professional lenses review

XENOTAR

XENAR

SYMMAR

TELE-ARTON

TELE-XENAR

SUPER-ANGULON

SCHNEIDER

JOS. SCHNEIDER & CO. OPTISCHE WERKE 6550 BAD KREUZNACH

SCHNEIDER LENSES

The visiting card of all lenses is their engraving. The first glance of all experts will therefore be directed at the engraved mark of origin. More than nine million lenses have carried the Schneider-Kreuznach trade mark to all corners of the globe, and they are being followed by some 50,000 in each month. Even though the location on the map of Bad Kreuznach may possibly not be known to the photographers of Sydney, Toronto or Tokyo, the name of the town is everywhere nonetheless a synonym for optical perfection.

Can there be any better proof of quality than continuously rising exports? Quality is after all the decisive criterion for exports, because in this no other factor really counts. The world-wide renown of Schneider lenses is reflected by the direct exports to some 100 countries of the world. When the indirect exports, i. e., those lenses going abroad as camera components through the camera manufacturers, is added to the direct exports, actual exports will be discovered to account probably for some 60 per cent, of the entire production. The Xenotar and Xenar systems have become the undisputed favorites in sales to the camera industry, while the Symmars, Super-Angulons and Componons hold the lead in the field of applied photography in engineering and science. These conventional systems have been supplemented by the comparative newcomers, i.e.,thevariablefocal length lenses of the Schneider Variogon series, which have proven a truly pioneering achievement. When looking at the Schneider program in its entirety there is obviously only one definite and indisputable conclusion that can be drawn: This truly unique assortment of optical equipment can provide a lens for every conceivable camera model and for every conceivable field of photography. This trend continues with the declared object of providing an optimum in optical quality in every conceivable field through a Schneider lens.

The preceding tables provide the flange focal distances (s'm) of our lenses, namely the distances between the flange focus of the lens in shutters or normal mounts and the negative plane, with the lens set at infinity. If it is intended to focus on objects at closer range, the lens must be moved away from its infinity setting in the direction of the chosen object. The distance covered by this movement (z) - also referred to as elongation of extension - can be established by relating

$$z = \frac{f}{\beta}$$

with: f = true focal length of the lens system

ß = ratio of reproduction

$$\beta = \frac{\text{size of object}}{\text{size of image}}$$

If it is intended, for example, to photograph an object of 10 mtrs. height using a lens with a focal length of 50 mmtrs. to obtain a 1000 times reduction of said object, namely 10 mmtrs., the required elongation of extension (z) against infinity setting will be:

$$z = \frac{50}{\frac{10\,000}{10}} = 0.05 \text{ mmtrs.}$$

If a camera is equipped with an f = 50 mmtrs. lens which provides an extension of 5 mmtrs., an object of 100 mmtrs. height can be photographed at a 10 times reduction, namely 10 mmtrs. reproduction on the negative. A larger reproduction of this object is not possible with this optical system because of the limited extension it provides; not even by moving closer towards the object.

Every alteration to the elongation of extension (z) and, consequently, to the scale of reproduction (ß), corresponds with an alteration to the distance between the object (0) and its image (0´) at the focal plane of the lens system. This total distance 00´ can be established from the true focal length (f) of the lens system and the ratio of reproduction (6) by relating:

$$00' = 2f + \triangle H' + f(\beta + \frac{1}{\beta})$$

In this formula, AH represents the distance between the major planes of the lens system and should be allowed for in accordance with its sign. As can be seen from this relation, 00´ is at its minimum at 1 : 1 reproduction, namely equalling four times the focal length f with A H added or subtracted. If the lens system is moved from its symmetric position at 1 :1 reproduction towards the negative, a reduced reproduction of the object is obtained; which is the case with most photographs taken. If, however, the lens system is moved towards the object, an enlarged reproduction will result.

