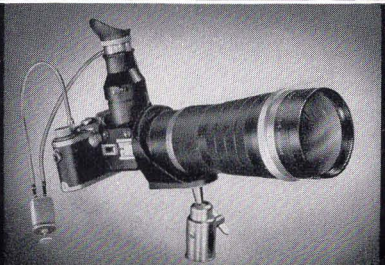
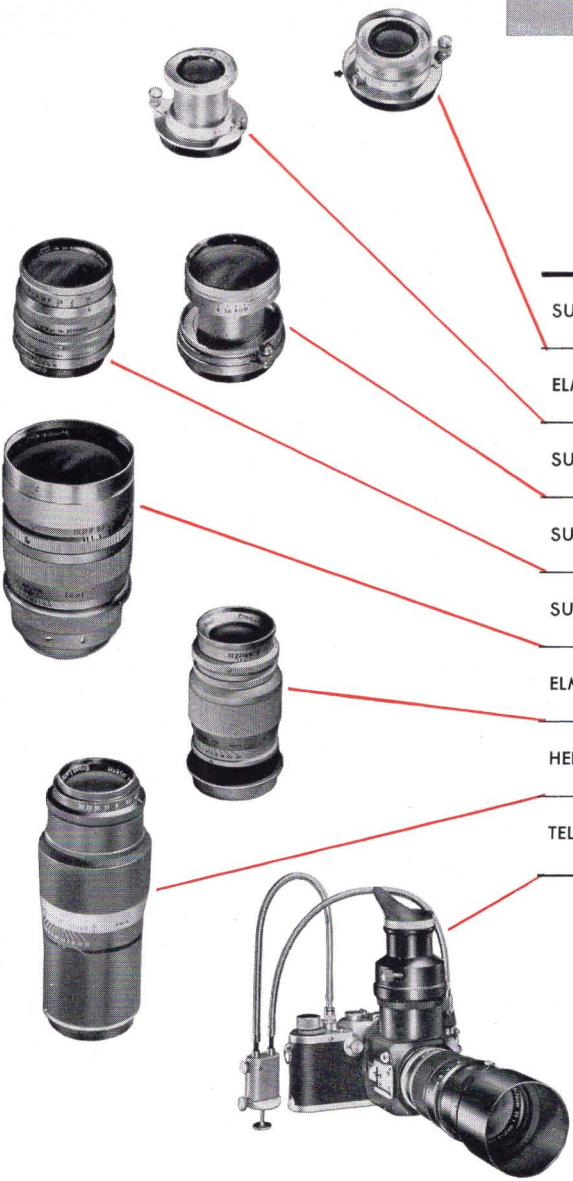
Leica Lenses



