

# Vickers Instruments

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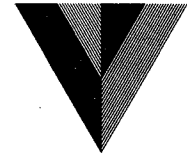
A Vickers company

All prices are exclusive of V.A.T.

The minimum order value is £15.00.

All prices quoted are ex-works.

Goods will be invoiced at the prices ruling at the time of delivery.



## M17 MICROSCOPE SPECIFICATIONS

JANUARY 1982

### SCHEDULE A

#### M17 extra wide field microscope for transmitted light

Basic microscope stand offering a 25mm diameter maximum field of view (achieved when using the recommended 12.5X wide field compensating eyepieces). Incorporates optical system capable of Köhler illumination at all objective powers, and rapid interchange facility for condensers

**M171010** 1820.00

**Includes:** interchangeable quintuple objective turret with individually centrate apertures; achromatic condenser with trip-out top lens assembly 0.9 N.A.; mechanical stage with verniers reading to 0.1mm; filter slide fitted with daylight blue, dark green, and neutral density filters

Binocular viewing head with automatic tube-length compensating mechanism

**M172120** 299.00

6 V. 30 W. lamphousing with focusing and centring controls. opal diffuser on slide (bulb included)

**M172900** 190.00

30 W. lamp control unit for 240 V, 50/60 Hz operation (see general list for alternative supply voltages)

**M175000** 90.00

Set of five Microplan (flat field) objectives for use with covered preparations; 2.5X, 10X, 25X, 40X and 100X (oil immersion)

**M177700** 1002.20

Paired eyepieces, 12.5X, wide field compensating. (Achieves maximum field of view; effective eyepiece power 10X due to 0.8X reduction in wide field optical system)

**M071934** 237.00

Soft plastic dust cover

**M177030** 5.00

**SCHEDULE B****M17 wide field microscope for transmitted light observations**

Basic microscope stand offering a 20mm diameter maximum field of view. Incorporates optics for Köhler illumination and offers rapid interchange facility for stages and condensers. Up to 27mm additional working clearance may be obtained by lowering the stage on an auxiliary dovetail slide. Accommodates a wide range of accessory systems.

**Includes:** interchangeable quintuple objective turret with individually centred apertures; mechanical stage with verniers reading to 0.1mm

Binocular viewing head with automatic tube-length compensating mechanism

6 V. 30 W. lamphousing with focusing and centring controls, opal diffuser on slide (bulb included)

30 W. lamp control unit for 240 V., 50/60 Hz operation (see general list for alternative supply voltages)

Set of five Microplan (flat field) objectives for use with covered preparations; 2.5X, 10X, 25X, 40X and 100X (oil immersion)

Achromatic condenser with trip-out top lens assembly 0.9 N.A. Recommended for observations at both highest and lowest powers (this condenser has an integral support bracket. If other condensers are specified, additional items must be ordered. See general list, Condensers)

Paired eyepieces, 10X wide field, compensating

Soft plastic dust cover

**M171020** 1360.00

**M172120** 299.00

**M172900** 190.00

**M175000** 90.00

**M177700** 1002.20

**M174900** 253.00

**M071327** 34.30

**M177030** 5.00

**SCHEDULE C****M17 microscope for routine observations in transmitted light**

Basic microscope stand offering a 20mm diameter maximum field of view. Incorporates optics for Köhler illumination. Condensers are interchangeable on the Akehurst slide system

**Includes:** interchangeable quintuple objective turret with individually centred apertures; mechanical stage with verniers reading to 0.1mm; substage Akehurst bracket for condenser attachment. This stand will **not** accept the trip-out achromatic condenser M174900

Binocular viewing head

6 V. 30 W. lamphousing with focusing and centring controls, opal diffuser on slide (bulb included)

30 W. lamp control unit, for 240 V., 50/60 Hz operation (see general list for alternative supply voltages)

Set of four Microplan (flat field) objectives for use with covered preparations; 4X, 10X, 40X and 100X (oil immersion)

Achromatic condenser 1.25 N.A. in centring mount

Akehurst slide for condenser attachment

Paired eyepieces, 10X wide field, compensating

Soft plastic dust cover

**M171030** 1290.00

**M171800** 258.00

**M172900** 190.00

**M175000** 90.00

**M177705** 760.20

**M152970** 170.00

**M252779** 26.60

**M071327** 34.30

**M177030** 5.00

**SCHEDULE D****M17 metallurgical microscope**

Basic microscope stand for incident light applications, with built-in Köhler illuminator and removable patch stop for use with dark ground objectives. Offers rapid interchange facility for stages, which may be lowered on an auxiliary dovetail slide to accommodate larger specimens (maximum clearance depends on stage selected)

