

# Anti-Shading Lens

## Xenoplan 2.8/50-0902

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

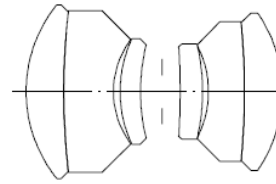
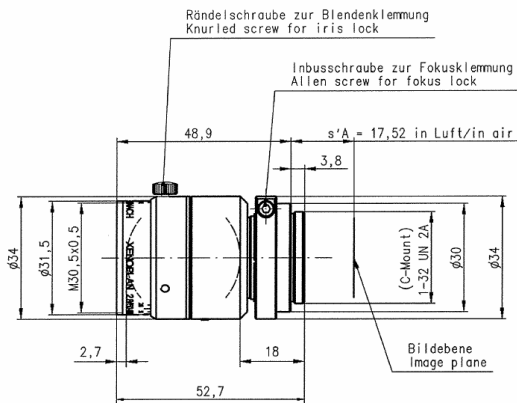
F-number	2.8
Focal length	50.2 mm
Image circle	24 mm
Transmission	400 - 1000 nm
Interface	C-Mount
Weight	135 gr.
Filter tread	M30.5 x 0.5
Code no.	1001976

### Contact

Jos. Schneider Optische Werke GmbH  
 Ringstraße 132  
 55543 Bad Kreuznach  
 Germany  
 Phone +49 671 601-205  
 Fax +49 671 601-286  
[www.schneiderkreuznach.com](http://www.schneiderkreuznach.com)  
[industrie@schneiderkreuznach.com](mailto:industrie@schneiderkreuznach.com)

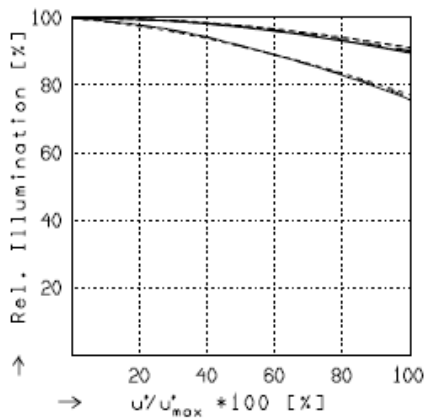
Schneider Optical Technologies Co., Ltd.  
 Rm. A505 Yingdali Science Park, Hongmian Rd.,  
 Futian Free Trade Zone, Shenzhen 518038,  
 P.R. China  
 Phone: +86 755 88 32 11 70  
 Fax: +86 755 88 32 11 75  
[www.schneiderkreuznach.com](http://www.schneiderkreuznach.com)  
[info@schneider-asiapacific.com](mailto:info@schneider-asiapacific.com)

Schneider Optics Inc.  
 285 Oser Ave.  
 Hauppauge, NY 11788  
 USA  
 Phone +1 631 761-5000  
 Fax +1 631 761-5090  
[www.schneideroptics.com/industrial](http://www.schneideroptics.com/industrial)  
[industrial@schneideroptics.com](mailto:industrial@schneideroptics.com)



## XENOPLAN 2.8/50

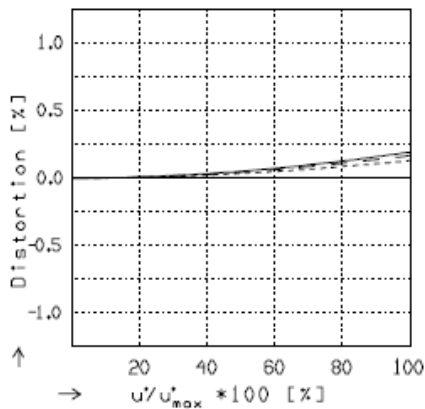
$f'$	= 50.2 mm	$\beta'_p$	= 0.945
$s_F$	= -33.5 mm	$s_{EP}$	= 19.6 mm
$s_{F'}$	= 31.7 mm	$s_{AP}$	= -15.7 mm
$HH'$	= -3.1 mm	$\Sigma d$	= 32.0 mm



## RELATIVE ILLUMINATION

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

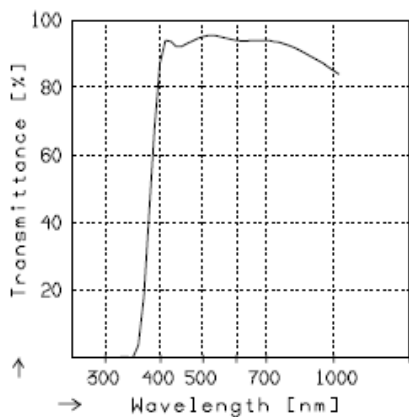
	$f / 2.8$	$f / 4.0$	$f / 8.0$
— $\beta' = -0.0200$	$u'_{max} = 11.0$	$00' = 2607.$	
- - $\beta' = -0.0500$	$u'_{max} = 11.0$	$00' = 1103.$	
... $\beta' = -0.1000$	$u'_{max} = 11.0$	$00' = 604.$	



