LEICA **SUMMILUX-M** 90 f / 1.5 ASPH.

Technical Data.

Illustration 1:1

Lens	Leica Summilux-M 90 f / 1.5 ASPH.
Order no.	11 678
Angle view (diagonal, horizontal, vertical)	For 35mm (24 x 36 mm): approx. 27° / 23° / 15°, for M8: approx. 21° / 17° / 11°
Optical design	Number of elements / groups: 8 / 6 Entrance pupil for bayonet: 27,2 mm Focusing range: 1 m to inϕnity
Distance setting	Scala: combined meter- / feet-increments Smallest object ϕeld: for 35 mm: 211 x 317 mm; for M8: 158 x 238 mm Highest reproduction ratio: 1:8,8
Diaphragm	Setting / type: preset, with click-stops, half values available Smallest aperture: f / 16 Number of aperture blades: 11
Bayonet	Leica M quick-change bayonet
Filter thread	E67
Lens hood	integrated
Dimensions and weight	Length: approx. 91 / 102 mm (without / with extended lens hood) Diameter: approx. 74 mm Weight: approx. 1010 g

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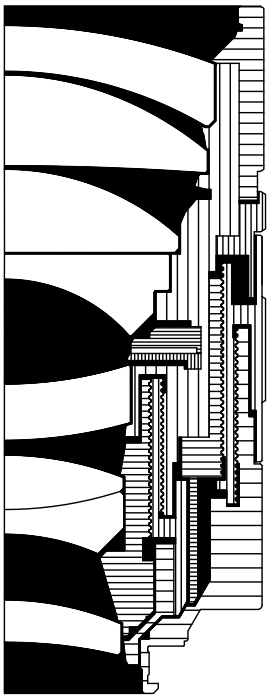
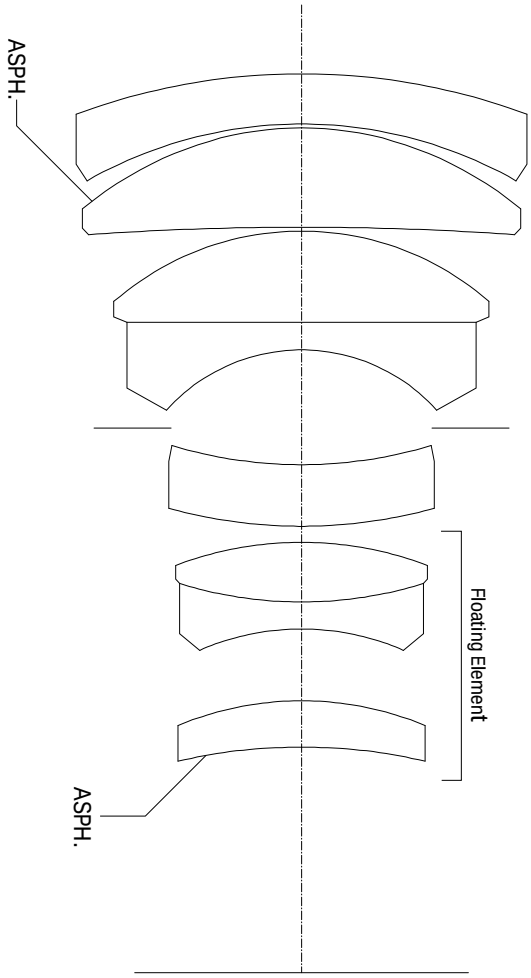
ENGINEERING DRAWING



