

# BIOLOGICAL CATALOGUE



# INTRODUCTION

## Biological Catalogue

Every year heralds another step, another milestone for biological and medical diagnosis techniques and research methods, likewise for Motic as we continue to expand our offerings to meet the needs of decreasing budgets but increasing expectations. From our beginnings in educational biological microscopy to our current offerings of fluorescence microscopy, we have strived to design, manufacture, and support microscopes to exceed your requirements.

Though Motic remains an infant amongst mature giants, we have accumulated a unique philosophy of "Plug and Play", or in a biological frame of reference, "Plug and Analyse".

All microscopes offered by Motic have the potential to become an analysis station with the integration of our expanding line of digital application cameras equipped with our self-developed analysis software to increase task potentials and the overall life span of the microscope. We envision total digitalisation of our line of microscopes to empower you to complete the tasks of today and tomorrow.

The following pages contain our biological line of microscopes for 2006. As we continue to improve the excellence and functionality of our microscopes, we may need to make changes without prior notice. We warmly welcome you to become acquainted with us by visiting our website [[www.motic.com](http://www.motic.com)] and/or contacting your local Motic representative with your questions and curiosity.

Motic Microscopes.

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# FLUORESCENCE MICROSCOPY

## Biological Catalogue

### BA400 EF-UPR-III

#### UPRIGHT FLUORESCENCE MICROSCOPE\*

Expanding the application possibilities of the BA400, the EPI Fluorescence attachment effortlessly fits on top of the BA400 to provide reflected light fluorescence imaging.

- Colour Corrected Infinity Optical System [CCIS®]
- T-shaped, 3-cassette slider mount [excluding dummy cassette], HBO 100W centrable attachment



\*Please refer to the BA400 section or BA400 catalogue for more detail of basic system



### AE30/31 EF-INV-II

#### INVERTED FLUORESCENCE MICROSCOPE\*

The EPI Fluorescence attachment for the AE30/31 inverted microscope increases the amount of examination and manipulation of cells and tissue culture available from other observations.

- Colour Corrected Infinity Optical System [CCIS®]
- 2-cassette slider [excluding dummy cassette] with HBO 100W centrable attachment [bottom mount]

\*Please refer to the AE30/31 section or AE30/31 catalogue for more detail of basic system

#### AVAILABLE FLUORESCENCE CASSETTE FILTERS

Filter Set	Exciter (nm)	Dichroic (nm)	Barrier (nm)
DAPI and Hoechst	D350/50x	400DCLP	D460/50m
FITC FITC/RSGFP/Fluo 3/DiO Acradine Orange [+RNA]	D480/30x	505DCLP	D535/40m
TRITC [Rhodamine]/Dil/Cy3	D540/40x	565DCLP	D605/55m
Texax Red / Cy3.5	D560/40x	595DCLP	D630/60m
Cy5, Alexa Fluor 633, Alexa Fluor 647	HQ620/60x	Q660LP	HQ700/75m
Cyan GFP	D436/20x	455DCLP	D480/75m
Endow GFP Bandpass Emission	HQ470/40x	Q495LP	HQ525/50m
Yellow GFP BP [10C/Topaz]	HQ500/20x	Q515LP	HQ535/30m





## BA400

### MODULAR HIGH PERFORMANCE MICROSCOPE

The BA400 is a modular design for personalisation and adaptation to the different requirements of laboratory and clinical inspection, and research. Combining the CCIS® optical system with an external lamphousing for Koehler illumination provides continuous, constant crisp and informative observation.

- Increased working distance CCIS® Plan Achromat objectives
- Hassle free Epi-Fluorescence attachment with three filter cassette capacity



<b>Optical System</b>	Colour Corrected Infinity Optical System [CCIS®]
<b>Observation Tube</b>	Widefield binocular 30° [F.N. 22] Widefield trinocular 30° [F.N. 22]- light distribution 20/80 Widefield trinocular 30° [F.N. 22]- light distribution 0/100
<b>Nosepiece</b>	Reversed quintuple
<b>Stage</b>	174 x 145mm surface; 76 x 50mm movement; hard coated with coaxial movement and left or right hand controls; torque adjustment of X and Y axis controls
<b>Condenser</b>	Swing-out Achromat (N.A. 0.9/0.13) condenser 4-position N.A. 1.25 Phase Contrast turret condenser [10x, 20x, 40x, 100x, and BF] Phase and Dark field Contrast N.A. 1.25 turret condenser [10x, 40x, 100x and DF (10x-40x)]
<b>Focus</b>	42mm stroke; torque adjustment for coarse; focus lock; 1µm minimum increments; silicon coated focus controls
<b>Illumination</b>	Externally mounted, Transmitted 6V/30W Quartz Halogen Koehler Illumination
<b>Accessories</b>	Phase and dark field contrast condensers, gout diagnosis polariser kit, high resolution built-in digital head; photo/digital documentation adapters