**M171040** 1360.00

**Includes:** interchangeable quintuple turret with individually centrable apertures for bright field objectives; optical system giving an additional 1.25X magnification to meet A.S.T.M. and D.I.N. standards in photomicrography (see instruction Manual); filter slide fitted with daylight blue, dark green and neutral density filters

Large mechanical stage with bracket; vernier scales permit the 50mm x 75mm traverses to be read to 0.1mm

**M412530** 249.00

Incident light adaptor plate for stage (essential when handling routine metallographic specimens)

**M152390** 46.50

Binocular viewing head

**M171800** 258.00

6 V. 30 W. lamphousing with focusing and centring controls, opal diffuser on slide (bulb included)

**M172900** 190.00

30 W. lamp control unit, for 240 V., 50/60 Hz operation (see general list for alternative supply voltages)

**M175000** 90.00

Set of five Microplan (flat field) objectives for use with uncovered specimens; 2.5X, 10X, 25X, 40X and 100X (oil immersion)

**M177710** 1002.20

Paired eyepieces, 10X wide field, compensating

**M071327** 34.30

Soft plastic dust cover

**M177030** 5.00

**SCHEDULE E****M17 microscope offering full facilities for incident and transmitted illumination**

Basic microscope stand equipped with dual optical systems. Köhler illumination at all objective powers may be achieved in both incident and transmitted light. Offers interchange facility for stages and condensers, and an auxiliary dovetail slide permits lowering of the stage to accommodate larger specimens (maximum clearance depends on stage selected)

**Includes:** interchangeable quintuple turret with individually centrable apertures for bright field objectives; optical system giving an additional 1.25X magnification to meet A.S.T.M. and D.I.N. standards in photomicrography (see instruction manual). Removable patch stop for use with dark ground objectives in incident light; filter slide fitted with daylight blue, dark green and neutral density filters.

	<b>M171050</b>	1650.00
Large mechanical stage with bracket, vernier scales reading to 0.1mm	<b>M412530</b>	249.00
Incident light adaptor plate for stage	<b>M152390</b>	46.50
Binocular viewing head with automatic tube-length compensating mechanism	<b>M172120</b>	299.00
6 V. 30 W. lamphousing with focusing and centring controls, opal diffuser on slide (bulb included)	<b>M172900</b>	190.00
30 W. lamp control unit, for 240 V., 50/60 Hz operation (see general list for alternative supply voltages)	<b>M175000</b>	90.00
Achromatic condenser with trip-out top lens assembly 0.9 N.A. (this condenser has an integral support bracket; if other condensers are specified, additional items must be ordered. (See general list, Condensers)	<b>M174900</b>	253.00
Paired eyepieces, 10X wide field, compensating	<b>M071327</b>	34.30
Soft plastic dust cover	<b>M177030</b>	5.00

**This schedule does NOT include a set of objectives, as requirements will vary considerably, dependent on usage. Select from general list.**

**M17 FLOURESCENCE MICROSCOPY****(i) INCIDENT LIGHT EXCITATION — RESEARCH****Option 1:**

Research fluorescence microscope stand with base optics for Köhler illumination in transmitted light, built-in mechanical stage with 50mm x 75mm movements, ball bearing quintuple objective changer, built-in substage condenser bracket with rapid change Akehurst slide condenser fitting and self-contained incident fluorescence illuminator incorporating all filters for ultraviolet, violet, blue (FITC) and green (Rhodamine) excitation **M171070 2700.00**

Slider position				
Filters				
Exciter	MUG.2	BG.3	2X FITC 5 + GG455	TRITC 1
Dichroic	UV	Violet	Blue	Green
Barrier	GG400 +GG420	GG475	OG515	RG610

**OR Option 2:**

Research microscope stand complete as above but fitted with modified filter sets for FITC/Rhodamine double staining technique **M171075 2700.00**

Slider position				
Filters				
Exciter	MUG.2	BG.3	2X FITC 5 + GG455	TRITC 1 + OG515
Dichroic	UV	Violet	Blue	Green
Barrier	GG400 + GG420	GG475	SAL525	RG610

Binocular viewing head with automatic tube-length compensating mechanism	<b>M172120</b>	299.00
50 W. mercury vapour lamphousing with focusing and centring controls; built-in Calflex heat filters and BG38 red suppressor (bulb included)	<b>M172750</b>	381.00
50 W. Ballast/power unit for 240 V. 50/60 Hz supply	<b>M415050</b>	281.00
Lamp filter tray to accommodate blanking plate or optional additional filters	<b>M173500</b>	21.20
Blanking plate in cell, to prevent specimen fading between observations	<b>M173608</b>	14.40
Tinted light shield on flip-up bracket	<b>M174570</b>	46.00
Set of four Microplan (flat field) objectives for use with covered preparations; 4X, 10X 40X and 100X (oil)	<b>M177705</b>	760.00
Paired eyepieces, 6.3X wide field compensating	<b>M071121</b>	113.00
Soft plastic dust cover	<b>M177030</b>	5.00