Illustrations 1:1

LENS SHAPE



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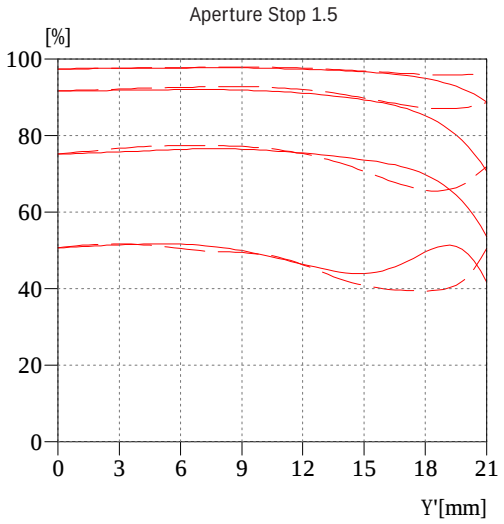
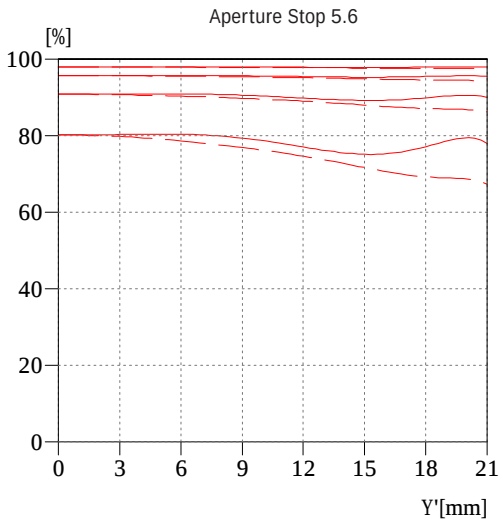
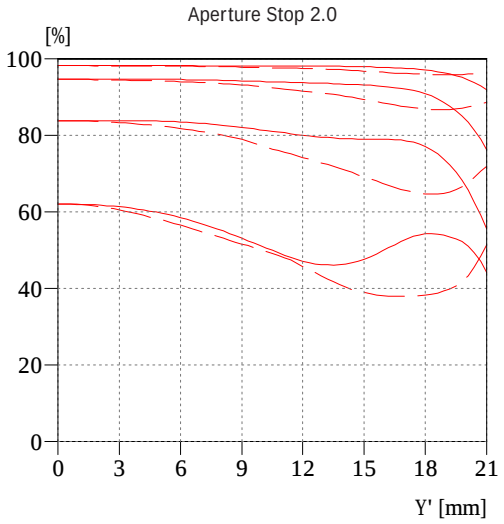
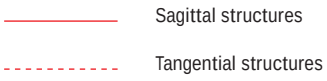
MTF-DIAGRAMS









MTF GRAPHS

The MTF is shown in each case for the maximum aperture 1.25 and the aperture values 2.0 and 5.6 for long focusing distances (infinity). The contrast is plotted for 5, 10, 20, 40 lines / mm for the height of the format