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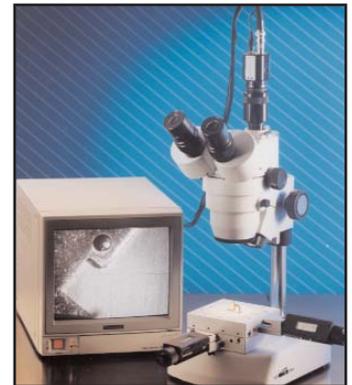
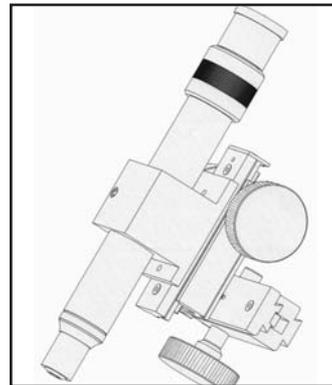
# Inspecta

Microscope  
 Components  
 and Systems

## Quality Inspection Instruments

The Inspecta modular range of components and systems provides the user with a comprehensive solution to their exact needs.

Pyser have designed the Inspecta range to be easily specified and assembled, and have created a series of proven solutions to make it even easier to select the correct components.

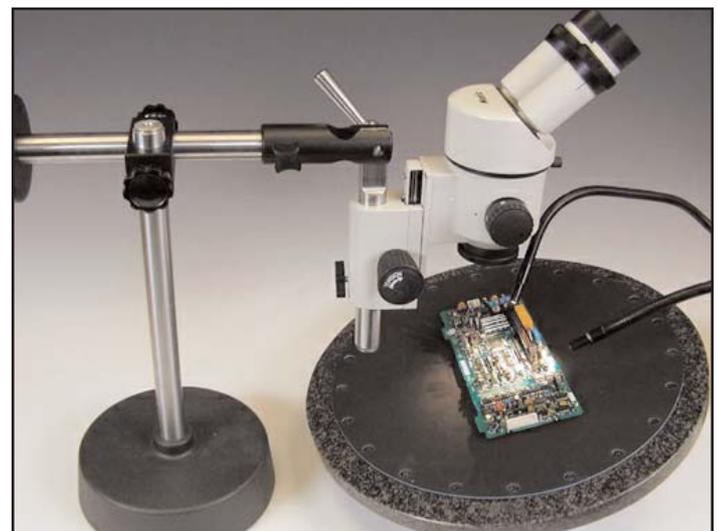


### Components:

- Eyepieces
- Objectives
- Microscope Tubes
- Heads
- Focussing Mechanisms
- Stands
- Stages
- CCTV
- Digital Cameras
- Monitors
- Lighting

### Typical Applications:

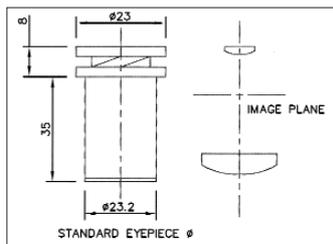
- Inspection of pcb's
- Micro electronics rework
- Tooling alignment
- Reaction monitoring
- On-line quality checking
- Video imaging
- Wear and distortion
- Machine setting
- Inspection systems
- Measuring systems



# Eyepieces

**Huygenian Eyepiece** x 7  
Composed of two plano convex lenses separated by an air space. The image plane is between the two lenses. The top lens is adjusted to bring the graticule into focus

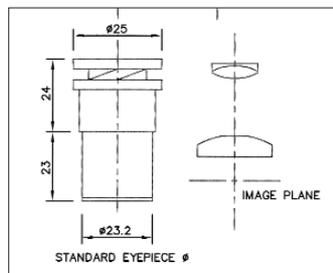
Field of view: 15mm dia  
Graticule/reticle: 16mm dia



Cat.Ref: **F7**  
Order code: **55H02080**

**Kellner Eyepiece** x 10  
Composed of a plano convex lens and an achromatic lens. The image plane is below the lens elements. The use of an achromatic lens provides a larger field of view, better colour correction and substantial eye relief. The top lens adjusts to focus on the graticule.

