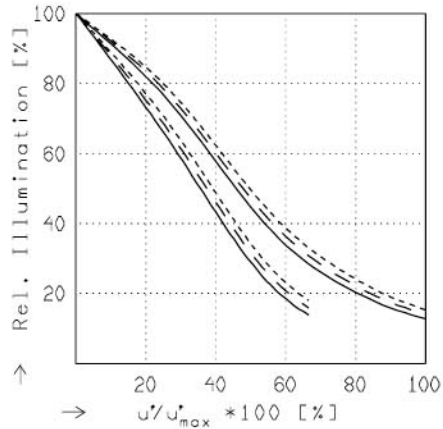
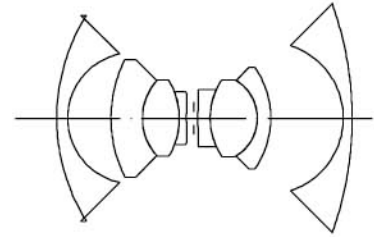


Schneider-Kreuznach ALPA Apo-Helvetar 5,6/48mm

$f' = 48.0 \text{ mm}$ $\beta_p = 0.995$
 $s_F = -31.2 \text{ mm}$ $s_{EP} = 17.0 \text{ mm}$
 $s_{F'} = 29.5 \text{ mm}$ $s_{A'P} = -18.2 \text{ mm}$
 $HH' = 24.8 \text{ mm}$ $\Sigma d = 60.0 \text{ mm}$

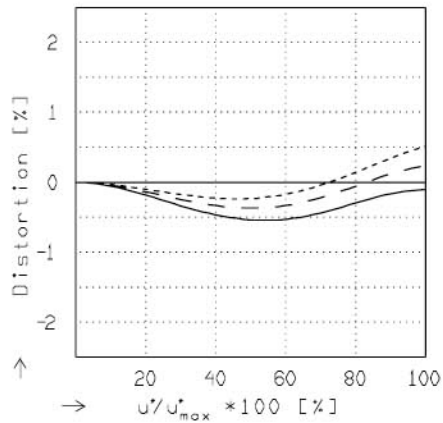


RELATIVE ILLUMINATION

The relative illumination is shown for the given focal distances or magnifications.

$f / 5.6$ $f / 22.0$

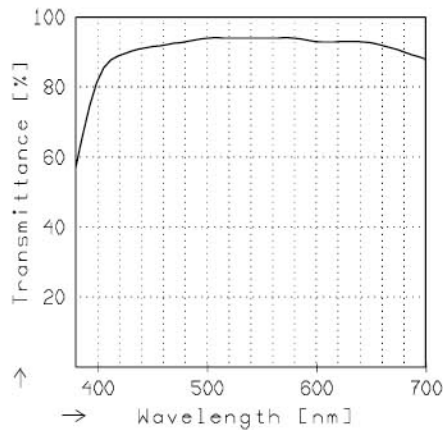
| | | | |
|---------|--------------------|-------------------|----------------|
| — | $\beta' = 0.0000$ | $u'_{max} = 82.9$ | $00' = \infty$ |
| - - | $\beta' = -0.0500$ | $u'_{max} = 83.2$ | $00' = 1082.$ |
| - · - · | $\beta' = -0.1000$ | $u'_{max} = 83.4$ | $00' = 605.$ |



DISTORTION

Distortion is shown for the given focal distances or magnifications. Positive values indicate pincushion distortion and negative values barrel distortion.

| | | | |
|---------|--------------------|-------------------|----------------|
| — | $\beta' = 0.0000$ | $u'_{max} = 82.9$ | $00' = \infty$ |
| - - | $\beta' = -0.0500$ | $u'_{max} = 83.2$ | $00' = 1082.$ |
| - · - · | $\beta' = -0.1000$ | $u'_{max} = 83.4$ | $00' = 605.$ |



TRANSMITTANCE

Relative spectral transmittance is shown with reference to wavelength.