## DISTORTION

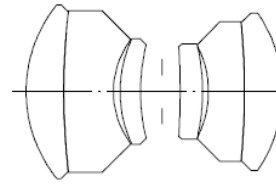
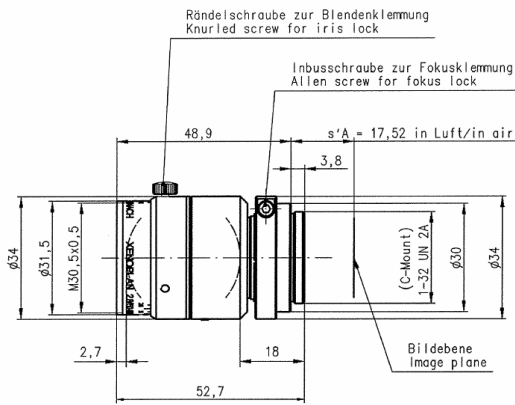
Distortion is shown for the given focal distances or magnifications. Positive values indicate pincushion distortion and negative values barrel distortion.

— $\beta' = -0.0200$	$u'_{max} = 11.0$	$00' = 2607.$
- - $\beta' = -0.0500$	$u'_{max} = 11.0$	$00' = 1103.$
... $\beta' = -0.1000$	$u'_{max} = 11.0$	$00' = 604.$



## TRANSMITTANCE

Relative spectral transmittance is shown with reference to wavelength.



## XENOPLAN 2.8/50

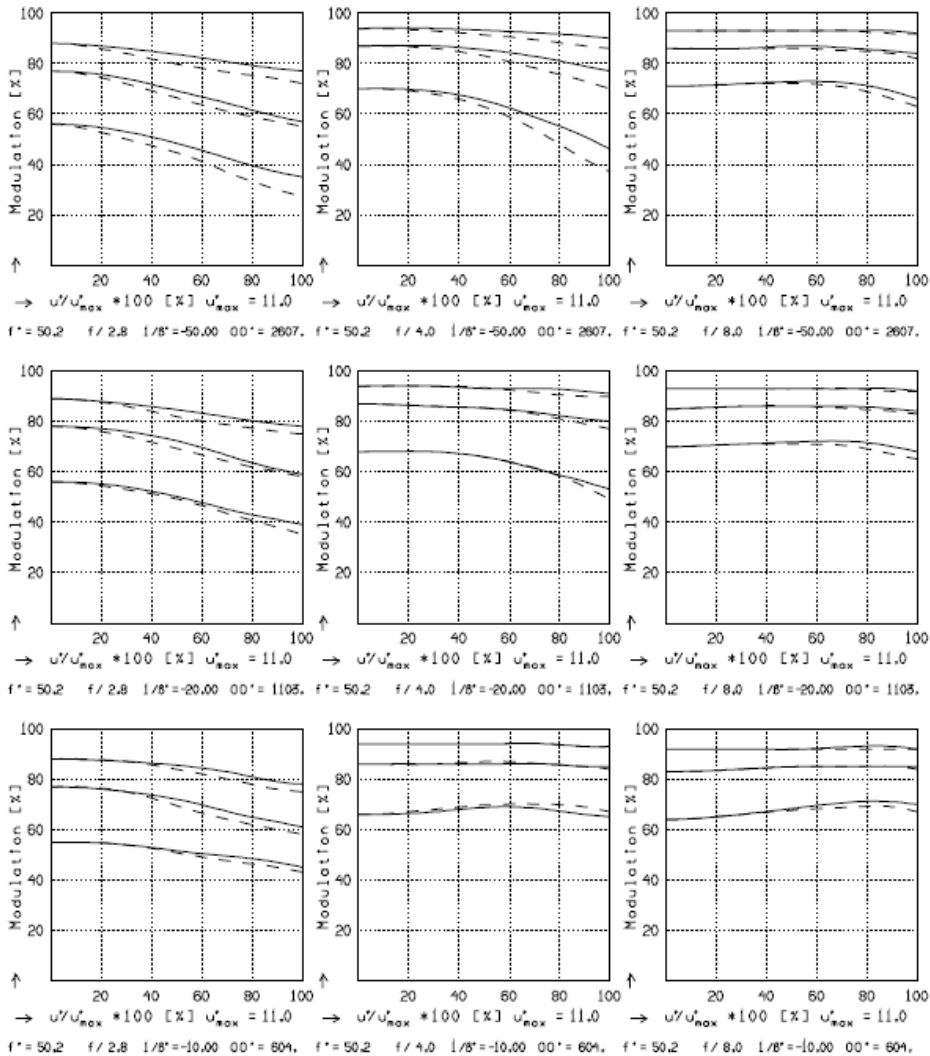
$f'$	= 50.2 mm	$\beta'_p$	= 0.945
$s_F$	= -33.5 mm	$s_{EP}$	= 19.6 mm
$s_{F'}$	= 31.7 mm	$s_{A'P}$	= -15.7 mm
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## XENOPLAN 2.8/50

