



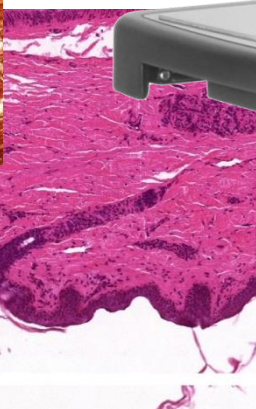
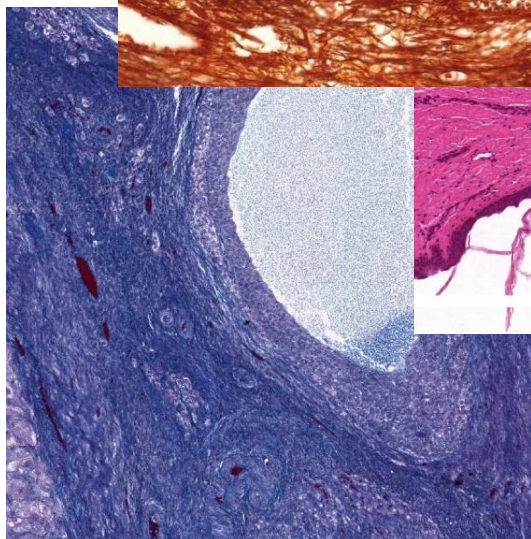
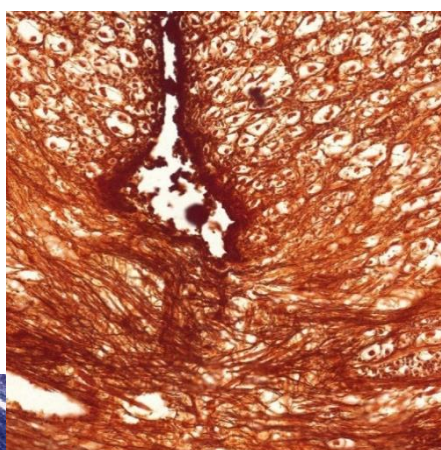
OPTO-EDU (BEIJING) CO., LTD.

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Tel:+8610 88696020 Fax:+8610 88696085

A12.1091

A12.1093

**Research Scientific
Laboratory Microscope**



A12.1091, A12.1093, A16.1093 Series Microscope



A12.1091

**Laboratory Microscope,
Manual**



A12.1093

**Laboratory Microscope,
Semi-Auto**

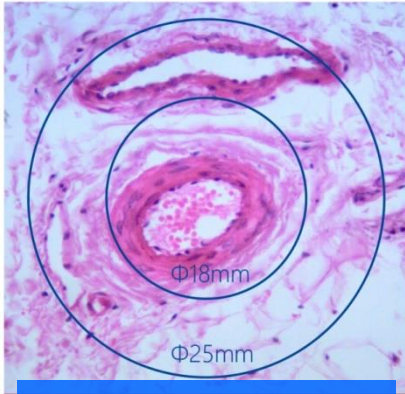
A12.1091, A12.1093, A16.1093 Series Microscope
Intelligent revolutionary products, Operating comfort
ergonomics design, Fast and efficient imaging for
laboratory and clinical operation, Microscope
applications has brought a revolutionary
breakthrough.



A16.1093

**Fluorescence Microscope,
Semi-Auto**

A12.1091 Laboratory Microscope, Manual



Large Field Eyepiece
SW10x/25mm, High
Eyepoint, Diopter
Adjustable, Dia.30mm

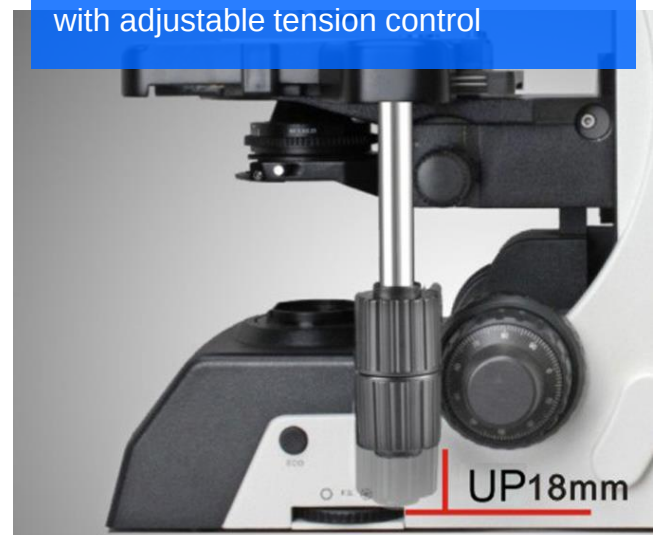


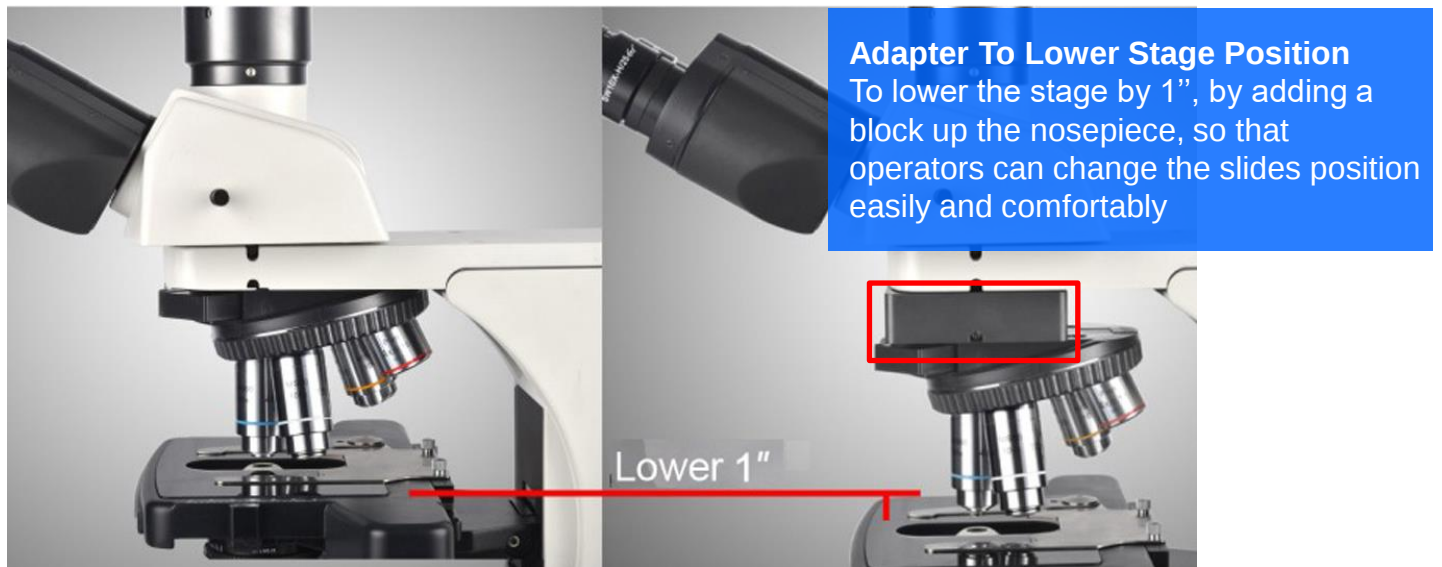
ECO Function

The transmitted light would be off automatically after 30 minutes from operators leave. It will not only save energy, but also extend the lamp's life

Low-position Control Knobs

The height of the stage control knobs can be adjusted up or down by 18mm to ensure a comfortable hand position, and with adjustable tension control

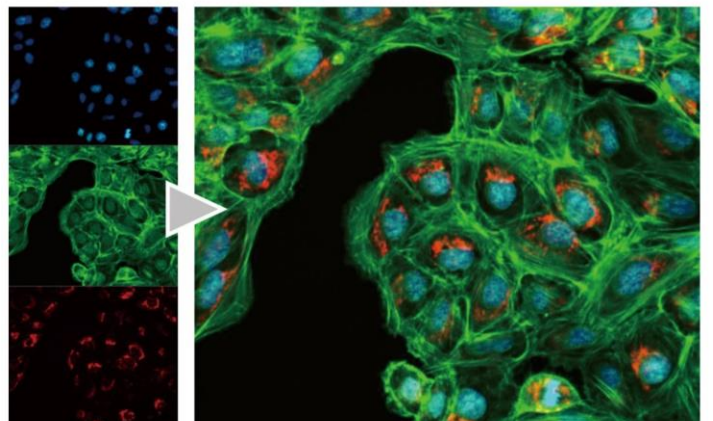




A12.1091 Upgrade Models



Upgrade To [A16.1091](#)
Upright Fluorescent Microscope



A12.1093 Laboratory Microscope, Semi-Auto



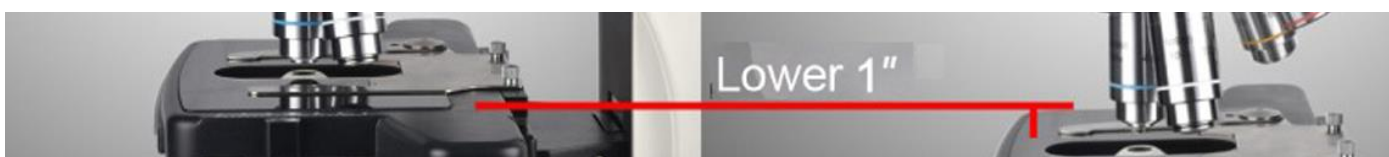
Auto Coded Nosepiece & Auto Condenser

Automatically swing-out and swing-in the top lens element according to the objective lens that is selected via the intelligent linking.



Ergo Tilting Trinocular Head

Eye tube can be adjustable from 0° to 35° . Trinocular tube can be connected to SLR camera and digital camera, having a 3-position beam splitter (0:100, 100:0, 80:20), the splitter bar can be assembled on the either side according to user's requirement.



Adapter To Lower Stage Position

To lower the stage by 1", by adding a block up the nosepiece, so that operators can change the slides position easily and comfortably



Put Slides By One Hand

It is easy for operators to put slides by one hand due to the convex point guide mechanism.



Sapphire Glass Stage Insert

Mechanical stage with a gorilla glass insert is durable and allows operators to easily clear the stage. We have sapphire glass for your optional choice.



Focusing System

Coaxial focusing system with low-position X-Y coaxial control knobs. The ergonomic design provides operators comfortable experience.

Nosepiece Rotating Buttons

This microscope has the function of automatically rotating nosepieces and adjusting the light intensity.

