bearing guideways making the focusing mechanism extremely robust.

Optional Accessories

Accessory for Inspection of Gems & Micro Samples

Darkfield Attachment (with specimen holder) for inspection of GEM

& MICRO SAMPLES under transmitted light

(To be used with Stereo Microscopes MSZ)

Optional Lights

Fluorescent Ring Light

Fibre Optics Illumination (Ring Light)

Fibre Optics Illumination (Bifurcated)

Auxiliary Objectives & Eyepieces

Eyepieces (Paired) Widefield 15x or 20x or 25x

Auxiliary Lens 1.5x or 2x



MIPS (Micro Image Projection System) :
Optional attachments on MSZ & MSZ-TR



Gems - Inspection Accessories
Darkfield attachment (with specimen holder) for inspection of
Gems & Micro samples under transmitted light

Standard Configurations

	MODEL MSZ-BI	MODEL MSZ-TR
Optical body	Binocular body	Trinocular body
Zoom ratio	1 : 7	
Objective zoom range	0. 65X - 4.5X	
Eyepiece	SWF10X/22mm (High eye-point Super Widefield Eyepieces)	
Working distance	100mm	
Interpupillary distance adjustment	55mm-75mm	
Binocular head inclination of	45°	
Diopter adjustment	+/- 5 diopter	
Optical Body Rotation	360° with reflected and transmitted illumination Voltage input 220V/50HZ Top halogen lamp 6V15W adjustable brightness bottom fluorescent lamp 5W	

MSZ Series Optical Data

Auxiliary Lens (optional)	WF 10X (standard)		WF 15X (optional)		WF 20X (optional)		WF 25X (optional)		Working Distance mm
	Mag	FOV mm							
1.5x	9.8x - 67.5x	22.5 - 3.3	14.6x - 101.3x	16.4 - 2.3	19.5x - 135x	13.3 - 1.9	24.4x - 168.8x	12.3 - 1.7	45
2.0x	13x - 90x	16.9 - 2.5	19.5x - 135x	12.3 - 1.8	26x - 180x	10 - 1.4	32.5x - 225x	9.2 - 1.3	40

The user may select different objective and eyepiece as per the requirement of magnification, working distance, visual field and depth of field.



THE NEW BENCHMARK IN HEALTHCARE

ICON



THE NEW BENCHMARK IN HEALTHCARE

Guided by Japanese production methods and manufactured in a TUV-certified ISO 9001 : 2000 facility, Magnus microscopes are today recognized for their precision engineering and high-performance optics.

Magnus has a significant presence in the healthcare & education sectors in the Indian market and its microscopes have been the preferred choice for a number of World Bank funded projects. Since 1995, more than 15,000 Magnus microscopes have been supplied to important World Bank public health programs.

The core team at Magnus has been specially trained in Japan & Germany by experts from leading optical engineering companies in the world.

Magnus now offers the Icon – The Microscope with Plan Infinity Optics and features that are best in class for this category of Microscopes.

Plan Infinity Optics

The newly-developed Plan Infinity optics with Multi Layer coatings provide objectives with excellent flatness, thus producing sharp, clear images up to the edge of the field of view. The standard set include 4x, 10x, 40x and 100x oil objectives. Options of 20x as well as 50x Semi Apo No Cover Slip Objective is also available.

Widefield FN 20 Eyepieces

Paired 10X Widefield eyepieces with FN 20 make for very comfortable viewing of samples, ensuring long hours of fatigue-free operation.

Koehler Illumination

An Abbe condenser, with N.A. 1.25 and built-in aperture diaphragm and centring screws combined with field iris diaphragm gives even Koehler illumination for the samples.

Inward Nosepiece

Quadruple Inward Nosepiece gives a better visual feel of the slides under observation. It also allows an easy

access to the slides and provides a clear view of the objective being used to examine the slide. Quintuple nosepiece option is also available.

Dual Slide Holder

Dual slide holder increases productivity by having two slides mounted on the stage and a quick change-over from one slide to another. This feature saves overall time for the user.

LED Illumination

Now shift to the High Brightness long life LED light source with a lifetime of at least 30000 hours. The LED light source is also available with the an in-built battery back-up for 6-8 hours of operation. There is also an option of charging the batteries with a solar panel, thus removing dependence on the grid supply.

Anti Fungus Treatment

The optics (observation tubes, eyepieces and objectives) are anti-fungus treated to maintain their optimum functionality even in high humidity areas.

Double Layer Mechanical Stage

The stage is a Double Layer Mechanical stage with ergonomic long handle control knobs for easy X-Y movement of the slide.

