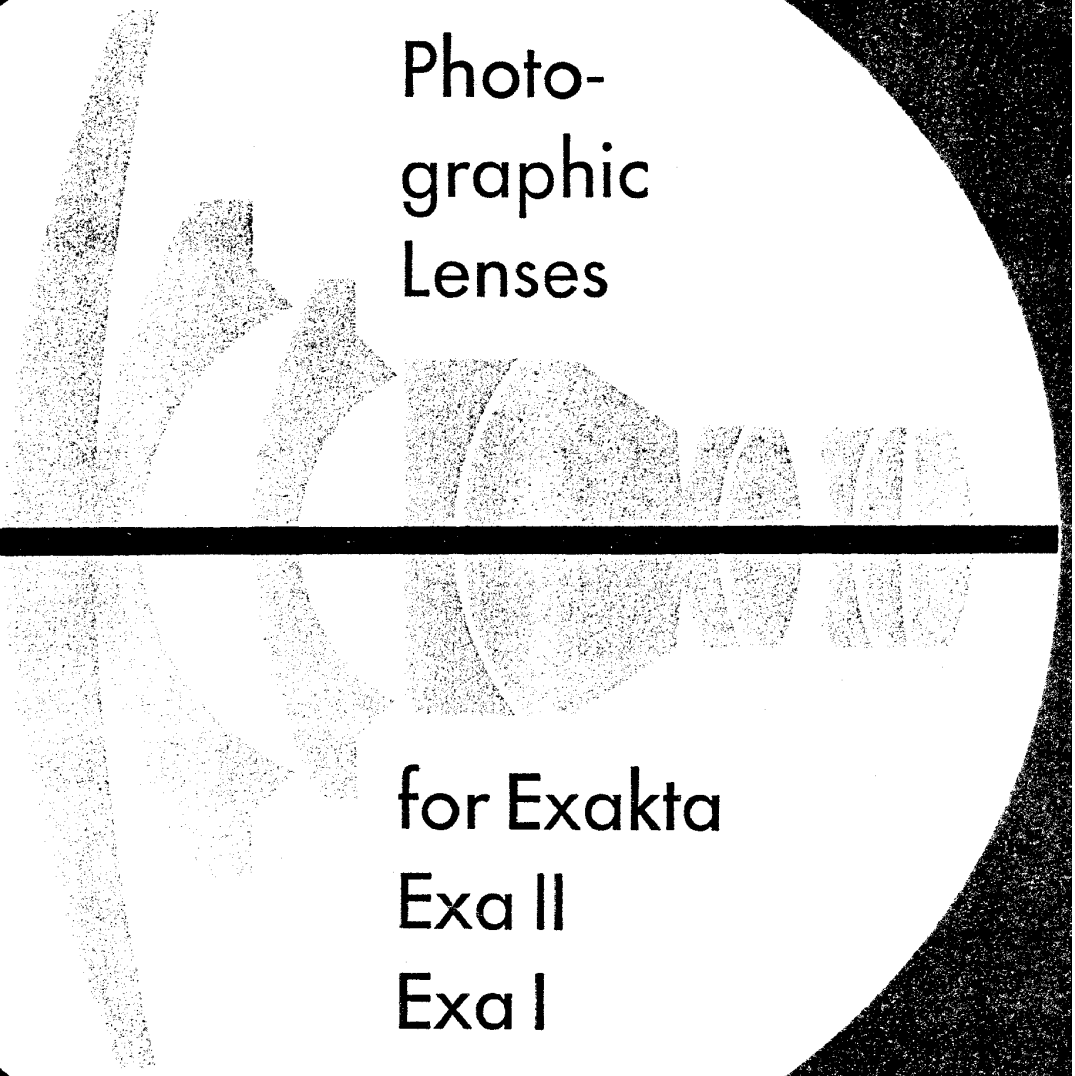