Low-position Control Knobs

The height of the stage control knobs can be adjusted up or down by 18mm to ensure a comfortable hand position, and with adjustable tension control





Left/Right Focusing Wheel Interchangeable

In order to better adapt to users with different operating habits, the focus and stage can be easily adjusted to the left or right hand position for operation

Auto Light Intensity Management

The Management system can automatically adjust to the suitable light intensity according to the different setup of objectives from the low to high magnifications, and reduce the eye fatigue at the same time. The long-life LED lamp can keep the light intensity and easy for maintenance.



Image Capture Button

The digital camera could capture images just by pressing the black 'capture' button at the side of base

Remote Control Pad

Objectives could be switched by simply pressing the rotating buttons. User can also self-define two of the most commonly used objectives, and switch between these two objectives by pressing the green button.

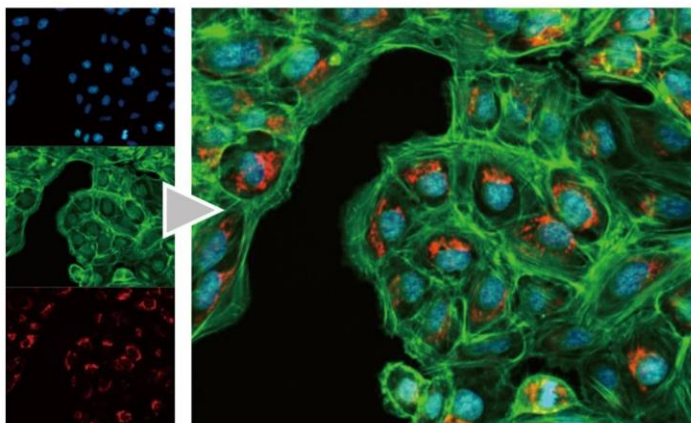


A12.1093 Upgrade Models



A16.1093

Upgrade To [A16.1093](#) Upright
Fluorescent Microscope, Semi-Auto



Upgrade To [A17.1093](#)
Multi-Viewing Microscope

A17.1093-5



A17.1093-2A



A17.1093-2B

Product Accessories

N-PLN Series Plan Objectives

These plan objectives can provide flat image through the light from visible light to NIRS. They are usually used for bright-field viewing as the high signal-to-noise, high resolution and high contrast image result

N-PLFN Series Plan Fluorescent Objectives

Owe to the multilayer coating technology, these S-APO objective can compensate the spherical aberration and the chromatic aberration from ultraviolet to infrared light. High-sensitive fluorescence ensure the acuity, articulation and color reduction of image, to provide the digital image of high-quality and high-function.

N-PLM Series Plan PH Objectives

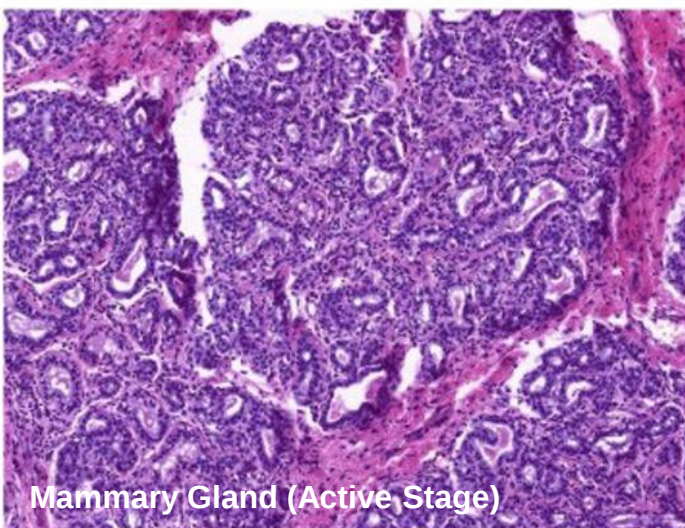
They are the good choice for clinic and scientific research. These high-quality plan objective can provide advanced plan image of 25mm FOV under bright field & transmitted light. NIS60 series plan phase contrast objectives are specially designed for phase contrast viewing.

N-PLPN Series APO Plan Objectives

The newly-launched advanced **Apochromatic** objective lens has a high level of chromatic aberration correction capability, high resolution, and ensures a high level of wave phase aberration correction function in the full field of view. It is an ideal choice for routine laboratory observation work and digital imaging objectives.

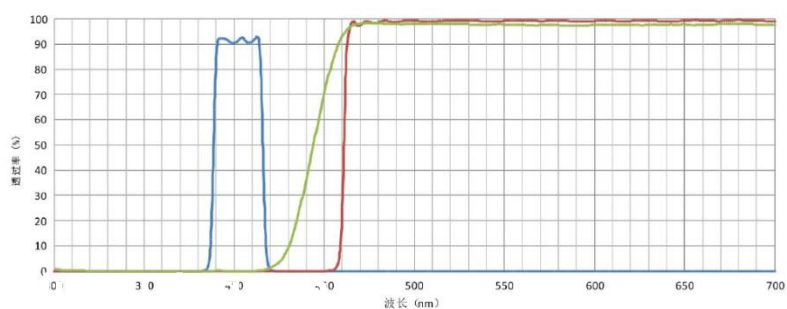
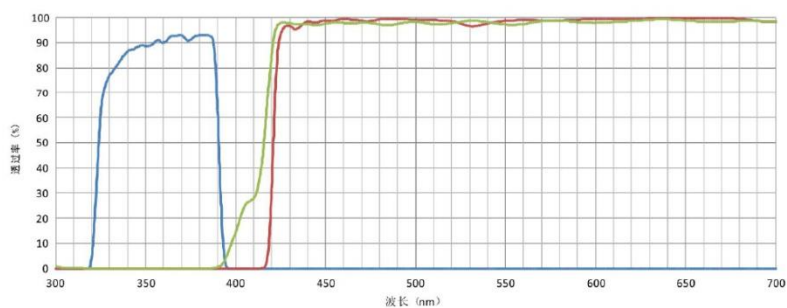
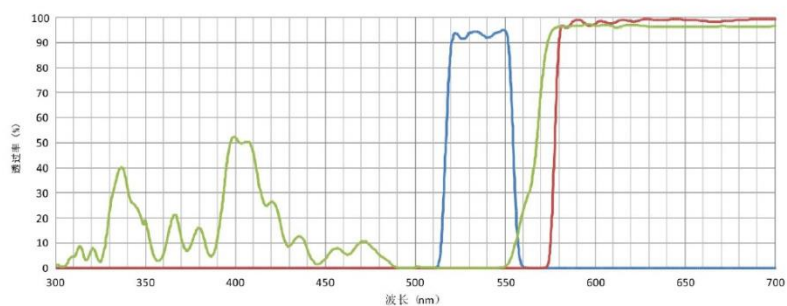
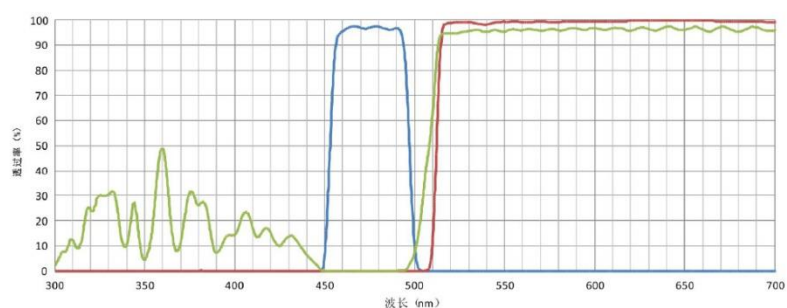
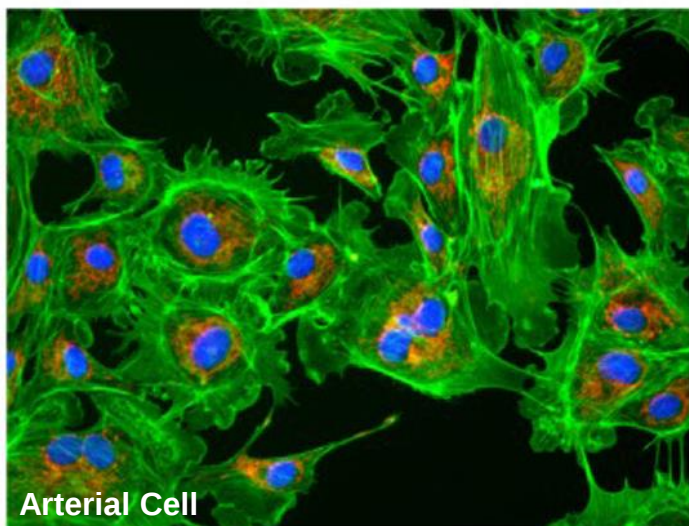
◆ Bright-field Viewing

