OLYMPUS MICROSCOPES

Gallenkamþ



OLYMPUS MICROSCOPES

As exclusive Distributors in the United Kingdom only for biological microscopes made in Japan by Olympus Optical Co. Ltd. we are unable to offer for sale outside the U.K.

All lenses fitted to Olympus microscopes are hard coated for protection, maximum contrast and resolution.

All Olympus microscopes have an adjustment on the coarse

focus which enables the user to vary the torque needed to rotate the knobs. It is only necessary to rotate one knob in the opposite direction from the other to tighten or loosen the movement.

LENS CODE

Applicable to optical elements of all Olympus microscopes.

Eyepieces

H -- Huygenian.

R - Ramsde

P — Compensated for chromatic aberration and distortion of objectives.

K — As P, but for use with high power or fluorite objectives.

WF - Wide field.

Bi - Binocular.

G - Paired Greenough type stereoscopic syepieces.

Objectives

All objectives are corrected for chromatic aberration.

N - Normal dry system.

NZ — Normal dry system for zoom microscope.

S — Spring mounted.

Iris diaphragm.

PI - Plan (aplanatic), compensated for spherical

aberration.

FI - Fluorite, semi-apochromatic.

ML-050

Olympus MODEL MIC MICROSCOPE

A compaginexpensive microscope for schools use. Supplied with plastics carrying case.

- Inclined monocular head
- Fixed square stage with clips
- Built-in magnification control
- Stage focusing by rack and pinion
- Adjustable focus stop protects slide and objective
- Magnifications $\times 40 \times 75 \times 150$ and $\times 300$

*ML-050

MICROSCOPE, Olympus Model MIC, as specification.

Each £18.50 m

NOTE: No accessory optical elements can be fitted to this microscope.

ACCESSORIES

ML-801

ML-II4 Substage illuminator, Model LSK-III, plug in type

Replacement lamp ...

For d. ... and prices see entries in List No. sequence.

All items on this page normally available from stock.



Olympus MODEL ST MICROSCOPE

A robust microscope especially recommended for simple routine work and for schools use. Supplied with carrying case.

- Fixed square stage with clips
- Rack and pinion focus mechanism
- Rotating click-stop 5-aperture diaphragm
- Double nosepiece with click-stops
- Preset focusing stop avoids damage to slide or objective
- Magnifications from \times 70 to \times 600
- Optical elements—eyepieces $H \times 7$, $P \times 15$ objectives $N \times 10$, $N \times 40$

*ML-070

MICROSCOPE, Olympus Model ST, as specification, including the four optical elements shown above.

Each £32.50 m

For Lens Code see page 484.

ACCESSORY

ML-800 Substage illuminator, Model LSK-II For details a price see entry in List No. sequence.

Olympus MODEL STN MICROSCOPE

This microscope is a Model ST but with optical elements selected and approved by the Nuffield Biology Project for the O-level biology course. Supplied in carrying case.

- Fixed square stage with clips
- Rack and pinion focus mechanism
- Rotating click-stop 5-aperture diaphragm
- Double nosepiece with click-stops
- Preset focusing stop avoids damage to slide or objective
- Magnifications $\times 40$ and $\times 100$
- Optical elements-eyepiece H×10 objectives N \times 4, N \times 10

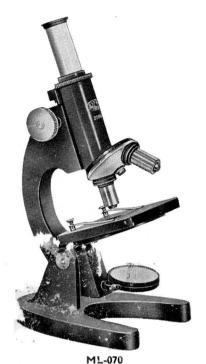
*ML-072

MICROSCOPE, Olympus Model STN, as specification, including the three optical elements shown above. Each £21.75 m

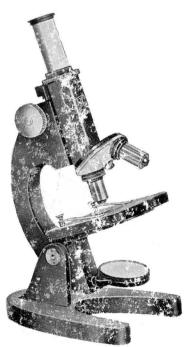
For Lens Code see page 484.

ACCESSORIES

ML-300 Objective, N×20 See entries in List No. sequence. ML-800 Substage illuminator, Model LSK-II



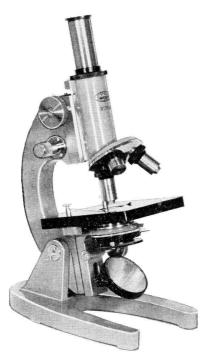




ML-072



ML-074



ML-075

Olympus MODEL HSB MICROSCOPE

A versatile microscope suitable for use in schools and industrial laboratories.

- Monocular body which can be inclined through 90°
- Triple nosepiece
- Coarse and fine focusing
- Fixed square stage with clips, drilled to accept accessory mechanical stage
- Simple fixed condenser
- Rotating click-stop 5-aperture diaphragm
- Preset focusing stop
- Magnification from \times 40 to approx. \times 400
- Optical elements eyepiece $H \times 10$ objectives $N \times 4$, $N \times 10$, $N \times 40$

*ML-074P

MICROSCOPE, Olympus Model HSB, as specification, including the four optical elements shown above and carrying case Each £41.75 m

For Lens Code see page 484.

ACCESSORIES

ML-II2 Graduated mechanical stage Model FM-2

ML-800 Substage illuminator, Model LSK-II

For details and prices see entries in List No. sequence.

Olympus MODEL HSC MICROSCOPE

A versatile microscope recommended for advanced students use.

- Monocular body which can be inclined through 90°
- Triple nosepiece
- Coarse and fine focusing
- Fixed square stage, drilled to accept accessory mechanical stage
- Abbé condenser N.A. I-25 with iris diaphragm
- Condenser focusing by rack and pinion
- Preset focusing and condenser stops
- lacksquare Magnification from imes 40 to approx. imes 400
- Optical elements—eyepiece H×10—objectives N×4, N×10, N×40

*ML-075

MICROSCOPE, Olympus **Model HSC,** as specification, including the four optical elements shown above and carrying case \dots \dots \dots Each **£47·50** m

For Lens Code see page 484.

LSK-II ...

ACCESSORIES

ML-II2 Graduated mechanical stage Model FM-2 ML-800 Substage illuminator, Model

For details and prices see entries in List No. sequence.



486A

Olympus MODEL GB MICROSCOPE

A general purpose, high performance microscope recommended for laboratory use and the teaching of advanced students.

- Graduated draw tube
- Monocular head
- Quadruple nosepiece
- Coarse and fine focusing adjustment knobs
- Fixed square stage with built-in mechanical stage
- Condenser N.A. I.25 with iris diaphragm
- Condenser focusing by rack and pinion
- Magnifications from ×50 to approx. ×1500
- Optical elements—eyepieces $H \times 5$, $P \times 10$, $P \times 15$ objectives $N \times 10$, $N \times 40$, $S \times 100$

*ML-080

MICROSCOPE, Olympus Model GB, as specification, including the six optical elements shown above and carrying case Each £99.50 m

For Lens Code see page 484.

ACCESSORIES

ML-800 Substage illuminator, Model LSK-II See entries in List No. sequence.



ML-080

MICROSCOPE OPTICS

The primary factors governing the performance of an objective are its magnification and its numerical aperture. Other factors, such as focal length and working distance are determined by these two primary factors.

