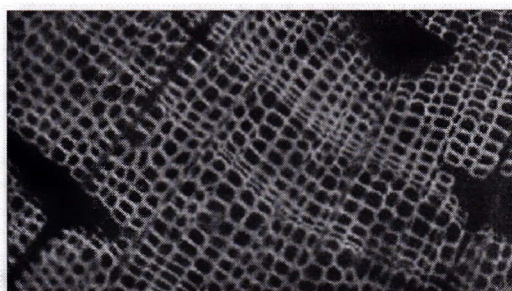
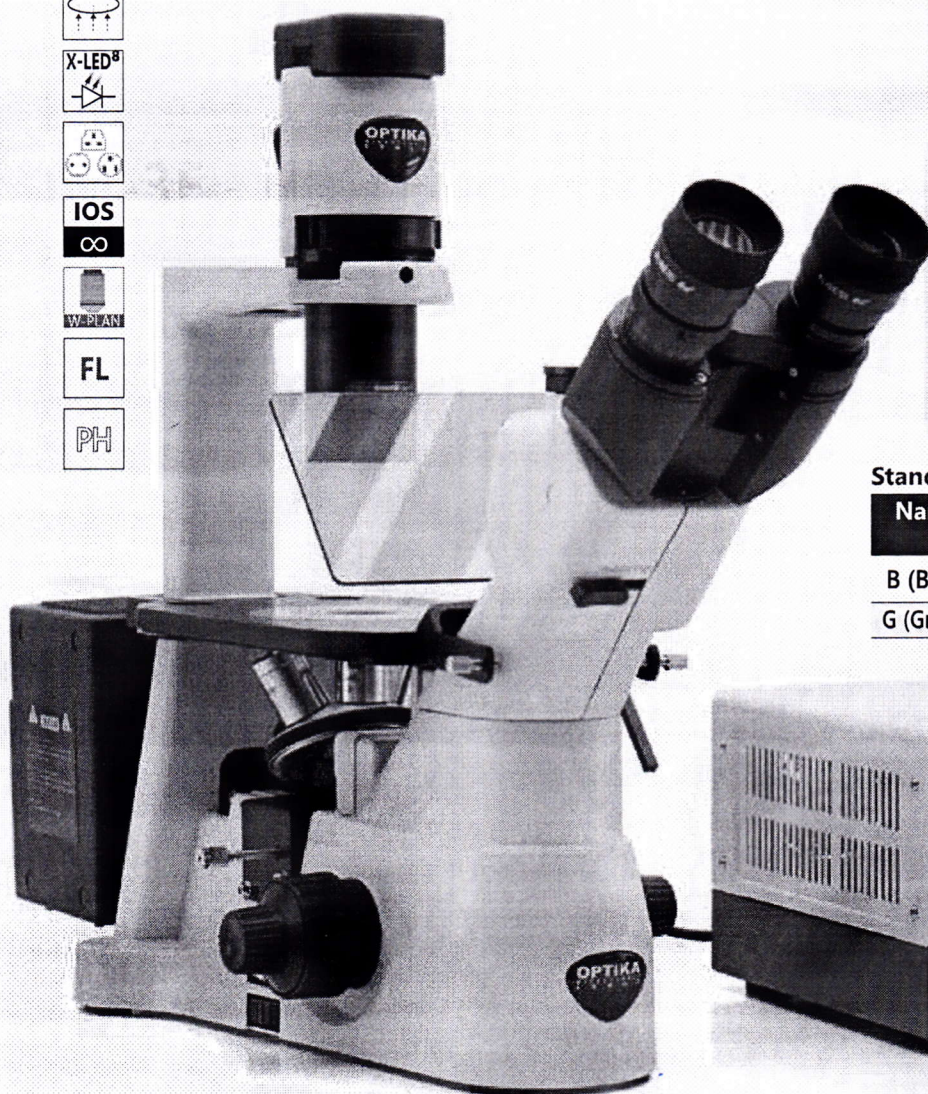


