

A close-up photograph of a microscope's objective lens assembly. The lens is silver with a blue band near the tip. Technical specifications are printed on the lens: 'A40', '0.65', and '160/0.17'. The background is a blurred laboratory setting with various glassware and equipment.

Cole-Parmer®

Cole-Parmer Microscopes

- Compound and stereozoom microscopes available
- Excellent clarity and resolution
- Robust and sturdy with crisp, high-resolution images
- 5-year warranty



Your science is our number one priority

- We work with experts, gaining feedback and industry knowledge to bring you the best products and services, helpful resources, and reliable guidance.
- Our organization includes scientists, engineers and researchers who contribute to our business, sales and marketing, product development, technical and application support, product development, research, manufacturing, and management.

We have your back every day

Our team of knowledgeable experts are available to offer guidance when you need it. You can be confident that we will help you make the right choice for your specific requirements.

Compound and Stereozoom Microscopes

Compound Microscopes

A compound microscope consists of a group of lenses (called objectives) which focuses a real image of the object inside the microscope. A second group of lenses (called eyepieces) magnify this image and projects it on the retina of the eye. This compound optical system (objectives – eyepieces) together with other mechanical components are the basics of a modern microscope. The overall resolution and image quality of a microscope is determined by the quality of the optics and the light source.

Specialized Compound Microscope Types

Fluorescence – This type of microscope is used to observe certain parts of living cells and tissues with the help of adding fluorophores to the specimen. When exposed to excitation light, the fluorophores absorb the energy and emit light in another visible wavelength. This makes it possible to distinguish different types of cells, to prove the presence or absence of antibodies, or observe sub-microscopic structures of cells and tissues.

Darkfield – Darkfield contrast is typically used for unstained samples. The image seen has the appearance of a dark, almost black background with highlighted bright objects on it. These objects, because they are unstained, are hard to see with brightfield contrast. The applications are mostly biological samples, smears from tissue culture, or water-borne, single-celled organisms.

Phase Contrast – Phase contrast microscopes have phase objectives. These allow the visualization of living organisms that have poor or no contrast. With phase contrast, the specimen does not require coloring that may cause living organisms to die.

Polarization – A standard optical microscope equipped with a circular 360° rotating stage, strain-free objectives, a polarized light source, and a second polarizer (called the “analyzer”) to the light path between the objectives and eyepieces.

Metallurgical – Metallurgical microscopes can be used to see opaque items at high magnification. They are used to locate defects in metals, study rocks and minerals, and as used for other material science applications.

Cole-Parmer MSU-600 (#78904-30) microscope is equipped with specific attachments and optics for this material science application.

Stereozoom Microscopes

A stereozoom microscope, or dissecting microscope, is an optical microscope with fixed or adjustable magnification zoom objective and is designed for observation of samples at relatively low magnifications from 4.5 to 55 times. These microscopes consist of separate objective lenses and eyepieces resulting in two separate optical paths, one for each eye. Stereozoom microscopes allow users to view a three-dimensional view of a specimen with increased depth of focus.

The stereozoom microscope is used in laboratories for sample preparation or to study objects in the field of life science.

Types of Objectives

There are four types of objectives:

Achromatic – Built up out of one or two lenses and has about 60% of focused area across the center.

Semi plan – Can either be built up out of two lens element achromats or three or more element apochromats and has about 80% of focused area across the center. EPL on objectives stands for Eco Plan or economical plan and is comparable to semi plan.

Plan – Corrects better for color and spherical aberration than either the semi plan or the achromatic objective. Plan objectives have a flat field around the center of close to 100% of the image and give flatter fields and slightly higher resolving power (details). Plan objectives are supplied to middle and high end laboratories.

Semi-APO – Additional lenses built-in to improve corrections even further, providing a superior image. While they give the best image, they also are the most expensive. Semi-APO objectives are used by high end users where extreme quality of images and details are required.

Although all four objective types will correct for achromatic errors (color errors), there is no “achromatic” in the name of “semi plan”, “plan”, and “semi-APO”.

The difference between the lenses is the focusing area which can be seen from the eyepieces when using the objective lenses. The difference at the low power lenses is smaller than at the higher 40/60/100x lenses.

Infinity Corrected Optics

What is an infinity corrected optical system?

Microscopes with infinity corrected optical systems have infinity image distance. These systems are designed by placing a tube lens within the body tube between the objective and the eyepieces, resulting in an intermediate image. This optical system permits optical accessories such as illuminators to be placed into the light path between the objective and the tube lens (also known as the infinite space) with minimal effect on focus and increase the tube length to greater than 160 mm. Infinity corrected optics are used in research laboratory microscopes and industrial metallurgical microscopes.

What is infinity optics?

Infinity optics is the production of a flux parallel light rays after passing through the objective. This is different than the infinity space.

About the tube length

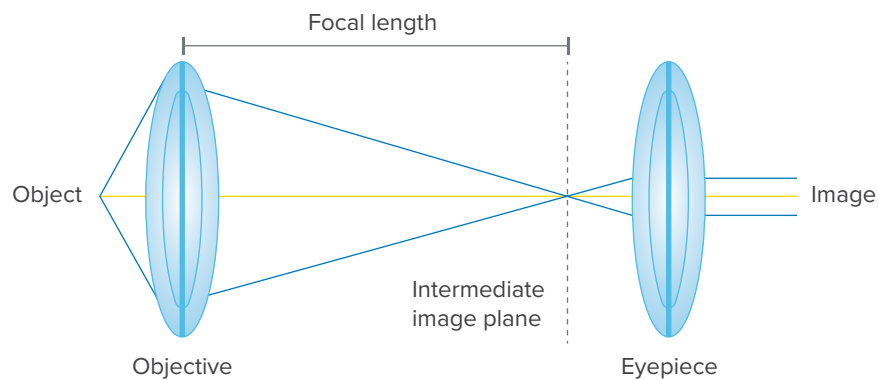
The tube length, or focal length, in infinity corrected optical systems ranges from 160 to 200 mm. The Royal Microscopical Society standardized microscope tube length at 160 mm during the nineteenth century. This was the standard until the 1980s when infinity corrected optics were introduced. To adjust for this change, manufacturers needed to place additional optical elements into the accessories to restore the 160 mm tube length, resulting in reduced light and increased magnification. Microscopes without infinity correct optics have a specified tube length of 160 mm.

