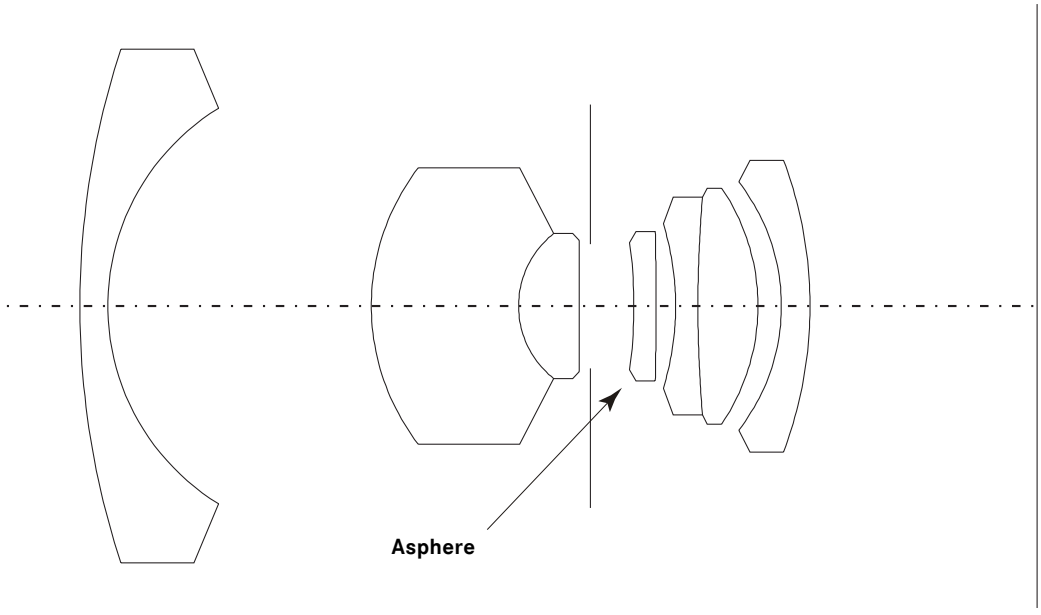
Its contrast and detail rendition at full aperture sets new standards for wide-angle lenses. Stopping down a mere 1 or 1.5 aperture delivers the highest optical performance over the entire image area. With a focal length that is only 3 mm longer than that of the 21 mm lens, it produces images that are impressive for their unusual perspectives without appearing to have been made with a super-wide-angle lens. Converging vertical lines are particularly easy to master with this lens. All these features make it an ideal lens for reportage and for architectural photographs.

