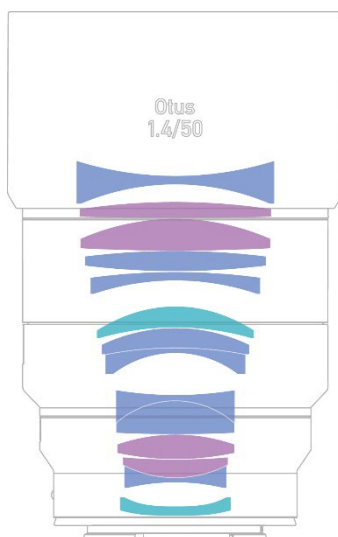




ZEISS Otus ML 1.4/50

Technische Daten/Technical Specifications



Brennweite/Focal length	50 mm (1.96")
Blendenbereich/Aperture range	f/1.4 – f/16
Linsen / Gruppen/Lens elements / Groups	14/11
Fokussierbereich/Focusing range	0,5 m (19.68 ") – ∞
Arbeitsabstand/Free working distance	0,39 m (15.35") – ∞
Bildfeld*/Angular field* (diag. / horiz. / vert.)	47°/39°/27°
Bildkreisdurchmesser/Diameter of image field	43 mm (1.69")
Anlagemaß/Flange focal distance	E-Mount: 18 mm (0.7") RF-Mount: 20 mm (0.78") Z-Mount: 16mm (0.62")
Objektfeld bei Naheinstellung*	259 x 173 mm (10.19" x 6.81")
Coverage at close range (MOD)*	
Abbildungsmaßstab bei Naheinstellung	1:7.3
Image ratio at MOD	
Filterdurchmesser/Filter thread	M67 x 0.75
Lage der Eintrittspupille (vor der Bildebene)	67.6 mm (2.66")
Entrance pupil position (in front of image plane)	
Drehwinkel des Fokussierings (inf – MOD)	259.5°
Rotation angle of focusing ring (inf – MOD)	
Durchmesser max./Diameter max.	77,4 mm (3.04")
Durchmesser des Fokussierings	77,4 mm (3.04")
Diameter of focusing ring	
Länge (ohne Objektivdeckel)/Length (without lens caps)	E-Mount: 100 mm (3.93") RF-Mount: 100 mm (3.93") Z-Mount: 102 mm (4.02")
Länge (mit Objektivdeckeln)/Length (with lens caps)	E-Mount: 114 mm (4.48") RF-Mount: 112 mm (4.40") Z-Mount: 115mm (4.53")
Gewicht/Weight	E-Mount: 677 g (1.492 lbs)
(without lens caps / ohne Streulichtblende)	RF-Mount: 697 g (1.536 lbs) Z-Mount: 718 g (1.582 lbs)

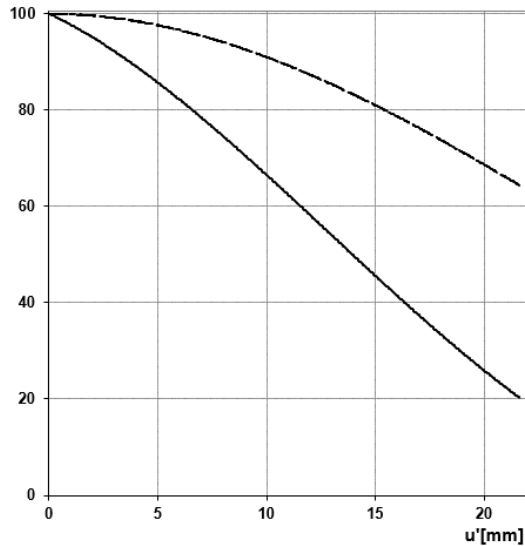
* bezugnehmend auf das 24x36mm Format/referring to 36 mm format



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Relative Beleuchtungsstärke / Relative Illuminance

E [%]



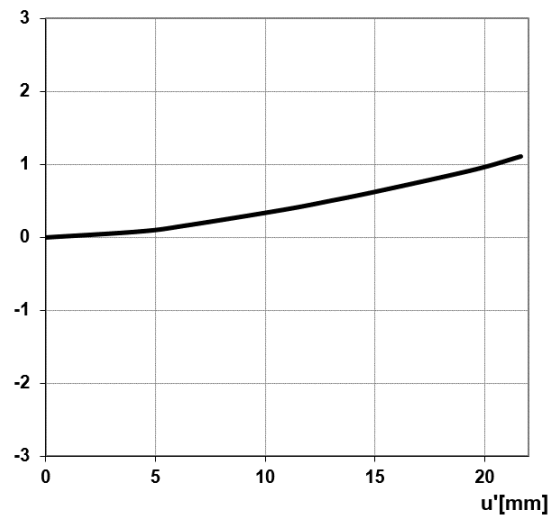
Die relative Beleuchtungsstärke zeigt die Abnahme der Bildhelligkeit von der Mitte des Bildes zu den Ecken. Angabe in Prozent.

The relative illumination shows in percent the decrease in image brightness from the image center to edge.

- Blendenzahl: $k = 1.4$ / f-number = 1.4
- - - Blendenzahl: $k = 4$ / f-number = 4
- · · Blendenzahl: $k = 3.8$ / f-number = 3.8

Relative Verzeichnung / Relative Distortion

V [%]



Die Relative Verzeichnung zeigt die Abweichung der aktuellen von der idealen Bildhöhe.

The relative distortion shows in percent the deviation of the actual from the ideal image height.