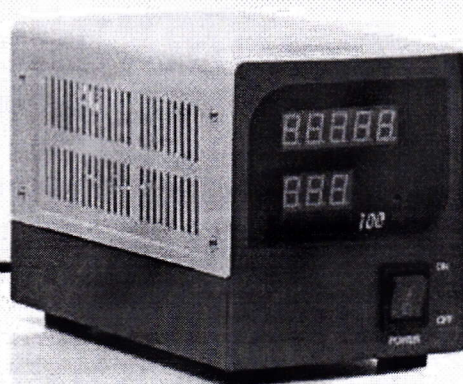
# IM-3F - HBO Fluorescence Microscope

Routine inverted fluorescence microscope for transmitted brightfield, phase contrast and fluorescence observations with IOS LWD W-PLAN objectives. The HBO fluorescence illuminator is combined with blue and green excitation filter set for the visualization of the following fluorochromes: Acridine Yellow, Acridine Orange, Auramine, DiO, DTAF, FITC, GFP, YFP, etc. (blue) plus Rhodamine, Texas Red and TRITC (green). Transmitted light through the exclusive **X-LED®** to ensure great-looking, rich and high-quality specimen view.



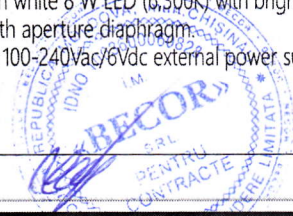
## Standard filtersets

Name	Excitation filter (nm)	Dichroic mirror cut-off (nm)	Emission filter (nm)
B (Blue)	450 – 490	495	520LP
G (Green)	527 – 553	565	575LP



Part	Description
<b>Observation mode:</b>	Brightfield, phase contrast, HBO fluorescence.
<b>Epi-illumination and filter:</b>	HBO 100 W high pressure mercury lamp. 3-position filter holder; blue & green included.
<b>Head:</b>	Trinocular (2-position 100/0, 0/100), 45° inclined.
<b>Interpupillary distance:</b>	Adjustable between 50 and 75 mm.
<b>Dioptric adjustment:</b>	On the left eyepiece tube.
<b>Eyepieces:</b>	WF10x/22 mm, high eye-point and with rubber cups.
<b>Nosepiece:</b>	Quintuple revolving nosepiece, rotation on ball bearings.
<b>Objectives:</b>	IOS LWD W-PLAN 4x/0.13 IOS LWD W-PLAN PH 10x/0.25 IOS LWD W-PLAN PH 20x/0.40 IOS LWD W-PLAN 40x/0.60 All with anti-fungus treatment.

Part	Description
<b>Specimen stage:</b>	Fixed stage, 250x160 mm, with glass and metal stage inserts.
<b>Focusing:</b>	Coaxial coarse (adjustable tension) and fine focusing mechanism with limit stop to prevent the contact between objective and specimen.
<b>Condenser:</b>	LWD pre-centered condenser, N.A. 0.30, W.D. 72 mm. With 4x/10x, 20x/40x phase contrast slider and brightfield. Removable to extend the working distance up to 150 mm.
<b>Transmitted illumination:</b>	X-LED® with white 8 W LED (6,300K) with brightness control. With aperture diaphragm. Multi-plug 100-240vac/6Vdc external power supply.





# IM-3 Series

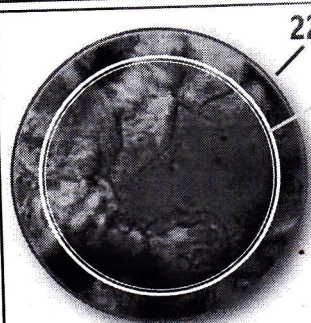
Inverted microscopes are useful for observing living cells or organisms at the bottom of a large container (e.g., a tissue culture flask) under more natural conditions than on a glass slide, as it occurs with a conventional microscope. IM-3 Series is engineered and designed to be your ideal solution for fast and reliable routine inspections, with the exclusive, state-of-the-art X-LED® illumination system. A particularly simple and ingenious optical design allows stable alignments and smooth and accurate movements. OPTIKA provides different configurations, including the innovative LED fluorescence technology for a new, enhanced experience.

