



B. HOPFEN & CO.

SOLE U. S. AGENTS

239 FOURTH AVENUE

NEW YORK

Who Is Steinheil?

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 SOHNE 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)
- SELENAR F:2.5 (motion picture anastigmat)

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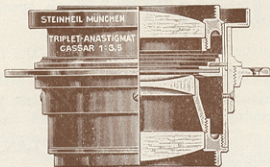
Sole U. S. Agents,

New York.

Triplet-Anastigmat

Cassar F:3,5—F:5

Ser. 0



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.

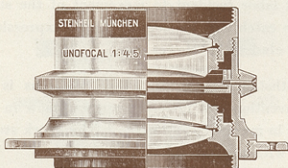
It is desired to emphasize the fact that, in spite of its great speed, the CASSAR is in every sense of the word a fully corrected anastigmat.

No.	Focal Length, Inches	Aperture, Inches	Speed	Size of Plate Covered, Inches
1	2	$\frac{5}{8}$	F:3.5	1 x $1\frac{1}{2}$
2	3	$\frac{7}{8}$	F:3.5	$1\frac{3}{4}$ x $2\frac{1}{4}$
3	$4\frac{3}{4}$	$1\frac{3}{8}$	F:3.5	$2\frac{1}{4}$ x $3\frac{1}{4}$
4	$5\frac{1}{4}$	$1\frac{1}{2}$	F:3.5	$3\frac{1}{4}$ x $4\frac{1}{4}$
5	6	$1\frac{5}{8}$	F:3.5	$3\frac{1}{2}$ x $4\frac{3}{4}$
6	$6\frac{1}{2}$	$1\frac{7}{8}$	F:3.5	4 x 5
7	$7\frac{1}{8}$	2	F:3.5	$4\frac{3}{4}$ x $6\frac{1}{2}$
8	$8\frac{1}{4}$	$2\frac{3}{8}$	F:3.5	5 x 7
9	10	$2\frac{3}{4}$	F:3.5	6 x 8
10	$11\frac{7}{8}$	$3\frac{3}{8}$	F:3.5	$6\frac{1}{2}$ x $8\frac{1}{2}$
11	$14\frac{1}{4}$	$3\frac{1}{2}$	F:4	7 x $9\frac{1}{2}$
12	$16\frac{1}{2}$	$3\frac{1}{2}$	F:4.8	8 x 10
13	20	$4\frac{1}{8}$	F:4.8	10 x 12
14	$23\frac{3}{4}$	$4\frac{3}{4}$	F:5	11 x 14
15	$27\frac{3}{4}$	5	F:5	12 x 15

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

Unofocals F:4,5

Series I



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.

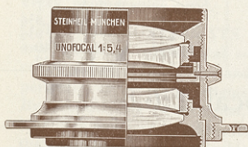
In fact, it is a most desirable general purpose lens, perfectly corrected for spherical, chromatic and astigmatic aberrations.

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	$\frac{5}{8}$	$1\frac{3}{4} \times 2\frac{1}{4}$	$2\frac{1}{4} \times 3\frac{1}{4}$
1	$4\frac{1}{4}$	1	$2\frac{1}{2} \times 3\frac{1}{2}$	$3\frac{1}{4} \times 4\frac{1}{4}$
1a	$4\frac{3}{4}$	$1\frac{1}{6}$	$2\frac{3}{4} \times 4$	$3\frac{1}{2} \times 4\frac{3}{4}$
2	$5\frac{1}{4}$	$1\frac{3}{16}$	$3\frac{1}{4} \times 4\frac{1}{4}$	4 x 5
3	6	$1\frac{1}{4}$	$3\frac{1}{2} \times 4\frac{3}{4}$	$4\frac{1}{4} \times 5\frac{1}{2}$
3a	$6\frac{1}{2}$	$1\frac{3}{8}$	4 x 5	$4\frac{3}{4} \times 6\frac{1}{2}$
3b	$7\frac{1}{8}$	$1\frac{9}{16}$	$4\frac{1}{4} \times 5\frac{1}{2}$	5 x 7
4	$8\frac{1}{4}$	$1\frac{13}{16}$	$4\frac{3}{4} \times 6\frac{1}{2}$	$5\frac{1}{2} \times 8$
5	$9\frac{1}{2}$	$2\frac{1}{8}$	5 x 7	$6\frac{1}{2} \times 8\frac{1}{2}$
6	$11\frac{7}{8}$	$2\frac{5}{8}$	$6\frac{1}{2} \times 8\frac{1}{2}$	8 x 10
7	$15\frac{7}{8}$	$3\frac{1}{2}$	8 x 10	10 x 12

Unofocal F:5,4

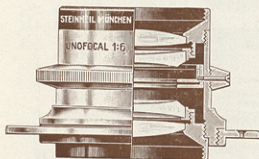
Series Ia



This series is similar in construction to series No. 1 and the lenses are excellent for hand cameras.