Angaben für unendlich.
Data for infinity.

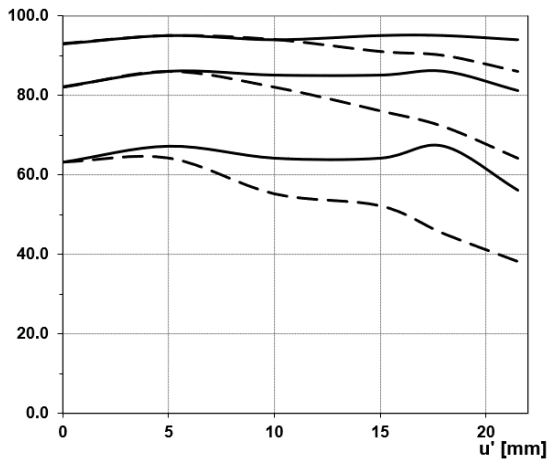


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MTF Charts

Unendlich / Infinity

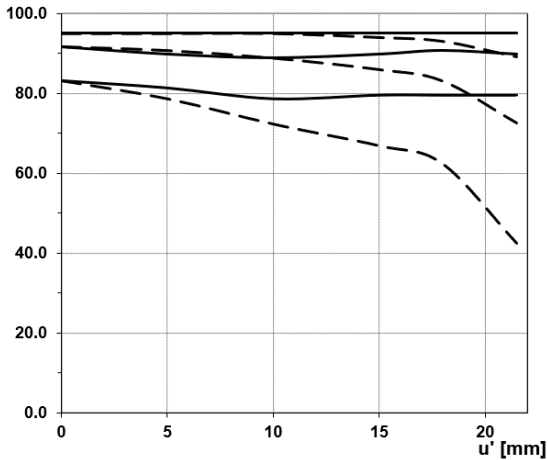
MTF [%]



Blendenzahl: $k = 1.4$ / f-number = 1.4

— Sagittal
--- Tangential

MTF [%]



Blendenzahl: $k = 4$ / f-number = 4

— Sagittal
--- Tangential

Modulationsübertragung MTF als Funktion der Bildhöhe (u') und Spaltorientierung. Weißes Licht. Ortsfrequenzen $R=10, 20$ und 40 Perioden/mm. // Modulation transfer MTF as a function of the image height (u') and slit orientation. White light. Spatial frequencies $R=10, 20$ and 40 cycles/mm.

The MTF charts above are revealing the real measurement result in the professional lab environment.



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Schärfentiefe / Depth of Field (DOF)*

Engraved Distance	f/1.4		f/2		f/2.8		f/4		f/5.6		f/8		f/11		f/16	
	from	to	from	to	from	to	from	to	from	to	from	to	from	to	from	to
Meter																
INF	63.940	INF	46.139	INF	32.625	INF	23.070	INF	16.313	INF	11.535	INF	8.156	INF	5.767	INF
10	8.637	11.874	8.207	12.795	7.640	14.471	6.959	17.760	6.181	26.173	5.336	79.298	4.472	INF	3.639	INF
5	4.631	5.433	4.504	5.619	4.326	5.922	4.098	6.412	3.812	7.262	3.471	8.937	3.081	13.262	2.658	42.034
3	2.861	3.153	2.812	3.215	2.741	3.313	2.646	3.463	2.523	3.699	2.367	4.094	2.177	4.823	1.955	6.445
2	1.936	2.068	1.914	2.095	1.880	2.136	1.834	2.199	1.773	2.293	1.694	2.441	1.593	2.687	1.469	3.132
1.5	1.463	1.539	1.450	1.553	1.430	1.577	1.403	1.611	1.367	1.662	1.319	1.739	1.256	1.862	1.176	2.069
1.2	1.176	1.225	1.167	1.234	1.154	1.249	1.137	1.271	1.112	1.303	1.079	1.351	1.036	1.425	0.981	1.545
1	0.983	1.018	0.977	1.024	0.968	1.035	0.955	1.050	0.937	1.072	0.914	1.104	0.882	1.154	0.841	1.233
0.9	0.886	0.914	0.881	0.920	0.873	0.928	0.863	0.940	0.848	0.958	0.829	0.985	0.802	1.025	0.768	1.087
0.8	0.789	0.812	0.785	0.816	0.779	0.823	0.770	0.832	0.758	0.846	0.742	0.867	0.721	0.899	0.693	0.947
0.7	0.691	0.709	0.688	0.712	0.683	0.718	0.677	0.725	0.667	0.736	0.655	0.752	0.638	0.776	0.615	0.812
0.65	0.642	0.658	0.640	0.661	0.635	0.665	0.630	0.672	0.621	0.681	0.610	0.695	0.595	0.716	0.575	0.747
0.6	0.593	0.607	0.591	0.609	0.587	0.613	0.582	0.619	0.575	0.627	0.566	0.639	0.552	0.656	0.535	0.683
0.55	0.544	0.556	0.542	0.558	0.539	0.561	0.535	0.566	0.529	0.573	0.520	0.583	0.509	0.598	0.494	0.620
0.5	0.495	0.505	0.494	0.507	0.491	0.509	0.487	0.514	0.482	0.519	0.475	0.528	0.465	0.540	0.452	0.559

* Schärfentiefetabelle für das 24x36mm Format, Zerstreuungskreis 0.028mm (D/1500), gerundet auf 0.01m // Depth-of-field table for sensor format 24x36mm, circle of confusion 0.028mm (D/1500), rounded to 0.01m