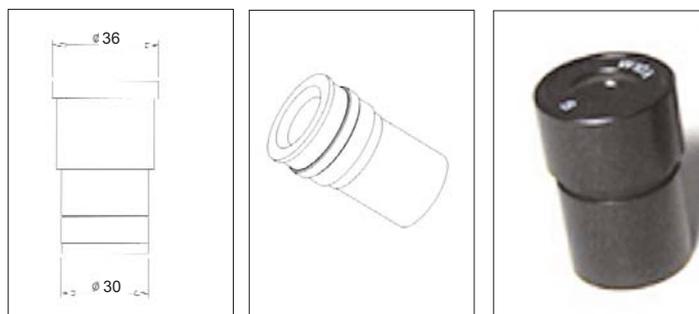
Field of view: 15mm dia  
Graticule/reticle: 16mm dia



Cat.Ref: **F10**  
Order code: **55H02081**

**Kellner Widefield Eyepiece** x 10  
Composed of a plano convex lens and an achromatic lens. The image plane is below the lens elements. The use of a larger achromatic lens provides a wider field of view than the standard F10. The top lens adjusts to focus on the graticule. Requires eyepiece adaptor (P170) to fit into viewing heads and body tubes.

Field of view: 23mm dia  
Graticule/reticle: 25mm dia

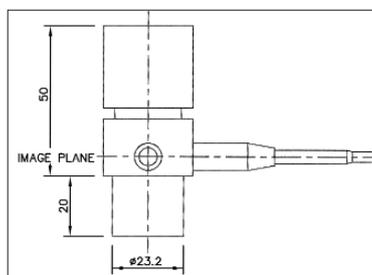


**NEW**

Cat.Ref: **F14**  
Order code: **55H02092**

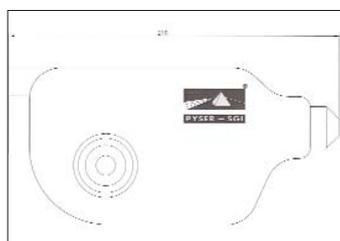
**Bright Line Eyepiece** x 10  
Fitted with a special graticule etched into the glass and illuminated from the side. Used for viewing objects when a normal graticule/reticle pattern is hard to see or when the specimen is dark. Available for any standard or special graticules.

Graticule/reticle: 19 mm dia



Cat.Ref: **SIE25**  
Order code: **55E02095**

**Curtain Micrometer Eyepiece and Control Unit**  
Has translucent curtains which are controlled by positive action knurled knobs for precision adjustment. The keypad and display the measured value. An RS232 output allows the unit to interface with a PC. A universal fitting permits the unit to be fitted to most eyepiece tubes.



**NEW**

Cat.Ref: **CM100**  
Order code: **55F02094**

**Graticule/Reticle Cassette**  
Interchangeable graticule slides with the option of a wide range of structured patterns including cross lines, concentric circles, targets, tolerance patterns, grids and micrometers. Specify graticule requirements when ordering.



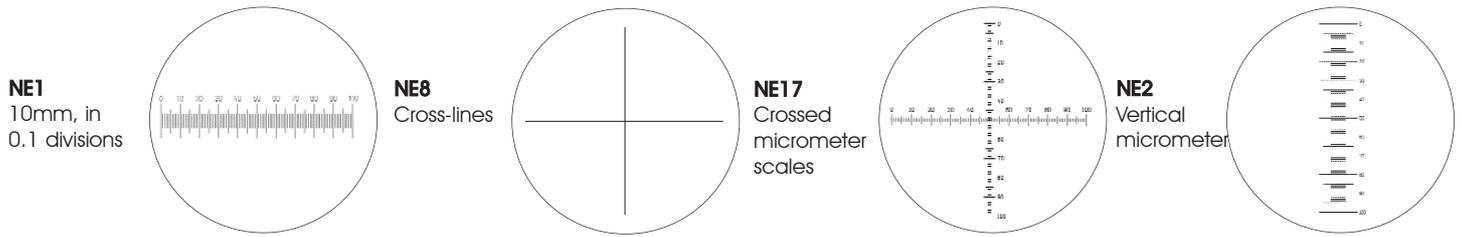
Cat.Ref: **GC1**  
Order code: **80E02541**

