

# SWIR lens

## SWIRON 1.4/23

The SWIRON high-performance lenses of the C- and V-Mount compact series are extremely robust and insensitive to rough ambient conditions, with the result that the lenses retain their high optical imaging performance in industrial environments. The secure locking of the iris and focus settings and the SWIR coating of 800 – 1800 nm is standard for all these lenses.



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### Key Features

- Designed for 800 – 1800nm
- Compact and low weight
- High transmission
- Distortion less than 1%
- Usage of highly transparent glass for SWIR range
- Special lack inside the lens to minimize light scatter in the SWIR range
- Focus and iris setting lockable

### Applications

- Machine Vision and other imaging applications
- 3D measurement
- Traffic
- Medical

### Technical Specifications

F-number	1.4
Focal length	23.1 mm
Image circle	11 mm
Transmission	800 - 1800 nm
Interface	C-Mount
Weight	115 gr.
Option	Other interface on request

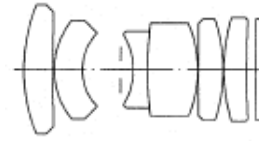
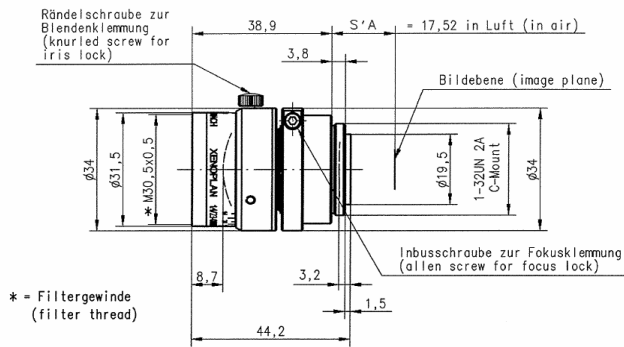
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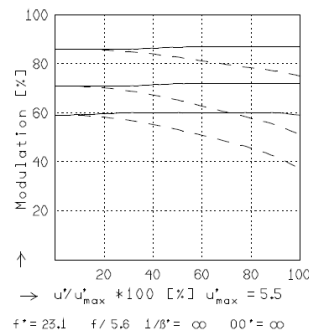
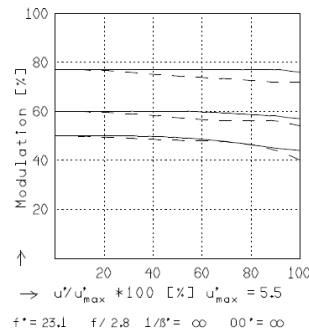
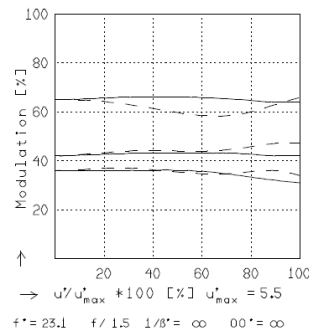
$f^*$	= 23.1 mm	$\beta_p$	= 2.341
$s_F$	= 9.0 mm	$s_{EP}$	= 18.8 mm
$s_{F^*}$	= 13.6 mm	$s_{AP}$	= -40.5 mm
$HH'$	= -6.8 mm	$\Sigma d$	= 34.8 mm

## SWIRON 1.4/23

MODULATION with reference to the relative image height

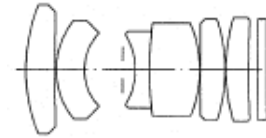
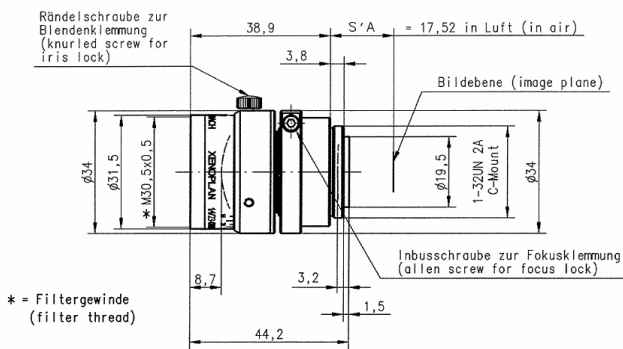
Wavelength $\lambda$	[nm]	1175	1625	1475	1325	1025	875
Spectral weighting	[%]	11.3	6.4	9.1	9.5	26.5	37.2
Spatial frequency R	[1/mm]	10	20	30			
Format	[mm X mm]	6.6	8.8				
Diagonal $2u'$	[mm]	11.0					

