

# Macro lens

## Apo-Componon 2.8/40-0007

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	2.8
Focal length	41.5 mm
Image circle	43,2 mm
Magnification	-0,10
Transmission	400 - 700 nm
Interface	V-Mount
Weight	108 gr.
Option	Optical filter

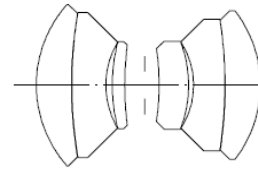
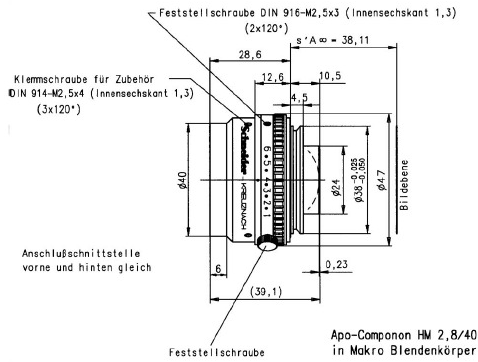
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## APO-COMPONON 2.8/40

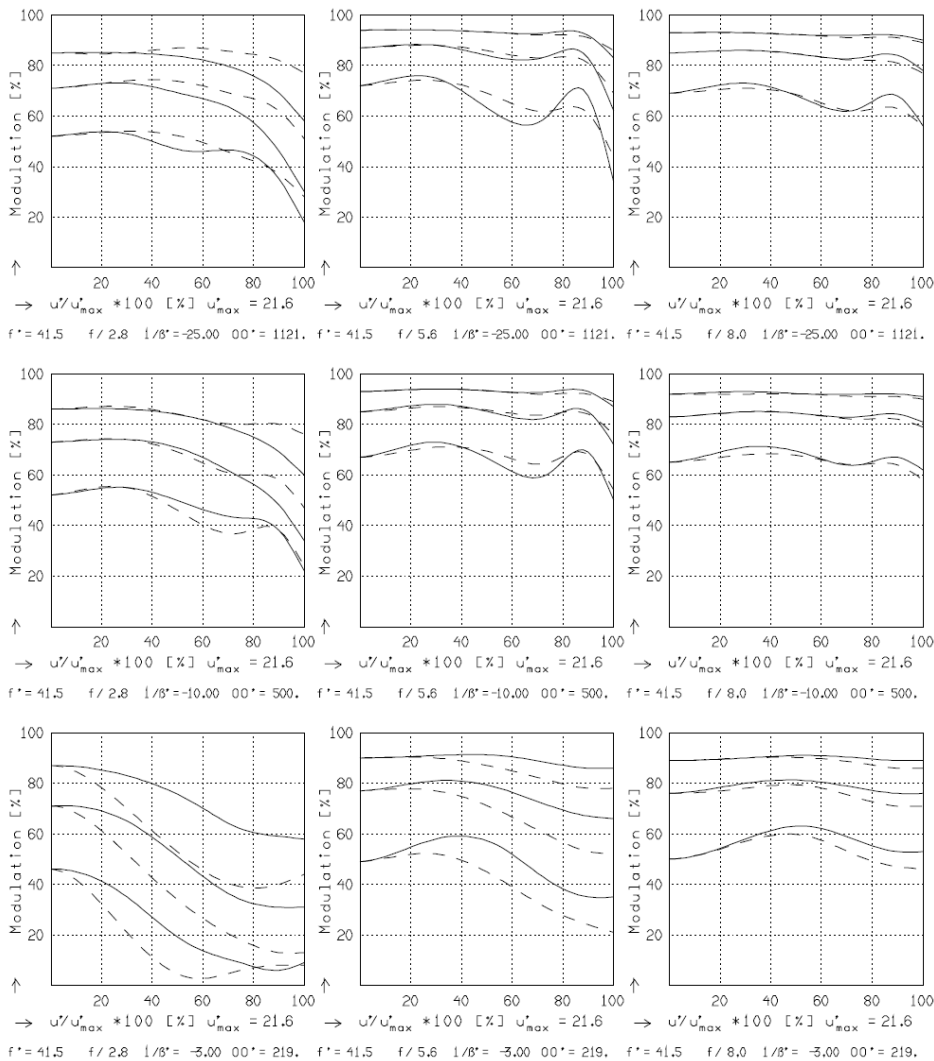
$f^*$ = 41.5 mm	$\beta_p$ = 1.049
$s_F$ = -24.5 mm	$s_{EP}$ = 15.0 mm
$s_F^*$ = 27.8 mm	$s_{AP}^*$ = -15.7 mm
$HH^*$ = -2.2 mm	$\Sigma d$ = 28.5 mm