Trinocular Head

The Icon comes with an option of a trinocular head to mount a Digital SLR camera or a range of USB/ Firewire cameras for connectivity to a laptop or desktop computer.

Upgradable to Fluorescence

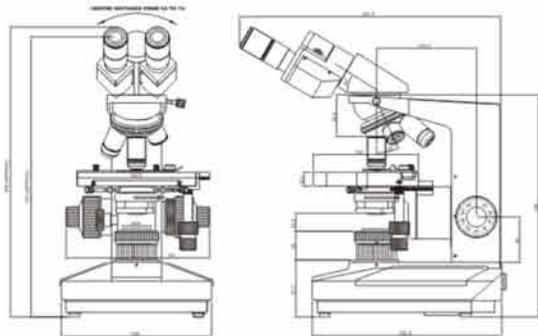
The Icon can be upgraded to an LED Fluorescence microscope by adding the MicroLED attachment for Blue and Green excitations.

A complete microscope for all medical and education needs

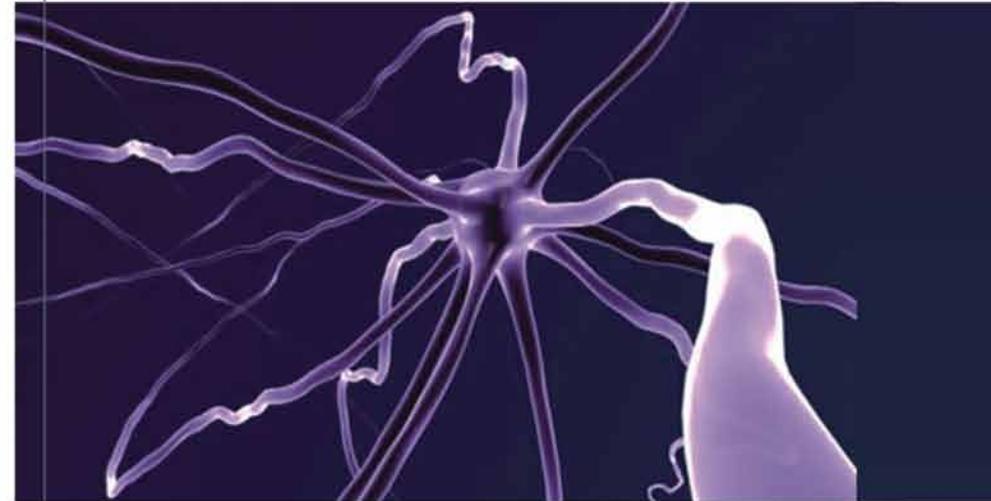


Model	Magnus Icon
Body	Aluminium die-cast body with all critical movements based on ball bearing & wire guides thereby ensuring smooth & precise manipulation
Mechanical Stage	Co-axial low drive double layer mechanical stage (140mm x 160mm) with traverse area of 50mm x 75mm
Focusing System	Coaxial coarse/fine focus, with tensional adjustment and minimum fine focusing range of 2um.
Nosepiece	Quadruple inward revolving nosepiece based on precision ball-bearing mechanism with positive click stop
Option (a) Illumination base (6V20W Halogen Light)	Built-in illumination base with pre-centred 6V 20W halogen light source coupled with an efficient collector lens system and Koehler to provide optimum brightness along the optical path. Power supply 230V AC, 50Hz single phase.
Option (b) LED Light source (with battery back-up)	LED Light source: High brightness, longlife (30000hrs) 1W LED. Battery Back-up: In-built NiMH Rechargeable batteries provide 6 to 8hrs back-up on full charge
Abbe condenser	N.A. 1.25 Rack & pinion adjustable, centered through dual adjustment knobs.
Eyeiece	WF 10x (FN 20) paired eyepiece. The unique optical design of the compensating eyepiece provides relief from eye fatigue and renders colour-compensated wide-field images of utmost clarity.
Infinity corrected Plan Achromat Objectives (Anti fungus treated)	Plan Achromat 4X/0.10 WD 25mm
	Plan Achromat 10X/0.25 WD 5mm
	Plan Achromat 40X/0.65(Spring) WD 0.5mm
	Plan Achromat 100X/1.25(Spring, Oil) WD 0.14mm
Binocular Head	Binocular (30 degree inclined seidentopf, 360 degree rotatable, diopter adjustment with a special anti-fungus treatment

Specifications are subject to change without notice



ICON



The Plan Infinity Microscope

CALL US 180 10



THE NEW BENCHMARK IN HEALTHCARE

Magnus – Fraen Partnership

Since its inception in 2000, Fraen Srl has defined the concept of MAXIMIZING LIGHT! and is committed to developing high-quality, innovative and technologically advanced optical solutions to satisfy customer requirements.

