OPTIKA®
MICROSCOPES
ITALY

IM-7

Inverted Research Microscope

IM-7 - Inverted Research Microscope

IM-7 represents the best of what Optika dedicates to the world of research.
This model was created to meet all the needs related to research in life science and designed to be complemented by a series of packages dedicated to more advanced individual applications.
For all intents and purposes, IM-7 is to be considered as an inverted imaging platform, due to its high expandability and state-of-the-art quality.

IM-7 - Inverted Research Microscope

Top-level of optical equipment among our product range provides a sharp and clear view in any situation, while top-level mechanical design offers sturdiness and long lifetime.

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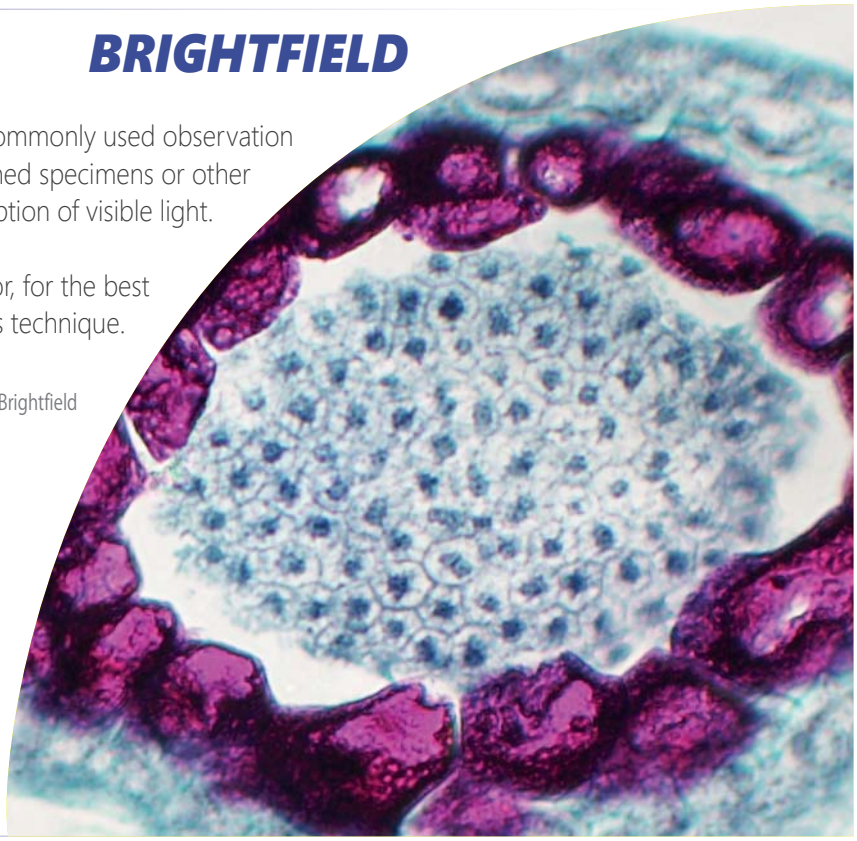
IM-7

BRIGHTFIELD

Transmitted brightfield illumination is one of the most commonly used observation method in optical microscopy, and is ideal for fixed, stained specimens or other types of samples having high natural absorption of visible light.

IM-7 is fitted with high-efficiency LED brightfield illuminator, for the best outcome when using this technique.



