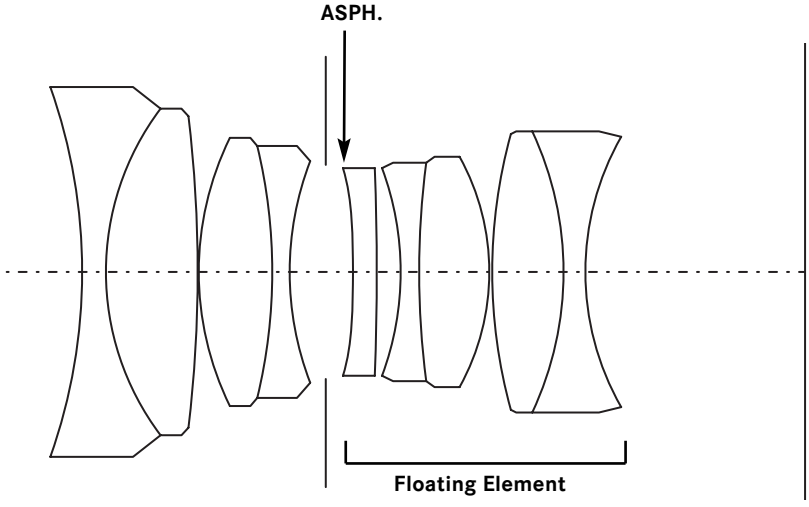
The LEICA SUMMILUX-M 35 mm f/1.4 ASPH. is a further revised version of the popular wide-angle lens of the Leica M rangefinder system. Thanks to the latest developments in the fields of optics and precision engineering, the new 35 lens sets a whole new standard in the fast wide-angle lens portfolio. Regardless of whether it's a matter of selective focus in the close-up range, high-contrast available light applications or landscape shots with immense depth of field, the lens delivers persuasive arguments in any situation. In comparison with its predecessor, the new LEICA SUMMILUX-M 35 mm f/1.4 ASPH. now incorporates a floating element: the lenses behind the aperture blades are constructed as a floating group that changes its position relative to the front lens group during focusing to ensure that the LEICA SUMMILUX-M 1:1.4/35 mm ASPH. achieves equally outstanding imaging performance at closer focusing distances. Another new feature is a full-metal, rectangular, screw-mount lens hood that contributes significantly to the even more compact dimensions of the lens.
Even wide open, the LEICA SUMMILUX-M 35 mm f/1.4 ASPH. reveals performance characteristics without precedent in the field of compact 35 mm lenses: outstanding imaging performance over the entire focusing range, from infinity to minimum focus, excellent contrast, even in the finest structures, superb rendition of details across the entire image field, good field flattening and, stopped down to f2 and onwards, almost complete freedom from coma effects. It is hardly possible to improve this excellent optical performance by stopping down.