**Spare slides:** Specify Graticule type

Cat.Ref: **CM100**  
Order code: **55F02094**

# Graticules/Reticles

Pyser-SGI have the world's largest selection of eyepiece graticules/reticles and stage micrometers. These are just examples from this range. Please request a full catalogue or look on our web site: [pyser-sgi.com](http://pyser-sgi.com)



Eyecups are available in sizes to suit individual eyepieces

## Other Eyepieces

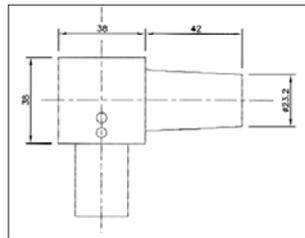
Many other eyepieces and magnifications are available i.e. x5, x15 or x20.



# Viewing Heads

## 90° Viewing Head with Mirror

The optical path is turned through 90° by means of a high-grade surface mirror so that the image of the specimen viewed is reversed. Tube length 90mm



## 90° Viewing Head with Mirror

Cat.Ref: **P115**  
Order code: **80E02510**

## 90° Viewing Head with Prism

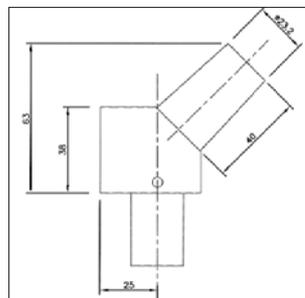
The optical path is turned through 90° by a roof prism giving an erect final image. Tube length 90mm.

## 90° Viewing Head with Prism

Cat.Ref: **P114**  
Order code: **80E02511**

## 45° Viewing Head with Prism

The optical path is turned through 45° by a roof prism giving an erect final image. Tube length 90mm

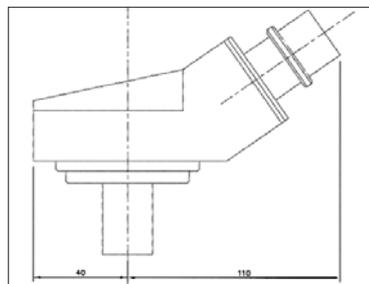


## 45° Viewing Head with Prism

Cat.Ref: **P113**  
Order code: **80E02413**

## 30° Binocular Viewing Head with Prism

A binocular head is more restful for continuous viewing, the image is erect and there is adjustment for the distance between the eyepieces and for uneven eyesight.



## 30° Binocular Viewing Head with Prism

Cat.Ref: **P119**  
Order code: **80F02415**

## 30° Trinocular Head with Prism

Binocular viewing as with P119 above but with an additional vertical port which will accept 35mm, polaroid or CCTV cameras. Tube length 120mm - Width 125mm.

## 30° Trinocular Head with Prism

Cat.Ref: **P120**  
Order code: **80E02518**

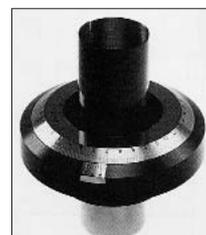
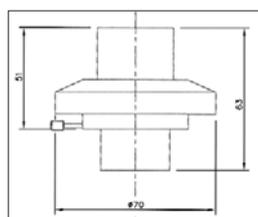
**Note: Matched eyepieces must be ordered separately for both binocular and trinocular viewing heads.**

## Protractor Head/Goniometer

Eyepiece and tube are mounted in this protractor head so that angular measurement is possible. 360° movement numbered every 10° with vernier scale down to 0.2°.

This protractor unit can be placed in optical tubes P136 or P137, or in viewing heads as shown above (P113, P114 & P115).

