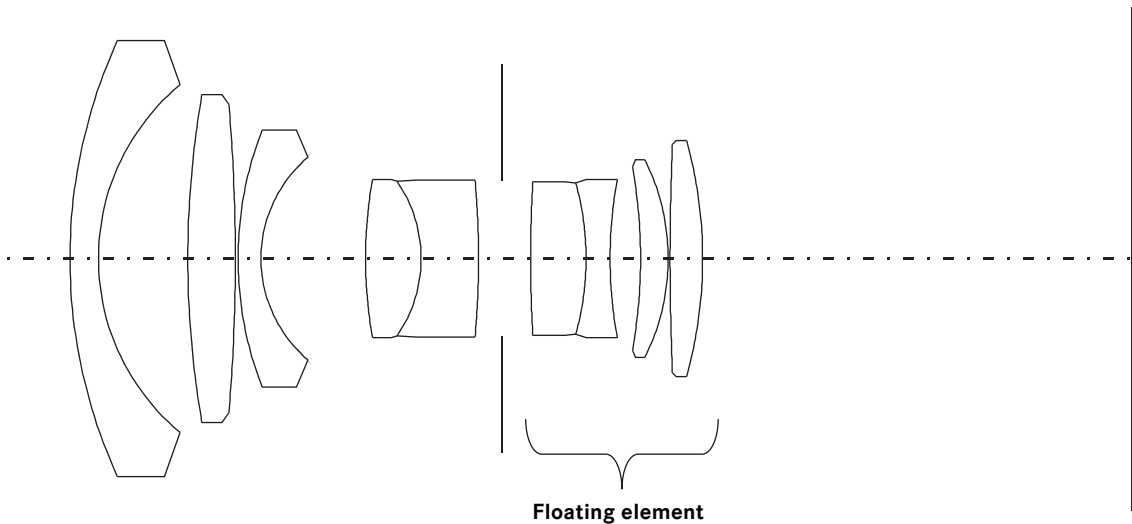




This wide-angle lens uses a floating element to achieve uniformly high imaging performance across the entire focusing range from 30 cm (12 in) to infinity. Artificial vignetting, which is already extremely low for this focal length, is easy to eliminate by slightly stopping down the aperture. At first glance, photographs taken with the LEICA ELMARIT-M 24 mm f/2.8 do not look like super-wide-angle pictures, however they are very impressive because of their unusual perspective. In the close-up range, this lens makes unusual images possible because it sets the main subject off in an interesting manner in relation to its surroundings.

___ Lens shape



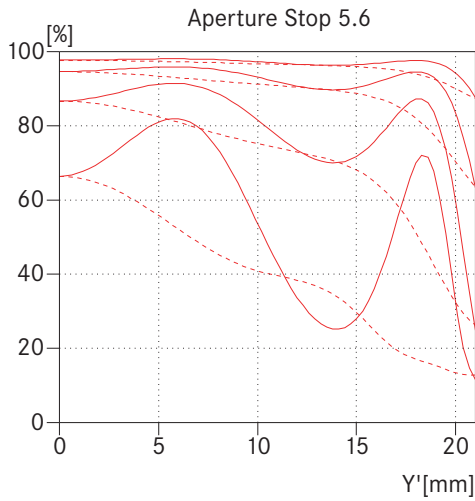
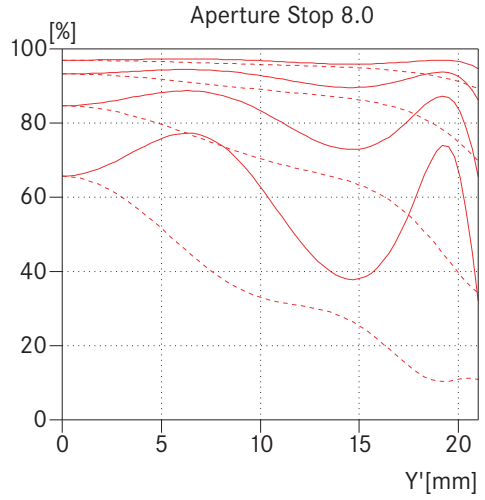
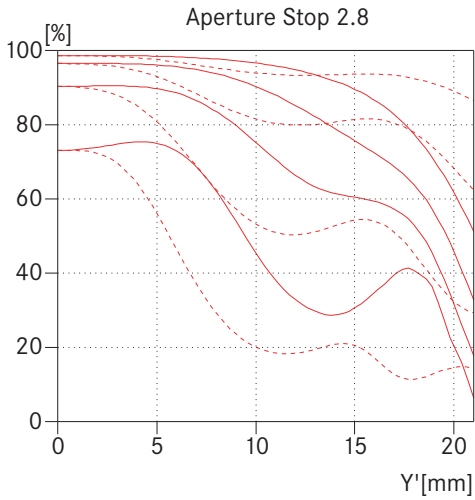