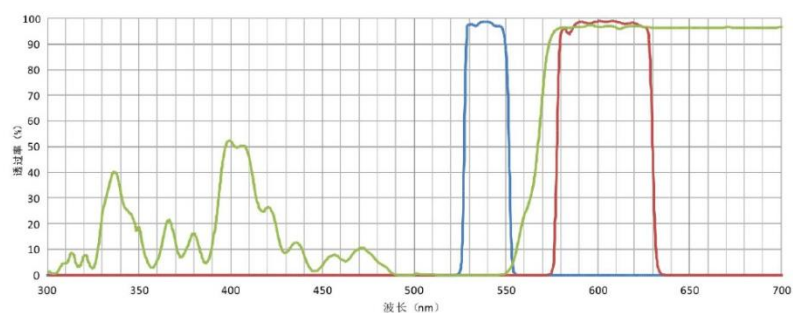
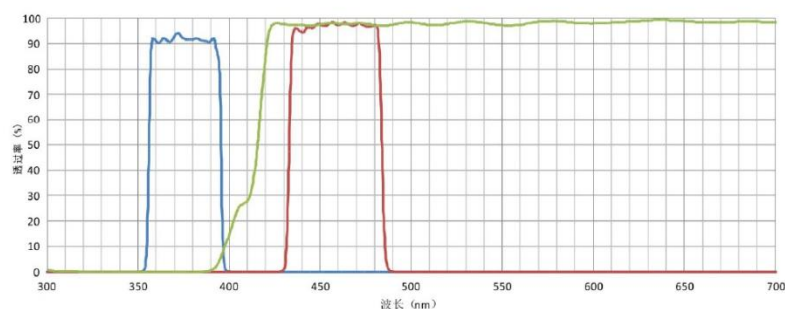
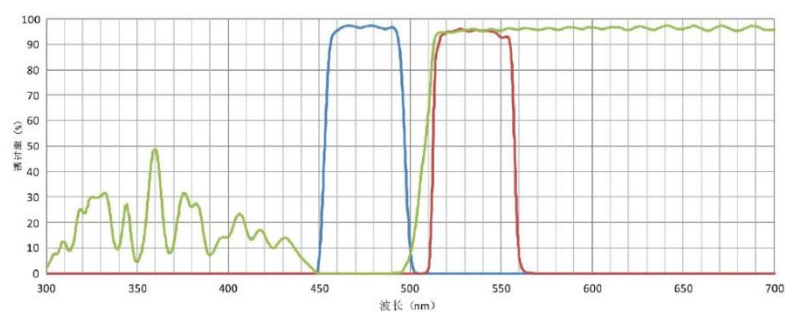
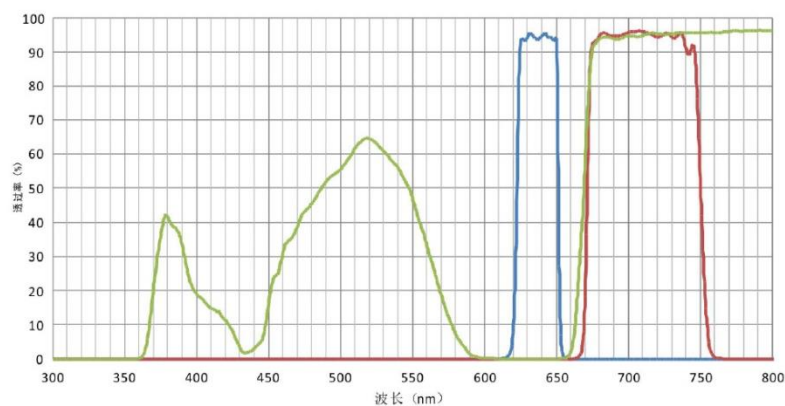
Brighter image, high resolution and flatness, suitable for all the magnifications



◆ Fluorescent Viewing

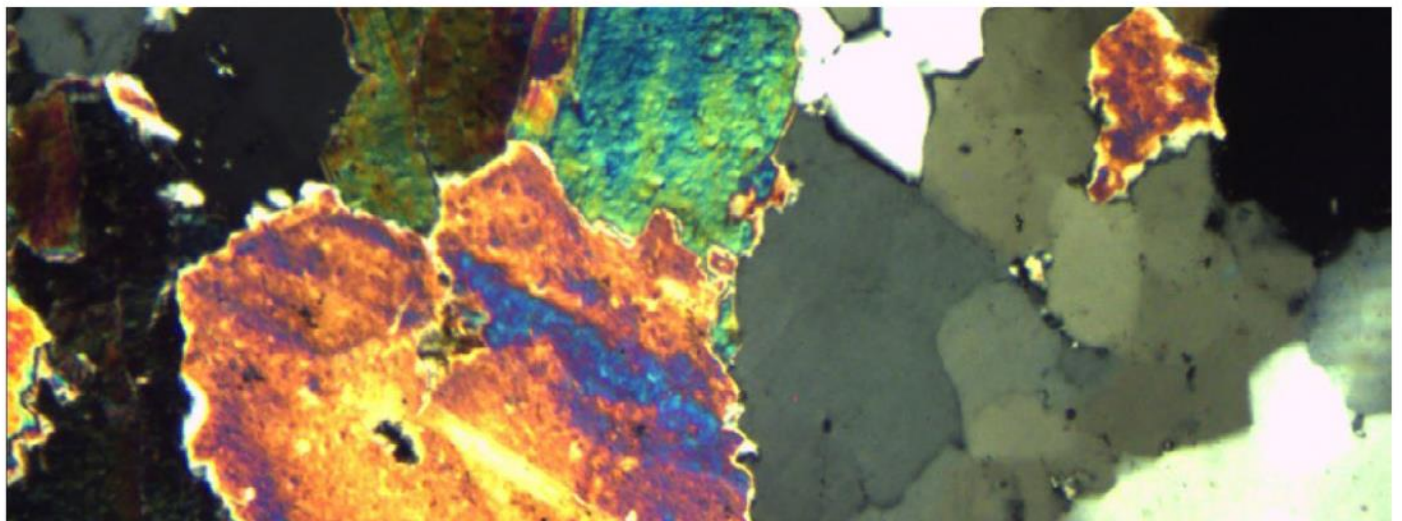
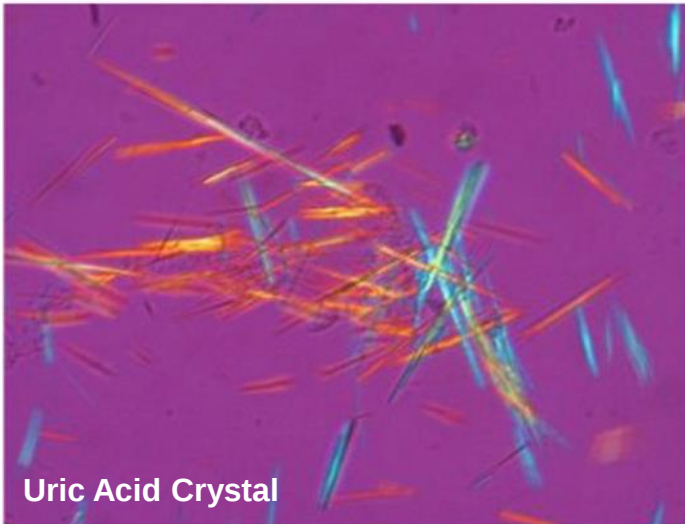
The compact epi-fluorescent components includes noise elimination feature which ensures images captured are bright, with high contrast and high signal-to-noise ratio.





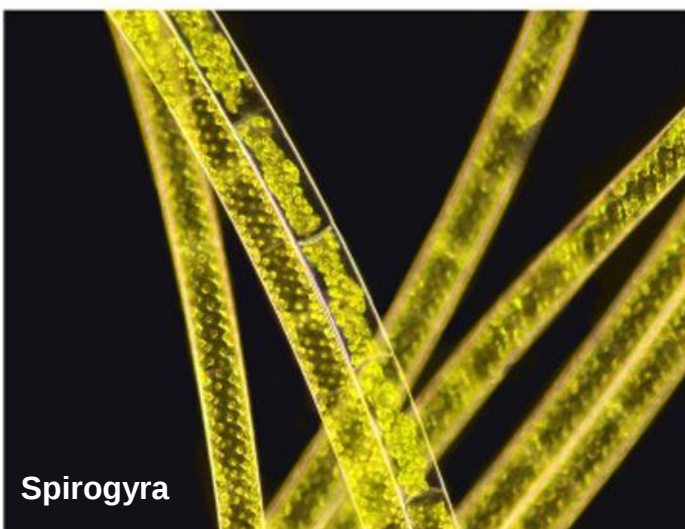
◆ Polarizing Viewing

It is quite suitable for viewing collagen, amyloid and crystal etc. double refracting specimen.



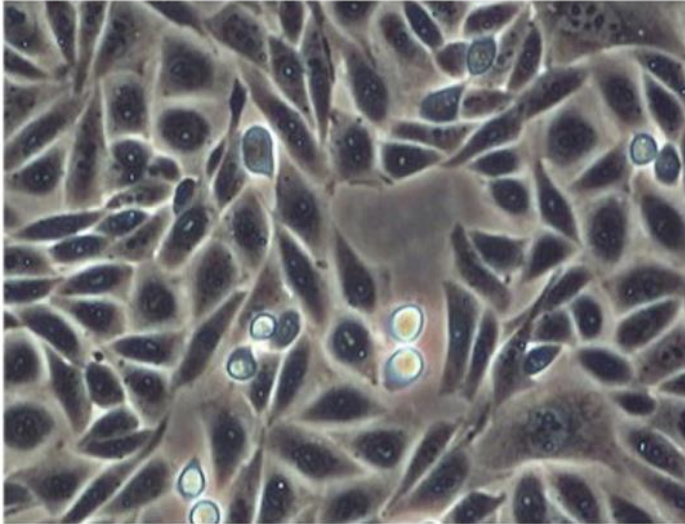
◆ Dark-field Viewing

It can be used for clearly viewing of blood or flagellum etc. fine structure.



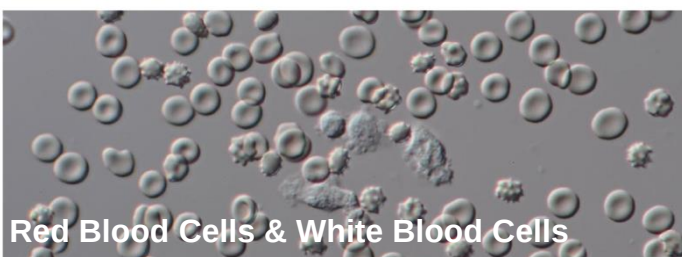
◆ Phase Contrast Viewing

Operators can get high contrast image of neutral background color whatever the magnifications are. It is suitable for viewing non-stained specimen.



