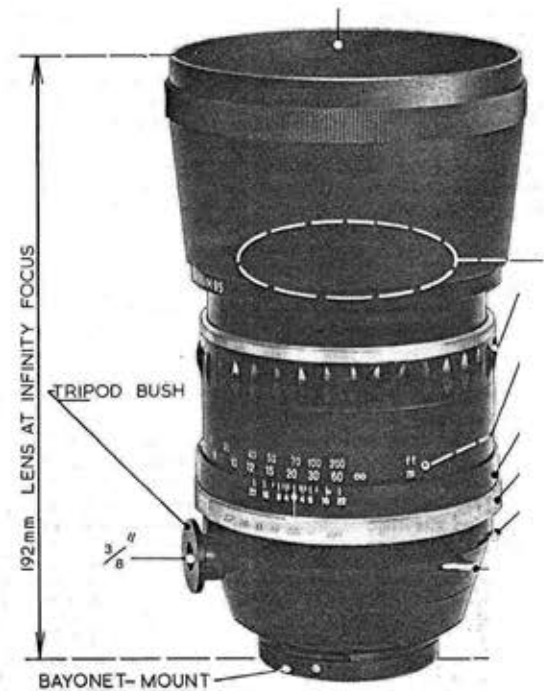
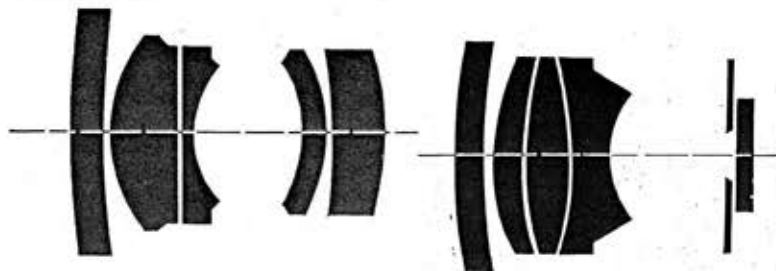
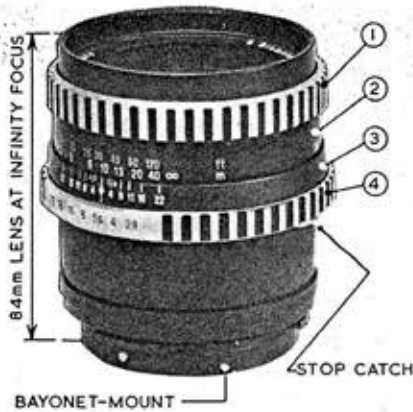
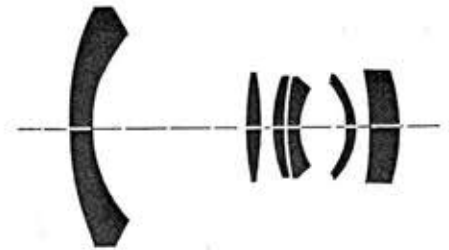
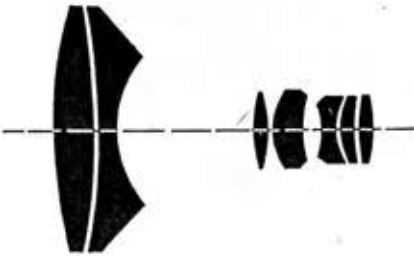


# PENTACON SIX LENSES

## —A REVIEW



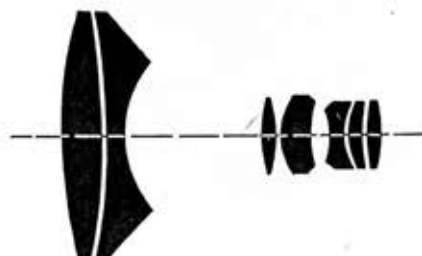
# PENTACON SIX LENSES

## —A REVIEW

The Pentacon Six camera was reviewed in our issue of 22 March 1968, and the present report is concerned with the interchangeable lenses available for the camera. The normal lens range for the camera is manufactured by Carl Zeiss Jena, although, since the camera has a focal plane shutter, various lenses may be used via adaptor rings. The Pentacon Six lenses are anodised black, with the aperture and focus rings in glossy chrome, inset with black milling. The styling and finish are first class. The milling is coarse, which allows an easy grip to be gained even with that fabled gloved hand. The distance scales are inked in white for metric, and orange for feet. There is a depth of field preview lever on the right hand side, spring loaded to return the lens to full aperture when released. The lenses are held open against spring pressure, and are therefore of the 'sprung shut' type.