BAT400 - MVH2S

## BAT 400

### MULTI OBSERVATION SYSTEM

Designed for simultaneous discussion and observation by researchers and laboratory technicians as well as facilitating the necessary visual aid for teaching and training, the BAT400 is available in three versions to suffice your requirements.



BAT400 - MVH3

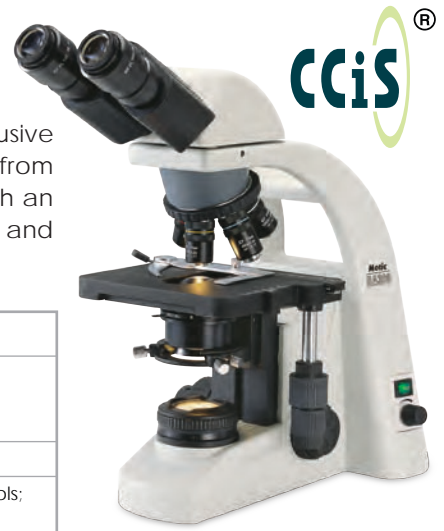


BAT400 - MVH5

### BA300

#### VERSATILE UPRIGHT MICROSCOPE

The BA300 combines the ruggedness of a well-constructed stand for abusive environments and the versatility of accessories to applications ranging from educational to clinical routine. Employing the superior CCIS® optical system with an ergonomic layout, the BA300 delivers continuous flawless hours of observation and usage.



<b>Optical System</b>	Colour Corrected Infinity Optical System [CCIS®]
<b>Observation Tube</b>	Widefield binocular 30° [F.N. 20] Widefield trinocular 30° [F.N. 20]- light distribution 20/80 Widefield trinocular 30° [F.N. 20]- light distribution 0/100
<b>Nosepiece</b>	Reversed quintuple
<b>Stage</b>	174 x 145mm surface; 76 x 50mm movement; hard coated with right hand controls; coaxial movement
<b>Condenser</b>	N.A. 0.90 Abbe condenser with slider stop; 4-position Phase Contrast (10x, 20x, 40x, 100x, BF) turret condenser; 4-position Phase and Dark field Contrast [PH 10x, 40x, 100x, and DF (10x-40x)] turret condenser
<b>Focus</b>	42mm stroke; 2µm minimum increments torque adjustment for coarse; focus lock; silicon coated focus controls
<b>Illumination</b>	Transmitted 6V/30W Quartz halogen Koehler illumination
<b>Accessories</b>	Phase Contrast slider; simple dark field slider; high resolution built-in digital head; photo/digital documentation adapters



### BA200

#### ADAPTABLE UPRIGHT MICROSCOPE

The compact footprint for space conscious environments combined with the CCIS® optical system provide the ideal solution for educational and inspection facilities. The BA200's modular format extends its capacity to various tasks based upon the different components combinations.

- Optional high resolution built-in digital head transforms the BA200 into a documentation and analysis system.

<b>Optical System</b>	Colour Corrected Infinity Optical System [CCIS®]
<b>Observation Tube</b>	Widefield binocular 30° [F.N. 18] Widefield trinocular 30° [F.N. 18]- light distribution 20/100 Widefield trinocular 30° [F.N. 18] - light distribution 0/100
<b>Nosepiece</b>	Reversed Quadruple
<b>Stage</b>	Ball bearing mechanical stage: 140 x 135mm surface Travel range: 76 x 50mm; coaxial movement
<b>Condenser</b>	N.A. 1.25 Abbe Condenser with slider slot, focusable
<b>Focus</b>	25mm stroke; 2µm minimum increments; torque adjustment for coarse; focus lock; silicon coated focus controls
<b>Illumination</b>	Built-in transmitted 6V/20W halogen critical illumination
<b>Accessories</b>	Simple phase contrast sliders (10x and 40x) ; simple dark field slider; simple polariser kit attachment; high resolution built-in digital head; photo/digital documentation adapters

## BA SERIES ACCESSORIES



### Fluorescence Attachment

Easily integrated into the BA400 arm, the Epi Fluorescence attachment accommodates 3 filter cassettes for excitation observation.



