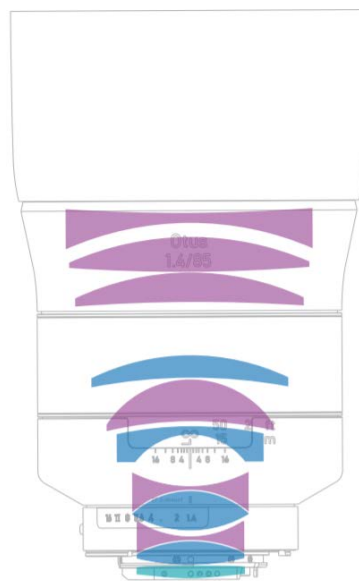




# ZEISS Otus 1.4/85

## Technische Daten/Technical Specifications



 Sonderglas / Special glass  
 Asphären / Aspheric surface

|                                                               |                                                  |
|---------------------------------------------------------------|--------------------------------------------------|
| <b>Brennweite/Focal length</b>                                | 85 mm                                            |
| <b>Blendenbereich/Aperture range</b>                          | f/1.4 – f/16                                     |
| <b>Linsen / Gruppen/Lens elements / Groups</b>                | 11 / 9                                           |
| <b>Fokussierbereich/Focusing range</b>                        | 0,8 m (31.50'') - ∞                              |
| <b>Arbeitsabstand/Free working distance</b>                   | 0,65 m (25.59'') - ∞                             |
| <b>Bildfeld*/Angular field* (diag. / horiz. / vert.)</b>      | 28.24° / 23.71° / 15.97°                         |
| <b>Bildkreisdurchmesser/Diameter of image field</b>           | 43 mm (1.69'')                                   |
| <b>Anlagemaß/Flange focal distance</b>                        | ZF.2: 46,50 mm (1.83'')<br>ZE: 44,00 mm (1.73'') |
| <b>Objektfeld bei Naheinstellung*</b>                         | 278,85 mm x 185,61 mm (10.97'' x 7.31'')         |
| <b>Coverage at close range (MOD)*</b>                         |                                                  |
| <b>Abbildungsmaßstab bei Naheinstellung</b>                   | 1 : 7.7                                          |
| <b>Image ratio at MOD</b>                                     |                                                  |
| <b>Filterdurchmesser/Filter thread</b>                        | M86 x 1.00                                       |
| <b>Lage der Eintrittspupille (vor der Bildebene)</b>          | 90 mm (3.54'')                                   |
| <b>Entrance pupil position ( in front of image plane)</b>     |                                                  |
| <b>Drehwinkel des Fokussierings (inf – MOD)</b>               | 261 °                                            |
| <b>Rotation angle of focusing ring (inf – MOD)</b>            |                                                  |
| <b>Durchmesser max./Diameter max.</b>                         | ZF.2: 101 mm (3.98'')<br>ZE: 101 mm (3.98'')     |
| <b>Durchmesser des Fokussierings</b>                          | ZF.2: 92 mm (3.62'')                             |
| <b>Diameter of focusing ring</b>                              | ZE: 92 mm (3.62'')                               |
| <b>Länge (ohne Objektivdeckel)/Length (without lens caps)</b> | ZF.2: 122 mm (4.80'')<br>ZE: 124 mm (4.88'')     |
| <b>Länge (mit Objektivdeckeln)/Length (with lens caps)</b>    | ZF.2: 138 mm (5.43'')<br>ZE: 141 mm (5.55'')     |
| <b>Gewicht/Weight</b>                                         | ZF.2: 1140g (2.51 lbs)<br>ZE: 1200g (2.64 lbs)   |