### APO-COMPONON 2.8/40

MODULATION with reference to the relative image height

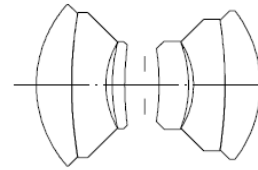
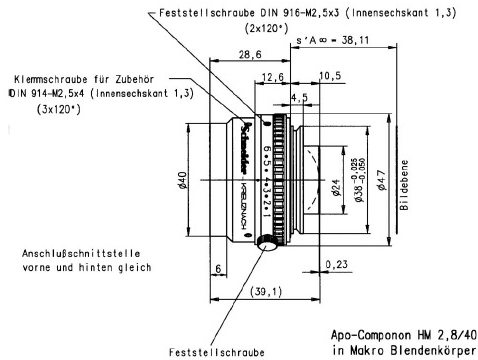
Wavelength $\lambda$ [nm] :	546	706	644	480	436	405
Spectral weighting [%] :	27.4	12.4	24.1	18.3	12.6	5.2
Spatial frequency R [1/mm] :	10	20	40			
Format [mm X mm] :	24.0	X	36.0			
Diagonal $2u'$ [mm] :	43.2					

radial —  
tangential - - -



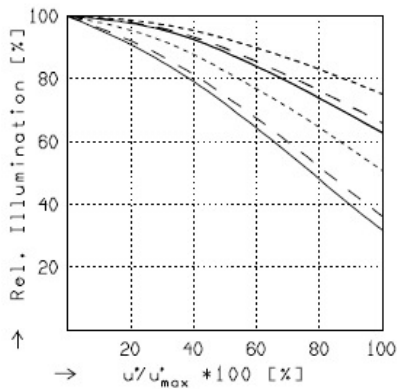
Focusing : MTF<sub>max</sub> at  $f/2.8$  . R = 20 1/mm.  $u'/u'_{max} = 0$

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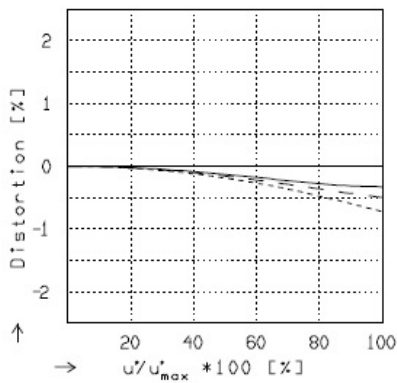
$f' = 41.5 \text{ mm}$	$\beta_p' = 1.049$
$s_F = -24.5 \text{ mm}$	$s_{EP} = 15.0 \text{ mm}$
$s_{F'} = 27.8 \text{ mm}$	$s_{AP} = -15.7 \text{ mm}$
$HH' = -2.2 \text{ mm}$	$\Sigma d = 28.5 \text{ mm}$



## RELATIVE ILLUMINATION

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

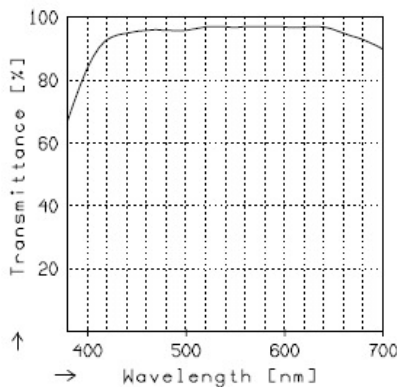
	$f / 2.8$	$f / 5.6$	$f / 8.0$
— $\beta' = -0.0400$	$u_{max}' = 21.6$	$00' = 1121.$	
- - $\beta' = -0.1000$	$u_{max}' = 21.6$	$00' = 500.$	
- · - $\beta' = -0.3333$	$u_{max}' = 21.6$	$00' = 219.$	



## DISTORTION

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

— $\beta' = -0.0400$	$u_{max}' = 21.6$	$00' = 1121.$
- - $\beta' = -0.1000$	$u_{max}' = 21.6$	$00' = 500.$
- · - $\beta' = -0.3333$	$u_{max}' = 21.6$	$00' = 219.$



## TRANSMITTANCE

Relative spectral transmittance is shown with reference to wavelength.