### 50 mm 1/4 Flektogon.

1. FOCUSING GRIP.
2. DISTANCE SCALE.
3. DEPTH OF FIELD SCALE.
4. STOP SETTING RING.



### 50 mm 1/4 Flektogon

This is the widest angle lens available for the Pentacon Six. The actual photographed picture size with this camera is 56 mm x 56 mm, giving a diagonal of 79 mm. Consequently the standard 80 mm 1/2.8 lens is normal for the format, and the 50 mm lens represents a scale factor to the diagonal of x 0.625.

This lens and that examined next, the 65 mm, are very similar in size. Set to infinity it extends 73 mm from the camera front, with a front rim diameter of 90 mm. Behind this rim, the barrel sharply tapers to the focusing ring, with a broadening behind this to the aperture setting ring. The appearance of a lens is far less important than its performance, but the overall design and styling of this and the 65 mm lens have been excellently carried out.

The front glass diameter is 71 mm, and the rear 18 mm. The overall optical section—front glass to rear glass back surface distance—is 85 mm, and the back extension, or rear surface to focal plane distance, is 65 mm. The lens is therefore quite an impressive piece of optical engineering. There are click half stops from the maximum aperture 1/4 down to 1/22 and the lens focuses down to 0.5m, just under 20 in., which is accomplished in a 310° rotation of the focusing ring. It may be noted that with the lens set to infinity, and set down on its rear end, the curve of the rear glass will only be a few thou' clear of the surface it stands on. The lens extends 73 mm from the camera front flange set to infinity. It weighs 22 oz.

The lens performed well at full aperture, with good sharpness over most of the field, falling off a little to the edges, and definitely towards the corners. At 1/5.6 there was a general crispening up, with some fall-off still noticeable at the very edges and in the corners. At 1/8, really fine detail was crisply defined over the whole frame, and this performance was maintained on stopping down to 1/16 with very little contrast fall-off. For all practical purposes, the half stop after 1/5.6 might be regarded as the aperture at which a big enlargement from most of the frame would show really crisp detail over the whole picture. Under normal conditions there was no flare, and contrast was excellent. There was no observable vignetting, and linear distortions were negligible.

The lens tested gave a most creditable performance, and the 50 mm 1/4 Flektogon will perform the functions of a general purpose wide-angle lens excellently.

### 65 mm 1/2.8 Flektogon

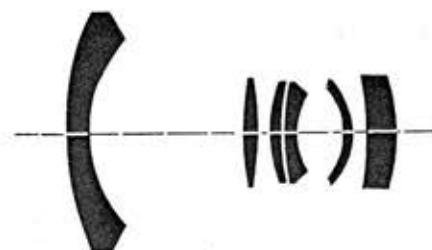
The mounting of this lens and that of the previous one described are almost identical in size. The 65 mm lens extends 75 mm from the camera front flange, set to infinity. The 65 mm lens is 5 oz lighter at 17 oz. The front glass diameter is 67 mm, and the rear glass 25 mm. The optical section is 86 mm and the back extension is 65 mm.

The aperture scale has click half-stops down to 1/22, and the lens focuses to just under 0.75 m, about 29 in., with a 290° movement. The focal length scale factor to the format diagonal is x 0.81.

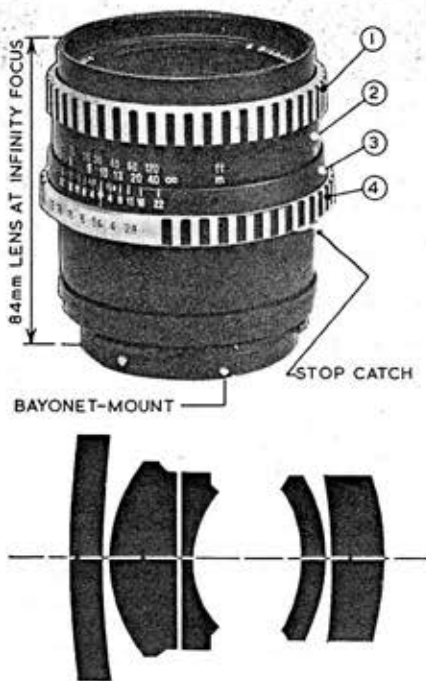
On test, this lens gave a pattern of behaviour very similar to the 50 mm; the

### 65 mm 1/2.8 Flektogon.

1. FOCUSING GRIP.
2. DISTANCE SCALE.
3. DEPTH OF FIELD SCALE.
4. STOP SETTING RING.



- 1 FOCUSING GRIP. 2. DISTANCE SCALE. 3. DEPTH OF FIELD SCALE. 4. STOP SETTING RING.