◆ DIC Phase Contrast Viewing

DIC increases the contrast of the sample, and enables the nucleus and larger organelles such as mitochondria to have a strong three-dimensional effect, which is more suitable for micromanipulation. At present, it is mostly used for micromanipulation of gene injection, nuclear transfer, genetically modified animals and other bioengineering



Red Blood Cells & White Blood Cells

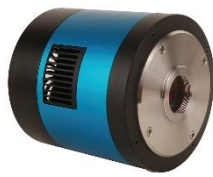


Saccharomyces Cerevisiae

Software Function



A59.2225

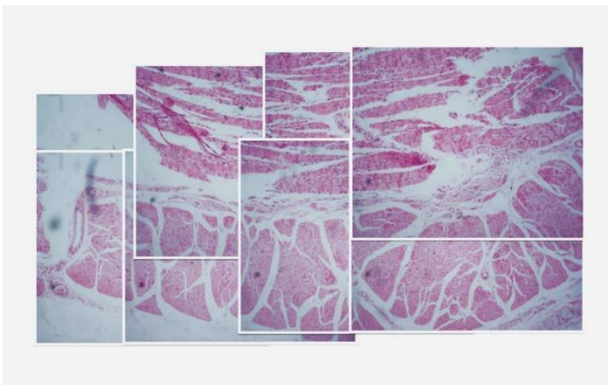


A59.2226

With high speed USB3.0 digital camera and professional image processing software, Opto-Edu microscope can work with computer to get various advanced function done easily. Real Time / Static Measure, 2D Image Scan & Stitching, 3D Depth of Field Fusion, Fluorescent Image Synthesis, Cell Counting and etc

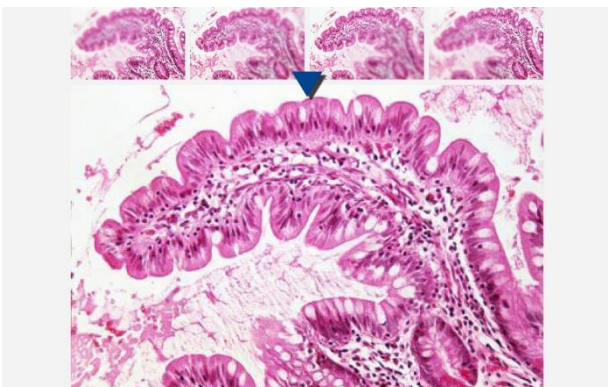
◆ 2D Image Scan & Stitching

By collecting and importing images in real time, the software can quickly stitch together to form a large-size and high-resolution image



◆ 3D Depth Of Field Fusion

Users can collect multiple images with different focal lengths by fine-tuning the focal length, and synthesize one image for output. Suitable for specimens that require a certain depth of field or poorly made sections



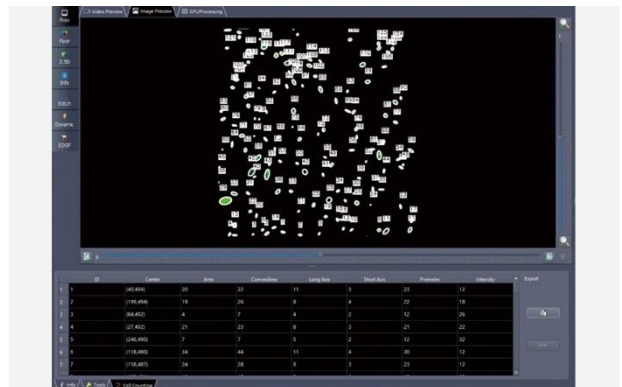
◆ Real Time / Static Measure

In cell observation and section observation, you need to use the measurement function. To determine the cell size, cell gap, synapse length and other data. The software can provide measurement of distance, angle, rectangle, circle, ellipse, etc.



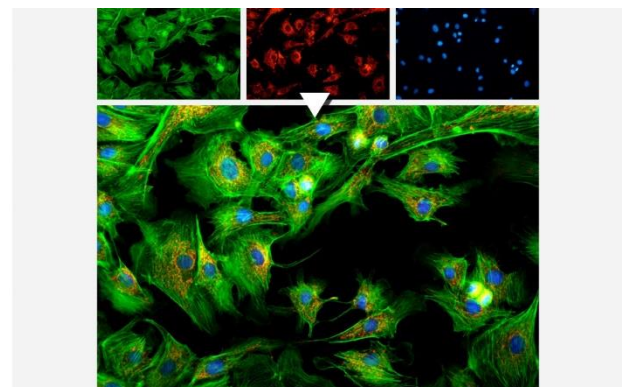
◆ Cell Counting

Customize cell counting requirements, automatically count and count the shape information of cells, including: size, location, volume, circumference, brightness, etc. And all data including processed images can be saved as excel sheet



◆ Fluorescent Image Synthesis

By collecting or importing images of different fluorescence channels, users can obtain images after fluorescence synthesis. For the image of each channel, the displacement in the x direction and y direction can be adjusted to achieve the fine-tuning effect



A12.1095 is newly designed Full Auto Motorized Research Level Scientific Laboratory Microscope, equipped with electric platform, auto focus, electric objective conversion, touch screen controller and powerful imaging software; Through the precise connection between the parts, the functions of microscope observation, image acquisition and image processing are realized, and the repetitive operation is reduced. In addition, it can restore the microscope settings and parameter settings of the last operation, and improve the stability and accuracy of microscope imaging. Microscope operation can be so fast and efficient.

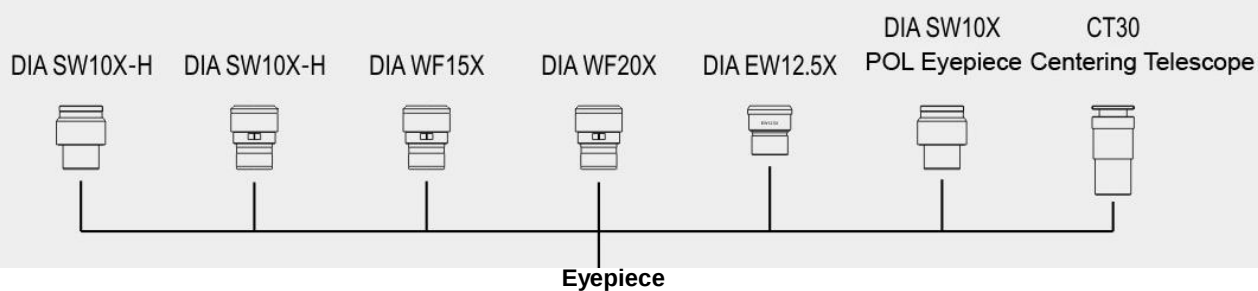
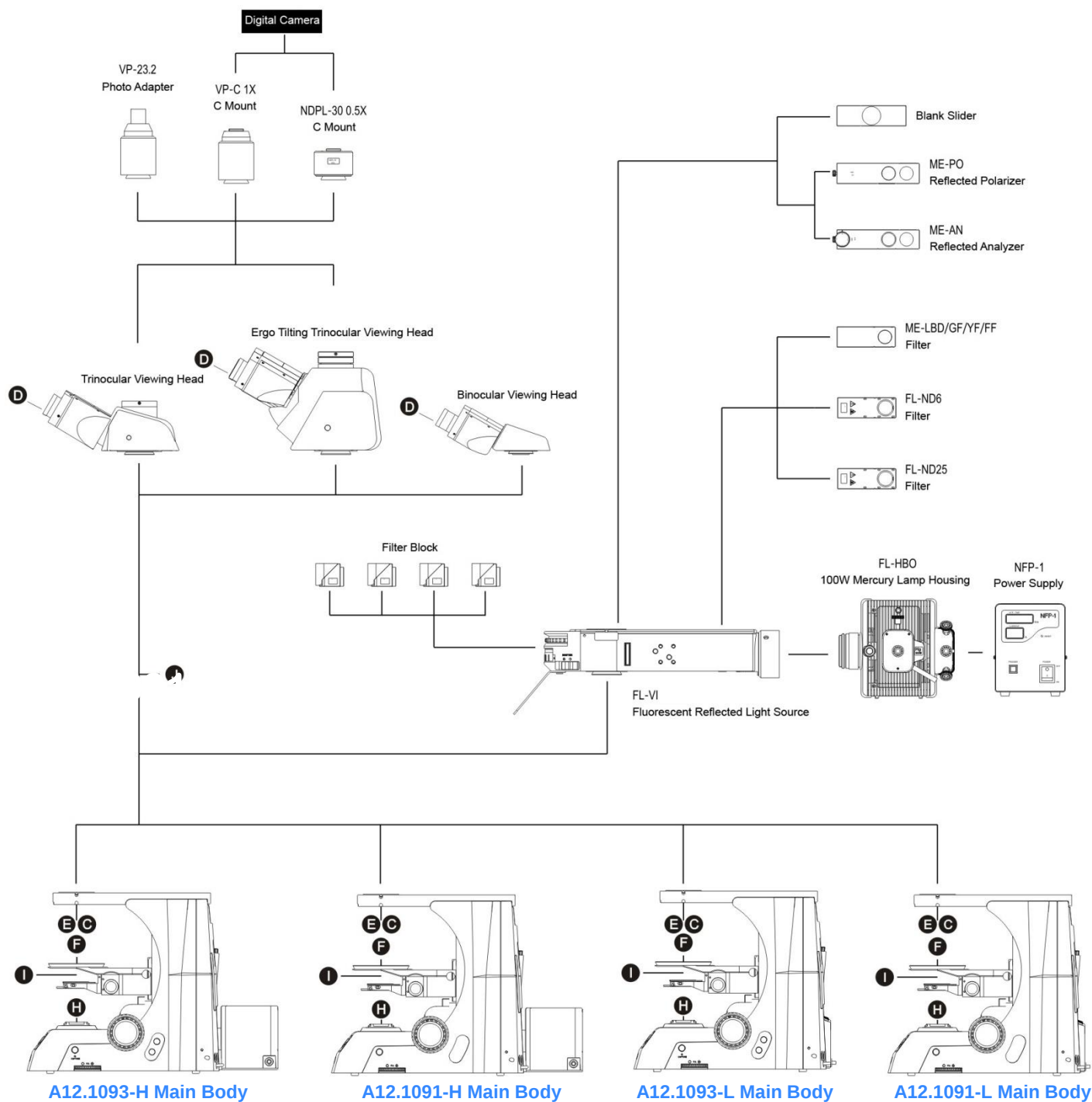
Full Auto Motorized Research Level Scientific Laboratory Microscope		A12.1091	A12.1093	A12.1095	Cata.No.
Optical System	NIS60 Infinity Optical System	●	●	●	
Observation Method	Bright Field	●	●	●	
	Dark Field	○	○	○	
	Polarizing	○	○	○	
	Phase Contrast	○	○	○	
	Flourescent	○	○	○	
	DIC	○	○	○	
Main Body	A12.1091-H Manual Body + Halogen Illumination.	●			A54.1090-BH
	A12.1091-L Manual Body + LED Illumination.	●			A54.1090-BL
	A12.1093-H Semi-Auto Body + Halogen Illumination.		●		A54.1090-ATH
	Auto Nosepiece + Auto Condenser + Auto Brightness Adjust				
	A12.1093-L Semi-Auto Body + LED Illumination.		●		A54.1090-ATL
	Auto Nosepiece + Auto Condenser + Auto Brightness Adjust				
Head	A12.1095 Full Auto Body + LED Illumination.			●	
	Auto Nosepiece + Auto Brightness + Auto X/Y/Z Stage+ Touch LCD Screen				
	Seidentopf Binocular Head, Inclined 30°, Interpupillary Distance 47-78mm	○	○	○	A53.1090-B
	Seidentopf Trinocular Head, Inclined 30°, Interpupillary Distance 47-78mm, 3 Level Light Split Switch E100:P0/E20:P80/E0:P100	●	○	●	A53.1090-T
Eyepiece	Ergo Tilting Trinocular Head, Inclination 0°~35°, Interpupillary Distance 47-78mm, 3 Level Light Split Switch E100:P0/E20:P80/E0:P100	○	●	○	A53.1090-TT
	SW10x/25mm, High Eyepoint, Diopter Adjustable, Dia.30mm	●●	●●	●●	A51.1090-1025
	SW10x/22mm, High Eyepoint, Diopter Adjustable, Dia.30mm	○	○	○	A51.1090-1022
	EW12.5x/16mm, High Eyepoint	○	○	○	A51.1090-12516
	WF15x/16mm, High Eyepoint, Diopter Adjustable, Dia.30mm	○	○	○	A51.1090-1516
	WF20x/12mm, High Eyepoint, Diopter Adjustable, Dia.30mm	○	○	○	A51.1090-2012
Nosepiece	Manual Nosepiece, Quintuple, Backward, Center Adjustable	○	○	○	A54.1091-5M
	Manual Nosepiece, Sextuple, Backward	●			A54.1091-6M
	Coded Nosepiece, Sextuple, Backward, For Auto Brightness Adjust	○			A54.1091-6C
	Auto Coded Nosepiece, Sextuple, Backward, Motorized Switch Objectives, Controlled By: 1. Shortcut Button On Right Side Of Base, Can Switch 2 Preseted Objectives Quickly 2. Remote Control Pad In Front Of Base, Press Each Button To Switch Objectives And Adjust The Light Intensity Automatically. 2 Buttons Can Be Self-Defined For Most Commonly Used Objecives, Press Green Button Can Swap Between Them	○	●	●	A54.1091-6A
	With Slot For Polarizing Compensator Slider Or DIC Slider	●	●	●	
	Protect Cover For Nosepiece Holes	●	●	●	A54.1091-C
NIS60 N-PLN Infinity Plan Objective	2x/0.06, W.D.7.5mm, Cover Glass 0.17mm	○	○	○	A52.1090-2
	4x/0.10, W.D.30mm, Cover Glass 0.17mm	●	●	●	A52.1090-4
	10x/0.25, W.D.10.2mm, Cover Glass 0.17mm	●	●	●	A52.1090-10
	20x/0.40, W.D.12mm, Cover Glass 0.17mm	●	●	●	A52.1090-20
	40x/0.65, W.D.0.7mm, Cover Glass 0.17mm	●	●	●	A52.1090-40
	50x/0.95(Oil, W.D.0.19mm, Cover Glass 0.17mm	○	○	○	A52.1090-50
	60x/0.8, W.D.0.3mm, Cover Glass 0.17mm	○	○	○	A52.1090-60
	100x/1.25(Oil), W.D.0.2mm, Cover Glass 0.17mm	●	●	●	A52.1090-100
NIS60 APO Infinity Plan	20x/0.75, W.D.1.1mm, Cover Glass 0.17mm	○	○	○	A52.1091-20
	100x/1.45(Oil), W.D.0.13mm, Cover Glass 0.17mm	○	○	○	A52.1091-100