Effective tube length: 40mm

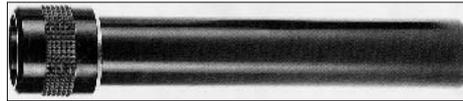


## Protractor Head/Goniometer

Cat.Ref: **P124**  
Order code: **80E02462**

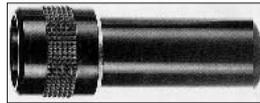
# Microscope Tubes (Optic Tubes)

**Tube – 150mm length**  
Collett head to take 23mm tube diameter components



150mm Tube Length  
Cat.Ref: **P137**  
Order code: **80E02521**

**Tube – 70mm length**  
Collett head to take 23mm tube diameter components



70mm Tube Length  
Cat.Ref: **P136**  
Order code: **80E02520**

**Spacer Tubes**  
These tubes can be added to increase magnification



**5mm** Cat.Ref: **P138**  
Order code: **80E02624**  
**10mm** Cat.Ref: **P139**  
Order code: **80E02625**  
**20mm** Cat.Ref: **P140**  
Order code: **80E02626**

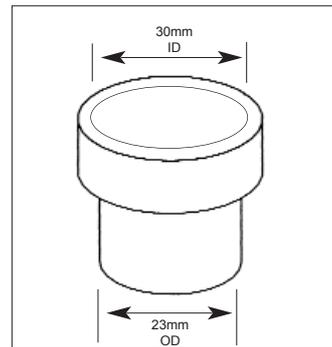
## Anti Reflection Inserts

Optical systems can suffer loss of definition due to reflections inside optical tubes. To reduce this problem, specially coated black paper is available. 4 sheets 100x100mm

Cat.Ref: **P602**  
Order code: **80F02530**

# Adaptors

To accept 30mm Ø tube components, i.e. widefield eyepieces. This adaptor fits into the microscope tubes above, and adds 15 mm to the tube length.



Cat.Ref: **P170**  
Order code: **80E02629**

# Objectives

## Achromatic

Standard objectives with B.S.I. objective threads (R.M.S. standards). All lens element surfaces are anti-reflection coated. Achromatic lenses substantially reduce spherical aberration and coma, as compared to a single lens of the same focal length. Working distances given are the clear air space between specimen and the end of the objective body. The magnifications only apply when a 160mm tube is used. In all other cases a factor must be applied by calibration.

## Other types

The objectives described above have been selected to meet the more popular requirements. We can supply all types of objectives including phase contrast oil conversion reflective and extended working distance. If the above standard lenses do not meet your requirements we will endeavour to supply alternatives against specifications.

## Notes

When objectives are used with tubes of length other than 160mm, the magnification factor quoted no longer applies.



Cat.Ref:	Order code:	Magnification	Working Distance
<b>F48</b>	<b>55E02083</b>	X 0.5	Infinity
<b>F49</b>	<b>55E02084</b>	X 1	140mm
<b>F50</b>	<b>55E02085</b>	X 2	70mm
<b>F51</b>	<b>55E02086</b>	X 5	12mm
<b>F52</b>	<b>55E02087</b>	X 10	7mm
<b>F54</b>	<b>55E02088</b>	X 20	2mm
<b>F55</b>	<b>55E02089</b>	X 40	0.8mm
<b>F56</b>	<b>55E02090</b>	X 60	0.5mm
<b>F57</b>	<b>55E02091</b>	X 3	35mm
<b>F58</b>	<b>55E02092</b>	X10	15mm
<b>F59</b>	<b>55E02093</b>	X10	22mm

# Multi Objective Turrets

These turrets allow multiple objectives to be rotated into the optical path. Two types are available: The triple turret which accepts 3 objectives, and the quadruple turret which accepts 4.



Triple Turret order code: **410-202**

Quadruple Turret order code: **410-201**

# Camera Adaptors

## C-Mount Adaptor

Eyepiece adaptors for use with C mount camera, either monochrome or colour. Graticule/reticle holder included. The image of both specimen and graticule/reticle is displayed on the monitor. Standard C-mount thread

Graticule/Reticle: 19mm dia  
Tube size: 23mm



Cat.Ref: **P264**  
Order code: **90E02511**

# CCTV Systems

A microscope with added television camera has the advantage not only of reducing operator fatigue but also allowing others to view the screen at the same time.

The video output can be linked via a video capture card in a PC to give live images. These can be stored, manipulated and analysed to suit individual requirement.

The choice of camera is wide and new models are constantly being introduced, we recommend at this time the following which meet the exacting requirements of most industrial quality control departments.

## Solid State Monochrome Camera

Gives long life and reliability. Horizontal resolution more than 300 lines, illumination minimum 18 lux, lens standard C mount, image device 2/3 diagonal size, interline transfer CCD 500 (horizontal) 582 (vertical) picture element. Weight 500 grams.