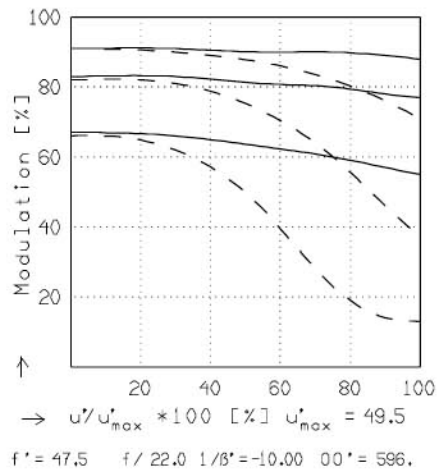
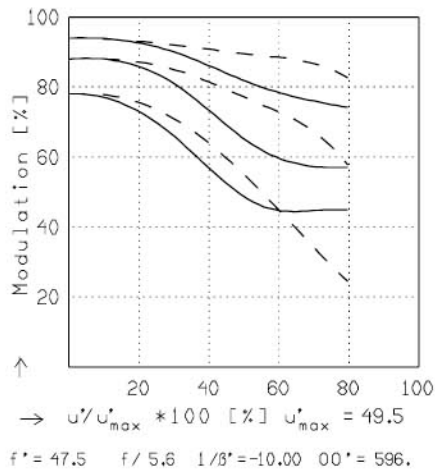
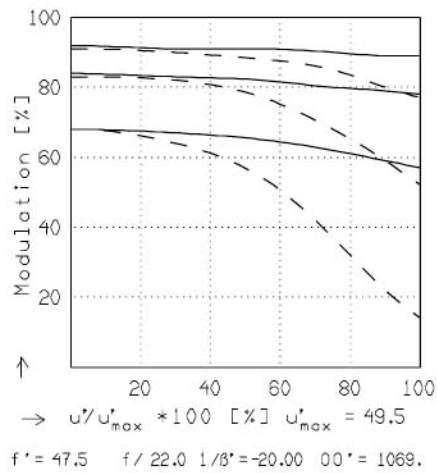
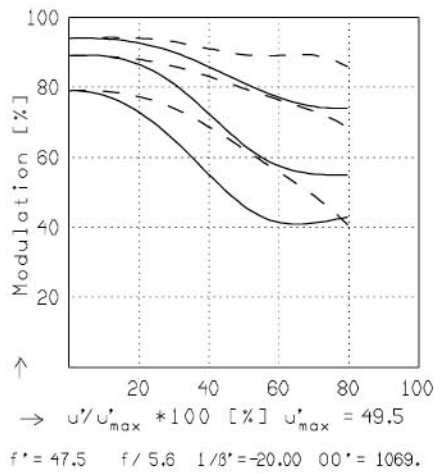
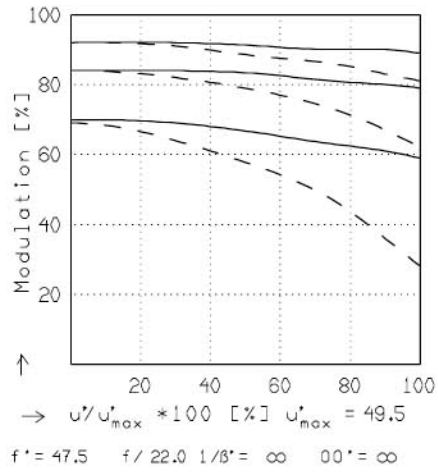
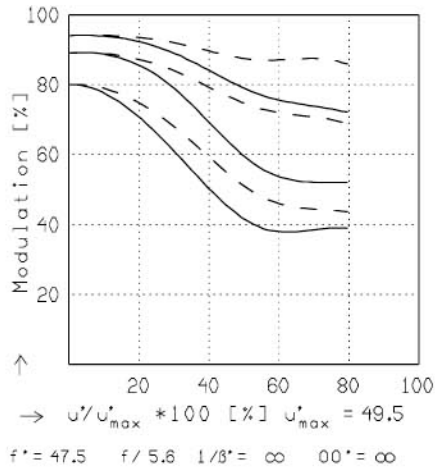
Jos. Schneider Optische Werke GmbH
 Ringstrasse 132 55543 Bad Kreuznach Germany

Schneider-Kreuznach ALPA Apo-Helvetar 5,6/48mm

MODULATION with reference to the relative image height

| | | | | | | | |
|-----------------------------|--------|-------|------|------|------|------|-----|
| Wavelength λ | [nm] | 546 | 644 | 588 | 480 | 436 | 405 |
| Spectral weighting | [%] | 24.6 | 18.6 | 22.1 | 12.4 | 15.2 | 7.1 |
| Spatial frequency R | [1/mm] | 5 | 10 | 20 | | | |
| Image- \emptyset f / 5.6 | [mm] | 98.0 | | | | | |
| Image- \emptyset f / 22.0 | [mm] | 123.0 | | | | | |

radial —
 tangential - -



Focusing : MTF_{max} at f / 5.6 , R = 20 1/mm, $u'/u'_{max} = 0$

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