

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

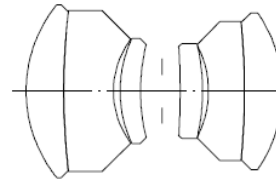
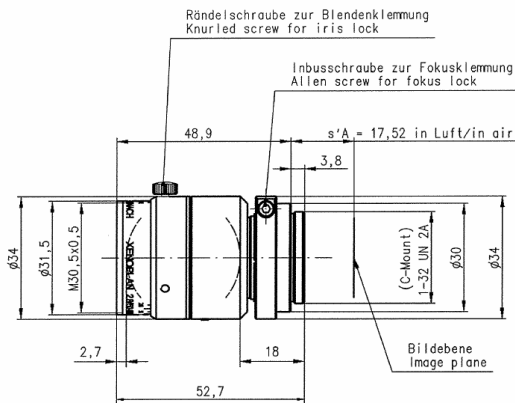
Applications

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

Technical Specifications

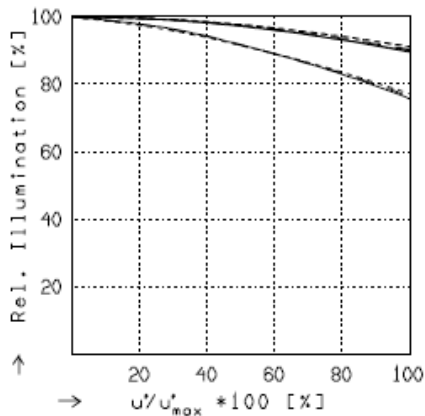
F-number	2.8
Focal length	50.2 mm
Image circle	24 mm
Transmission	400 - 1000 nm
Interface	C-Mount
Weight	135 gr.
Filter thread	M30.5 x 0.5
Code no.	1001976

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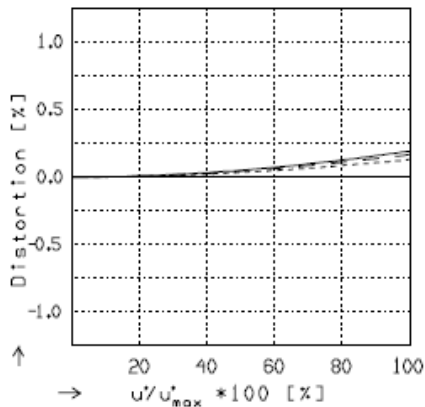
f'	= 50,2 mm	β'_p	= 0,945
s_F	= -33,5 mm	s_{EP}	= 19,6 mm
$s_{F'}$	= 31,7 mm	s_{AP}	= -15,7 mm
HH'	= -3,1 mm	Σd	= 32,0 mm



RELATIVE ILLUMINATION

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

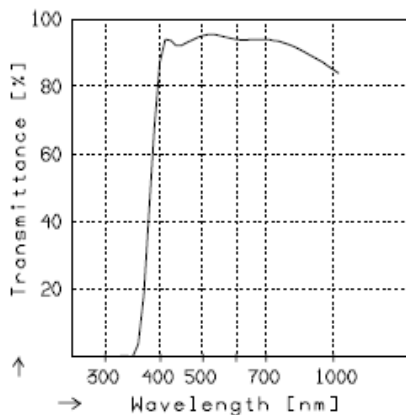
	$f / 2.8$	$f / 4.0$	$f / 8.0$
— $\beta' = -0.0200$	$u'_{max} = 11.0$	$00' = 2607.$	
- - $\beta' = -0.0500$	$u'_{max} = 11.0$	$00' = 1103.$	
- · - $\beta' = -0.1000$	$u'_{max} = 11.0$	$00' = 604.$	



DISTORTION

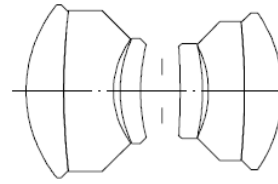
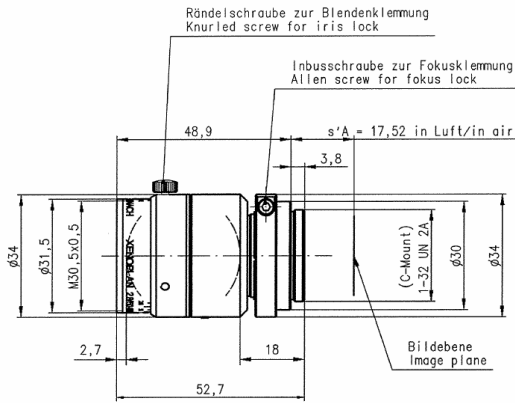
Distortion is shown for the given focal distances or magnifications. Positive values indicate pincushion distortion and negative values barrel distortion.

