Xenon-Emerald Lens

XENON-EMERALD 2.9/100-L

Many camera manufacturers are using the F-Mount bayonet as the camera/lens interface of their high resolution area and line scan cameras. Schneider-Kreuznach has addressed this topic with the new series of industrial XENON EMERALD lenses. These low distortion lenses with an image circle diameter of 43.2mm are compact, robust, lockable in distance and aperture, designed for close up range or infinity and optimized for a uniform image quality over the whole sensor area. The 400-1000 nm broadband coating makes them suitable for applications in the visible and the near infrared spectrum. The option of alternative mounts like e.g. Canon bayonet or M42 thread makes them even more flexible for a wide range of applications in machine vision, quality control, web inspection and other image processing applications.

XENON-EMERALD

Key Features

- Robust mechanics for rough industrial environment
- Compact design and low weight
- Focus and iris setting lockable
- High resolution optics 400 - 700 nm (VIS) / 700 - 1000 nm (NIR)
- Corrected for infinity
- Constant MTF over the entire image field

Applications

- Machine vision and other imaging applications
- Quality control
- Web inspection
- Surface inspection
- Line scan applications

Technical Specifications

|	
F-number	2.9
Focal length	100.9 mm
Image circle	43.2 mm
Transmission	400 - 1000 nm
Interface	F-Mount
Weight	460 gr.
Filter Thread	M43 x 0.75
Code No. (F-Mount)	1070506
Code No. (Canon-Mount)	1073835
Code No. (V48)	1073834

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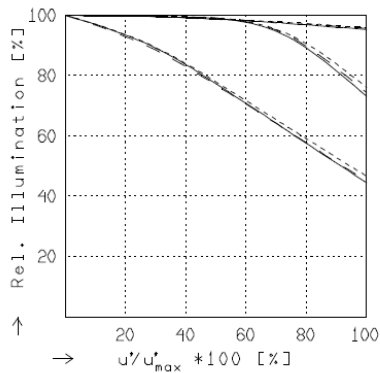info@schneider-asiapacific.com

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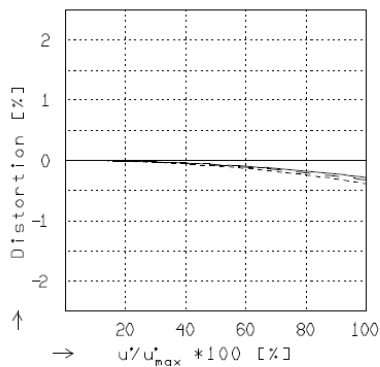
XENON-EMERALD 2.9/100-L
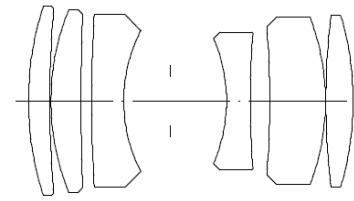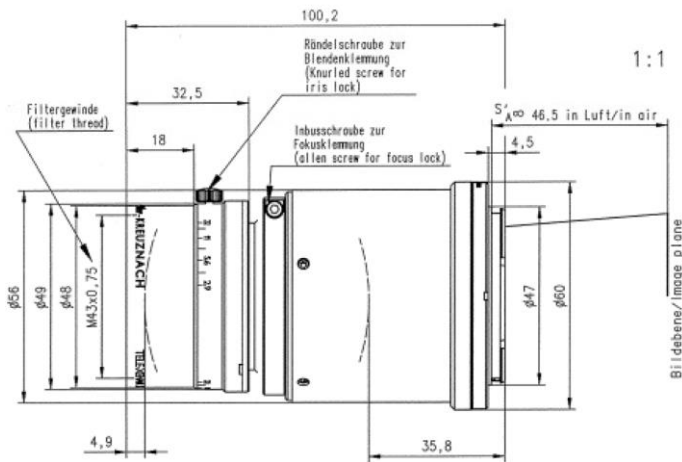
XENON-EMERALD 2.9/100 L

f'	= 100.9 mm	ß'$_P$	= 1.318
s$_F$	= −46.4 mm	s$_{EP}$	= 30.2 mm
s'$_{F'}$	= 78.7 mm	s'$_{AP}$	= −54.3 mm
HH'	= −17.3 mm	Σ d	= 59.4 mm