**White light source and condenser for transmitted light if required — select from general list. All condensers must be ordered complete with M252779 Akehurst slide.**

## M17 FLUORESCENCE MICROSCOPY—continued

**(ii) INCIDENT LIGHT EXCITATION — ROUTINE**

Routine fluorescence microscope stand with base optics for Köhler illumination in transmitted light, built-in mechanical stage with 50mm x 75mm movements, ball bearing quintuple objective changer, built-in substage condenser bracket with incident fluorescence illuminator for FITC excitation only — slider removeable for transmitted bright field.	<b>M171086</b>	1980.00
Routine fluorescence microscope stand as M171086 but with incident fluorescence illuminator for ultraviolet excitation	<b>M171082</b>	1860.00
Routine fluorescence microscope stand as M171086 but with incident fluorescence illuminator for violet excitation	<b>M171084</b>	1860.00
Routine fluorescence microscope stand as M171086 but with incident fluorescence illuminator for Rhodamine excitation	<b>M171088</b>	2000.00
Binocular viewing head	<b>M171800</b>	258.00
12 V. 100 W. tungsten halogen lamphousing with focusing and centring controls, trip-out diffuser and built-in Calflex heat filter (bulb included). Not suitable for violet and ultraviolet excitation	<b>M172700</b>	250.00
100 W. control unit for 240 V. 50/60 Hz supply	<b>M415300</b>	180.00
50 W. mercury vapour lamphousing with focusing and centring controls, bulb, built-in Calflex heat filter and BG 38 red-suppressor. Recommended for violet and ultraviolet excitation	<b>M172750</b>	381.00
50 W. Ballast/Regulator for 240 V. 50/60 Hz supply	<b>M415050</b>	281.00
Lamp filter tray to accommodate blanking plate or optional additional filters.	<b>M173500</b>	21.20
Blanking plate in cell, to prevent specimen fading between observations.	<b>M173608</b>	14.40
BG38 red-suppression filter in cell for use with tungsten halogen lamp	<b>M173587</b>	19.80
Set of four Microplan (flat field) objectives for use with covered preparations. 4X, 10X, 40X and 100X (oil)	<b>M177705</b>	760.20
Paired eyepieces, 6.3X wide field compensating	<b>M071121</b>	113.00
BG12 exciter filter for use with Auramine, Procion yellow and allied dyes (to replace 2X FITC5 and GG455 combination, included in microscope stand M171086)	<b>M174507</b>	6.00
Soft plastic dust cover	<b>M177030</b>	5.00

**White light source and condenser for transmitted light if required — select from general list. All condensers must be ordered complete with M252779 Akehurst slide.**

## M17 FLUORESCENCE MICROSCOPY—continued

**(iii) TRANSMITTED LIGHT EXCITATION USING DARK GROUND CONDENSER**

Microscope stand with Köhler illuminator base, built-in mechanical stage with 50mm x 75mm movements and ball bearing quintuple objective changer (includes trip-out achromatic condenser, essential for low power work in bright field)

**M171010** 1820.00

Binocular viewing head

**M171800** 258.00

12 V. 100 W. tungsten halogen lamphousing with focusing and centring controls, trip-out diffuser and built-in Calflex heat filter (bulb included)

**M172700** 250.00

100 W. control unit for 240 V. 50/60 Hz supply

**M415300** 180.00

Lamp filter tray to accommodate filters 40mm diameter if required

**M173500** 21.20

Substage condenser bracket with swing-out filter trays 32mm diameter.

**M413015** 98.00

Tiyoda wide field oil immersion dark ground condenser

**M150970** 324.00

Akehrst slide for condenser attachment

**M252779** 26.60

Set of five Microplan (flat field) objectives for use with covered preparations; 2.5X\*, 10X\*, 25X, 40X and 100X (oil)

\*Use in bright field only

**M177700** 1002.20

Paired eyepieces, 6.3X wide field compensating

**M071121** 113.00

Soft plastic dust cover

**M177030** 5.00

**Exciter, suppressor and barrier filters to be selected from list.**

**M17 FLUORESCENCE MICROSCOPY—continued****TRANSMITTED LIGHT EXCITATION FILTERS**

The transmitted light dark ground fluorescence microscope has no built-in filters. Exciter, barrier and suppressor filters must be individually selected from lists below. Use 100 W. tungsten halogen or 200 W. mercury source only.