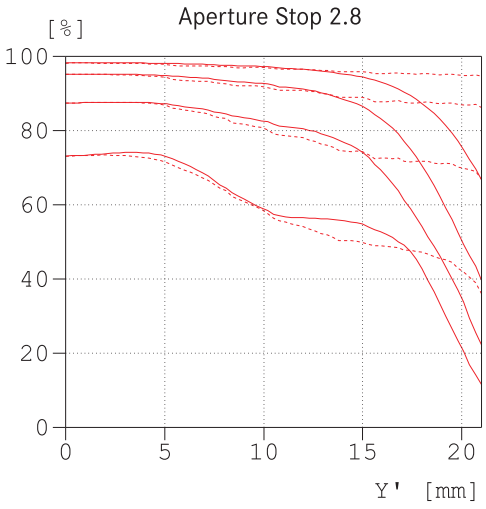
Lens shape

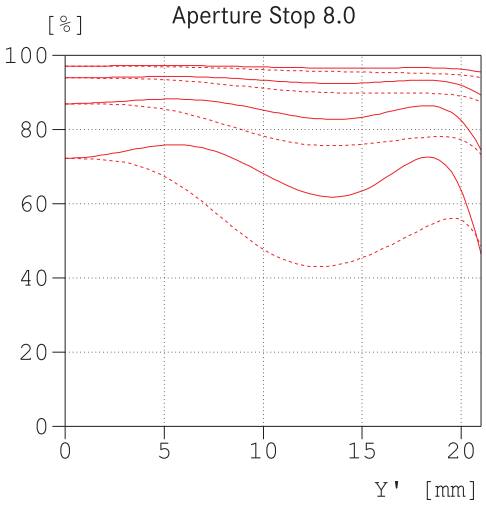


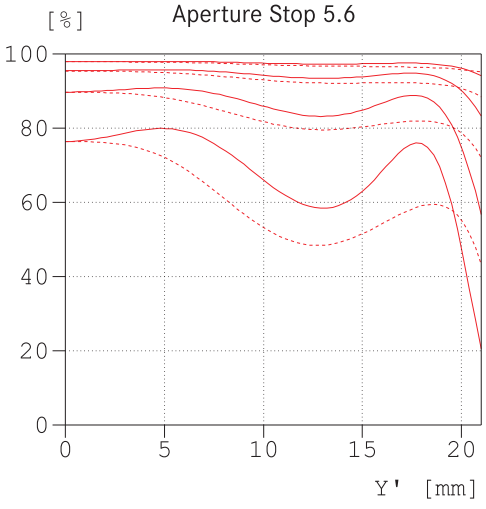
Engineering drawing

Technical Data	
Angle of view (diagonal, horizontal, vertical)	84°, 74°, 53°
Optical design	**Number of elements / groups:** 7 / 5
	Focal length: 24.4 mm
	Entrance pupil: 20.7 mm (related to the first lens surface in light direction)
	Focusing range: 0.7 m to Infinity
Distance setting	**Scale:** combined meter/feet-increments
	Smallest object field: 630 mm x 950 mm
	Highest reproduction ratio: 1:26
Diaphragm	**Setting / Type:** with clickstops (including half values), manual diaphragm
	Smallest aperture: f/16
Bayonet	Leica M quick-change bayonet
Filter (type)	internal thread for screw-in type filters E 55
Lens hood	separate, clip-on type, lockable
Dimensions and weight	**Length:** 45 mm
	Largest diameter: 58 mm
	Weight: approx. 290 g / 388 g (black anodized- / silver chrome finish)

MTF graphs





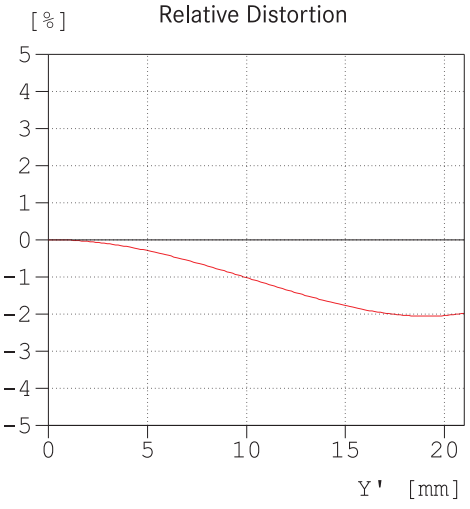


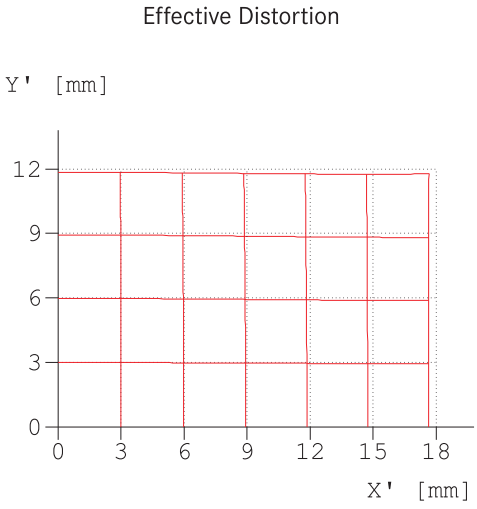
The MTF is indicated both at full aperture and at f/5.6 at long taking distances (infinity). Shown is the contrast in percentage for 5, 10, 20 and 40 lp/mm accross the height of the 35 mm film format, for tangential (dotted line) and sagittal (solid line) structures, in white light. The 5 and 10 lp/mm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