RELATIVE ILLUMINATION

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

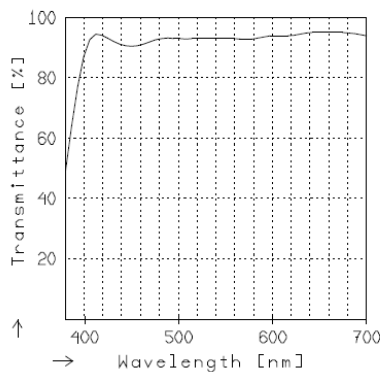f / 2.9   f / 4.0   f / 8.0

——— ß' = 0.0000	u'$_{max}$ = 21.5	OO'= ∞
— — ß' = −0.0200	u'$_{max}$ = 21.5	OO'= 5233.
----- ß' = −0.0500	u'$_{max}$ = 21.5	OO'= 2208.

DISTORTION

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

——— ß' = 0.0000	u'$_{max}$ = 21.5	OO'= ∞
— — ß' = −0.0200	u'$_{max}$ = 21.5	OO'= 5233.
----- ß' = −0.0500	u'$_{max}$ = 21.5	OO'= 2208.

TRANSMITTANCE

Relative spectral transmittance is shown with reference to wavelength.
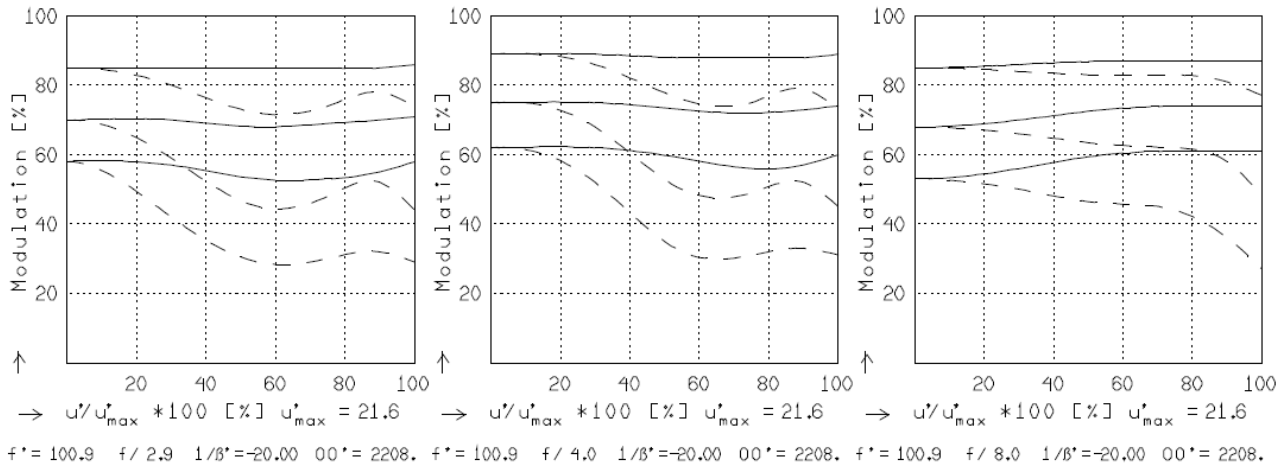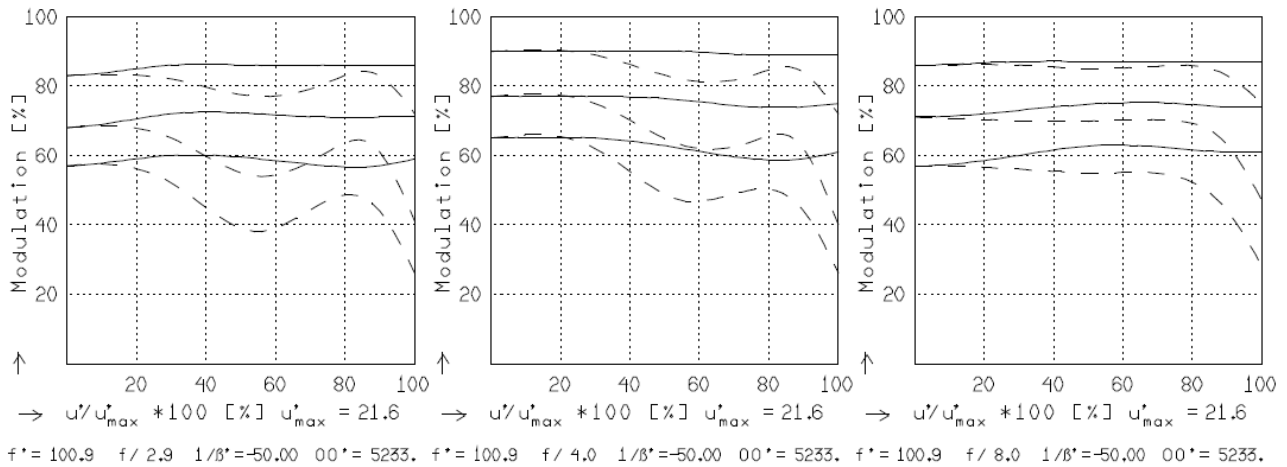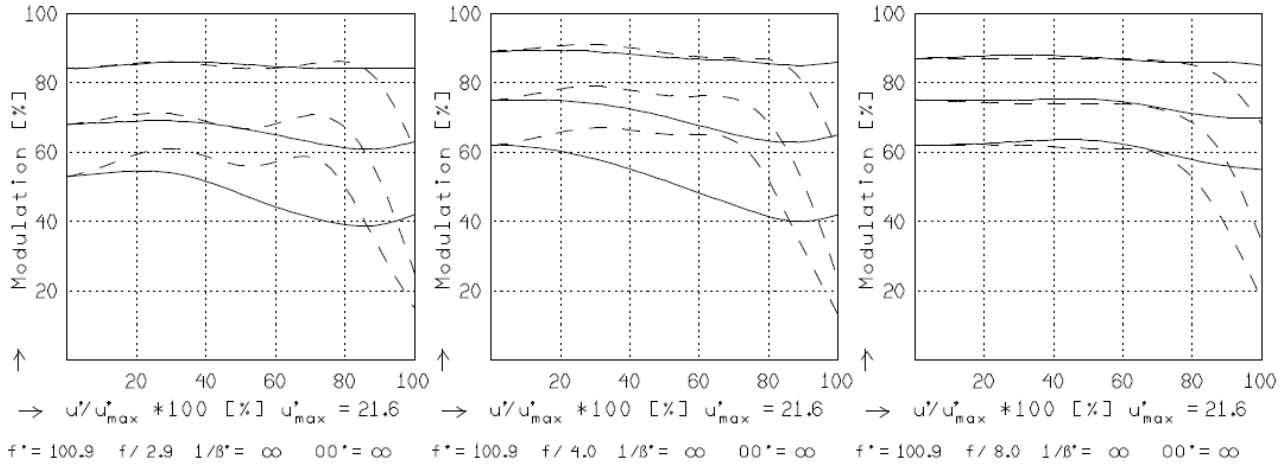
XENON-EMERALD 2.9/100-L