**Exciter filters 32mm diameter for substage filter trays — transmitted light excitation only**

UG 1	Ultraviolet		<b>M411695</b>	10.00
UG 12	Ultraviolet		<b>M411696</b>	10.00
MUG 2	Ultraviolet		<b>M411697</b>	10.00
BG 3	Violet		<b>M174540</b>	14.00
BAFLU	Violet (Interference)		<b>M411817</b>	176.00
BG 12 3mm	Blue		<b>M411700</b>	7.50
FITC 5	Blue (Interference)		<b>M411813</b>	210.00
TRITC 1	Green (Interference)		<b>M411816</b>	193.00

**Suppression filters 40mm diameter, mounted in holders. Use for incident or transmitted light as required**

GG400	Pale yellow	(UV Suppressor)	<b>M173583</b>	10.90
GG455	Yellow	(UV/Violet Suppressor)	<b>M173585</b>	10.90
BG38	Turquoise	(Red-Suppressor)	<b>M173587</b>	19.80

**Colour (contrast) and barrier filters 19mm diameter for head filter slide. (Transmitted light microscopes and Routine Incident light microscopes only).**

RG610	Red	(Rhodamine Barrier)	<b>M174525</b>	6.00
OG515	Deep Yellow	(FITC Barrier)	<b>M174527</b>	6.80
GG475	Yellow	(Violet Barrier)	<b>M174530</b>	6.40
GG400	Pale Yellow	(UV Barrier)	<b>M174533</b>	5.20
BG12	Deep Blue		<b>M173685</b>	6.50

Filter slide, to accommodate a maximum of four of the above filters. (A slide fitted with green, blue, and neutral filters is supplied with each transmitted light microscope stand).

**M174345** 20.70

Further "white light" filters for colour contrast etc., may be selected from the section headed "Filters".



### M17 MICROSCOPE — Components & Accessories

A guide to the compatibility of accessory items with the basic stands is included. For technical or mechanical reasons, some items should **NOT** be specified with a particular stand; this is indicated by ● in the appropriate column.

Special notes, where necessary, are indicated thus ★

Basic Stands						
A	B	C	D	E		
					<b>VIEWING HEADS</b>	
					Straight monocular head	<b>M172030</b> 41.20
					Inclined monocular head (accepts double image eyepiece)	<b>M172000</b> 87.00
					Inclined binocular head	<b>M171800</b> 258.00
					Inclined binocular head with automatic tube-length compensating mechanism (of particular value in measurement either with eyepiece graticule or image splitting module)	<b>M172120</b> 299.00
					Photo-visual inclined binocular head with automatic tube-length compensating mechanism, camera outlet port, beam-splitting prism on slide; essential for photomicrography (See also Section F, Camera Equipment)	<b>M171900</b> 462.00
					Micro-projection screen with three interchangeable screens	<b>M173390</b> 680.00
					Discussion head to accept two standard binocular viewing heads M171800 or M172120 — The two operators sit side by side	<b>M176320</b> 900.00
					Drawing tube — to be inserted between the microscope Limb top and viewing head	<b>M173480</b> 422.00
					<b>ALTERNATIVE STAGES</b>	
					<b>If ordered complete each basic Schedule already includes a mechanical stage.</b>	
					<b>Note: ★ Indicates that a dovetail bracket M410890 must be ordered with each stage, to fit the interchange block on the microscope stand.</b>	
			★	★	Standard mechanical stage with pendant concentric controls (right-hand); movements 50mm x 75mm, with 0.1mm vernier scales	<b>M172990</b> 120.00
	★		★	★	Mechanical stage with large top plate, pendant concentric controls (right-hand); movements 50mm x 75mm, with 0.1mm vernier scales	<b>M152250</b> 258.00
					(All the above stages have enlarged apertures to permit use of the Tiyoda dark ground condenser)	
					Adaptor plate for large top mechanical stage, to convert for incident light use	<b>M152390</b> 46.50
	★		★	★	Adaptor plate for M172990 stage, to convert for incident light use	<b>M750995</b> 51.60
					150mm diameter graduated rotating stage with centring controls and ball-bearing movement	<b>M720200</b> 227.00
					Attachable mechanical stage for above	<b>M177580</b> 228.00
					Support bracket to adapt stages listed above for dovetail interchange facility	<b>M410890</b> 45.50
					<b>(One dovetail bracket M410890 must be ordered with each additional stage)</b>	
					<b>The following stages are for incident light use only, and are ready equipped with dovetail support brackets</b>	
●	●	●			Metallurgical mechanical stage with pendant concentric controls (right-hand); movements 50mm x 75mm (ungraduated).	<b>M412580</b> 220.00
●	●	●			Autolevelling gliding stage with two magnetic stage-plates, to accommodate mounted specimens up to 35mm diameter x 25mm deep	<b>M412550</b> 175.00
●	●	●			Autolevelling gliding movement (as above) mounted on centrable graduated rotating stage	<b>M412540</b> 375.00
					(Other stages for specialist purposes are listed with the appropriate accessory systems)	