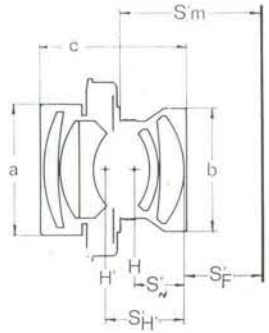
When taking photographs at close distance it is important to know the required extra exposure time in addition to the elongation of extension (z) and the total distance 00´. The exposure time factor (T) for close-range photography is established from the reproduction ratio (G) by relating:

$$T = (1 + \frac{1}{\beta})^2$$

The factor is insignificant when taking photographs at long range and increases to 4 at 1:1 reproduction, e. g. in this case the exposure time is 4 x and must be increased in proportion to the required size of enlargement.

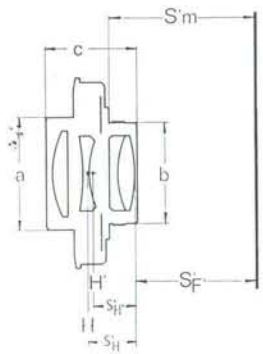
XENOTAR

With the advent of the Schneider Xenotar, high-speed lenses became available for medium and large formats for the first time; the resolving power and optical contrast of these lenses so far exceeded those of the designs hitherto available, that their success was certain from the first.



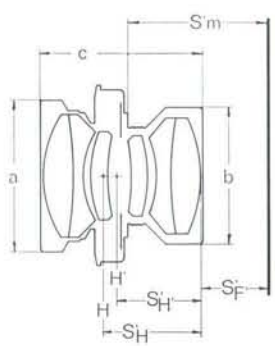
XENAR

The world-wide popularity which the four-element lens has achieved lies in the exceptional efficiency of this objective. Thus the Schneider Xenar remains the favourite moderate-priced standard and universal lens of medium aperture.



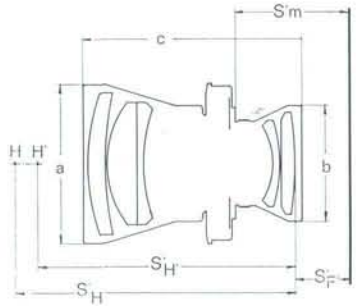
SYMMAR

The resolution, the contrast and the colour correction of the Symmar lenses have made them famous all over the world. An overwhelming number of black-and-white and colour pictures, in which a true-to-nature reproduction of every detail is essential, are made with the Schneider Symmar.



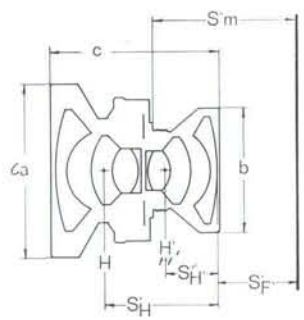
TELE-LENSES

The short extension length is the most remarkable feature of the Tele-lens, two models of which are made by the House of Schneider; the Tele-Arton and the Tele-Xenar. If the Tele-Xenars are outstanding, then the Tele-Artons are unrivaled.



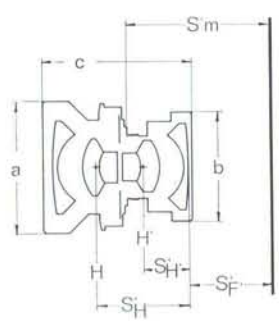
SUPER-ANGULON 56

A Super-Angulon with higher speed is an aid with problems, which can only be solved with perfect focusing screen control. Very little loss of light at the image edges - and a still larger image angle - differentiate this revised design in the Super-Angulon 1 : 8 Series.



SUPER-ANGULON 8

The resolving power and contrast-rendering of this lens design are so good, even at full aperture, that the space-embracing representation of widespread subjects and dynamic situations gives excellent results, without stopping-down at all. The Super-Angulon offers unsurpassed advantages as an ultra-wide-angle lens: it enables the full diameter of the image circle to be utilized without loss of quality.