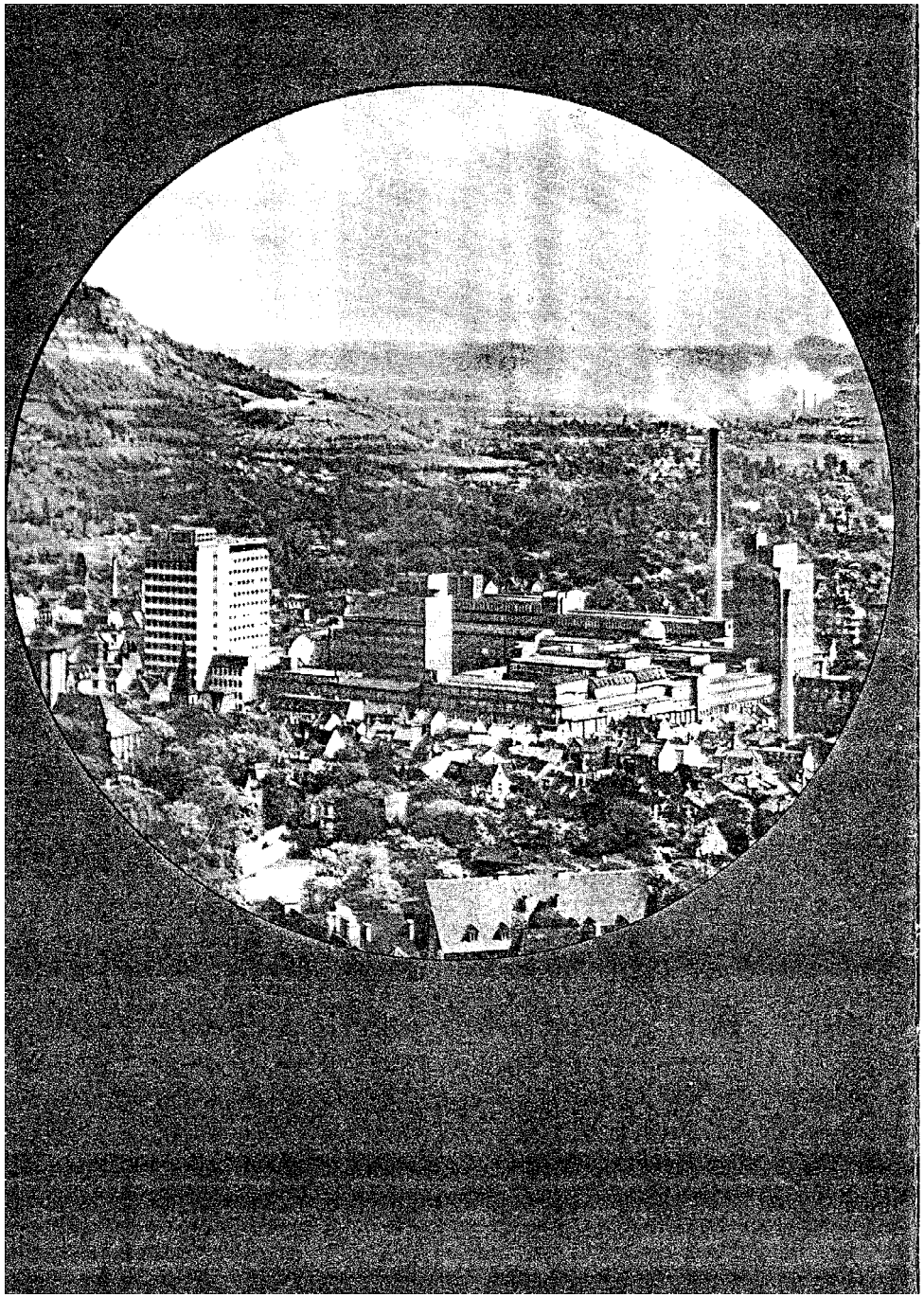
Photo-graphic Lenses