Capsella middle embry - Brightfield

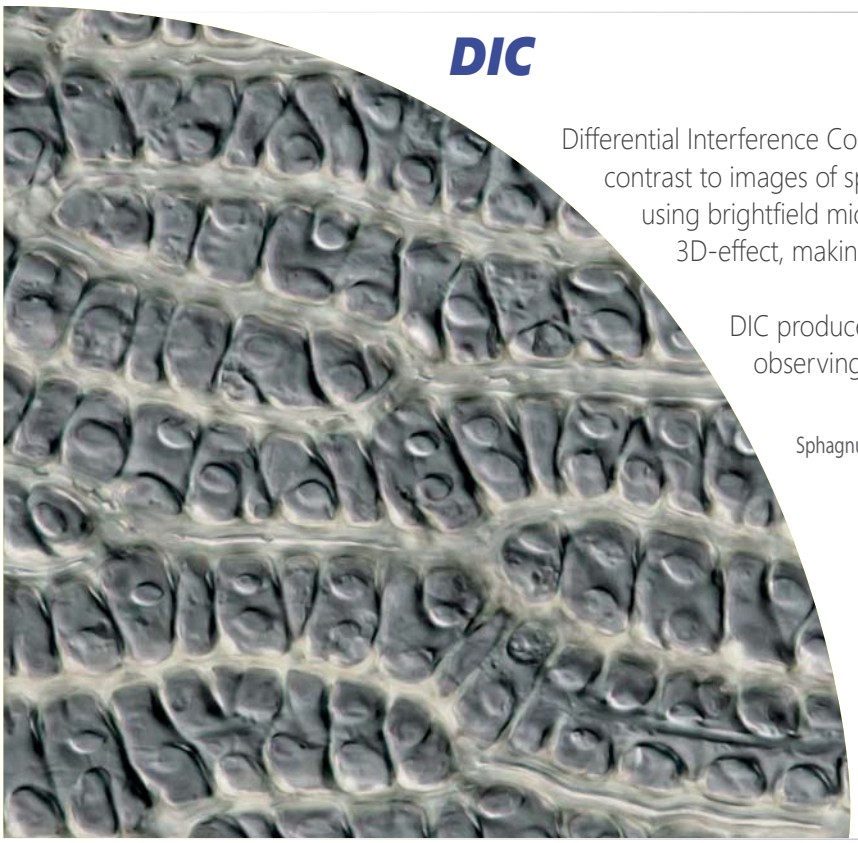
FLUORESCENCE

The fluorescence microscopy is the most demanding technique in biology and biomedical sciences, as well as in materials science.
This method is capable to study organic and inorganic samples thanks to primary fluorescence (auto-fluorescence) or secondary (staining and labelling with fluorochromes)

IM-7 is tailored for applications in research, clinical and pharmaceutical diagnostic field.
Fluorescence illuminators available as mercury lamp.