MAGNIFICATION

All objectives listed in this catalogue, except those used with the inverted microscopes, are based on a mechanical tube length of 160 mm. By increasing the mechanical tube length, the initial magnification is increased according to

 $\mbox{Initial magnification} \ \ = \ \ \frac{\mbox{Tube length mm}}{\mbox{Focal length mm}}$

Inclined monocular and binocular bodies are fitted with a correcting lens to compensate for the increase in mechanical tube length.

NUMERICAL APERTURE (N.A.)

The N.A. gives a measure of the resolving power of an objective. The greater the N.A. the greater the resolution. The maximum useful magnification obtainable from an objective is approximately 1000 times the N.A. Thus it can easily be calculated whether a particular combination of objective and eyepiece has reached or over-reached the effective power of the objective.

DEPTH OF FOCUS

The greater the N.A. of an objective, the smaller is the depth of field in which the object remains in focus. By reducing the N.A. and by stopping down the iris diaphragm, greater depth of focus is achieved at a cost of reduced resolution.



Olympus SERIES K MICROSCOPES

A range of modern microscopes for school and college advanced biological laboratories with features normally restricted to expensive research models. Supplied in fitted hardwood case with lock and

The stand is of rigid construction, built on a solid extra heavy cast base.

The monocular head is inclined at 45° and is rotatable through 360°.

EYEPIECES

All eyepieces are hard coated for high transmission and quality definition.

The standard equipment includes a WF×10 wide field eyepiece. Alternative eyepieces are available and are listed on page 497.

The quadruple click-stop nosepiece gives smooth accurate alignment.

OBJECTIVES

All achromatic objectives are parfocal and interchangeable and supplied in dust-proof plastics tubes. Alternative objectives are available and listed on page 496.

STAGE

A large size stage (110 × 140 mm) is predrilled and tapped to accommodate a mechanical stage which is available as an accessory.

Abbé condenser N.A. 1.25 focusing by rack and pinion through a variable iris diaphragm with swing-out filter holder.

A plano-concave mirror is included in the standard equipment. A 20W illuminator ML-114 or Universal Illuminator ML-802 with transformer are available as alternatives.

Vertical movement of the stage, by conveniently located coaxial coarse and fine adjustment controls.

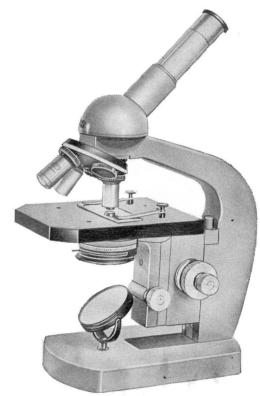
Coarse focus range 28 mm.

Fine focus range 2 mm.

For Lens Code see page 484.

NOTE: ML-100 is approved by the Nuffield Biology Project for the O-level biology course.

- Co-axial coarse and fine focusing knobs
- Substage focusing by rack and pinion
- Inclined rotatable monocular head
- Quadruple nosepiece
- Large size stage to accommodate attachable mechanical stage
- Preset focusing lock protects slides and objectives



ML-100 to ML-104

| | Each | Magnification range | Abbé condenser | Achromatic objectives | Wide field eyepiece | Model | List No. |
|---|------------|-------------------------|-------------------|------------------------|---------------------|-------|-------------|
| | £ 65·75 | ★ 40 to × 400 | N.A. 1·25 | N×4, N×10, N×40 | WF×10 | KI | *ML-100 |
| 1 | 78 · 00 | imes100 to $	imes$ 1000 | N.A. 1·25 | N×10, N×40, S×100 | WF×10 | KII | *ML-102 |
| | 81 · 25 | imes40 to $	imes$ 1000 | N.A. 1·25 | N×4, N×10, N×40, S×100 | WF×10 | KIII | *ML-104 |

ACCESSORIES

*ML-108 Cancelled. Now supplied with ML-100, ML-102 and ML-104.

*ML-II2 Graduated mechanical stage, Model FM-2, range of movement 50×25 mm. Vernier scales reading to 0.1 mm Each £15.25 m

*ML-114 Substage illuminator, Model LSK-III, plug-in type, with 20W lamp and two replacements. Requires no transformer. For 240V a.c. or d.c. supplies.

Each £5.50 £5.50 m ML-801 Replacement lamp, 20W, for illuminator ML-114 ...

Universal light source, Model LSD, with transformer ...

ML-730 Dark field condenser, Model DC

For details and prices entries in List No. sequence.

ML-860 Phase contrast outfit ...

*HJ-520 Immersion oil. In bottle containing 1 fl. oz (approx. 28 ml)... Each £0.06 c



Olympus MODEL KHC MICROSCOPE

A low priced research microscope of modern design suitable for routine medical and biological studies and research. Supplied in fitted hardwood case with lock and key.

- Inclined binocular head rotatable through 360°
- High quality optics
- Magnifications from \times 40 to \times 1000 with optics supplied
- Enclosed rack and pinion
- Coaxial coarse and fine focusing adjustment knobs
- Large built-in mechanical stage
- Pre-set focusing lock protects slides and objectives
- Built-in illuminator

HEAD

Inclined binocular head, rotatable through 360° with interocular distance adjustable from 56 mm to 74 mm and individual acuity adjustment to facilitate sharpest possible image.

EYEPIECES

All eyepieces are hard coated for high transmission and quality definition.

NOSEPIEC2

The quadruple click-stop nosepiece gives smooth accurate alignment.

OBJECTIVES

All achromatic objects are parfocal and interchangeable and supplied in dustproof plastics tubes.

STAGE

Horizontal mechanical stage (120 \times 140 mm) with fine vernier graduation. Designed with convenient coaxial controls for slide manipulation through 30 \times 70 mm.

SUBSTAGE

Abbé condenser N.A. $1\cdot 25$ focusing by rack and pinion with variable iris diaphragm and swing-out filter holder and removable blue filter.

ILLUMINATION

The base of the microscope incorporates a pre-centred 20W lamp. Two replacements are supplied.

FOCUSING

Vertical movement of the stage is by coarse and fine focusing controls.

Coarse focus range 28 mm

Fine focus range 2 mm

m

| List No. | Model | Paired eyepieces | | | Magnification | Each |
|-------------|-------|------------------|--------------------------|-----------|---------------|-------------|
| *ML-140 | кнс | BiWF×10 | N×4, N×10 N×40, S×100 | N.A. 1·25 | ×40 to ×1000 | £ 152·00 |

For Lens Code see page 484.

REPLACEMENT PART

*ML-148 Lamp bulb, 20W, for illuminator ... Each £1:15 m

ACCESSORIES

The optical range can be extended by using additional eyepieces, objectives and condensers listed on pages 496 to 498.

*ML-150 Vertical monocular head for micrographic work. Screws on in place of binocular head ... Each £4.75 m

*ML-152 Plano-concave mirror for use with external illuminator when the built-in illumination is insufficient. Screws on in place of illuminator condenser lens ... Each £3·50 m

*ML-156 Cancelled. Now supplied with ML-140.

HJ-520 Immersion oil. For details and price see entry in List No. sequence.



Olympus SERIES EH RESEARCH MICROSCOPES

High performance research microscopes incorporating built-in illuminator.

- Preset focus lock protects slides and objectives
- Fine focus adjustment to 0.002 mm
- Built-in flexible Köhler illumination
- Wide range of optical elements

STAND

The stand is of rigid construction with acid-resisting finish.

Binocular or trinocular interchangeable heads rotating through 360°. On the binocular and trinocular models the interocular distance is adjustable from 58 mm to 78 mm and individual acuity adjustment is provided. Binocular models are supplied with an interchangeable vertical monocular head for photography.

