professional lenses

review

XENOTAR

XENAR

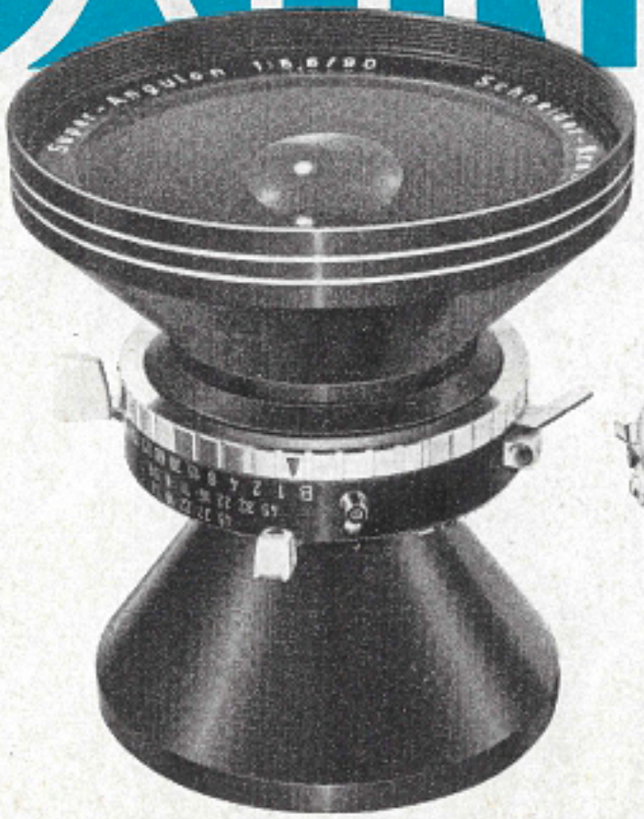
SYMMAR

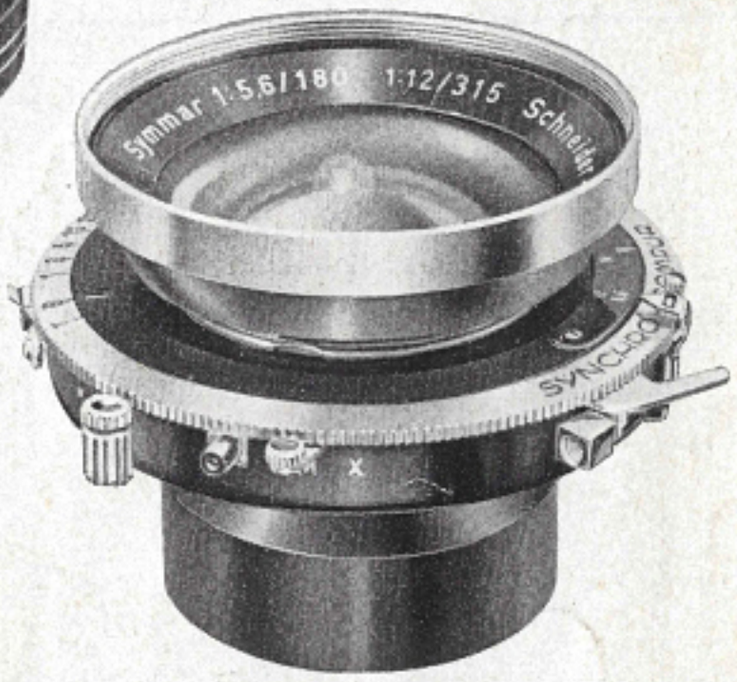
TELE-ARTON

TELE-XENAR

SUPER-ANGULON

SCHNEIDER





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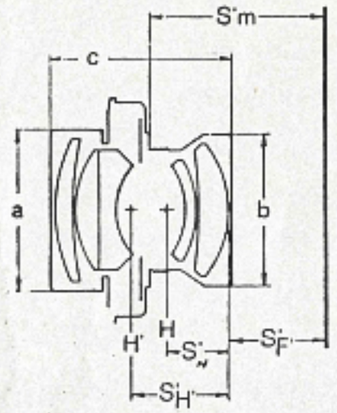
SCHNEIDER LENSES

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 eleven 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 70 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., the variable focal 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.