### Fluorescence Filter Sets

Available for excitation ranges of 300nm - 625nm, these cassettes effortlessly fit into the BA400 slider.



### Phase/Dark Field Contrast Condenser

The N.A. 1.25 condenser provides the convenience of phase contrast [10x, 40x, and 100x] with the option of dark field [10x - 40x] observation. [BA300/400]



### 4-Position Phase Contrast Condenser

The N.A. 1.25 condenser is equipped for phase contrast imaging [10x, 20x, 40x, and 100x] while providing the benefit of bright field for simultaneous observation methods.



### Simple Phase Contrast Slider

The simple phase contrast slider equipped with 10x and 40x phase annuli when combined with the Plan Phase objectives and the BA300's N.A 0.90 Abbe condenser is the ideal choice for laboratory screening. [BA300]



### Simple Phase Contrast

Offered in magnification specific phase annuli [10x and 40x], the simple phase sliders with the E Plan Phase objectives provides convenience and functionality in one. [BA200]



### Simple Polarisation Attachment

The attachment conveniently mounts onto the condenser [or collector lens] for rapid transition between bright field and simple polarised observations. [BA200/300]



### Gout Diagnosis Kit

Available for the BA400, the Gout Diagnosis kit is Motic's unique and rapid method of detecting Gout and pseudo-Gout for increase specimen processing. Utilising a First Order Red Compensator [535nm].



### DMBA200 High Resolution Digital Head

Transforming the BA200 into an analysis and documentation station, the high resolution built in DMBA200 digital head offers the possibility of expanding the role and power of the microscope. Equipped standard with Motic Images Plus software.



### DMBA300 High Resolution Digital Head

The high resolution built in DMBA300 head offers the aspects of digitalisation in a convenient format to document and analyse the specimen. Equipped standard with Motic Images Plus software.



### DMBA400 High Resolution Digital Head

Preparation, screening, observation, and analysis with one microscope is the possibility with the DMBA400 with a built in high resolution camera. Equipped standard with Motic Images Plus software.

### AE 30/31

#### Application Driven Inverted Microscope

A class leading inverted microscope, the AE30/31 offers the upscale function of external and centrable Koehler illumination in the routine realm. Ruggedness of design ensures years of continuous and reliable performance with accessories upgrades for further practicality.

- System expansion modularity permits application driven accessories attachment when needed with minimum down time.
- Minimum footprint for space conscious laboratories and clinics requiring application rich inverted microscopy.



<b>Optical System</b>	Colour Corrected Infinity Optical System [CCIS®]
<b>Observation Tube</b>	Siedentopf Widefield binocular 45° [F.N. 22], 380mm viewing height Siedentopf Widefield trinocular 45° [F.N. 22] - light distribution 20/80, 400mm viewing height Siedentopf Widefield trinocular 45° [F.N. 22] - light distribution 0/100, 400mm viewing height
<b>Nosepiece</b>	Tilted quintuple, waterproof mechanisms
<b>Stage</b>	200 x 260mm surface, fixed, plain stage; attachable mechanical stage
<b>Condenser</b>	ELWD N.A. 0.30 (W.D. 72mm) slider stopper, LWD N.A. 0.50 [W.D. 28mm] Focusable for objectives 4x - 40x
<b>Focus</b>	Z-axis movement via nosepiece (stage fixed); coaxial movement with 10mm stroke movement; 1µm minimum increment
<b>Illumination</b>	Transmitted 6V/30W Quartz Halogen Koehler Illumination
<b>Accessories</b>	Phase Contrast sliders; Auxilliary mechanical stages; Haemacytometer holder; photo/digital documentation adapters



### AE 20/21

#### Functional Inverted Microscope

Established to bring inverted microscopy to levels of routine clinical preparation, the AE 20/21's functionality exceeds the expectations of a basic inverted microscope. Available with an optional phase contrast, the AE20/21's responsibility can cover both screening and preparation, thus an asset in space conscious labs.