Cotton fibers - UV Fluorescence

Multiple Observation Methods

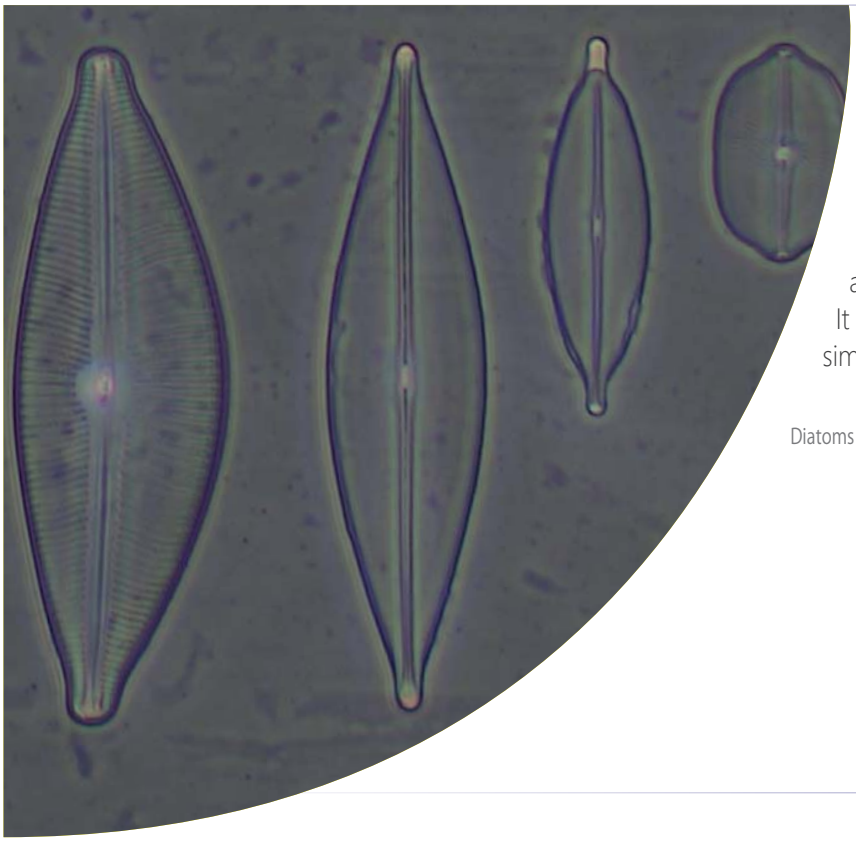


DIC

Differential Interference Contrast (DIC) is a microscopy technique that introduces contrast to images of specimens which have little or no contrast when observed using brightfield microscopy. The images produced using DIC have a pseudo 3D-effect, making the technique ideal for many applications.

DIC produces high resolution images with good contrast. It is best for observing unstained samples.

Sphagnum pores g - DIC



PHASE CONTRAST

Phase-contrast microscopy is a particular technique applied in transparent, non-stainable, samples like culture of living cells, microorganisms, lithographic patterns, latex dispersions, fibers, asbestos and subcellular particles.
It reveals many cellular structures that are not visible with a simple brightfield microscope.

Diatoms - Phase contrast

IM-7 - Features

Revolving nosepiece for DIC and Fluorescence filter turret

The six-position nosepiece has a slot (in each of the six positions) for inserting DIC prisms.

The filter turret can hold up to six fluorescence filterblocks. It is easily extractable, in order to facilitate the operation of inserting or replacing the filterblocks.

Mechanical stage and universal condenser

The wide 3-layer mechanical stage comes with several interchangeable plates for the use of Petri dishes, flasks and slides. The movement of the stage is controlled by a long tilting handle equipped with a pair of knobs for X/Y axes.

The universal condenser is a 6-position type, designed for brightfield, phase contrast and DIC.

Illuminator arm

The arm of the transmitted illuminator is backward tilting up to 30 degrees and it allows to use flasks and big bottles.

IM-7 - Features

Main photo tube and Bertrand lens

The main photo tube located on the binocular head is easily controllable by using its control knob. 3 positions selectable: 100/0, 50/50, 0/100.

For phase contrast centering operations a Bertrand lens is available and it can be easily inserted by means of a dedicated knob.