— Engineering drawing

Technical Data	
Angle of view (diagonal, horizontal, vertical)	84°, 74°, 53°
Optical design	Number of elements / groups: 9 / 7 Focal length: 24.3 mm Entrance pupil: 20.6 mm (related to the first lens surface in light direction) Focusing range: 0.3 m to Infinity
Distance setting	Scale: Combined meter/feet-increments Smallest object field: 250 mm x 374 mm Highest reproduction ratio: 1:10.5
Diaphragm	Setting / Type: Preset diaphragm with clickstops (including half values), Fully automatic diaphragm Smallest aperture: 22
Bayonet	LEICA R quick-change bayonet for LEICA R3 to LEICA R9 with mechanical, and, for LEICA R8/R9, additional electronic exposure control
Filter (type)	Series 8 filters, additional internal thread for screw-in type filters E 60
Lens hood	Separate, rectangular, clip-on type, lockable, also serves as mount for series filters
Dimensions and weight	Length: 48.5 mm Largest diameter: 67 mm Weight: approx. 406 g



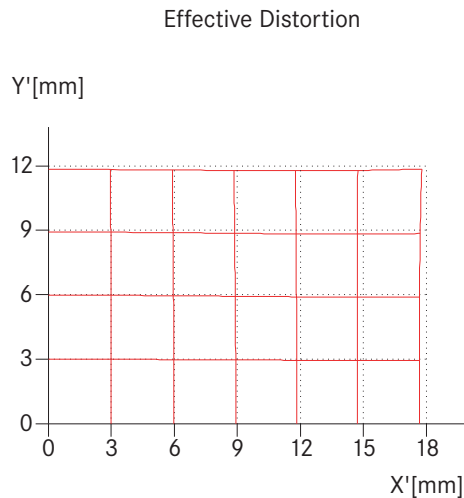
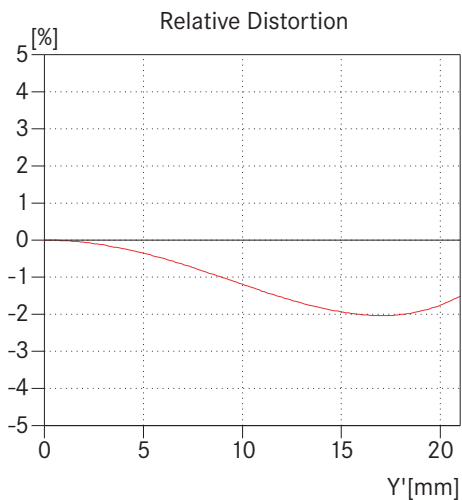
— MTF graphs



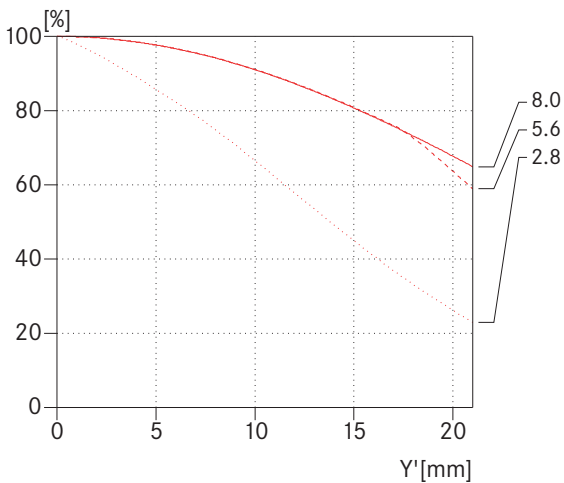
The MTF is indicated both at full aperture and at f/5.6 at long taking distances (infinity). Shown is the contrast in percentage for 5, 10, 20 and 40 lp/mm across the height of the 35 mm film format, for tangential (dotted line) and sagittal (solid line) structures, in white light. The 5 and 10 lp/mm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

- 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.