Based on its rich knowledge of optical systems, Fraen Srl has developed automotive lighted instrumentation pointers, fiber optic couplers, light pipes, high-efficacy TIR collimators, etc and has become the industry benchmark for the top quality optical solutions for high-powered LEDs.

Magnus has a significant presence in the healthcare & education sectors in the Indian market and its microscopes have been the preferred choice for a number of World Bank funded projects. Since 1995, more than 15,000 Magnus microscopes have been supplied to important World Bank public health programs.

Guided by Japanese production methods and manufactured in a TUV-certified ISO 9001 : 2000 facility, Magnus microscopes are today recognized for their precision engineering and high-performance optics. The core team at Magnus has been specially trained in Japan & Germany by experts from leading optical engineering companies in the world.

The Magnus-Fraen partnership strives to combine the optical design and manufacturing strengths to produce high precision and cost competitive products to serve the education and healthcare markets all over the world.

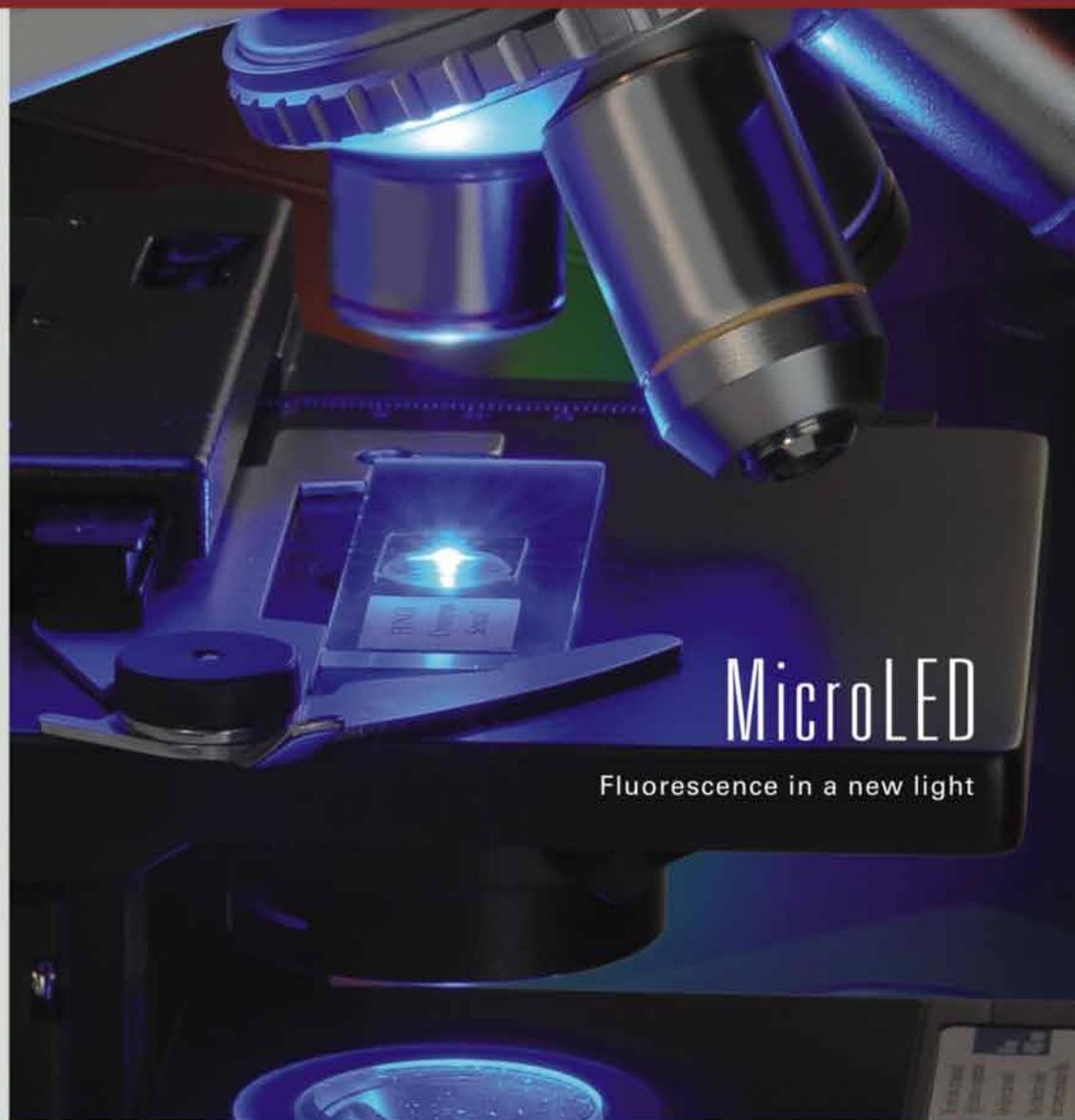
MicroLED Specifications

- Lifetime : >30,000 hrs
- LED Power : Typically 3W, depending on LED type.
- Excitation : See table ▶
- Modules available : Clamp-on modules available for the following microscopes:
 - Magnus Icon • Magnus MLXi • Olympus CX21 • Olympus CX31
- Emission filters : 2 or 3 positions sliding filter carrier depending on the excitation spectra
- Mirror : Enhanced Al + SiO₂ coating
- AC adaptor : Input Voltage - 220/110V AC
Output Voltage - 7.5V DC / 12V DC
Power - Max. 15 - 18W

LED Cassettes	Excitation
Royal Blue	450nm
Blue	480nm
Green	535nm

Optionals

- Battery Pack : Rechargeable NIMH battery pack for Fluorescence module
- Intensity Control : Fluorescence illumination intensity control through variable potentiometer
- Digital Cameras : Choice of Digital SLR camera or USB/Firewire camera.
(Requires Trinocular Head and adapter as per microscope model)



MicroLED

Fluorescence in a new light



THE NEW BENCHMARK IN HEALTHCARE

THE NEW VISION OF FLUORESCENCE MICROSCOPY

Overview

Magnus Analytics and Fraen Corporation, Italy bring you an integrated optical solution for fluorescence microscopy consisting of a unique, proprietary illumination system with high power solid-state (LED) sources to replace the mercury and xenon arc-lamps found in traditional epi-fluorescence microscopy.

This approach allows significant increase of performance and light source lifetime, reduction of initial costs and operating costs, reduction of maintenance and less heat production.

The module is designed to attach to a number of standard bright field microscope and fluorescence microscopy can be done by simply inserting a mirror in the light path.