Basic Stands				
A	B	C	D	E
			●	
		●	●	
★	★	●	●	★
★	★	●	●	★
★	★	●	●	★
★	★	●	●	★
★	★	●	●	★
★	★	●	●	★
★	★	●	●	★
incl.		●	●	
		●	●	
	●	●	●	

**CONDENSERS AND ATTACHMENTS**

The achromatic condenser M174900 has an integral dovetail bracket and attaches direct to Schedule A, B or E microscope stands

All standard condensers must be fitted with an Akehurst slide M252779

**Note:** ★ Indicates that Schedules A, B and E require in addition a substage Akehurst bracket M413000 or M413015 if standard condensers are specified.

Akehurst slide for condenser interchange (We recommended that one M252779 be ordered with each standard condenser specified)

**M252779** 26.60

**M413000** 65.00

**M413015** 98.00

**M150830** 99.00

**M152970** 170.00

**M177240** 324.00

**M150970** 324.00

**M151970** 175.00

**M001394** 115.00

**M174900** 253.00

**M174960** 85.00

**M152975** 190.00

Substage condenser carrier bracket

Substage condenser carrier bracket with double filter trays

Two-lens Abbe condenser 1.2 N.A. in centring mount

Achromatic condenser 1.25 N.A. in centring mount

Research phase contrast condenser with iris diaphragm, in centring mount

Tiyoda wide field oil immersion dark ground condenser in centring mount N.A. 1.2–1.4

High power oil immersion dark ground condenser in centring mount

Low power dark ground condenser providing an illuminating cone of N.A. 0.8 to 0.7 and suitable for objectives from 4X to 40X 0.65 N.A.

Achromatic condenser with trip-out top lens assembly 0.9 N.A., and centring movement. The integral dovetail bracket replaces the substage carrier M413000 and slide M252779

Alternative top lens assembly 1.30 N.A. (oil) for achromatic condenser M174900

Strain free achromatic condenser in centring mount 1.25 N.A.

**OBJECTIVES AND EYEPIECES**

Objectives for use with covered preparations (corrected for 0.17mm coverslip)

Magnification N.A. Working distance (mm)

**Microplan (flat field)**

2.5X	0.08	12.7	<b>M056211</b>	83.00
4X	0.12	12.3	<b>M056411</b>	99.00
10X	0.25	5.08	<b>M055911</b>	121.20
25X	0.50	0.68	<b>M056511</b>	258.00
40X	0.65	0.48	<b>M056311</b>	240.00
100X (oil)	1.25	0.15	<b>M055511</b>	300.00

**Fluoplan**

10X	0.25	5.51	<b>M056111</b>	130.00
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**Fluorite**

50X (oil)	0.95	0.21	<b>M053611</b>	300.00
100X (oil)	1.3	0.14	<b>M053543</b>	449.00

with iris diaphragm

N.B. These Fluorite are not flat field (plan) objectives

**Apoplan**

10X	0.30	3.3	<b>M057011</b>	550.00
40X	0.75	0.20	<b>M057211</b>	640.00
50X (oil)	0.95	0.17	<b>M057511</b>	640.00
100X (oil)	1.30	0.12	<b>M057711</b>	750.00