radial —  
tangential - -



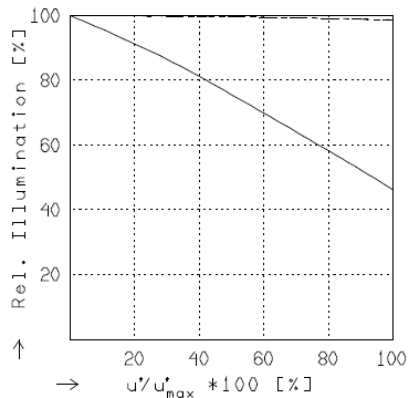
Focusing :  $MTF_{max}$  at  $f / 1.4$  ,  $R = 30$  1/mm,  $u'/u'_{max} = 0$

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$f' = 23.1 \text{ mm}$	$\beta_p = 2.341$
$s_F = 9.0 \text{ mm}$	$s_{EP} = 18.8 \text{ mm}$
$s_F' = 13.6 \text{ mm}$	$s_{AP}' = -40.5 \text{ mm}$
$HH' = -6.8 \text{ mm}$	$\Sigma d = 34.8 \text{ mm}$

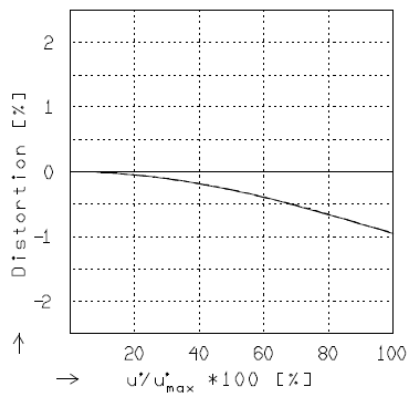


## RELATIVE ILLUMINATION

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

$$f / 1.5$$

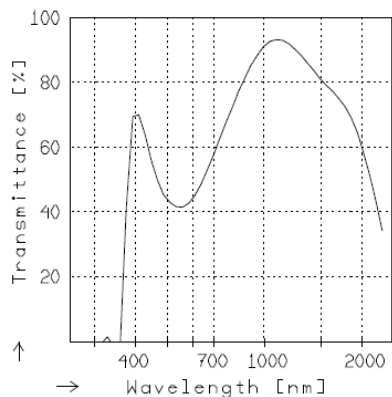
— $\beta' = 0.0000$	$u'_{max} = 5.4$	$00' = \infty$
- - $\beta' = 0.0000$	$u'_{max} = 5.4$	$00' = \infty$
---- $\beta' = 0.0000$	$u'_{max} = 5.4$	$00' = \infty$



## DISTORTION

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

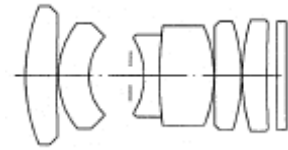
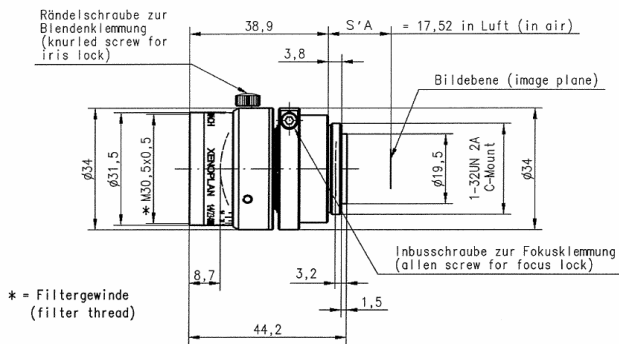
— $\beta' = 0.0000$	$u'_{max} = 5.4$	$00' = \infty$
- - $\beta' = 0.0000$	$u'_{max} = 5.4$	$00' = \infty$
---- $\beta' = 0.0000$	$u'_{max} = 5.4$	$00' = \infty$



## TRANSMITTANCE

Relative spectral transmittance is shown with reference to wavelength.

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$f^*$ = 23.1 mm	$\beta_p$ = 2.341
$s_F$ = 9.0 mm	$s_{EP}$ = 18.8 mm
$s_{F^*}$ = 13.6 mm	$s_{AP}$ = -10.5 mm
$HH'$ = -6.8 mm	$\Sigma d$ = 34.8 mm