Lenses	Relative aperture 1 : 1	Focal distance		Backfocus s'_F	Distance of main planes HH'	Locating dimension for ∞ s'_m	Recommended for size	With 1 : 16 diaphragm and setting ∞		Screw-in thread for accessories a	Mount diameter rear b	Mechanical Height c	Shutter Height	Weight in grams when	
		engraved	actual (± 1 %)					Angle of view in°	Image area diameter					Sealed	Normal mounting
XENOTAR	2.8	80	80.4	60	—6.3	73.5	56 x 72	59	91	M 49 x 0.75	38	40.5	I	230	290
	2.8	100	101.4	75.5	—8.0	95.3	60 x 90	60	117	M 58 x 0.75	48	49.2	I	360	420
	2.8	150	149.5	108	—15.2	139	90 x 120	56	160	M 77 x 0.75	63	76.7	II 5/2	875	780
	3.5	75	75	58.5	—1.0	69.4	60 x 60	59	85	–	27	30.3	00	100	115
	3.5	135	135.5	105.2	—1.7	125.3	90 x 120	59	153	M 58 x 0.75	48	50	I	380	430
	4	100	95.9	71.2	—7.3	87.4	56 x 72	60	110	M 49 x 0.75	38	47.7	0	230	–
XENAR	3.5	100	101	84.5	+1.9	96.2	65 x 90	60	116	M 40.5 x 0.5	31.8	37.7	0	225	250
	4.5	105	106	93.1	+1.0	99.8	65 x 90	62	127	M 40.5 x 0.5	31	30.4	0	190	210
	4.5	135	134	118	+1.1	127	90 x 120	62	161	M 40.5 x 0.5	37.5	33.5	I	245	310
	4.7	135	134	118	+1.1	126	90 x 120	62	161	M 40.5 x 0.5	31	34	0	155	220
	4.5	150	150	132	+1.5	144	90 x 120	62	180	M 40.5 x 0.5	37.5	38.5	I	250	310
	4.5	180	181	159	+1.8	174	100 x 150	62	217	M 49 x 0.75	51	44	II 6/2	410	385
	4.5	210	211	186	+2.1	201	130 x 180	62	253	M 58 x 0.75	57	52.5	CPE3u.5FS	550	510
	4.5	240	235	214	+3.6	228	130 x 180	62	282	M 67 x 0.75	70	59	IV 10/2	780	800
	4.5	300	303	269	+5.0	289	180 x 240	62	364	M 82 x 0.75	85	73	V 12/2	1085	1045
	4.5	360	360	319	+5.4	336	240 x 300	62	432	M102 x 1	105	81	–	–	1220
	4.5	420	422	376	+6.4	401	240 x 300	62	506	M120 x 1	125	87	–	–	1710
	4.5	480	483	429	+7.3	458	300 x 400	62	580	M120 x 1	125	100	–	–	2100
SYMMAR	5.6	80	79	66.2	+1.4	75.7	56 x 72	70	110.6	M 40.5 x 0.5	31.5	36	0	230	260
	5.6	100	102.3	85.9	+1.8	99.1	65 x 90	70	143.2	M 40.5 x 0.5	31.5	40	0	225	255
	5.6	135	135.5	113	+2.9	131	90 x 120	70	190	M 40.5 x 0.5	31.5	44	0	230	260
	5.6	150	150	125	+3.3	146.5	90 x 120	70	210	M 49 x 0.75	38	47	I	300	370
	5.6	180	182	154	+4.0	178	130 x 180	70	255	M 58 x 0.75	45	56	I	400	470
	5.6	210	212	176	+4.6	205	130 x 180	70	297	M 58 x 0.75	54	64	I	480	550
	5.6	240	240	201	+4.7	236	180 x 240	70	336	M 67 x 0.75	60	75	II 5/2	725	675
	5.6	300	287	242	+5.1	284	240 x 300	70	402	M 86 x 1	80	90	CPE3u.5FS	1000	980
	5.6	360	358	300	+6.3	353.4	300 x 400	70	500	M105 x 1	99.5	114	IV 10/2	1725	1500
TELE-ARTON	4	180	176	77	+26.8	102.4	65 x 90	35	110	M 67 x 0.75	45	97	I	700	–
	5.5	180	180	74	+38.5	115.5	65 x 90	35	110	M 40.5 x 0.5	48	77	0	315	380
	5.5	240	241	99	+49.6	146	65 x 90	30	130	M 49 x 0.75	50	103	I	370	590
	5.5	240	241	99	+49.6	158	90 x 120	35	152	M 49 x 0.75	65	103	II 5/2	800	660
	5.5	270	265	126	+54	152	90 x 120	37	178	M 67 x 0.75	51	97	I	560	620
	5.5	360	353	168	+74.3	209	130 x 180	41	264	M 95 x 1	60	124	CPE3u.5FS	960	910
TELE-XENAR	5.5	360	366	184	+68.6	214	130 x 180	35	230	M 67 x 0.75	57	110	CPE3u.5FS	670	650
	5.5	500	497	250	+97.7	312	180 x 240	35	312	M105 x 1	86	155	V 12/2	1650	1650
	8	1000	970	523	+142	540	180 x 240	18	312	M127 x 1	95	272	–	–	2180
SUPER-ANGULON	4	53	52.7	24.2	+47.7	47.1	56 x 72	95	115	M 67 x 0.75	58.5	104	0	465	–
	5.6	47	47.2	32	+18.3	51.6	65 x 90	105	123	M 49 x 0.75	38	51	00	160	–
	5.6	65	65.3	44.3	+25.2	71.4	65 x 90	105	170	M 67 x 0.75	50	69	0	300	375
	5.6	75	76	51.2	+29.1	82.8	90 x 120	105	198	M 67 x 0.75	57.7	77	0	375	420
	5.6	90	90	61.5	+35.2	100.6	130 x 180	105	235	M 82 x 0.75	70	94	0	525	610
	8	65	65.2	47.2	+21.2	70.5	65 x 90	100	155	M 49 x 0.75	42	56	00	260	395
	8	75	76	55.5	+25	82.7	90 x 120	100	181	M 49 x 0.75	42	67	0	415	–
	8	90	90.7	66.3	+30	99.4	130 x 180	100	216	M 67 x 0.75	57	80	0	380	–
	8	121	120.8	88.5	+40	132	180 x 240	100	290	M 77 x 0.75	75	104	0	710	545
	8	165	165	120	+55	178	240 x 300	100	394	M105 x 1	100	143	I	1400	–
	8	210	210	153	+70	228	300 x 400	100	500	M127 x 1	125	179	I	2200	–