for tangential (dashed line) and sagittal structures (continuous line) for white light. The plots for 5 and 10 lines / mm provide an impression of the contrast performance for coarser object structures and the 20 and 40 lines / mm plots document the resolving power for fine and finest object structures.

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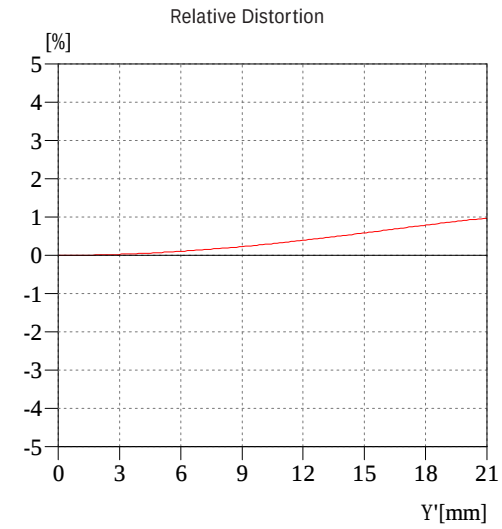
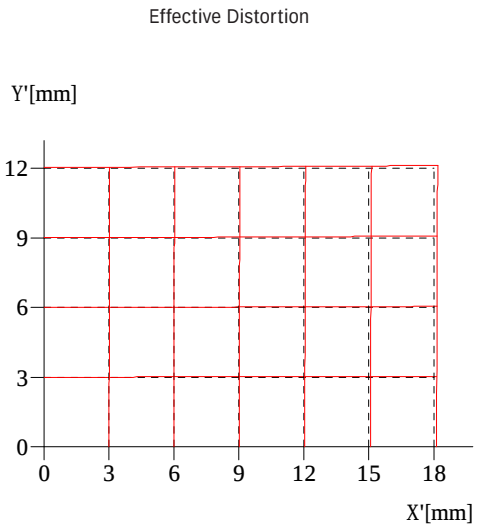
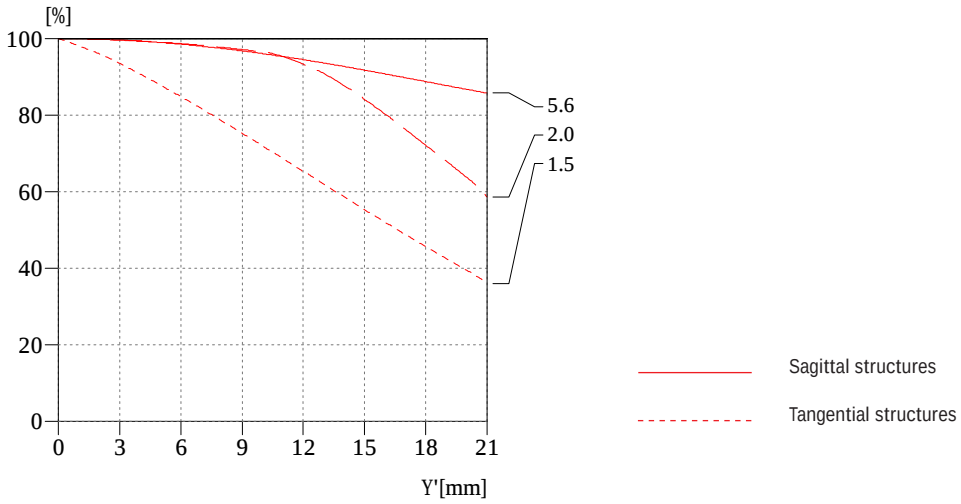
DISTORTION