SPECIFICATIONS

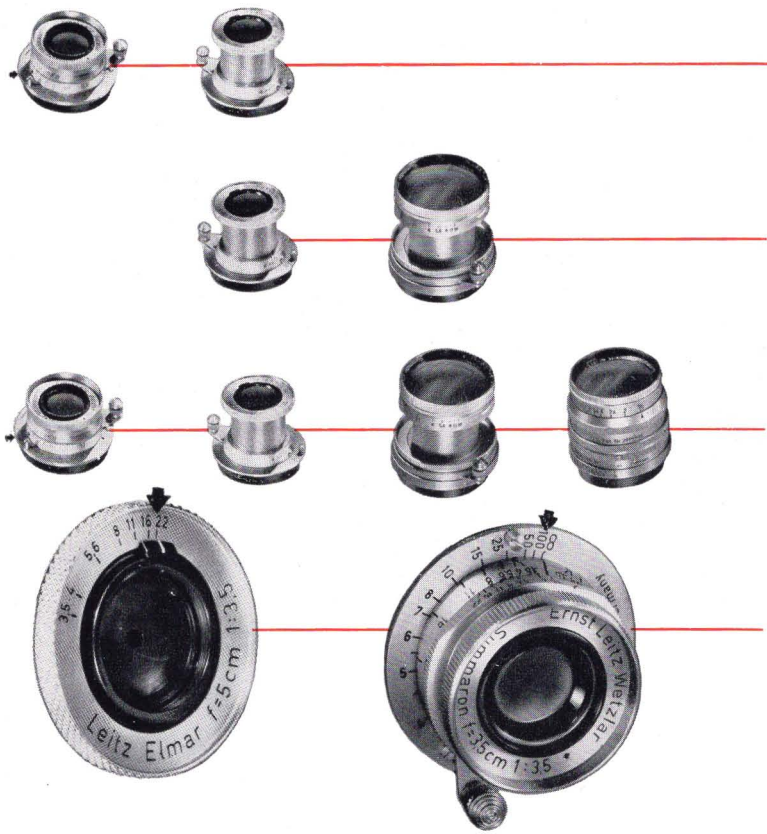


Name	Focal Length	Type
SUMMARON	35 mm.	WIDE ANGLE
ELMAR	50 mm.	STANDARD
SUMMITAR	50 mm.	STANDARD
SUMMARIT	50 mm.	STANDARD
SUMMAREX	85 mm.	LONG FOCUS
ELMAR	90 mm.	LONG FOCUS
HEKTOR	135 mm.	LONG FOCUS
TELYT	200 mm.	TRUE TELEPHOTO

OF THE EIGHT LEICA LENSES

Maximum Aperture	Mount	Minimum Aperture	Angle of View	Scale of Reproduction Compared with Standard Lens	Weight
F:3.5	RIGID CHROME	F:22	68°	× 0.7	6 ounces
F:3.5	COLLAPSIBLE-CHROME	F:16	48°	× 1.00	4 ounces
F:2	COLLAPSIBLE-CHROME	F:16	48°	× 1.00	7.5 ounces
F:1.5	RIGID CHROME	F:16	48°	× 1.00	10.5 ounces
F:1.5	RIGID CHROME	F:16	28°	× 1.75	21 ounces
F:4	RIGID CHROME	F:36	27°	× 1.8	7 ounces
F:4.5	RIGID BLACK	F:36	19°	× 2.7	18.5 ounces
F:4.5	RIGID BLACK	F:32	12°	× 4.00	14.5 ounces

INTERCHANGEABLE LEICA



LENSES

The fact that the Leica Camera may be fitted with a complete series of interchangeable lenses is one of the most important characteristics of the Leica system of photography.

The principle of interchangeability is not new, but as developed and applied to the Leica Camera, it has been made available to a far greater number of photographers than was previously possible.

The Helical Mount. Each lens is provided with its own focusing mount. On the Leitz Elmar 50mm., and the Leitz Summaron 35mm., focusing is effected by means of a lever. On the other lenses a milled ring is provided. The distance is read off by an index mark.

Collapsible Lens Mounts. The Leitz Elmar and Leitz Summitar of 50mm., focal length are provided with collapsible mounts, and must be pulled out before using the camera. When the lens is fully drawn out, it is turned slightly to the right, when it will lock in position. To push back the lens, it must first be turned a little to the left, then pushed straight back into the body of the camera.

The Infinity Catch. When the focusing mounts of the Summaron 35mm., and Elmar, Summitar and Summarit 50mm., lenses reach the "infinity" mark, they lock in position by means of a catch. By pressing the knob on the end of the focusing lever, the catch is released and can then be rotated for focusing. This device is only found on lenses of 35 and 50mm., focal length.

The Aperture is set on the Leitz Elmar 50mm., by a small lever engraved with an index next to the front ring of the lens mount. On the other lenses, a narrow ring bearing the index mark, actuates the diaphragm. The figures indicate the relative aperture of the lens.