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XENON-EMERALD 2.9/100 L

MODULATION with reference to the relative image height

Wavelength       λ        [nm] :    546    644    588    486    436    420
Spectral weighting        [%] :   27.4   16.6   25.8   21.7    8.5    0.0
Spatial frequency R [1/mm] :    20     40     60
Format           [mm X mm] :   24.0         36.0                 radial    _____
Diagonal 2u'              [mm] :   43.2                          tangential  _ _
```



```
f'= 100.9   f / 2.9   1/ß'= ∞      00'= ∞        f'= 100.9   f / 4.0   1/ß'= ∞      00'= ∞        f'= 100.9   f / 8.0   1/ß'= ∞      00'= ∞
```

```
f'= 100.9   f / 2.9   1/ß'=-50.00  00'= 5233.   f'= 100.9   f / 4.0   1/ß'=-50.00  00'= 5233.   f'= 100.9   f / 8.0   1/ß'=-50.00  00'= 5233.
```

```
f'= 100.9   f / 2.9   1/ß'=-20.00  00'= 2208.   f'= 100.9   f / 4.0   1/ß'=-20.00  00'= 2208.   f'= 100.9   f / 8.0   1/ß'=-20.00  00'= 2208.
```

```
Focusing :   MTF_max  at  f / 2.9  .  R = 60   1/mm,  u'/u'_max = 0
```