



## Opto Edu A14.0950 Research Level Inverted Biological Microscope Mortorized Condenser

### Our Product Introduction

#### Basic Information

- Place of Origin: China
- Brand Name: CNOEC, OPTO-EDU
- Certification: CE, Rohs
- Model Number: A14.0950
- Minimum Order Quantity: 1 pc
- Price: FOB \$1~1000, Depend on Order Quantity
- Packaging Details: Carton Packing, For Export Transportation
- Delivery Time: 5~20 Days
- Payment Terms: T/T, West Union, Paypal
- Supply Ability: 5000 pcs/ Month



#### Product Specification

- Eyepiece: High Eyepoint Plan Eyepiece  
PL10X/22mm,diopter Adjustment
- Nosepiece: Motorized Bright Filed Sextuple Nosepiece  
With DIC Slot.
- Objective: LWD Infinity Plan Semi-APO Positive Phase  
Contrast Objective
- Working Stage: Manual Mechanical Stage, 300mm (X) X  
240mm (Y),
- Focusing: Motorized Coarse & Fine Coaxial Focusing
- Condenser: Mortorized LWD Unviersal 7 Positions  
Condensor With N.A.0.55
- Highlight: **Opto Edu Inverted Biological Microscope,  
Mortorized Condenser Inverted Biological  
Microscope**  
**,  
Research Level Inverted Biological Microscope**

## Product Description



OPTO-EDU (BEIJING) CO., LTD.

OPTO-EDU

F-1501 Wanda Plaza, No.18 Shijingshan Road, Beijing 100043, China  
Tel:+8610 88696020 Fax:+8610 88696085

## A14.0950/A16.0950

**A14.0950 Research Level Inverted Biological Microscope**

**A16.0950 Research Level Inverted Fluorescent Microscope**



- Electric Z-axis
- Electric Control System
- Electric Revolving Nosepiece

- Digital Light Intensity Control
- Electric Switching Optical Port
- Coded Fluorescence Illumination Disc

### A14.0950/A16.0950 Solution for Cell Imaging

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#### Open A New World Of Microscopic Imaging

A14.0950/A16.0950 Inverted Biological Microscope is a new electric microscope Specially designed to meet the needs of teaching and research. As a highly salable instrument platform for live cell imaging, the A14.0950/A16.0950 combines excellent optical and mechanical properties to provide users with high-resolution, high-contrast microscopic images. meets bright field, fluorescence, dark field, phase contrast, relief phase contrast, DIC and other observation methods.

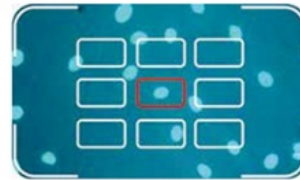


## A14.0950/A16.0950 Electric Control System

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### ► Auto Focus

The Z-axis height can be quickly adjusted according to real-time images to achieve one-click focus, eliminating fine-tuning steps and improving work efficiency.



### ► Electric Optical Path Selection

Through the front panel button or PC control, users can freely achieve three light paths selection so that the repetitive experimental operation is more convenient, which greatly improves the efficiency of scientific research work compared with the same series of products on the market

### ► Electric Nosepiece

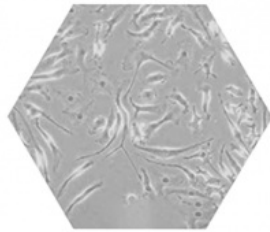
The objectives can be quickly switched by pressing the button on the frame or controlling by PC to improve the operation convenience.