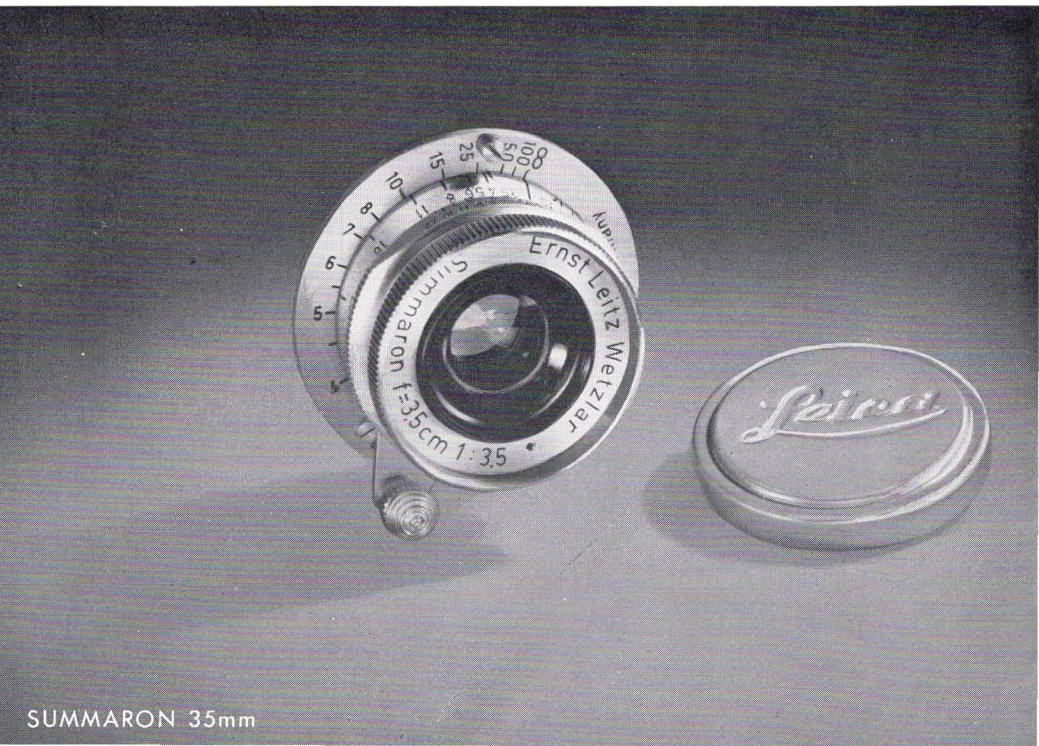
SUMMARON 35mm., F:3.5 COATED WIDE-ANGLE LENS

The angle of field of the Leitz 35mm. (1⅜″), coated F:3.5 wide angle Summaron lens is almost 68°, and in spite of the really high aperture of F:3.5, this lens possesses the first-class definition of the other Leitz lenses of different focal length. The great depth of focus makes it possible to avoid setting the lens repeatedly; for instance, at the aperture of F:4.5, sharp focus on all objects between 13 feet and infinity may be obtained by setting the lens to focus on a distance of 26 feet.

ELMAR 50mm., F:3.5 COATED STANDARD LENS

The standard Leitz Elmar F:3.5, 50mm. (2″), coated lens has a light transmitting power sufficient for most exposures. The correction of this lens has been so thoroughly carried out that its performance at F:3.5 with regard to definition is extremely good. The Leitz Elmar yields a sharp image at full aperture and covers the whole negative field perfectly. Because of its remarkable optical construction, and relatively large aperture, this lens will always remain the most suitable for the majority of amateurs and is therefore one of the "Standard Lenses" for the Leica camera.

This standard lens, the Leitz Elmar, has now been made for more than 25 years, and has achieved an excellent reputation. It is provided with changing flange for alternative use on the camera, enlarger or projector, and may also be used in conjunction with the auxiliary devices for photographing small objects.



