

# Macro lens

## Componon 2.8/28-0001

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	29.3 mm
Image circle	30 mm
Magnification	-0,12
Transmission	400 - 700 nm
Interface	V-Mount
Weight	105 gr.
Option	Optical filter

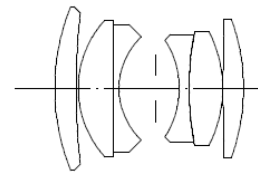
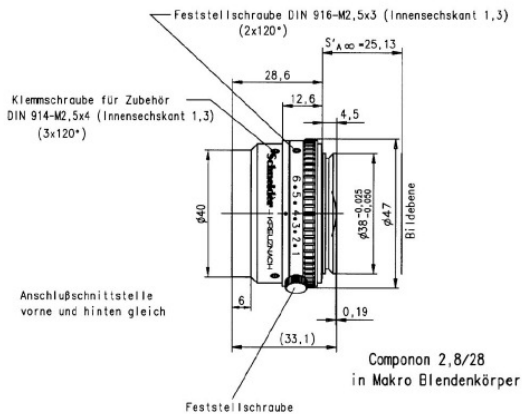
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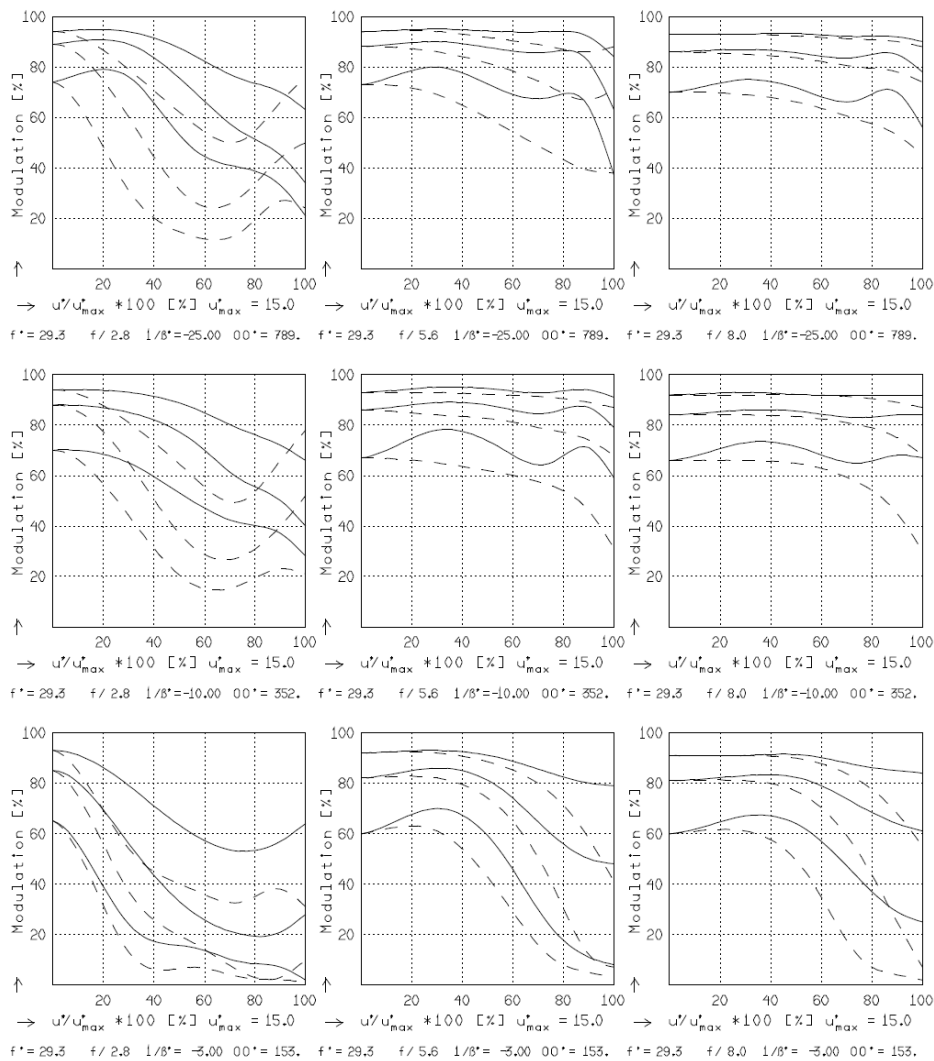
## CPN 2.8/28