No.	Focal Length, Inches	Aperture Inches	Size of Plates Covered Inches
0	3	$\frac{1}{2}$	$1\frac{3}{4} \times 2\frac{1}{4}$
1	$4\frac{1}{4}$	$\frac{3}{4}$	$2\frac{1}{2} \times 3\frac{1}{2}$
1a	$4\frac{3}{4}$	$\frac{7}{8}$	$3\frac{1}{4} \times 4\frac{1}{4}$
2	$5\frac{1}{4}$	1	$3\frac{1}{2} \times 4\frac{1}{2}$
3	6	$1\frac{1}{16}$	4 x 5
3a	$6\frac{1}{2}$	$1\frac{3}{16}$	$4\frac{1}{4} \times 5\frac{1}{2}$
4	$7\frac{1}{8}$	$1\frac{5}{16}$	5 x 7

Unofocal F:6 Series II



*A rapid anastigmat for
portraiture, group and
commercial work.*

No.	Focal Length Inches	Aperture, Inches	Size of Plates Covered Inches	
			From	To
0	3	$\frac{1}{2}$	$1\frac{3}{4} \times 2\frac{1}{4}$	$2\frac{1}{2} \times 3\frac{1}{2}$
1	$4\frac{1}{4}$	$\frac{11}{16}$	$2\frac{1}{4} \times 3\frac{1}{2}$	$3\frac{1}{4} \times 4\frac{1}{4}$
1a	$4\frac{3}{4}$	$\frac{3}{4}$	$3\frac{1}{4} \times 4\frac{1}{4}$	$3\frac{1}{2} \times 4\frac{3}{4}$
2	$5\frac{1}{4}$	$\frac{7}{8}$	$3\frac{1}{2} \times 4\frac{3}{4}$	4 x 5
3	6	1	4 x 5	$4\frac{3}{4} \times 6\frac{1}{2}$
3a	$6\frac{1}{2}$	$\frac{11}{16}$	$4\frac{1}{4} \times 5\frac{1}{2}$	5 x 7
4	$7\frac{1}{8}$	$\frac{13}{16}$	$4\frac{3}{4} \times 6\frac{1}{2}$	$6\frac{1}{2} \times 8\frac{1}{2}$
5	$8\frac{1}{4}$	$\frac{13}{8}$	5 x 7	7 x $9\frac{1}{2}$
6	10	$\frac{15}{8}$	$6\frac{1}{2} \times 8\frac{1}{2}$	8 x 10
7	$11\frac{7}{8}$	2	7 x $9\frac{1}{2}$	10 x 12

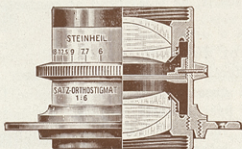
Unofocal F:6,8 Series IIa

*A rapid hand camera lens, astigmatically corrected
and of moderate price.*

No.	Focal Length, Inches	Aperture, Inches	Size of Plate Covered, Inches
0	3	$\frac{5}{16}$	$1\frac{3}{4} \times 2\frac{1}{4}$
1	$4\frac{1}{4}$	$\frac{5}{8}$	$2\frac{1}{2} \times 3\frac{1}{2}$
1a	$4\frac{3}{4}$	$\frac{11}{16}$	$3\frac{1}{4} \times 4\frac{1}{4}$
2	$5\frac{1}{4}$	$\frac{3}{4}$	$3\frac{1}{2} \times 4\frac{3}{4}$
3	6	$\frac{7}{8}$	4 x 5
3a	$6\frac{1}{2}$	$\frac{13}{16}$	$4\frac{1}{4} \times 5\frac{1}{2}$
4	$7\frac{1}{8}$	$\frac{11}{16}$	5 x 7

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 $7\frac{3}{4}$, $12\frac{5}{8}$ or $14\frac{1}{8}$ 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 12.