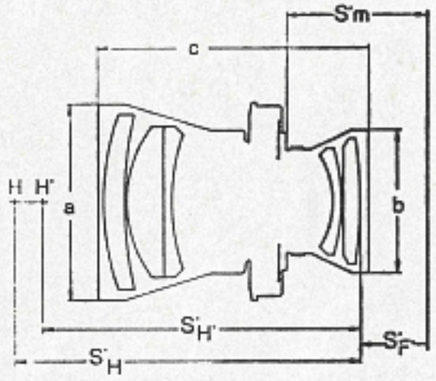
XENOTAR

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 succes was certain from the first.



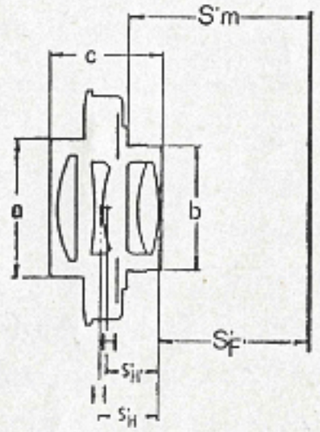
TELE-LENSES

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.



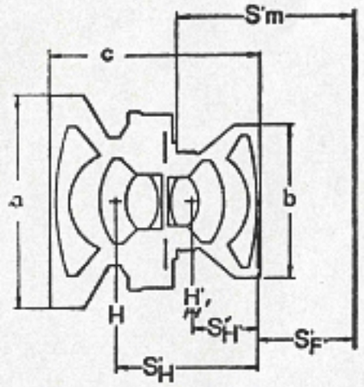
XENAR

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.



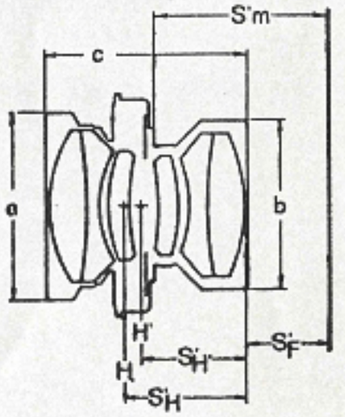
SUPER-ANGULON 5,6

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.



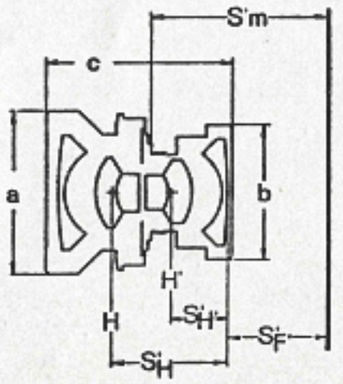
SYMMAR

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.



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 wider-spread subjects and dynamic situations gives excellent results, without stopping down at all. The Super-Angulon offers unsurpassed advantages as an ultrawide-angle lens: it enables the full diameter of the image circle to be utilized without loss of quality.