Abbreviation:  
incl. ... included

Basic Stands				
A	B	C	D	E
				Magnification N.A. Working distance (mm)
				<b>Positive Phase Contrast Microplan (flat field)</b>
				10X 0.25 5.08 M055918 161.00
				25X 0.50 0.68 M056518 295.00
				40X 0.65 0.48 M056318 290.00
				100X (oil) 1.25 0.15 M055518 300.00
				<b>Positive Phase Contrast Apoplan</b>
				10X 0.30 3.3 M057018 599.00
				40X 0.75 0.20 M057218 670.00
				100X (oil) 1.30 0.12 M057718 775.00
				<b>Negative Phase Contrast High Absorbtion Microplan (flat field)</b>
				10X 0.25 5.05 M055917 171.00
				40X 0.65 0.38 M056317 290.00
				*40X 0.65 0.49 M056316 290.00
				* for uncovered specimens
				Auxiliary microscope for alignment of phase condenser to above objectives M101260 40.00
				<b>Objectives for use with uncovered specimens</b>
				<b>Microplan (flat field)</b>
				2.5X 0.08 12.7 M056212 83.00
				4X 0.12 12.3 M056412 99.00
				10X 0.25 5.25 M055912 121.20
				25X 0.50 0.79 M056512 258.00
				40X 0.65 0.65 M056312 240.00
				63X 0.90 0.16 M056012 280.00
				100X (oil) 1.25 0.33 M055512 300.00
				100X (dry) 0.90 0.28 M059652 359.00
				<b>Fluoplan</b>
				1 10X 0.25 5.68 M056111 130.00
				<b>Apoplan</b>
				10X 0.30 3.5 M057012 550.00
				40X 0.75 0.30 M057212 640.00
				50X (oil) 0.95 0.17 M057512 640.00
				63X 0.95 0.12 M057412 699.00
				100X (oil) 1.30 0.30 M057712 750.00
				<b>Microplan Bright field/dark ground objectives (flat field)</b>
				<b>For incident light examination of uncovered specimens only</b>
				A special objective changer M172540 must be ordered with these objectives (see below)
●	●	●		4X 0.10 6.10 M058512 165.00
●	●	●		10X 0.22 3.60 M058612 215.00
●	●	●		25X 0.45 0.90 M058712 255.00
●	●	●		40X 0.65 0.20 M058812 283.00
●	●	●		80X 0.85 0.20 M058912 392.00
				<b>Objective changers</b>
●	●	●		Interchangeable quintuple turret with individually centrable apertures, for bright field objectives only (one is already included with each basic stand) M172500 170.00
●	●	●		Interchangeable quintuple turret with individually centrable apertures, for incident light bright field/dark ground objectives M172540 180.00
				<b>Eyepieces for viewing heads</b>
				<b>for camera and framing eyepieces</b>
				Magnification Field of view index
				<b>Wide field compensating non-focusing</b>
				6.3X 20 Single M071101 56.70
				10X 20 Single M071317 17.20
				12.5X 20 Single M071914 119.00
				16X 16 Single M071514 168.00
				20X 12.5 Single M071614 178.00
				6.3X 20 Paired M071121 113.00
				10X 20 Paired M071327 34.30
				12.5X 20 Paired M071934 237.00
				16X 16 Paired M071534 335.00
				20X 12.5 Paired M071634 310.00





Basic Stands						
A	B	C	D	E		
					<b>FILTERS</b>	
					<b>40mm diameter filters mounted in holders to fit either of above filter housings:</b>	
					Glass manufacturers' code numbers are given in order that the user may consult the literature and obtain detailed filter characteristics if required	
					<b>Chance</b>	<b>Schott</b>
					OR.2	or RG.610 Light red <b>M173582</b> 15.00
					OGR.1	or VG.9 Dark Green <b>M173584</b> 12.70
					OB.8	or BG.34 Daylight blue <b>M173586</b> 15.70
					ON.10	or NG.9 Neutral (glass) 7% <b>M173588</b> 10.80
					HA.3	or KG.1 Heat absorbing <b>M173590</b> 14.10
					0.6 (25%)	Neutral density <b>M173592</b> 16.90
					1.0 (10%)	(metallised) <b>M173594</b> 17.80
					2.0 ( 1%)	<b>M173596</b> 18.90
					<b>E(iv) 32mm diameter unmounted filters for swing-out filter trays on condenser mount or substage bracket:</b>	
			●		OR.2	or RG.610 Light red <b>M151536</b> 11.00
			●		OY.1	or OG.570 Orange <b>M151538</b> 5.00
			●		OY.4	or OG.515 Yellow <b>M151539</b> 8.00
			●		OGR.1	or VG.9 Dark green <b>M151535</b> 9.00
			●		OB.8	or BG.34 Daylight blue <b>M151540</b> 8.00
			●		OB.2	or BG.23 Turquoise <b>M151545</b> 9.00
			●		ON.11	or NG.4 Neutral (glass) 23% <b>M151537</b> 8.00
			●		HA.3	or KG.1 Heat absorbing <b>M151533</b> 9.00
						Diffuser <b>M151547</b> 3.00
					<b>Cross-arm filter slide and filters 19mm diameter:</b>	
					<b>Microscopes to Schedules A, D and E which have cross-arm slots are supplied with a slide containing daylight blue, dark green and neutral density filters</b>	
					<b>Microscopes to Schedules B and C can only be equipped with 32mm or 40mm diameter filters (listed above) as no cross-arm slot is provided</b>	
	●	●			Cross-arm filter slide; accommodates 3 filters selected from list below and is fitted with clear plane glass disc to preserve optical corrections in white light <b>M174345</b> 20.70	
					The chosen filters will be factory fitted to the slide	
					<b>19mm diameter filters:-</b>	
					<b>Chance</b>	<b>Schott</b>
			●		OR.2	or RG.610 Light red <b>M173680</b> 6.50
			●		OY.1	or OG.570 Orange <b>M173681</b> 6.50
			●		OY.4	or OG.515 Yellow <b>M173682</b> 6.90
			●		OGR.1	or VG.9 Dark green <b>M173683</b> 6.90
			●		OB.8	or BG.34 Daylight blue <b>M173684</b> 7.10
			●		OB.10	or BG.12 Deep blue <b>M173685</b> 6.50
			●		OB.2	or BG.23 Turquoise <b>M173686</b> 6.90
			●		ON.10	or NG.9 Neutral (glass) 7% <b>M173687</b> 6.90
			●		ON.11	or NG.4 Neutral (glass) 23% <b>M173688</b> 6.50
			●		Set of three Inconel neutral density filters 0.6, 1.0, 2.0 (25%, 10%, 1%) complete with filter slide. (M174345). Particularly recommended for colour photomicrography <b>M173670</b> 47.20	