<b>Optical System</b>	Colour Corrected Infinity Optical System [CCIS®]
<b>Observation Tube</b>	Siedentopf Widefield binocular 45° [F.N. 20], 370mm viewing height Siedentopf Widefield trinocular 45° [F.N. 20] - light distribution 20/80, 390mm viewing height
<b>Nosepiece</b>	Tilted quadruple, waterproof mechanism
<b>Stage</b>	200 x 260mm surface, fixed, plain stage; attachable mechanical stage
<b>Condenser</b>	ELWD N.A. 0.30 (W.D. 72mm) Focusable, slider stop
<b>Focus</b>	Z-axis movement via nosepiece (stage fixed); coaxial movement with 10mm stroke movement; 2µm minimum increment
<b>Illumination</b>	Transmitted 6V/30W Quartz Halogen Koehler Illumination
<b>Accessories</b>	Phase Contrast sliders; Auxilliary mechanical stages; Haemacytometer Holder; Photo/digital documentation adapters



# AE SERIES ACCESSORIES

## Biological Catalogue

### Accessories



#### Fluorescence Attachment

Easily integrated into the back of the AE30/31, the Epi Fluorescence attachment accommodates 2 filter cassettes for excitation observation. [AE30/31]



#### Fluorescence Filter Sets

Available for excitation ranges of 300nm - 625nm, these cassettes effortlessly fit into the AE30/31 cassette slider. [AE30/31]



#### LWD N.A. 0.5 Condenser

The Long Working Distance [W.D. 28mm] N.A. 0.5 condenser is available for those observation methods requiring a higher N.A. than the standard ELWD N.A. 0.30. [AE30/31]

### Phase Contrast Accessories



#### Centrable Phase Slider

Designed for routine clinical and culture screening environments, the centrable Phase slider is equipped with a PH1 and PH3 phase annuli as well as a bright field slot. [AE30/31]



#### PH3 Phase Contrast

Combining the PH3 Phase Ring with the Long Working Distance E Plan Achromat Phase objective expands the functionality of the AE20/21 through higher phase contrast imaging and screening.

### Mechanical and Auxiliary Stages



#### Universal Mechanical Stage

Universal in design for either left or right-handed operators, the mechanical stage incorporates rapid response, even when the handle is tilted, with the resolution to prevent the loss of the specimen. Accepts various diameter petri dish holders. [AE30/31]



#### Mechanical Stage

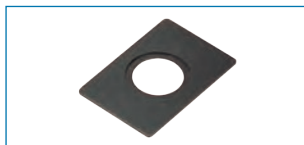
Designed for rapid response and convenience of use, the mechanical stage accepts various diameter petri dish holders. [AE20/21]



#### Auxiliary Stage

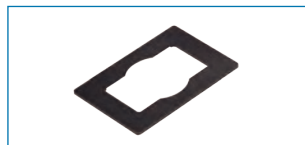
Attachable to the existing working area to increase the overall work surface to accommodate applications involving oversized specimens or manipulators.

### Petri Dish and Haemocytometer Holders



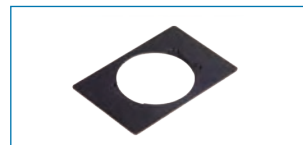
#### Ø 35mm Petri Dish Holder

Inserts into AE series' well plate holder of the mechanical stage for Ø35mm petri dishes.



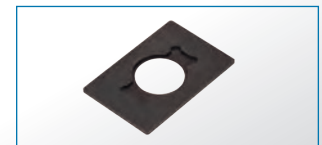
#### Ø 54mm Petri Dish Holder

Inserts into AE series' well plate holder of the mechanical stage for Ø54mm petri dishes.



#### Ø 65mm Petri Dish Holder

Inserts into AE series' well plate holder of the mechanical stage for Ø65mm petri dishes.



#### Haemocytometer Holder

Convenient holder for Haemocytometer types dishes and slides.

### MOTICAM 2000

#### PRACTICAL DIGITAL MICROSCOPY



Integrating a 1/2" chip sensor producing 2.0-megapixel live images with a compact design, the Moticam 2000 is a practical application digital camera for microscopy analysis. Real time analysis is available in the Moticam 2000 preview window for instantaneous results and conclusions. Numerous preview and output sizes are available to suit the necessary requirement of the application.

- Equipped standard with numerous eyepiece adapters to retrofit practicality any microscope.