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



TRANSMITTANCE

Relative spectral transmittance is shown with reference to wavelength.



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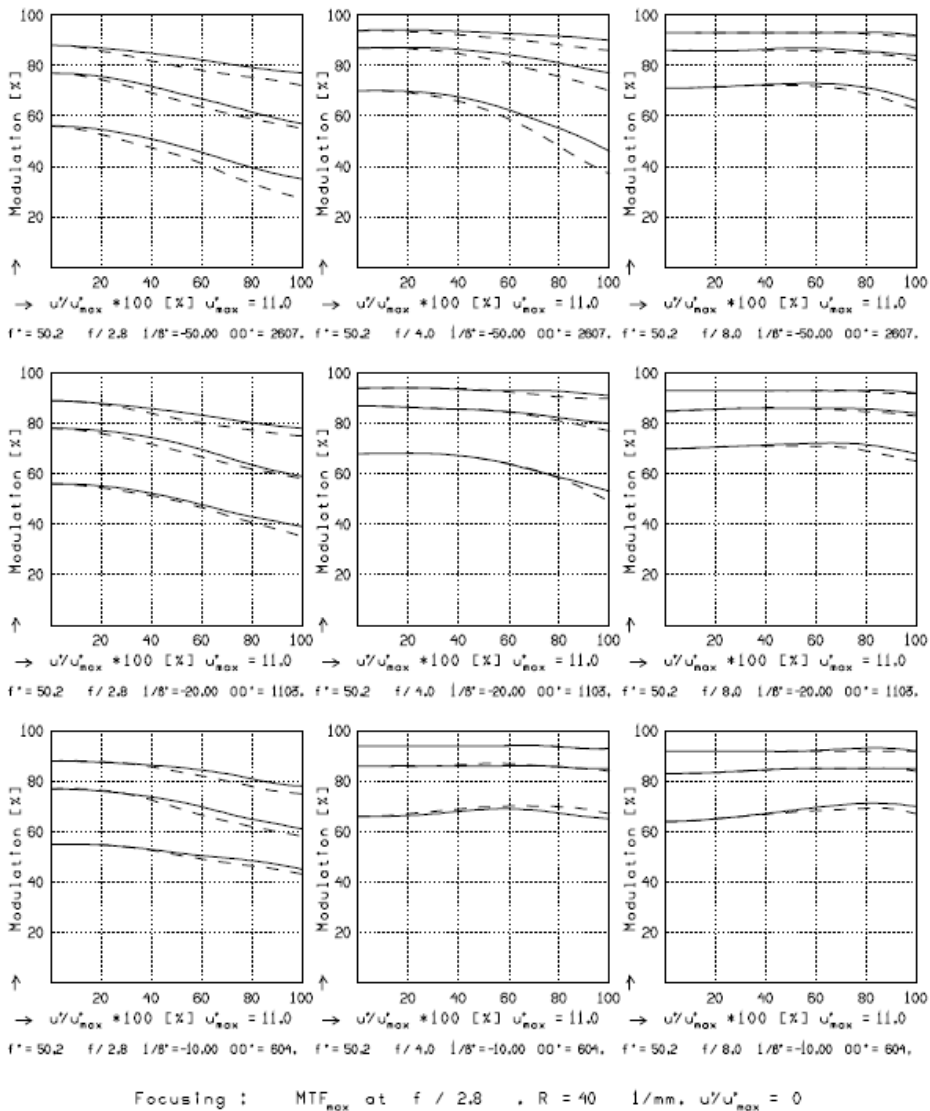
f'	=	50,2 mm	β_p'	=	0,945
s_F	=	-33,5 mm	s_{EP}	=	19,6 mm
$s_{F'}$	=	31,7 mm	s_{AP}	=	-15,7 mm
HH'	=	-3,1 mm	Σd	=	32,0 mm