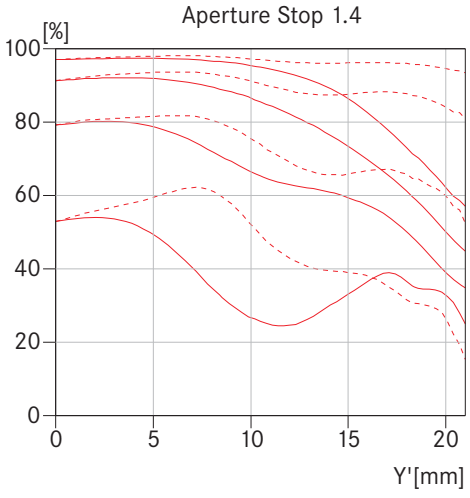
Lens shape

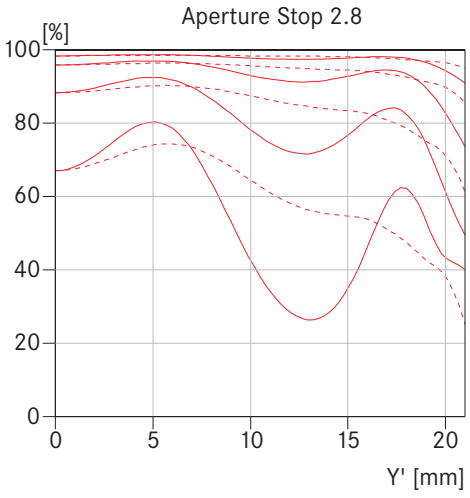


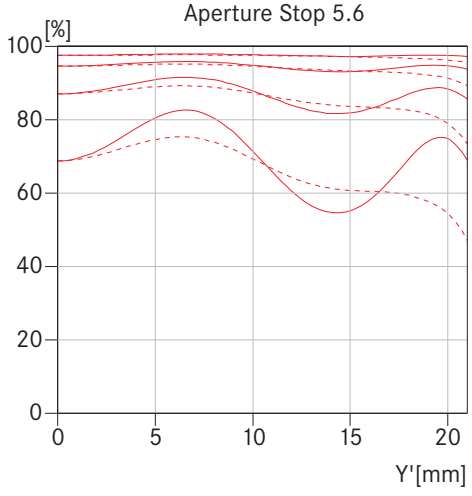
Engineering drawing

Technical Data	
Angle of view (diagonal, horizontal, vertical)	for 35 mm (24 x 36 mm): 63°, 54°, 37° / for M8 (18 x27 mm): 50°, 42°, 28°
Optical design	**Number of lenses / groups:** 9 / 5
	Focal length: 35.6 mm
	Position of entrance pupil: 16.6 mm (from apex of 1st lens element)
	Focusing range: 0.7 m to infinity
Distance setting	**Scales:** Combined meter / feet graduation
	Smallest object field: 418 x 626 mm (for 35 mm), 313 x 470 mm (M8)
	Largest reproduction ratio: approx. 1:17.4
Aperture	**Setting / Function:** With click-stops, half values available
	Lowest value: 16 / **Number of blades:** 9
Bayonet	Leica M quick-change bayonet with 6 bit lens identification bar code for digital M models
Filter mount/Lens hood	Internal thread for screw-on filters size E46, non-rotating / Snap-on type (supplied)
Dimension and weight	**Length:** approx. 46 / 58 mm (with/without lens hood)
	Largest diamater: approx. 56 mm
	Weight: approx. 320 g

MTF graphs





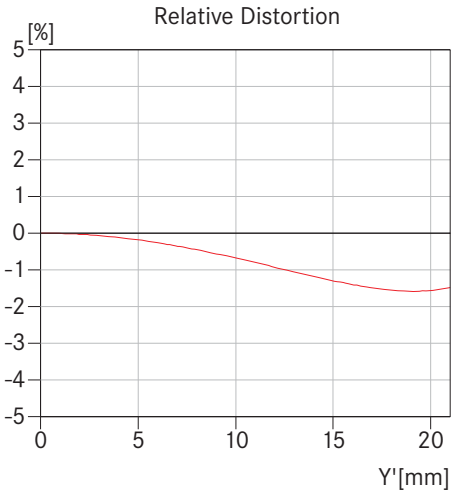


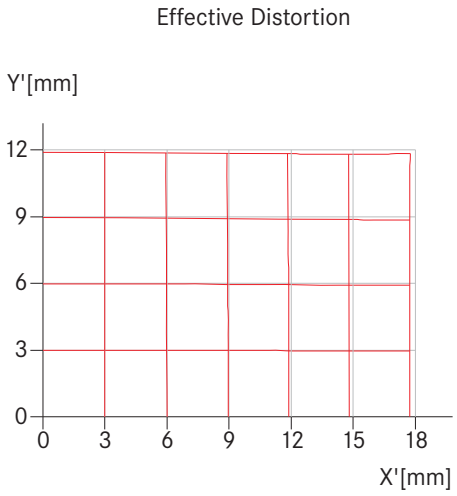
The MTF is indicated at full aperture, at f/2.8 and at f/5.6 at long taking distances (infinity). Shown is the contrast in percentage for 5, 10, 20 and 40 lp/mm accross the height of the 35 mm film format, for tangential (dotted line) and sagittal (solid line) structures, in white light. The 5 and 10 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.