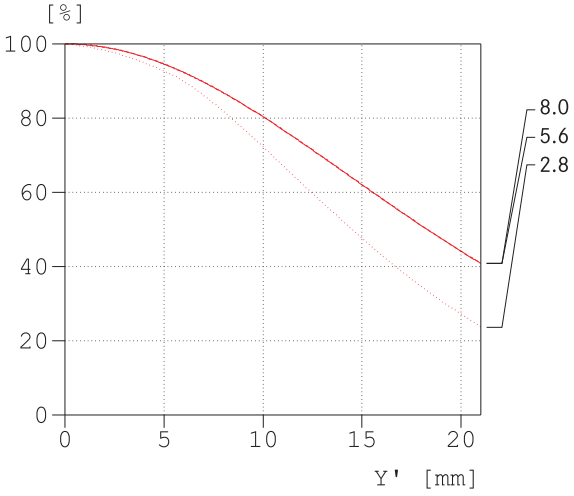
tangential structures

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.

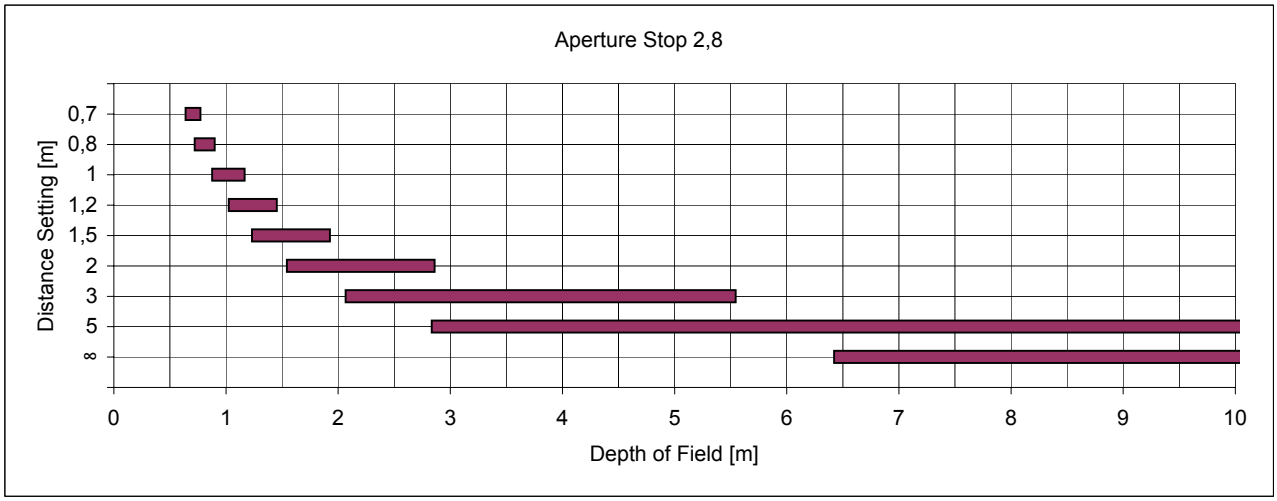
Vignetting is a continous decrease of the illumination to the edges of the image field. The graph shows the percentage lost of illumination over the image height. 100% means no vignetting.