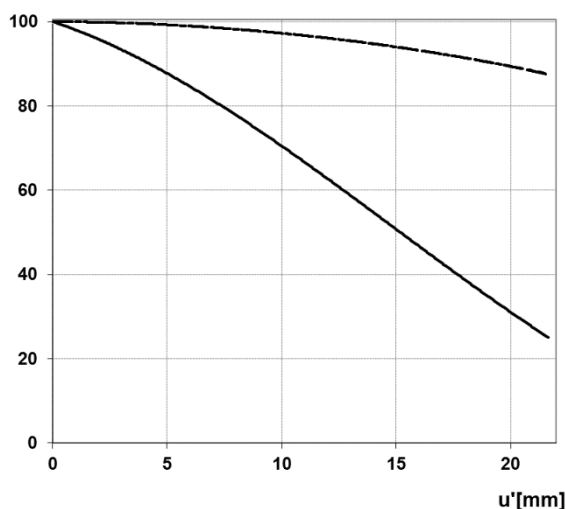
\* bezugnehmend auf das 24x36mm Format/referring to 36 mm format



# ZEISS Otus 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.

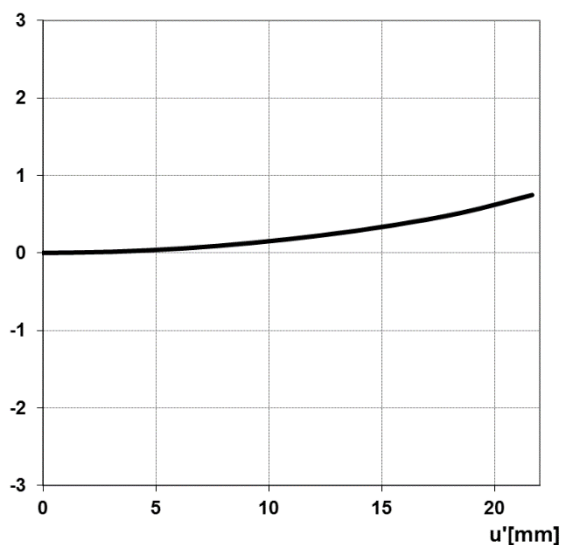
— Blendenzahl:  $k = 1,4$  / f-number = 1.4

--- Blendenzahl:  $k = 4,0$  / f-number = 4.0

... Blendenzahl:  $k = 3,9$  / f-number = 3.9

## 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.

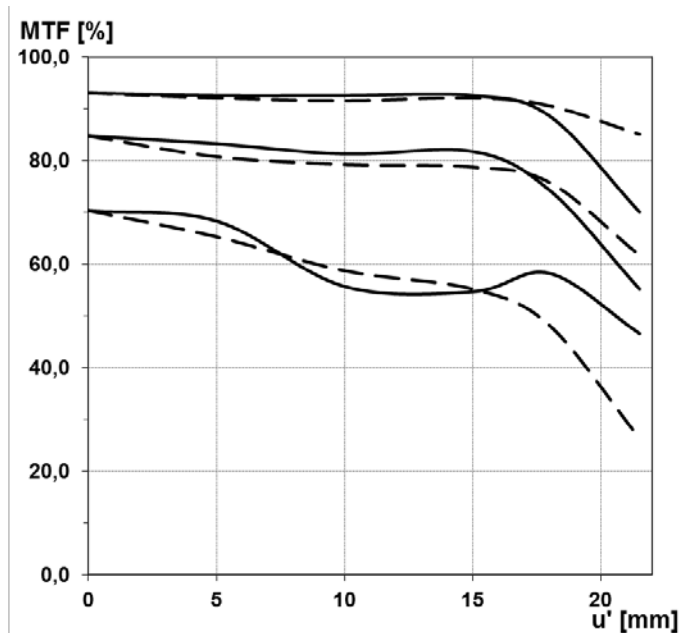
Angaben für unendlich.  
Data for infinity.