sagittal structures

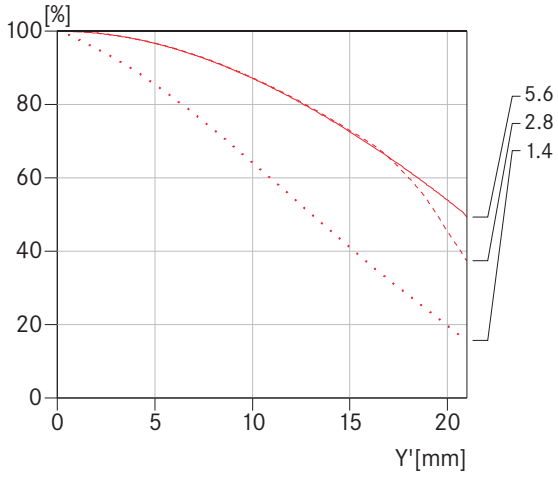
tangential structures

Distortion





Vignetting

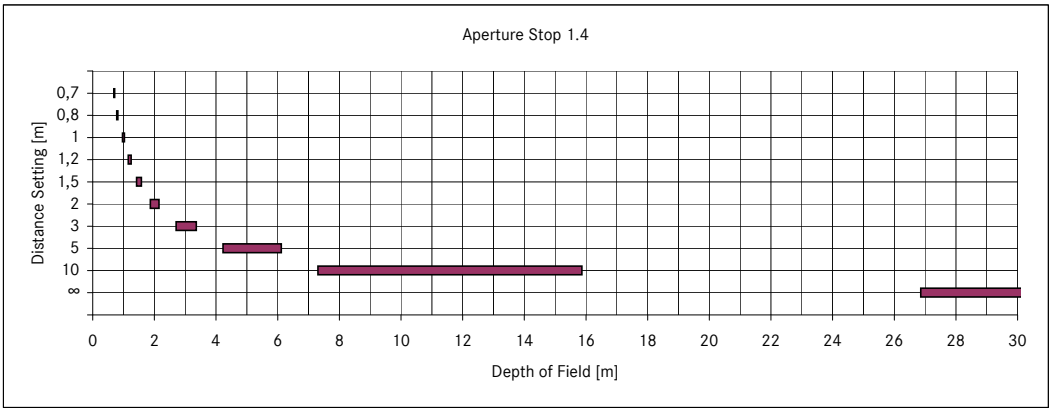


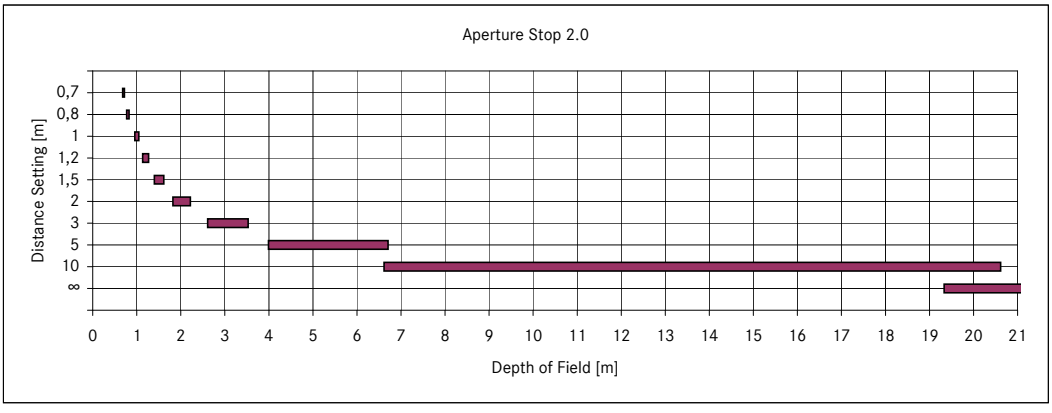
Distortion is the deviation of the real image height (in the picture) from the ideal image height. The relative distortion is the percentage deviation. The ideal image height results from the object height and the magnification. The image height of 21.6mm is the radial distance between the edge and the middle of the image field for the format 24mm x 36mm. The graph of the effective distortion illustrates the appearance of straight horizontal and vertical lines in the picture.