VIGNETTING



DISTORTION

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 21.6 mm is the radial distance between the edge and the middle of the image field for the format 24 mm x 36 mm. The graph of the effective distortion illustrates the appearance of straight horizontal and vertical lines in the picture.

VIGNETTING

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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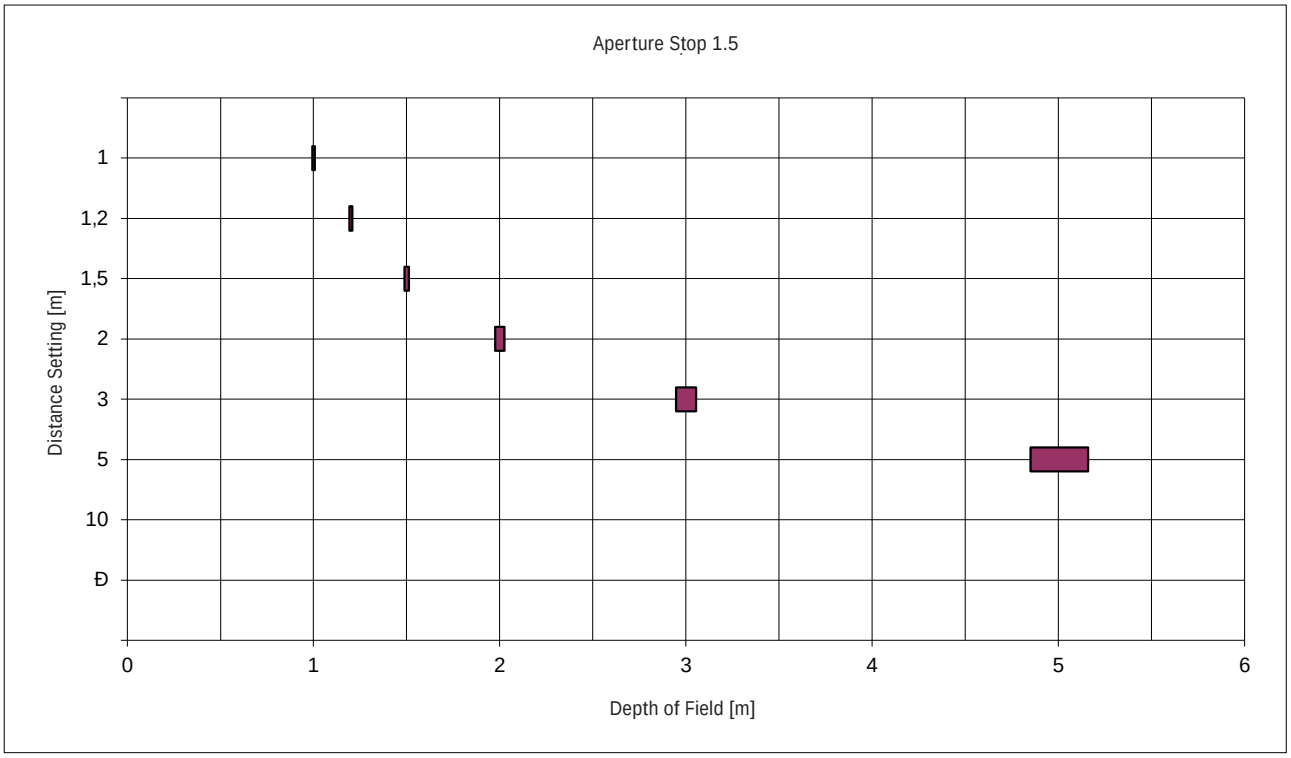
DEPTH OF FIELD TABLE