Benefits of infinity space

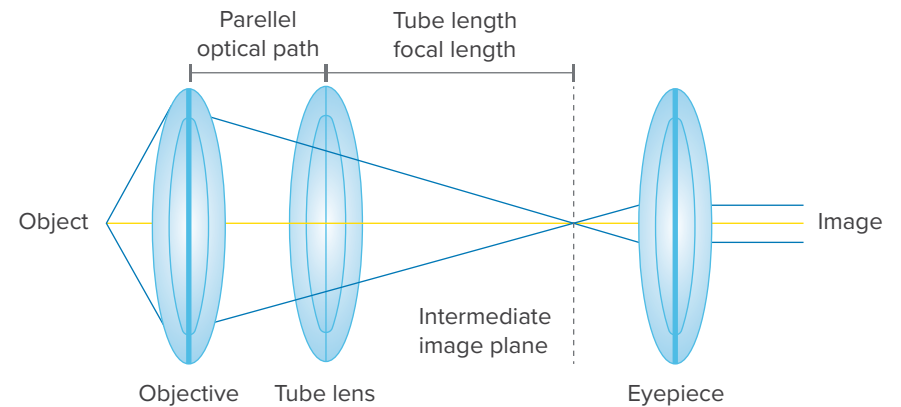
When accessories are added into the optical path, parfocality between different objectives can still be maintained.

Accessories can be designed to produce 1x magnification without altering alignment between the objective and tube lens. Optical accessories placed into the infinity space do not shift the location or the focal point of the image. This allows one to use a combination of optical techniques to compare specimens.

Finite optical system



Infinity optical system



Parts of a Microscope

Digital Microscopy

Modern microscopy uses CMOS, CCD, or HD cameras for digital output to computer or HDMI displays. Users can use ImageFocus analysis software to capture, edit, analyze, and share microscopy images.

Trinocular Tube

Cole-Parmer MSU-400 and MSU-600 have trinocular versions with a tube to connect to a user's selectable camera for digital microscopy. A trinocular design is more flexible than a built-in camera since it can be swapped to a different or newer camera if desired.

Eyepieces

Eyepieces magnify the image outputted by the objectives and are typically 10x. The field number, typically 18 or 20 mm, shows the size of the eyepiece's field of view.

Objectives

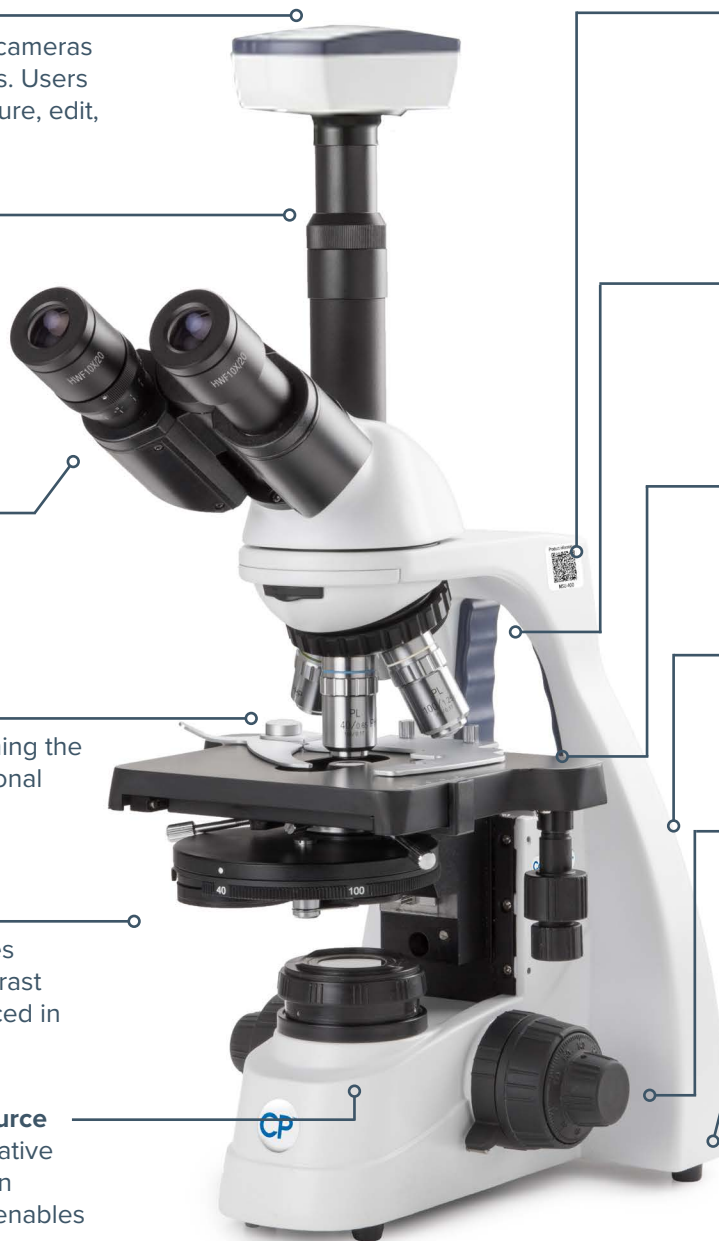
Microscope objectives are crucial for determining the images magnification and resolution. International standards are used during production. Typical objective magnifications are 4x/10x/40x/100x.

Condenser

The 1.25 NA condenser's diaphragm maximizes the optical systems resolution and allows contrast adjustment. Color or density filters can be placed in the filter holder.

Collector Lens System and NeoLED Light Source

The lens system maximizes light output. Innovative NeoLED design increases the light output even more, requiring less energy. The total system enables higher resolution very close to the theoretical diffraction limit of the optics.



Head

All Cole-Parmer microscopes feature an ergonomically comfortable viewing head, adjustable interpupillary distance, and a diopter adjustment on one tube. Many microscopes feature a Siedentopf head to adjust interpupillary without impacting the focus.

Nosepiece

A rotatable metal turret holding four or five microscope objectives for precise switching of magnifications. The revolver is mounted reversed for more workspace.

Stage

The specimen sits on the stage. Move the specimen slide in the X or Y direction. Low positioned stage controls prevent fatigue.

Microscope Base and Arm

A large base guarantees the necessary stability of the microscope. The arm includes an integrated carrying grip for easy and safe transportation.