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	$6\frac{1}{4}$	$6\frac{1}{4}$	$3\frac{1}{2}$	$\frac{9}{16}$ $\frac{9}{16}$	F:6	$2\frac{1}{2} \times 3\frac{1}{2}$	$3\frac{1}{4} \times 4\frac{1}{4}$
1a	$8\frac{5}{8}$	$6\frac{1}{4}$	$4\frac{1}{4}$	$\frac{13}{16}$ $\frac{9}{16}$	F:6.7	$3\frac{1}{4} \times 4\frac{1}{4}$	4×5
2	$8\frac{5}{8}$	$8\frac{5}{8}$	$4\frac{3}{4}$	$\frac{13}{16}$ $\frac{13}{16}$	F:6	$3\frac{1}{2} \times 4\frac{3}{4}$	$4\frac{3}{4} \times 6\frac{1}{2}$
2a	$10\frac{1}{4}$	$8\frac{5}{8}$	$5\frac{1}{4}$	1 $\frac{13}{16}$	F:6.7	$3\frac{1}{2} \times 4\frac{3}{4}$	5×7
3	$10\frac{1}{4}$	$10\frac{1}{4}$	6	1 1	F:6	4×5	6×8
3a	$12\frac{5}{8}$	$10\frac{1}{4}$	$6\frac{1}{2}$	$\frac{13}{16}$ 1	F:6.7	$4\frac{1}{2} \times 6\frac{1}{2}$	$6\frac{1}{2} \times 8\frac{1}{2}$
4	$12\frac{5}{8}$	$12\frac{5}{8}$	$7\frac{1}{8}$	$\frac{13}{16}$ $\frac{13}{16}$	F:6	5×7	8×10
4a	$14\frac{1}{8}$	$12\frac{5}{8}$	$7\frac{3}{4}$	$\frac{13}{8}$ $\frac{13}{16}$	F:6.7	$5\frac{1}{2} \times 7\frac{1}{2}$	$8\frac{1}{2} \times 10\frac{1}{2}$
5	$14\frac{1}{8}$	$14\frac{1}{8}$	$8\frac{1}{4}$	$\frac{13}{8}$ $\frac{13}{8}$	F:6	6×8	$8\frac{1}{2} \times 10\frac{1}{2}$
5a	17	$14\frac{1}{8}$	9	$1\frac{5}{8}$ $\frac{13}{8}$	F:6.7	$6\frac{1}{2} \times 8\frac{1}{2}$	$8\frac{1}{2} \times 10\frac{1}{2}$
6	17	17	$9\frac{7}{8}$	$1\frac{5}{8}$ $1\frac{5}{8}$	F:6	7×9	10×12
6a	$20\frac{1}{2}$	17	$10\frac{3}{4}$	2 $1\frac{5}{8}$	F:6.7	8×10	10×12
7	$20\frac{1}{2}$	$20\frac{1}{2}$	$11\frac{3}{4}$	2 2	F:6	8×10	12×14

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 $23\frac{3}{4}$ 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	$2\frac{1}{8}$	$\frac{5}{16}$	$1\frac{3}{4} \times 2\frac{1}{4}$	$2\frac{1}{2} \times 3\frac{1}{4}$
0	3	$\frac{7}{16}$	2 x $2\frac{3}{4}$	$2\frac{3}{4} \times 4$
1	$3\frac{1}{2}$	$\frac{9}{16}$	$2\frac{1}{2} \times 3\frac{1}{2}$	$3\frac{1}{2} \times 4\frac{3}{4}$
2	$4\frac{1}{4}$	$\frac{5}{8}$	$3\frac{1}{4} \times 4\frac{1}{4}$	4 x 5
3	$4\frac{3}{4}$	$\frac{11}{16}$	$3\frac{1}{2} \times 4\frac{3}{4}$	$4\frac{3}{4} \times 6\frac{1}{2}$
3a	$5\frac{1}{4}$	$\frac{13}{16}$	4 x 5	5 x 7
4	6	$\frac{7}{8}$	$4\frac{1}{4} \times 5\frac{1}{2}$	6 x 8
4a	$6\frac{1}{2}$	1	$4\frac{3}{4} \times 6\frac{1}{2}$	6 x 8
5	$7\frac{1}{8}$	$\frac{11}{16}$	5 x 7	7 x $9\frac{1}{2}$
6	$8\frac{1}{4}$	$1\frac{1}{4}$	6 x 8	8 x 10
7	$9\frac{1}{2}$	$\frac{17}{16}$	7 x $9\frac{1}{2}$	10 x 12
8	11	$\frac{15}{8}$	8 x 10	11 x 14
8a	$12\frac{1}{2}$	$1\frac{7}{8}$	10 x 12	12 x 16
9	$14\frac{1}{4}$	$2\frac{1}{4}$	11 x 14	16 x 16
10	$18\frac{3}{4}$	$2\frac{1}{2}$	12 x 16	16 x 20
11	$23\frac{3}{4}$	$3\frac{1}{16}$	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*."

