

Macro lens

Apo-Componon 4.0/60-0016

Unlike conventional camera lenses where the optical performance decreases as the magnification increases, Schneider-Kreuznach macro lenses have been developed and corrected exclusively for the close-up range of 1:20 to 1:1. Due to its mechanical stability and the robust V-mount interface enabling simpler adjustment of the best azimuth position, the system is exceptionally well suited to demanding, continuous industrial use.



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Key Features

- Excellent optical imaging performance when using large sensors
- Vibration-insensitive for stable optical performance
- Industry-compatible V-mount interface
- Lockable distance and aperture settings
- Infinitely adjustable aperture, guaranteed long-term stability
- 100% quality control guarantees reliability and constant quality
- Low maintenance requirements, therefore high system reliability

Applications

- Machine Vision and other imaging applications
- PCB inspection
- LCD inspection
- OLED inspection
- Solar inspection

Technical Specifications

F-number	4.0
Focal length	59.9 mm
Image circle	60 mm
Magnification	-0,17
Transmission	400 - 700 nm
Interface	V-Mount
Weight	120 gr.
Option	Optical filter

Contact

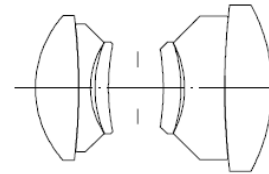
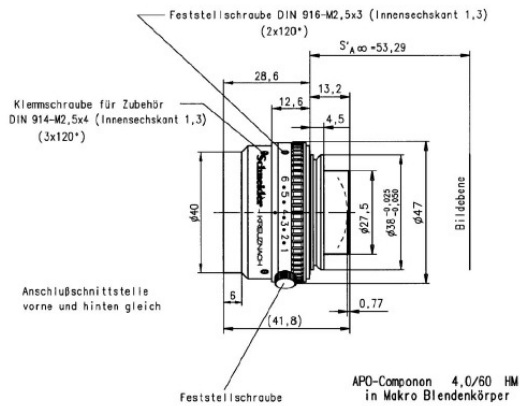
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Pyramid Imaging



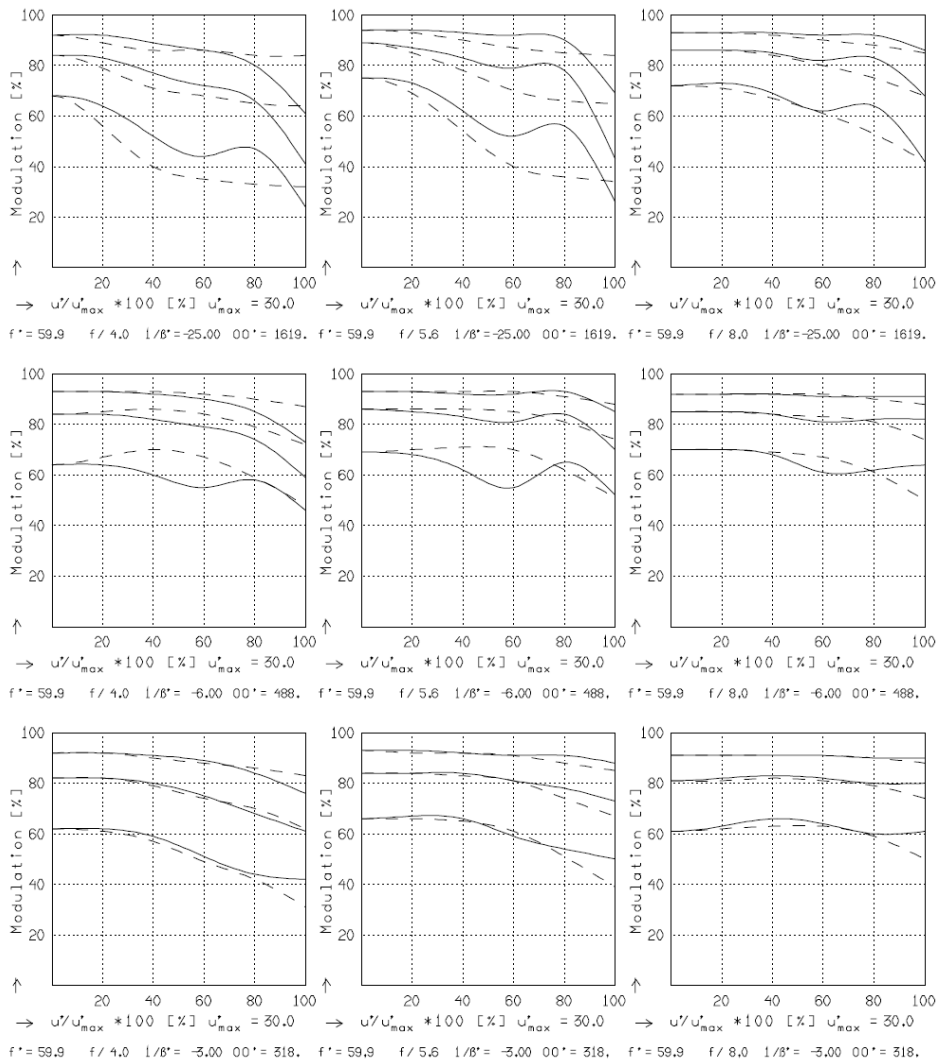
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f^*	= 59.9 mm	β_p	= 0.970
s_F	= -17.1 mm	s_{EP}	= 14.6 mm
s_F^*	= 40.9 mm	s_{AP}^*	= -17.3 mm
HH^*	= -1.9 mm	Σd	= 30.0 mm