XENOPLAN 2.8/50

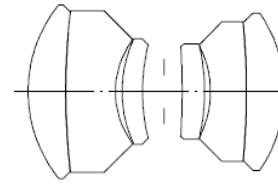
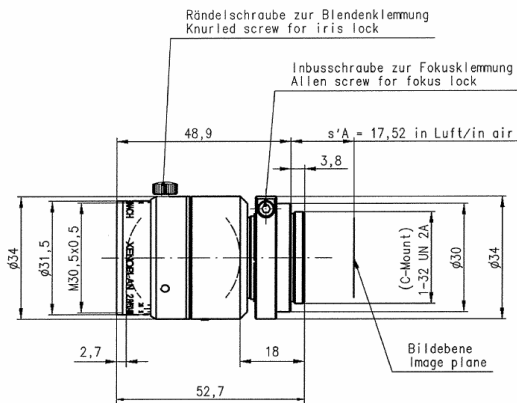
MODULATION with reference to the relative image height

Wavelength λ	[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 - -

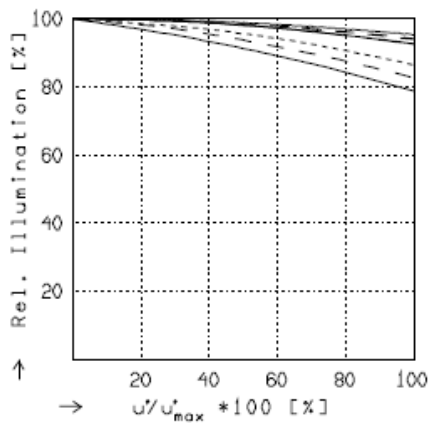


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XENOPLAN 2.8/50

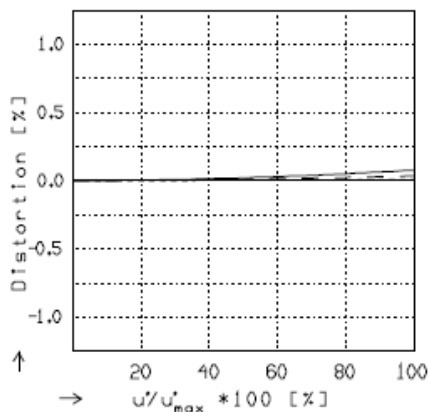
f'	= 50.2 mm	β'_p	= 0.945
s_F	= -33.5 mm	s_{EP}	= 19.6 mm
$s_{F'}$	= 31.7 mm	s_{AP}	= -15.7 mm
HH'	= -3.1 mm	Σd	= 32.0 mm



RELATIVE ILLUMINATION

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

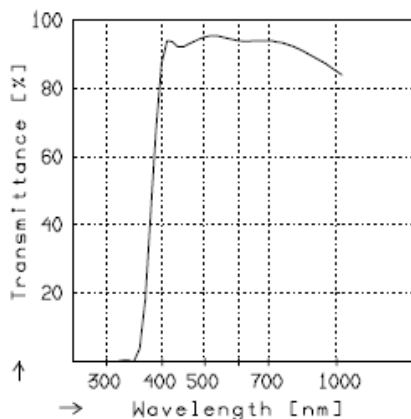
	$f / 2.8$	$f / 4.0$	$f / 8.0$
— $\beta' = -0.2000$	$u'_{max} = 11.0$	$00' = 358.$	
- - $\beta' = -0.3333$	$u'_{max} = 11.0$	$00' = 264.$	
.... $\beta' = -0.5000$	$u'_{max} = 11.0$	$00' = 223.$	



DISTORTION

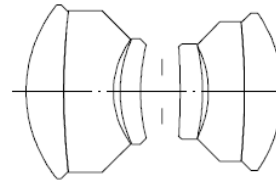
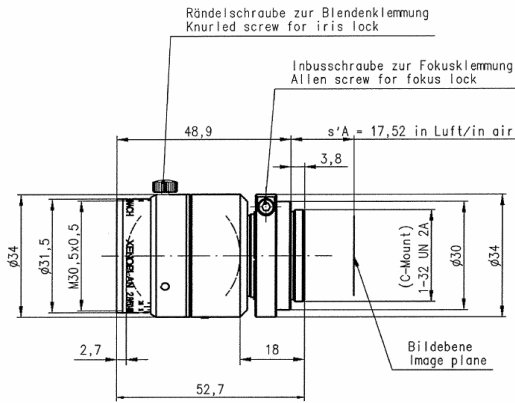
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.... $\beta' = -0.5000$	$u'_{max} = 11.0$	$00' = 223.$



TRANSMITTANCE

Relative spectral transmittance is shown with reference to wavelength.



