LEICA **SUPER-ELMAR-S** 24 MM F/3.5 ASPH.

Technical Data.

Illustration 1:2

TECHNISCHE DATEN

|	
Order no.	11054
Image angle (diagonal, horizontal, vertical)	96.6° / 86.5° / 63.9°, corresponds to approx. 19 mm focal length in 35 mm format
Optical design Number of lenses / groups	12 / 10
Position of entrance pupil (from apex of 1st lens element)	83.4 mm
Focusing range	0.4 m to ∞
Distance setting Scales	Combined meter/feet graduation
Smallest object field	349 mm × 533 mm
Largest reproduction ratio	1:11.3
Aperture Setting/Function	Electronically controlled diaphragm, set using setting / selection dial on camera, including half values
Lowest value	22
Bayonet	Leica S bayonet
Filter mount/Lens hood	External bayonet for lens hood (included), internal thread for E95 filter, filter mount does not rotate
Dimensions and weight Length to bayonet mount	approx. 112 / 138 mm (without / with lens hood)
Largest diameter	approx. 101 / 150 mm (without / with lens hood)
Weight	approx. 1260 g

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ENGINEERING DRAWING

LENS SHAPE

Illustration 1:2

ASPH.

Floating Element
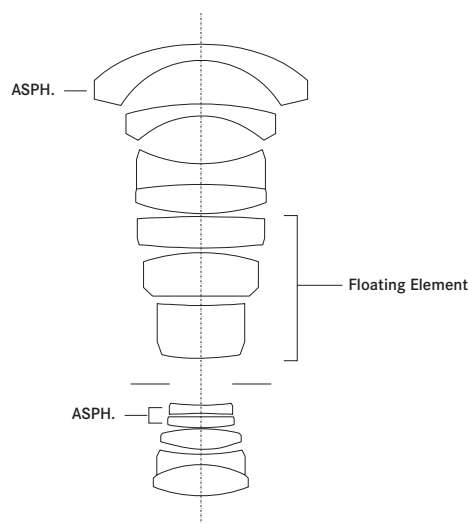
ASPH.

The Leica Super-Elmar-S 24 mm f/3.5 ASPH. offers Leica S-Photographers a true super-wide-angle lens with an angle of view equivalent to that of a 19 mm in 35 mm photography. With a diagonal angle of view of 96.6°, it strongly emphasises perspectives and opens up any number of creative opportunities in areas such as architectural, landscape or interior photography.

Of the 12 elements in ten groups, five are manufactured from glasses with anomalous partial dispersion, and of these, three are fluoride lenses for the correction of chromatic aberrations. Two aspherical lenses located directly behind the iris and the aspherical surface of the front lens minimise monochromatic aberrations. To ensure consistent performance at all distances, only the middle, three-element group is used for focusing, whereby one of its lenses moves independently as a floating element.

This extremely elaborate construction is reflected in an unusually high degree of correction. The Leica Super-Elmar-S 24 mm f/3.5 ASPH. has been optimised for maximum performance and shows very high resolution and contrast rendition from its initial aperture onwards at all focusing distances. Its extremely high imaging performance cannot be noticeably improved by stopping down. Particularly remarkable in view of its extreme angle of view and potential uses in architectural photography is that the Super-Elmar-S 24 mm f/3.5 ASPH. is almost completely free from distortion and therefore guarantees optimum results with an absolute minimum of post-processing effort.

