

# Anti-Shading Lens

## Apo-Xenoplan 2.0/20-0003

These high-resolution, high-speed lenses are optimized for the use of 4 and 8 megapixel 1.3" sensors with micro-lenses on the sensor surface. The special optical design prevents unwanted shading on the sensor. This makes it much easier to combine a homogeneous luminance distribution with high imaging performance. The image circles are very large for C-Mount lenses. With a 1.3" sensor, the relatively short focal lengths allow a large coverage range at a short working distance. The lenses are also broadband coated and can be used in the visible range 400 – 700 nm or the near infrared range 700 – 1000 nm.



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### Key Features

- Anti-shading for sensor sizes up to 1.3"(image circle 24 mm)
- Designed for 4 and 8 Mpix sensors with micro-lenses
- High resolution optics 400 - 700 nm (VIS) / 700 - 1000 nm (NIR)
- Very high MTF across the entire sensor
- Robust mechanics for industrial environment
- Compact and low weight
- Focus and iris setting lockable

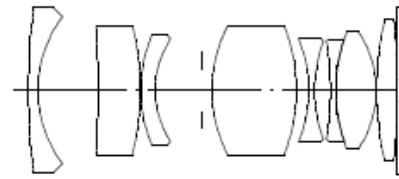
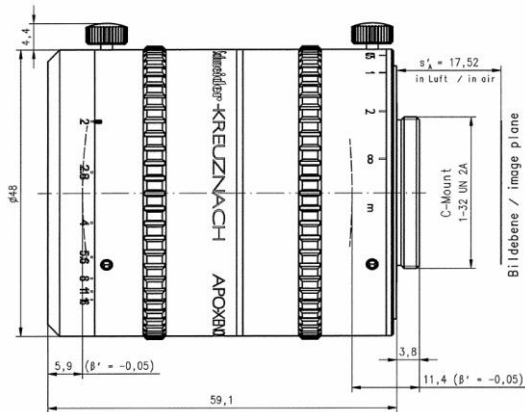
### Applications

- Machine Vision and other imaging applications
- 3D measurement
- Traffic
- Etc.

### Technical Specifications

|               |               |
|---------------|---------------|
| F-number      | 2.0           |
| Focal length  | 20.5 mm       |
| Image circle  | 24 mm         |
| Transmission  | 400 - 1000 nm |
| Interface     | C-Mount       |
| Weight        | 450 gr.       |
| Filter thread | M35.5 x 0.5   |
| Code no.      | 1056472       |

# Apo-Xenoplan 2.0/20



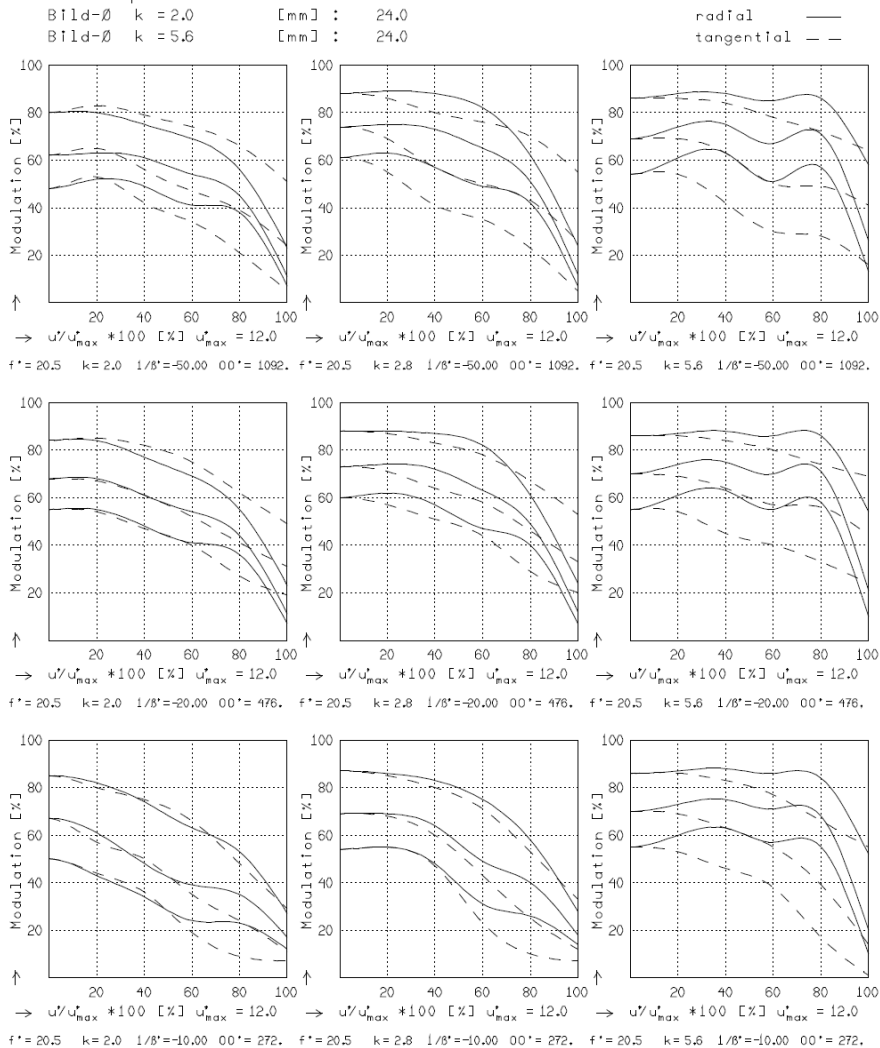
## APO-XENOPLAN 2/20

|         |           |            |            |
|---------|-----------|------------|------------|
| $f^*$   | = 20.5 mm | $\beta_p$  | = 2.964    |
| $s_F$   | = 5.6 mm  | $s_{EP}$   | = 12.5 mm  |
| $s_F^*$ | = 23.8 mm | $s_{AP}^*$ | = -37.1 mm |
| $HH^*$  | = 23.4 mm | $\Sigma d$ | = 46.3 mm  |