All dimensions in millimetres

SHUTTER CHARACTERISTICS

Type	Type	Synchro-nization	Time settings		Overall ⌀ mm	Maunting thread
COMPUR	00	MX**	B	1–1/500	47,5	M 25 x 0,5
	0*	MX**	B	1–1/500	58,5	M 32,5 x 0,5
	I*	MX**	TB	1–1/400	71	M 39 x 0,75
	II-R 5/2	EX	TB	1–1/200	80,5	⌀ 50,0 x 29 1/13 Gg/1"∢ 50°
	II-R 6/2	EX	TB	1–1/200	80,5	⌀ 55,8 x 29 1/13 Gg/1"∢ 50°
CP-Electronic	3*	EX	T	32–1/200	96	M 62 x 0,75
	5* FS	X	T	32–1/60		ca. 130 x 160 M 86 x 0,75
COMPOUND	IV-R 10/2	EX	TB	1–1/75	106	⌀ 76,7 x 29 1/13 Gg/1"∢ 50°
	V-R 12/2	EX	TB	1–1/50	125,5	M 90 x 1
Prontor Press	00	X	TB	1–1/125	62	M 25 x 0,5
	0	X	TB	1–1/125	62	M 32,5 x 0,5
	I	X	TB	1–1/125	76	M 39 x 0,75
PP-Electronic	1	X	B	32–1/125	76	M 39 x 0,75

* press-focus
** self-timer

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