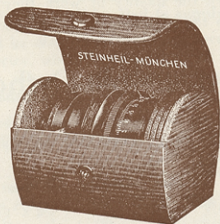
The lens not only gives an extreme wide angle, but also very uniform illumination of the entire field.

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	$\frac{1}{4}$	$3\frac{1}{4} \times 4\frac{1}{4}$	$7\frac{1}{2}$
1a	$3\frac{1}{2}$	$\frac{1}{3}$	4 x 5	$8\frac{3}{4}$
2	$4\frac{1}{4}$	$\frac{3}{8}$	5 x 7	10
3	6	$\frac{1}{2}$	8 x 10	$13\frac{1}{2}$
4	$7\frac{7}{8}$	$\frac{5}{8}$	10 x 12	$17\frac{1}{4}$
5	$10\frac{1}{4}$	$1\frac{3}{4}$	12 x 16	21
6	13	$1\frac{1}{16}$	14 x 18	24

Rapid Orthostigmatic Combination-Sets



THESE sets have been designed to provide in most compact form and at minimum cost a combination of ORTHOSTIGMATS, which can be so manipulated as to furnish lenses of *six* different focal lengths.

Set No. A² is intended for 5x7 plates and No. A³ for 8x10 plates.

The smaller set No. A² furnishes six different foci, varying from $5\frac{1}{4}$ to $14\frac{1}{4}$ inches, while the larger set No. A³ is variable for different foci between $7\frac{1}{8}$ and 17 inches.

Each set consists of three different elements and is furnished with a tube mount, iris diaphragm, lens cap, leather case and flange.

As will be observed the sets are made up of ORTHOSTIGMATS which are described in detail on page 8 under the head of "Convertible Orthostigmats."

For work outside the studio, where portability and convenience are to be considered, the commercial or view photographer will find these sets superior to any similar convertibles on the market,—and aside from their portability the quality of work they will do will be found up to the highest possible standard.

Set A₂ Convertible Orthostigmat

Single Elements	Focal Length Inches	Speed	Resulting Angle	Size of Plates Covered Inches	
				From	To
II	8 $\frac{3}{4}$	F:12	53°	4 $\frac{3}{4}$ x 6 $\frac{1}{4}$	7 x 9
III	10 $\frac{1}{4}$	F:12	46°	5 x 7	8 x 10
V	14 $\frac{1}{4}$	F:12	34°	8 x 10	11 x 14
Combinations:					
III u. II	5 $\frac{1}{4}$	F:6.7	78.5°	3 $\frac{1}{2}$ x 4 $\frac{3}{4}$	5 x 7
V u. II	6 $\frac{1}{2}$	F:7.7	67.5°	4 x 5	6 $\frac{1}{2}$ x 8 $\frac{1}{2}$
V u. III	7 $\frac{1}{8}$	F:7.2	63°	5 x 7	7 x 9 $\frac{1}{2}$

Set A₃ Convertible Orthostigmat

Single Elements	Focal Length Inches	Speed	Resulting Angle	Size of Plates Covered Inches	
				From	To
III	10 $\frac{1}{4}$	F:12	60°	5 x 7	8 x 10
V	14 $\frac{1}{4}$	F:12	45°	7 x 9	10 x 12
VI	17	F:12	38.5°	8 x 10	12 x 15
Combinations:					
V & III	7 $\frac{1}{8}$	F:7.2	80°	5 x 7	8 x 10
VI & III	7 $\frac{1}{8}$	F:7.7	74°	5 $\frac{1}{2}$ x 7 $\frac{1}{2}$	9 x 11
VI & V	9	F:6.7	66.5°	6 $\frac{1}{2}$ x 8 $\frac{1}{2}$	10 x 12

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 days approval against deposit of the price, which will be returned without delay if the lens is returned within specified period and in undamaged condition.

If preferred, lenses will be forwarded through dealers for examination and trial, or in care of express companies.

In either case 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.

COD 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.

Special catalogs of STEINHEIL products are issued on:

Process lenses and accessories

Motion picture camera lenses

Projection lenses

Cameras

Telescopes and astronomical instruments.

Prism binoculars