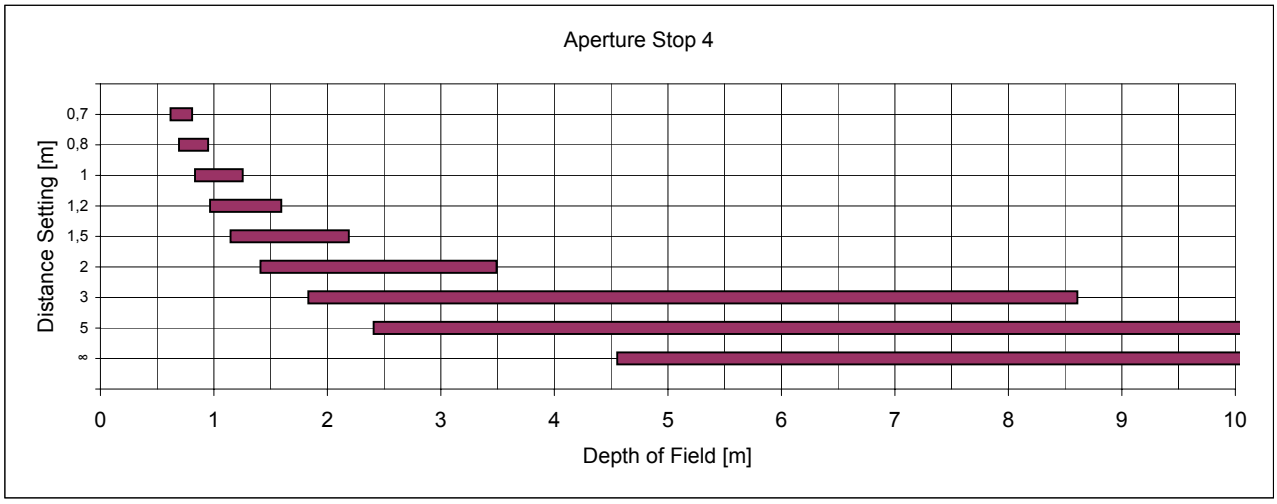
sagittal structures

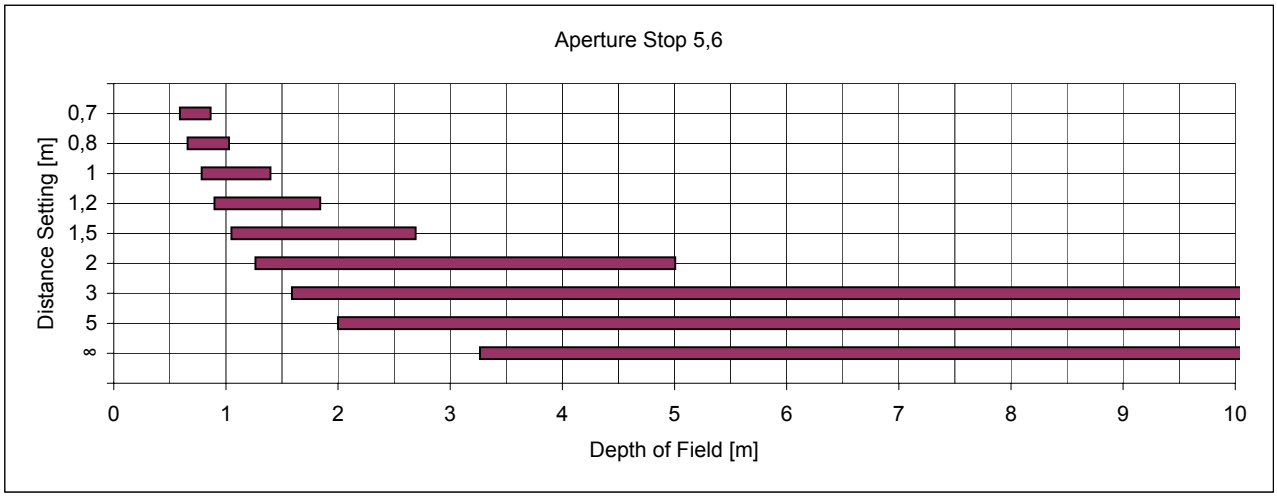
tangential structures

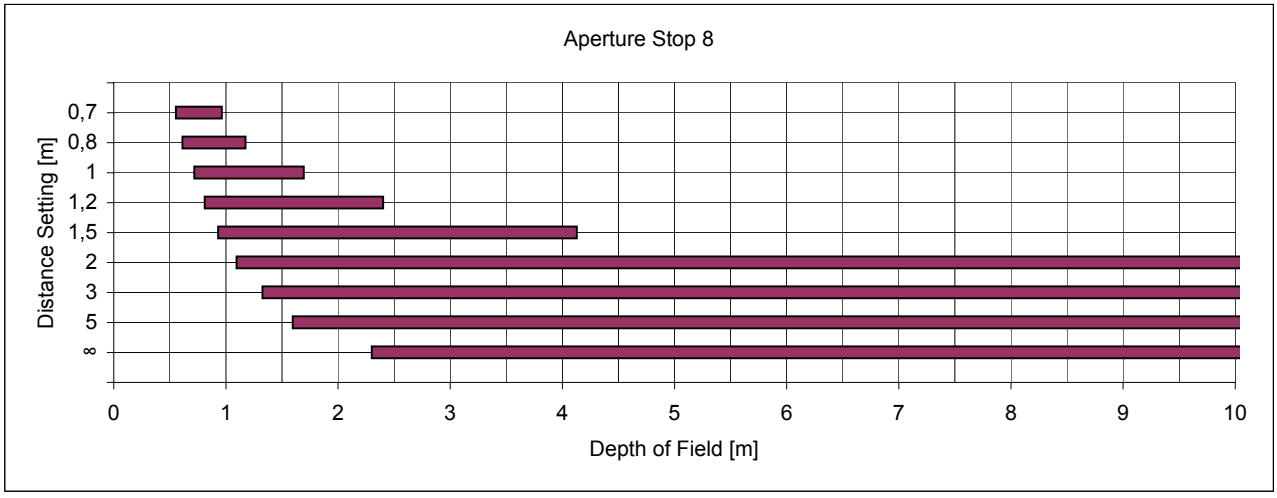
Depth of field table

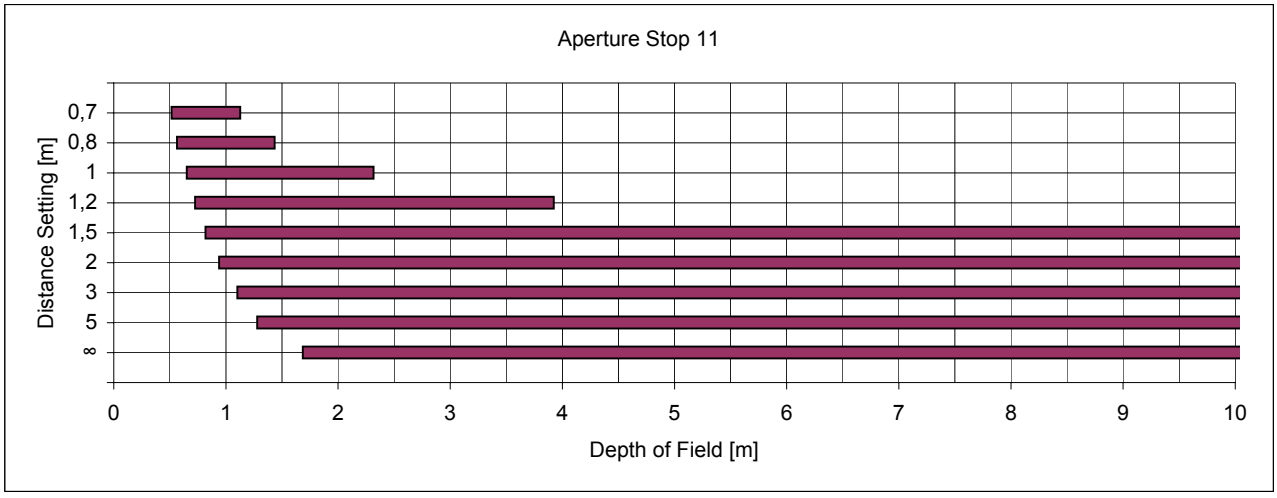
Distance Setting [m]	Aperture Stop 2,8	4	5,6	8	11	16	Magnification
0,7	0,640 - 0,774	0,618 - 0,810	0,590 - 0,865	0,554 - 0,965	0,515 - 1,129	0,462 - 1,592	1/25,9
0,8	0,721 - 0,900	0,693 - 0,950	0,658 - 1,029	0,612 - 1,176	0,564 - 1,436	0,499 - 2,304	1/30,0
1	0,876 - 1,167	0,834 - 1,255	0,783 - 1,399	0,718 - 1,695	0,651 - 2,318	0,564 - 6,175	1/38,2
1,2	1,024 - 1,454	0,966 - 1,595	0,897 - 1,842	0,811 - 2,404	0,725 - 3,924	0,618 - ∞	1/46,4
1,5	1,231 - 1,928	1,146 - 2,190	1,049 - 2,693	0,931 - 4,130	0,818 - 12,79	0,683 - ∞	1/58,7
2	1,543 - 2,861	1,410 - 3,492	1,263 - 5,008	1,094 - 14,65	0,939 - ∞	0,762 - ∞	1/79,2
3	2,066 - 5,546	1,832 - 8,609	1,588 - 35,73	1,326 - ∞	1,102 - ∞	0,863 - ∞	1/120
5	2,835 - 22,24	2,407 - ∞	1,999 - ∞	1,596 - ∞	1,279 - ∞	0,966 - ∞	1/202
∞	6,422 - ∞	4,553 - ∞	3,266 - ∞	2,301 - ∞	1,686 - ∞	1,174 - ∞	1/∞