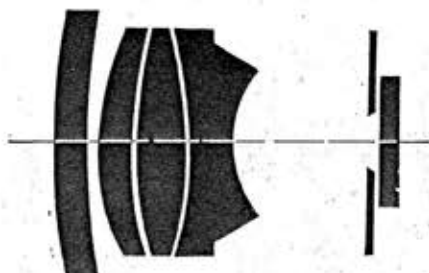


120 mm 1/2.8 Biometar.

extra one stop maximum aperture is presumably traded off against the narrower angle covered. Central sharpness at full aperture was good, with some fall-off at the edges and definitely in the corners; although as with the 50 mm, the contrast was well maintained over the whole frame. At 1/4 the frame was crisper overall, but with some fall-off still at the very edges and in the corners. For general purposes, really crisp overall coverage was achieved at the half stop between 1/5.6 and 1/8, and there was then no fall-off on stopping down until 1/16. No trouble was experienced with flare or vignetting, and linear distortion was not observable. Contrast was medium high, this and the 50 mm lens matching very closely in this respect—a useful feature. This again is a very creditable performance, and the 65 mm 1/2.8 Flektogon will perform the functions of a general purpose semi-wide angle lens admirably.

**80 mm 1/2.8 Biometar**

This lens was fully examined in the review of the Pentacon Six camera published 22 March 1968. The lens matches the styling and layout of the other Pentacon Six objectives.



**120 mm 1/2.8 Biometar**

This is a compact, slightly telephoto lens, of the same weight as the 65 mm—17 oz. Set to infinity it extends 73 mm from the camera front flange, and focuses down to 1.3 m, around 4 ft 3 in., with a focusing movement of 285°. The aperture scale is click half stop down to 1/22. Its overall diameter—the aperture ring—is 81 mm. An interesting feature of the lens is its deeply curved rear surface. The scale factor to the format diagonal is  $\times 1.5$ .

On test, the lens gave a sharp picture of good contrast over the whole frame at full aperture, like its fellow the 80 mm. At 1/4, really fine detail was crisply rendered over virtually the whole frame, and a further half stop down sufficed to give a really excellent balance of resolving power, definition and sharpness over the whole frame. The lens was stopped down to 1/16 before some slight fall-off contrast became noticeable. No flare was observed, and the lens was free from linear distortions. Contrast was medium.

The 120 mm 1/2.8 Biometar will be found an excellent long focus lens, suited both for general purpose use, out and about, and in the studio, as well as for more critical applications. For example, since it is not 'very' telephoto, its corrections will hold up well when used with tubes or bellows for macrophotography. For out and about hand-held use, it is very easy to use since it balances well with the camera. For example, with the left hand edge of the camera placed just below the ball of the thumb and before the wrist, it is possible to focus and set the aperture holding the camera in the left hand only, using the thumb and fore-

finger on the focusing ring and the third finger on the aperture ring, although this was a little difficult with the review sample, since the focusing movement had a rather high inertia.

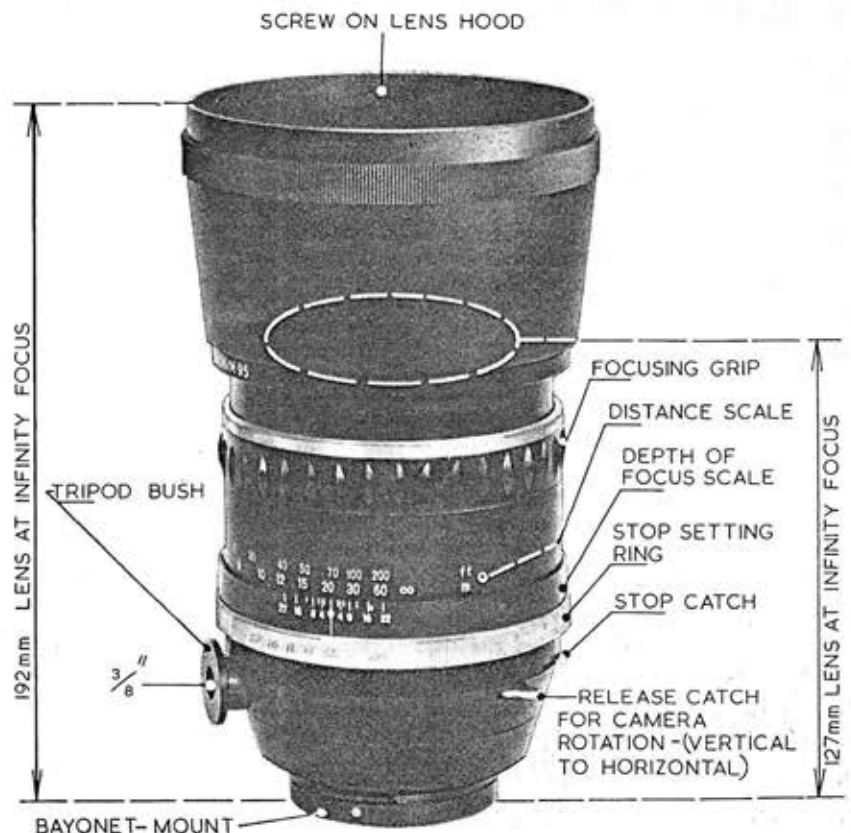
**180 mm 1/2.8 Sonnar**

This lens is, of course, a relative of the famous 'Olympia' Sonnar of 1936. Modern techniques, particularly, in this instance, anti-reflection coatings, have considerably increased the efficiency of the basic design in the ensuing 32 years.