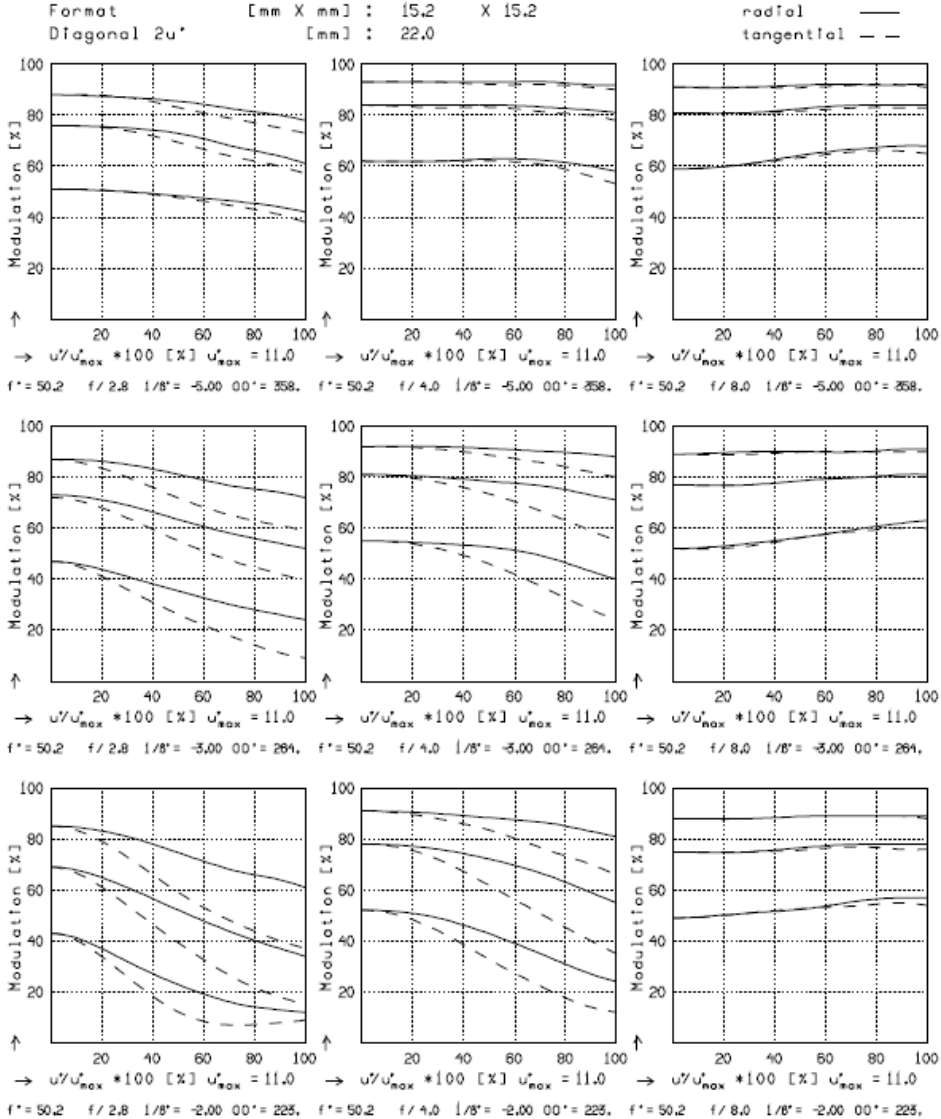
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s_F	= -33.5 mm	s_{EP}	= 19.6 mm
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HH'	= -3.1 mm	Σd	= 32.0 mm

XENOPLAN 2.8/50

MODULATION with reference to the relative image height

Wavelength λ	[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_{nox} at f / 2.8 , R = 40 1/mm. u'/u'nox = 0