### APO-XENOPLAN 2/20

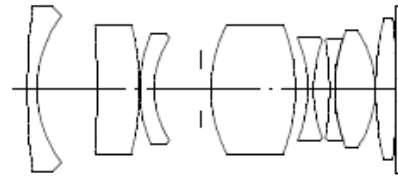
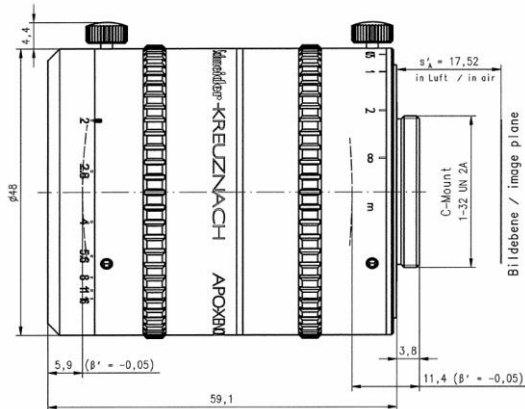
MODULATION als Funktion der relativen Bildgröße

|                                |        |      |      |      |      |     |
|--------------------------------|--------|------|------|------|------|-----|
| Wellenlänge $\lambda$ [nm]     | : 555  | 655  | 605  | 505  | 455  | 405 |
| Spektrale Gewichtung [%]       | : 19.6 | 23.7 | 22.2 | 15.7 | 12.1 | 6.7 |
| Ortsfrequenz R [1/mm]          | : 25   | 50   | 75   |      |      |     |
| Bild- $\emptyset$ k = 2.0 [mm] | : 24.0 |      |      |      |      |     |
| Bild- $\emptyset$ k = 5.6 [mm] | : 24.0 |      |      |      |      |     |



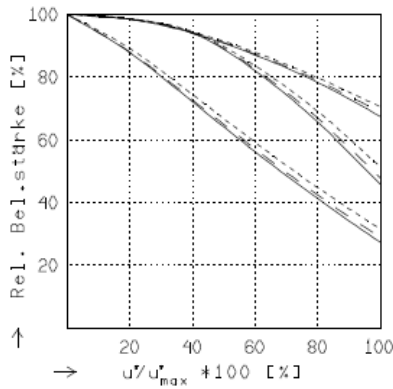
Fokussierung  $MTF_{max}$  bei k = 2.0 . R = 50 1/mm.  $u/u'_{max} = 0$

# Apo-Xenoplan 2.0/20



## APO-XENOPLAN 2/20

|          |           |            |            |
|----------|-----------|------------|------------|
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| $s_F$    | = 5.6 mm  | $s_{EP}$   | = 12.5 mm  |
| $s_{F'}$ | = 23.8 mm | $s_{AP}$   | = -37.1 mm |
| $HH'$    | = 23.4 mm | $\Sigma d$ | = 46.3 mm  |

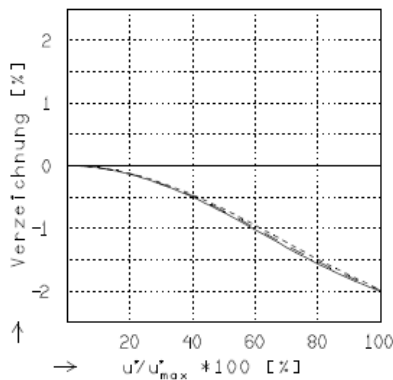


## RELATIVE BELEUCHTUNGSSTÄRKE

Die relative Beleuchtungsstärke ist für die angegebenen Brennweiten oder Abbildungsmaßstäbe für die folgenden Blendenzahlen dargestellt.

$$k = 2.0 \quad k = 2.8 \quad k = 5.6$$

|     |                    |                   |               |
|-----|--------------------|-------------------|---------------|
| —   | $\beta' = -0.0200$ | $u_{max}' = 11.8$ | $00' = 1092.$ |
| - - | $\beta' = -0.0500$ | $u_{max}' = 11.8$ | $00' = 476.$  |
| ... | $\beta' = -0.1000$ | $u_{max}' = 11.8$ | $00' = 272.$  |

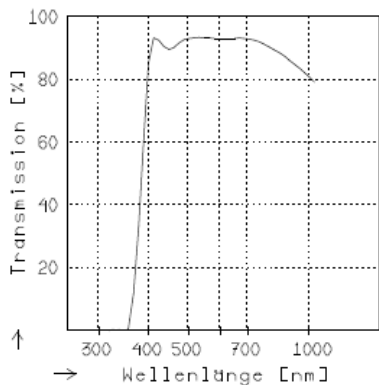


## VERZEICHNUNG

Die Verzeichnung ist für die angegebenen Brennweiten oder Abbildungsmaßstäbe dargestellt.

Pos. Werte : Kissenförm. Verzeichnung  
Neg. Werte : Tonnenförm. Verzeichnung

|     |                    |                   |               |
|-----|--------------------|-------------------|---------------|
| —   | $\beta' = -0.0200$ | $u_{max}' = 11.8$ | $00' = 1092.$ |
| - - | $\beta' = -0.0500$ | $u_{max}' = 11.8$ | $00' = 476.$  |
| ... | $\beta' = -0.1000$ | $u_{max}' = 11.8$ | $00' = 272.$  |



## TRANSMISSION

Die relative spektrale Transmission ist als Funktion der Wellenlänge dargestellt.