for Exakta
Exa II
Exa I

aus Jena

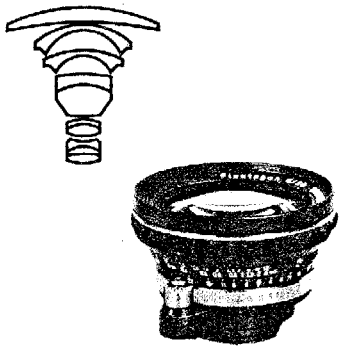


Awarded with Gold Medal at Leipzig Fair

Flektogon f/4, 20 mm
S f/2.8, 180 mm
Mirror-Lens System f/5.6, 1000 mm

Photographic Lenses for Exakta, Exa II, Exa I

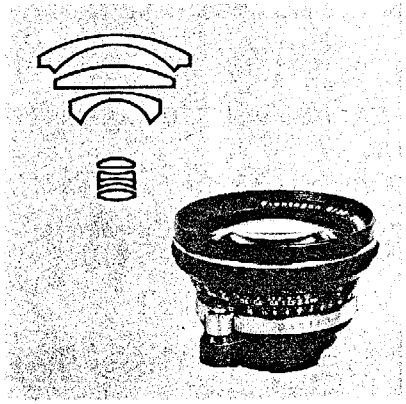
Designed to providing a survey of photolenses for the 35-mm cameras Exakta, Exa II and EXA I, this brochure covers the characteristic features and fields of application of each of these lenses ranging from the super wide-angle lens to the mirror lens system of as long a focus as 1,000 mm. There will also be found herein operational instructions for the fully automatic diaphragm and the automatic aperture correction incorporated in some of the lenses. Finally, a comprehensive table furnishes a summary of all the optical and technical lens data.



Flektogon f/4, 20 mm

Super wide-angle lens of extremely large field angle. Excellent optical performance in black-and-white and colour photography. Uniform and full coverage of format, no distortion.
For indoor portrait, architecture, panoramic work, general photographs and close-ups.

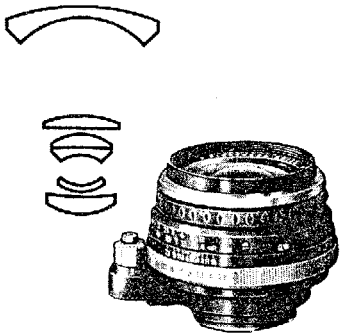
Cf. Brochure No. 54-310-2



Flektogon f/4, 25 mm

Wide- angle lens of particularly large field angle. Outstanding lens performance in black-and-white and colour. Full coverage of format, no distortion.
For indoor portrait, architecture, general views, panoramic work, and close-ups.

Cf. Brochure No. 54-091-2



Flektogon f/2.8, 35 mm

Fast wide-angle and macro lens. Excellent definition, true colour rendition.
For scenics, architectural photography, indoor portraiture, snapshots, press work, and close-ups down to the macro region.