Cat.Ref: **P251**  
Order code: **90F02508**

## Monitors

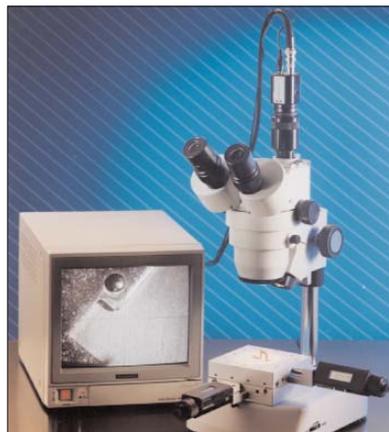
Video input composite video signal 1.0 Vp-p sync negative, resolution horizontal 700 lines vertical 350 lines, deflection linearity within 2% power consumption 28W, height 219mm width 234mm weight 6.5kg



Cat.Ref: **P257**  
Order code: **90F02510**

## Complete CCTV systems

Comprises camera, power supply, video cable, monitor and P264 adaptor.



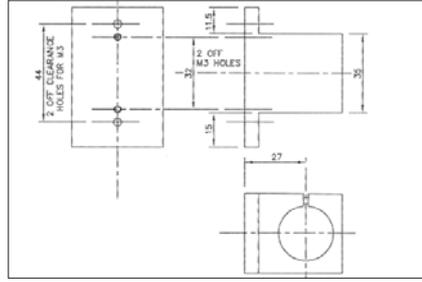
**Monochrome Version**  
Cat.Ref: **P920**  
Order code: **50E02070**

**Colour Version**  
Cat.Ref: **P221**  
Order code: **50E02071**

# Mounting Components

## Slide Mount Block

The slide mount block clamps the microscope tube for fixation either to a flange plate, P166 hereunder, or to a rack and pinion by means of a dovetail adaptor P201 hereunder. It can also be used to attach the tube to a machine or rig in either vertical or horizontal stance.

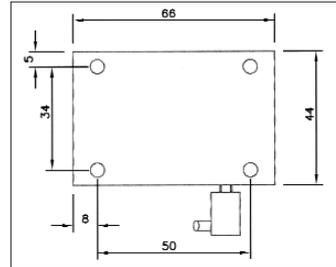


Cat.Ref:  
Order code:

**P150**  
**80E02421**

## Flange Plate

The female dovetail will accept all rack and pinion focussing systems. The level arm locks the dovetail. The flange is pre-drilled for 1/4" screws.

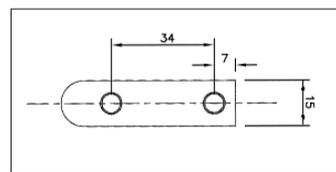


Cat.Ref:  
Order code:

**P166**  
**80E02533**

## Dovetail Adaptor

The dovetail can act as a linking piece between the slide mount block and the flange plate, or rod mounting block.

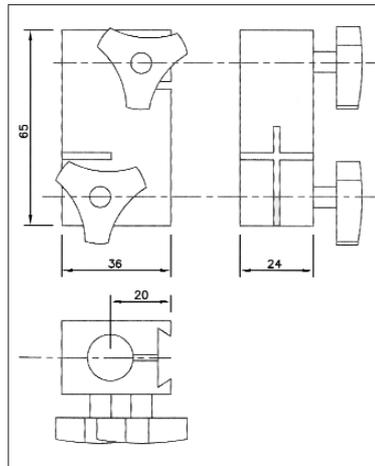


Cat.Ref:  
Order code:

**P201**  
**80F02428**

## Rod Attachment Block

By using this block with either the slide mount block alone or with rack and pinion the microscope can be mounted and moved on a rod. Female dovetail will accept all rack and pinion focussing systems. Lever arm locks dovetail. Bore will accept stainless steel rod, P207



Cat.Ref:  
Order code:

**P211**  
**80E02534**

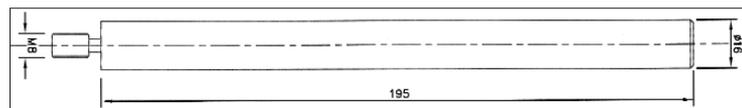
## Rods

Stainless steel rods suitable for fitting to tables, pillars and to the rectangular base