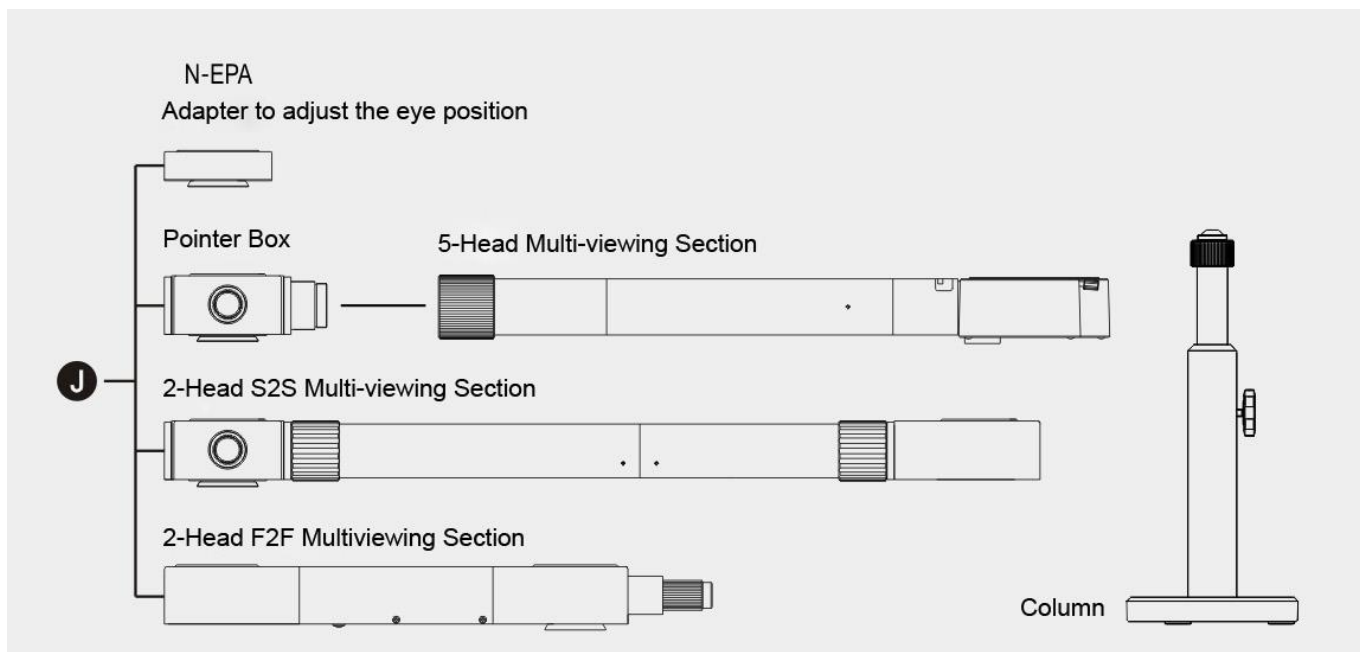
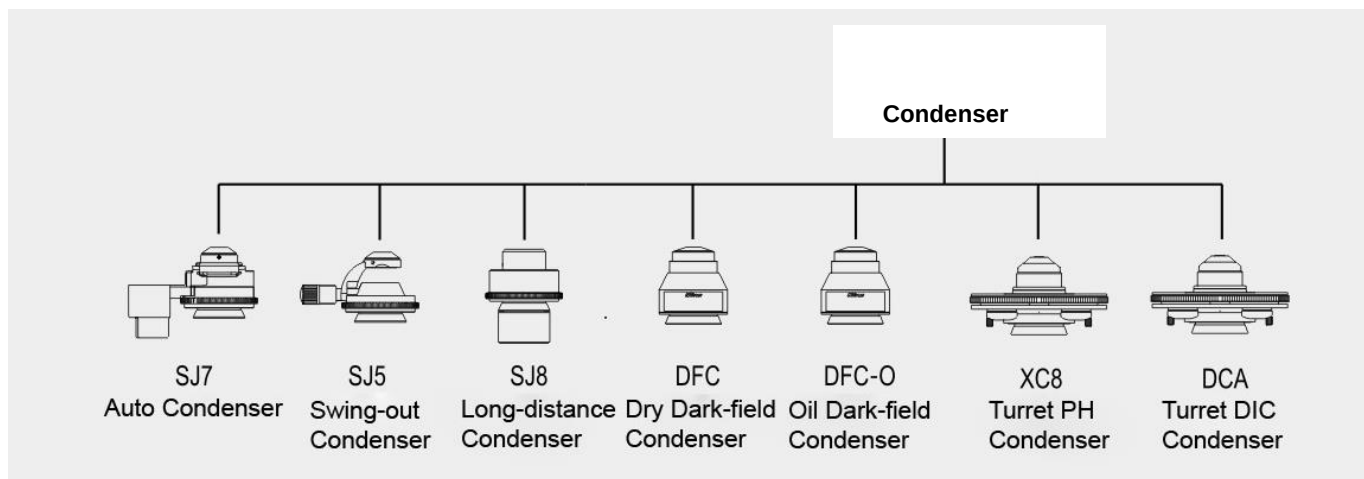
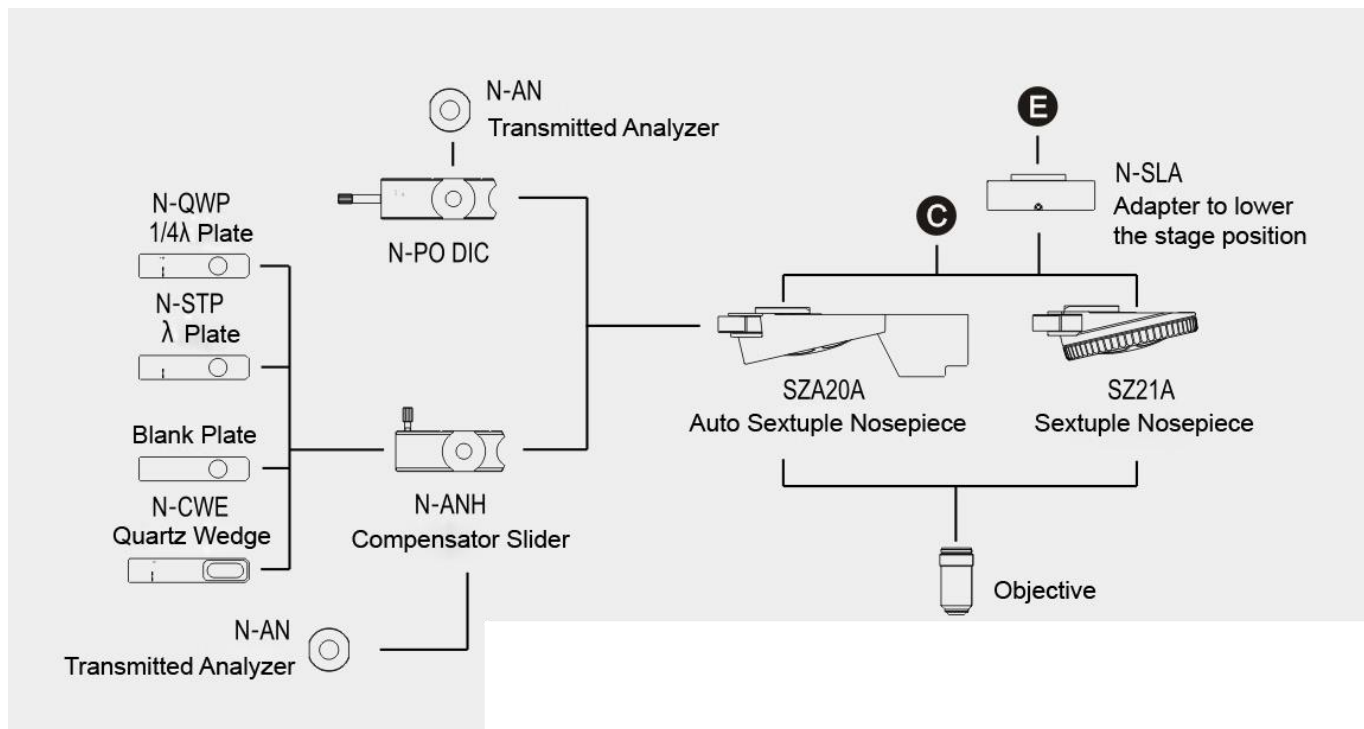
Working Stage	Double Layer Mechanical Stage Full Size 302x152mm, Stage Table Size 190x152mm, Moving Range 78x32mm, Double Slide Holder, With Gorilla Glass Insert, Left Handle	○		○	A54.1092-GL
	Double Layer Mechanical Stage Full Size 302x152mm, Stage Table Size 190x152mm, Moving Range 78x32mm, Double Slide Holder, With Gorilla Glass Insert, Right Handle	●		○	A54.1092-GR
	Double Layer Mechanical Stage Full Size 302x152mm, Stage Table Size 190x152mm, Moving Range 78x32mm, Double Slide Holder, With Sapphire Glass Insert, Left Handle		○	○	A54.1092-SL
	Double Layer Mechanical Stage Full Size 302x152mm, Stage Table Size 190x152mm, Moving Range 78x32mm, Double Slide Holder, With Sapphire Glass Insert, Right Handle		●	○	A54.1092-SR
	Low Position Control Knob, Height Adjustable Up/Down 18mm, Convex Point Guide Mechanism For Easily Put Slide By One Hand, With Tension Adjustable Ring, With Safety Stop Screw	●	●	-	
	Full-Auto X/Y/Z Motorized Control Working Stage, Including Control Joy Stick, --Travel Range X:125mm, Y:75mmmm, --Minimum Step 0.1um --Re-Position Accurate +/-1.5um --Max Speed 25mm/s --Size: 275x239x44.5mm --Soft Stop, Mechanical Stop, Opto-Electro Switch Stop --Z Axis Re-Position Accurate: Average +/-1.5um, Near Focus +/-0.1um --Z Axis Max Speed 10r/s --3D Control Stick, 4 Speeds --Connection By USB2.0 & RS232 --Communication Speed 9600 bits Z Axis Upgrade With Optical Grating Ruler	○	○	●	A54.1095-A
Condenser	Swing-Out Condenser NA0.9/0.25	●			A54.1095-B
	Auto Swing-Out Condenser NA0.9/0.25		●	-	A56.1091-S
Focusing	Coaxial Coarse & Fine Focusing, Fine Division 0.001mm, Focusing Range 35mm, Coarse Stroke 37.7mm, Fine Stroke 0.1mm, Can Exchange Hand Wheel Between Left/Right	●	●	●	A56.1091-A
Light Source	Transmit Kohler Illumination, Brightness Adjustable, 12V100W Halogen, External Lamp House For A12.1091-H, A12.1093-H	●	●		A56.1090-12V100W
	Transmit Kohler Illumination, Brightness Adjustable, 3W S-LED, Built-in Main Body For A12.1091-L, A12.1093-L			●	A56.1090-3WLED
	ECO Function Support Auto Power Off After 30 Mins From Operator Leave To Save Energy	●	●	●	A56.1090-ECO
	Auto Brightness Adjust, Brightness For Each Objective Can Be Memorized And Restored When Objective Is Selected (To Upgrade A12.1091 to Auto Brightness Adjust, Must Upgrade Its Nosepiece To A54.1091-6C Coded Nosepiece At Same Time)	○	●	●	A56.1090-AB
Filter For Transmit Light	Filter Holder On Base, Can Hold 3 Filters	●	●	●	A56.1092-H
	Filter LBD	●	●	●	A56.1092-LBD
	Filter Green	●	●	●	A56.1092-G
	Filter Yellow	●	●	●	A56.1092-Y
	Filter ND6	●	●	●	A56.1092-ND6
	Filter ND25	●	●	●	A56.1092-ND25