Bright field microscopy is not affected since the halogen white light function remains intact. Magnus MicroLED LED fluorescence modules are available for the Olympus CX series and the Magnus Icon as well as MLXi microscopes.

The standard fluorescence module is available with 480nm (blue) module. Other options include the 455nm (deep Blue) and the 535nm (green) LED cassettes.



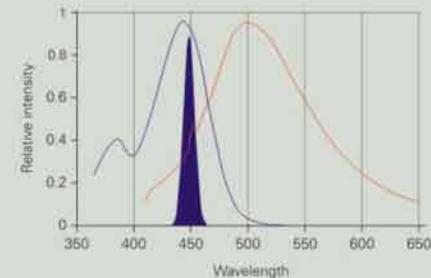
Tuberculosis Application

Transmitted light microscopy on sputum samples is the most widely used method to diagnose pulmonary tuberculosis. However, this method is complex and has low sensitivity compared to culture, while the more-sensitive fluorescence microscopy method is a far more reliable and effective diagnostic tool.

Till now, the fluorescence method has not found favour in public health programmes, due to the high initial investment required for a fluorescence microscope. But now, with MicroLED, fluorescence microscopy can be employed on small microscopes at an affordable price.

Advantages of Fluorescence Microscopy over ZN staining

- Observation at low magnification provides high throughput – Due to the use of 40x magnification in fluorescence instead of 100x, the user can view a much larger field and thus make the process of diagnosis faster.
- The output of the Royal Blue LED (455nm) used for tuberculosis applications provides a perfect match for the excitation peak of the Auramine O Dye, resulting in a high contrast image with excellent Signal-to-Noise ratio.



— Auromine-O Excitation ■ Royal Blue LED Spectrum
— Auromine O Emission

- With the use of a dry 40x objective, there is no need for using oil resulting in overall savings as well as lesser microscope maintenance issues associated with the use of immersion oil.
- The fluorescence method achieves higher sensitivity than the ZN method making detection of TB pathogens easier.

Key Benefits

The MicroLED has been developed to provide equivalent performance and capability delivered in standard fluorescence microscopy equipment, but with a series of enhancements designed to make the technology accessible to more users, easier to operate and maintain, and significantly smaller to make it portable. Some of the key advantages offered by this technology are as under :

- The LED modules are light sources emitting an extremely efficient spectrum only in the desired bandwidth, thus ensuring a very good signal-to-noise ratio.
- Light source lifetime: typically 30,000 hrs, thus allowing many years of operation and cost savings.
- No warm-up time required for the light source.
- No need of any special alignment procedure.
- Variable light control allows adjustment of illumination intensity to reduce photobleaching
- Allows transmitted light observation without removing the fluorescence module
- Choice of Blue, Royal Blue and Green LED cassettes
- Battery pack option for field operation.



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