$f^*$ = 29,3 mm	$\beta_p^*$ = 1,041
$s_F$ = -16,3 mm	$s_{EP}$ = 11,8 mm
$s_F^*$ = 20,8 mm	$s_{AP}^*$ = -9,7 mm
$HH^*$ = -2,9 mm	$\Sigma d$ = 18,5 mm

## CPN 2.8/28

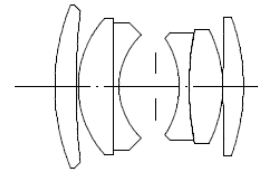
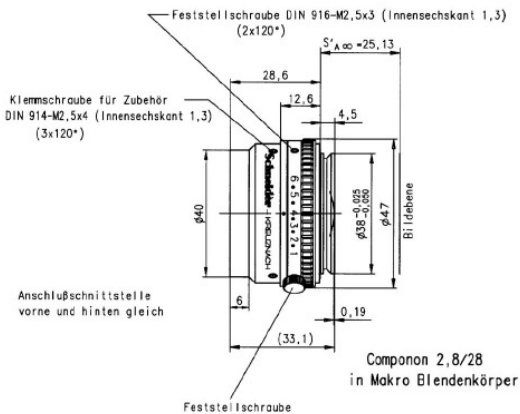
### MODULATION with reference to the relative image height

Wavelength $\lambda$ [nm] :	546	706	644	480	436	405
Spatial 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] :	23.0		X 23.0			
Diagonal $2u'$ [mm] :	30.0					



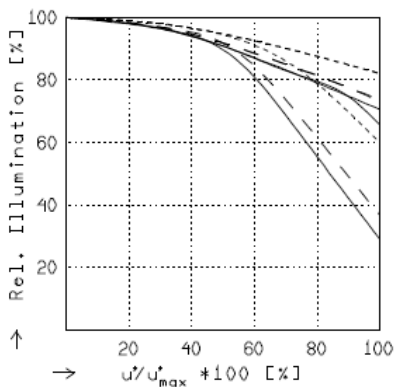
Focusing : MTF<sub>max</sub> at f / 2.8 . R = 20 1/mm.  $u'/u'_{max} = 0$

# Componon 2.8/28



## CPN 2.8/28

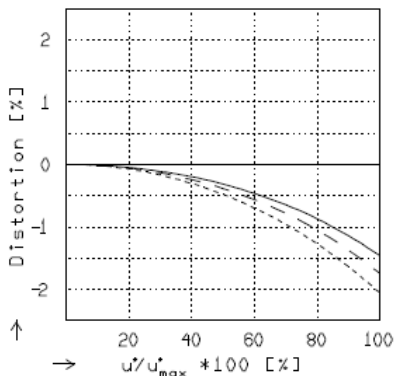
$f^* = 29.3 \text{ mm}$	$\beta_p^* = 1.041$
$s_F = -16.3 \text{ mm}$	$s_{EP} = 11.8 \text{ mm}$
$s_{F'}^* = 20.8 \text{ mm}$	$s_{A'P}^* = -9.7 \text{ mm}$
$HH^* = -2.9 \text{ mm}$	$\Sigma d = 18.5 \text{ mm}$



## RELATIVE ILLUMINATION

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

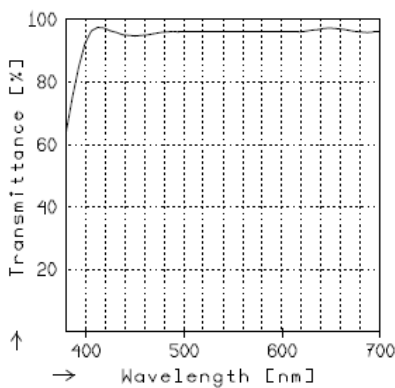
	$f / 2.8$	$f / 5.6$	$f / 8.0$
— $\beta^* = -0.0400$	$u_{max}^* = 14.8$	$00^* = 789.$	
- - $\beta^* = -0.1000$	$u_{max}^* = 14.7$	$00^* = 352.$	
.... $\beta^* = -0.33333$	$u_{max}^* = 14.7$	$00^* = 153.$	



## DISTORTION

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

— $\beta^* = -0.0400$	$u_{max}^* = 14.7$	$00^* = 789.$
- - $\beta^* = -0.1000$	$u_{max}^* = 14.7$	$00^* = 352.$
.... $\beta^* = -0.33333$	$u_{max}^* = 14.7$	$00^* = 153.$



## TRANSMITTANCE

Relative spectral transmittance is shown with reference to wavelength.