Basic Stands				
A	B	C	D	E
all camera systems fully interchangeable				

**CAMERA EQUIPMENT** — components needed for use of Vickers microscope cameras, with or without automatic exposure control. All specifications **MUST** include focusing/framing eyepieces and appropriate camera eyepieces

#### Fundamental items for camera systems

Photovisual binocular head with automatic tube-length compensating mechanism, camera outlet port, beam splitting prism on slide (replaces standard viewing heads)	<b>M171900</b>	462.00
Vertical tube for camera eyepiece	<b>M173750</b>	48.90
Camera support pillar and cross-arm incorporating light-excluding collar	<b>M173780</b>	89.00

#### Exposure system — manually controlled

Beam-splitter tube with photometer outlet port	<b>M173800</b>	110.00
Cadmium sulphide photometer	<b>M030500</b>	121.00
Manual speeded shutter with cable release	<b>M173950</b>	155.00

If the photometric facility is **not** required, the following item may be ordered in place of the beam-splitter unit M173800:-

Spacer tube; replaces beam-splitter unit	<b>M173850</b>	104.00
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#### Exposure system — electronically controlled

Beam-splitter tube with photometer outlet port	<b>M173800</b>	110.00
J352 Exposure control unit complete with photomultiplier	<b>J352000</b>	880.00
Electromagnetic shutter assembly	<b>M173980</b>	115.00

#### Recommended for fluorescence photomicrography

Partial field stop unit with trip-out stop isolating 1/100 of the total field	<b>M173840</b>	360.00
J372 partial field exposure control unit complete with photomultiplier	<b>J372000</b>	999.00
Electromagnetic shutter assembly	<b>M173980</b>	115.00

(A 6.3X camera eyepiece M071101 should be specified if these items are ordered.

#### Camera bodies and film holders

Camera bodies and framing eyepieces are engraved with scales permitting rotational alignment of the format as required

Manual wind 35mm camera body, with dark slide (magnification factor: 0.4X)	<b>M173930</b>	75.00
Autowind 35mm camera body, with dark slide. May be used only with J35 or J37 exposure units (magnification factor: 0.4X)	<b>M173940</b>	289.00
Polaroid® CB101 camera body with dark slide; accepts series 100 pack film (magnification factor: 1.0X)	<b>M173870</b>	199.00
Large format camera body; accepts standard holder for 5" x 4" (12.7 x 10.2cm) sheet film or Polaroid® 545 holders for series 50 film envelopes (magnification factor: 1.25X)	<b>M173900</b>	310.00