Distance Setting [m]	Aperture Stop 1,50	2,0	2,8	4,0	5,6	8,0	11,0	16,0	16,0	Magnification
1	0,995 - 1,006	0,993 - 1,007	0,990 - 1,010	0,986 - 1,014	0,981 - 1,020	0,973 - 1,029	0,963 - 1,040	0,947 - 1,060	0,947 - 1,060	1/8,8
1,2	1,192 - 1,208	1,190 - 1,211	1,186 - 1,215	1,180 - 1,221	1,172 - 1,230	1,160 - 1,243	1,145 - 1,260	1,122 - 1,290	1,122 - 1,290	1/11,1
1,5	1,487 - 1,513	1,484 - 1,517	1,477 - 1,524	1,467 - 1,534	1,455 - 1,549	1,436 - 1,571	1,413 - 1,599	1,377 - 1,648	1,377 - 1,648	1/14,4
2	1,977 - 2,024	1,970 - 2,031	1,958 - 2,044	1,941 - 2,063	1,918 - 2,090	1,885 - 2,131	1,845 - 2,185	1,782 - 2,281	1,782 - 2,281	1/20
3	2,947 - 3,056	2,931 - 3,072	2,904 - 3,103	2,865 - 3,149	2,814 - 3,213	2,741 - 3,314	2,656 - 3,449	2,525 - 3,703	2,525 - 3,703	1/31,2
5	4,851 - 5,159	4,808 - 5,209	4,734 - 5,298	4,629 - 5,437	4,496 - 5,634	4,310 - 5,958	4,098 - 6,421	3,788 - 7,377	3,788 - 7,377	1/53,6
10	9,413 - 10,67	9,25 - 10,88	8,979 - 11,29	8,602 - 11,94	8,147 - 12,95	7,548 - 14,8	6,914 - 18,13	6,067 - 28,83	6,067 - 28,83	1/109,5
Ð	158,4 - Ð	121,5 - Ð	86,758 - Ð	60,74 - Ð	43,40 - Ð	30,40 - Ð	22,12 - Ð	15,23 - Ð	15,23 - Ð	1/Ð



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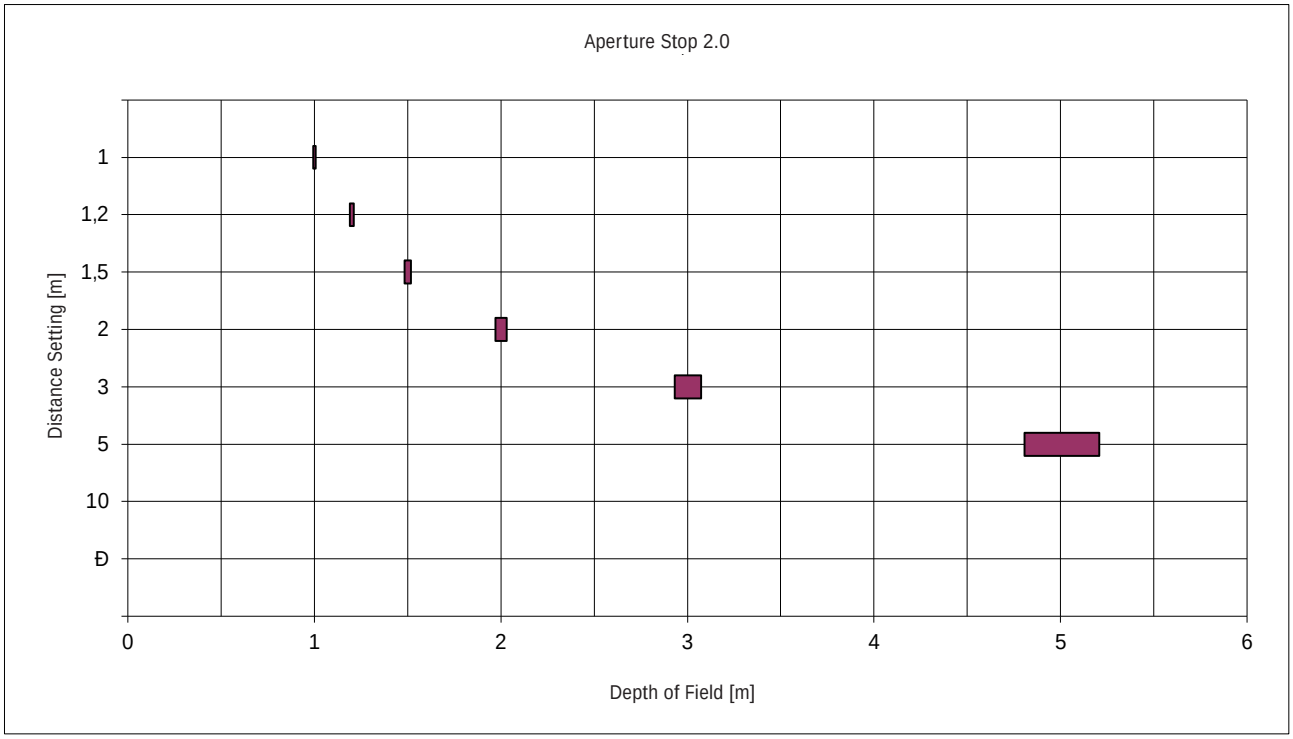