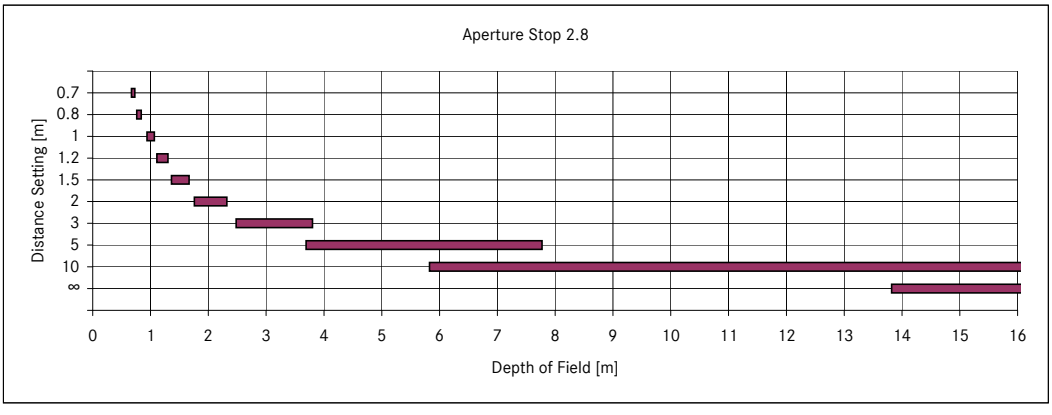
Vignetting is a continous decrease of the illumination to the edges of the image field. The graph shows the percentage loss of illumination over the image height. 100% means no vignetting.