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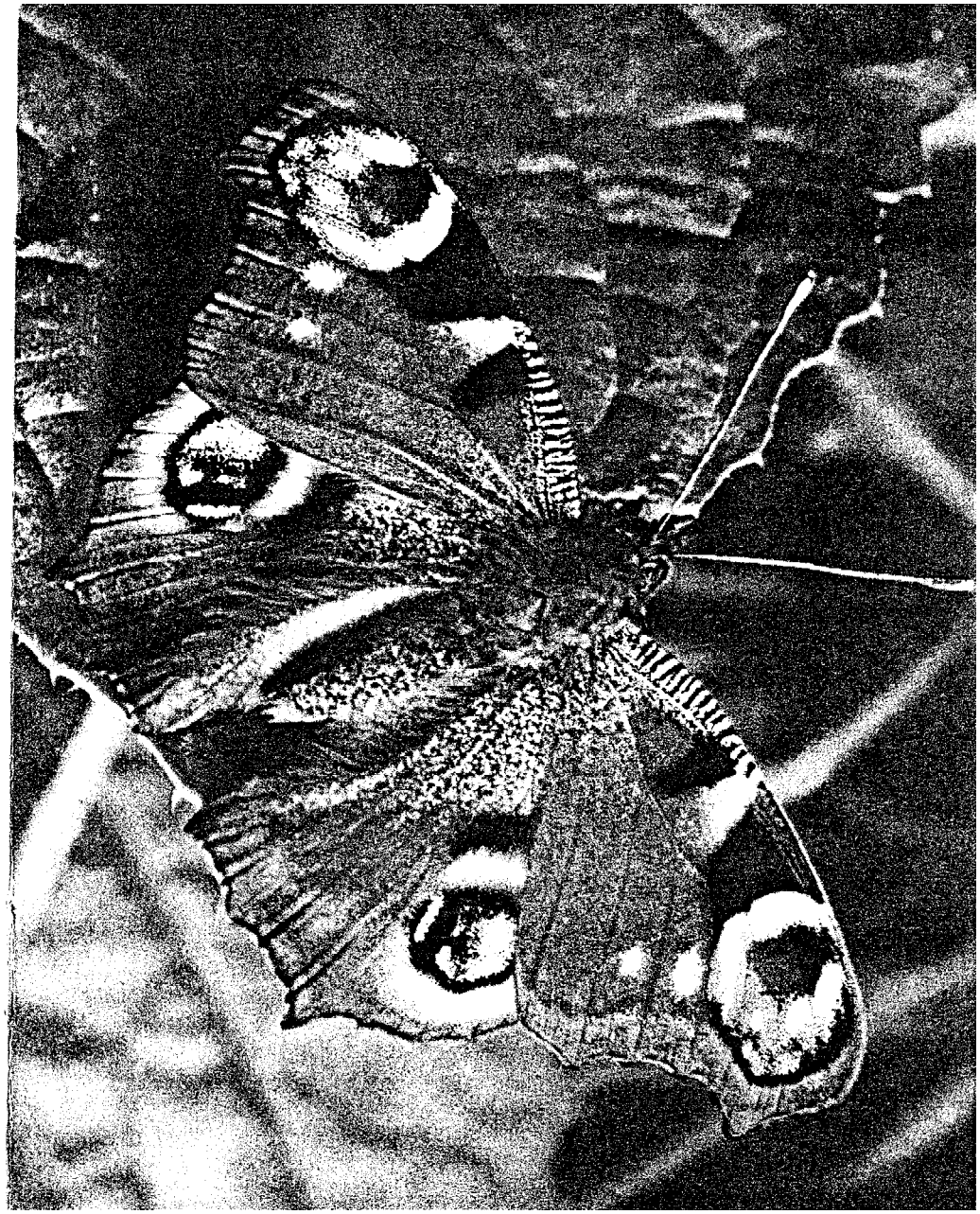
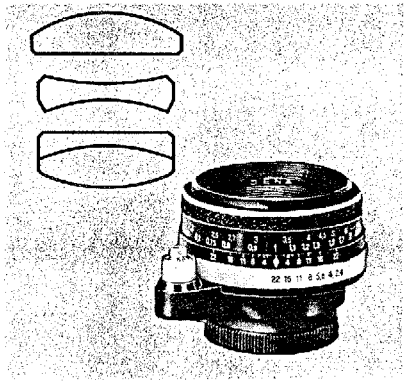
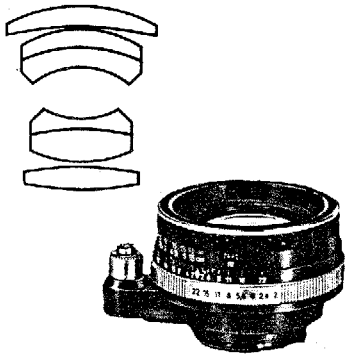




T f/2.8, 50 mm

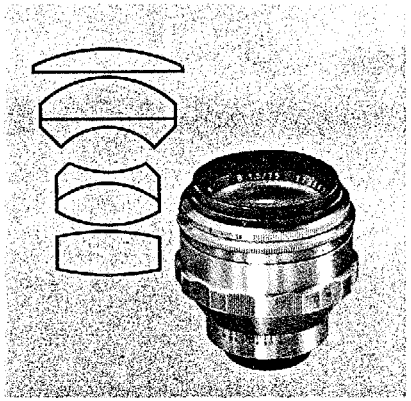
Fast standard lens. Needle-sharp definition. Outstanding colour rendition.
For scenics, architecture, wildlife, sport, press, and technical work, snapshots and reproductions.