Chip Size	1/2"
Effective Pixels	2 megapixels
Max. Still Image Resolution	1600 x 1200
Scanning Mode	Progressive Scan Method
Compatibility	TWAIN
Max Frame Rate	10fps @ 1600 x 1200, 40fps @ Binning
Max Data Transfer	480MB/sec through USB 2.0
Minimum Illumination	3 Lux
Camera Power Supply	5V self-power through USB 2.0 cable
Minimum System Requirements	P3, 1GHz, 256MB RAM, 32MB Display, Windows XP or 2000, USB 2.0 connection G4, 1GHz, 256MB RAM, 32MB Display, OSX, USB 2.0 connection
Included Software	Motic Images Plus 2.0 for Windows and Macintosh (2 CD)



### MOTICAM 2300

#### COMPACT HIGH RESOLUTION CAMERA

3.0-megapixel live imaging in a compact size, the Moticam 2300 offers an ideal and cost effective extension for microscopy analysis. Real time analysis is available in the Moticam 2300 preview window for instantaneous results and conclusions. The Moticam 2300 is TWAIN compliant for integration into existing software and image capture systems for convenience.

- Equipped standard with Motic Images Plus software and numerous eyepiece adapters to retrofit practicality any microscope.

Chip Size	1/2 "
Effective Pixels	3 megapixels
Max. Still Image Resolution	2048 x 1536
Scanning Mode	Progressive Scan Method
Compatibility	TWAIN
Max Frame Rate	10fps @ 2048 x 1536, 40fps @ Binning
Max Data Transfer	480MB/sec through USB 2.0
Minimum Illumination	3 Lux
Camera Power Supply	5V self-power through USB 2.0 cable
Minimum System Requirements	P3, 1GHz, 256MB RAM, 32MB Display, Windows XP or 2000, USB 2.0 connection G4, 1GHz, 256MB RAM, 32MB Display, OSX, USB 2.0 connection
Included Software	Motic Images Plus 2.0 for Windows and Macintosh (2 CD)

### MOTICAM 3000 / 3000C

#### HIGH SENSITIVITY AND COOLED CAMERAS

The Moticam 3000 provides the combination of high sensitivity with low noise to ensure even images up to a maximum resolution of 2080 x 1542 [in real time and captured]. Equipped standard with Motic Images Advanced software, the Moticam 3000 continues the Motic philosophy of "Plug and Analyse".

- Moticam 3000C with its Peltier-cooled system is ideal for fluorescence imaging.



Chip Size	1/2"
Effective Pixels	3.3 megapixels
Max Still Image Resolution	2080 x 1542
Pixel Size	3.45µm x 3.45µm
Cooling Device [3000C version]	Peltier Device
Scanning Mode	Progressive scan method
Binning Options	2x2, 3x3, 4x4 [colour, black/white]
Noise Reduction	9.8e-
Transfer Speed	20MHz 8-bit; 10MHz 10-bit via IEEE 1394 Firewire
White Balance	Automatic / Manual
Minimum System Requirements	Pentium 4, 1GHz or higher, 256MB RAM, 32MB Display, Windows 2000 & XP
Included Software	Motic Images Advanced 3.2



### MOTICAM 5000 / 5000C

#### HIGH RESOLUTION AND COOLED CAMERAS

Designed for maximum resolution of 2580 x 1944 imaging, the Moticam 5000's low noise disturbance ensures the optimum amount of analysis without discrepancies. Utilising the manual or automatic shutter function and background calibration [software driven], long exposures can be capture with minimum to no noise for accuracy.

- The Moticam 5000C incorporates a Peltier cooling system for noise reduction and cooling to 10° below ambient.

Chip Size	2/3"
Effective Pixels	5.0 megapixels
Max Still Image Resolution	2580 x 1944
Pixel Size	3.4µm x 3.4µm
Cooling Device [5000C version]	Peltier Device
Scanning Mode	Progressive scan method
Binning Options	2x2, 3x3, 4x4 [colour, black/white]
Noise Reduction	9.8e-
Transfer Speed	20MHz 8-bit; 10MHz 10-bit via IEEE 1394 Firewire
White Balance	Automatic / Manual
Minimum System Requirements	Pentium 4, 1GHz or higher, 256MB RAM, 32MB Display, Windows 2000 & XP
Included Software	Motic Images Advanced 3.2