EXEPIECES

A wide range of high quality Huygenian, wide field and compensating eyepieces is available. All eyepieces are hard coated for high transmission and quality definition.

NOSEPIECE

The quintuple click-stop nosepiece is mounted on ball bearings for smooth and accurate alignment. Objective identification symbols are engraved on the nosepiece.

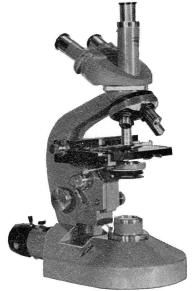
All achromatic objectives are parfocal and interchangeable, and supplied in dust-proof plastics tubes.

STAGE

Horizontal mechanical stage (120 imes 140 mm) with fine vernier graduation. Designed with convenient coaxial controls for slide manipulation through 50 imes 70 mm.

SUBSTAGE

An Abbé condenser N.A. 1.25 focusing by rack and pinion with a 25 mm iris diaphragm, swing-out filter holder and blue filter.



ML-192 without transformer

ILLUMINATION

Precentred illuminating system at the base of the microscope with field diaphragm and compensating switch to give Köhler illumination to each objective.

FOCUSING

Vertical movement of stage by coarse and fine focusing controls.

Coarse focus range 31 · 8 mm.

Fine focus range 1 · 2 mm. Scale calibrated in units of 0.002 mm.

When ordering please state voltage and frequency of supply. ACCESSORIES

Eyepieces Objectives Condensers Objectives
Condensers
Phase contrast outfit See pages 496 to 501

Photomicrographic equipment For immersion oil see HJ-520 on page 487.

For replacement bulbs for illuminating system see ML-803 in List No. sequence

For Lens Code see page 484.

RECOMMENDED ASSEMBLIES

| List No. | Model | Eyepieces (paire | d)‡ | Objectives | Head | Each |
|----------|------------------------------------|--|----------------|--|------------|-------------|
| *ML-190† | EHC-Bi-I with transformer | BiP×7 BiWF×10 BiP×15 | | N×4 N×10 N×40 S×100 | Binocular | £ 266·00 |
| *ML-192 | EHC-Tri-I with transformer | $\left. \begin{array}{ll} BiP\times7 & P\times7 \\ BiWF\times10 & P\times10 \\ BiP\times15 & P\times15 \end{array} \right\}$ | for photo tube | N×4 N×10 N×40 S×100 | Trinocular | 293 · 00 |
| *ML-194 | EHC-Tri-II with transformer | $ \left. \begin{array}{ll} \text{BiP} \times 7 & \text{P} \times 7 \\ \text{BiWF} \times 10 & \text{P} \times 10 \\ \text{BiP} \times 15 & \text{P} \times 15 \\ \text{BiK} \times 20 \end{array} \right\} $ | For photo tube | N×4 N×10 FI×40 FI×100 | Trinocular | 333 · 00 |
| *ML-196 | EHC-Tri-III with transformer | $\left. \begin{array}{ll} \text{BiP} \times 7 & \text{P} \times 7 \\ \text{BiWF} \times 10 & \text{P} \times 10 \\ \text{BiP} \times 15 & \text{P} \times 15 \\ \text{BiK} \times 20 \end{array} \right\}$ | For photo tube | PI × 4 PI × 10 PI × 40 PI × 100 | Trinocular | 412.00 |

[†] Monocular head also supplied.

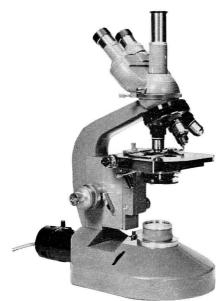
[†] Eyepieces for photo tubes are not paired.



Olympus SERIES FH RESEARCH MICROSCOPES

A range of extremely high performance research microscopes incorporating an ultra sensitive stage focusing to 0.0005 mm.

- Preset focus lock protects slides and objectives
- Fine focus adjustment to 0.0005 mm
- Built-in flexible Köhler illumination
- Wide range of optical elements



ML-212 without transformer

STAND

The stand is of rigid construction, with acid-resisting finish.

HEAD

Binocular and trinocular interchangeable heads are rotatable through 360°. On the binocular and trinocular models the interocular distance is adjustable from 58 mm to 78 mm and individual acuity adjustment is provided. Binocular models are supplied with an interchangeable vertical monocular head for photography.

EYEPIECES

A wide range of the highest quality Huygenian, wide field and compensating eyepieces is available. All eyepieces are hard coated for high transmission and quality definition.

NOSEPIECE

The quintuple click-stop nosepiece is mounted on ball bearings for smooth and accurated alignment. Objective identification symbols are engraved on the nosepiece.

OBJECTIVES

All achromatic objectives are parfocal and interchangeable, and supplied in dust-proof plastics tubes.

STAGES

A square detachable mechanical stage is dovetailed to the body. Coaxial controls operate both directions of movement (50 mm \times 70 mm) with verniers reading to 0·1 mm.

SUBSTAGE

An Abbé condenser N.A. 1.25 focusing by rack and pinion with a 25 mm iris diaphragm, swing-out filter holder and blue filter.

ILLUMINATION

Precentred illuminating system at the base of the microscope with field diaphragm and compensating switch to give Köhler illumination to each objective.

FOCUSING

Vertical movement of stage by coaxial coarse and fine controls located beneath the stage level. The coarse adjustment has a locking device.

Coarse adjustment—rack and pinion—range 32.5 mm.

Fine adjustment—balanced spring tension—range 2 mm.

Calibrated in units of 0.001 mm to permit measurement of thickness of specimen.

Sensitivity: 0.0005 mm.

When ordering please state voltage and frequency of supply.

ACCESSORIES

Eyepieces Phase contrast outfit
Objectives Photomicrographic equipment
Condensers

See pages 496 to 501.

For immersion oil see HJ-520 on page 487.
For replacement bulbs for illuminating system see ML-803 in List No. sequence.

For Lens Code see page 484.

RECOMMENDED ASSEMBLIES

| List No. | Model | E | yepieces (paired) ‡ | Objectives | Head | Each |
|----------|------------------------------------|--------------------------------------|--|--|------------|-------------|
| *ML-210† | FHF-Bi-I with transformer | BiP×7 BiWF×10 BiP×15 | | N×4 N×10 N×40 S×100 | Binocular | £ 348·00 |
| *ML-212 | FHF-Tri-I with transformer | BiP×7 BiWF×10 BiP×15 | $\left. \begin{array}{l} P \times 7 \\ P \times 10 \\ P \times 15 \end{array} \right\} \text{for photo tube}$ | N×4 N×10 N×40 S×100 | Trinocular | 376 · 00 |
| *ML-214 | FHF-Tri-II with transformer | BiP×7 BiWF×10 BiP×15 BiK×20 | $ \left. \begin{array}{l} P \times 7 \\ P \times 10 \\ P \times 15 \end{array} \right\} \text{for photo tube} $ | N×4 N×10 FI×40 FI×100 | Trinocular | 428 · 00 |
| ML-216 | FHF-Tri-III with transformer | BiP×7 BiWF×10 BiP×15 BiK×20 | $ \left. \begin{array}{l} P \times 7 \\ P \times 10 \\ P \times 15 \end{array} \right\} \text{for photo tube} $ | PI × 4 PI × 10 PI × 40 PI × 100 | Trinocular | 495 · 00 |

[†] Monocular head also supplied.