Pancolar f/2, 50 mm

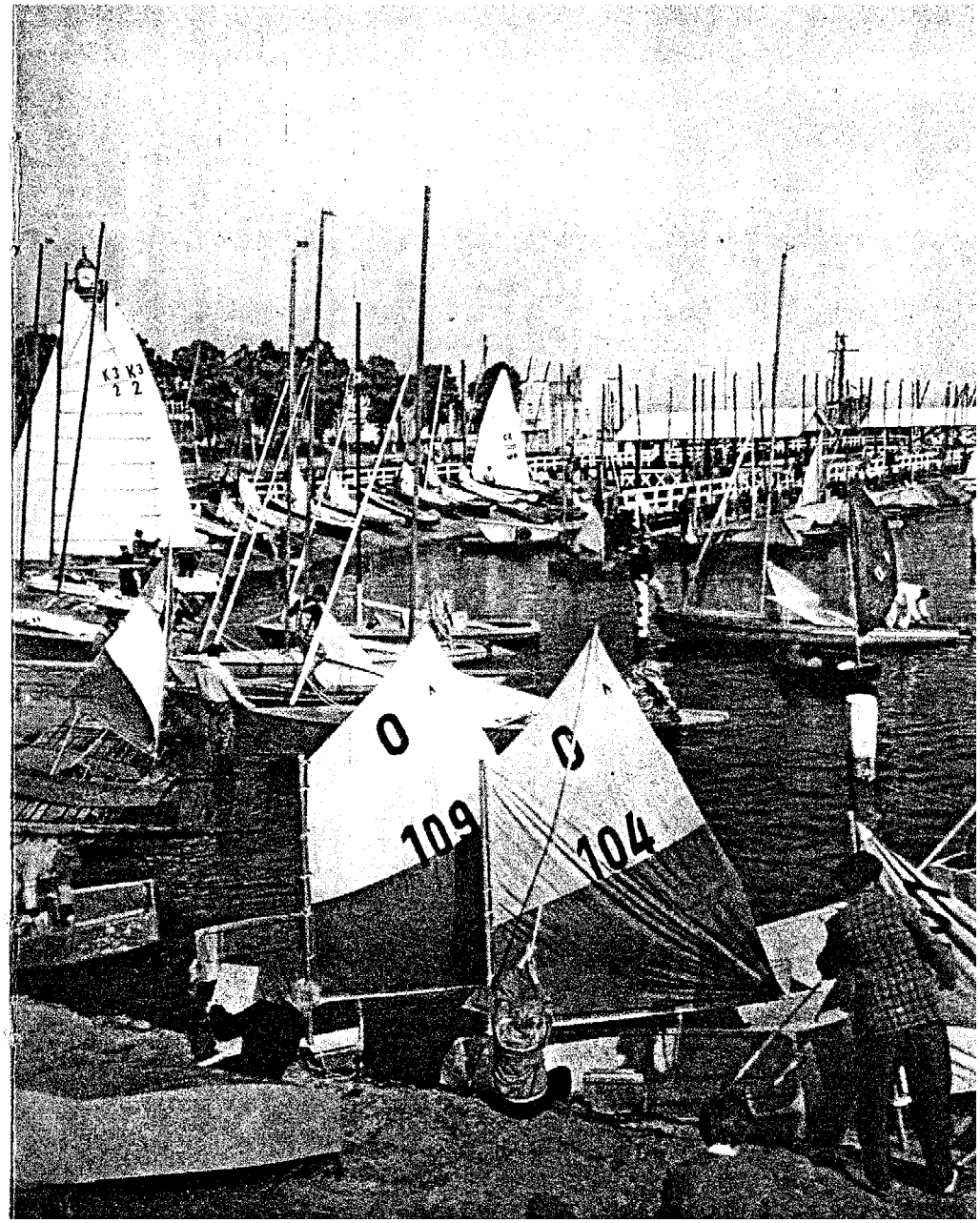
Standard lens of particularly high light-grasp. Excellent image quality, true colour rendition.
For scenics, architecture, wildlife, sport, theatre, stage, and press work, as well as snapshots.

Cf. Brochure No. 54-096-2



B f/1.5, 75 mm

Super-fast lens of medium focal length. Excellent image quality in black-and-white and colour.
For theatre and stage photography, recording of oscilloscope traces on fluorescent screens, etc.; press work at unfavourable light level, and portraiture.