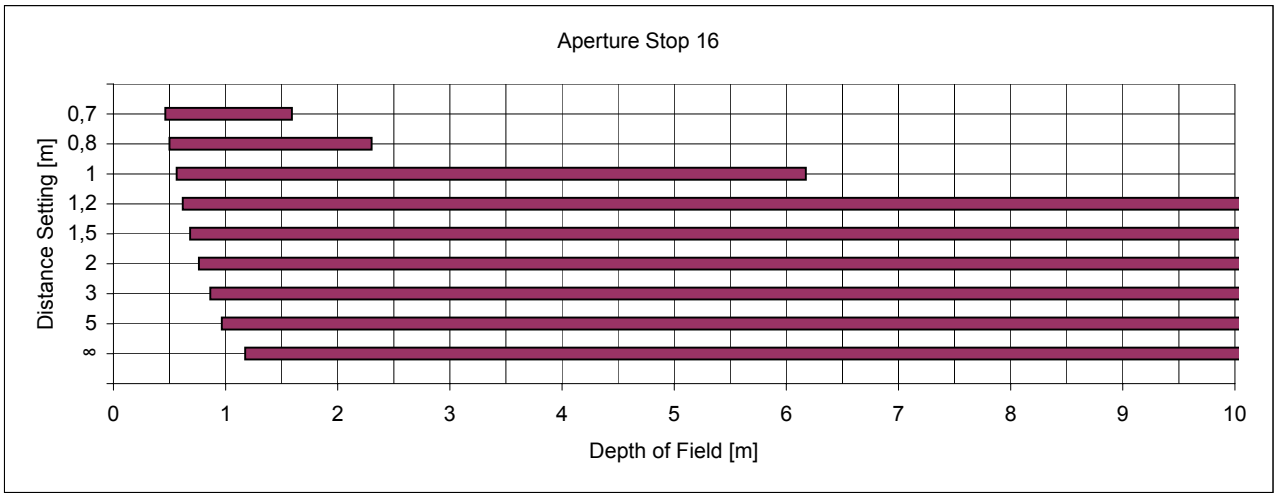





Aperture Stop 5,6
Distance Setting [m]
0,7
0,8
1
1,2
1,5
2
3
5
∞
0
1
2
3
4
5
6
7
8
9
10
Depth of Field [m]


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


Aperture Stop 11
Distance Setting [m]
0,7
0,8
1
1,2
1,5
2
3
5
∞
0
1
2
3
4
5
6
7
8
9
10
Depth of Field [m]



Leica Camera AG / Oskar-Barnack-Straße 11 / D-35606 Solms / Telefon +49 (0) 6442-208-0 / Telefax +49 (0) 6442-208-333
www.leica-camera.com / info@leica-camera.com