## X-LED® Exclusive Lighting Source

Special technology able to double the light intensity for incomparable performance, ensuring constant pure-white colour temperature (6,300K colour temperature).

Relevant money and energy saving thanks to the incredibly low energy consumptions which allows you to cut the electricity bills by 90%!

The electric consumption (8 W only) proves the high efficiency of this system: incredibly high light intensity combined with low consumption.



22mm FN

20mm FN

## Large Specimen View (22 mm Field Number)

The **F.O.V.** (field of view) is based on a comfortable diameter of 22 mm.

This means that an extra wide area of the sample can be inspected and allows a natural and easy view, particularly needed in a laboratory environment.

## In fluorescence we can offer several options.

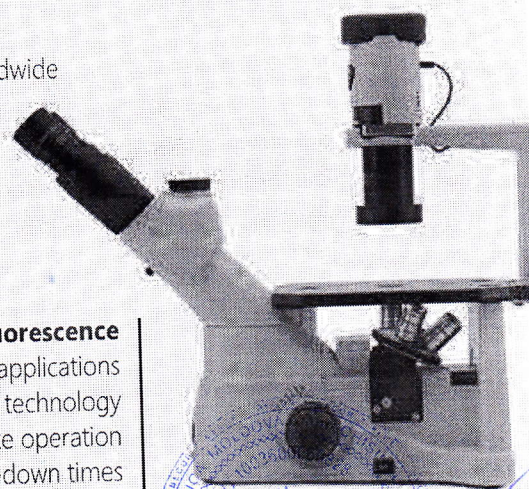
According to your application and to the fluorochromes you are using, we can help you to identify the best light source.

### Traditional, HBO Fluorescence

- » The most used and diffused method, worldwide
- » Wide spectrum range for future upgrades

### Innovative, LED Fluorescence

- » Recommended for routine applications
- » Cost-effective, money saving technology
  - » Ready for immediate operation
  - » Eliminate warm-up/cool-down times
  - » Forget lamp replacement & centering





# M-3 Series - Comparison chart

2

Laboratory

## Common features:

- **Head:** Trinocular (2-position), 45° inclined.
- **Eyepieces:** WF10x/22mm, high eye-point.
- **Nosepiece:** Quintuple, reversed, on ball bearings.
- **Stage:** Fixed, 250x160 mm (mechanical stage and side extension available as accessories).
- **Focusing mechanism:** Coaxial coarse (adjustable tension) and fine focusing mechanism with limit stop to prevent the contact between objective and specimen.

Model	Type	Objectives	Condenser	Incident illumination	Fluorescence slider	Transmitted illumination
IM-3	BF, PH	IOS LWD W-PLAN PH 10x, 20x, 40x	LWD, N.A. 0.30, iris diaphragm	-	-	8 W X-LED <sup>®</sup> , brightness control
IM-3F	BF, FL, PH	IOS LWD W-PLAN 4x, 10xPH, 20PH, 40x	LWD, N.A. 0.30, iris diaphragm	FL HBO with blue and green filtersets	2-position +BF	8 W X-LED <sup>®</sup> , brightness control
IM-3FL4	BF, FL	IOS LWD U-PLAN F 10x, 20x, 40x	LWD, N.A. 0.30, iris diaphragm	FL HBO with blue and green filtersets	3-position +BF	8 W X-LED <sup>®</sup> , brightness control
IM-3LD2	BF, FL, PH	IOS LWD W-PLAN PH 10x, 20x, 40x	LWD, N.A. 0.30, iris diaphragm	FL LED with blue and green filtersets	2-position +BF	8 W X-LED <sup>®</sup> , brightness control
IM-3LD4	BF, FL	IOS LWD U-PLAN F 10x, 20x, 40x	LWD, N.A. 0.30, iris diaphragm	LED Fluorescence Cubes as optional	4-position	8 W X-LED <sup>®</sup> , brightness control
IM-3LD4D	BF, FL	IOS LWD U-PLAN F 10x, 20x, 40x	LWD, N.A. 0.30, iris diaphragm	LED Fluorescence Cubes as optional	2-position	8 W X-LED <sup>®</sup> , brightness control
IM-3MET	MET	IOS LWD U-PLAN MET 5x, 10x, 20x, 50x	-	Halogen bulb, 12 V/50 W, brightness control	-	-