Lens with lens hood, illustration 1:2

Lens hood in transport position, illustration 1:2
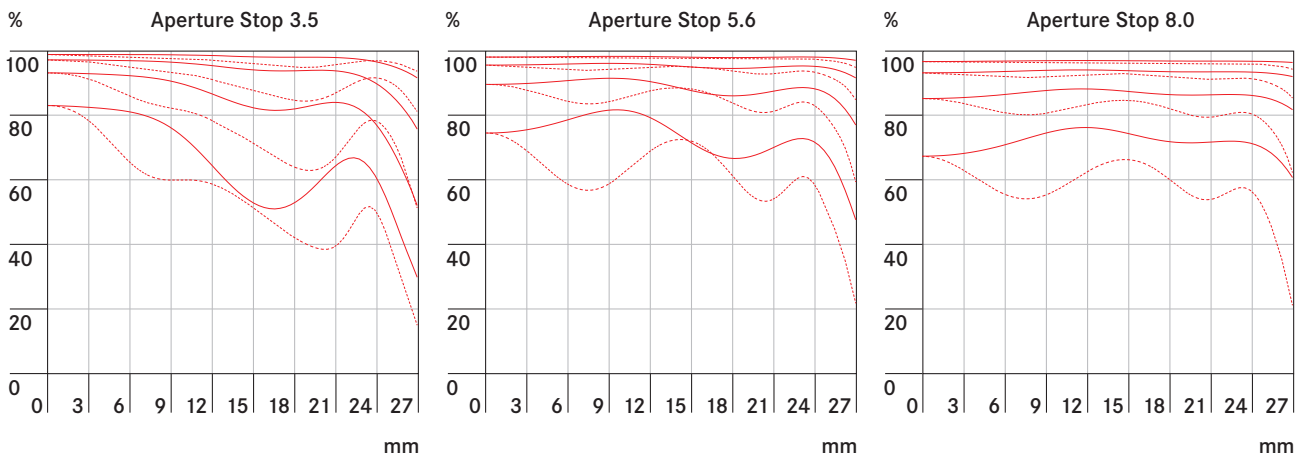
SCOPE OF DELIVERY

Rear lens cover (Order no. 16020), Lens cover S (Order no. 16027),
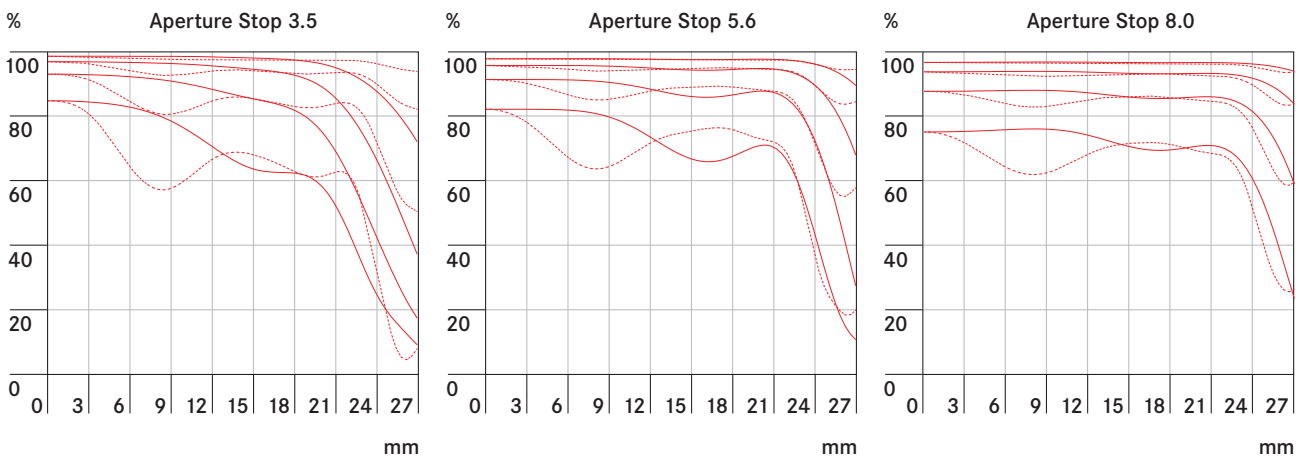Lens pouch (Order no. 439-606.105-000), Lens hood (Order no. 12404)

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MTF DIAGRAMS

Focusing distance

Aperture Stop 3.5 / Aperture Stop 5.6 / Aperture Stop 8.0

Infinity (∞)