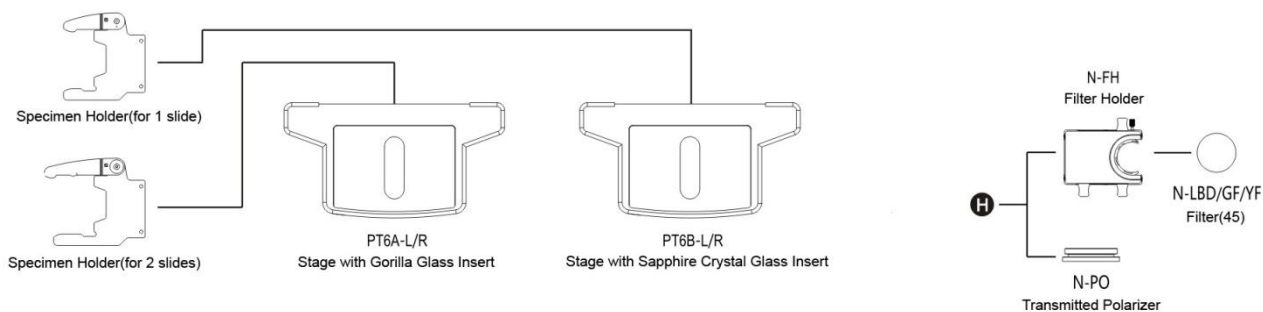
Adapter	Eyepiece Adapter Dia.23.2mm	○	○	○	A55.1090-E
	C-Mount 1.0x	○	○	○	A55.1090-1.0x
	C-Mount 0.5x	○	○	○	A55.1090-0.5x
Software	NOMIS Basic Image Processing Software	○	○	○	A30.1090
Dark Field	Dark Field Condenser, N.A. 0.7~0.9, Dry	○	○	○	A5D.1090-D
	Dark Field Condenser, N.A. 1.25~1.36, Immersion	○	○	○	A5D.1090-I
	Dark Field Objective, Infinity Plan 100X, For Immersion Dark Field Observation	○	○	○	A5D.1030-3
	Dark Field Objective, Infinity Plan 100X, With Iris Diaphragm, For Immersion Dark Field Observation	○	○	○	A5D.1030-4
Polarizing	Polarizer For Transmit Light Source, Swing-Out, On Collector	○	○	○	A5P.1091-BP
	Analyzer For Transmit Light, Slide With Quartz Wedge Compensator	○	○	○	A5P.1091-BA
	Upgrade To <u>A15.1091</u> Professional Polarizing Microscope	○		○	<u>A15.1091</u>
Phase Contrast	Turret Phase Contrast Condenser, Center Adjustable	○	○	○	A5C.1090
	Centering Telescope 10x	○	○	○	A5C.1092
	Infinity Plan Phase Contrast Objective N-PLN PH 10x/0.25	○	○	○	A5C.1091-10
	Infinity Plan Phase Contrast Objective N-PLN PH 20x/0.40	○	○	○	A5C.1091-20
	Infinity Plan Phase Contrast Objective N-PLN PH 40x/0.65	○	○	○	A5C.1091-40
	Infinity Plan Phase Contrast Objective N-PLN PH 100x/1.25(Oil)	○	○	○	A5C.1091-100
DIC	Polarizer For Transmit Light Source	○	○	○	A5P.1090-TP
	Turret DIC Condenser	○	○	○	A5C.1095
	DIC Slide 10x, Used With Semi-APO Fluorescent Objective	○	○	○	A5C.1095-10
	DIC Slide 20x/40x, Used With Semi-APO Fluorescent Objective	○	○	○	A5C.1095-2040
	DIC Slide 100x, Used With Semi-APO Fluorescent Objective	○	○	○	A5C.1095-100
	DIC Slide With Analyzer 10x-20x	○	○	○	A5C.1095-1020P
	DIC Slide With Analyzer 40x-100x	○	○	○	A5C.1095-40100P
NIS60 N-PLFN Semi-APO Fluorescent Objective For DIC	4x/0.13, W.D.16.5, Cover Glass 0.17mm	○	○	○	A5F.1091-4
	10x/0.3, W.D.8.1, Cover Glass 0.17mm	○	○	○	A5F.1091-10
	20x/0.5, W.D.2.1, Cover Glass 0.17mm	○	○	○	A5F.1091-20
	40x/0.75, W.D.0.7, Cover Glass 0.17mm	○	○	○	A5F.1091-40
	100x/1.3, W.D.0.15, Cover Glass 0.17mm, Oil	○	○	○	A5F.1091-100
Fluorescent	Upgrade To A16.1093, A16.1095 Fluorescent Microscope	-	○	○	A16.1093, A16.1095
Other Accessories	Working Stage Holder Bracket	●	●	●	A54.1096
	Adapter To Adjust Eye Position	○	○	○	A54.1096-A1
	Adapter To Lower The Stage Position 1"	○	○	○	A54.1096-A2
	Immersion Oil	●	●	●	A50.1090-01
	Allen Wrench	●	●	●	A50.1090-02
	Power Cord	●	●	●	A50.1090-03
	Short Eye Cover, For Eyepiece	○	○	○	A50.1090-04
	Long Eye Cover, For Eyepiece	○	○	○	A50.1090-05
	Eyepiece Micrometer, Cross	○	○	○	A50.1090-06
	Adapter Ring To Install Eyepiece Micrometer	○	○	○	A50.1090-07
	USB Cable	○	○	○	A50.1090-08

Note: "●" In Table Is Standard Outfits, "○" Is Optional Accessories "-" Is Unavailable

System Diagram & Size(mm)

