



LEICA APO-SUMMICRON-M 35 f/2 ASPH.

Technical Data.



Lens	Leica APO-Summicron-M 1:2/35 ASPH.
Order Number	
Black, anodized	11 699
View angle (diagonal/horizontal/vertical)	
Full-frame (24 × 36 mm)	62.5°/53.6°/37.2°
for M8 (18 × 27 mm)	47.0°/40.0°/28.0°, equivalent focal length approx. 46.67 mm
Lens system	
Number of lenses/assemblies	10/5
Number of aspherical surfaces	4
Position of the entrance pupil before the bayonet	13.8 mm
Focus range	0.3 m to infinity (LiveView), 0.7 m to infinity (Rangefinder)
Focusing	
Scale	Combined scale meter (m)/foot (ft)
Smallest object field	Full-frame: 135 × 203 mm, M8: 101 × 152 mm
Largest scale	1:5,6
Aperture	
Setting/Function	Lock blade, with half-increment lock settings
Smallest aperture	16
Number of aperture blades	11
Bayonet	Leica M bayonet with 6-bit encoding
Filter thread	E39
Lens hood	Screw-on
Dimensions	
Length	approx. 40.9/49.3 mm (without/with lens hood)
Diameter	approx. 53 mm (without lens hood)



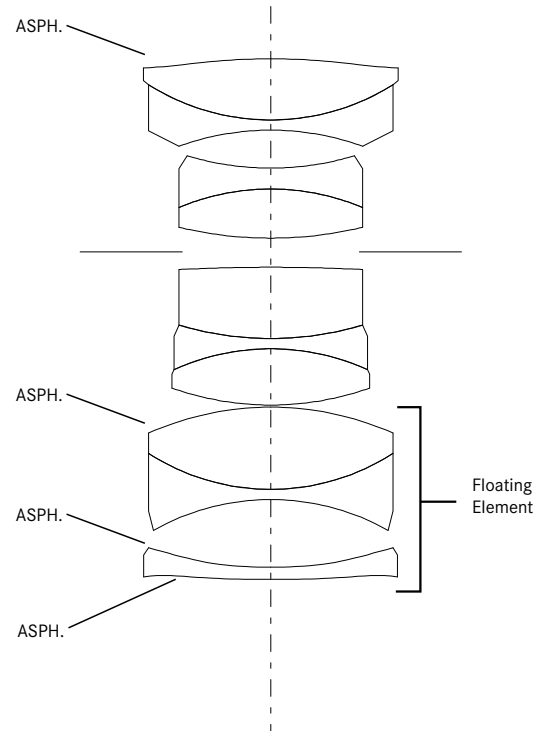
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TECHNICAL DRAWING



