STEINHEIL

LENSES

THE FIRM OF C. A. STEINHEIL SOHNE has been among the foremost leaders of lens manufacturers in Germany for the past three-quarters of a century. So well known are the products of this firm throughout continental Europe and so wide and steady has been the demand for their output, that foreign markets have heretofore been practically neglected.

The energies which might have been directed to the creation of a world market were utilized instead in the designing, improvement and perfection of the firm's formulae and products.

In Germany itself—the cradle of optical attainment—the name of STEINHEIL is associated instantly with all that stands for the best in lens manufacture, whether applied to photography, astronomy, spectroscopy, or the optical needs of general science.

Lenses bearing the name of STEINHEIL have for the last 70 years been regarded as the standard of excellence and still are the choice of the large majority of serious workers in the country in which they are produced.

The firm of C. A. STEINHEIL SÖHNE has not followed the beaten track, but has always been in the vanguard of the pioneers of lens design and production. They have led the field and left others to follow.

The attention of the reader is directed to the following historical table, in which the most notable achievements of the firm are briefly set forth:

1855—Foundation of the firm.

1862—Construction of the first known spectrum apparatus.

1865—Construction of the PERISCOP (the first symmetrical lens).

1868—Construction of the APLANAT F:7 (the first symmetrical achromatic lens).

1871—Construction of the wide angle APLANAT (first photographic lens for copying).

1881—Construction of the ANTIPLANAT (forerunner of the anastigmats).

1893—Construction of the ORTHOSTIGMAT F:6.8 (a symmetrical cemented anastigmat).

1902—Construction of the UNOFOCAL F:4.5 (a symmetrical uncemented anastigmat).

1908—Construction of the TRIPLAR F:3.8 (a rapid portrait anastigmat).

RECENT INVENTIONS:

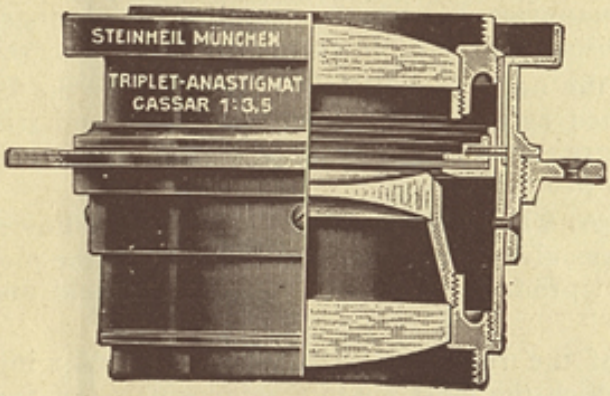
CASSAR F:2.5—F:3.5 (Triplet uncemented anastigmat).

STEINHEIL MÜNCHEN

Triplet-Anastigmat

Cassar F:3.5—F:5

Series O



THE distinguishing feature of this lens is its extraordinary speed. At its full opening it is listed to work at F:3.5, but in actual comparison with most other lenses similarly listed its speed is considerably greater, because it is an *uncemented* anastigmat, and therefore there is absolutely no loss or absorption of light due to the presence of cement.

This lens is a triumph both in design and manufacture. It yields negatives of remarkable brilliancy, free from flare or coma, sharp and crisp to the extreme corners of the plate for which it is listed, and its depth and definition at full opening leave nothing to be desired.

It should be borne in mind that a lens working at a speed of F:3.5 is twice as rapid as an F:4.5 instrument, so that in the studio, under most adverse light

conditions and particularly in the photography of children or other difficult subjects, the photographer equipped with a CASSAR F:3.5 is at all times master of the situation.

With judicious use and a knowledge of the astounding capacities of this lens, an operator will be enabled to eliminate to a large degree the expense and loss of time and labor incident to movement of the subject or failure to catch that momentary facial expression which so often eludes the slower lens.

Notwithstanding the fact that this lens is of very recent invention and introduction, it is now in constant daily use in many of the foremost New York studios and has met with unqualified approval.