[‡] Eyepieces for photo tubes are not paired.



Olympus PHOTOMAX PHOTOMICROSCOPE

BASIC BODY

Focusing unit. A coaxial system with rack and pinion coarse adjustment range 34 mm and geared fine movement of ± 2 mm adjustable to 0.002 mm.

Illuminating unit. A built-in trans-illuminator with pre-centred bulb provides Köhler illumination through objectives $\times 1.3$ to $\times 100$ by a switch-over system. An epi-illuminator can be attached.

Coaxial controls provide 70 mm horizontal and 32 mm vertical movement with fine vernier adjustment. The stage rotates through 360° and the stage clips are detachable.

VIEWING HEAD

Inclined at 22° for maximum comfort, the head maintains constant tube length at any interpupillary distance. The viewing eyepiece and the camera film are parfocal and specimens can be photographed while being observed. A knob selects the proportion of beamsplitting between the viewing head and the camera. An auxilliary revolving turret magnifier provides $\times 1$, $\times 1 \cdot 2$, $\times 1 \cdot 4$ and $\times 1 \cdot 8$ total magnification without the need to change objectives or eyepieces.

NOSEPIECE

Two detachable rotating nosepieces, each holding up to five objectives, are supplied.

CONDENSERS

An achromatic Abbé condenser N.A. 1.4 and a swing-out top lens condenser N.A. 0.8 are fitted. The achromatic condenser can be rotated to achieve oblique illumination.

PHOTOGRAPHIC UNIT

Exposure system. Automatic exposure timing from 0.01 sec to 10 min with provision for longer exposures by manual timing.

Over exposure detection. An orange lamp lights when the shutter is open and a green lamp extinguishes to warn of over exposure.

Shutter release button. Actuates shutter so as to eliminate vibration, and film is then wound on automatically. A separate button actuates film wind without shutter operation. A red lamp lights when all the film has been exposed.

Sensitivity setting. Calibrated dials cover ASA speed ranges 6 to 3200 monochrome and 12 to 800 colour and ASA regulation range 0.7 to 1.4.

Colour temperature regulation. A null point meter, compensating filters and adjusting knob allow regulation of the light source colour temperature over the range 2854°K to 6000°K.

Cameras. Two standard 35 mm camera backs with automatic screens are provided. The screens allow the cameras to be interchanged when loaded with film. Polaroid, roll film and plate cameras are available.

EYEPIECES

Photography. Wide field, paired, compensated with mask. Magnifications $\times 10$ and $\times 15$ supplied.

Observation. Wide field, paired, compensated, magnification \times 10 supplied.

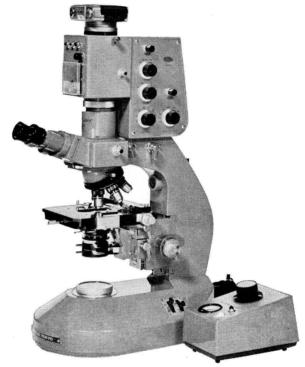
OBJECTIVES

Plan achromatic, flat field \times 4, \times 10, \times 20, \times 40 and \times 100 oil immersion supplied.

FILTERS

A selection of colour temperature compensation, neutral density, monochrome contrast and daylight observation filters is supplied. A highly versatile microscope system which provides extremely accurate black and white or colour photographic records in the fields of biology and medicine.

- Binocular viewing of specimens while photographing
- Precision photographic system with electronically controlled shutter
- Colour temperature regulation
- Clean, well laid out controls
- Film advanced automatically



ML-240

*ML-240

MICROSCOPE, Olympus Photomax, as specification

including: Main body with viewing head, two nosepieces and stage. Substage condenser mount.

Achromatic Abbé and swing-out condensers.

Objectives \times 4, \times 10, \times 20, \times 40, and \times 100. Photography eyepieces \times 10 and \times 15. Observation eyepieces \times 10.

Photographic unit.

35 mm camera backs (2).

Illuminator and transformer.

Colour filters, light, medium and dark blue. Neutral filters, 50%, 12% and 3% transparency. Contrast filters, light green, yellow and blue.

Spare lamps.

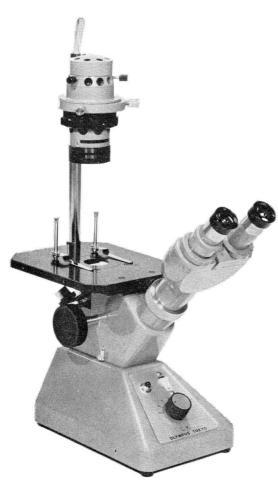
Cable release.

Cargille oil.

Accessory container.

Plastics dust cover, instruction manual and certificate of Each £2035.00 m inspection

- Image appears upright
- Convenient positioning of controls for minimum fatigue and simple operation
- Rack and pinion focusing
- Phase contrast accessories for $\times 10$ and $\times 20$ objectives and polarizing attachment available



ML-282

Olympus Model CK INVERTED MICROSCOPE

A simplified microscope for routine examination of cultures in bottles, dishes or tubes.

HEAD

Binocular or monocular, inclined at 45°.

EYEPIECES

Paired or single $\times 10$.

NOSEPIECE

Triple nosepiece with click-stops for quick accurate centring of objectives.

OBJECTIVES

Achromatic, long working distance $\times 4$ and $\times 10$. Accessory $\times 20$ objective available as optional extra.

STAGE

Large, plain stage 180×150 mm, with stage clips on pillars, height adjustable for holding petri dishes, culture flasks, etc. Side extension plates each measuring 140×70 mm facilitate manipulation of specimens.

ILLUMINATION

Compact illuminator slides on vertical pillar which can be attached to front or rear of stage. Incorporates helical focusing, centring screws for lamp, slide-in filters and iris diaphragm. Lamp is 6V, 12W, fed by a transformer in base of microscope.

FOCUSING

Single focusing system operated by large diameter paired knobs, gives 15 mm movement. The stage remains stationary and permits the contents of large containers to be examined.

MAGNIFICATION

Standard outfit gives $\times 40$ and $\times 100.$ Accessory $\times 20$ objective available for magnification of $\times 200.$

*ML-280

MICROSCOPE, Olympus Inverted Model CK, as specification with inclined monocular head, triple nosepiece, plain stage, single $\times 10$ eyepiece, $\times 4$ and $\times 10$ achromatic long working distance objectives and built-in illumination. For 220 and 240V a.c. supplies.

Each **£140** · **00** m

*ML-282

MICROSCOPE, Olympus Inverted Model CK, as specification with inclined binocular head, triple nose-piece, plain stage, paired $\times 10$ eyepieces, $\times 4$ and $\times 10$ achromatic long working distance objectives and built-in illumination. For 220 and 240V a.c. supplies.

Each £184-50 m

When ordering please state voltage and frequency of supply.

REPLACEMENT PART

*ML-284 Bulb, 12W, spare for ML-280 and ML-282.

Each £0.50 m

ACCESSORIES

*ML-286 Objective, achromatic, long working distance, magnification × 20 Each £6.90 m

*ML-288 Phase contrast accessory for ×10 or ×20 objectives.
Each £9.00 m

*ML-289 Polarising attachment... ... Each £11.00 m

NOTE: The optical elements used with this model are not suitable for use with other *Olympus* microscopes.