Course and Fine Focusing System

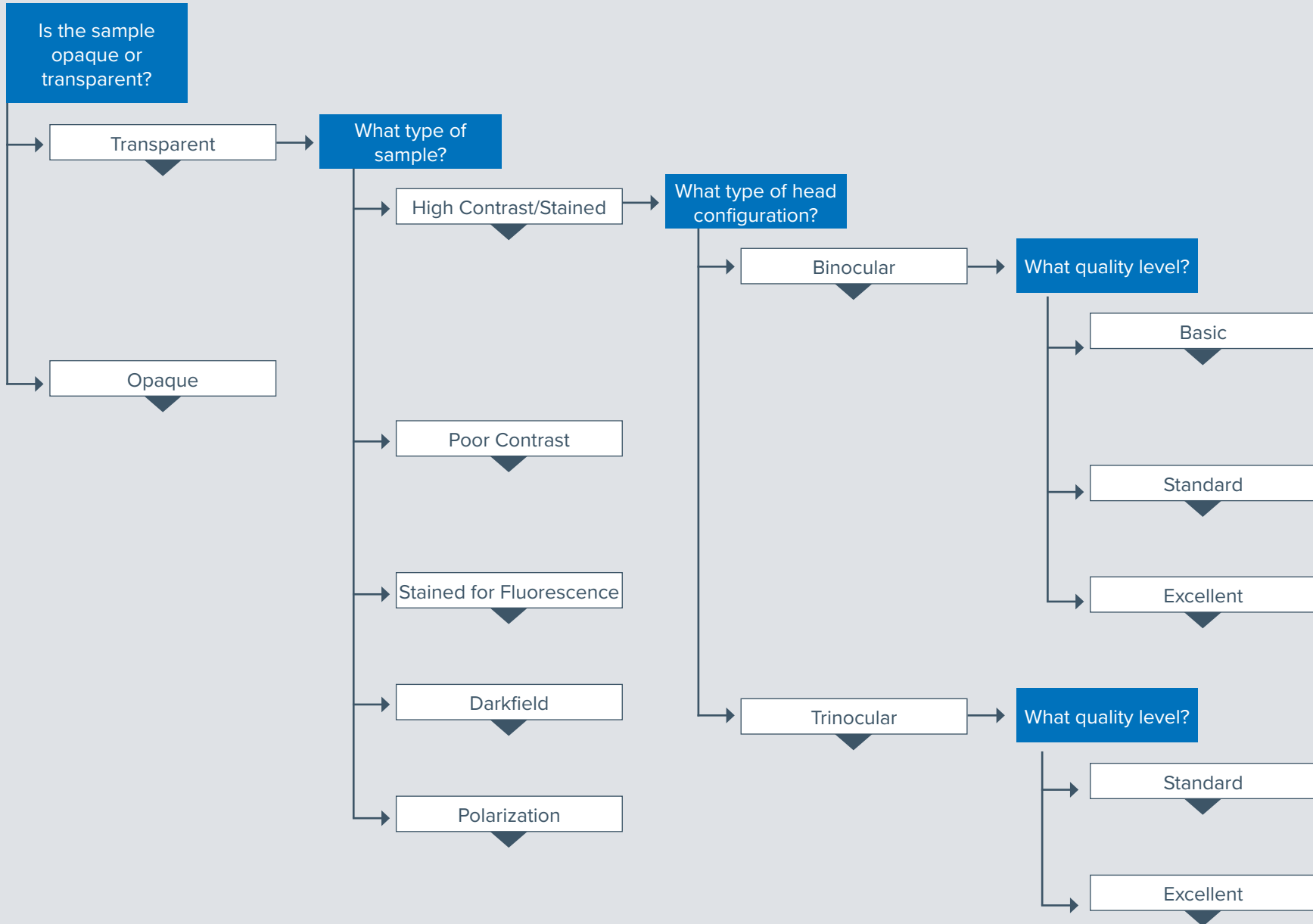
The full metal mechanical system moves the specimen in focus. With rack stop to prevent damage to prepared microscopy slides and objectives.

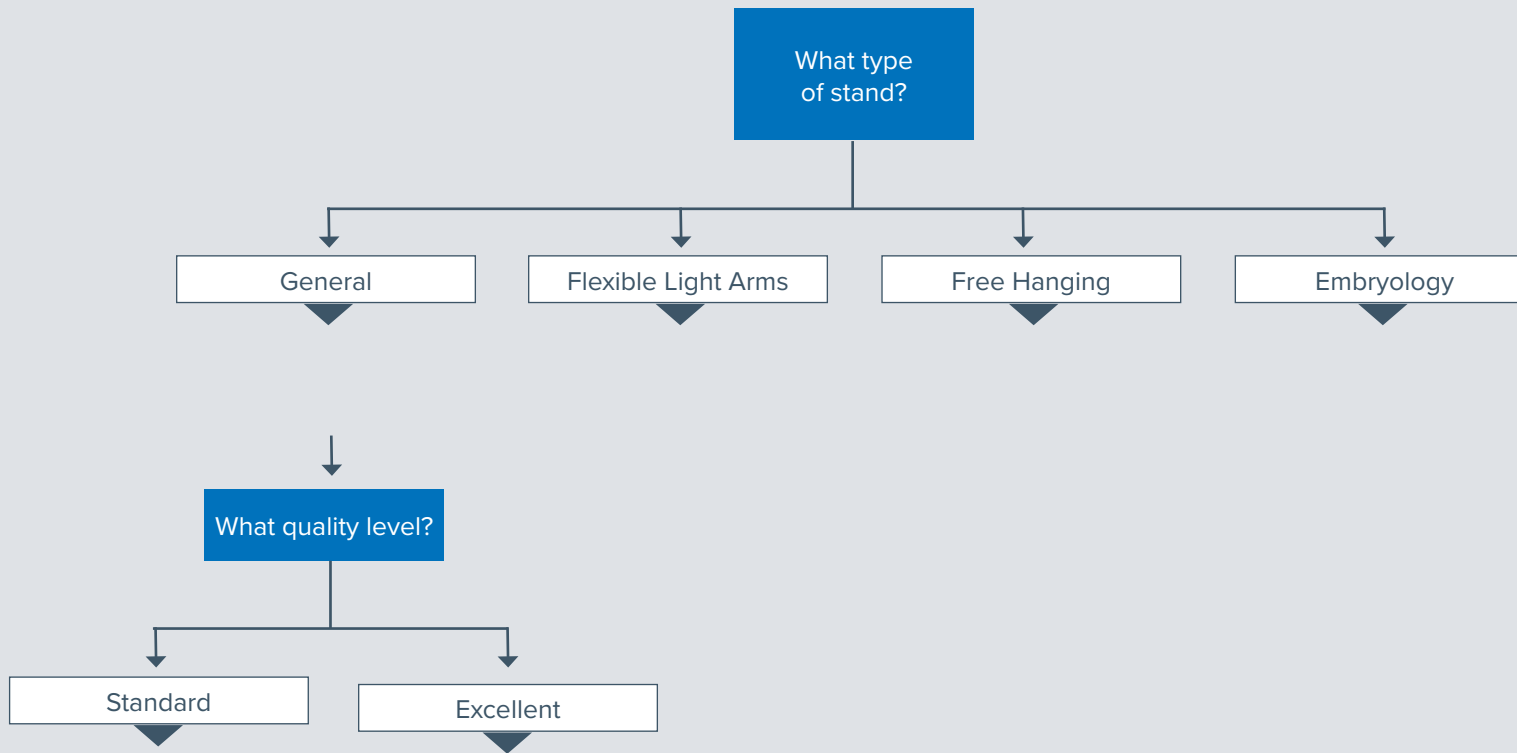
Corded and Cordless Use

Microscope can be used both corded and cordless with built-in rechargeable batteries (optional or standard depending on model).