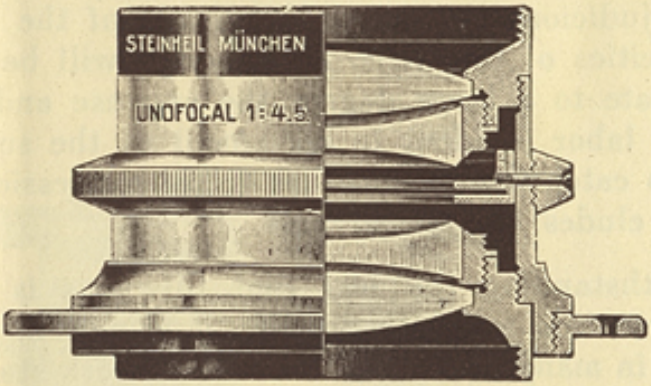
It is desired to emphasize the fact that, in spite of its great speed, the CASSAR is in every sense of the word a fully corrected anastigmat.

No.	Focal Length, Inches	Aperture, Inches	Speed	Size of Plate Covered, Inches
1	2	5/8	F:3.5	1 x 1½
2	3	7/8	F:3.5	1¾ x 2¼
3	4¾	1⅜	F:3.5	2¼ x 3¼
4	5¼	1½	F:3.5	3¼ x 4¼
5	6	1⅝	F:3.5	3½ x 4¾
6	6½	1⅞	F:3.5	4 x 5
7	7⅛	2	F:3.5	4¾ x 6½
8	8¼	2⅜	F:3.5	5 x 7
9	10	2¾	F:3.5	6 x 8
10	11⅞	3⅜	F:3.5	6½ x 8½
11	14¼	3½	F:4	7 x 9½
12	16½	3½	F:4.8	8 x 10
13	20	4⅛	F:4.8	10 x 12
14	23¾	4¾	F:5	11 x 14
15	27¾	5	F:5	12 x 15

For motion picture cameras the rapidity of Nos. 1 and 2 may be increased to F:2.5.

Unofocal F:4.5

Series 1



A RAPID anastigmat for instantaneous portraiture, group and commercial work.

The UNOFOCAL is famous for its even sharpness, great depth of focus and its convertible feature at the full opening. The back and front combinations of the UNOFOCAL can be used alone as achromatic lenses of about double the focal length of the entire lens.

With a large stop each single component is a soft focus lens suitable for portraiture, and with small stops it constitutes an excellent group and landscape lens. It can also be used for copying and reproduction work and especially for three color photography from nature.

In fact, it is a most desirable general purpose lens, perfectly corrected for spherical, chromatic and astigmatic aberrations.

The principal point of superiority of the UNOFOCAL F:4.5 over other types of lenses listed to work at similar speed is the fact that the UNOFOCAL is an *uncemented* lens and therefore all loss of light incident to cemented lenses and consequent decrease of speed is eliminated.

No.	Focal Length, Inches	Aperture, Inches	Size of Plates Covered, Inches	
			From	To
0	3	5/8	1¾ x 2¼	2¼ x 3¼
1	4¼	1	2½ x 3½	3¼ x 4¼
1a	4¾	1 1/16	2¾ x 4	3½ x 4¾
2	5¼	1 3/16	3¼ x 4¼	4 x 5
3	6	1¼	3½ x 4¾	4¼ x 5½
3a	6½	1⅜	4 x 5	4¾ x 6½
3b	7⅛	1 9/16	4¼ x 5½	5 x 7
4	8¼	1 13/16	4¾ x 6½	5½ x 8
5	9½	2⅛	5 x 7	6½ x 8½
6	11⅞	2⅝	6½ x 8½	8 x 10
7	15⅞	3½	8 x 10	10 x 12

Apochromat-Orthostigmat F:9

Process Lenses

Series F

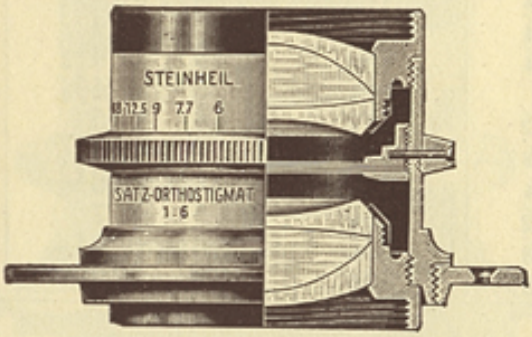
A recently designed Anastigmat for three-color work; corrected for the red, yellow and blue rays: the three negatives will therefore correspond and register perfectly. An excellent lens for all process work.