Olympus SERIES X STEREOSCOPIC **MICROSCOPES**

For plant classification, entomology, anatomy, geology and other applications.

Binocular and trinocular stereoscopic wide field microscopes with magnification selector knobs. Fixed optics ensure the highest resolution and freedom from distortion in stereomicroscopy. Model with trinocular head is for photomicrography.

- Erect stereoscopic image
- Individual interpupillary and diopter adjustment to compensate for personal visual acuity of user
- Rapid change of magnification



Robust stand with adjustable pillar.

HEAD

The inclined binocular head permits a natural viewing position and reduces user fatigue.

EYEPIECES

Wide field eyepieces $G \times 10$ and $G \times 20$ provided.

STAGE

The stage is provided with clips and clear glass and opal glass plates. The working depth between the stage and the objective varies from 47 to 90 mm depending upon magnification.

MAGNIFICATION

The drum selector gives five different magnifications simply by turning a knob.



ML-320 with ML-820

*ML-310

MICROSCOPE, Olympus Model X, as specification with N×1 objective. Includes fitted case with lock and key Each £166.00 m

*ML-320

MICROSCOPE, Olympus Model X-Tr, as ML-310 but including trinocular head and $\times 10$ parfocal eyepiece for photomicrography and a fixed NX1 objective.

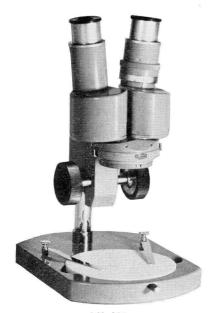
Each £214.00 m

ACCESSORIES

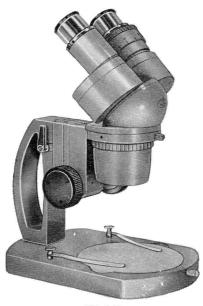
*ML-312 Objective, $N \times 2$ for use with microscope ML-310 only. Each £24.00 m ML-804 Illuminator, Model LSG ML-820 Trans-illuminating substage base For details and ML-823 Iris diaphragm for ML-820 prices see entries in List No. Universal stand, Model VS-IV... ML-830 sequence. Photomicrographic apparatus, Model PM6 ... apparatus,

For Lens Code see page 484.

| Objectives | $G \times 10$ Eyepieces | | G×20 | Eyepieces |
|------------|-------------------------|-------------------------|-----------------------------------|-------------------------|
| | Magnification range | Field of view (mm dia.) | Magnification range | Field of view (mm dia.) |
| N×1 | × 6⋅3 to ×40 | 32 to 5·0 | imes12·6 to $	imes$ 80 | 16 to 2·5 |
| N×2 | ×12·6 to ×80 | 16 to 2·5 | $	imes 25 \cdot 2$ to $	imes 160$ | 8 to 1·25 |



ML-330



ML-340

Olympus LOW POWER STEREOSCOPIC MICROSCOPES MODELS VA-II & VT-II

Low cost stereoscopic microscopes with distortion-free optics. These functional microscopes are valuable in the fields of science. education and medicine. Approved by the Nuffield Biology Project for the O-level biology course.

- Stereoscopic viewing minimises eye-strain
- Natural, vivid images are erect and unreversed
- Optical elements are hard-coated for high trans-

STAND

Acid-resistant and chromium-plated with rubber bumpers. Model VT-II incorporates a hand-grip stand for correct and safe handling.

Binocular head with interpupillary adjustment. Detaches from stand for use on ML-830 Universal stand and ML-347 long-arm stand.

Independent focusing of left eyepiece provides means of obtaining critically sharp images. Paired G×10 eyepieces provide large, distortion-free field.

OBJECTIVES

Model VA II. The paired parfocal $N\times 1$ and $N\times 2$ objectives are interchangeable by a rapid "click-lock" method. They are so mounted as to provide long working distances with an aperture adequate for high resolution.

Model VT-II. Incorporates turret with twin paired objectives for instantaneous magnification change.

Flush-mounted glass plate with screw lock; large size stage clips.

FOCUSING

Rack and pinion focus mechanism, range 50 mm.

MICROSCOPE, Olympus Model VA-II, as specification, including optical elements. Supplied with vinyl dust cover and fitted hardwood case with lock and key. Each £62.00 m

*ML-340

MICROSCOPE, Olympus Model VT-II, as specification, including optical elements. Supplied with vinyl dust cover and fitted hardwood case with lock and key. Each £76.00 m

For Lens Code see page 484.

ACCESSORIES

See entries in List No. sequence.

Long-arm stand for use with ML-330 and ML-340—see ML-347 in List No. sequence.

MAGNIFICATION AND FIELD OF VIEW CHART

| Objective Working distance | Wide field G> | d eyepiece <10 | Wide field G> | d eyepiece < 15 | Wide field eyepiece $G \times 20$ | | |
|----------------------------|------------------|----------------------------|------------------|----------------------------|-----------------------------------|-------------------------|---------|
| | Magnification | Field of view (mm dia.) | Magnification | Field of view (mm dia.) | Magnification | Field of view (mm dia.) | |
| N×1 N×2 | 128 mm 78 mm | ×10 ×20 | 20 10 | ×15 ×30 | 15 7·5 | ×20 ×40 | 10 5 |



494A

Gallenhamp LONG ARM STAND

ML-347A

LONG ARM STAND, Gallenkamp, for use with Olympus microscopes ML-330 and ML-340. A heavy base, with two holes for storage of eyepieces, supports a vertical pillar which has a horizontal arm 12 cm long for holding the microscope. The arm rotates through 360° and can be clamped in any position. An adjustable locking collar prevents the arm from moving down the vertical pillar.

Overall height

33 cm

Base

25 cm wide \times 30 cm deep

Weight

12 kg

Each £17.00 b

OLYMPUS DISSECTING MICROSCOPE

*DR-570

DISSECTING MICROSCOPE, Olympus Model DM-2, with interchangeable \times 10 and \times 20 achromatic lenses. The cast base carries a vertical column on which are mounted the rack and pinion focusing assembly and the working stage. This square stage 60×60 mm can be used with either the clear glass or the frosted glass plates supplied; it is fitted with slip-on hand rests and with slide clips. Illumination is provided by means of a fully adjustable plano-convex mirror. The lenses are held by a double jointed arm which allows examination of any part of the stage. Complete in wooden case with carrying handle.

Each £15.75 m

EYEPIECE GRATICULES

Eyepiece graticules mounted on optical glass disks 19 mm dia. to fit Olympus and most other standard microscope eyepieces. The scales and rulings are in opaque black on a transparent background.