Find the Perfect Microscope for Your Application









Cole-Parmer Compound Microscopes Range

Series	Binocular	Trinocular (camera ready?)*	Max objectives	4/10/40/100 SMP objectives	10/20/40/100 SMP objectives	5/10/20/50 SMP objectives	Semi-plan or Plan	LED or Köhler LED	NeoLED	Incident illumination	Battery Operation**	Application	Item number
MSU-100	Yes	—	4	Yes	—	—	N/A	—	Yes	—	Yes	General	78903-90
MSU-200	Yes	—	4	Yes	—	—	SP	—	Yes	—	Yes	General	78904-00
MSU-400	Yes	—	4	Yes	—	—	SP	—	Yes	—	Optional	General	78904-02
	—	Yes	5	Yes	—	—	SP	—	Yes	—	Optional	General	78904-04
	—	Yes	5	Yes	—	—	P	—	Yes	—	Optional	General	78904-07
	—	Yes	5	—	Yes	—	P	—	Yes	—	Optional	Phase contrast	78904-10
	—	Yes	5	Yes	—	—	P	—	Yes	—	Optional	Fluorescence	78904-13
MSU-600	Yes	—	5	Yes	—	—	SP	—	Yes	—	Mains Only	General	78904-16
	—	Yes	5	Yes	—	—	SP	—	Yes	—	Mains Only	General	78904-18
	—	Yes	5	Yes	—	—	P	—	Yes	—	Mains Only	General	78904-21
	—	Yes	5	—	Yes	—	P	—	Yes	—	Mains Only	Phase contrast	78904-24
	—	Yes	5	Yes	—	—	P	—	Yes	—	Mains Only	Darkfield	78904-27
	—	Yes	5	—	—	Yes	P	—	Yes	Yes	Mains Only	Materials, metallurgical	78904-30
	—	Yes	5	—	—	Yes	P	—	Yes	Yes	Mains Only	Materials, metallurgical	78904-33

* Camera can be added

** All units have mains plug, 100-240 VAC, 50/60 Hz



Cole-Parmer Stereozoom Microscopes Range

Series	Trinocular	0.7–4.5x zoom	0.65–5.5x zoom	Rack and pinion stand	Pillar stand	Universal stand	Double arm boom stand	Gooseneck dual LED	Item number
MSS-200	Yes	Yes	—	—	Yes	—	—	—	78904-66
	Yes	Yes	—	Yes	—	—	—	—	78904-69
MSS-400	Yes	Yes	—	Yes	—	—	—	—	78904-48
	Yes	—	Yes	—	Yes	—	—	—	78904-51
	Yes	—	Yes	—	—	—	Yes	—	78904-54
	Yes	—	Yes	—	—	Yes	—	—	78904-57
	Yes	—	Yes	—	Yes	—	—	—	78904-60
	Yes	—	Yes	—	—	—	—	Yes	78904-63

Cole-Parmer MSU-100 Series – Excellent optical clarity and resolution

- Entry-level microscope
- Binocular model
- Revolving reversed nosepiece
- Integrated X-Y mechanical stage
- NeoLED illumination
- Cordless or cordless operation
- Ergonomic carrying grip
- 5-year warranty



Cole-Parmer MSU-100 Series – Specifications

Microscopes for education need to be easy-to-use and rugged, which means able to withstand extensive use and rough handling. High-quality, yet affordably priced, these microscopes match these demands due to the well-thought construction and use of high-quality materials.

Head

- Binocular model with 45° inclined tubes, adjustable interpupillary distance between 48 and 75 mm and a ± 5 diopter adjustment on left tube
- All heads are 360° rotatable and secured

Nosepiece

- Revolving nosepiece for four reversed objectives on ball bearings

Objectives

- Achromatic 4x/0.10, 10x/0.25, S40/0.65, and S100x
- All optics are anti-fungus treated and anti-reflection coated for maximum light throughput

Focusing

- Coaxial coarse and fine adjustments, 200 graduations, 15 μm per graduation, 3 mm per rotation, and total travel approximately 15 mm
- Supplied with an adjustable rack stop to prevent damage to samples and objectives

Stage

- Supplied with 115 x 100 mm stage with integrated 55 x 20 mm X-Y mechanical stage

Condenser

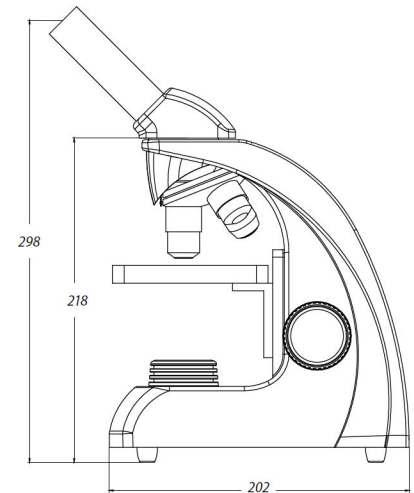
- Height adjustable Abbe condenser N.A. 1.25 with iris diaphragm and filter holder

Illumination

- Replaceable 1 W NeoLED illumination system for increased light output
- Internal rechargeable batteries with an external 100–240 V battery charger/mains adapter

What's Included

- Microscope, dust cover, white filter, rechargeable batteries, and mains adapter/charger



Dimensions

298 (h) x 151 (w) x 202 mm (d) | 2.8 kg

Description	SMP objectives	Objective type	Power	Item number
Binocular compound microscope	4/10/S40/S100x	Achromatic	100 to 240 V, 50/60 Hz	78903-90

Cole-Parmer MSU-200 Series – Robust and sturdy with crisp, high-resolution images

- WF 10x/18 mm eyepiece(s)
- Reversed nosepiece for four semi plan objectives
- Integrated X-Y mechanical stage
- Coaxial coarse and fine adjustment with rack stop
- Height adjustable Abbe condenser with iris diaphragm and filter holder
- 1 W NeoLED illumination for increased light output
- Rechargeable batteries and integrated power supply
- Ergonomic stand
- 5-year warranty



Cole-Parmer MSU-200 Series – Specifications

The modern MSU-200 Series microscope is especially developed for entry-level applications and educational purposes, with a primary focus on ergonomics and quality. These microscopes are supplied with secured eyepieces and adjustable rack stop to prevent damage to samples and objectives. The DIN WF 10x/18 eyepieces and the semi-plan achromatic corrected 45 mm DIN objectives generate a crisp high-resolution image. When changing magnification, the image remains perfectly in focus and centered.