## IM-3 Series - Optical performance

### IM-3 / IM-3LD2 / IM-3F

10x (M-780)				
Eyepiece				
Field number (mm)			22	
Objective	N.A.	W.D. (mm)	Total magnification	Field of view (mm)
4x	0.13	10.40	40x	5.50
10x PH	0.25	7.30	100x	2.20
20x PH	0.40	6.80	200x	1.10
40x PH	0.60	3.00	400x	0.55
60x	0.70	1.70	600x	0.37

### IM-3FL4 / IM-3LD4 / IM-3LD4D

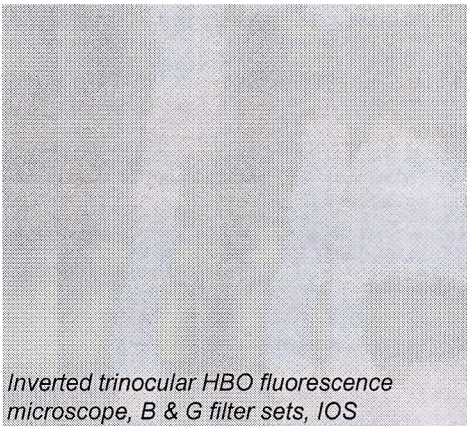
10x (M-780)				
Eyepiece				
Field number (mm)			22	
Objective	N.A.	W.D. (mm)	Total magnification	Field of view (mm)
4x	0.13	18.52	40x	5.50
10x	0.30	7.11	100x	2.20
20x	0.45	5.91	200x	1.10
40x	0.65	1.61	400x	0.55
60x	0.75	1.04	600x	0.37

### IM-3MET

IM-3MET						
Eyepiece			10x (M-780)		15x (M-601)	
Field number (mm)			22		16	
Objective	N.A.	W.D. (mm)	Total magnification	Field of view (mm)	Total magnification	Field of view (mm)
5x	0.15	10.80	50x	4.40	75x	3.20
10x	0.30	10	100x	2.20	150x	1.60
20x	0.45	4	200x	1.10	300x	0.80
50x	0.55	7.90	500x	0.44	750x	0.32
100x	0.80	2.10	1000x	0.22	1500x	0.16







*Inverted trinocular HBO fluorescence microscope, B & G filter sets, IOS*

Observation Method - Transmitted Light	Brightfield	Yes
	Phase contrast (Positive type)	Yes
Observation Method - Incident Light	Fluorescence	Yes
Main Body	Type	Inverted
	Construction material	Aluminum die-cast
Head	Type	Trinocular (Siedentopf)
	Split ratio	100/0 - 0/100
	Inclination	45°
	Interpupillary distance (mm)	50-75
	Dioptric adjustment	On left tube
	Tube inner diameter (mm)	30
Eyepieces	Field number (mm)	22
	Magnification	10x
	Planar type	Yes
	Micrometric scale	As optional
	Diameter of micrometer glass (mm)	26
	High eyepoint (for glass wearers)	Yes
	Rubber cup	Yes
	Retractable protections	Yes
Nosepiece	Positions	Quintuple
	Reversed	Yes
	Bi-directional	Yes
	Rotation on ball bearings	Yes
	Objective thread	RMS
Objectives	Optical system	∞
	Anti-fungus treatment	Yes
	Parfocal distance (mm)	45
	Standard magnifications	40x-400x
	Type	IOS LWD
		IOS LWD W-PLAN
		4x/0.13, W.D. 10.4 mm
		IOS LWD W-PLAN PH
		10x/0.25, W.D. 7.3 mm
	IOS LWD W-PLAN PH	
	20x/0.40, W.D. 6.8 mm	
	IOS LWD W-PLAN	
	40x/0.60, W.D. 3.1 mm	
Stage	Type	Fixed
	Dimensions (mm)	250x160
	Material	Anti-scratch painting
	Glass round insert	Yes
	Metal round insert	Yes