# ANALYSIS SOFTWARE / DOCUMENTATION ADAPTERS

## Biological Catalogue

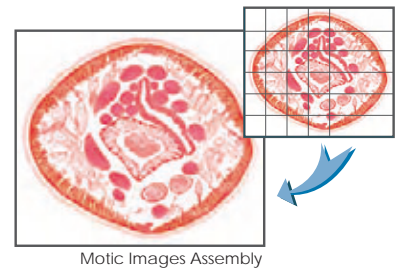
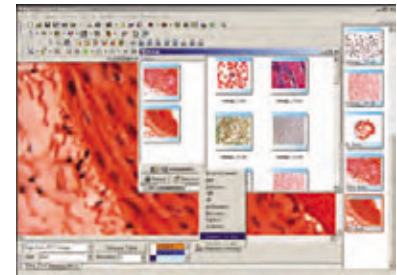
### MOTIC IMAGES ADVANCED DOCUMENTATION AND ANALYSIS SOFTWARE

Motic Images Advanced image analysis software contains processing tools to satisfy most professional users.

Supporting Motic's Megapixel chip devices, this software is a one-stop platform for image quantification. Do accurate and reliable measurements, automatic or manual segmentation with different customisable features and then export all data gathered to Excel with a single click of the mouse. View images in a virtual 3D format based on image pixel intensity to give different perspective of your sample. Different filtering and image manipulation and optimisation devices are also provided.

Advanced comes equipped standard with Motic Assembly and Multi Focus add-on modules.

- Motic Assembly stitches up to 400 [20x20] images together into single large image
- Motic Multi Focus combines up to 100 images of different focal planes into a single smooth image, and even compensates for stereomicroscopy shift.



### DOCUMENTATION ADAPTERS PHOTO AND VIDEO/DIGITAL CAMERA ADAPTERS




To expand the utility of Motic microscopes, a series of photo and video/digital camera adapters are offered for integration of Motic digital application cameras or third party documentation systems.

**PHOTOMICROGRAPHY\***

Phototube adapter - requires combination with one of the below photo eyepieces

	2.5X Photo Eyepiece
	4.0X Photo Eyepiece

\*Final adapter must be provided by camera manufacturer

DIGITAL DOCUMENTATION	
Connection to digital video/camera requires the necessary adapter to match the chip sensor size.	
Adapter	Sensor Size
 0.5x Camera Adapter	1/2" Camera Chip Sensor
 0.65x Camera Adapter	2/3" Camera Chip Sensor
 1.0x Camera Adapter	1/3" - 2/3" Camera Chip Sensors

### BA Upright series objectives



#### EF PLAN ACHROMAT

Cost-effective Achromat objectives ensure field flatness up to F.N. 20 and suitable for usage in education, training, and clinical screening. [BA200 usage]



#### PLAN ACHROMAT

Designed for routine and research related tasks, these Achromat objectives empower a flatness up to F.N. 22 with sharp contrast and low chromatic aberration. [BA300/400 usage]



#### E PLAN ACHROMAT PHASE

Cost-effective phase contrast objectives provide excellent image flatness up to F.N.20 and suitable for usage in education, training and clinical screening. [BA200/300 usage]



#### PLAN ACHROMAT PHASE

High performance with field flatness up to F.N. 22, these objectives provide excellent phase-contrast image for cell distinction. [BA300/400 usage]

### BA400 Upright series objectives



#### N PLAN ACHROMAT \*

Excellent contrast and field flatness up to F.N. 22, combined with greater working distances establish these Achromat objectives for clinical, routine, research applications.



#### N PLAN ACHROMAT PHASE \*

These objectives provide high contrast phase contrast imaging with greater working distances for applications needing the extra room for documentation marking. Field flatness up to F.N. 22.



#### PLAN FLUAR

Spherically corrected for three colours and high contrast, the Plan Fluar are excellent objectives for fluorescence observations and photomicrography and digital documentation.

### AE20/21 Inverted series objectives



#### E PLAN ACHROMAT INVERTED

Cost effective and waterproofed, these Achromat Inverted objectives provide field flatness up to F.N. 20 for screening and pathological preparation.



#### E PLAN ACHROMAT PHASE INVERTED

Excellent phase contrast for cell culture observation with field flatness of F.N. 20, these objectives are ideal continuous screening and preparation.



#### LONG WORKING DISTANCE E PLAN ACHROMAT / PHASE

Providing the extra working distance needed for inverted microscopy, both the E Plan and E Plan Phase provide crisp imaging and field flatness of F.N. 20.