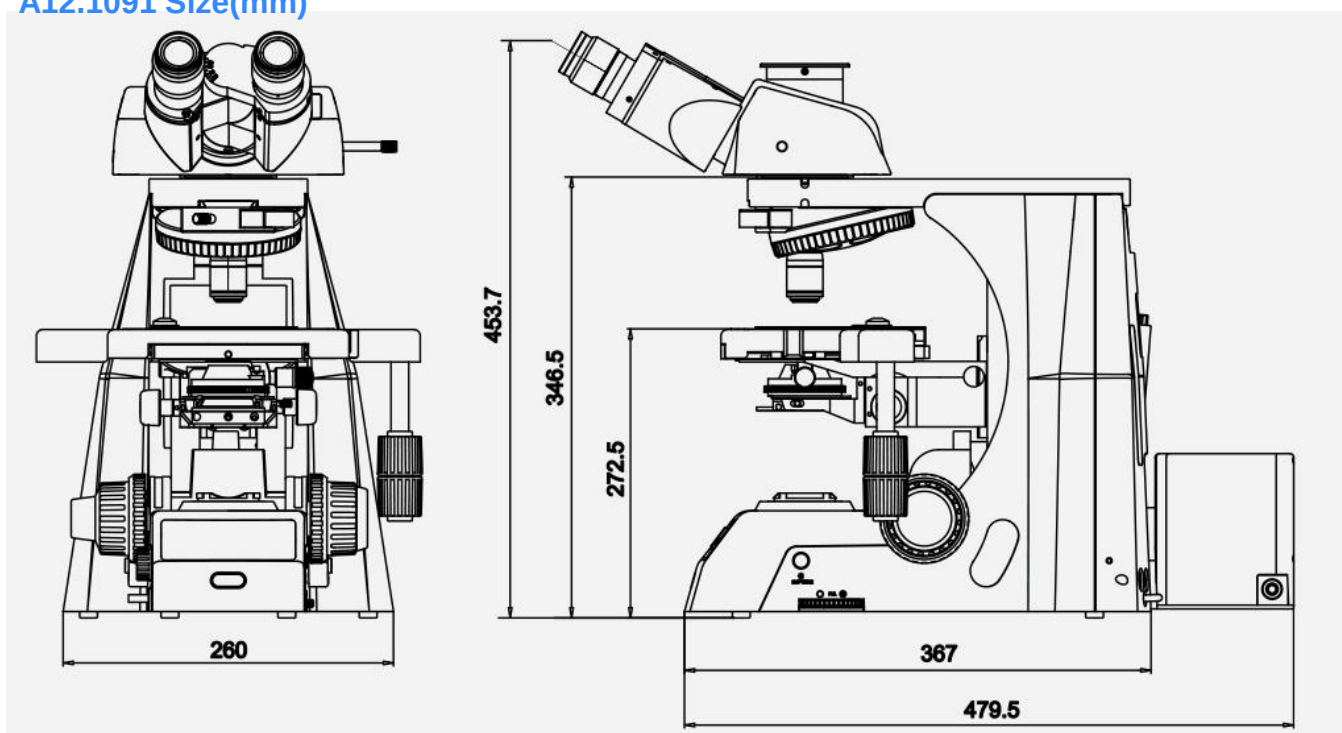




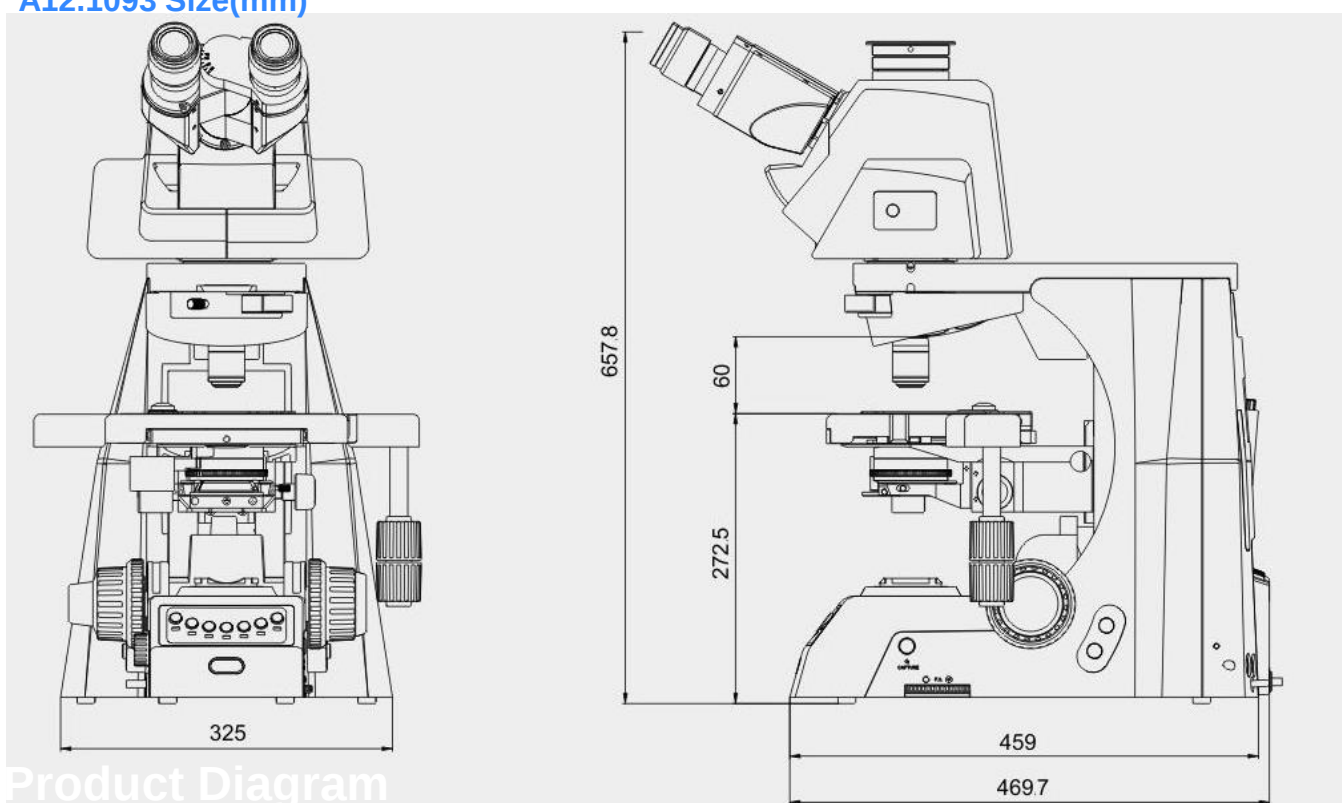


F

A12.1091 Size(mm)

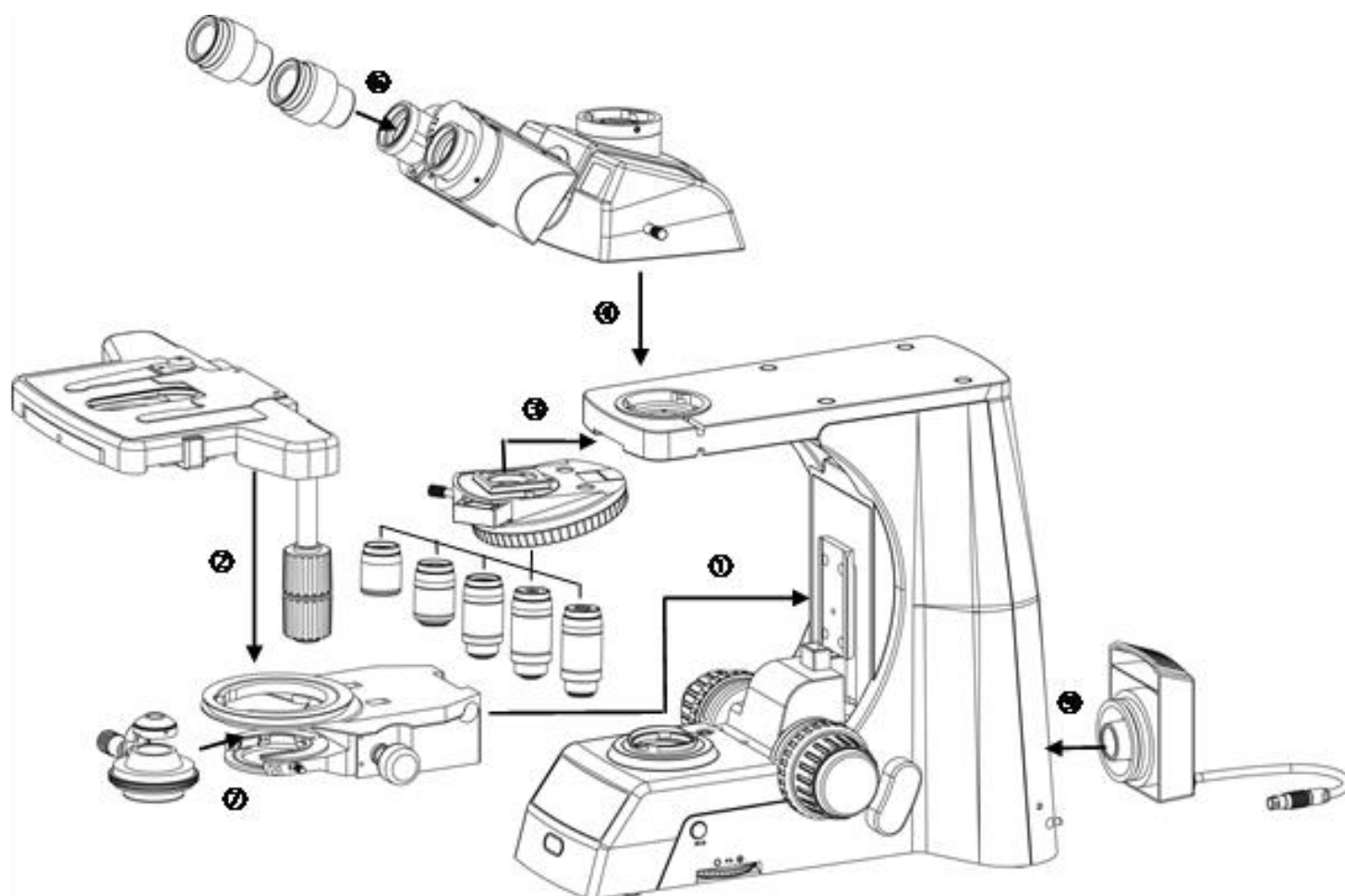


A12.1093 Size(mm)