SUMMARON 35mm

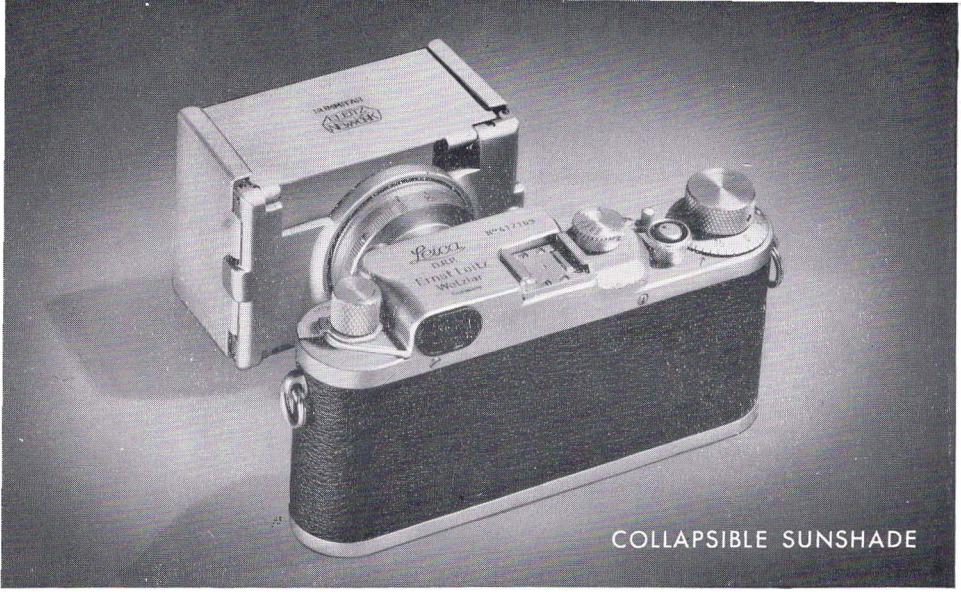
ELMAR 50mm

SUMMITAR 50mm., F:2 COATED UNIVERSAL SPEED LENS

From the diameter of the front element of the Summitar lens, one would be led to believe that its aperture is about F:1.6. In spite of this, the effective aperture remains F:2 and this means that the increased amount of light transmitted by the larger front element has the effect of considerably reducing the falling off in illumination at the edges of the field. In other words, the lens gives even intensity of illumination at the edges of the image. This is of great advantage, particularly in color photography. While it is always possible to reduce the vignetting effect in a lens by increasing the diameter of the front element, this is usually done by a sacrifice in definition at the edges of the field. In the Summitar lens, however, the increased marginal intensity of illumination is not accomplished by a sacrifice in definition; on the contrary, we have improved the correction of the Summitar lens to such an extent that, in spite of the increased marginal intensity of illumination, a considerable improvement in definition over the entire area has been accomplished, even at full aperture.

Another advantage of the Summitar lens lies in the fact that the large front element of this new objective is made of a new type optical glass which protects the lens surface very effectively against adverse climatic conditions such as encountered in the tropics or in humid atmospheres.

When using the Summitar lens, it is of utmost importance to eliminate



all possibility of stray light from entering the lens and causing flare or halation on the film. Therefore the Summitar lens should always be used with the collapsible sunshade which has been specially designed for it. This is especially true when the full, or nearly full, aperture of the lens is utilized, even on occasions where photographs are being taken in artificial light or out of doors without sunshine.

The advisability of using a sunshade refers to all photographic lenses.

In general, the same rule applies to the Summitar lens which applies to all high speed photographic lenses. The full aperture should serve as a reserve of speed for such cases where unfavorable lighting conditions would make it necessary to use exceedingly long exposure times; where a short exposure time is necessary because of a too rapid movement of the object, or where it is desirable to use a differential focus, in order to reduce confusing background detail in portraiture.

The Leitz Summitar lens is collapsible and equipped with the standard type focusing mount with depth of focus scale and coupling for the range finder of the Leica camera. When stopped down to F:6.3, the Summitar lens may be used for enlarging. For close up photography and short distance work, the Summitar lens may be used with the Optical Short Distance Focusing Device (Nooky-Hesum).

SUMMARIT 50mm., F:1.5 COATED SPEED LENS

It is not only the wide aperture which makes the Summarit lens of outstanding interest. It must be stressed that the new lens gives a magnificent sharpness over the entire field when working at full aperture.

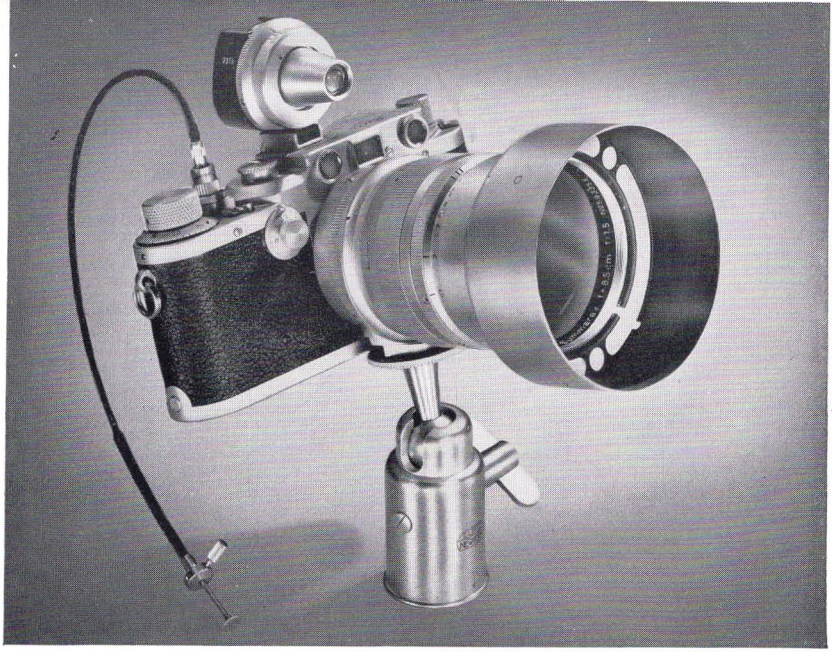
The definition of the Summarit lens improves further on stopping down; in other words, it is not computed so that its best achievement is only at F:1.5.