Aperture Stop 3.5 / Aperture Stop 5.6 / Aperture Stop 8.0

——————— Sagittal structures

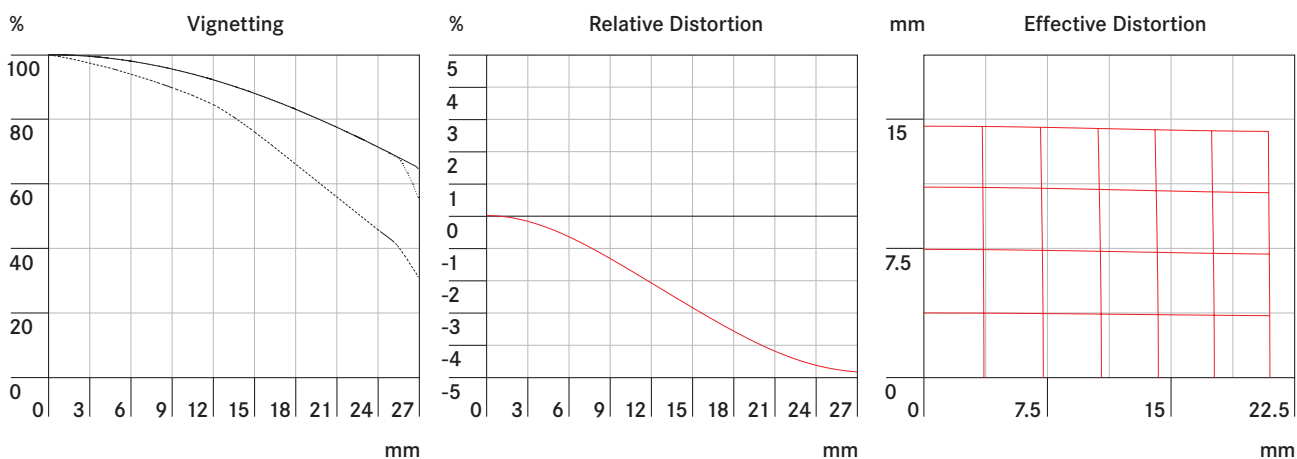.................... Tangential structures

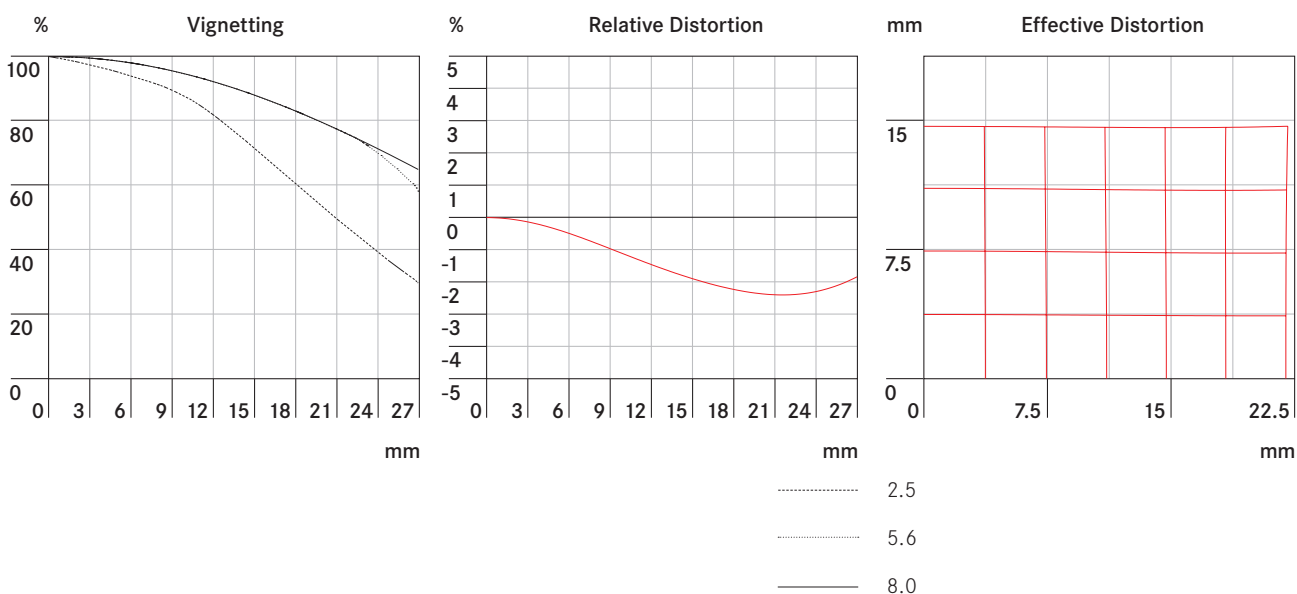| MTF GRAPHS	The MTF is indicated both at full aperture and at f/5.6 and f/8 at long taking distances (infinity). Shown is the contrast in percentage for 5, 10, 20 and 40 lp/mm across the height of the 35 mm film format, for tangential (dotted line) and sagittal (solid line) structures, in white light. The 5 and 10 lp/mm will give an indication regarding the contrast ratio for large object structures. The 20 and 40 lp/mm records the resolution of finer and finest object structures.