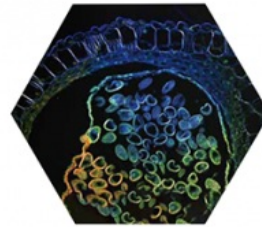
## A14.0950/A16.0950 Excellent Optical Performance

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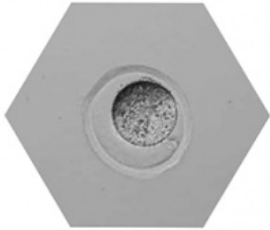




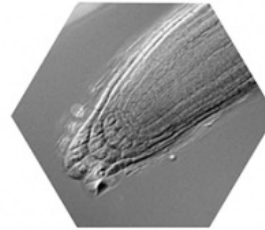
Rat Kidney Cells  
(Phase Contrast)



Anther of Lilium Brownii Var. Vibraculum Baker  
(Fluorescence)



Mouse Zygote  
(Relief Phase Contrast)



The Root of Arabidopsis  
(DIC)

## A14.0950/A16.0950 Details

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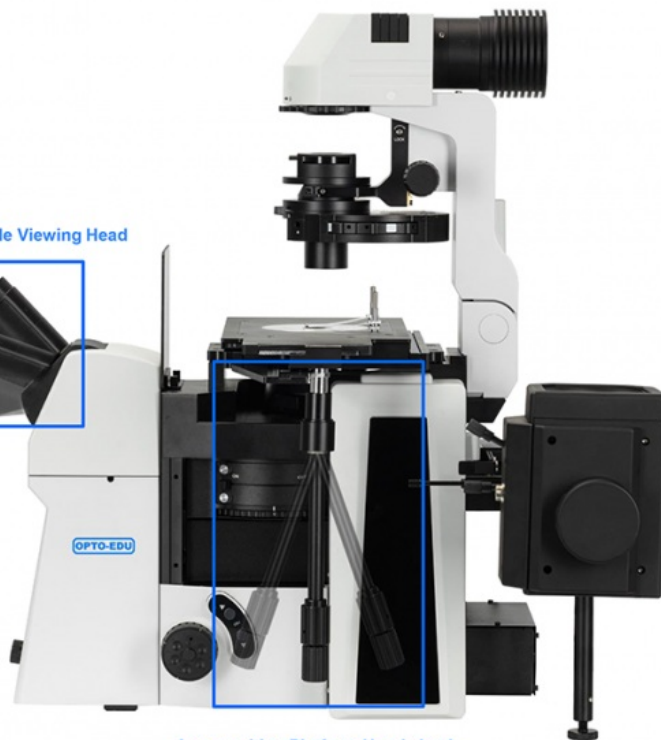
### ► Elevation Adjustable Viewing Head

The A14.0950/A16.0950 is equipped with a **20-45°** adjustable binocular viewing head, which can raise the eye point by 78mm (65mm interpupillary distance) as required. It can be observed easily and quickly even in a standing state, which is effectively avoiding fatigue of eyes and limbs.

Elevation Adjustable Viewing Head



Low-position Platform Handwheel



### ► Low-position Platform Handwheel

The low-position platform handwheel can be rotated **360°**, which can effectively reduce the hand fatigue caused by long-term operating, which is more ergonomic and improves the convenience of operation.



The tilting structure of the transmission bracket ensures a large working space for users and facilitates the replacement of specimens.



The drainage groove structure is designed under the objective nosepiece, which can prevent the optical components and modules from accidentally being wetted by the cell culture medium or soaking liquid, contaminating and damaging the microscope, which makes the maintenance simplified.



A14.0950/16.0950 front digital screen can display the status information of multiple components such as objectives, real-time hole position information of fluorescent filter disk, transmission brightness, left side port, fluorescence gate, etc.



A14.0950/A16.0950 can be flexibly configured with single or double layer optical paths according to the application, providing space for system extensibility. Double layer optical path can be customized according to customer needs adapt to a variety of refit and self-research.

Full series of LWD semi-APO objectives were developed for cell culture. The objectives with correction ring have significant advantage for the observation of glass substrates and culture vessels with different thickness, and achieves accurate focusing by correcting the cover glass thickness.