Eyepiece(s)

- Wide field WF 10x/18 mm eyepieces

Head

- Binocular model with 30° inclined tubes, interpupillary distance is adjustable between 48 and 75 mm, and equipped with a ±5 diopter adjustment on the left tube
- 360° rotatable and secured with a screw

Nosepiece

- Reversed quadruple nosepiece on ball bearings

Objectives

- Semi-plan 4x/0.10, 10x/0.25, S40x/0.65 objectives, and S100x/1.25 oil immersion objective
- The 40x and S100x oil immersion objectives are spring loaded
- All optics are anti-fungus treated with anti-reflection coating for maximum light throughput

Focusing

- Coaxial coarse and fine adjustments with 200 graduations, precision 2 μm per graduation, 0.4 mm per rotation
- Coarse adjustments equipped with friction control
- Total travel range approximately 23 mm
- Adjustable rack stop to prevent damage to samples and objectives

Stage

- 130 x 130 mm with mechanical 70 x 28 mm X-Y translation stage

Condenser

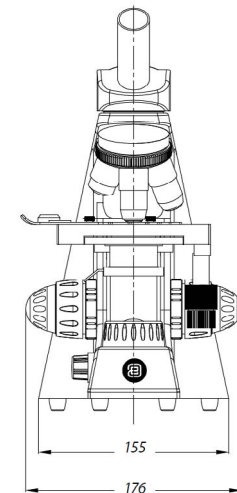
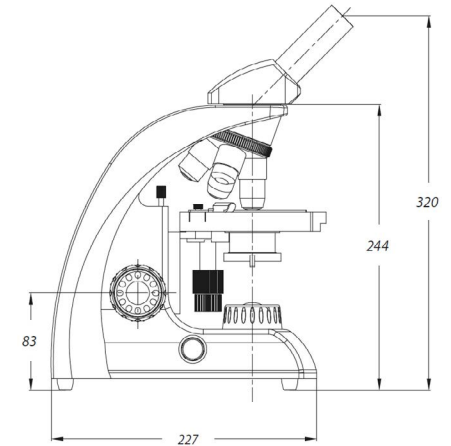
- Height-adjustable Abbe condenser N.A. 1.25 with iris diaphragm and filter holder

Illumination

- Adjustable 1 W NeoLED illumination system for increased light output
- Rechargeable batteries and integrated power supply for cordless operation

What's Included

- Microscope, dust cover, spare fuse, 5 mL immersion oil for S100x objective, crosshairs eyepiece for centering, and power cord



Dimensions

360 (h) x 176 (w) x 227 mm (d) | 4.0 kg

Description	SMP objectives	Objective type	Power	Item number
Binocular compound microscope	4/10/S40/S100x	Brightfield semi-plan	100 to 240 V, 50/60 Hz	78904-00

Cole-Parmer MSU-400 Series – Clear, bright images at every magnification

- Smooth-operating, reversed ball-bearing quadruple or quintuple nosepiece for effortless objective changes
- Integrated rackless X-Y mechanical stage
- Equipped with a Siedentopf type head with 30° incline for comfort
- ± 5 diopter adjustment on left eyepiece
- Integrated carrying grip for easy portability
- 5-year warranty



Cole-Parmer MSU-400 Series – Specifications

Overview

- Versatile and advanced microscopes
- Binocular and trinocular models
- HWF 10x/20 mm eyepieces
- Plan IOS and Plan Fluarex objectives
- E-plan IOS, Plan IOS and Plan Fluarex objectives
- 3W NeoLED adjustable illumination system
- Cable storage system and anti-theft system

Cole-Parmer MSU-400 Series boast the finest optical components that guarantee performance. These modern microscopes focus on ergonomics and today's quality standards ideal for secondary schools, universities, small- and mid-sized laboratories, and veterinary applications.

The DIN HWF 10x/20 eyepieces and the semi plan achromatic corrected 45 mm DIN objectives of the MSU-400 models generate a crisp, high-resolution image. When changing magnification, the image remains perfectly in focus and centered. The 120 x 120 mm plain stage and 130 x 130 mm stage with double layered 70 x 28 mm X-Y mechanical stage enable a 2 μ m precision positioning of the specimen.

Multi-layer coatings on the objectives allow uses in the most demanding applications. Exceptional spherical aberration correction ensures the perfect centering of the objectives. Easily focus on your sample using double coaxial low-positioned coarse and fine adjustments with 180° graduations. The coarse adjustment is equipped with friction control. Adjustable rack stop prevents damage to sample and objectives.

All models feature a scratch-resistant stage with integrated X-Y rackless mechanical stage, Vernier scale, and soft-close removable specimen holder. The rackless stage, has no protruding parts for smooth movements.

Safely transport the microscopes using the integrated carrying handles. Store excess cable in the back of the microscope during use and stow away cable during transport and storage. The anti-theft slow lets you secure the microscope in place.

Eyepiece(s)

- High wide field HWF 10x/20 mm secured eyepiece(s) with 20 mm field of view (\varnothing 23.2 mm tube)

Head

- Available with binocular or trinocular heads.
- Equipped with a Siedentopf type head, 360° rotatable and equipped with 30° inclined \varnothing 23.2 mm tubes.
- Binocular and trinocular models have a diopter \pm 5 adjustment on the left eyepiece. The interpupillary distance is adjustable between 48 to 76 mm.
- Models equipped with plan infinity corrected PLi objectives have a unique swiveling system of the eyepiece tubes for ergonomic positioning of the eyepieces in a high and in a low position.
- Trinocular head comes with a \varnothing 23.2 mm tube, ensuring maximum flexibility.
- Prisms inside the heads are designed to minimize the light absorption for perfect digital imaging.
- Unique rotating system allows the ergonomic positioning of both tubes in a high (431 mm) and in a low position (377 mm).

Cole-Parmer MSU-400 Series – Specifications (continued)

Nosepiece

Revolving and reversed ball-bearing quadruple or quintuple nosepiece.

Objectives

- The latest production techniques and multi-layer coatings used for the manufacturing of the MSU-400 objectives enable the MSU-400 to be used for high-demand applications. World class spherical aberration correction and modern CNC and assembly technology ensure the perfect centering of the objectives.
- Brightfield models: E-plan IOS infinity corrected, plan IOS infinity corrected 4x/0.10, 10x/0.25, 20x/0.40, S40x/0.65, S60x/0.85, and S100x/1.25 oil immersion objectives.
- Phase contrast models: Plan phase IOS infinity corrected 10x/0.25, 20x/0.40, S40x/0.65 and S100x/1.25 oil immersion objectives.
- All S40x, S60x and S100x oil immersion objectives are spring loaded. All optics are anti-fungus treated and anti-reflection coated for maximum light throughput.