Basic Stands							
A	B	C	D	E			
					<b>Film holders for large format camera body</b>		
					Double 5" x 4" cut film holder	<b>M033004</b>	15.50
					Polaroid® 545 film holder	<b>M552102</b>	200.00
					<b>Connecting cable for electromagnetic shutter</b>		
					(The Autowind 35mm camera has a built-in cable to connect to exposure units. The following item must be ordered if other camera bodies are used with electromagnetic shutter M173980:-)		
					Cable for electromagnetic shutter connection	<b>M030870</b>	10.00
					<b>Spares</b>		
					Spare shutter release cable (manual)	<b>M030423</b>	5.00
					Spare cable for electromagnetic shutter connection	<b>M030870</b>	10.00
					<b>Components needed for use of commercially available single lens reflex cameras</b>		
					Monocular tube to carry cameras in place of a microscope viewing head.	<b>M172030</b>	41.20
					<b>OR</b>		
					Monocular tube to carry cameras on the photo outlet of the M171900 photo visual head.	<b>M171950</b>	30.20
					If more than the occasional photograph is being taken, it probably will be found much more convenient to carry cameras from the photo-visual head. Photography and visual observation can then be alternated without any interchange of equipment.		
					Whichever monocular tube is used, a microscope adaptor will be needed for the particular S.L.R. camera to be used. Such adaptors are obtainable from photographic dealers.		
					<b>SPECIAL-PURPOSE ACCESSORY SYSTEMS</b>		
					<b>Magnification changer</b>		
					Magnification factors of 1.0X, 1.25X, 1.6X and focusing Bertrand lens selectable at will	<b>M174600</b>	469.00
					<b>Accessories for linear measurement</b>		
					Eyepiece graticule 1cm÷100 for 10X and 12.5X focusing eyepieces only	<b>M047312</b>	15.10
					Stage micrometer for incident light 1mm÷100	<b>M153335</b>	40.00
					Stage micrometer 1mm÷100, glass	<b>M001586</b>	27.50
					<b>Image shearing measuring systems</b>		
					Other configurations for semiconductor inspection and measurement may be selected using components from the main list.		
					<b>Microhardness Testing Equipment</b>		
					Equipment complete for determination of Vickers micro-indentation hardness; comprising pneumatic transmitter, indenting objective, measuring objective, monocular viewing head with centrable filar micrometer eyepiece, calibration standard; in fitted wooden storage cabinet.	<b>M172090</b>	1950.00
					Quintuple revolving objective changer (recommended for permanent mounting of micro-hardness objectives)	<b>M172500</b>	170.00
					<b>Differential interference contrast systems</b>		
					<b>Incident light (Nomarski) D.I.C. unit</b>		
					Analyser slide for cross-arm slot	<b>M173650</b>	100.00
					Incident light polarizing filter; must be used with heat filter in lamp filter housing. (See section E)	<b>M173730</b>	61.30
					Nomarski prism unit, with integral quadruple objective changer	<b>M174700</b>	420.00
					Recommended objectives		
					Magnification	N.A.	
					<b>Microplan (flat field)</b>		
					4X	0.12	<b>M056414</b> 99.00
					10X	0.25	<b>M055913</b> 121.00
					40X	0.65	<b>M056314</b> 250.00
					63X	0.90	<b>M056012</b> 280.00
					100X (oil)	1.25	<b>M055512</b> 300.00
					<b>Transmitted light (F.H. Smith) D.I.C. system</b>		
					Substage polarizing/shearing unit, cross-arm slide with adjustable wedge compensator and analyser slide	<b>M175700</b>	1653.00
					Double slide module to accommodate wedge and analyser slides, incorporating 1.25X corrector lens	<b>M174580</b>	129.00



Basic Stands						
A	B	C	D	E	Recommended objectives	
					Magnification	N.A.
					<b>Microplan (flat field)</b>	
					10X	0.25
					25X	0.50
					40X	0.65
					100X (oil)	1.25
					The strain free achromatic condenser M152975 is recommended.)	
					<b>Simple polarizing accessories</b>	
●	●	●			Cross-arm analyser slide with white-order quartz plate	M173650 100.00
		●	●		Polarizer (to fit lamp filter housing M173500)	M173730 61.30
					19mm dia. Polaroid disc for use with M174345 cross-arm filter slide	M176555 3.00
●			●	●	Polaroid analyser in spring mount	M176550 9.20
					40mm dia. drop-in polarizer for use with substage filter unit M173550 or with lamp filter housing M173500	M176560 27.90
					Heat filter 40mm Ø for filter housing (to protect polarizer)	M173590 14.10
					<b>Closed circuit television systems — full details on application</b>	
					Mounting accessories for CCTV camera	M173890 141.00
					<b>MISCELLANEOUS</b>	
					Spare bulb, 6 V. 30 W. (pack of three)	M006033 7.50
					Spare bulb, 12 V. 100 W.	M006017 5.80
					Spare bulb, mercury vapour 50 W.	M006044 65.00
					Spare bulb mercury vapour 200 W.	M006023 142.00
					6 ml. bottle of immersion oil as supplied with each immersion objective ( $n_D = 1.515$ )	M322260 3.50
					100 ml. bottle of above oil	M322261 10.00
					6 ml. bottle of fluorescence free DIN immersion oil	M322262 5.50
					Soft plastic dust cover, short (for basic microscope)	M177030 5.00
					Soft plastic dust cover, long (for M17 fitted with camera equipment)	M177035 7.50
					Wooden accessory case; will be assembled to suit order	M411960 45.00
						per case
						90.00
						per tray
					Expanded polystyrene storage/transport pack to accommodate basic microscope stand, viewing head, mechanical stage and optics	M177100 9.10
					(Not suitable for incident light research fluorescence microscopes: M171070 and M171075).	

As designs are under constant review the technical specifications may not be correct in every detail