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VIGNETTING–/DISTORTION DIAGRAM

Focusing distance

Vignetting — Relative Distortion — Effective Distortion

Infinity (∞)

Vignetting — Relative Distortion — Effective Distortion

- 2.5
- 5.6
- ———— 8.0

DISTORTION & VIGNETTING

Distortion is the deviation of the real image height (in the picture) from the ideal image height. The relative distortion is the percentage deviation. The ideal image height results from the object height and the magnification. The image height of 27.04 mm is the radial distance bet–ween the edge and the middle of the image field for the format 30 mm × 45 mm. The graph of the effective distortion illustrates the appearance of straight horizontal and vertical lines in the picture.

Vignetting is a continous decrease of the illumination to the edges of the image field. The graph shows the percentage loss of illumination over the image height. 100% means no vignetting.

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DEPTH OF FIELD TABLE

∞ feet ∞ m	Aperture Stop							Magnifi-cation
	3.5	4	5.6	8	11	16	22	
0.4	0.385 – 0.416	0.384 – 0.419	0.378 – 0.427	0.369 – 0.440	0.360 – 0.459	0.345 – 0.495	0.330 – 0.550	1 / 11.3
0.5	0.474 – 0.531	0.471 – 0.535	0.460 – 0.551	0.446 – 0.578	0.429 – 0.616	0.405 – 0.697	0.382 – 0.841	1 / 15.4
0.7	0.641 – 0.774	0.634 – 0.786	0.612 – 0.827	0.583 – 0.902	0.550 – 1.020	0.506 – 1.327	0.463 – 2.181	1 / 23.6
1	0.872 – 1.183	0.858 – 1.212	0.813 – 1.330	0.756 – 1.563	0.696 – 2.025	0.619 – 4.240	0.551 – ∞	1 / 35.8
2	1.50 – 3.09	1.45 – 3.33	1.31 – 4.61	1.15 – 11.3	1.00 – ∞	0.84 – ∞	0.70 – ∞	1 / 76.6
3	1.97 – 6.69	1.89 – 8.01	1.65 – 26.3	1.40 – ∞	1.18 – ∞	0.94 – ∞	0.77 – ∞	1 / 117.3
5	2.63 – 101.5	2.48 – ∞	2.08 – ∞	1.68 – ∞	1.37 – ∞	1.05 – ∞	0.84 – ∞	1 / 198.9
∞	5.28 – ∞	4.69 – ∞	3.39 – ∞	2.41 – ∞	1.79 – ∞	1.27 – ∞	0.96 – ∞	1 / ∞

∞ feet ∞ m   Set distance [m]