[illegible]

	60X/0.70, WD=1.42~2.10mm, 0~1.3mm Cover glass thickness	√	√	√	√	√		A5F.0961-60
Infinity Plan APOchromatic Objective	4X/0.16, WD=12.8mm	√			√	√		A5F.0962-4
	10X/0.40, WD=3.2mm	√	√	√	√	√		A5F.0962-10
	20X/0.75, WD=0.6mm	√	√	√	√	√		A5F.0962-20
	40X/0.95, WD=0.15mm	√		√	√	√		A5F.0962-40
	60X/0.90, WD=0.26mm	√		√	√	√		A5F.0962-60
	60X/1.25, WD=0.14mm Oil	√			√	√		A5F.0962-60S
	100X/1.35, WD=0.13mm Oil	√			√	√		A5F.0962-100
Infinity Plan Super APO Objective	10X/0.14, WD=3.1mm	√			√	√		A5F.0963-10
	20X/0.80, WD=0.6mm	√			√	√		A5F.0963-20
	40X/0.95, WD=0.18mm	√			√	√		A5F.0963-40
	60X/1.42, WD=0.17mm Oil	√			√	√		A5F.0963-60
	100X/1.45, WD=0.14mm Oil (Under development)	√			√	√		A5F.0963-100
LWD Infinity Plan Semi-APO Relief Hoffman Phase Contrast Objectives	10X/0.30, WD=8.8mm,	√	√	√	√	√	√	A5C.0965-10
	20X/0.45, WD=6.5~7.6mm, 0~2mm Cover glass thickness	√	√	√	√	√	√	A5C.0965-20
	40X/0.45, WD=2.85~4.05mm, 0~2mm Cover glass thickness	√	√	√	√	√	√	A5C.0965-40



Infinity correction plan APO objectives



Infinity correction plan super-APO objectives



LWD plan semi-APO Relief phase contrast objectives



LWD plan semi-APO objectives



LWD plan semi-APO phase contrast objectives

## A14.0950/A16.0950 Specification

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A14.0950 Research Level Inverted Biological Microscope A16.0950 Research Level Inverted Fluorescent Microscope			A14.0950	A16.0950
Function	BF, Bright Field		•	•
	PH, Phase Contrast		•	•
	POL, Polarizing		o	o
	DF, Dark Field		o	o
	DIC, Differential Interfered Contrast		o	o
	Relief Hoffman Phase Contrast		o	o
Head	20°-45° tilting Binocular head, inverted image, interpupillary distance: 50mm~76mm	A53.0960	•	•
Eyepiece	High eyepoint plan eyepiece PL10X/22mm, diopter adjustment	A51.0904-1022T	••	••
Nosepiece	Motorized bright filed sextuple nosepiece with DIC slot.		•	•
LWD Infinity Plan Semi-APO Positive Phase Contrast Objective	4X/0.13, WD=17mm,	A5C.0960-4	•	•
	10X/0.30, WD=8.8mm,	A5C.0960-10	•	•
	20X/0.45, WD=6.5~7.6mm, 0~2mm Cover glass thickness	A5C.0960-20	•	•
	40X/0.60, WD=2.85~4.05mm, 0~2mm Cover glass thickness	A5C.0960-40	•	•
	60X/0.70, WD=1.42~2.10mm, 0~1.3mm Cover glass thickness	A5C.0960-60	•	•
LWD Infinity Plan Semi-APO Objective	4X/0.13, WD=17mm,	A5F.0961-4	o	o
	10X/0.30, WD=8.8mm,	A5F.0961-10	o	o
	20X/0.45, WD=6.5~7.6mm, 0~2mm Cover glass thickness	A5F.0961-20	o	o
	40X/0.60, WD=2.85~4.05mm, 0~2mm Cover glass thickness	A5F.0961-40	o	o
	60X/0.70, WD=1.42~2.10mm, 0~1.3mm Cover glass thickness	A5F.0961-60	o	o