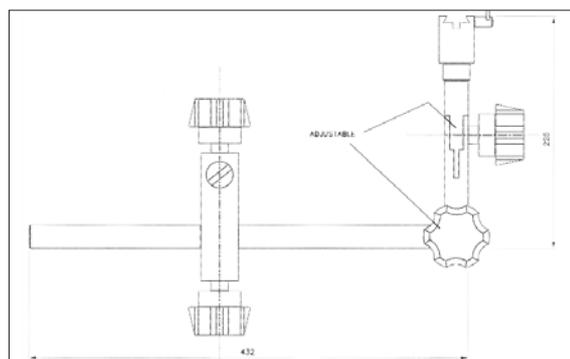
Cat.Ref:  
Order code:

**P207**  
**80E02535**



## Adjustable Arm Unit

The adjustable arm fits the stainless steel rod P207. The female dovetail unit with lever locking arm, will accept either rack and pinion or slide mounting block with dovetail.



Cat.Ref:  
Order code:

**P209**  
**80F02432**

# Bases

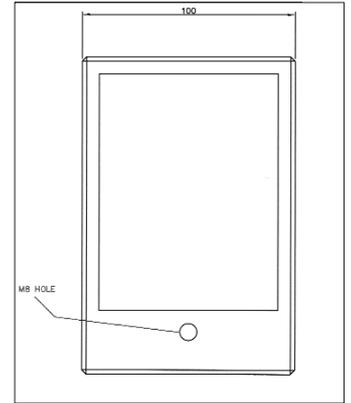
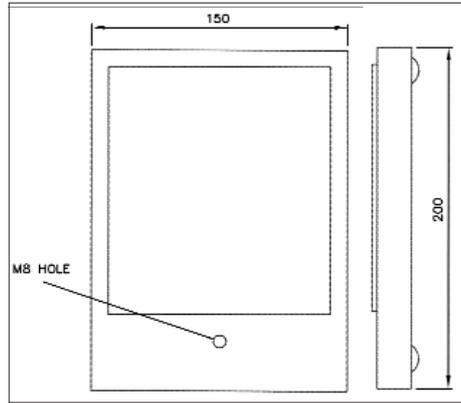
## Rectangular Bases

Two sizes for bench mounting. M8 hole accepts Rod P207.

P216: 150mm x 200mm  
P215: 100mm x 150mm



Size: 150x200mm  
Cat.Ref: **P216**  
Order code: **80E02537**

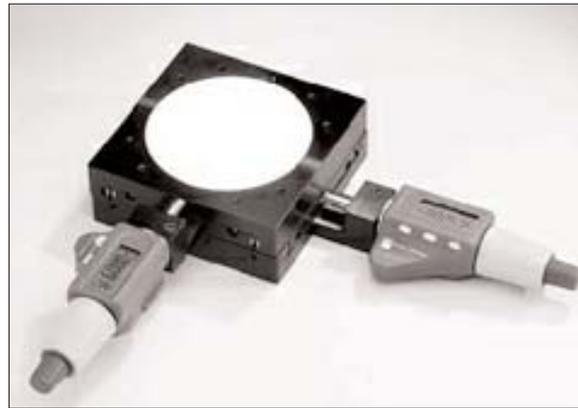


Size: 100x150mm  
Cat.Ref: **P215**  
Order code: **80E02536**

**Others**  
Illuminated bases, desk claps and other types all available

# X-Y Stages

A variety of X-Y stages are available to suit individual applications. The stage shown here provides 30mm x 30mm movement to 1µm resolution and has precision micrometers with digital readout.