Photolenses for Exakta and Exa

Lens type	Aperture and focal length mm	Number of lens elements	Field angle	Diaphragm type	For Exakta, Exa II	For Exa I	Minimum aperture	Focusing from ∞ to : (measured from film plane) m	Image magnification as compared with f = 50 mm	Push-on diameter mm	Screw thread (metric)	Filter sizes, applicable**)	Sunshades, applicable**)	Overall constructional length (when set to ∞) mm		Maximum diameter***) mm	Weight, approx. kg
Flektogon	4/20	10	93°	ASB	+	+	22	0.16	0.4 x	80	77 x 0.75	M 77 W	—	58.8		r 46.9	0.33
Flektogon	4/25	7	82°	ASB	+	+	22	0.2	0.5 x	80	77 x 0.75	M 77 W	—	62.3		r 46.9	0.35
Flektogon	2.8/35	6	62°	ASB	+	+	22	0.18	0.7 x	51	49 x 0.75	51 W/M 58	M 58 W	57.3		r 46.9	0.2
T	2.8/50	4	45°	ASB	+	+	22	0.5	1 x	51	49 x 0.75	51/M 49	M 49	43.8		r 46.9	0.15
T	2.8/50	4	45°	RB	+	+	22	0.6	1 x	37	35.5 x 0.5	37/M 35.5	—	39.2		50.5	0.12
Pancolar	2/50	6	45°	ASB	+	+	22	0.5	1 x	51	49 x 0.75	51/M 49	M 49	43.8		r 46.9	0.18
B	1.5/75	6	32°	BV	+	—	16	0.8	1.5 x	60	58 x 0.75	M 58	M 58	81.5		76	0.53
Bm	2.8/80	5	30°	ASB	+	+	22	0.8	1.6 x	51	49 x 0.75	51/M 49	M 49	64.5		r 46.9	0.26
Bm	2.8/120	5	21.5°	ASB	+	—	22	1.3	2.4 x	70	67 x 0.75	M 67	M 67	115.4		r 46.9	0.55
S	4/135	4	18.5°	ASB	+	+*)	22	1.0	2.7 x	51	49 x 0.75	51/M 49	M 49	95.5		r 46.9	0.39
S	2.8/180	5	14°	ASB	+	—	22	2.2	3.6 x	90	86 x 1	M 86 W	M 95	204.6	with sunshade	r 54.5	1.1
S	4/300	5	8°	BV	+	—	22	3.0	6 x	80	77 x 0.75	M 77	M 77	317.5		r 69.5	1.9
Mirror-Lens System	4/500	4 + 2 mirrors	5°	without diaphragm	+	—	—	8.0	10 x	built-in filter dial	built-in filter dial	built-in filter dial	—	321.0		r 152.0	7.3
Mirror-Lens System	5.6/1000	4 + 2 mirrors	2,5°	without diaphragm	+	—	—	16.0	20 x	built-in filter dial	built-in filter dial	built-in filter dial	—	512.0		r 140.0	14.0

EXPLANATIONS

Diaphragm types: ASB = Fully Automatic Diaphragm, BV = Presetting Diaphragm, RB = Click-Stop Diaphragm

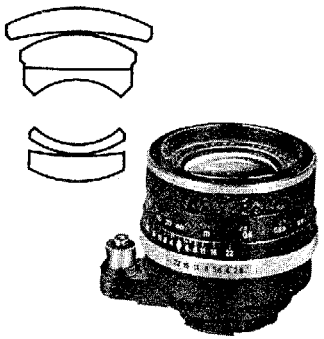
*) When using the S f/4, 135 mm on the Exa I, the camera shutter causes one longitudinal format-side to be vignetted slightly. In colour transparencies, this vignetting is concealed by the slide mask.

**) Filter-sizes include the diameter of the push-on filter and the size of the screw-in filter (M) available for supply by us. Sunshades produced by us are likewise listed. Flektogon f/4, 20 mm and f/4, 25 mm require the use of the special filter M 77 W. No sunshades are supplied for these lenses! For Flektogon f/2.8, 35 mm use is made of the filter M 58 with adapter ring M 49/M 58 of the special sunshade M 58 W. Other filters (with the exception of 51 W) cause vignetting! The sunshade for S f/2.8, 180 mm has a threaded adapter ring M 86/M 95 to be unscrewed for the lens-filter-sunshade combination.

S f/2.8, 180 mm and f/4, 300 mm as well as the 500-mm Mirror Lens System f/4 and the 1000-mm System f/5.6 are supplied with a sunshade.

