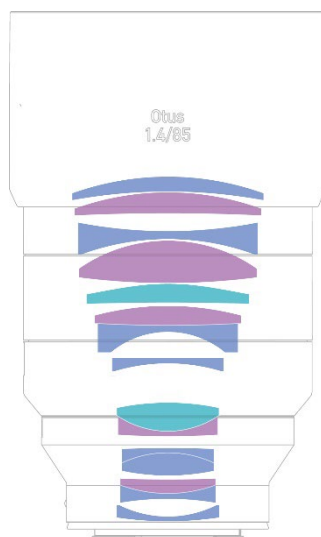




ZEISS Otus ML 1.4/85

Technische Daten / Technical Specifications



Brennweite/Focal length	85 mm (3.34")
Blendenbereich/Aperture range	f/1.4 – f/16
Linsen / Gruppen/Lens elements / Groups	15/11
Fokussierbereich/Focusing range	0,8 m (31.49 ") – ∞
Arbeitsabstand/Free working distance	0,68 m (26.77") – ∞
Bildfeld*/Angular field* (diag. / horiz. / vert.)	30° / 25° / 17°
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*	289 x 193 mm (11.37" x 7.59")
Coverage at close range (MOD)*	
Abbildungsmaßstab bei Naheinstellung	1:8.1
Image ratio at MOD	
Filterdurchmesser/Filter thread	M77 x 0.75
Lage der Eintrittspupille (vor der Bildebene)	42.6 mm (1.68")
Entrance pupil position (in front of image plane)	
Drehwinkel des Fokussierings (inf – MOD)	244°
Rotation angle of focusing ring (inf – MOD)	
Durchmesser max./Diameter max.	87,9 mm (3.46")
Durchmesser des Fokussierings	87,9 mm (3.46")
Diameter of focusing ring	
Länge (ohne Objektivdeckel)/Length (without lens caps)	E-Mount: 113 mm (4.44") RF-Mount: 111 mm (4.37") Z-Mount: 116 mm (4.56")
Länge (mit Objektivdeckeln)/Length (with lens caps)	E-Mount: 127 mm (5.03") RF-Mount: 126 mm (4.96") Z-Mount: 129mm (5.07")
Gewicht/Weight	E-Mount: 1033 g (2.292 lbs)
(without lens caps / ohne Streulichtblende)	RF-Mount: 1055 g (2.326 lbs) Z-Mount: 1061 g (2.339 lbs)

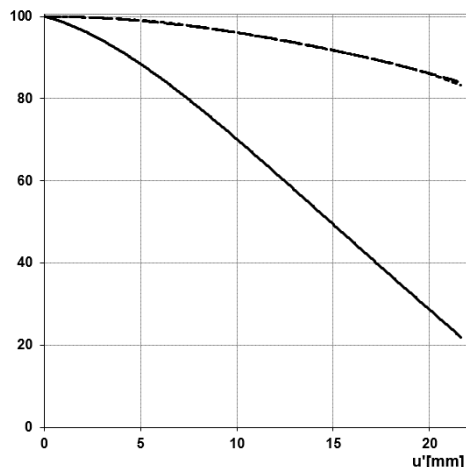
* bezugnehmend auf das 24x36mm Format/referring to 36 mm format



ZEISS Otus ML 1.4/85

Relative Beleuchtungsstärke / Relative Illuminance

E [%]



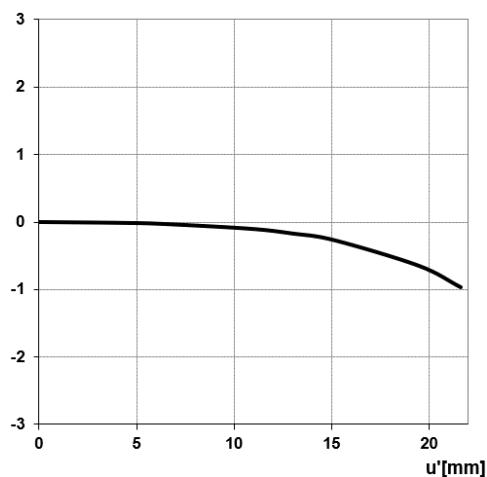
Die relative Beleuchtungsstärke zeigt die Abnahme der Bildhelligkeit von der Mitte des Bildes zu den Ecken. Angabe in Prozent.

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: $k = 3.88$ / f-number = 3.88

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.