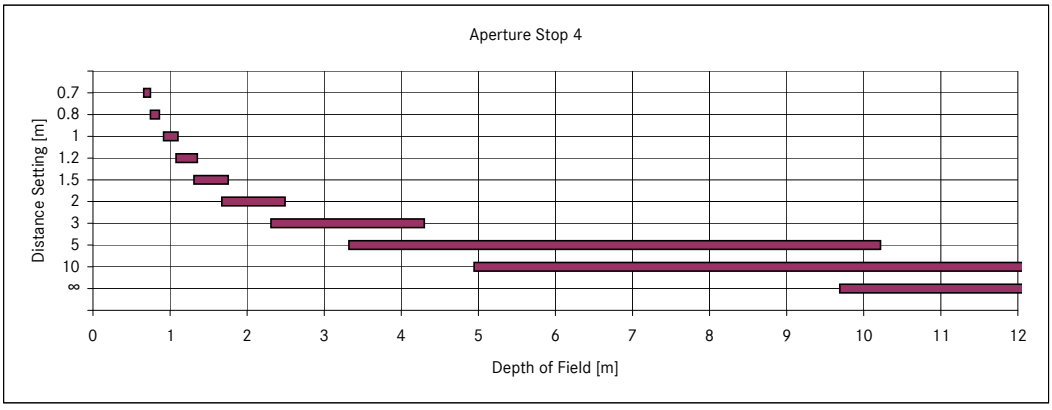
Depth of field table

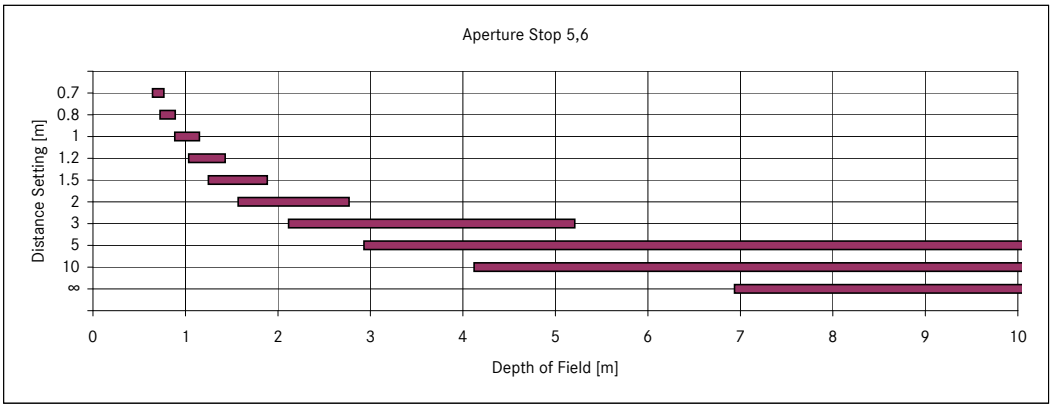
Distance Setting [m]	Aperture Stop 1.4	2	2.8	4	5.6	8	11	16	Magnification
0.7	0.684 - 0.716	0.679 - 0.723	0.671 - 0.732	0.659 - 0.747	0.644 - 0.768	0.623 - 0.801	0.599 - 0.848	0.562 - 0.940	1/17,4
0.8	0.779 - 0.822	0.772 - 0.830	0.761 - 0.843	0.746 - 0.863	0.726 - 0.892	0.699 - 0.938	0.668 - 1.004	0.622 - 1.14	1/20,2
1	0.967 - 1.035	0.955 - 1.049	0.939 - 1.070	0.915 - 1.104	0.885 - 1.152	0.844 - 1.233	0.798 - 1.353	0.732 - 1.62	1/25,8
1.2	1.152 - 1.252	1.135 - 1.273	1.111 - 1.305	1.077 - 1.356	1.035 - 1.431	0.979 - 1.560	0.916 - 1.762	0.829 - 2.25	1/31,4
1.5	1.425 - 1.583	1.399 - 1.618	1.362 - 1.671	1.310 - 1.757	1.248 - 1.887	1.165 - 2.124	1.076 - 2.523	0.956 - 3.69	1/39,8
2	1.867 - 2.154	1.821 - 2.219	1.758 - 2.322	1.672 - 2.495	1.570 - 2.771	1.438 - 3.325	1.303 - 4.45	1.128 - 10.3	1/53,8
3	2.71 - 3.37	2.61 - 3.53	2.48 - 3.80	2.31 - 4.30	2.12 - 5.21	1.88 - 7.66	1.65 - 18.7	1.38 - ∞	1/81,9
5	4.23 - 6.12	3.99 - 6.71	3.69 - 7.78	3.32 - 10.2	2.93 - 17.7	2.49 - ∞	2.10 - ∞	1.67 - ∞	1/138
10	7.31 - 15.9	6.61 - 20.6	5.83 - 35.9	4.95 - ∞	4.12 - ∞	3.30 - ∞	2.64 - ∞	1.99 - ∞	1/278
∞	26.9 - 6.71	19.3 - ∞	13.8 - ∞	9.69 - ∞	6.94 - ∞	4.87 - ∞	3.56 - ∞	2.46 - ∞	1/∞