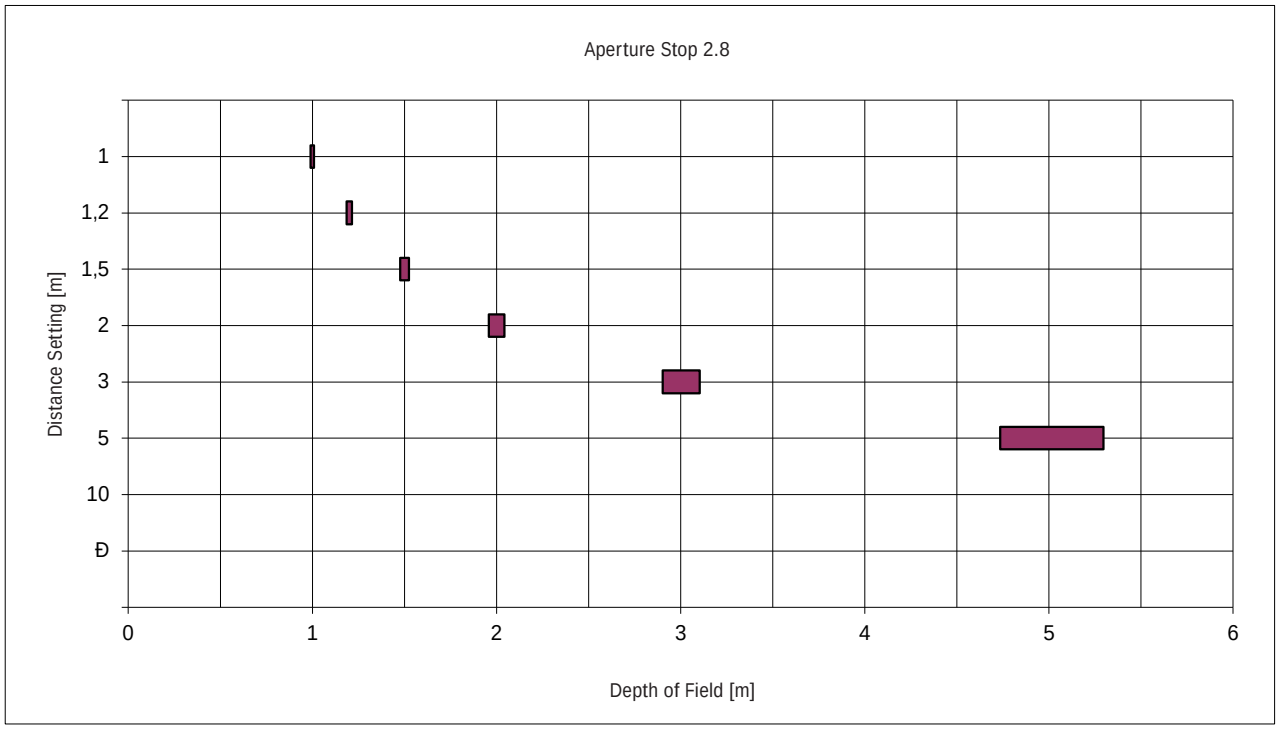

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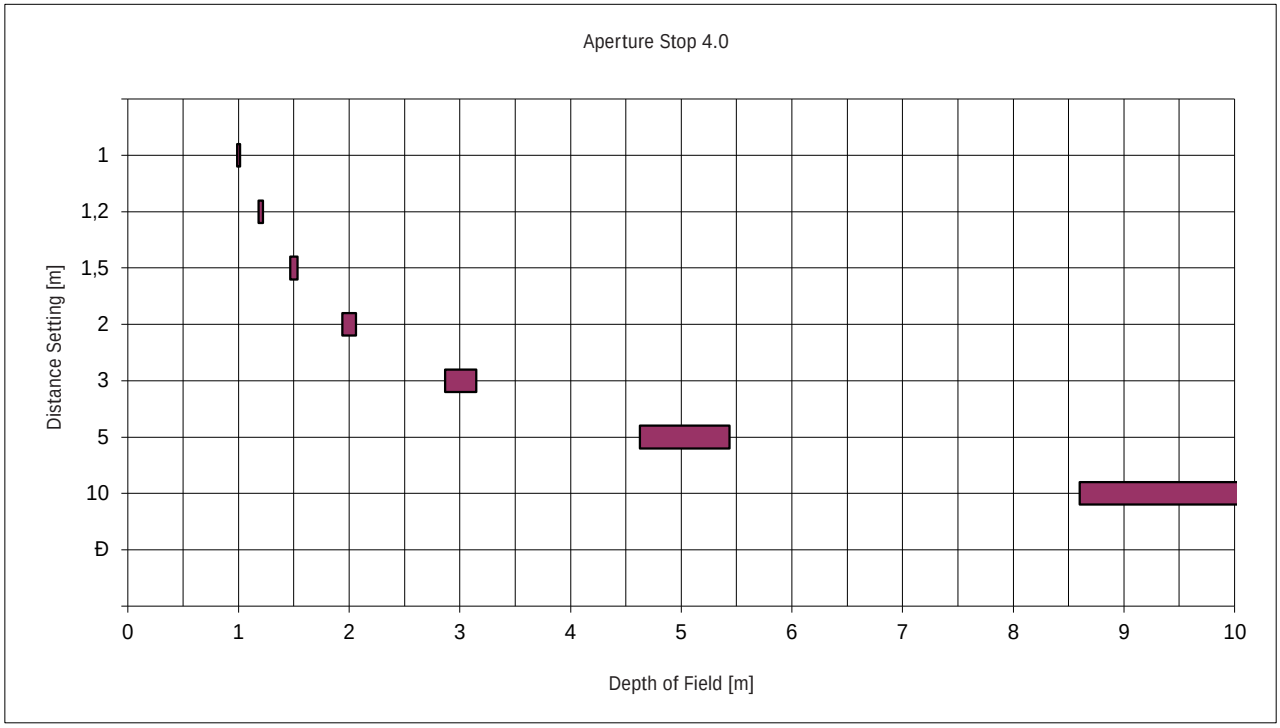