Focusing

Double coaxial, low-positioned coarse and fine adjustments with 180 graduations. Precision 1.1 μm , 200 μm per rotation, total travel range approximately 19 mm. Supplied with an adjustable rack stop to prevent damage to samples and objectives. The coarse adjustment is equipped with friction control.

Stage

All units are equipped with a scratch-resistant 152/197 x 131 mm stage with integrated 75 x 36 mm X-Y rackless mechanical stage, Vernier scale and soft-close removable specimen holder. The rackless stage has no protruding parts, enables smooth movements and is safer in use. Low positioned X-Y control knobs prevent fatigue during long working sessions.

The MSU-400 can be equipped with a heating stage which can be set up to 50 °C by a PID temperature controller — only available with newly purchased microscopes.

Condenser For Brightfield

The standard height-adjustable Abbe N.A. 1.25 condenser for brightfield comes with an iris diaphragm and swing-out filter holder.

Polarization

The Cole-Parmer MSU-400 has an integrated slot above the nosepiece for an optional polarization filter.

NeoLED Illumination

The 3 W adjustable Köhler NeoLED diascope illumination is powered by an internal 100–240 V power supply making it suitable for worldwide use. The innovative NeoLED design offers larger apertures, allowing the optical system of the MSU-400 microscope to produce images at higher resolutions, very close to the theoretical diffraction limit of the optics. Other benefits of the NeoLED is low energy consumption, no heating and a long operating lifetime.

Köhler Illumination

A Köhler illumination ensures, for all infinity corrected IOS models, the highest possible contrast and the maximum achievable resolving power. It generates a uniform illumination of the sample and eliminates all interference from dust on lenses and side glare of the light source.

Cordless Use

The optional rechargeable batteries turn the Cole-Parmer MSU-400 into a cordless system.

Cable Storage System

Allows users to easily stow away excess cable length into the back of the instrument during operation and to roll up the power cable for easy storage.

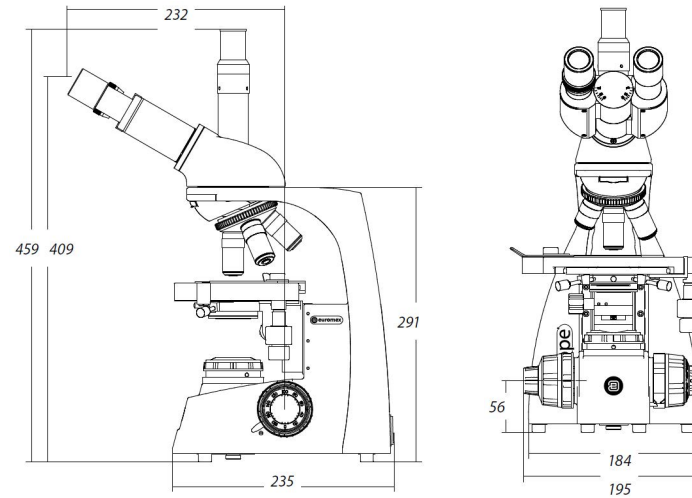
Carrying Grip

The integrated carrying grip at the back of the microscope ensures safe transportation.

Cole-Parmer MSU-400 Series – Specifications (continued)

What's Included

Microscope, dust cover, white filter, tools, spare fuse, 5 mL immersion oil, and power cord. Phase contrast model is supplied with green filter and alignment telescope. Smart foam packaging ensures a low environmental footprint while maintaining a maximum of safety during transport. Fluorescence LED model includes a fluorescence attachment with four 5 W LEDs for fluorescence excitation and a UV protection shield.



Dimensions

459 (h) x 195 (w) x 235 mm (d) | 6.6 kg

Description	Objectives	Objective type	Power	Item number
Binocular compound microscope	4/10/S40/S100x E-Plan IOS	Brightfield semi-plan	100 to 240 V, 50/60 Hz	78904-02
Trinocular compound microscope	4/10/S40/S100x E-Plan IOS	Brightfield semi-plan	100 to 240 V, 50/60 Hz	78904-04
Trinocular compound microscope	4/10/S40/S100x Plan IOS	Brightfield plan	100 to 240 V, 50/60 Hz	78904-07
Trinocular compound microscope	10/20/S40/S100x Plan Phase IOS	Phase contrast	100 to 240 V, 50/60 Hz	78904-10
Trinocular compound microscope	4/10/S40/S100x Plan Fluarex PLFi	Fluorescence-LED	100 to 240 V, 50/60 Hz	78904-13

Cole-Parmer MSU-600 Series – Powerful and ergonomic

- Smooth-operating, revolving nosepiece provides effortless objective changes
- Equipped with a Siedentopf type head with 30° incline for comfort
- Unique rotating system allows ergonomic positioning of both tubes in a high (431 mm) and in a low (397 mm) position
- 5-year warranty



 BINOCULAR	 TRINOCULAR	 ROTATING HEAD 360°	 TRANSMITTED LIGHT
 INFINITY CORRECTED	 KÖHLER ILLUMINATION	 NEOLED ILLUMINATION	 PHASE CONTRAST ILLUMINATION
 DARKFIELD ILLUMINATION	 ABBE CONDENSER	 ANTI-BACTERIAL PROTECTION	 INCIDENT LIGHT
 POLARIZED LIGHT	 INTERNAL POWER SUPPLY	 5-YEAR WARRANTY	

Cole-Parmer MSU-600 Series – Specifications

Overview

- EWF 10x/22 mm eyepiece
- Binocular and trinocular models
- Quintuple reversed nosepiece
- E-plan IOS, plan IOS, and plan phase objectives
- 187/230 x 140 mm rackless stage
- Intensity adjustable 3 W NeoLED Köhler illumination
- Sensor for energy savings
- Cable storage system

The MSU-600 Series microscopes meet today's ergonomic standard as they provide more comfort and convenience for microscopists with ergonomic features such as height adjustable eye tubes and a large rackless stage with double slide holder. The modern design and compact size allow more working space, safer operation, and enable easy storage. These microscopes are available in various configurations suitable for high schools, universities, life science, and biomedical science. Observation methods such as brightfield, phase contrast, cardioid mirror darkfield, basic polarization, and fluorescence are available.