LINEAR RULINGS

| List No. | Type of scale | Length | Subdivisions | Each | |
|----------|---------------------------|--------|--------------|--------|--|
| MP-710 | Horizontal | 10 mm | 100 µm | 2·25 | |
| MP-712 | ,, | 2 mm | 20 μm | 2 · 25 | |
| MP-715 | Horizontal with crossline | 10 mm | 100 µm | 2 · 25 | |
| MP-725 | Vertical/Horizontal | 10 mm | 100 µm | 2 · 25 | |

MP-745

EYEPIECE GRATICULE. With one square, 1 cm side divided into 100 squares of 1 mm numbered and lettered along two edges... ... Each £2.25 m

MP-760

EYEPIECE GRATICULE, half-circle protractor, graduated 0°-90°-0°, on base of 10 mm subdivided in 0·5 mm Fach 62.25

MP-76

EYEPIECE GRATICULE, to BS 3625 for determination of the particle size of powders ... Each £4.00 m

MP-766

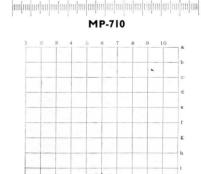
EYEPIECE GRATICULE, Whipple, for counting bacteria and for calibration Each £2.25 m



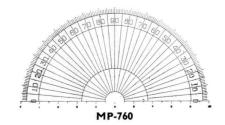
ML-347 with microscope



DR-570



M P.745





Olympus MODEL SZ-III STEREOSCOPIC **ZOOM MICROSCOPE**

A stereoscopic prismatic zoom microscope with a zoom ratio of $5\cdot 7$ for the study of plant and animal anatomy.

- Continuous magnification from \times 7 to \times 40 without defocusing
- Alternative optical elements provide magnification ranges from $\times 3.5$ to $\times 160$
- Perfect stereoscopic and erect images

STAND

Durable acid-resistant finish.

Binocular head inclined at 45° and rotatable through 360° with individual diopter and inter-pupillary adjustments on each eyepiece. Magnification ratio indicated on graduated ring.

Wide field G×10 eyepieces supplied with standard equipment.

A built-in NZ × 1 objective is supplied with the standard equipment.

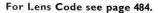
Conversion lenses for alternative magnifications are listed under accessories below.

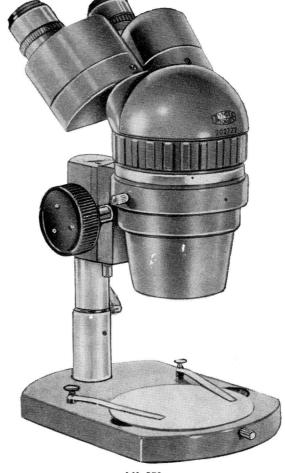
Flush-mounted glass plate with screw lock; large size stage clips.

Single focusing movement by rack and pinion mechanism.

MICROSCOPE, Olympus Model SZ-III, as specification, with clear and opaque glass stage plates, eyepiece caps, eyepiece shades, plastics dust cover and wooden ... Each £163.00 m cabinet

| ORIES | | | | |
|---|--|---|---|--|
| Conversion lens, $\times 0.5$ with extens | ion | pillar. | | |
| | 1000 716 1 | Each | £18.00 | m |
| Conversion lens, ×0.75 | | Each | £6-40 | m |
| Conversion lens, ×1·5 | | Each | £8·50 | m |
| Conversion lens, ×2 | | Each | £8·50 | m |
| Eyepieces, G × 20 paired | | 7 | | |
| Micrometer eyepiece | ••• | 1 | | |
| Epi-illuminator, Model LSG-II | | | | |
| Trans-illuminating substage base | | | | |
| Iris diaphragm for ML-820 | | sequ | rence. | |
| Universal stand Model VS-IV | ••• | 1 | | |
| | Conversion lens, ×0·75 Conversion lens, ×1·5 Conversion lens, ×2 Eyepieces, G×20 paired Micrometer eyepiece Epi-illuminator, Model LSG-II Trans-illuminating substage base Iris diaphragm for ML-820 | Conversion lens, ×0.5 with extension Conversion lens, ×0.75 Conversion lens, ×1.5 Conversion lens, ×2 Eyepieces, G×20 paired Micrometer eyepiece Epi-illuminator, Model LSG-II Trans-illuminating substage base Iris diaphragm for ML-820 | Conversion lens, ×0·5 with extension pillar. Each Conversion lens, ×0·75 Each Conversion lens, ×1·5 Each Conversion lens, ×2 Each Each Each Conversion lens, ×2 Each Eyepieces, G ×20 paired Micrometer eyepiece Epi-illuminator, Model LSG-II Trans-illuminating substage base Iris diaphragm for ML-820 | Conversion lens, ×0·5 with extension pillar. Each £18·00 Conversion lens, ×0·75 Each £6·40 Conversion lens, ×1·5 Each £6·50 Conversion lens, ×2 Each £8·50 Eyepieces, G×20 paired Micrometer eyepiece Epi-illuminator, Model LSG-II Trans-illuminating substage base Iris diaphragm for ML-820 Iris diaphragm. |





ML-350

MAGNIFICATION AND FIELD OF VIEW CHART

| Objective assembly | | G×10 E | yepieces | G × 20 Eyepieces | | |
|---|---|--|--|--|--|--|
| Conversion lens | Working distance | Magnification ranges | Field of view (mm dia.) | Magnification ranges | Field of view (mm dia.) | |
| × 0⋅5 × 0⋅75 None × 1⋅5 × 2 | 166 mm 111 mm 97 mm 52 mm 36 mm | × 3·5 to ×20 × 5·3 to ×30 × 7 to ×40 ×10·5 to ×60 ×14 to ×80 | 62.9 to 11.0 41.9 to 7.3 31.4 to 5.5 21.0 to 3.7 15.6 to 2.8 | × 7 to ×40 ×10·5 to ×60 ×14 to ×80 ×21 to ×120 ×28 to ×160 | 34.8 to 6.1 23.2 to 4.1 17.4 to 3.1 11.6 to 2.0 8.7 to 1.5 | |



Olympus OBJECTIVES for Biological Microscopes

All objectives listed below are suitable for all Olympus microscopes except those requiring special objectives which are then listed under accessories for individual models.

All objectives are corrected for chromatic aberration and are parfocal, interchangeable and fluoride coated for maximum contrast and resolution.

All objectives (except those for stereoscopic microscopes) are colour coded.

For explanation of Lens Code see page 484.