This fact makes the objective more useful than it would otherwise be, for it can be used for all-round photographic purposes to the best advantage. The light distribution of the F:1.5 lens is remarkable even at full aperture, and the objective possesses a freedom from distortion which has not previously been achieved with a lens of such speed.

The Summarit lens couples with the rangefinder in the same way as the other Leitz objectives, and is focused by rotating the knurled grip on the lens barrel. Its focusing mount is rectilinear—the lens itself does not rotate during focusing. Because of its great light transmitting capacity the lens has a larger diameter than other 50mm. lenses, and therefore is not collapsible.

SUMMAREX 85mm

ELMAR 90mm



SUMMAREX 85mm., F:1.5 LONG FOCUS COATED SPEED LENS

The Summarex 85mm. (3¼"), F:1.5 coated speed lens has been designed primarily for press and magazine photographers who must often work under well-nigh impossible conditions of illumination. Supplementary flash lighting is often prohibited at such popular events as horse shows, circuses and ice shows —and in the theater, flash light is taboo except during rehearsals.

Portrait photographers will find the focal length of 85mm., in addition to the high speed of the Summarex lens, of great advantage for child photography in the studio where shutter speeds as high as 1/60th of a second are required to "freeze" movement.

The even distribution of light over the entire negative, and the definition at all apertures, are remarkable. The all-round performance of the lens is a personal triumph for the designer, Professor Berek, who spent a considerable number of years on the computations and tests.

There is no special view finder required for the Summarex lens, as the Imarect Finder is used with the long index line of the calibrated ring set "shy" (to the left) of the 90mm. marking.

ELMAR 90mm., F:4 LONG FOCUS COATED LENS

The Elmar 90mm. (3½"), F:4 long-focus lens is one of the most popular Leitz lenses for portrait and landscape work, its light weight being a special advantage when working without a tripod—since a heavier lens may cause camera motion in hand-held exposures.

HEKTOR 135mm., F:4.5 LONG FOCUS COATED LENS

The Leitz Hektor 135mm. (5⅜″), F:4.5 lens has an exceptionally high resolving power and should be used where subjects of fine structure are to be photographed. It fulfills perfectly all that the photographer demands for a long-focus lens, being suitable not only for distant landscapes and scientific work, but also of great value for portraits—particularly head studies—and for fine details of architecture, which must necessarily be photographed from some distance. In addition, the 135mm. Hektor lens has extremely good color correction, and is thus particularly fitted for work with color films, and for use with infra-red films and a red filter.

HEKTOR 135mm

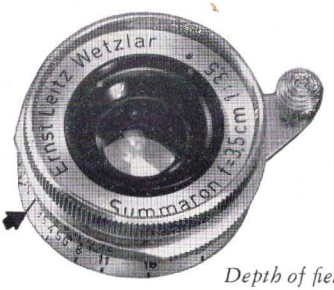
TELYT 200mm., F:4.5 TELEPHOTO COATED LENS

The range of application of the Leitz 200mm. (8″), F:4.5 Telyt lens is very much the same as that of the 135mm. Hektor. The size of the picture on the negative, however, is almost half as large again, and compared with the 50mm. "universal" lenses, the magnification of the image given by the Leitz Telyt lens is 4 times.

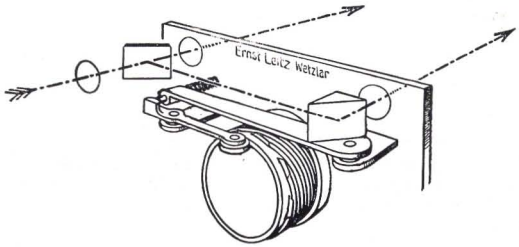
The advantage of the telephoto principle is that such a lens can be fitted in a mount which is considerably shorter in length than the focal length of the lens itself. Thus, the Leitz Telyt is only 3.3mm. longer than the Hektor 135mm. lens, although its actual focal length is 65mm. greater.