### AE 30/31 Inverted series objectives



#### PLAN ACHROMAT INVERTED

Crisp and high contrast imaging with a waterproof casing, the Plan inverted objectives are designed for culture specimens and entry level fluorescence imaging.



#### PLAN ACHROMAT PHASE INVERTED

Dedicated for cell culture observation and other clinical observations, these objectives offer excellent contrast in both bright field and fluorescence imaging.



#### LONG WORKING DISTANCE PLAN ACHROMAT / PHASE

Combining the high contrast and excellent resolution of Plan principles with the working distances required make these objectives ideal for applications of observation to screening to research.

\*Check with your local Motic dealer for availability

# CCIS SERIES OBJECTIVES SPECIFICATIONS

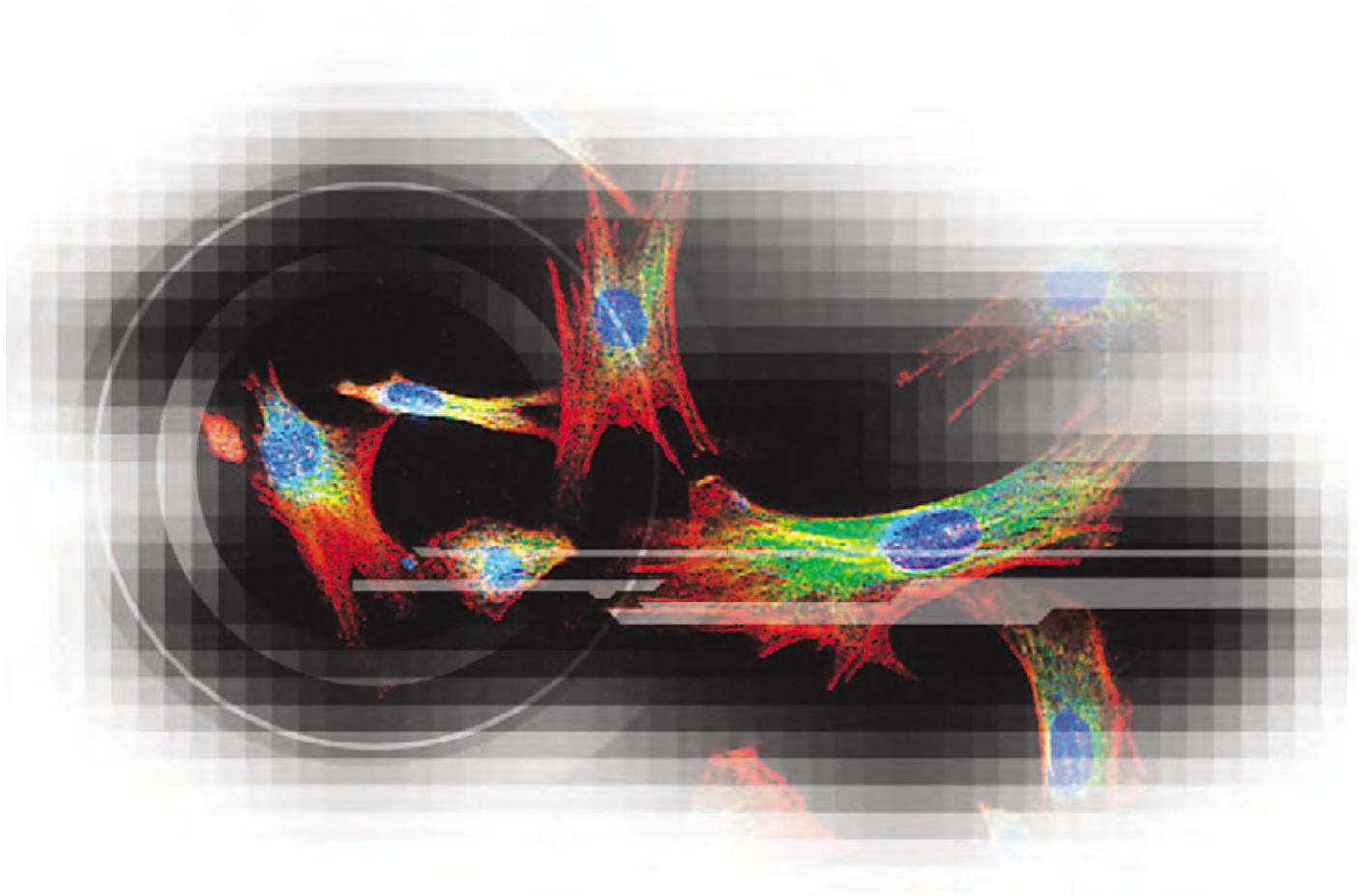
## Biological Catalogue

Description		N.A.	W.D. (mm)	F.N.	Cover Glass	Immersion
EF PLAN	EF PLAN 4x	0.1	6.3	20	-	
	EF PLAN 10x	0.25	3.9	20	0.17	
	EF PLAN 20x	0.40	1.3	20	0.17	
	EF PLAN 40x	0.65	0.4	20	0.17	
	EF PLAN 60x	0.8	0.14	20	0.17	
	EF PLAN 100x	1.25	0.12	20	0.17	Oil
E PLAN PH	E PLAN PH 10x	0.25	1.9	22	0.17	
	E PLAN PH 40x	0.65	0.4	22	0.17	
PLAN	PLAN 4x	0.1	7.0	22	-	
	PLAN 10x	0.25	4.3	22	0.17	
	PLAN 20x	0.4	1.3	22	0.17	
	PLAN 40x	0.65	0.4	22	0.17	
	PLAN 100x	1.25	0.13	22	0.17	Oil
PLAN PH	PLAN PH 10x	0.25	4.3	22	0.17	
	PLAN PH 20x	0.4	1.3	22	0.17	
	PLAN PH 40x	0.65	0.4	22	0.17	
	PLAN PH 100x	1.25	0.13	22	0.17	Oil
N PLAN	N PLAN 2x	0.05	6.3	22	-	
	N PLAN 4x	0.1	20.5	22	-	