Figure 1:1

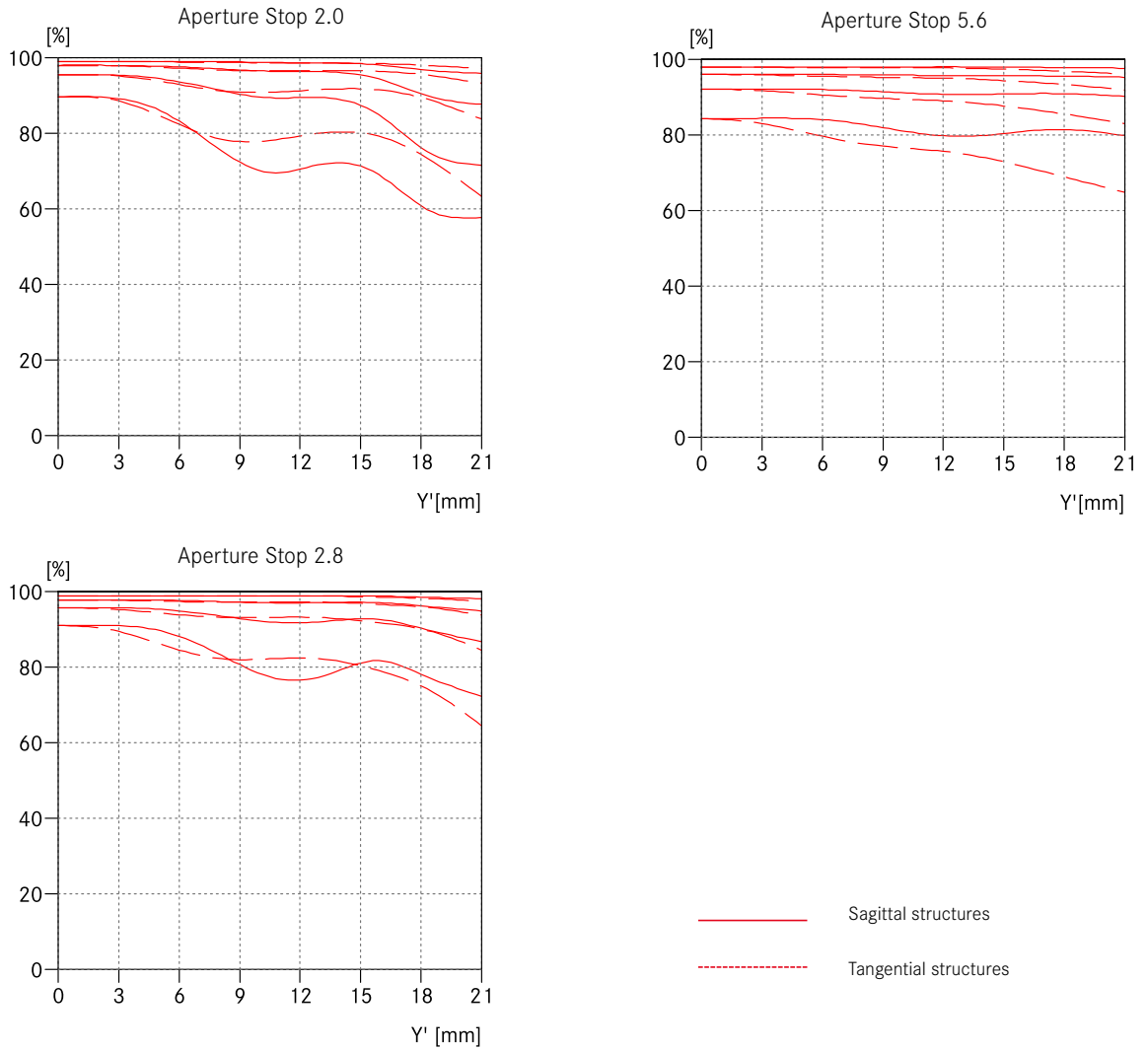
LENS CUT





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MTF DIAGRAMS



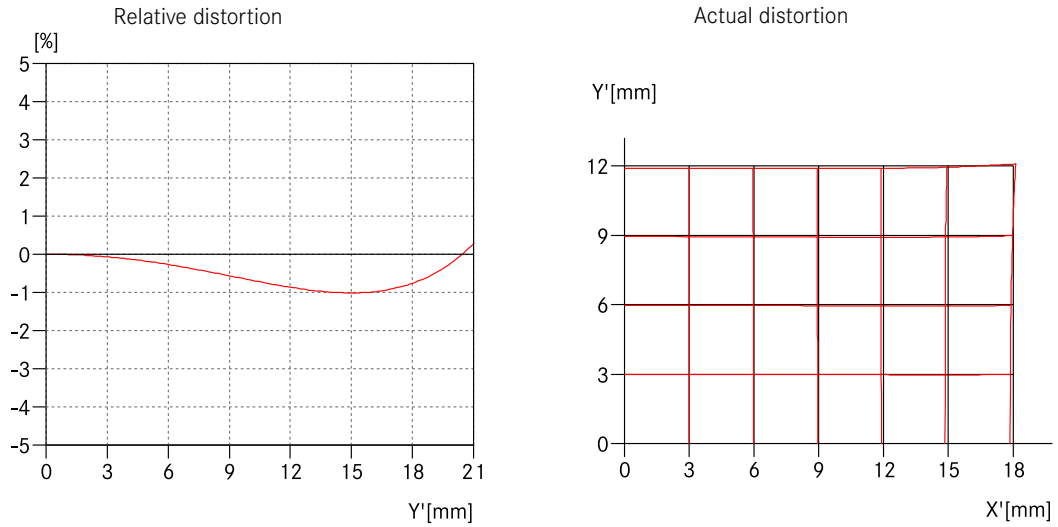
MTF CURVES

The MTF is shown in each case for the max. aperture of 2, as well as for 2.8 and 5.6 for long focus distances (infinity). The contrast is plotted in percentages for 5, 10, 20, 40 lines/mm over 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 offer an impression of the contrast behavior for coarser object structures, while the 20 and 40 lines/mm plots document the resolution capability for fine and finest object structures.