Infinity Plan <b>APO</b> chromatic Objective	4X/0.16, WD=12.8mm	A5F.0962-4	o	o
	10X/0.40, WD=3.2mm	A5F.0962-10	o	o
	20X/0.75, WD=0.6mm	A5F.0962-20	o	o
	40X/0.95, WD=0.15mm	A5F.0962-40	o	o
	60X/0.90, WD=0.26mm	A5F.0962-60	o	o
	60X/1.25, WD=0.14mm Oil	A5F.0962-60S	o	o
	100X/1.35, WD=0.13mm Oil	A5F.0962-100	o	o
Infinity Plan <b>Super APO</b> Objective	10X/0.14, WD=3.1mm	A5F.0963-10	o	o
	20X/0.80, WD=0.6mm	A5F.0963-20	o	o
	40X/0.95, WD=0.18mm	A5F.0963-40	o	o
	60X/1.42, WD=0.17mm Oil	A5F.0963-60	o	o
	100X/1.45, WD=0.14mm Oil (Under development)	A5F.0963-100	o	o
Working Stage	Manual mechanical stage, 300mm (X) × 240mm (Y), moving range is 135mm (X) × 85mm (Y), stage thickness is 30mm. Lower universal right side handle. With lock function. During locking, moving range 50mm (X) × 50mm (Y). It can use with 35mm petri dish holder, culture flask holder, sliced holder, Φ110mm replaceable disc stage with clips.	A54.0960	•	•
Frame, Focusing & Camera Port	<b>Motorized</b> coarse & fine coaxial focusing, range: 10.5mm, precision: 1 μm. <b>Motorized</b> left camera port, splitting ratio:0:100, 50:50, 100:0.		•	•
	Dual optical path, with fluorescent light barrier			
	Base mounting bracket anti-vibration	A54.0960-AV	o	o
Condenser <b>A</b>	Right camera port, manual two gears switching, splitting ratio: 100:0, 0:100, POV16mm, built-in C-mount 1X. ( <b>MUST</b> ordered with whole unit, cannot be added later as optional)	A55.0960	o	o
	Manual 7 positions LWD condenser, NA0.55, WD27mm, 3 positions(Ø30mm) to meet phase contrast, 4 positions(Ø38mm) <b>Work For BF, PH, DF, POL, DIC.</b>	A56.0961	•	•
	4X phase contrast aperture group	A5C.0961-4	•	•
Phase Contrast Slide for A	10X phase contrast aperture group	A5C.0961-10	•	•
	20X/40X/60X phase contrast aperture group	A5C.0961-204060	•	•
Dark Field for A	4X/10X/20X dark field aperture group	A5D.0961	Ao	Ao
Polarizing for A	Analyzer	A5P.0961-A	Ao	Ao
	Polarizer	A5P.0961-P	Ao	Ao
DIC for A,B	DIC slider & Analyzer for transmitted light, Need to select Objectives: A5F.0961-10x,20x,40x,60x A5F.0962-10x,20x,40x,60x A5C.0960-10x,20x,40x,60x	A5C.0964	Ao	Ao
	10X DIC ring, compatible with condenser B	A5C.0964-10	Ao	Ao
	20X DIC ring, compatible with condenser B	A5C.0964-20	Ao	Ao
	40X/60X DIC ring, compatible with condenser B	A5C.0964-4060	Ao	Ao
Condenser <b>C</b>	Manual 5 positions LWD condenser, NA0.30, WD73mm, to meet 4X-60X phase contrast, simple polarization or 10X-40X RPC relief contrast. <b>Work For BF, PH, POL, Relief</b>	A56.0963	o	o
Phase Contrast for C	4X phase contrast aperture group	A5C.0963-4	Co	Co
	10X phase contrast aperture group	A5C.0963-10	Co	Co
	20X/40X/60X phase contrast aperture group	A5C.0963-204060	Co	Co
Polarizing for C	Analyzer, <b>MUST</b> be selected for Relief Hoffman	A5P.0963-A	Co	Co
	360° rotatable polarizer, <b>MUST</b> be selected for Relief Hoffman	A5P.0963-P	Co	Co
Relief Hoffman Phase Contrast Slide & Objective	10X aperture group, compatible with condenser C	A5C.0965-10S	Co	Co
	20X aperture group, compatible with condenser C	A5C.0965-20S	Co	Co
	40X aperture group, compatible with condenser C	A5C.0965-40S	Co	Co
	LWD Infinity Plan Semi-APO Relief Hoffman Phase Contrast Objectives	A5C.0965	Co	Co
	10X/0.30, WD=8.8mm,	A5C.0965-10	Co	Co
	20X/0.45, WD=6.5~7.6mm, 0~2mm Cover glass thickness	A5C.0965-20	Co	Co
	40X/0.45, WD=2.85~4.05mm, 0~2mm Cover glass thickness	A5C.0965-40	Co	Co
Transmit Light	Tilting transmitted light system, transmitted Kohler light system, Condenser lifting adjustable, range: 65mm, able to set 4 filters.	A56.0960	•	•
	10W Cool LED Light Box, color temperature 5000K	A56.0960-LED	•	•
	12V100W halogen illumination box, filament center preset.	A56.0960-HAL	o	o
	12V100W halogen lamp 7724	A56.0960-12100	o	o
	LBD filter	A56.0960-LBD	o	o
	Green filter	A56.0960-G	o	o
Reflect Fluorescent Mercury Light	L-shaped design reflection fluorescence illuminator.with attenuation plate.		x	•
	100W Fluorescence mercury light box	A5F.0960-	x	•
	100W mercury lamp power supply unit (U5 power supply unit)	MER	x	•
	100W Mercury Lamp (OSRAM)		x	•
	Extension accessories	A5F.0960-EX	x	•
	<b>Multi-band LED Light Source Module, with four excitation channels,10W high-power LED</b>	<b>A5F.0960-LED4</b>	x	o
	<b>Manual</b> turret with 8 positions, built-in shutter, External connecting cable 30cm	A5F.0960-50	x	•
	Rotary disk dustproof box	A5F.0960-DB	x	•
	Fluorescence filter(B) (CHROMA)	A5F.0960-B	x	•