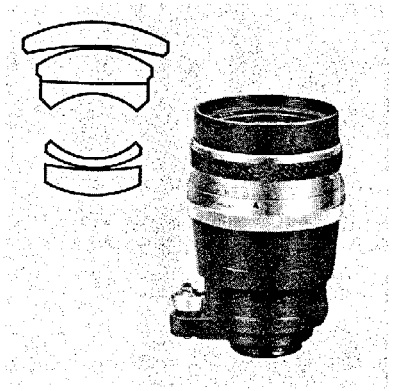
For some time our photolenses have been provided with a special setting point for infrared photography. When working with infrared material and infrared filters, this redded point at the right of the index for range setting is to be used instead of the latter index.

***) Regarding the lenses which are provided either with a release lug or with a tripod socket or support, the radius of the maximum diameter (lens center to outermost face of release lug or tripod sleeve or support) is listed instead of the diameter of the lens itself. This radius is denoted by the letter r preceding its value.



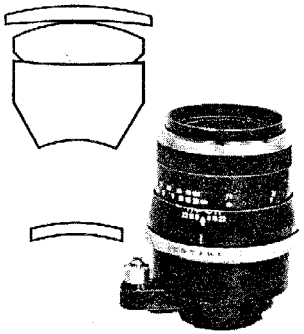
Bm f/2.8, 80 mm

Fast lens of medium focal length, markedly high and uniform resolution over the entire field, and striking perspektive rendition. True colour reproduction.
For scenics, architecture, wildlife, sport, and portraiture work.



Bm f/2.8, 120 mm

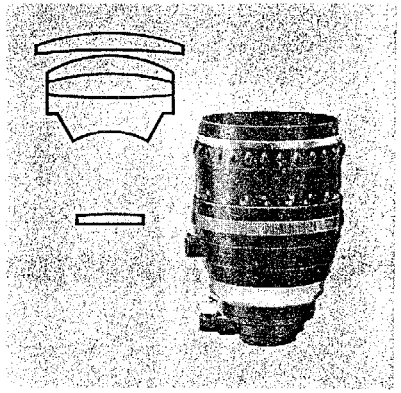
Fast lens of long focus. Significant image quality and true colour rendition.
For sports and wildlife photography, scenics, press work and portraiture.



S f/4, 135 mm

Light and handy lens of long focus. Short constructional length. Excellent image crispness. Equally well suited for colour and black-and-white.
For wildlife and sport shots, scenics, press work, portraiture, and close-ups of marked perspective.

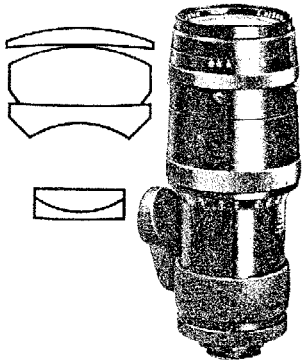
Cf. Brochure No. 54-307-2



S f/2.8, 180 mm

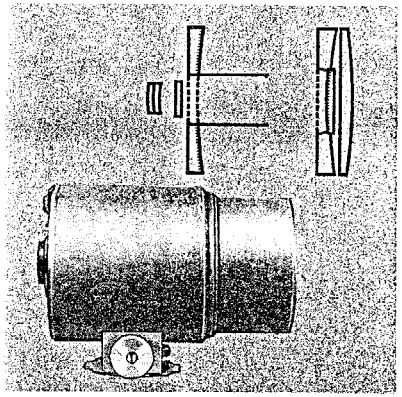
Especially fast lens of long focus. Short constructional length. Outstanding image quality in black-and-white and colour. For sport, wildlife, scenics, press work at a longer range, and portraiture.

Cf. Brochure No. 54-309-2



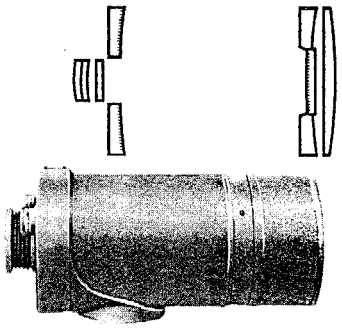
S f/4, 300 mm

Lens of long focus and large aperture. Short constructional length. Crisp definition of image, true colour rendition. Ideal for wildlife, sports and landscape tele-photography. Also for press work at longer range.