No.	Focal Length Inches	Aperture Inches	Size of Plate	
			Same Size	Reduction
1	15¾	1 3/16	12 x 15	10 x 12
2	19	2¼	15 x 20	12 x 15
3	23½	2⅝	20 x 24	15 x 20
4	29½	3¼	24 x 28	20 x 24
5	35½	4	28 x 35	24 x 28

Mounted with Waterhouse diaphragms.

Convertible Orthostigmat F:6

Series A



IN the ORTHOSTIGMAT series STEINHEIL has succeeded in producing a convertible anastigmat with perfect flatness of field and extraordinary microscopic sharpness, and has made available to the discriminating photographer a truly *universal* lens to cover every photographic need.

The ORTHOSTIGMATS are perfectly corrected anastigmats of symmetrical construction—each element consisting of three lenses and constituting by itself a perfectly corrected anastigmat when used separately. By necessity of construction, these two elements are of either equal or unequal focal length, depending on the focal length of the double ORTHOSTIGMAT.

The double ORTHOSTIGMAT produced by the combination of two *equal* elements has a rapidity of F:6; in this case the focal length of each element is approximately double that of the doublet.

When two *unequal* halves are combined, the speed is F:6.7, and the user has the choice of three focal lengths any or all of which are instantly at his command. The photographer is thus enabled to acquire

three lenses at the cost of one. For example: The No. 4A lens of Series A gives its owner the option of immediately converting his lens into one of 7¾, 12⅝ or 14⅛ inches focal length and at whichever focal length he uses it, he is assured of perfect photographic results.

Absence of distortion, uniform illumination without internal reflections, maximum correction of curvature of field and great covering power make the ORTHO-STIGMAT preeminently suitable for indoor and outdoor work, including portraits, groups, landscapes, architecture, interiors, reproductions and general commercial work.

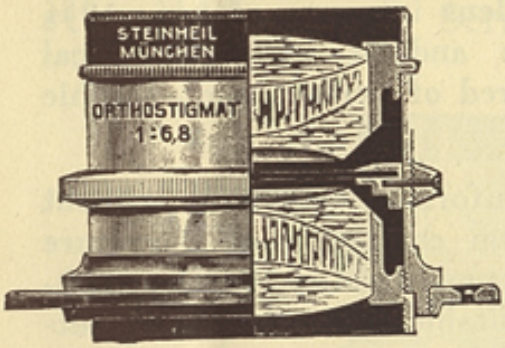
These lenses may also be obtained in sets, each set providing a choice of 6 different focal lengths. A full description of these sets will be found on page 10.

Angle of view of the complete lens = 85°

Angle of view of the half lens = 75°

No	Focal Length, Inches			Aperture Inches		Speed	Size of Plate Sharply Covered	
	Single Elements		Doublet				With Full Aperture, Inches	With Small Stops, Inches
1	6¼	6¼	3½	9/16	9/16	F:6	2½ x 3½	3¼ x 4¼
1a	8⅝	6¼	4¼	13/16	9/16	F:6.7	3¼ x 4¼	4 x 5
2	8⅝	8⅝	4¾	13/16	13/16	F:6	3½ x 4¾	4¾ x 6½
2a	10¼	8⅝	5¼	1	13/16	F:6.7	3½ x 4¾	5 x 7
3	10¼	10¼	6	1	1	F:6	4 x 5	6 x 8
3a	12⅝	10¼	6½	1 3/16	1	F:6.7	4½ x 6½	6½ x 8½
4	12⅝	12⅝	7⅛	1 3/16	1 3/16	F:6	5 x 7	8 x 10
4a	14⅛	12⅝	7¾	1⅜	1 3/16	F:6.7	5½ x 7½	8½ x 10½
5	14⅛	14⅛	8¼	1⅜	1⅜	F:6	6 x 8	8½ x 10½
5a	17	14⅛	9	1⅝	1⅜	F:6.7	6½ x 8½	8½ x 10½
6	17	17	9⅞	1⅝	1⅝	F:6	7 x 9	10 x 12
6a	20½	17	10¾	2	1⅝	F:6.7	8 x 10	10 x 12
7	20½	20½	11¾	2	2	F:6	8 x 10	12 x 14