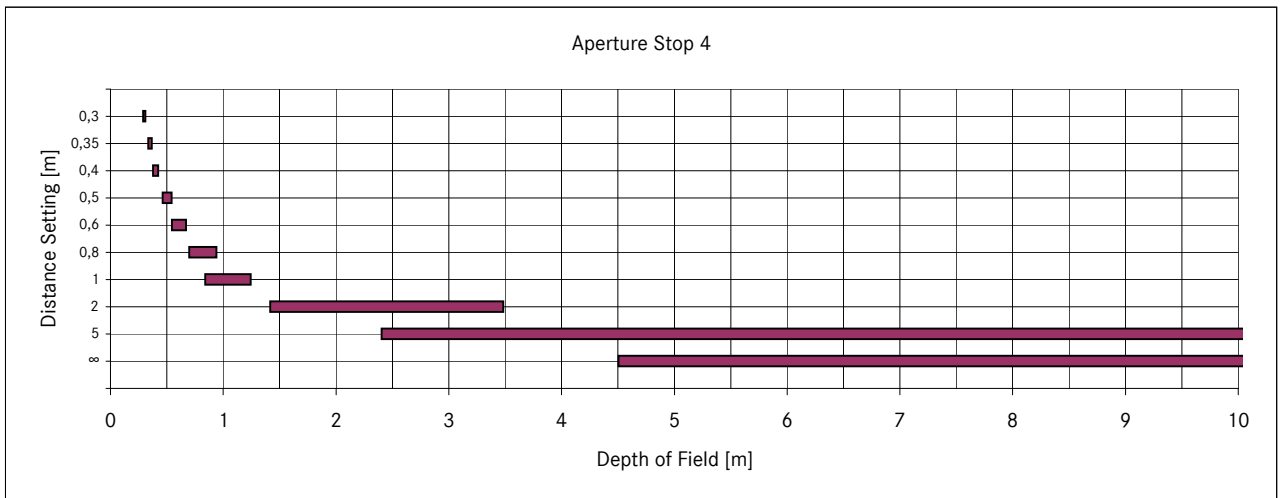
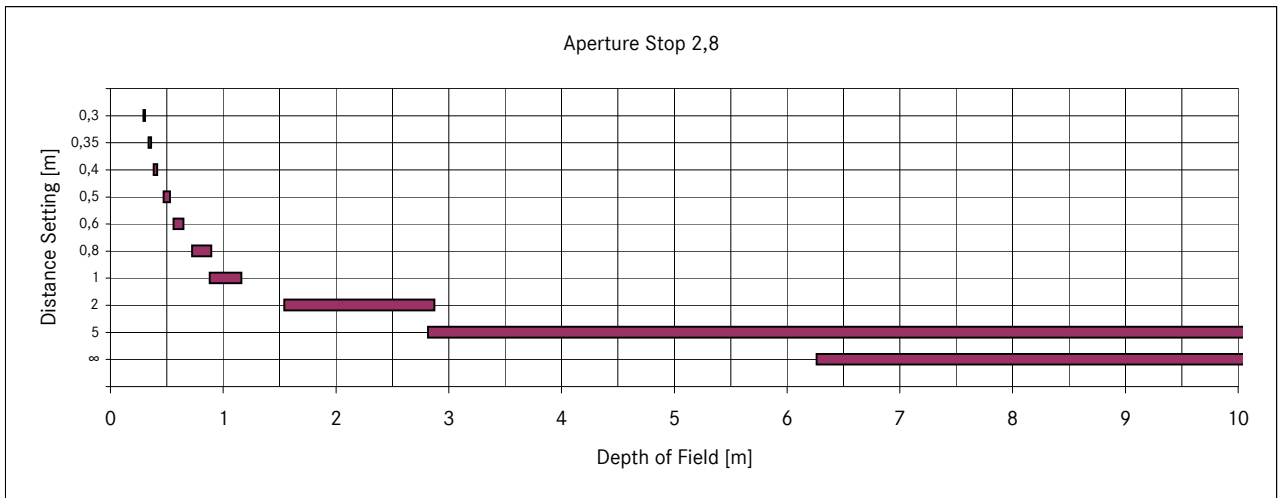
Vignetting is a continuous decrease of the illumination to the edges of the image field. The graph shows the percentage lost of illumination over the image height. 100% means no vignetting.