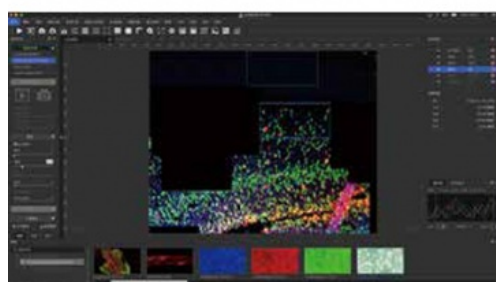
Fluorescent Filter	Fluorescence filter(G) (CHROMA)	A5F.0960-G	x	•
	Fluorescence filter(UV) (CHROMA)	A5F.0960-UV	x	•
	Fluorescence filter(R1) (CHROMA) EX:AT620/50X, BS: AT655DC, EM: AT690/50M	A5F.0960-R1	x	o
CAN Card	Need buy computer too to meet electric control, including MV-image-Research	A54.0966-USB	•	•
	Need buy computer too to meet electric control, including MV-image-Research	A54.0966-PCIE	o	o
Computer	Dell Computer Precision T3650(i7 11700/16GB/256GB+1TB/P620) + P2722H	A54.0966-PC	o	o
	External connecting cable 200cm, computer connect with power supply box.	A54.0966-EC	•	•
Power supply	External system controller.All motorized units are powered by this. Voltage input:90-265V,output:12V100W/24V5A/15V5A/5V5A		•	•
	External connecting cable 200cm, power supply box connect to microscope		•	•
Digital Camera	SONY IMX267 color camera,CCD 8.9M, 32fps@8.9MP,USB3.0,Sensor 1"	A59.0960-8.9M	o	o
	SONY IMX264 color camera,CCD 5.0M, 35fps@5MP,USB3.0,Sensor 2/3"	A59.0960-5.0M	•	•
	SONY ICX695 color camera,CCD 6.0M, 7.5fps@6MP,USB3.0,Sensor 1"	A59.0960-6.0M	o	o
	SONY ICX695 color cold camera,CCD 6.0M, 7.5fps@6MP,USB3.0,Sensor 1"	A59.0960-6.0MC	o	o
	SONY ICX695 mono color camera,6.0M, 7.5fps@6MP,USB3.0,CCD 1"	A59.0960-6.0MM	o	o
	SONY ICX695 mono color cold camera,6.0M, 7.5fps@6MP,USB3.0,CCD 1"	A59.0960-6.0MMC	o	o
	RISI 9.9M mono color camera(2960x2960), field of view 17.8mm, pixel size 4.25x 4.25um, 30 fps, 73% quantum efficiency, sensor 17.8mm	A59.0960-9.9M	o	o
Telescope	Phase Contrast Telescope Φ30	A5C.0910-30	•	•
	Fluorescence Telescope	A5F.0930-2	x	•
C-mount adaptor	C-mount adaptor 0.5X	A55.0930-05	o	o
	C-mount adaptor 0.65X	A55.0930-65	•	•
	C-mount adaptor 1X	A55.0930-10	o	o
Accessories	Allen wrench M3		•	••
	Allen wrench M4		•	••
	Allen wrench M5		•	•
	Non-fluorescing immersion oil		o	o
Packaging	Carton and foam		•	•
Remark	• means standard outfit, 'o' means optional outfit, 'x' means not compatible, 'A','B','C' means only compatible for specific condenser A,B or C			