Orthostigmat F:6.8 — Series B



THIS lens has all the qualities and corrections of Series A. It is in every sense a universal lens, and its speed is sufficient for all practical applications, including instantaneous exposures under fair lighting conditions, portraiture, groups, landscapes and interiors. As a copying lens it cannot be excelled.

The ORTHOSTIGMAT series B is composed of six lenses (two equal elements of three lenses each). The back element of this lens may be used alone, with slight stopping down, and when so used its focal length is about double that of the complete lens.

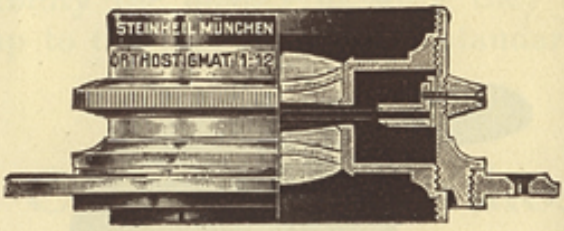
For the worker who requires a lens of extreme focal length, the No. II lens is recommended. As a doublet it has a focal length of 23¾ inches and the focal length of the single element is approximately 47 inches.

No.	Focal Length, Inches	Aperture, Inches	Size of Plates Covered, Inches	
			From	To
00	2⅛	5/16	1¾ x 2¼	2½ x 3¼
0	3	7/16	2 x 2¾	2¾ x 4
1	3½	9/16	2½ x 3½	3½ x 4¾
2	4¼	5/8	3¼ x 4¼	4 x 5
3	4¾	11/16	3½ x 4¾	4¾ x 6½
3a	5¼	13/16	4 x 5	5 x 7
4	6	7/8	4¼ x 5½	6 x 8
4a	6½	1	4¾ x 6½	6 x 8
5	7⅛	1 1/16	5 x 7	7 x 9½
6	8¼	1¼	6 x 8	8 x 10
7	9½	1 7/16	7 x 9½	10 x 12
8	11	1⅝	8 x 10	11 x 14
8a	12½	1⅞	10 x 12	12 x 16
9	14¼	2¼	11 x 14	16 x 16
10	18¾	2½	12 x 16	16 x 20
11	23¾	3 1/16	16 x 20	20 x 20

The speed of No. 9—11 is F:7.7

Orthostigmat F:12

Series E



THE exceptional feature of this lens is that it covers an angle of view of over 100° at the remarkable speed F:12, thus making it superior to any high grade wide angle lens on the market. It is unexcelled in any capacity in which a wide angle lens may be required and its great freedom from perspective distortion, critical sharpness to the edge of the plate for which it is listed, and fine corrections will at once commend it as the wide angle instrument *"par excellence."*

The lens not only gives an extreme wide angle, but also very uniform illumination of the entire field.

As an auxiliary lens to any photographic outfit the wide angle ORTHOSTIGMAT F:12 is indispensable.

Angle of view over 100°

No.	Focal Length Inches	Aperture, Inches	Size of Plate Covered Inches	Diameter of Sharp Image Inches
1	3	1/4	3 1/4 x 4 1/4	7 1/2
1a	3 1/2	1/3	4 x 5	8 3/4
2	4 1/4	3/8	5 x 7	10
3	6	1/2	8 x 10	13 1/2
4	7 7/8	5/8	10 x 12	17 1/4
5	10 1/4	1 1/16	12 x 16	21
6	13	1 3/4	14 x 18	24

To Our Customers:

STEINHEIL products may be obtained from reputable dealers in photographic goods throughout the United States. In the event of difficulty in procuring them in this way we shall be glad to supply them direct.