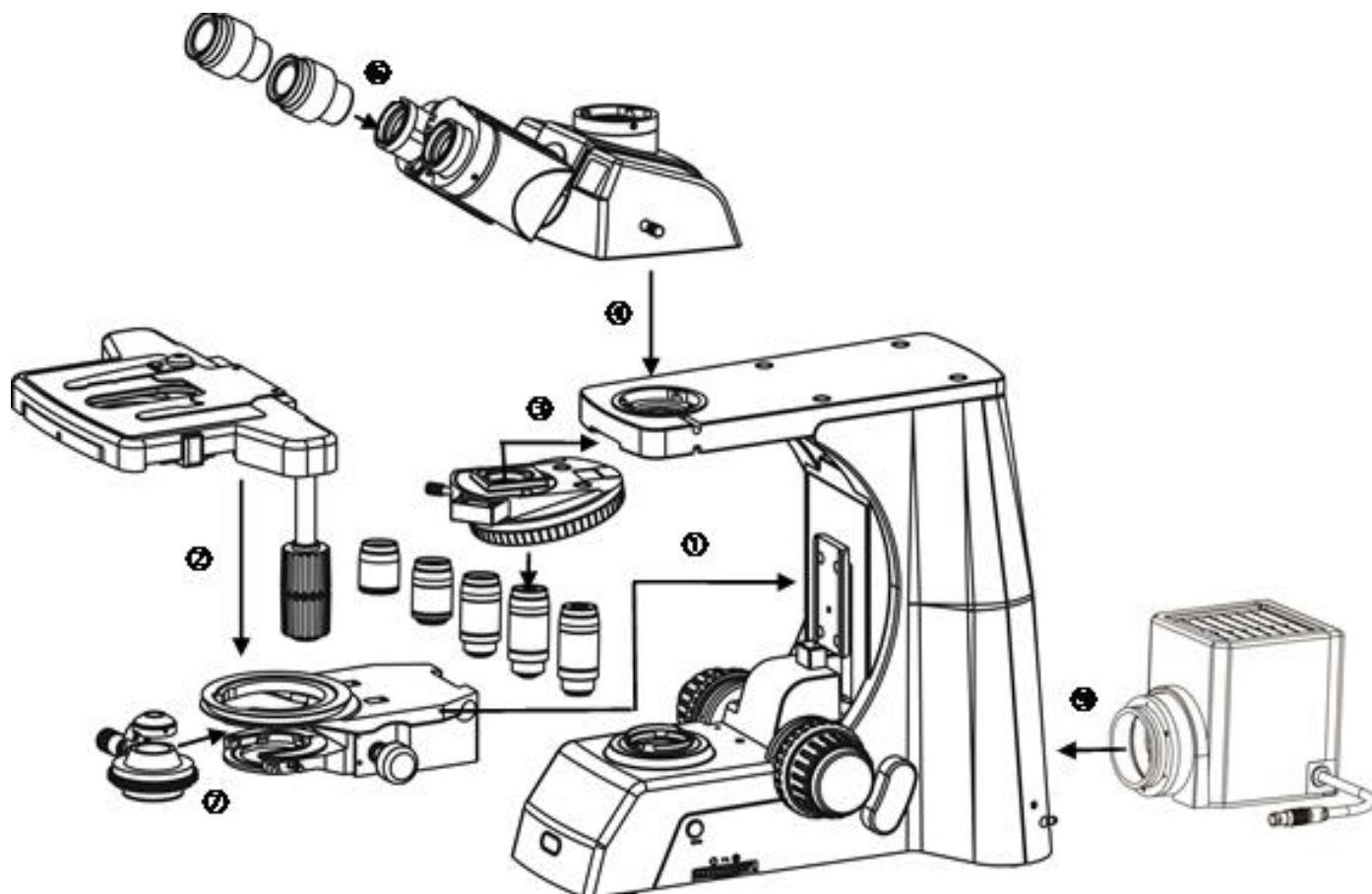


Product Diagram

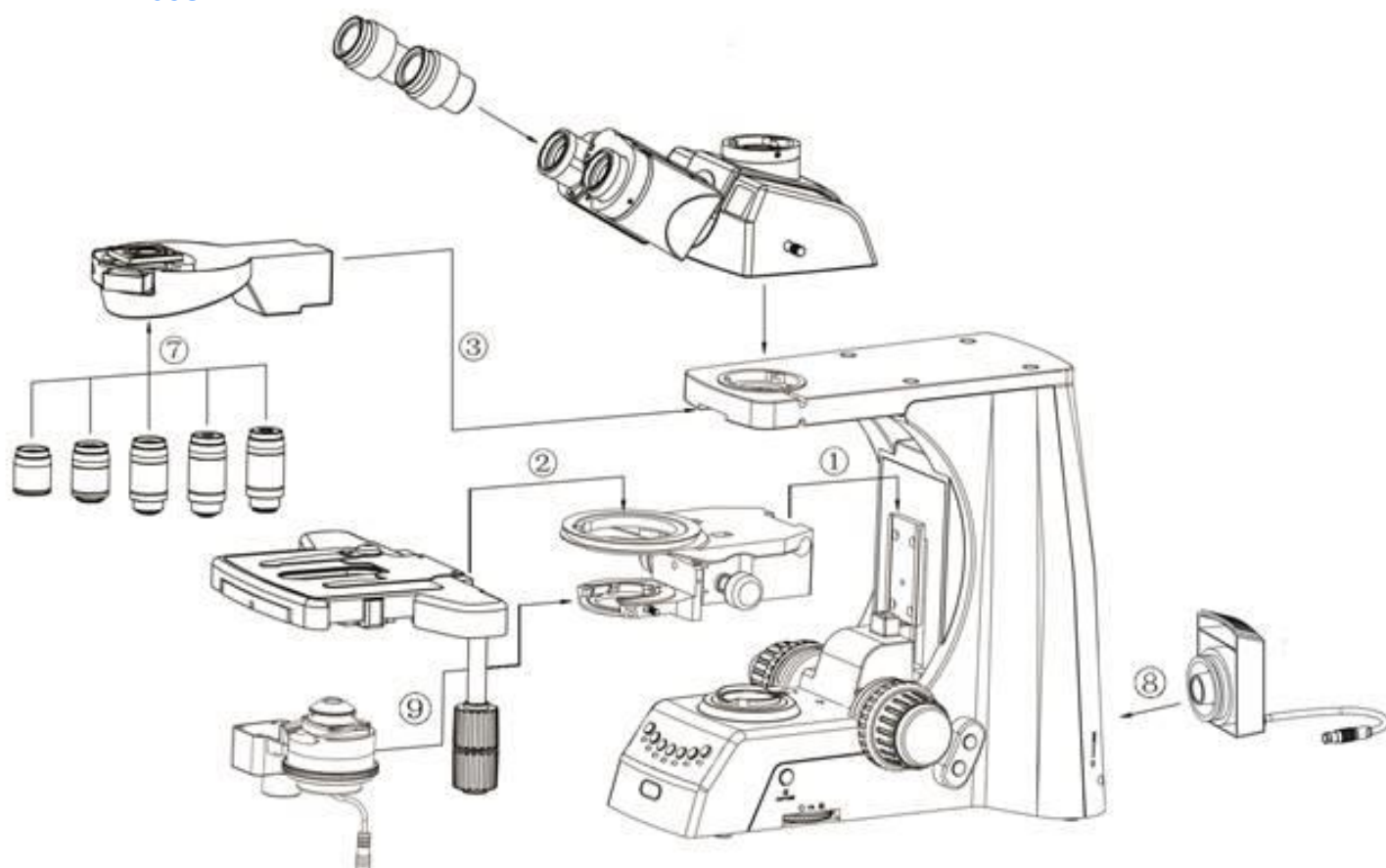
A12.1091-L



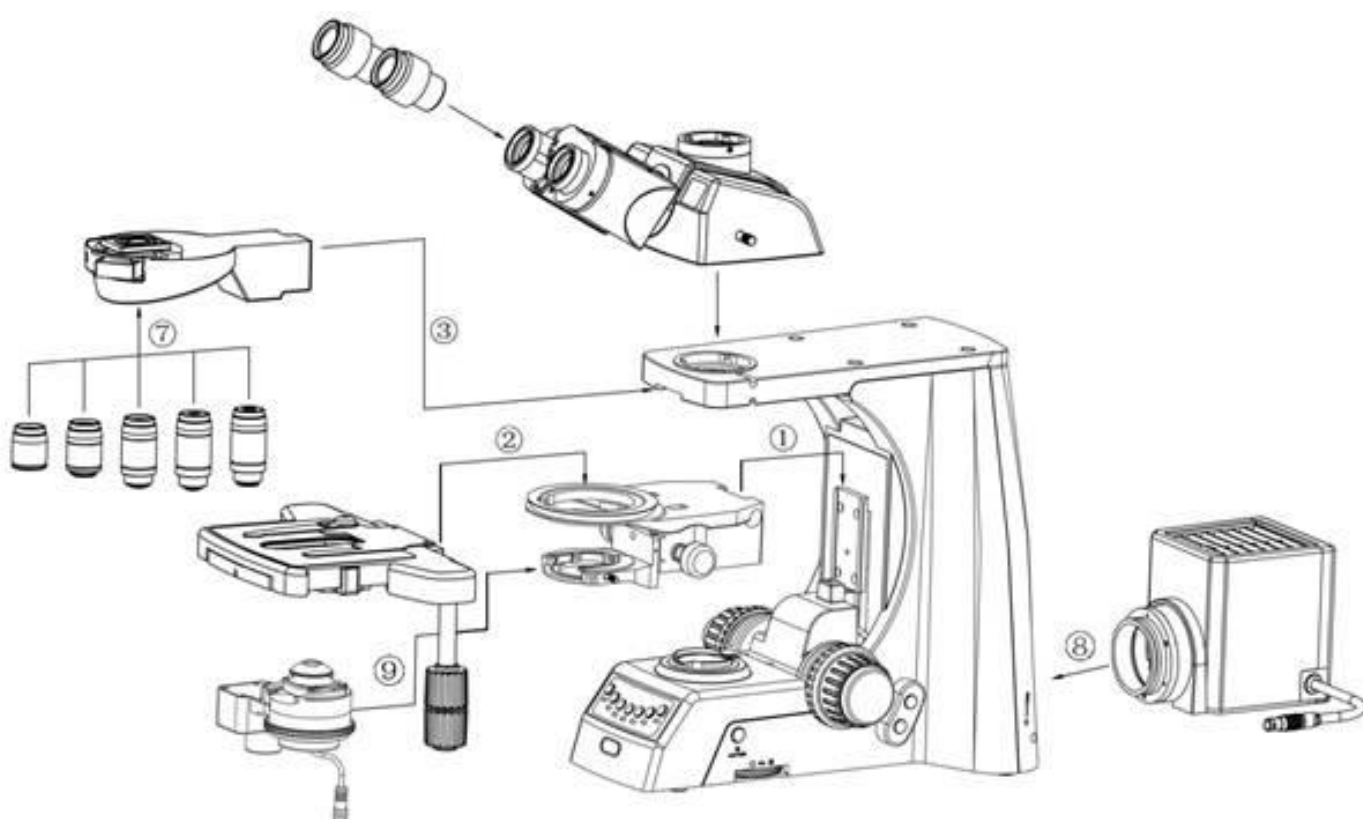
A12.1091-H



A12.1093-L



A12.1093-H



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