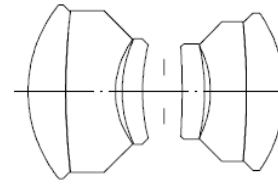
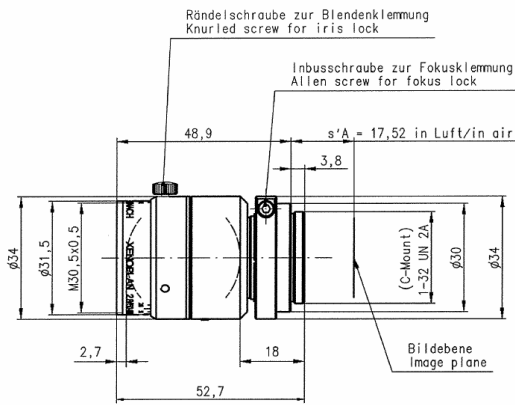
MODULATION with reference to the relative image height

Wavelength $\lambda$	[nm]	555	655	605	505	455	405
Spectral weighting	[%]	19,6	23,7	22,2	15,7	12,1	6,7
Spatial frequency R	[1/mm]	10	20	40			
Format	[mm X mm]	15,2	X 15,2				
Diagonal $2u'$	[mm]	22,0					

radial —  
tangential - -

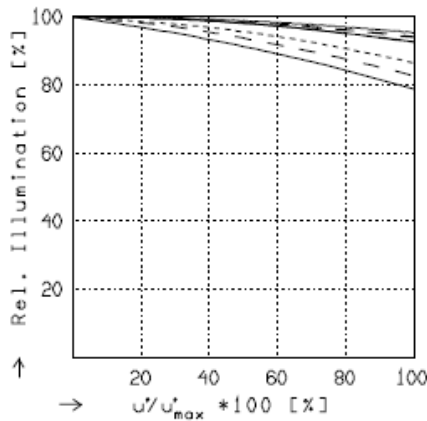


Focusing :  $MTF_{nox}$  at  $f / 2.8$  ,  $R = 40$  1/mm,  $u'/u'_{nox} = 0$



## XENOPLAN 2.8/50

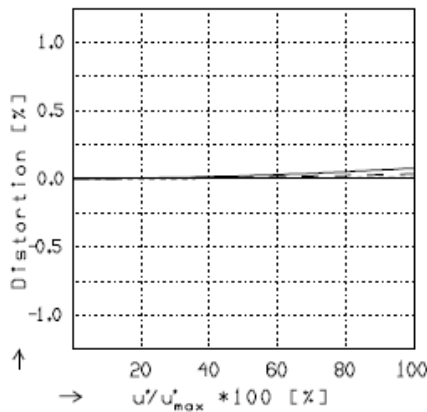
$f'$	= 50.2 mm	$\beta'_p$	= 0.945
$s_F$	= -33.5 mm	$s_{EP}$	= 19.6 mm
$s_{F'}$	= 31.7 mm	$s'_{AP}$	= -15.7 mm
$HH'$	= -3.1 mm	$\Sigma d$	= 32.0 mm



## RELATIVE ILLUMINATION

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

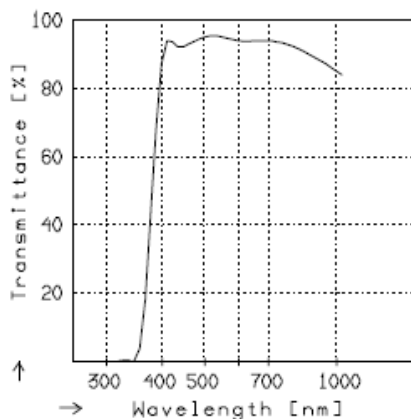
	$f / 2.8$	$f / 4.0$	$f / 8.0$
— $\beta' = -0.2000$	$u'_{max} = 11.0$	$00' = 358.$	
- - $\beta' = -0.3333$	$u'_{max} = 11.0$	$00' = 264.$	
.... $\beta' = -0.5000$	$u'_{max} = 11.0$	$00' = 223.$	



## DISTORTION

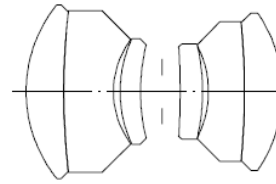
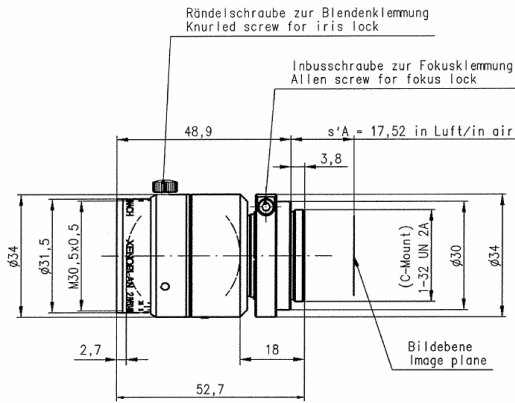
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## TRANSMITTANCE

Relative spectral transmittance is shown with reference to wavelength.