## A14.0950/A16.0950 Software

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### ► Plenty of New Fountions In Mvimage Software

A14.0950/A16.0950 is equipped with Mvimage-Research 3.0, a professional fluorescence image analysis software independently developed, and has the intellectual property certificate issued by the National Copyright Administration. It can realize fluorescence intensity analysis, real-time / automatic depth of field extension mode, automatic stitching mode, automatic Z-stack and other functions.



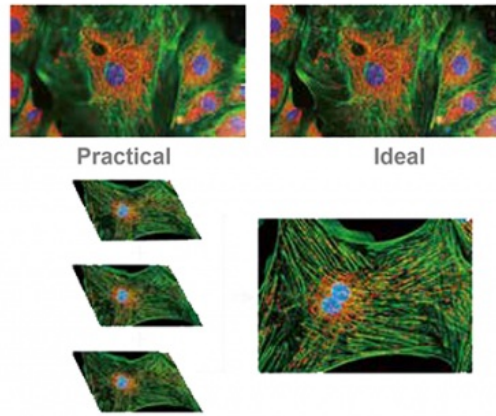
### ► Image Stitching

Photos from different parts of sections can be stitched together into one overall photo.



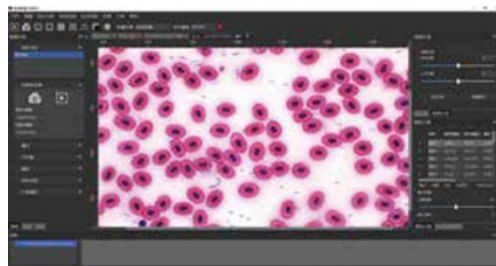
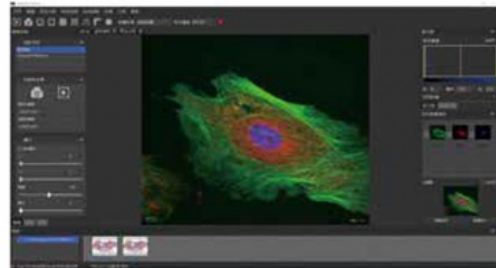
### ► Automatic Depth of Field Fusion

Users can set up and down moving distance and step length, so that the loading platform can move up and down, and automatically collect different depth of field image and image fusion.



### ► Fluorescent Merge

The images from different fluorescent channels, are able to be merged automatically and also kept separately. Each single image is available to be adjusted and the information will be updated to merged image simultaneously.