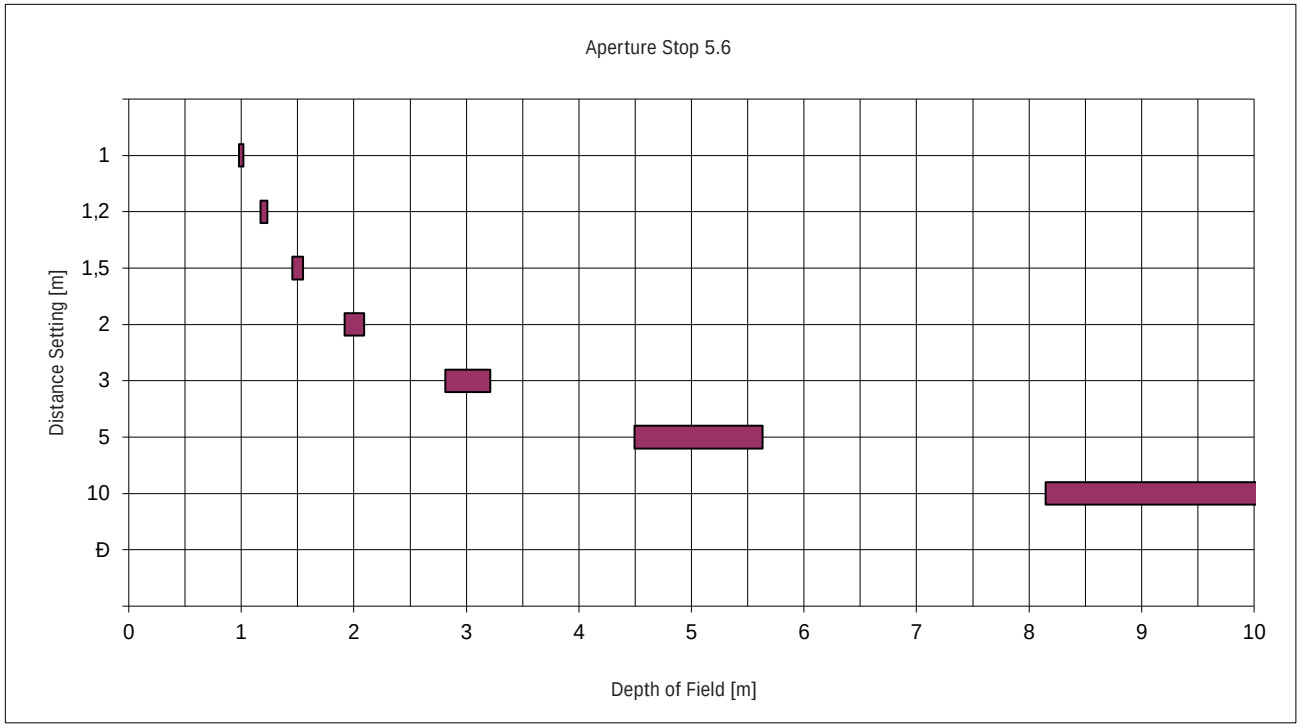

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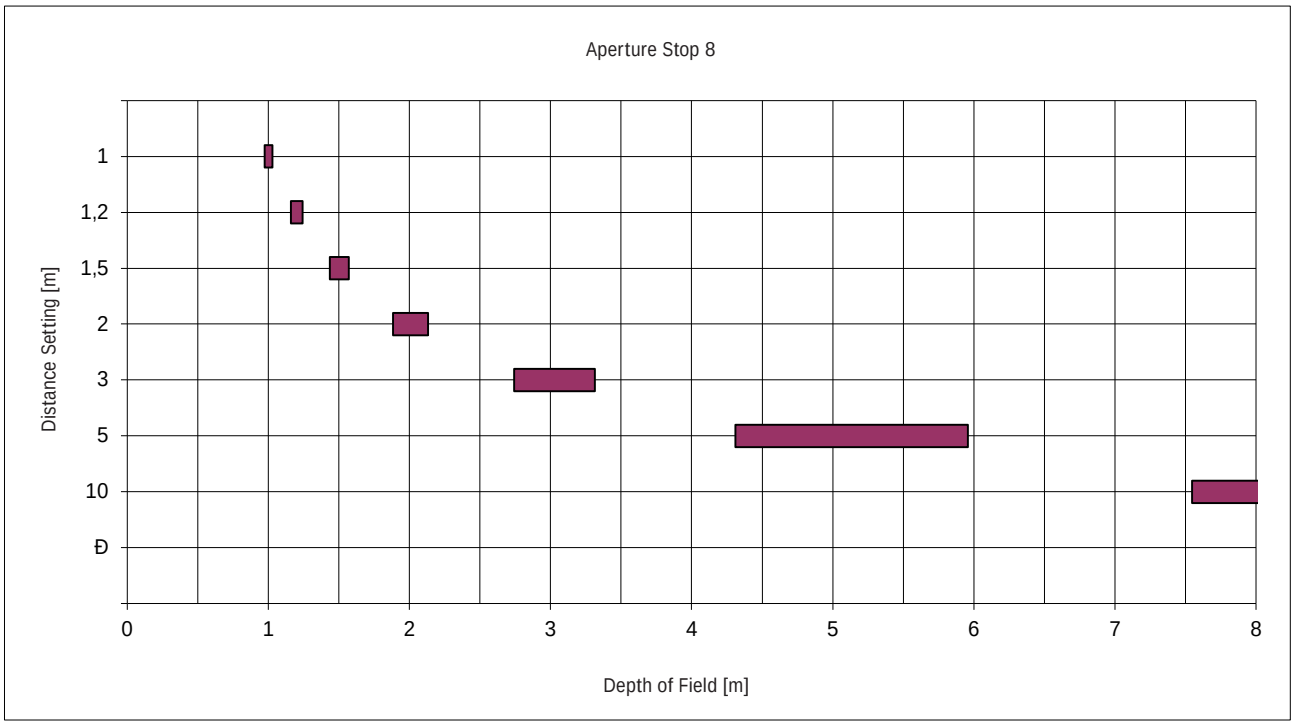