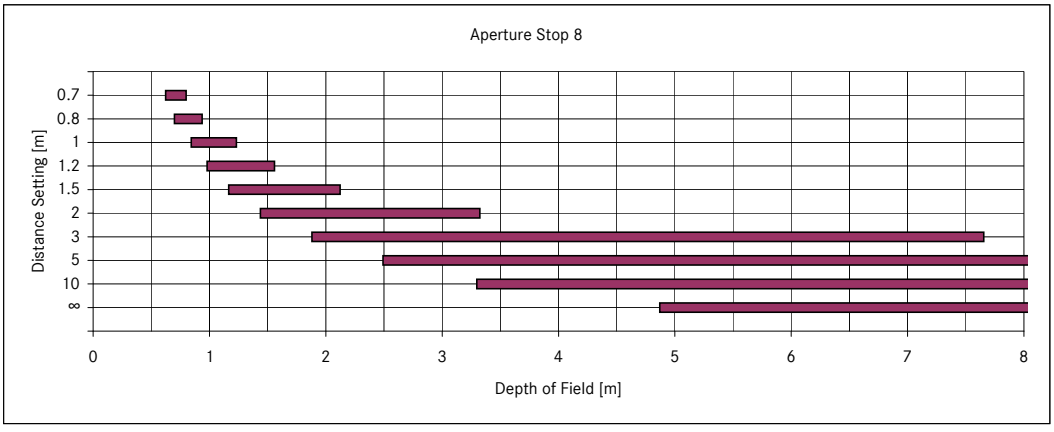


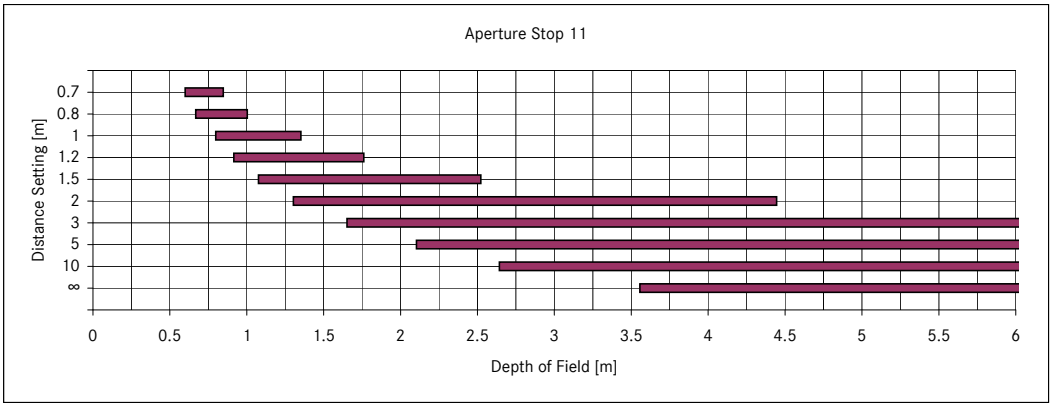


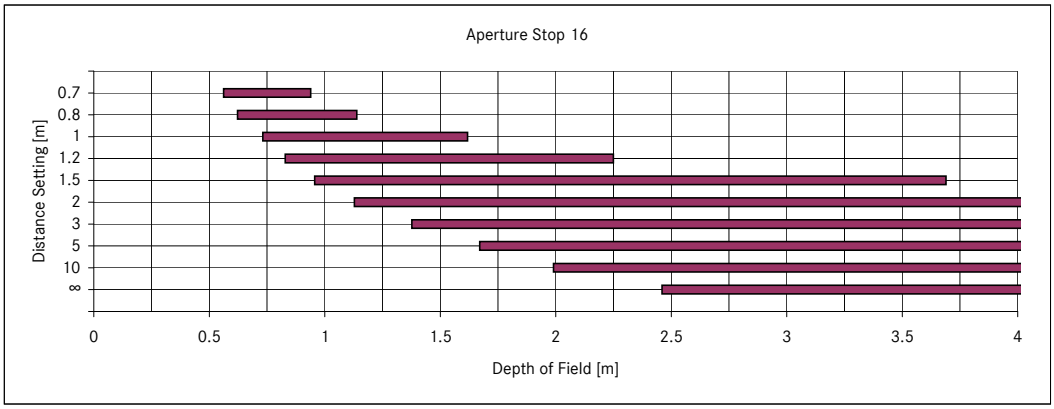



Aperture Stop 4
Distance Setting [m]
0.7
0.8
1
1.2
1.5
2
3
5
10
∞
0 1 2 3 4 5 6 7 8 9 10 11 12
Depth of Field [m]


Aperture Stop 5,6
Distance Setting [m]
0.7
0.8
1
1.2
1.5
2
3
5
10
∞
0 1 2 3 4 5 6 7 8 9 10
Depth of Field [m]


Aperture Stop 8
Distance Setting [m]
0.7
0.8
1
1.2
1.5
2
3
5
10
∞
0 1 2 3 4 5 6 7 8
Depth of Field [m]


Aperture Stop 11
Distance Setting [m]
0.7
0.8
1
1.2
1.5
2
3
5
10
∞
0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 5 5.5 6
Depth of Field [m]



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