Fitted to the Pentacon Six, the lens extends 155 mm from the camera front flange without its lens hood, and 180 mm with its lens hood, and set to infinity. It may be mentioned here that the focusing travel extends beyond the infinity mark on the distance scale—so that jamming the lens back against the stop when in a hurry, will result in a completely unsharp picture. This extra travel could be intended to allow a latitude in fitting the lens to other cameras. This point seems confirmed by the facility provided to rotate the tripod fitting pedestal round the lens on a collar with a catch lock. On a square format camera like the Pentacon Six, this feature has little practical use.

The lens is styled slightly differently from the others reported on, in that the focusing ring has a series of raised grips, rather than milling, and the milling on the aperture setting ring is finer. In general appearance, however, the lens conforms to the standard Pentacon livery. The overall diameter at the front rim is 100 mm, and the weight of the lens just under 3 lb. The scale to format diagonal factor is  $\times 2.25$ .

**180 mm 1/2.8 Sonnar.**



# PENTACON SIX LENSES

On test, the lens retained contrast and good sharpness over the whole frame at full aperture. At  $f/4$ , the performance stepped up markedly, and really fine detail was crisply defined over most of the frame. For very critical use, stopping down a further half stop improved definition further, and performance was then maintained down to  $f/16$ , where some softening of contrast became apparent. No flare was observed, and the lens was free from linear distortions. Contrast was medium, not quite as high as the 120 mm  $f/2.8$ .

The 180 mm  $f/2.8$  Sonnar by Carl Zeiss Jena will be found to live up to its reputation, providing good image quality at its full aperture of  $f/2.8$  where this wide aperture is necessary, and when stopped down, a standard of resolving power and definition suitable for critical applications. Considering that a lens of its aperture and focal length for this format cannot be small, the lens handles surprisingly conveniently. It can even be focused and its aperture set with the camera held in the left hand only. This is done by resting the left hand end of the camera base plate on the wrist, and the lens along the hand, with the thumb and first finger operating the focusing ring, and the fourth finger on the aperture setting ring. The focusing movement on the review sample was very

smooth, with some slightly increased friction towards the closer focused distance. The lens focuses down to just under 2.2 m, around 7 ft, which is a very useful feature for studio work. The lens can be hand held satisfactorily, although a firm tripod should be used where possible. In this connection it might be mentioned that tests indicated that the Pentacon Six, despite fairly noticeable shutter and mirror jar seems to remain quite steady on a tripod even at slower shutter speeds, such as  $1/30$ th sec. The obvious application of this lens is sports, action and press photography, and these purposes it will fulfil outstandingly.

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In addition to the lenses reviewed here, other longer focal length objectives are available for the Pentacon Six, including mirror lenses. The range available for the camera should serve most purposes and it will be noted that they are all, except the 50 mm, of wide aperture —  $f/2.8$ . These are good modern optical constructions, with the mounts well designed for convenience in use and distinguished in appearance. The standard 80 mm  $f/2.8$  is an outstandingly good lens, performing better at full aperture

than the 65 mm  $f/2.8$ , but some professional workers might prefer, from the point of view of general utility, to omit the 80 mm, and equip with the 65 mm and the 120 mm. The 120 mm can be used to fill the frame, particularly with colour, from a useful working distance, whilst the 65 mm can be used in tighter situations to give semi-wide angle coverage. Once again, those whose use of longer focal length lenses is too restricted to warrant considerable expenditure, can adapt almost any lens for use on the Pentacon Six with its focal plane shutter.

The Pentacon Six, stemming as it does from its predecessor, Praktisix, is certainly one of the significant cameras of today, and fully merits the strong promotion it is now getting. In addition to the lenses, a range of ancillary equipment is available, including extension tubes, and bellows attachment; and although in this country we do not seem to have seen it, there is apparently a plate and cut film back attachment available. A further variant as regards long focal length lenses is the Novoflex and Kilfit follow-focus equipment and lenses.

The Pentacon Six is manufactured in East Germany by VEB Pentacon, and distributed in this country by C.Z. Scientific Instruments Limited, 93-97 New Cavendish Street, London W1.