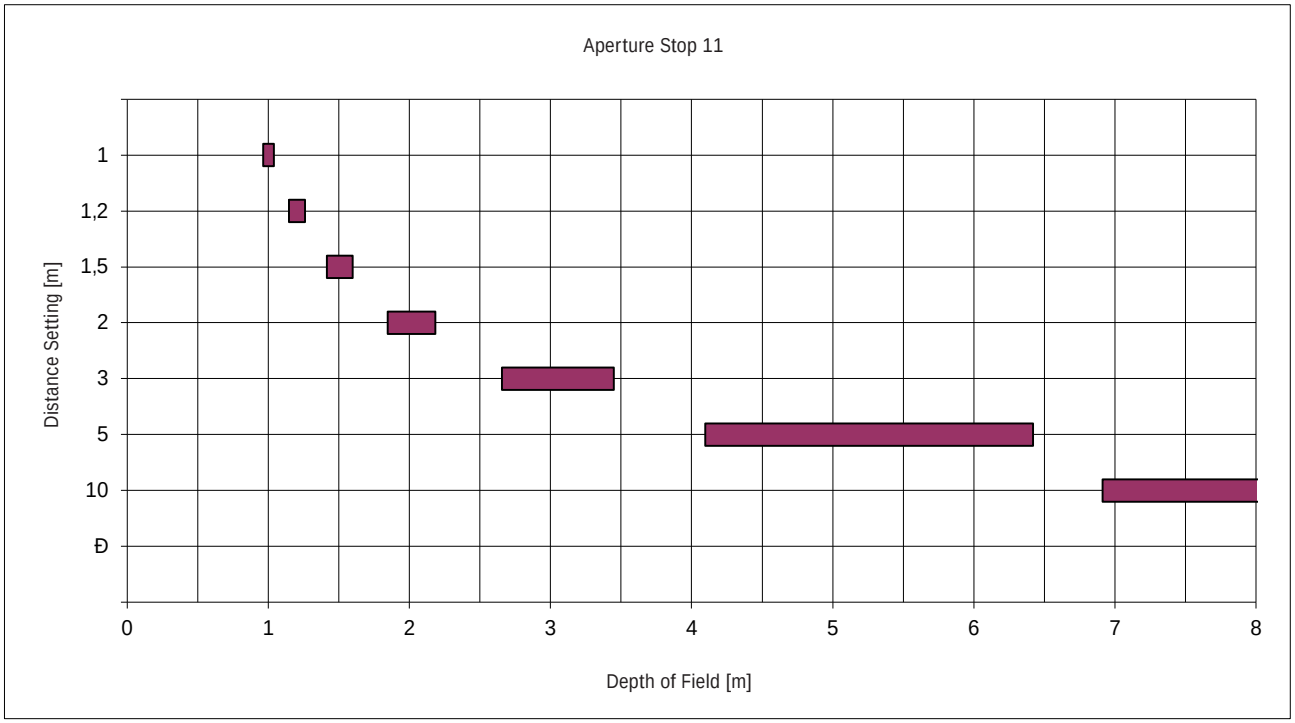

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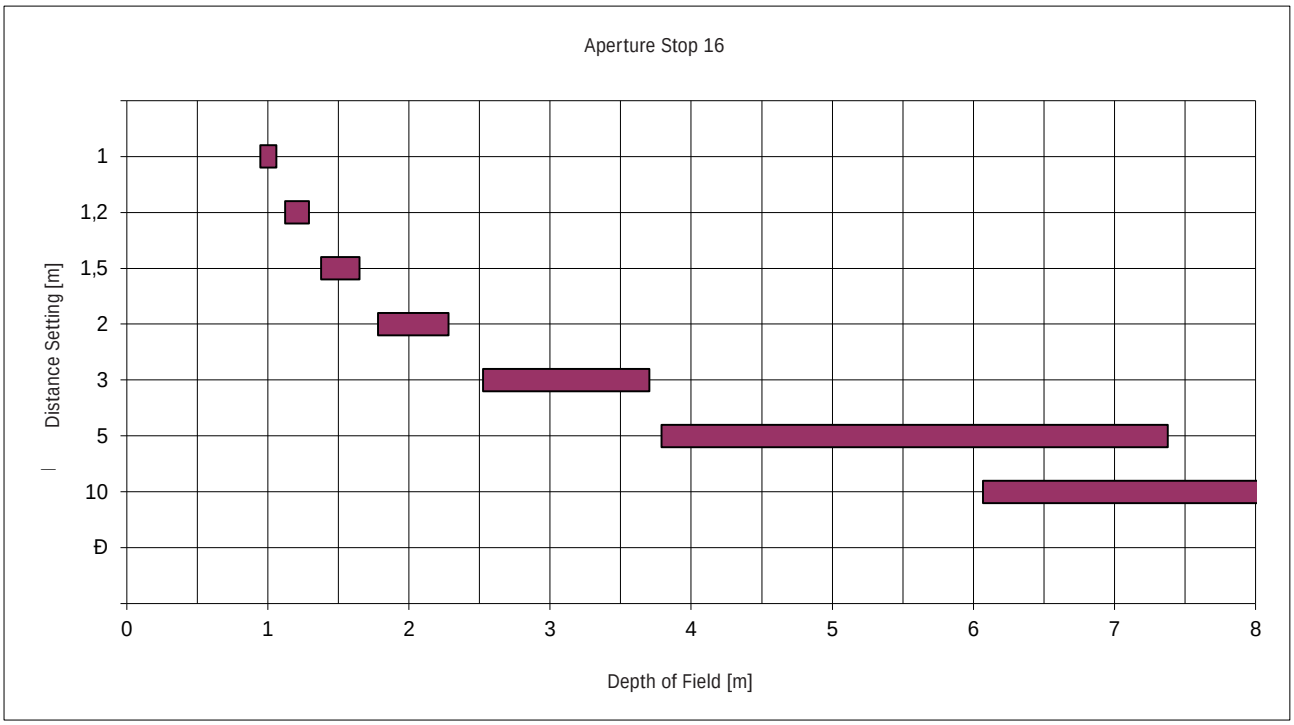

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