In the computation and construction of this lens, which has the excellent definition and evenness of illumination over the entire picture characteristic of all Leitz lenses, special attention has been given to insure the most complete color correction possible, so that the lens is as accurate when used with color films—as with the panchromatic and infra-red types. The latter films are particularly recommended for long distance work, where they serve to penetrate the bluish atmospheric haze which is often present in such photography, and which might otherwise destroy fine detail and over-all sharpness.

To avoid parallax and make certain that the picture area is the same as that visualized (this is always a point of difficulty with telephoto lenses), a mirror reflex attachment is provided which also serves for focusing directly on to the glass screen, so that no coupling with the range finder is necessary.



Depth of field scale



Coupled range finder

The Depth of Field Scale. In order that the range of depth of field at any lens aperture may be read off direct from the camera, a special scale is fitted engraved with the aperture figures, which shows the distances in front of and behind the actual focusing distance at which sharp focus is obtained, for all lens apertures. The accuracy of this scale is quite sufficient for most practical purposes, though for very accurate work special depth of field tables can be obtained from us (price 15 cents), in which the figures are calculated for a circle of confusion of 1/30th of a millimetre.

Lens Changing. The interchangeability of the various Leica lenses is made possible by having a standardized screw thread on both the camera and the lens mount. The camera flange into which the lenses are screwed, and the lens thread, are made with the greatest accuracy possible. The lenses are simply screwed into the flange and are then in correct register. A quick-thread mount or a bayonet fitting has not been used, since these are liable to wear with use, and become inaccurate. When changing the lens, the opening in the camera body should not be exposed to strong light and it is best to hold the front of the camera against the body while the other lens is taken from the camera case. If the camera is carried for some time without a lens, a screw cover should be used to keep out dust and damp.

The Coupled Range Finder. In the Leica Models IIc, and IIIc, a special patented device connects the helical focusing mount of the lens with the actuating lever of the range finder. The coupling is automatically effected merely by screwing the lens into the camera. This automatic coupling represents a micrometer-movement mechanism with two compensating devices of a degree of precision such as is found only in very high-priced microscopes. This coupling makes the Leica extremely convenient and quick to manipulate. It should be specially mentioned that Leica lenses which are adapted for this coupling are suitable for immediate use on the Model Ic Leica, which is not equipped for coupling the lens with the range finder, though it can be provided with this coupling by subsequent adaptation.

Versatility of Lenses. The number of lenses available for use with the Leica being so large, it might not be an easy matter for all photographers to decide which lens would best suit their requirements. The following list, arranged in order of the various types of photography, clearly shows the special purposes to which the different lenses are suited.

Type of Work	Lens of Short Focal Length	Lens of Standard Focal Length	Lens of Long Focal Length	Remarks
Candid and Snapshots	Summaron 35 mm	Elmar or Summitar 50 mm	Elmar 90 mm	
Technical	Summaron 35 mm	Elmar or Summitar 50 mm	Elmar 90 mm	
Advertising	Summaron 35 mm	Elmar or Summitar 50 mm	Elmar 90 mm	
Landscape	Summaron 35 mm	Elmar or Summitar 50 mm	Elmar 90 mm	
Travel Pictures	Summaron 35 mm	Elmar or Summitar 50 mm	Elmar 90 mm	
Reproductions	Summaron 35 mm	Elmar 50 mm	Hektor 135 mm	With fine-grain film
Sports	Summaron 35 mm	Summitar or Summarit 50 mm	Summarex 85 mm	In special cases also Hektor 135 mm or Telyt 200 mm
Press Photography	Summaron 35 mm	Summitar or Summarit 50 mm	Summarex 85 mm	
Portraiture		Summitar or Summarit 50 mm	Elmar 90 mm or Summarex 85 mm	
Still Life		Elmar 50 mm	Elmar 90 mm or Summarex 85 mm	
Instantaneous Exposures in Artificial Light		Summitar or Summarit 50 mm	Summarex 85 mm	With high-speed films
Stage Photos		Summitar or Summarit 50 mm	Summarex 85 mm	
Interiors	Summaron 35 mm	Elmar, Summitar or Summarit 50 mm	Summarex 85 mm	
Architecture	Summaron 35 mm	Elmar 50 mm	Elmar 90 mm Hektor 135 mm Telyt 200 mm	
Nature Photography			Hektor 135 mm and Telyt 200 mm	
Stereo Photography		Elmar, Summitar or Summarit 50 mm		With special accessories

No. 1356
Printed in U.S.A.

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