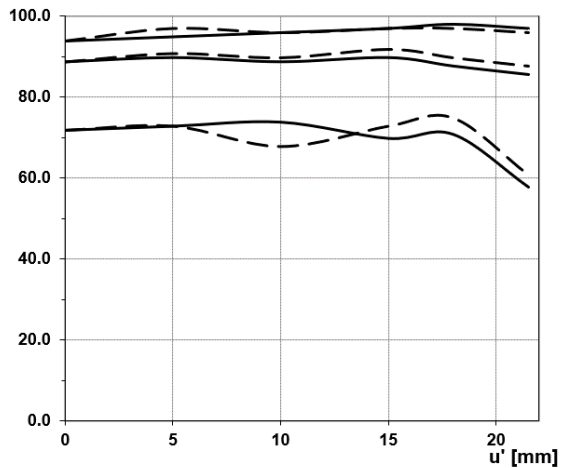


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MTF Charts

Unendlich / Infinity

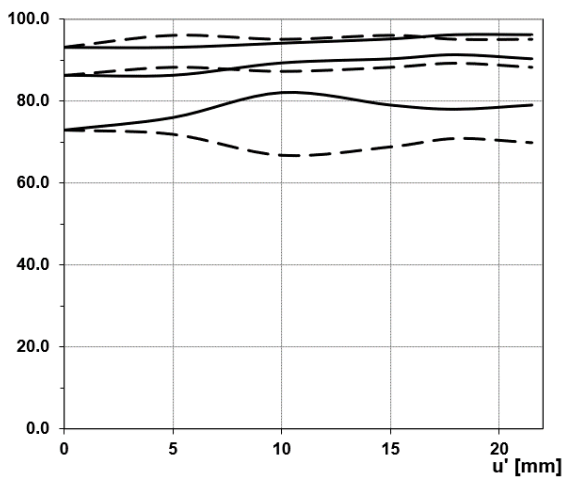
MTF [%]



Blendenzahl: $k = 1.4 / f\text{-number} = 1.4$

— Sagittal
--- Tangential

MTF [%]



Blendenzahl: $k = 4 / f\text{-number} = 4$

— 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.



ZEISS Otus ML 1.4/85

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	167.586	INF	121.399	INF	85.843	INF	60.700	INF	42.921	INF	30.350	INF	21.461	INF	15.175	INF
15	13.756	16.491	13.338	17.135	12.753	18.207	12.009	19.976	11.093	23.157	10.012	29.889	8.800	50.759	7.514	4031.41
7	6.713	7.312	6.612	7.437	6.464	7.633	6.265	7.931	6.004	8.392	5.670	9.146	5.256	10.476	4.764	13.189
4	3.903	4.102	3.868	4.141	3.816	4.202	3.745	4.292	3.649	4.425	3.521	4.629	3.355	4.952	3.145	5.493
3	2.944	3.058	2.924	3.080	2.894	3.114	2.853	3.163	2.796	3.236	2.720	3.345	2.618	3.512	2.487	3.779
2.5	2.461	2.540	2.447	2.556	2.426	2.579	2.396	2.613	2.356	2.663	2.301	2.737	2.227	2.849	2.131	3.024
2	1.974	2.026	1.965	2.036	1.951	2.051	1.932	2.073	1.905	2.105	1.868	2.151	1.819	2.221	1.753	2.328
1.7	1.681	1.719	1.675	1.726	1.664	1.737	1.650	1.753	1.630	1.776	1.603	1.810	1.566	1.859	1.516	1.934
1.5	1.485	1.515	1.480	1.521	1.472	1.529	1.460	1.542	1.445	1.560	1.423	1.586	1.393	1.624	1.353	1.682
1.2	1.190	1.210	1.187	1.214	1.181	1.219	1.174	1.227	1.163	1.239	1.149	1.256	1.129	1.281	1.102	1.317
1.1	1.092	1.109	1.089	1.112	1.084	1.116	1.078	1.123	1.069	1.133	1.056	1.147	1.039	1.168	1.016	1.199
1	0.993	1.007	0.990	1.010	0.987	1.014	0.981	1.020	0.974	1.028	0.963	1.040	0.949	1.057	0.929	1.083
0.9	0.894	0.906	0.892	0.908	0.889	0.911	0.884	0.916	0.878	0.923	0.869	0.933	0.857	0.947	0.841	0.968
0.85	0.845	0.855	0.843	0.857	0.840	0.860	0.836	0.865	0.830	0.871	0.822	0.880	0.811	0.893	0.796	0.911
0.8	0.795	0.805	0.794	0.807	0.791	0.809	0.787	0.813	0.782	0.819	0.775	0.827	0.765	0.838	0.752	0.855

* 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