Type	Relative Aperture 1 :	Focal Length engraved	Focal Length actual (± 1 %)	Back-focus s'_F	Distance of Nodal Points HH'	Flange Focus s'_m for ∞ in mm in Shutter electron.	Flange Focus s'_m for ∞ in mm in Shutter mechan.	max. Format cm x cm	Diaphragm 1 : 16 and Setting ∞ View. Angle in °	Diaphragm 1 : 16 and Setting ∞ Image Circle-⌀	Screw-in Thread for Accessories a	Mount. rear b	mech. Height c	Shutter Size	Weight in Grammes Normal Mount	Weight in Grammes mechan. Shutter	Weight in Grammes electr. Shutter
XENOTAR	2.8	80	80.4	60	—6.3	73.5	72.4	5.6 x 7.2	59	91	M 49 x 0.75	38	40.5	1	240	230	310
	2.8	100	101.4	75.5	—8.0	95.3	94.2	6 x 9	60	117	M 58 x 0.75	48	49.2	1	380	370	450
	2.8	150	149.5	108	—15.2	139	135.1	9 x 12	56	160	M 77 x 0.75	63	76.7	3	790	—	1170
	4	100	95.9	71.2	—7.3	87.4	—	5.6 x 7.2	60	110	M 49 x 0.75	38	47.7	0	—	240	—
XENAR	3.5	100	101	84.5	+1.9	96.2	—	6.5 x 9	60	116	M 40.5 x 0.5	31.8	37.7	0	200	235	—
	4.5	135	134	116.7	+1.1	126	125.2	9 x 12	62	161	M 40.5 x 0.5	37.5	34	1	240	245	325
	4.7	135	134	116.7	+1.1	126	—	9 x 12	62	161	M 40.5 x 0.5	31	34	0	—	195	—
	4.5	150	150	131.2	+1.5	144	141.3	9 x 12	62	180	M 40.5 x 0.5	37.5	38.5	1	245	255	335
	4.5	180	181	159	+1.8	174	168.7	10 x 15	62	217	M 49 x 0.75	51	44	3	260	—	770
	4.5	210	211	186	+2.1	201	197.9	13 x 18	62	253	M 58 x 0.75	57	52.5	3	540	—	910
	4.5	240	235	214	+3.6	228	222	13 x 18	62	282	M 67 x 0.75	70	59	5 FS	610	—	1630
	4.5	300	303	269	+5.0	289	283.8	18 x 24	62	364	M 82 x 0.75	85	73	5 FS	735	—	2220
	4.5	360	360	319	+5.4	336	—	24 x 30	62	432	M 102 x 1	105	81	—	1230	—	—
	4.5	420	422	376	+6.4	401	—	24 x 30	62	506	M 120 x 1	125	87	—	1620	—	—
	4.5	480	483	429	+7.3	458	—	30 x 40	62	580	M 120 x 1	125	100	—	2170	—	—
SYMMAR	5.6	80	79	66.2	+1.4	75.7	—	5.6 x 7.2	70	110.6	M 40.5 x 0.5	31.5	36	0	200	220	—
	5.6	100	102.3	85.9	+1.8	99.1	—	6.5 x 9	70	143.2	M 40.5 x 0.5	31.5	40	0	200	225	—
	5.6	135	135.5	113	+2.9	131	—	9 x 12	70	190	M 40.5 x 0.5	31.5	44	0	205	235	—
	5.6	150	150	125	+3.3	146.5	145.5	9 x 12	70	210	M 49 x 0.75	38	47	1	300	310	390
	5.6	180	182	154	+4.0	178	176.8	13 x 18	70	255	M 58 x 0.75	45	56	1	395	400	480
	5.6	210	212	176	+4.6	205	203.6	13 x 18	70	297	M 58 x 0.75	54	64	1	600	510	590
	5.6	240	240	201	+4.7	236	232.5	18 x 24	70	336	M 67 x 0.75	60	75	3	665	—	1050
	5.6	300	287	242	+5.1	284	280.2	24 x 30	70	402	M 86 x 1	80	90	3	1085	—	1270
	5.6	360	358	300	+6.3	353.4	348.1	30 x 40	70	500	M 105 x 1	100	114	5 FS	—	2220	2220
	6.8	355	—	300	+6.3	—	350.4	30 x 40	70	500	M 105 x 1	100	114	3	—	—	1600
TELE-ARTON	4	180	176	77	+26.8	102.4	101.3	6.5 x 9	35	110	M 67 x 0.75	45	97	1	—	600	600
	5.5	180	180	74	+38.5	115.5	—	6.5 x 9	35	110	M 40.5 x 0.5	48	77	0	370	325	—
	5.5	240	241	99.3	+49.2	146	145	6.5 x 9	30	130	M 49 x 0.75	50	103	1	500	440	520
	5.5	240	241	99.3	+49.2	158	154	9 x 12	35	152	M 49 x 0.75	65	103	3	635	—	700
	5.5	270	265	126	+54	152	150.8	9 x 12	37	178	M 67 x 0.75	51	97	1	495	500	580