Lenses will be sent on 10 day's approval against deposit of the price, which will be returned without delay if the lens is returned within specified period and in undamaged condition.

The customer will be charged with transportation costs one way, if the lens is returned.

All claims for breakage or other damage must be made immediately upon receipt of the merchandise; claims made later will not be entertained.

C.O.D. shipments will be made when orders are accompanied by sufficient funds to cover delivery charges both ways, which charges will be returned upon purchase of the merchandise.

All prices quoted are subject to change without notice.

B. HOPFEN & CO.

Sole U. S. Agents

235 FOURTH AVENUE

NEW YORK

1929

PRICE LIST OF STEINHEIL

Photographic Lenses

STEINHEIL MÜNCHEN

Steinheil American Lens Agency

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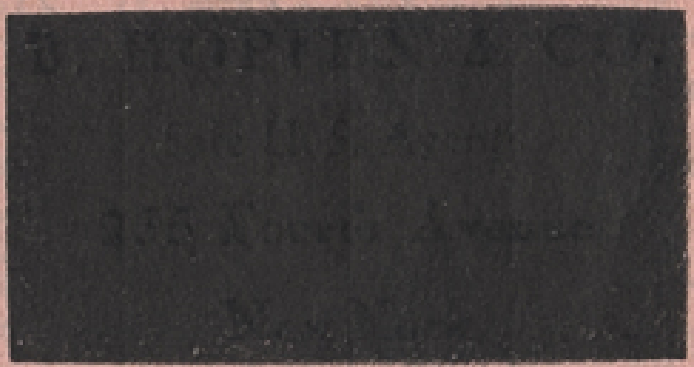

120 N. Green St., Chicago 230 Park Ave., New York

	No.	Focal Length	Normal Mount	Compur Shutter
Cassar F3.5 Series 0	1	2 1/4	$30	$40
	2	3	32	42
	3	4 3/4	36	46
	4	5 1/4	46	58
	5	6	52	64
	6	6 1/2	60	77
	7	7 1/8	66	83
	8	8 1/4	88	105
	9	10	108	132
	10	11 3/4	152	
	11	14 1/4	190	
	12	16 1/2	258	
	13	20	342	
	14	23 3/4	552	
	15	28	642	
Unofocal F4.5 Series I	0	3	$30	$40
	1	4 1/4	32	42
	1a	4 3/4	34	44
	2	5 1/4	40	52
	3	6	45	58
	3a	6 1/2	50	64
	3b	7 1/8	62	86
	4	8 1/4	86	100
	5	9 1/2	100	122
	6	11 3/4	140	174
	7	15 3/4	214	—
Apochromat Orthostigmat F9 Series F	1	14 1/4	152	
	2	19	214	
	3	23 3/4	286	
	4	30	404	
	5	35 1/2	524	
Orthostigmatic Combination Sets	A2	1/2 Plate	$90	
	A3	1/4 Plate	120	

Highest Standard—Since 1855

	No.	Focal Length	Normal Mount	Compur Shutter
Convertible Orthostigmat F6 Series A	1	3½	$36	$46
	1a	4¼	38	48
	2	4¾	40	50
	2a	5¼	44	56
	3	6	48	60
	3a	6½	52	64
	4	7⅛	60	72
	4a	7¾	64	78
	5	8¼	72	86
	5a	9	88	108
	6	10	96	115
	6a	10⅞	114	140
	7	11¾	140	165
Orthostigmat F6.8 Series B	00	2¼	$32	$42
	0	3	32	42
	1	3½	32	42
	2	4¼	34	44
	3	4¾	36	46
	3a	5¼	38	48
	4	6	44	56
	4a	6½	46	58
	5	7⅛	56	68
	6	8¼	66	80
	7	9½	90	105
	8	11	104	124
	8a	12½	124	144
	9	14¼	162	182
	10	19	228	252
	11	23¾	360	—
Wide Angle Orthostigmat F12 Series E	1	3	$34	
	1a	3½	36	
	2	4¼	38	
	3	6	42	
	4	7¾	52	
	5	10¼	62	