Eyepieces

- Extended plan wide field EWF 10x/22 mm eyepieces with 22 mm field of view and adjustable diopter on both eyepieces for infinity corrected IOS plan and plan phase systems and adjustable diopter on the left tube for EPLi systems (Ø 30 mm tube)

Head

- Trinocular head of the plan infinity corrected models has an optical path selector (100:0 / 50:50) and ± 5 diopter adjustments on both Ø 30 mm tubes
- Trinocular head of the E-plan infinity corrected models has a fixed, built-in beam splitter (50:50) and ± 5 diopter adjustment on the Ø 30 mm left tube
- A unique rotating system allows ergonomic positioning of both tubes in a high (431 mm) and a low (397 mm) position
- Trinocular head comes with a Ø 23.2 mm photo port

Nosepiece

- Revolving quintuple reversed nosepiece for a maximum of five objectives

Stage

Can be equipped with three types of stages:

- 187/230 x 140 mm rackless stage equipped with double slide holder and integrated 79 x 52 mm X-Y mechanical stage. The MSU-600 rackless stage has no protruded parts, enables smoother movements and is safer
- 150 x 140 mm stage with integrated 78 x 53 mm X-Y mechanical stage with plain inserts
- 360° rotating Ø 160 mm graduated stage with two object clamps

Cole-Parmer MSU-600 Series – Specifications (continued)

Condenser for Brightfield

The standard height-adjustable Abbe N.A. 1.25 condenser for brightfield accepts sliders with phase annuli suitable for plan phase 10x/20x or S40x/S100x oil immersion IOS objectives for economical phase contrast

Condenser for Zernicke Phase Contrast

An optional height-adjustable Zernicke N.A. 1.25 phase contrast disc condenser with plan phase 10x/20x/S40x and S100x oil immersion objectives.

Condenser for Darkfield (Standard)

The condenser is equipped with reflective cardioid mirrors and a built-in high powered 5 W LED light source. Together with a S100x objective with built-in iris diaphragm, this enables a 1000x magnification darkfield solution. The power supply of the 5 W LED light source is built in the microscope. The darkfield condenser can easily be exchanged for a brightfield condenser which is also included.

Focusing

- Coaxial coarse and fine adjustments, 200 graduations, 1 μm per graduation, 200 μm per rotation, total travel range is approximately 24 mm
- Adjustable rack stop to prevent damage to samples and objectives
- Coarse adjustments equipped with friction control

Illumination

- 3 W adjustable Köhler NeoLED diascope illumination with internal 100 to 240 V power supply for brightfield and phase contrast models
- The innovative NeoLED design offers larger apertures, allowing the optical system of the MSU-600 microscope to produce images at higher resolutions, very close to the theoretical diffraction limit of the optics.
- Other benefits of the NeoLED is low energy consumption, no heating and a long operating life span
- The Köhler illumination on models with IOS plan and plan phase infinity corrected system provides high contrast and a maximum achievable resolving power of the optics
- High-power 5 W LED built-in the cardioid mirror condenser for darkfield

Sensor

The unique sensor is developed to avoid unnecessary loss of energy. The illumination of the microscope automatically switches off shortly after user steps away from their position.

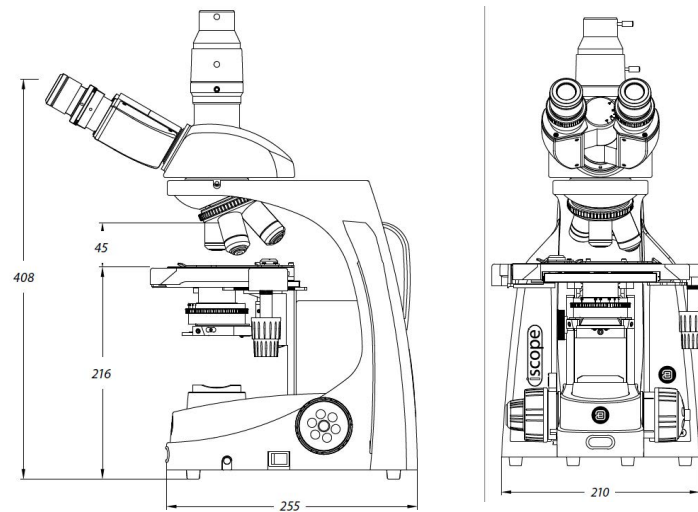
Cable Storage System

Allows users to easily insert the power cable into the back of the instrument, which enables easy storage. The integrated carrying grip at the back of the microscope ensures safe transportation of the microscope.

What's Included

Microscope, dust cover, spare fuse, 5 mL immersion oil for models with S100x objective, and power cord.

Cole-Parmer MSU-600 Series – Specifications (continued)



Dimensions

480 (h) x 210 (w) x 255 mm (d) | 9.0 kg

Description	Objectives	Objective type	Stage	Power	Item number
Binocular compound microscope	4/10/40/100x E-Plan IOS	Brightfield semi-plan	187/230 x 140 mm rackless stage	100 to 240 V, 50/60 Hz	78904-16
Trinocular compound microscope	4/10/40/100x E-Plan IOS	Brightfield semi-plan	187/230 x 140 mm rackless stage	100 to 240 V, 50/60 Hz	78904-18
Trinocular compound microscope	4/10/40/100x Plan IOS	Brightfield plan	187/230 x 140 mm rackless stage	100 to 240 V, 50/60 Hz	78904-21
Trinocular compound microscope	10/20/40/100x Plan Phase IOS	Phase contrast plan	187/230 x 140 mm rackless stage	100 to 240 V, 50/60 Hz	78904-24
Trinocular compound microscope	4/10/40/100x Plan IOS	Darkfield plan	187/230 x 140 mm rackless stage	100 to 240 V, 50/60 Hz	78904-27
Trinocular compound microscope	5/10/20/S50x Plan PLMi IOS	Metallurgical plan	150 x 140 mm mechanical rackless stage	100 to 240 V, 50/60 Hz	78904-30
Trinocular compound microscope	5/10/20/S50x Plan PLPOLRi	Polarization plan	Ø 160 mm rotatable round stage	100 to 240 V, 50/60 Hz	78904-33

Cole-Parmer MSS-200 Series – Robust and sturdy with crisp, high-resolution images

- Robust and sturdy
- 0.7x to 4.5x zoom parfocal objective with magnification from 7x to 45x
- Trinocular 45° inclined tubes with 360° rotatable head
- Incident and transmitted adjustable LED illuminations
- Coarse adjustment with tension control
- Double 3 W LED illumination
- Ergonomic carrying grip
- 5-year warranty



Cole-Parmer MSS-200 Series – Specifications

The MSS-200 Series microscopes are developed for laboratory applications. Trinocular microscopes feature paired wide field eyepieces WF 10/21 mm with eyecups. The head features an adjustable diopter with an interpupillary distance adjustable between 55 and 75 mm. The incident and transmitted adjustable LED illuminations can be used at the same time. Microscope is constructed of an alloy metal cast and is stove hardened off-white painted with a transparent and black/white staged plate.