- sagittal structures
- - - tangential structures



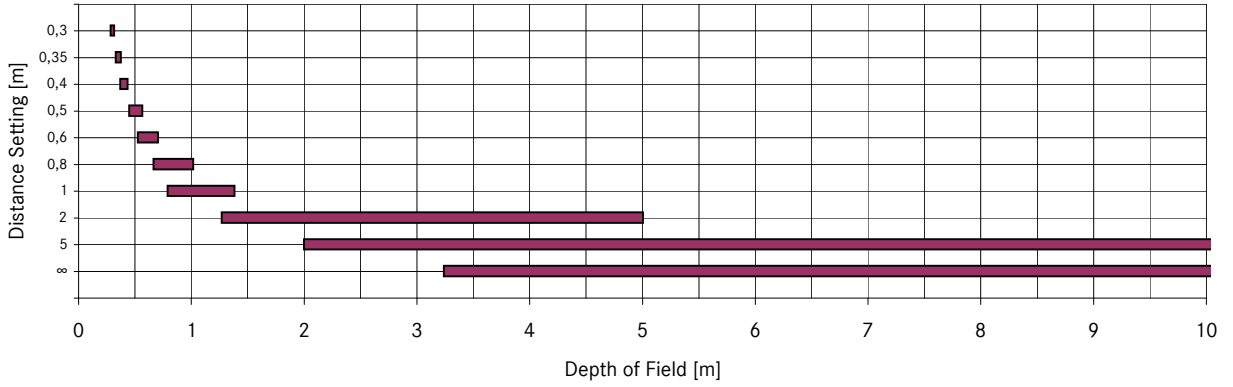
— Depth of field table

	Aperture Stop							Magnification
	2,8	4	5,6	8	11	16	22	
0,3	0,292 - 0,309	0,289 - 0,312	0,285 - 0,318	0,279 - 0,326	0,272 - 0,337	0,261 - 0,358	0,250 - 0,389	1/8,95
0,4	0,338 - 0,363	0,334 - 0,369	0,328 - 0,377	0,319 - 0,390	0,309 - 0,408	0,294 - 0,443	0,279 - 0,496	1/11,0
0,4	0,383 - 0,418	0,377 - 0,426	0,369 - 0,438	0,358 - 0,457	0,345 - 0,484	0,325 - 0,538	0,305 - 0,625	1/13,1
0,5	0,472 - 0,532	0,462 - 0,546	0,449 - 0,567	0,431 - 0,603	0,410 - 0,655	0,381 - 0,770	0,351 - 0,985	1/17,3
0,6	0,558 - 0,649	0,544 - 0,672	0,524 - 0,706	0,498 - 0,765	0,470 - 0,858	0,429 - 1,082	0,391 - 1,606	1/21,4
0,8	0,723 - 0,897	0,697 - 0,943	0,664 - 1,018	0,620 - 1,157	0,573 - 1,401	0,511 - 2,199	0,454 - 7,672	1/29,7
1	0,879 - 1,164	0,839 - 1,246	0,789 - 1,386	0,726 - 1,670	0,660 - 2,263	0,576 - 5,810	0,503 - ∞	1/38,0
2	1,542 - 2,874	1,415 - 3,487	1,270 - 5,007	1,102 - 14,95	0,949 - ∞	0,775 - ∞	0,639 - ∞	1/79,3
5	2,815 - 24,27	2,405 - ∞	1,999 - ∞	1,600 - ∞	1,285 - ∞	0,975 - ∞	0,763 - ∞	1/203
∞	6,262 - ∞	4,504 - ∞	3,238 - ∞	2,287 - ∞	1,683 - ∞	1,179 - ∞	0,876 - ∞	1/∞

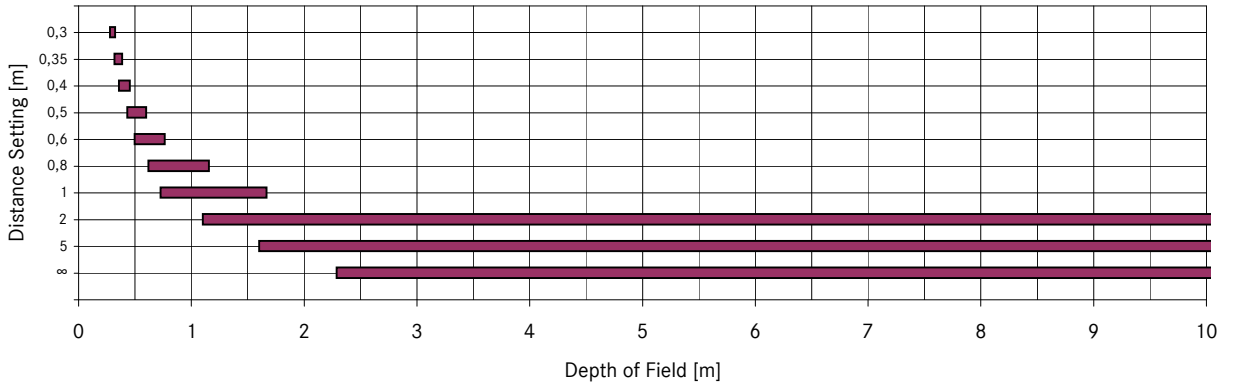




Aperture Stop 5,6



Aperture Stop 8



Aperture Stop 11