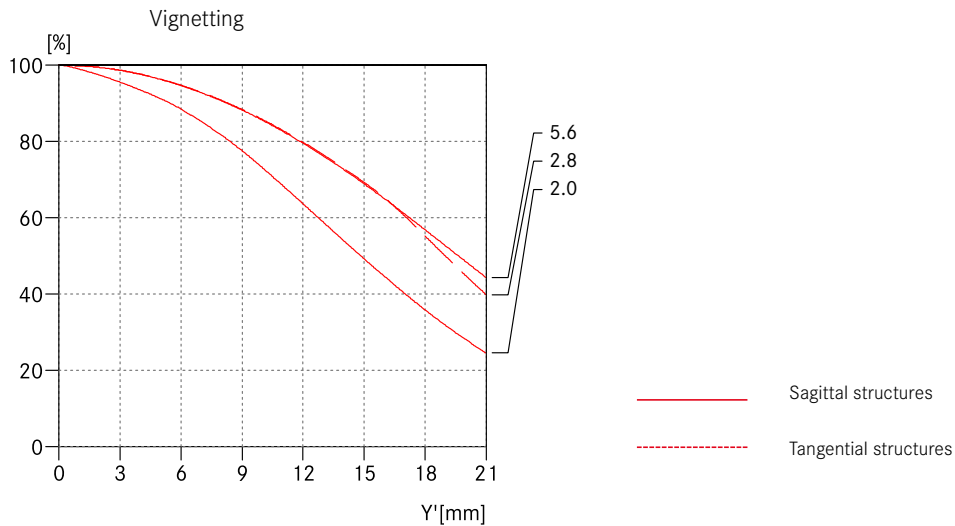


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DISTORTION



VIGNETTING



DISTORTION

Distortion is the deviation of the actual image height from the ideal image height, whereby the ideal image height is calculated from the object height and the reproduction scale. Relative distortion states the percentage deviation of the actual to the ideal image height. The image height of 21.6 mm is the radial distance between one corner of the image field and the middle of the image field (image format 24 mm x 36 mm). The graph of the effective distortion illustrates the actual line and the curvature of horizontal and vertical lines in the image horizon.