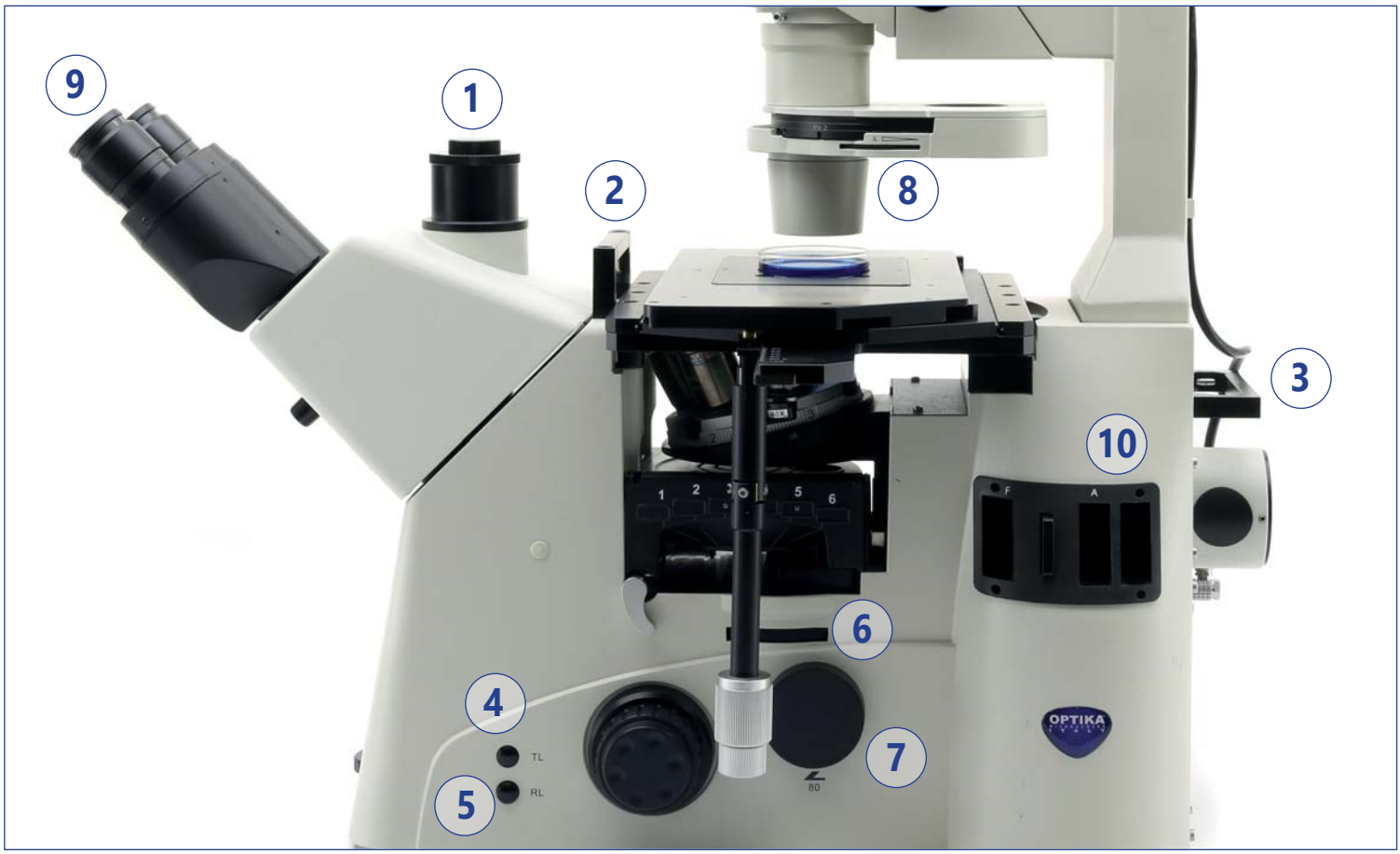
Fluorescence equipment

A complete package of accessory dedicatd to Fluorescence technique is available as option.

Fluorescence filterblocks

In addition to the four standard fluorescence B-G-V-UV filterblocks, many others are available upon request to satisfy every kind of need.

IM-7 - Features / Controls



IM-7 - Features / Controls

1 - Main photo tube, on binocular head

2 - Handle, for transportation

3 - Handle, for transportation

4 - Transmitted illuminator switch

5 - Fluorescence illuminator switch

6 - Magnification changer, 1x-1.5x

7 - Right side photo tube

8 - Universal condenser, for brightfield, PH and DIC

9 - Binocular head, with standard WF10x/22mm eyepieces or WF10x/25mm (optional)

10 - Slots for field diaphragm, aperture diaphragm, ND filters

11 - Input port for fluorescence illuminator

12 - Left side photo tube

13 - Side photo tubes control (100/0 ; 20/80 ; 0/100)

14 - Main photo tube control (100/0 ; 50/50 ; 0/100)