	N PLAN 10x	0.25	8.3	22	0.17	
	N PLAN 20x	0.45	1.0	22	0.17	
	N PLAN 40x	0.7	0.4	22	0.17	
	N PLAN 60x	0.8	0.3	22	0.17	
	N PLAN 100x	1.25	0.13	22	0.17	Oil
N PLAN PH	N PLAN PH 10x	0.25	8.3	22	0.17	
	N PLAN PH 20x	0.45	1.0	22	0.17	
	N PLAN PH 40x	0.7	0.4	22	0.17	
	N PLAN PH 100x	1.25	0.13	22	0.17	Oil
PLAN FLUAR	PLAN FLUAR 4x	0.13	20.5	25	-	
	PLAN FLUAR 10x	0.3	10.5	25	0.17	
	PLAN FLUAR 20x	0.5	1.9	25	0.17	
	PLAN FLUAR 40x	0.75	0.58	25	0.17	
	PLAN FLUAR 50x	1.0	0.17	25	0.17	Oil
	PLAN FLUAR 60x	1.0	0.17	25	0.17	Oil
	PLAN FLUAR 100x	1.3	0.2	25	0.17	Oil

# CCIS SERIES OBJECTIVES SPECIFICATIONS

## Biological Catalogue

Description		N.A.	W.D. (mm)	F.N.	Cover Glass	Immersion
E PLAN INV	E PLAN 4x	0.1	14.2	20	-	
	E PLAN 10x	0.25	6.3	20	1.1	
E PLAN LWD INV	E PLAN LWD 20x	0.40	5.5	20	1.1	
	E PLAN LWD 40x	0.60	2.1	20	1.1	
	E PLAN PH 10x	0.25	6.3	20	1.1	
E PLAN PH LWD INV	E PLAN PH LWD 20x	0.40	5.5	20	1.1	
	E PLAN PH LWD 40x	0.60	2.1	20	1.1	
PLAN INV	PLAN 4x	0.1	23.5	22	-	
	PLAN 10x	0.25	7.5	22	1.1	
PLAN LWD INV	PLAN LWD 20x	0.4	7.0	22	1.1	
	PLAN LWD 40x	0.6	2.8	22	1.1	
	PLAN PH 10x	0.25	7.5	22	1.1	
PLAN PH LWD INV	PLAN PH LWD 20x	0.4	7.0	22	1.1	
	PLAN PH LWD 40x	0.6	2.8	22	1.1	



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**Design Change:** The manufacturer reserves the right to make changes in instrument design in accordance with scientific and mechanical progress, without notice and without obligation.



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