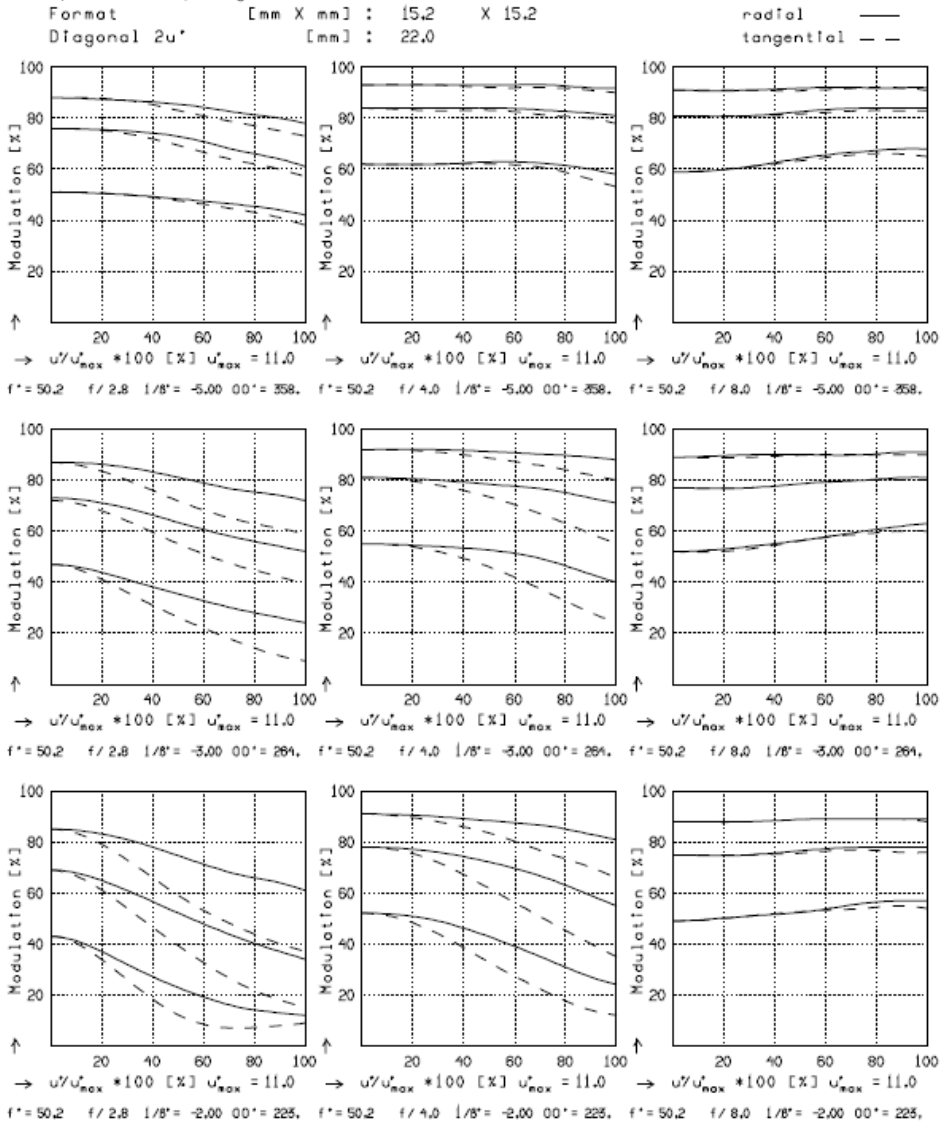
## XENOPLAN 2.8/50

$f'$	= 50.2 mm	$\beta'_p$	= 0.945
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## XENOPLAN 2.8/50

### MODULATION with reference to the relative image height

Wavelength $\lambda$	[nm] :	555	655	605	505	455	405
Spectral weighting	[%] :	19,6	23,7	22,2	15,7	12,1	6,7
Spatial frequency R	[1/mm] :	10	20	40			
Format	[mm X mm] :	15,2	X 15,2				
Diagonal $2u'$	[mm] :	22,0					



Focusing : MTF<sub>nox</sub> at f / 2.8 , R = 40 1/mm, u'/u'nox = 0