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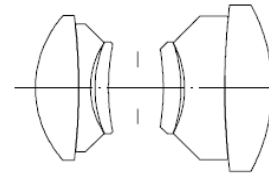
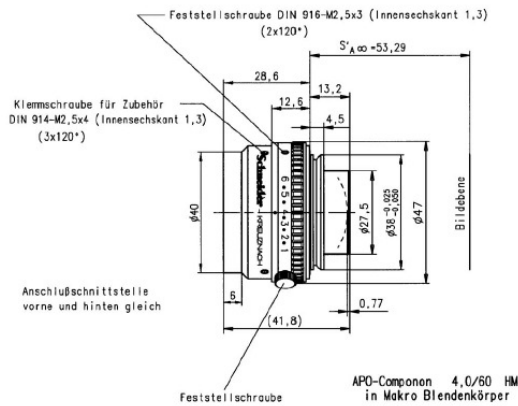
MODULATION with reference to the relative image height

Wavelength λ	[nm]	546	706	644	480	436	405
Spectral weighting	[%]	27.4	12.4	24.1	18.3	12.6	5.2
Spatial frequency R	[1/mm]	10	20	40			
Format	[mm X mm]	42.0	X	42.0			
Diagonal $2u'$	[mm]	60.0					



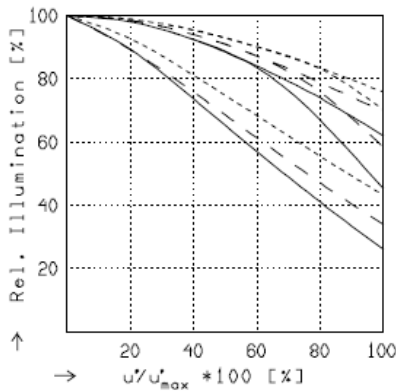
Focusing : MTF_{max} at f / 4.0 . R = 20 1/mm. $u'/u'_{max} = 0$

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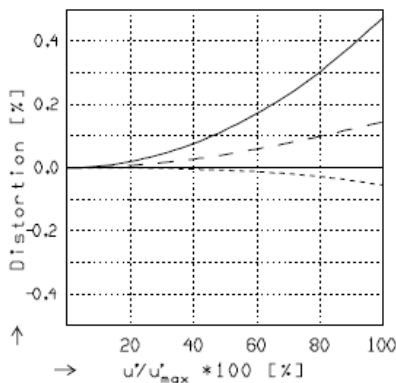
$f' = 59.9 \text{ mm}$	$\beta'_p = 0.970$
$s_F = -47.1 \text{ mm}$	$s_{EP} = 14.6 \text{ mm}$
$s'_F = 40.9 \text{ mm}$	$s'_{AP} = -17.3 \text{ mm}$
$HH' = -1.9 \text{ mm}$	$\Sigma d = 30.0 \text{ mm}$



RELATIVE ILLUMINATION

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

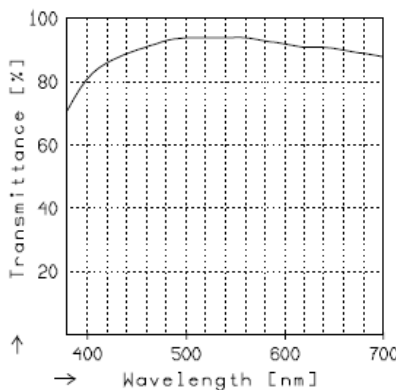
	$f / 4.0$	$f / 5.6$	$f / 8.0$
— $\beta' = -0.0400$	$u'_{max} = 30.1$	$00' = 1619.$	
- - $\beta' = -0.1667$	$u'_{max} = 30.0$	$00' = 488.$	
- - - $\beta' = -0.3333$	$u'_{max} = 30.0$	$00' = 318.$	



DISTORTION

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

— $\beta' = -0.0400$	$u'_{max} = 30.0$	$00' = 1619.$
- - $\beta' = -0.1667$	$u'_{max} = 30.0$	$00' = 488.$
- - - $\beta' = -0.3333$	$u'_{max} = 30.0$	$00' = 318.$



TRANSMITTANCE

Relative spectral transmittance is shown with reference to wavelength.



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