| No. | Туре | Individual magnification | Numerical aperture | Focal length mm | Working distance mm | N.A. Condenser | Remarks | Code | Each | |
|---------|-------------------------------------|-----------------------------|--------------------|-----------------------|---------------------------|-------------------|--------------------|------|-----------|---|
| *ML-500 | Normal Dry system | ×4 | 0.10 | 29 · 2 | 35.0 | 1 · 25 | | N | £ 3·75 | n |
| | , | ×10 | 0 · 25 | 15.8 | 5.6 | 1 · 25 | | N | 4.60 | 1 |
| | | imes 20 | 0 · 40 | 8.1 | 1.55 | 1 · 25 | | N | 6.90 | |
| | | × 40 | 0.65 | 4 · 4 | 0.56 | 1 · 25 | | N | 8.95 | |
| | | ×40 | 0.65 | 4.4 | 0.49 | 1 · 25 | see Note 3 | N | 8 · 95 | |
| | | imes 60 | 0.80 | 2.8 | 0.26 | 1 · 25 | | N | 10.00 | |
| 7. | Iris Diaphragm Oil | | | | | Dark field | For dark | | | |
| *ML-504 | immersion | $\times 100$ | 1 · 30 | 1 · 8 | 0.14 | condenser | field work | N.I | 22 · 50 | |
| | Spring Mounted | | | | | | Avoids slide | | | |
| *ML-506 | Dry system | imes 40 | 0.65 | 4.4 | 0.56 | 1 · 25 | breakage | N.S | 12 40 | |
| | Oil | | | | | | Avoids slide | | | |
| | immersion | ×100 | 1.30 | 1.8 | 0.14 | 1 · 25 | breakage | S | 20 · 15 | |
| | Plan | | | | | | No spherical | | | 1 |
| *ML-530 | Dry system | $\times 1.3$ (see Note 2) | 0.03 | 40 · 3 | 38 · 68 | 0.22 | aberration | PI | 13 · 55 | |
| | | imes 2 (see Note 2) | 0.05 | 44.1 | 42 · 20 | 0.22 | ,, | PI | 14.75 | |
| | | ×4 | 0.10 | 31 · 3 | 5.78 | 1.25 | ** | PI | 14.75 | |
| | | ×10 | 0.25 | 14.3 | 0.84 | 1 · 25 | ,,) | PI | 17.00 | |
| | | × 20 | 0 · 40 | 8-1 | 0.73 | 1 · 25 | ,, , | PI | 22.50 | |
| | Oil | \times 40 | 0.63 | 4.3 | 0.24 | 1 · 25 | " Spring mounted | PI.S | 31 · 75 | |
| | immersion | ×100 | 1 · 25 | 1.7 | 0.17 | 1.25 | ,,) | PI.S | 77 · 50 | |
| | Semi- apochromatic (Fluorite) | | | | | | | | | |
| *ML-550 | Dry system | × 40 | 0.75 | 4.4 | 0.49 | 1 · 25 | | FI | 22 · 50 | |
| | Oil | PROVIDE COMPONE | 2 | | | or | with iris | | | |
| | immersion (See Note 1) | ×100 | 1.30 | 1.7 | 0.11 | 1.4 | diaphragm | FI.I | 41 · 75 | |

NOTE 1: Semi-apochromatic objectives (fluorite) are highly corrected for colour aberration; the amount of the aberration $<\frac{1}{10}\lambda$ for every colour. They are very suitable for taking colour photographs.

NOTE 2: Low power objectives ML-530 \times 1·3 and \times 2 should be used with special condenser ML-720 which has a N.A. of 0·22.

NOTE 3: For use when object is not covered with a cover glass.

m m m

Olympus EYEPIECES for Biological Microscopes

All eyepieces listed in the table below are suitable for all Olympus microscopes except those requiring special eyepieces which are then listed under accessories for individual models.

All eyepieces are hard coated for high transmission and quality definition.

For explanation of Lens Code see page 484.

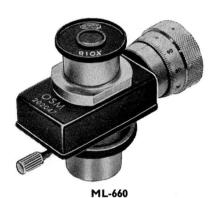
| No. | Туре | Magnification | Focal length mm | Field No. | Code | Remarks | Each |
|----------|--|---------------|--------------------|---------------------|-------|---|--------|
| | Single eyepieces | | | (See note below) | | 1 | £ |
| *ML-600 | Huygenian | ×5 | 50 | 21 | н | | 2.30 |
| | | ×7 | 36 | 18 | н | Especially effective with low power objectives | 2 · 30 |
| | | ×10 | 25 | 13 | н | Jan pana asjedinas | 2.30 |
| *ML-610 | Compensation | ×5 | 50 | 18 | P) | | 5 · 75 |
| | | ×7 | 36 | 18 | Р | | 5 · 75 |
| | | × 10 | 25 | 13 | P } | Compensate for chromatic aberration distortion of | 5 · 75 |
| | | ×10† | 25 | 13 | Р | objective | 5 · 75 |
| | | ×15 | 16.7 | 9.5 | P) | | 5 · 75 |
| | | × 20 | 12.5 | 7.5 | K | For use with high power or fluorite objectives | 6.75 |
| *ML-630 | Wide field | ×10 | 25 | 18 | WF) | Provide large flat field of | 5.75 |
| | | ×15 | 16.7 | 12 | WF } | view | 5 · 75 |
| *ML-634 | For phototube | ×7 | 36 | 18 | Р | | 5 · 75 |
| | | ×10 | 25 | 13 | Р | | 5 · 75 |
| | | ×15 | 16.7 | 9.5 | Р | | 5.75 |
| | Binocular eyepieces | | | | | | Pair |
| *ML-640 | Compensation | ×7 | 36 | 18 | BiP) | | 11.50 |
| | | ×10 | 25 | 13 | BiP | Constitution in | 11.50 |
| | | ×15 | 16.7 | 9.5 | BiP | Supplied in pairs | 11.50 |
| | | × 20 | 12.5 | 7.5 | BiK | | 13.50 |
| *ML-642 | Wide field | ×10 | 25 | 18 | BiWF | C. II. I | 13.50 |
| | | ×15 | 16.7 | 12 | BiWF | Supplied in pairs | 13.50 |
| *ML-644P | Wide field high eyepoint for spectacle wearers | ×10 | 25 | 18 | BiWF | Supplied in pairs | 16-10 |

[†] This eyepiece has a movable pointer for indicating details of specimens.

| No. | Туре | Magnification | Focal length mm | Field No. | Code | Pair | |
|---------|---|---------------|-----------------|-----------|------|---------|--|
| *ML-650 | For Stereoscopic Microscopes Wide field | ×10 | 25 | 20 | G | 10 · 65 | |
| | | ×15 | 16.7 | 13 | G | 10-65 | |
| | | × 20 | 12.5 | 10 | G | 10.65 | |

NOTE: Field No. is the product of the magnifying power of the objective and the diameter of the field of view.

Olympus MICROMETER EYEPIECES



*ML-660

MICROMETER EYEPIECE, Filar, Olympus Model OSM, magnification ×10. Can be inserted into the eyepiece sleeve on a monocular, binocular or trinocular head, after removal of the auxiliary lens. An accurate measurement of 0.0001 mm is possible when using an ×100 objective Each £27.00 m

*ML-670

COMPENSATION MICROMETER EYEPIECE,
Olympus, 10 mm/100. Magnification ×7. Focal length
36 mm. Field number 18 ... Each £7.95 m

*ML-674

COMPENSATION MICROMETER EYEPIECE, wide field, Olympus, 10 mm/100. Magnification ×10. Focal length 25 mm. Field number 18... Each £7.95 m

NOTE: Details of suitable 19 mm dia. graticules—see EYEPIECE GRATICULES MP-710 et seq. on page 494A.

*ML-680

MICROMETER EYEPIECE, $G \times 10$, with 10 mm linear graticule divided into 100. For use with stereoscopic microscopes Each £17·00 m

Olympus CONDENSERS

Five types of Olympus condenser are available to satisfy varied requirements. All have an external diameter of 36.8 mm.

*ML-700

CONDENSER, Olympus, **Abbé type,** N.A. 1·25, with variable iris diaphragm Each **£10·25** m

*ML-702

CONDENSER, Olympus, Abbé type, N.A. 1·40, with variable iris diaphragm. A 3-element condenser which is more highly corrected than ML-700 and is recommended for use with high power fluorite and planachromat objectives Each £19·00 m

*MI -710

CONDENSER, Olympus, swing-out, N.A. 0.9-0.25, with variable iris diaphragm. Useful where low and medium power objectives are used in conjunction with external illuminator when difficulty may be experienced in obtaining a fully illuminated field ... Each £14.75 m

*ML-720

CONDENSER, Olympus, N.A. 0.22 for use only with $\times 1.3$ and $\times 2$ achromatic objectives ... Each £6.80 m

*ML-730

CONDENSER, dark-field, Olympus, **Model DC,** for observation of Brownian movement of colloids, etc. For oil immersion $\times 100$ applications, objectives ML-504 or ML-550 must be used Each £23.00 m



ML-700

ML-702



ML-720

ML-730

All items on this page normally available from stock.