VIGNETTING

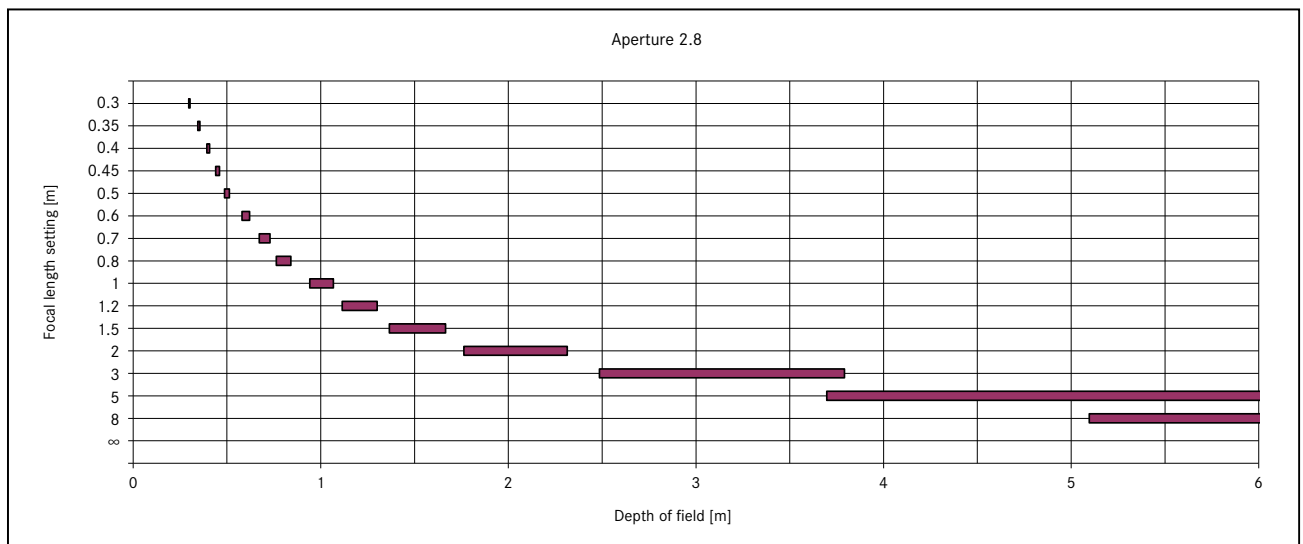
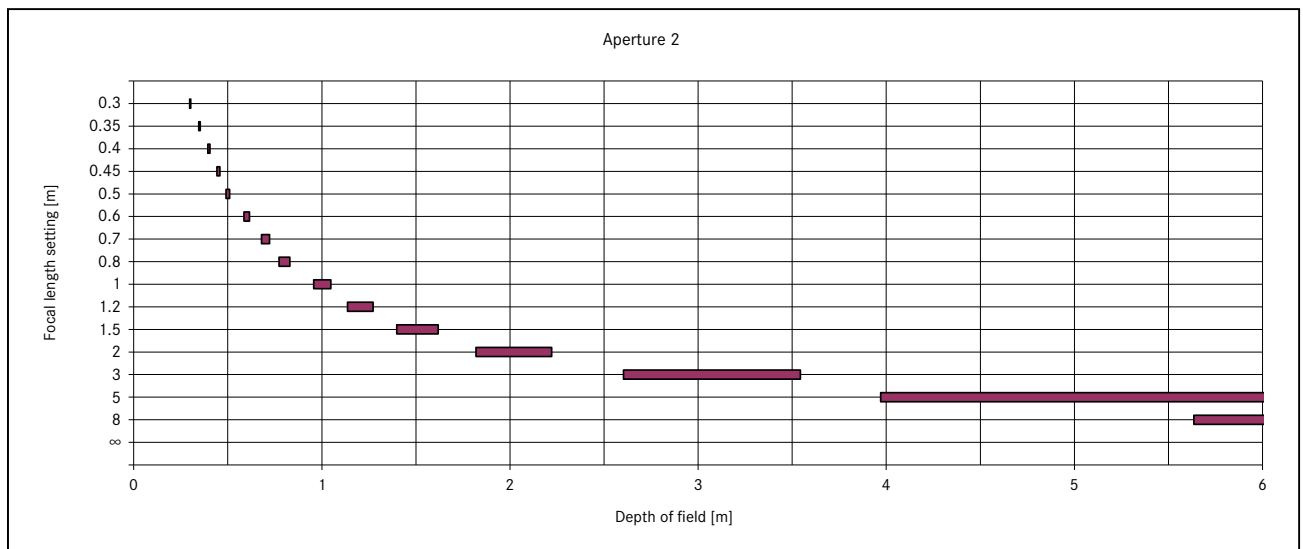
Vignetting is a continuous decrease of image brightness (irradiance) towards the edges of the image (shading compensation, darkening of the image corners). The graph shows the diminishing brightness in percent applied over the image height. 100% means no vignetting.