	5.5	360	353	168	+74.3	209	205.5	13 x 18	41	264	M 95 x 1	60	124	3	1370	—	1615
TELE-XENAR	5.5	360	366	184	+68.6	214	210.3	13 x 18	35	230	M 67 x 0.75	57	110	3	650	—	890
	5.5	500	497	250	+97.7	312	306.8	18 x 24	35	312	M 105 x 1	86	155	5 FS	1345	—	2000
	8	1000	970	523	+142	540	—	18 x 24	18	312	M 127 x 1	95	272	—	2300	—	—
	10	1000	970	523	+142	—	593.4	18 x 24	18	312	M 127 x 1	82.5	272	5 FS	—	—	2930
SUPER-ANGULON	4	53	52.7	24.2	+47.7	47.1	—	5.6 x 7.2	95	115	M 67 x 0.75	58.5	104	0	—	480	—
	5.6	47	47.2	32	+18.3	51.6	—	6.5 x 9	105	123	M 49 x 0.75	38	51	00	—	170	—
	5.6	65	65.3	44.3	+25.2	71.4	—	6.5 x 9	105	170	M 67 x 0.75	50	69	0	390	340	—
	5.6	75	76	51.2	+29.1	82.8	81.7	9 x 12	105	198	M 67 x 0.75	57.7	77	0 u. 1	400	325	475
	5.6	90	90	61.5	+35.2	100.6	99.6	13 x 18	105	235	M 82 x 0.75	70	94	0 u. 1	605	590	625
	8	65	65.2	47.2	+21.2	70.5	—	6.5 x 9	100	155	M 49 x 0.75	42	56	00	365	275	—
	8	75	76	55.5	+25	82.7	81.6	9 x 12	100	181	M 49 x 0.75	42	67	0 u. 1	425	420	510
	8	90	90.7	66.3	+30	99.4	98.3	13 x 18	100	216	M 67 x 0.75	57	80	0 u. 1	380	380	470
	8	121	121.6	88.5	+40	132	132.8	18 x 24	100	290	M 77 x 0.75	75	104	0 u. 1	525	580	670
	8	165	165	120	+55	178	180.5	24 x 30	100	394	M 105 x 1	100	143	I u. 3	1465	1465	1170
	8	210	210	153	+70	228	230.8	30 x 40	100	500	M 127 x 1	125	179	I u. 3	2285	2310	2590

All dimensions in millimetres

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

$$z = f \cdot m$$

with: f = true focal length of the lens system

m = ratio of reproduction
size of object

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

If it is intended, for example, to pothograph an object of 10 mtrs height using a lens with a focal length of 50 mmtrs to obtain a 1 000 times reduction of said object, namely 10 mmtrs, the required elongation of extension (z) against infinity setting will be:

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

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 5 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 (ß) by relating:

$$00' = 2f + HH' + f\left(m + \frac{1}{m}\right)$$

In this formula, HH' represents the distance between the nodal points 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 HH' 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 (m) by relating:

$$T = (1 + m)^2$$

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 × and must be increased in proportion to the required size of enlargement.

SHUTTER CHARACTERISTICS

Type	Type	Synchro-nization	Time settings		Overal ⌀ mm	Mount. 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
	1*	MX**	TB	1—1/400	71	M 39 x 0,75
CP-Electronic	1*	X	T	32—1/500	75	M 39 x 0,75
	3*	EX	T	32—1/200	96	M 62 x 0,75
	5* FS	X	T	32—1/60	130 x 158	M 86 x 0,75
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
	1	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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