15 - Bertrand lens insertion control

16 - Main switch

17 - Slot for analyzer

18 - Focusing knobs

19 - 3-layer mechanical stage

20 - Transmitted illuminator brightness control

IM-7 - Standard Specifications

Part	Description
Optical system:	Infinity corrected.
Head:	Type: Trinocular (Siedentopf); Inclination 45°; Interpupillary distance 47-78 mm; Tube inner diameter 30 mm; Built-in Bertrand lens.
Photo tubes:	Trino Port/Binocular: 100/0 ; 50/50 ; 0/100; Left Side Port/Binocular: 100/0 ; 0/100.; Right Side Port/Binocular: 100/0; 20/80.
Eyepieces:	PLAN WF10x/25 mm, high eyepoint and with built-in rubber cups; focusable .
Nosepiece:	Sextuple ball bearings revolving nosepiece, reversed; DIC slots fo all positions.
Objectives:	Infinity corrected; 60 mm parfocal distance; All with anti-fungus treatment; Selectable according to customer's preferences (see objective table).
Magnification changer:	1x, 1.5x
Specimen stage:	340x230 mm, three-layers mechanical stage; 130x85 mm moving range; Moving mechanism: Rack and pinion (flexible knob); Holder for Petri dish, 160x110 mm; Holder for Terasaki plate (96 well); Holder for 1 slide. Anti-scratch painting.
Focusing:	Coaxial coarse and fine focusing mechanism with limit stop to prevent the contact between objective and specimen; Adjustable tension of coarse focusing knob; 10 mm coarse total travel; Coarse travel per single rotation: 2 mm; Fine travel per single rotation: 0.2 mm; Fine graduations: 100; Fine resolution: 2 µm.
Condenser:	Koehler type, 6-position, focusable, centrable; N.A. 0.55; Iris diaphragm; Phase contrast positions: 10x PH, 20x PH, 40x PH (rings included); DIC positions: DIC1 (10x), DIC2 (20x, 40x, 60x) (prisms not included); 26 mm working distance.
Transmitted illumination (Full Koehler):	X-LED[10]; 10W LED, high efficiency, 6000K; Brightness control; 65.000-hour lifetime.
Incident illumination:	Upgradable to Incident Fluorescence illumination through the purchase of the components indicated in the fluoscence package table.
Differential Interference Contrast (DIC)	Upgradable to DIC through the purchase of the components indicated in the DIC package table.

IM-7 - Objectives/Application Packages

IM-7 is freely configurable in terms of objectives, by choosing among: Included ■ Optional □

Infinity-corrected Semi-Apochromatic, Long Working Distance objectives, field flatness up to F.N. 25. Objectives 20x, 40x, and 60x feature a correction collar in order to compensate for various thicknesses of cover glasses or different containers.		
M-1320	IOS LWD U-PLAN F (SEMI-APO) PH 4x/0.13, W.D. 16.5 mm, Cover glass -	□
M-1321	IOS LWD U-PLAN F (SEMI-APO) PH 10x/0.3, W.D. 7.4 mm, Cover glass 1.2 mm	□
M-1322	IOS LWD U-PLAN F (SEMI-APO) PH 20x/0.45, W.D. 7.5 - 8.8 mm, Cover glass 0 - 2 mm	□
M-1323	IOS LWD U-PLAN F (SEMI-APO) PH 40x/0.60, W.D. 3.0 – 4.4 mm, Cover glass 0 - 2 mm	□
M-1324	IOS LWD U-PLAN F (SEMI-APO) PH 60x/0.70, W.D. 1.8 – 2.6 mm, Cover glass 0.1 - 1.3 mm	□

HBO Fluorescence package: Included ■ Optional □

M-1330	EPI Fluorescence internal attachment	□
M-151.1	OSRAM 100W HBO high pressure mercury bulb	□
M-1332	HBO Lamp house	□
PS-HBO	Optika 100W HBO power supply	□
M-1334	6-position fluorescence filterbox turret	□
M-1335	UV protector orange shield	□
M-1336	B filterblock, filters included	□
M-1337	G filterblock, filters included	□
M-1338	V filterblock, filters included	□
M-1339	UV filterblock, filters included	□
M-1340	Aperture diaphragm slider	□
M-1341	Field diaphragm slider	□
M-1342	Slider with neutral density filter for HBO illumination	□
M-1343	Empty fluorescence filterblock	□