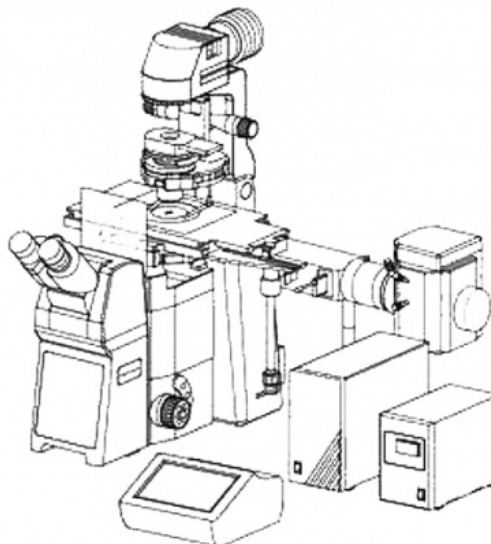


### ► Cell Counting

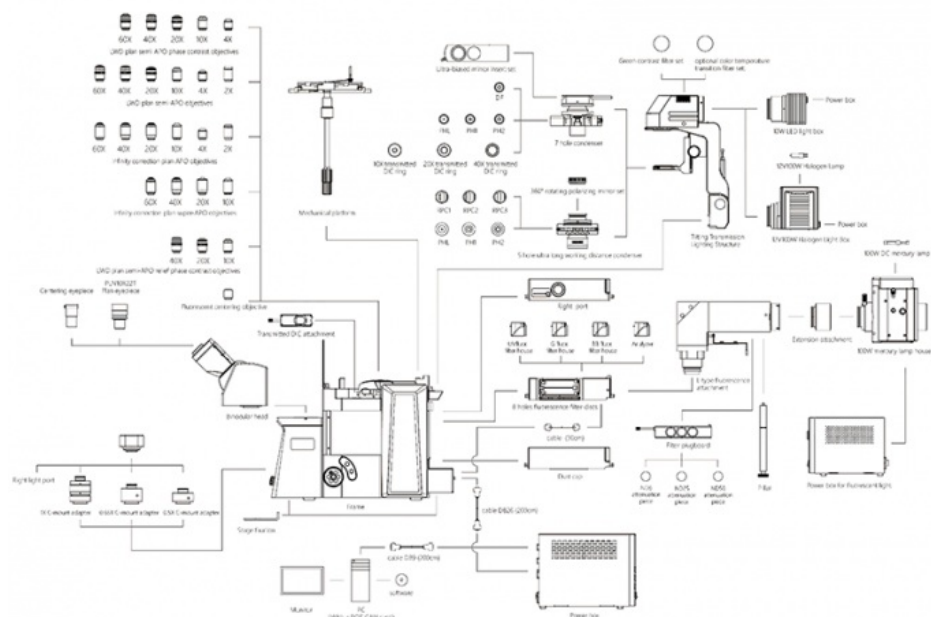
By clicking the "cell counting" button, setting appropriate threshold value, Mvimage will count cell number automatically and display the cell area, circumference and roundness.

A14.0950/A16.0950 Diagram

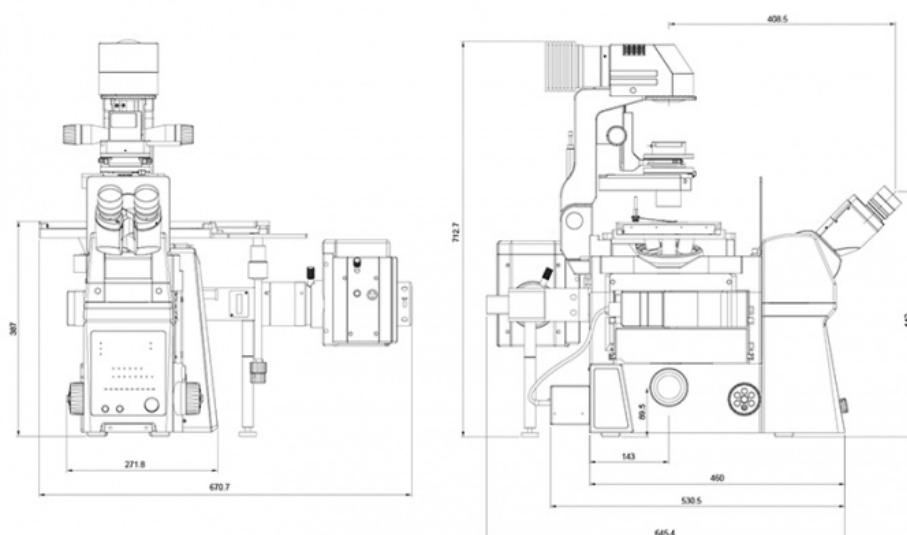
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**Opto-Edu (Beijing) Co., Ltd.**



0086 13911110627



sale@optoedu.com



cnoec.com

F-1501 Wanda Plaza, No. 18 Shijingshan Road, Beijing 100043, China