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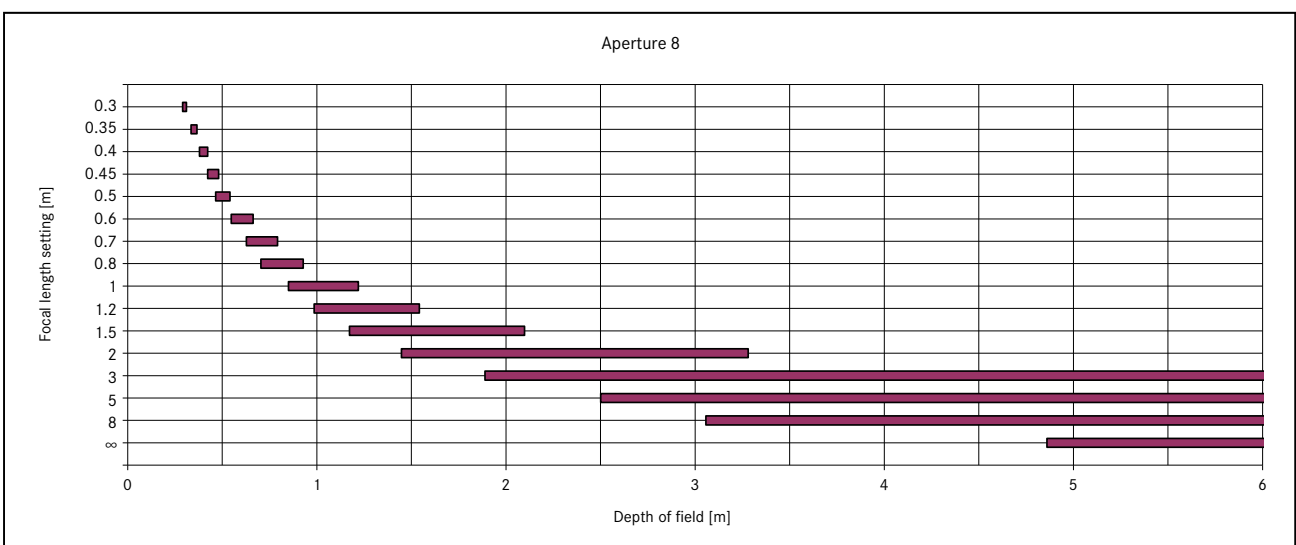
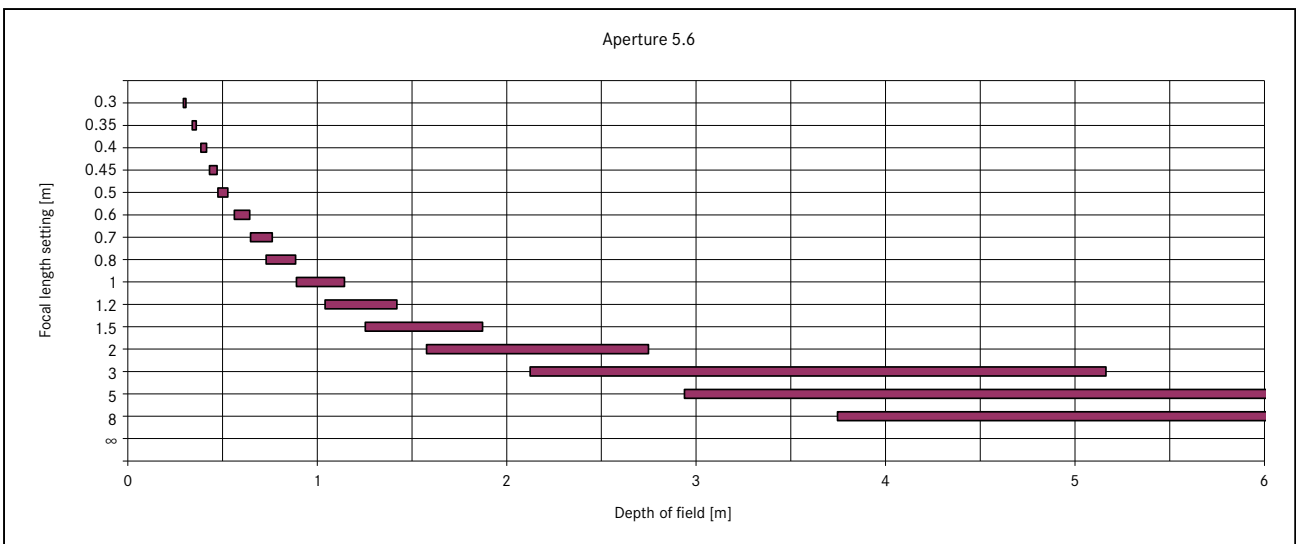
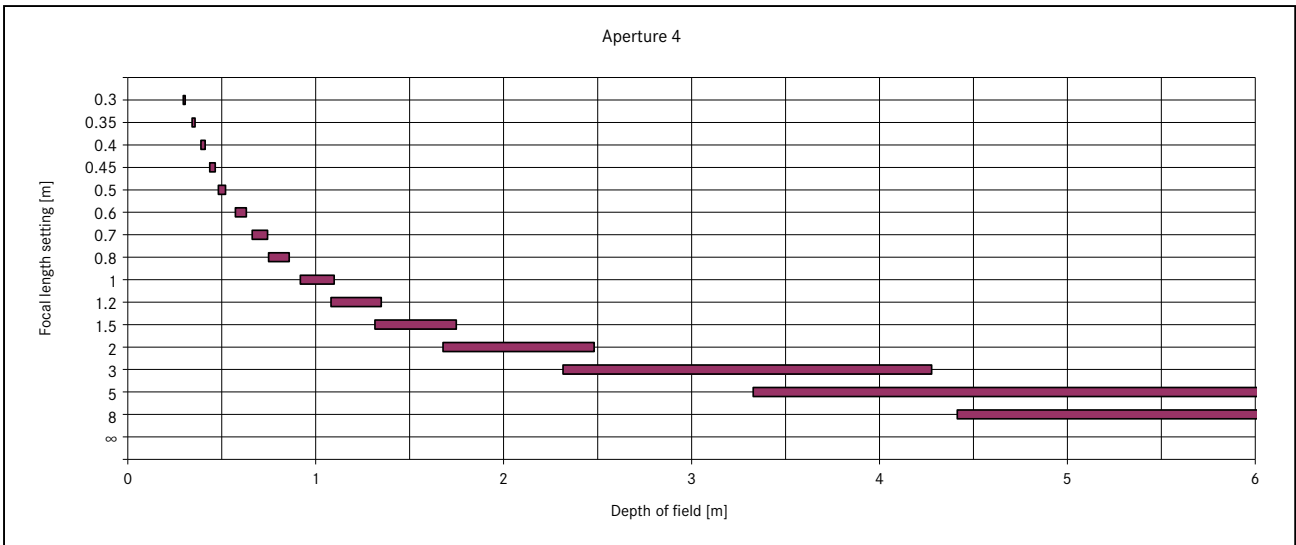
DEPTH OF FIELD TABLE