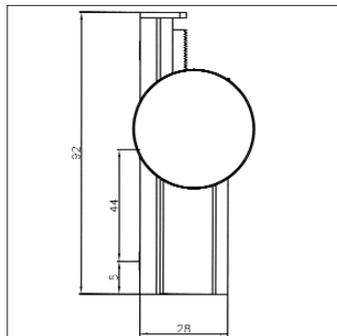


Cat.Ref: **X-Y Stage**  
Order code: **50E02058**

# Focussing Mechanisms

## Coarse Focusing Mechanism

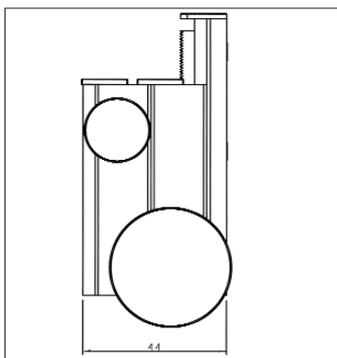
A precision, robust movement to allow coarse focussing. All metal mechanics are used to give a movement of 65mm. Mounts on to flange plate, rod attachment block or adjustable arm unit.



Cat.Ref: **P160**  
Order code: **80F02423**

## Coarse and Fine Focusing Mechanism

This mechanism provides both coarse and fine adjustments for ease of focussing, and is particularly useful for higher magnifications. The coarse focus is the same as P160 above. The fine movement works on a vertical lever mechanism to give precise positioning. Mounts on to flange plate, rod attachment block or adjustable arm unit.



Cat.Ref: **P162**  
Order code: **80F02424**

# Lighting

## Miniature Lamp with Variable Controller

A single lamp holder and bulb on a flexible joint. The bulb has built in condenser lens to concentrate light onto a small area. The lamp unit plugs into a power unit with variable control.



Cat.Ref: **PL882**  
Order code: **60E02362**

## Miniature Lamp excluding Controller

Single lamp holder and bulb on flexible joint requires 2.5 volt 100mA supply. Bulb has built in lens to concentrate light to small area.

Cat.Ref: **PL886**  
Order code: **60E02364**

## Double Miniature Lamp with Variable Controller

Double lamp units on flexible joints and objective mounting ring (standard 17mm). Double outlet power supply with variable control.



Cat.Ref: **PL887**  
Order code: **60E02374**

## Vertical Thru Lens Illuminator

Vertical illumination is essential when using high power objectives or when illuminating subjects in restricted light conditions. Supplied complete with variable control.



Cat.Ref: **PL910**  
Order code: **60E02367**

## Bulbs

Replacement bulbs for all above lighting systems available in packs of 10.

Cat.Ref: **PL2**  
Order code: **60E02369**

## Surface Illuminator

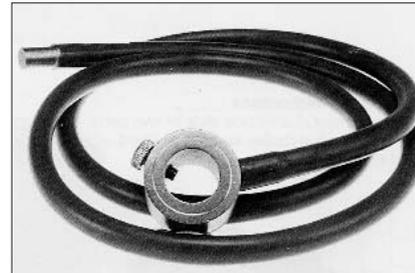
Surface lighting unit most suitable for microscopes fitted with TV cameras. Twin lamps are positioned so as to fully illuminate an area of 25mm. Two 12 volt, 12 watt quartz halogen lamps on adjustable arms. The lighting unit is mounted either directly onto the microscope tube or onto an objective spacer fitted between microscope and objective lens. If spacer is used microscope tube length is increased by 20mm. Supplied complete with variable control.



Cat.Ref: **PL889**  
Order code: **60E02375**

## Fibre Optic Cold Illuminator

Suitable for illuminating large areas with a high power source without transfer of heat from source to specimen. Illuminator fits to standard objectives (17mm dia.) Ultra flexible 6mm light guide transmits light from source (P228 P229) to ring. Overall length 1 metre, other lengths available on request. Other ring lights and under-stage lights available.



Cat.Ref: **PL235**  
Order code: **60E02358**

50 watt  
Cat.Ref: **P228**  
Order code: **60F02351**

150 watt  
Cat.Ref: **P229**  
Order code: **60F02352**

## Light Source

Two versions: 50 watt fixed output P228  
150 watt variable output P229

## Portable light unit

A portable light source for bench application, the source is a 6V, 6W tungsten bulb with focussing condenser lamp mounted on an arm, allowing easy positioning of the lamp. The arm is connected by flexible joints to a power unit which has variable brightness control.

## Note:

All lighting power units are available as 110 volt, models on request.



Cat.Ref: **PL892**  
Order code: **60E02366**