Mirror-Lens System f/4, 500 mm

Special optical system of very long focus and large aperture. Outstanding performance, highest image definition even with fully opened aperture.
Excellently suited for black-and-white as well as colour work.
For wildlife, sports and landscape tele-photography, as well as press work at longer range. Ideal also for infrared tele-photography. Cf. Brochure No. 54-084-2



Mirror-Lens System f/5.6, 1000 mm

Optical system of extremely long focus. Outstanding performance. Needle-sharp definition even with fully opened aperture. Excellently suited for black-and-white as well as colour work.
For sport and wildlife shots, scenics at very long ranges, scientific work, and long-range press work. Especially suited for infrared tele-photography.

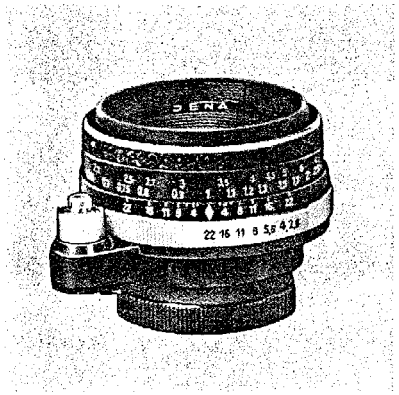
Cf. Brochure No. 54-317-2

Uniform Colour Rendition

A salient feature of all the 35-mm format lenses of our present production is their uniform colour rendition in contrast to the former varying colour rendition, which occasionally experienced led to differing tints. This colour correction results from an adequate thickness dimensioning of the hard low-reflection coating provided on all air/glass lens surfaces. Colour photographs taken with our lenses are therefore distinguished by a uniform and true colour rendition, unless such factors as illumination, developing etc. cause an unnatural rendering of the colours.

Fully Automatic Diaphragm ASB

Incorporated into the majority of photolenses described above, this diaphragm, which has click-in stops engaging even between the full f-numbers so important for colour work, enables the user of the Exakta or Exa to shoot his pictures as rapidly as with a camera fitted with rangefinder. Same as with the latter camera type, merely the predetermined value is set before every exposure, with the diaphragm remaining at full aperture. Only when pressing the release **(1)** on the lens, which in turn operates the camera shutter, the diaphragm closes to the correct preset aperture smoothly and vibration-free, immediately before the opening and closing of the shutter.
As soon as one lets go of the release, the diaphragm opens again. If prior to releasing the shutter, the diaphragm is intended to be closed to the preset aperture, e. g., for checking the depth of focus, the knurled, spring-mounted sleeve **(2)** housing the release knob must be depressed and arrested by giving it a short turn to the left. In that position, the automatic action is cut out, and the lens may be used as such with a standard diaphragm. When turning the sleeve to the right, the automatic is engaged again. The proper distance between lens and camera-shutter release can be adjusted by means of a small setscrew provided at the lower side of the lens release.



Automatic Aperture Correction

The Flektogon f/2.8,35 mm and the S f/4,135 mm provide an especially long extension (travel). Without the use of extension rings or attachment lenses, the 35-mm Flektogon f/2.8, for example, permits of work at as short a distance as 18 cm (measured from subject to film plane!), with an image scale of 1 : 2. Focusing of the S f/4, 135 mm ranges down to 1 m, without any supplementaries being required. Here the image size is the same as with 50-mm focal length and at abt. 0.37 m distance!
These lenses enable the user to fully utilize their exceptionally long focusing range, without bothering about technical points. Both lenses as well as the S f/2.8, 180 mm have an automatic diaphragm correction. When setting the range scale, the diaphragm is spontaneously so controlled that the ratio of aperture remains automatically constant through the entire focusing range. The necessity of a calculated increase of the exposure time is thus done away with even in shooting close-ups. The f-number is displayed on the lens likewise automatically so that the indicated stop value does always correspond to the actual ratio of aperture. This means that in the case of close-ups, which are shot with full diaphragm opening, the diaphragm index of the S f/4, 135 mm stands no longer opposite the f-number 4 but is arrested between 5.6 and 4, since this lens does not permit of opening the diaphragm beyond the value 4. The same holds good also for the Flektogon f/2.8, 35 mm, where the diaphragm is arrested at 4 already, when the lens is focused to 0.18 m.
The corrective opening of the diaphragm can be easily observed at the rear lens element, if the lens is stopped down and the range scale slowly turned from infinity to close-up range. To this end, the automatic should be disengaged.

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