<b>Condenser - Single Position</b>	Type	Abbe
	Removable	Yes
	Numerical aperture (N.A.)	0.30
	Diaphragms	Iris
	Slider for phase contrast	BF, 4x/10x, 20x/40x positions
	Long working distance	Yes
	Working distance (for LWD) (mm)	72
	Extendable working distance (for LWD) (mm)	up to 150

<b>Focusing System</b>	Type	Coaxial coarse & fine
	Fine total travel (per single rotation) (mm)	0.2
	Fine graduations	100
	Fine resolution ( $\mu\text{m}$ )	2
	Upper stop to prevent contact	Yes
	Adjustable tension	Yes

<b>Transmitted Illumination</b>	Type	X-LED
	X-LED type	X-LED8
	Light source power (W)	8
	Brightness control	Manual
	Lifetime (hours)	> 65,000
	Temperature (K)	6,300
	Max. required power (W)	13

<b>Power Supply for Transmitted Illumination</b>	Type	External
	Microscope connector	Jack, 2.1 mm
	Power plug type	Multi-plug (EU, UK, US)
	Input voltage	100/240 Vac, 50/60 Hz
	Output voltage	6 Vdc 2.5 A

<b>Accessories Included</b>	Dust cover	Yes
	Allen wrench	Yes
	Centering telescope	Yes
	Green filter	Yes
	User Manual	Digital version (downloadable)

<b>Additional Information</b>		Mechanical stage dimension 250x230 mm, X-Y translation range 120x80 mm (as optional). Metallic interchangeable inserts for slides, Petri dishes, Terasaki, multi-Well plates (as optional).
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<b>Product Dimensions</b>	Height (mm)	495
	Width (mm)	230
	Depth (mm)	730

<b>Product Weight</b>	(kg)	14
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<b>Fluorescence Attachment</b>	Number of positions	3
	Blue filter set (included)	Excitation: 460 - 490 nm; Dichroic: 500 nm; Emission: 520LP nm
	Green filter set (included)	Excitation: 527 - 553 nm; Dichroic: 565 nm; Emission: 575LP nm
	Filter dimensions	Excitation: 21.9 mm diam.; Dichroic: 29 mm x 21 mm; Emission: 20 mm diam.
	Filter set selection	Manual
	Shutter	Yes
	Field diaphragm	Centerable

<b>Fluorescence Light Source</b>	Light source	HBO
	Light source power (W)	100
	Lifetime (hours)	300

<b>Fluorescence Power Supply</b>	Type	External
	Power plug type	Schuko
	Input voltage	100/240 Vac, 50/60 Hz
	Max. power required (W)	130
	LED indicators	Yes