# ZEISS Otus 1.4/85

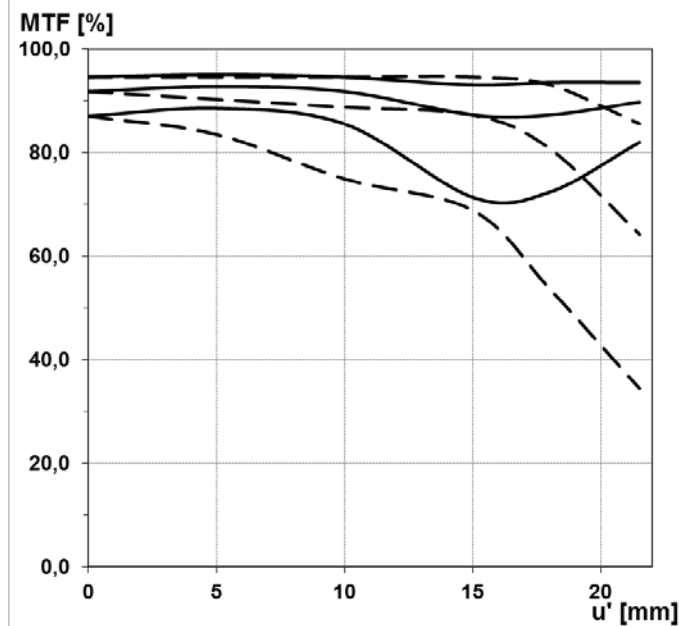
## MTF Charts

Unendlich / Infinity



Blendenzahl:  $k = 1,4$  / f-number = 1.4

— Sagittal  
... Tangential



Blendenzahl:  $k = 4$  / f-number = 4.0

— Sagittal  
... Tangential

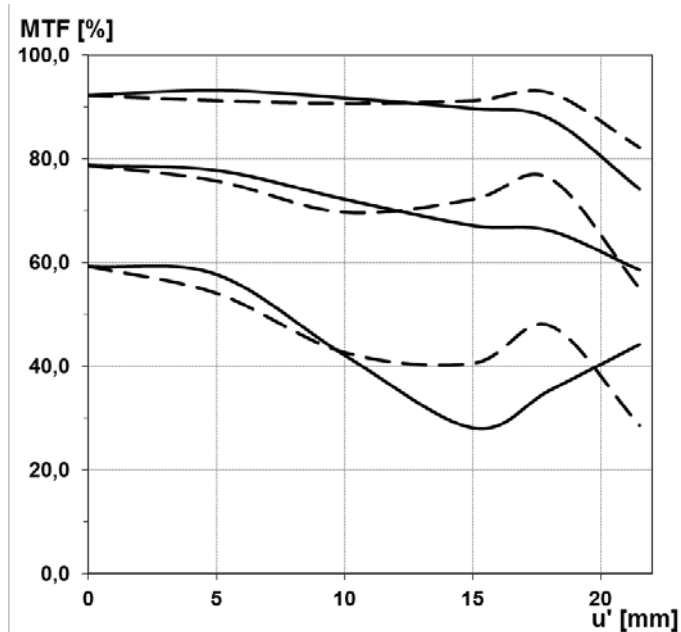
Modulationsübertragung MTF als Funktion der Bildhöhe ( $u'$ ) und Spaltorientierung. Weißes Licht. Ortsfrequenzen  $R=10, 20$  und  $40$  Perioden/mm. // Modulation transfer MTF as a function of the image height ( $u'$ ) and slit orientation. White light. Spatial frequencies  $R=10, 20$  and  $40$  cycles/mm.



# ZEISS Otus 1.4/85

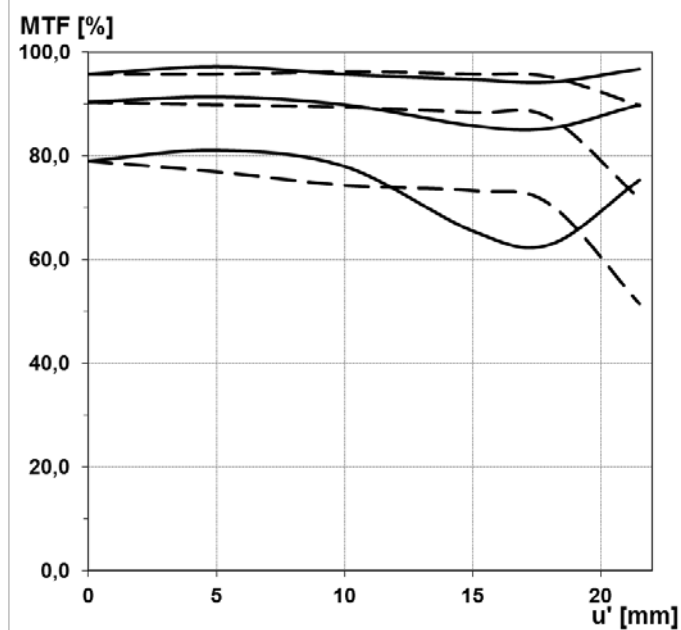
## MTF Charts

Naheinstellung / Short focus



Blendenzahl:  $k = 1,4$  / f-number = 1.4

— Sagittal  
... Tangential



Blendenzahl:  $k = 4$  / f-number = 4.0

— 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.