Eyepieces

- Pair of WF 10x/21 mm eyepieces with eyecups

Head

- Trinocular 45° inclined tubes
- Diopter adjustment on both eyepieces
- Interpupillary distance between 55 mm and 75 mm
- Trinocular head is supplied with a fixed light path beam splitter (50:50)

Illumination

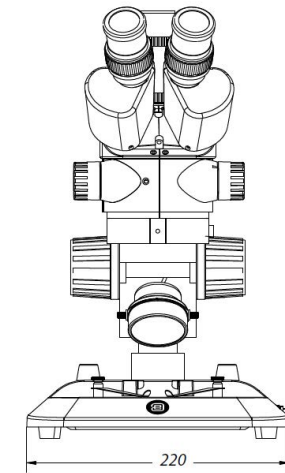
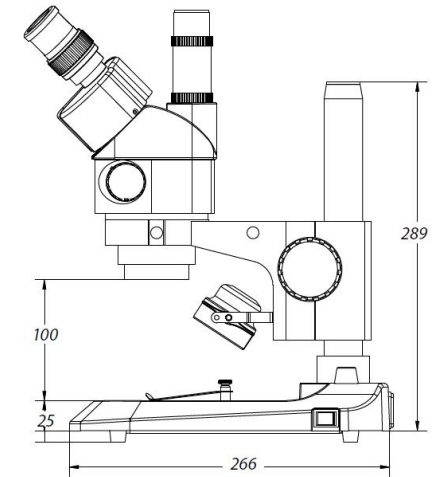
3 W transmitted and incident LED illuminators can be used simultaneously.

Stands

Pillar and rack and pinion stands are equipped with ergonomically-designed flat bases, complete with two object clamps and Ø 60 mm transparent and black/white stage plate.

What's included

Microscope, dust cover, eyecups, spare fuse, 60 mm transparent and black/white stage plates, two object clamps, and power cord



Dimensions

330 (h) x 220 (w) x 266 mm (d) | 4.4 kg

Description	Magnification	Objective type	Power	Item number
Trinocular stereozoom microscope; pillar stand	7.0 to 45x zoom	Achromatic	100 to 240 V, 50/60 Hz	78904-66
Trinocular stereozoom microscope; rack and pinion stand	7.0 to 45x zoom	Achromatic	100 to 240 V, 50/60 Hz	78904-69

Cole-Parmer MSS-400 Series – High precision, three dimensional imaging

- Observe specimen with three-dimensional imaging
- 0.65x to 5.5x zoom objective with magnification from 6.5x to 55x
- Field view of 35 mm to 4.9 mm, working distance of 110 mm
- Trinocular heads with 45° inclined tubes
- Available with and without LED lighting
- 5-year warranty



Cole-Parmer MSS-400 Series – Specifications

The MSS-400 Series professional stereozoom microscopes are perfect for analyzing all types of material surfaces and for preparing biological samples. These microscopes allow specimen examination with high precision, generating three-dimensional images, suitable for the highest demanding applications. The trinocular stereozoom microscopes are available with a large selection of stands. The interpupillary distance is adjustable between 54 and 75 mm and both eyepieces have ± 5 diopter adjustments.

Eyepieces

- Pair of HWF 10x/23 mm eyepieces

Head

- Trinocular 45° inclined tubes
- Both eyepieces with ± 5 diopter adjustments
- Interpupillary distance between 54 mm and 75 mm
- Trinocular head is supplied with a fixed light path beam splitter (50:50)

Objectives

- 1:8.4 zoom objective with 0.65x to 5.5x magnification, field of view from 35.4 mm to 4.2 mm

Stage

- 180 x 155 mm X-Y mechanical stage with 76 x 55 mm translation stage and transparent glass stage

Illumination

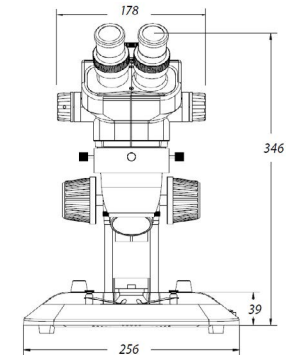
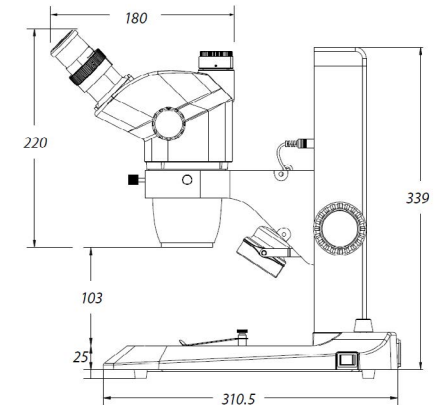
- 3 W transmitted and incident LED illuminators with internal power supply
- Both illuminators can be used simultaneously and the light intensities can be adjusted separately

Stands

- Ergonomically designed rack and pinion or pillar stand with 3 W incident and 3 W transmitted LED illuminations
- Ergonomically designed pillar stand with two 3 W gooseneck type incident LED illuminations on each side and a 3 W transmitted LED illumination
- Ergonomic pillar stand with rotating mirror and 3 W LED transmitted and incident illuminations (-M stand)
- Universal double arm stand mounted on a heavy base. Supplied without illumination
- Universal single arm stand with a table clamp mount. Supplied without illumination

What's Included

- Microscope, dust cover, spare fuse, and power cord



Dimensions

339 (h) x 256 (w) x 311 mm (d) | 5.1 kg

Description	Magnification	Objective	Power	Item number
Professional trinocular stereozoom microscope; rack and pinion stand	6.5 to 55x zoom	Achromatic	100 to 240 V, 50/60 Hz	78904-48
Professional trinocular stereozoom microscope; pillar stand	6.5 to 55x zoom	Achromatic	100 to 240 V, 50/60 Hz	78904-51
Professional trinocular stereozoom microscope; double arm stand	6.5 to 55x zoom	Achromatic	100 to 240 V, 50/60 Hz	78904-54
Professional trinocular stereozoom microscope; single arm stand	6.5 to 55x zoom	Achromatic	100 to 240 V, 50/60 Hz	78904-57
Professional trinocular stereozoom microscope; embryology pillar stand	6.5 to 55x zoom	Achromatic	100 to 240 V, 50/60 Hz	78904-60
Professional trinocular stereozoom microscope; pillar stand with dual LED flexible arms	6.5 to 55x zoom	Achromatic	100 to 240 V, 50/60 Hz	78904-63

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