		Aperture						Image scale	
		2.0	2.8	4.0	5.6	8.0	11.0		16.0
Focal length setting [m]	0.3	0.298 - 0.303	0.297 - 0.304	0.295 - 0.305	0.293 - 0.307	0.290 - 0.310	0.287 - 0.315	0.282 - 0.322	1/5.6
	0.35	0.346 - 0.354	0.345 - 0.355	0.343 - 0.358	0.340 - 0.361	0.336 - 0.366	0.330 - 0.373	0.322 - 0.384	1/7.1
	0.4	0.395 - 0.406	0.393 - 0.408	0.390 - 0.411	0.386 - 0.416	0.380 - 0.423	0.373 - 0.4325	0.362 - 0.4494	1/8.5
	0.45	0.443 - 0.458	0.440 - 0.460	0.436 - 0.465	0.431 - 0.471	0.423 - 0.481	0.414 - 0.4942	0.400 - 0.5178	1/9.9
	0.5	0.491 - 0.510	0.487 - 0.513	0.482 - 0.520	0.475 - 0.528	0.466 - 0.5407	0.454 - 0.558	0.436 - 0.5897	1/11.4
	0.6	0.586 - 0.615	0.581 - 0.621	0.573 - 0.630	0.563 - 0.6432	0.548 - 0.6639	0.531 - 0.6919	0.506 - 0.7448	1/14.2
	0.7	0.680 - 0.722	0.673 - 0.730	0.662 - 0.7433	0.648 - 0.7624	0.628 - 0.793	0.605 - 0.8	0.570 - 0.9172	1/17
	0.8	0.773 - 0.83	0.764 - 0.84	0.749 - 0.86	0.731 - 0.9	0.705 - 0.93	0.675 - 0.9886	0.631 - 1.1099	1/19.8
	1	1.0 - 1.0482	0.9 - 1.0668	0.92 - 1.0984	0.89 - 1.1438	0.85 - 1.2198	0.81 - 1.331	0.74 - 1.5726	1/25.5
	1.2	1.1 - 1.2722	1.1 - 1.3004	1.08 - 1.3491	1.04 - 1.4202	0.99 - 1.5428	0.92 - 1.7308	0.84 - 2.1781	1/31.1
	1.5	1.4 - 1.6178	1.4 - 1.665	1.32 - 1.7479	1.25 - 1.8727	1.17 - 2.0985	1.09 - 2.4741	0.97 - 3.5421	1/39.5
	2	1.8 - 2.2214	1.8 - 2.3139	1.68 - 2.4817	1.58 - 2.7485	1.45 - 3.2803	1.31 - 4.3367	1.14 - 9.4806	1/53.5
	3	2.6 - 3.5435	2.5 - 3.7913	2.32 - 4.2775	2.12 - 5.1636	1.89 - 7.5099	1.66 - 1.75527	1.39 - ∞	1/81.6
5	4.0 - 6.764	3.7 - 7.7502	3.33 - 10.1579	2.94 - 17.3865	2.50 - ∞	2.11 - ∞	1.68 - ∞	1/137.8	
8	5.6 - 13.8399	5.1 - 18.7833	4.41 - 44.812	3.75 - ∞	3.06 - ∞	2.49 - ∞	1.91 - ∞	1/222	
∞	18.7 - ∞	13.8 - ∞	9.67 - ∞	6.92 - ∞	4.86 - ∞	3.55 - ∞	2.46 - ∞	1/∞	





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