# ZEISS Otus 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 |      |
|-------------------|-------|------|------|------|-------|------|------|------|-------|------|------|------|------|------|------|------|
| Meter             | From  | to   | From | To   | from  | To   | From | To   | From  | To   | From | To   | From | To   | from | To   |
| INF               | 157   | inf. | 139  | inf. | 92    | inf. | 61   | inf. | 42    | inf. | 29   | inf. | 21   | inf. | 14.2 | inf. |
| 15 m              | 13.7  | 16.6 | 13.6 | 17.9 | 12.9  | 19.1 | 12.1 | 21 m | 11.2  | 25   | 9.97 | 35   | 8.81 | 66   | 7.39 | inf. |
| 7 m               | 6.71  | 7.31 | 6.68 | 7.56 | 6.53  | 7.76 | 6.32 | 8.09 | 6.05  | 8.58 | 5.70 | 9.43 | 5.31 | 10.8 | 4.77 | 14.2 |
| 4 m               | 3.90  | 4.09 | 3.90 | 4.17 | 3.85  | 4.23 | 3.78 | 4.32 | 3.68  | 4.45 | 3.55 | 4.66 | 3.40 | 4.96 | 3.18 | 5.54 |
| 3 m               | 2.95  | 3.05 | 2.94 | 3.09 | 2.92  | 3.12 | 2.88 | 3.17 | 2.82  | 3.24 | 2.75 | 3.35 | 2.66 | 3.49 | 2.53 | 3.76 |
| 2.5 m             | 2.46  | 2.53 | 2.46 | 2.56 | 2.44  | 2.58 | 2.42 | 2.62 | 2.38  | 2.66 | 2.33 | 2.73 | 2.27 | 2.82 | 2.17 | 2.99 |
| 2 m               | 1.97  | 2.02 | 1.98 | 2.04 | 1.97  | 2.05 | 1.95 | 2.07 | 1.93  | 2.10 | 1.89 | 2.14 | 1.85 | 2.19 | 1.79 | 2.29 |
| 1.7 m             | 1.68  | 1.71 | 1.68 | 1.73 | 1.68  | 1.74 | 1.66 | 1.75 | 1.65  | 1.77 | 1.62 | 1.80 | 1.60 | 1.83 | 1.55 | 1.90 |
| 1.5 m             | 1.48  | 1.51 | 1.49 | 1.52 | 1.48  | 1.53 | 1.47 | 1.54 | 1.46  | 1.55 | 1.44 | 1.57 | 1.42 | 1.60 | 1.39 | 1.65 |
| 1.2 m             | 1.19  | 1.21 | 1.19 | 1.21 | 1.19  | 1.22 | 1.18 | 1.22 | 1.18  | 1.23 | 1.17 | 1.24 | 1.15 | 1.26 | 1.13 | 1.28 |
| 1 m               | 0.99  | 1.00 | 1.00 | 1.00 | 0.99  | 1.01 | 0.99 | 1.01 | 0.99  | 1.02 | 0.98 | 1.03 | 0.97 | 1.04 | 0.96 | 1.05 |
| 0.9 m             | 0.89  | 0.90 | 0.90 | 0.91 | 0.89  | 0.91 | 0.89 | 0.91 | 0.89  | 0.91 | 0.88 | 0.92 | 0.88 | 0.93 | 0.87 | 0.94 |

\* Schärfentiefetabelle für das 24x36mm Format, Zerstreuungskreis 0.033mm (D/1500), gerundet auf 0.01m //  
Depth-of-field table for sensor format 24x36mm, circle of confusion 0.033mm (D/1500), rounded to 0.01m