Olympus ILLUMINATORS

*ML-800

ILLUMINATOR, Substage, Olympus Model LSK-II. With 20W lamp and two spares; requires no transformer. For use with microscopes ML-070, ML-072, ML-075 and ML-080. For 240V a.c. or d.c. supplies. Each £5.50 m

*ML-801 Replacement lamp, 20W Each £0.50 m

*ML-802

ILLUMINATOR, Universal, Olympus Model LSD, a mains powered, external illuminator with fully adjustable light intensity and focusing. For use with mirror illuminators and suitable for Köhler illumination. Includes adjustable output transformer in ventilated case fitted with voltmeter and pilot lamp and two spare lamps. For 240V a.c. single phase supplies Each £37 · 00 m

*ML-803 Replacement lamp, 30W ... Each £0.50 m

*ML-804

EPI-ILLUMINATOR, Olympus **Model LSG-II,** for stereoscopic microscopes. With light focusing facility and adjustable output transformer in ventilated case fitted with pilot lamp. Includes two spare lamps. 240V a.c. single phase supplies ... Each £24.75 m

When ordering please state List No. of microscope for which ML-804 is required.

*ML-805 Replacement lamp, 12W ... Each £0.50 m

*ML-806

ILLUMINATOR, Olympus Model VL-FL, with fluorescent tube for stereoscopic microscopes. Includes choke for 240V a.c. single phase supplies

*ML-807 Replacement fluorescent tube ... Each £4.50 m

*ML-810

ILLUMINATOR, Olympus Model HLS-II. A bright fluorescent light source for fluorescent microscopy. Comprises a 250W high pressure mercury discharge tube, five excitation filters and four pairs of eyepiece filters. For 240V a.c. single phase supplies Each £403 · 50 m

REPLACEMENT PART

*ML-812 Discharge tube, 250W Each £34.00 m

ACCESSORIES

*ML-814 Tank, for copper sulphate solution ... Each *ML-814 Tank, for copper surprises:

*ML-815 Condenser, dark field, for low magnification.

Each £44.50 m £9.25 m

*ML-816 Tube filter assembly with eight filters... Each £113.00 m

Olympus TRANSFORMER

*ML-818

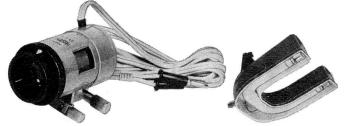
TRANSFORMER, Olympus Model TE-II, variable output, for use with microscopes Series EH and FH. Mounted in ventilated case fitted with voltmeter and pilot lamp. For 240V single phase supplies, maximum output 6V 5A Each £17.25 m ...

When ordering electrical accessories please state voltage and frequency of supply.



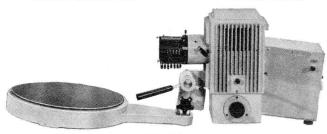


ML-802 without transformer



MI -804 without transformer

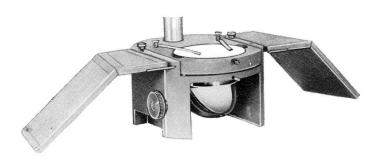
ML-806 without choke



ML-810



ML-818



ML-820





Olympus STANDS FOR STEREOSCOPIC MICROSCOPES

TRANS-ILLUMINATING SUBSTAGE Olympus, with fork-mounted adjustable mirror with polished metal finish on one side for use with lamps and matt white finish on the other for use with daylight. A 20W illuminator is incorporated in the back of the stand. Complete with inclined arm rests and two spare lamps. For 240V a.c. or d.c. supplies ... Each £22.00 m

REPLACEMENT PARTS AND ACCESSORIES

*ML-821 Replacement lamp, 20W Each £0·50 m *ML-823 Iris diaphragm for ML-820 Each £6·40 m

When ordering please state voltage and frequency of supply.

STAND, Universal, Model VS-IV, for examining large objects with any Olympus stereoscopic microscope.

Olympus PHASE CONTRAST OUTFIT

Phase contrast equipment is used for the study of transparent specimens, such as living cells or materials which are not easily stained.

*ML-860

PHASE CONTRAST OUTFIT, Olympus Model PB, positive phase, low absorption. Comprises four objectives \times 10, \times 20, \times 40 and \times 100, one substage condenser assembly, one centring telescope and one green filter. In wood cabinet

Outfits are also available in positive phase, extra low absorption and in negative phase, medium and low absorption-details on request.

Olympus PHOTOMICROGRAPHIC OUTFITS

- Pre-cock shutter prevents vibration and ensures clear pictures
- Specimen may be observed while photographing
- 35 mm full-frame format
- Suitable for all eyepieces except ×5
- Facility for attaching exposure meter
- Can take whole field of yiew with total magnification of film = $1/3 \times \text{total magnification of}$ microscope

The instrument incorporates a 3-position sliding prism:

- White position all light to viewing eyepiece.
 Green position 20% light to eyepiece, 80% to film.
 Yellow position all light to exposure meter head.

The camera is fitted with automatic film stop and cable release. Shutter speeds range from 1 to 1/50 sec and B. The adapter supplied fits all standard biological microscopes. An accessory adapter for use with stereoscopic microscopes is listed.

PHOTOMICROGRAPHIC OUTFIT, Model PM6, as specification ... Each £67.00 m

*ML-904

ACCESSORY

PHOTOMICROGRAPHIC OUTFIT, Model PM7. Similar to ML-900 but with facility for changing the camera back while loaded with film. viewing eyepiece has High-Low light intensity lever. Supplied with two camera backs. In wood cabinet.

Each £113.00 m

*ML-908P Adapter, to enable ML-900 and ML-904 to be used with Olympus stereoscopic microscopes ... Each £4.60 m

*ML-940

EXPOSURE METER, Olympus Model EMM-V, direct reading, measuring a wide range of light intensity independent of colour and also for use as a colour temperature meter. The luminous intensity of light incident on the window of a photographic device, or at the plane where a photo-sensitive plate or film should be placed, is measured Each £101.50 m



Olympus MICROPROJECTION SCREEN

For group viewing and optical comparison.

- Fits any microscope with vertical tube or trinocular head
- Instantly attached or removed using the clamp screw
- Eyepieces easily changed
- The hood may be removed to allow a tracing of the image to be made

SCREEN

 $85 \, \text{mm}$ diameter ground glass inclined at 10° to the vertical plane.

MAGNIFICATION

Magnification of projected image is $\times \frac{2}{3}$ magnification of the microscope.

ILLUMINATION

The screen is suitable for low and medium power objectives only and a powerful light source such as ML-802 must be used.

*ML-950

MICROPROJECTION SCREEN, Olympus Model MPS, as specification, fitted with attachable metal hood.

Each £31.50 m



ML-950



LONDON P.O. Box 290, Technico House, Christopher Street, London, EC2P 2ER Tel: 01-247 3211. Telex: 886041

WIDNES

P.O. Box 19, Victoria House, Widnes, Lancs. Tel: 051-424 2040

STOCKTON-ON-TEES

Portrack Lane, Stockton-on-Tees, Teesside, TS18 2PT. Tel: 0642 63441