Name	Excitation filter (nm)	Dichroic cut-off mirror (nm)	Emission filter (nm)
B (Blue)	460 – 490	500	510LP
G (Green)	510 – 550	570	590LP
V (Violet)	400 – 410	455	455LP
UV (Ultraviolet)	330 – 385	400	420LP

DIC - Differential Interference Contrast package: Included ■ Optional □

M-1350	DIC Prism for 10x	□
M-1351	DIC Prism for 20x	□
M-1352	DIC Prism for 40x	□
M-1353	DIC prism for 60x	□
M-1354	DIC 1 prism 10x for condenser	□
M-1355	DIC 2 prism 20x-40x-60x for condenser	□
M-1356	Slider with rotating analyzer	□

IM-7 - Accessories

Eyecups & Eyepieces
M-1360 PL10x/25, high eyepoint, focusable, rubber cup
M-1361 PL10x/25, micrometric eyepiece, high eyepoint, focusable, rubber cup

Objectives
M-1320 IOS U-PLAN F (SEMI-APO) PH 4x/0.13, W.D. 16.5 mm, Cover glass -
M-1321 IOS U-PLAN F (SEMI-APO) PH 10x/0.3, W.D. 7.4 mm, Cover glass 1.2 mm
M-1322 IOS U-PLAN F (SEMI-APO) PH 20x/0.45, W.D. 7.5 - 8.8 mm, Cover glass 0 - 2 mm
M-1323 IOS U-PLAN F (SEMI-APO) PH 40x/0.60, W.D. 3.0 – 4.4 mm, Cover glass 0 - 2 mm
M-1324 IOS U-PLAN F (SEMI-APO) PH 60x/0.70, W.D. 1.8 – 2.6 mm, Cover glass 0.1 - 1.3 mm

Fluorescence package
M-1330 EPI Fluorescence internal attachment
M-151.1 OSRAM 100W HBO high pressure mercury bulb
M-1332 HBO lamp house
PS-HBO 100W HBO power supply)
M-1334 6-position fluorescence filterbox turret
M-1335 UV protector orange shield
M-1336 B filterblock, filters included
M-1337 G filterblock, filters included
M-1338 V filterblock, filters included
M-1339 UV filterblock, filters included
M-1340 Aperture diaphragm slider
M-1341 Field diaphragm slider

DIC package
M-1350 DIC Prism for 10x
M-1351 DIC Prism for 20x
M-1352 DIC Prism for 40x
M-1353 DIC Prism for 60x
M-1354 DIC 1 prism 10x for condenser
M-1355 DIC 2 prism 20x-40x-60x for condenser
M-1356 Slider with rotating analyzer

Camera Adapters
M-620 0.35x focusable C-Mount adapter (for main photo tube only)
M-620.1 0.5x focusable C-Mount adapter (for main photo tube only)
M-620.2 0.65x focusable C-Mount adapter (for main photo tube only)
M-620.3 1x focusable C-Mount adapter (for main photo tube only)
M-1365 0.5x focusable C-Mount adapter (for left/right side photo tube only)
M-1366 1x focusable C-Mount adapter (for left/right side photo tube only)

Miscellaneous
M-1370 Color temperature filter, 38mm
M-1371 Green filter, 38mm
M-1372 Yellow filter, 38mm
M-1373 Frosted filter, 38mm
15104 Cleaning kit
DC-005 TNT dust cover, extra large, 820(l)x550(h) mm
M-005 Micrometric slide, 26x76mm, with 2 scales (1mm/100 & 10mm/100)
VP-IM7 IQ/OQ/PQ manual for IM-7
AB-040 Antibacterial surface treatment, only for newly purchased microscope

15104 - Cleaning kit
It cleans glass quickly and effectively,
without leaving residue or odor.
Ideal for precision lens or prism cleaning.

How to connect the cameras to our microscopes.
Please refer to the Adapter reference list on Digital section.

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