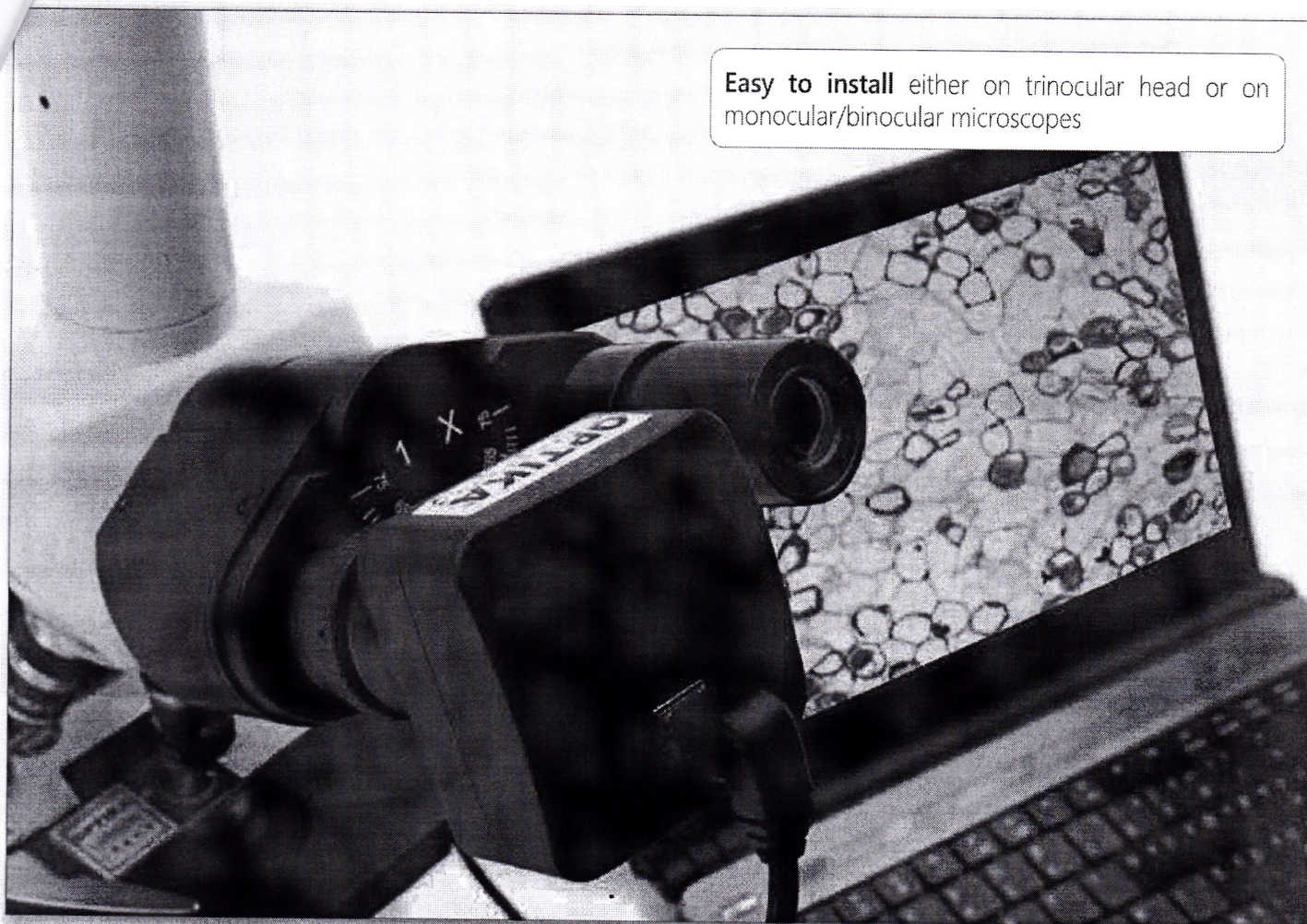


# USB CAMERAS - B Series

4

Cameras & Digital

Easy to install either on trinocular head or on monocular/binocular microscopes



C-B5	C-B10
5.1 MP (2592 x 1944)	10 MP (3584 x 2748)
USB 2.0	USB 2.0
1/2.5"	1/2.3"
CMOS	CMOS
Aptina CMOS	Aptina CMOS
4/3	4/3
2.2 x 2.2 $\mu\text{m}$	1.67 x 1.67 $\mu\text{m}$
7 fps (2592 x 1944)	3.3 fps (3584 x 2748)
27 fps (1280 x 960); 90fps (640 x 480)	11 fps (1792 x 1374); 38 fps (896 x 684)
0.53 V/lux-second	0.31 V/lux-second
40.5 dB	34 dB
66.5 dB	65.2 dB
8 Bit	8 Bit
1 Bit; 4 Bit; 8 Bit; 24 Bit	1 Bit; 4 Bit; 8 Bit; 24 Bit
0.294 msec - 2 sec	0.4 msec - 2 sec
1x1; 2x2; 4x4	1x1; 2x2; 4x4
380-650 nm (IR-cut filter)	380-650 nm (IR-cut filter)
PC USB	PC USB
YES	YES

