# Xenon-Emerald 2.8/28 S | F-Mount

This F-Mount lens is for large formats. A V48-Mount for more flexibility on request. Optimized for shorter distances, magnifications around 1:10. The low field of curvature makes the lens the ideal choice where a compact lens inquires large field of view. The robust lenses are for quality control as well as for medical applications. We also offer a version optimized for long working distances.

## Key features

- F-Mount
- 43.2 mm image circle
- optimized for short working distances
- 400-1000 nm broadband AR-coating

## Applications

- Quality control
- Code reader
- Web inspection
- Factory automation

## Technical specifications

| | |
|---|---|
| Type | -0006 |
| ID | 1071609 |
| Interface | F-Mount |
| Focal length [mm] | 28 |
| F/# range | F/2.8 ... F/22 |
| Numerical aperture | 0.18 |
| Max. sensor size [mm] | 43.2 |
| Max. angle of view [°] | 76 |
| Rec. magnification range | -0.1 ... -0.03 |
| Rec. working distance range [mm] | 265 ... 939 |
| Max. mechanical focus travel [mm] | - |
| Filter thread [mm] | M62 x 0.75 |
| Storage temperature [°C] | -25 … +70 |
| Net. weight [g] | 517 |
| Additional info | - |
| f'eff [mm] | 28.77 |
| SF [mm] | 19.96 |
| S'F' [mm] | 37.98 |
| HH' [mm] | 56.58 |
| ß'P | 3.64 |
| SEP [mm] | 27.85 |
| S'AP [mm] | -66.86 |
| Σd [mm] | 96.09 |

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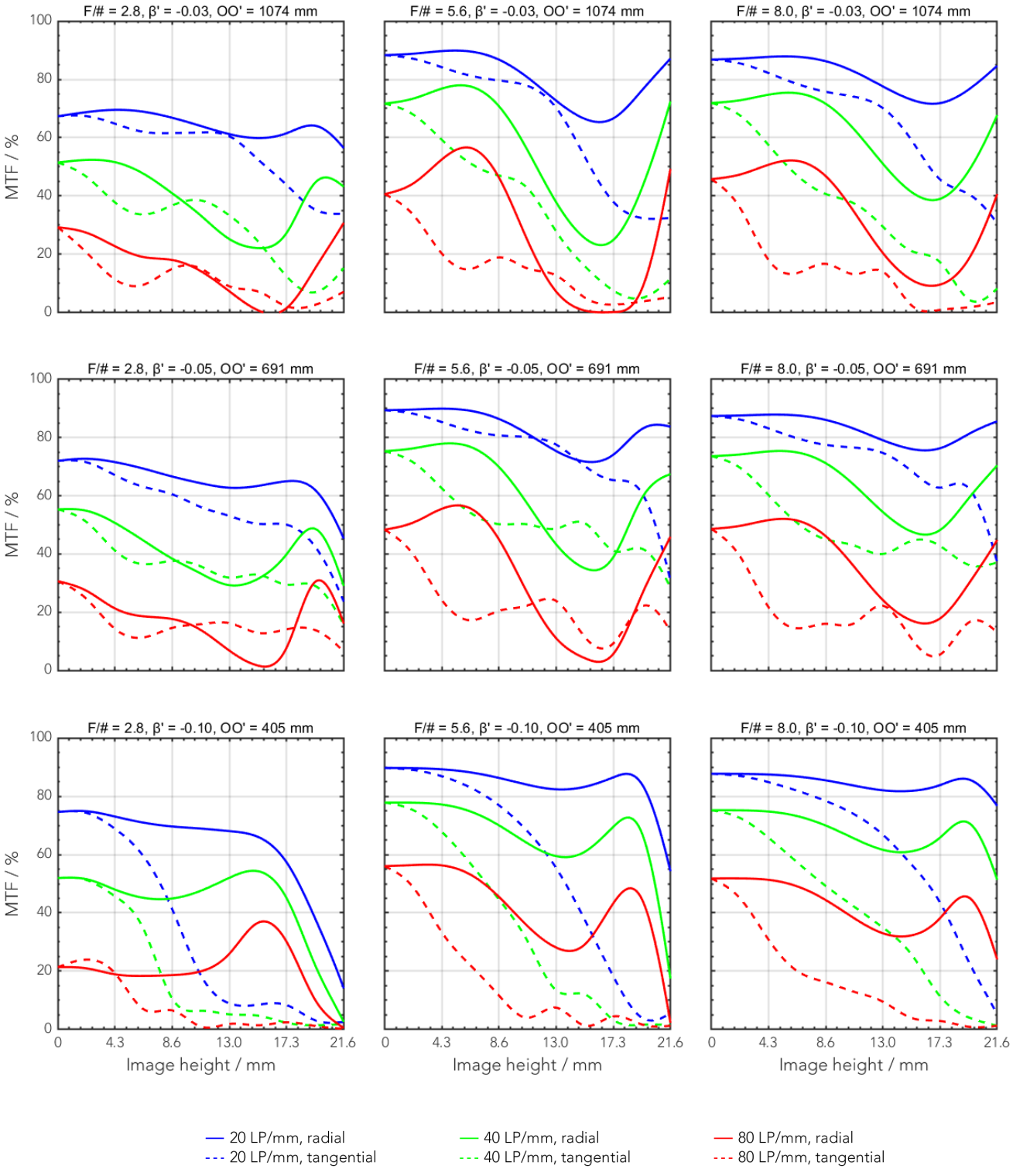
## MTF charts

| Spectrum name | VIS | | | | | |
|---|---|---|---|---|---|---|
| Wavelengths [nm] | 425 | 475 | 525 | 575 | 625 | 675 |
| Rel. weights [%] | 8 | 16 | 23 | 22 | 19 | 13 |

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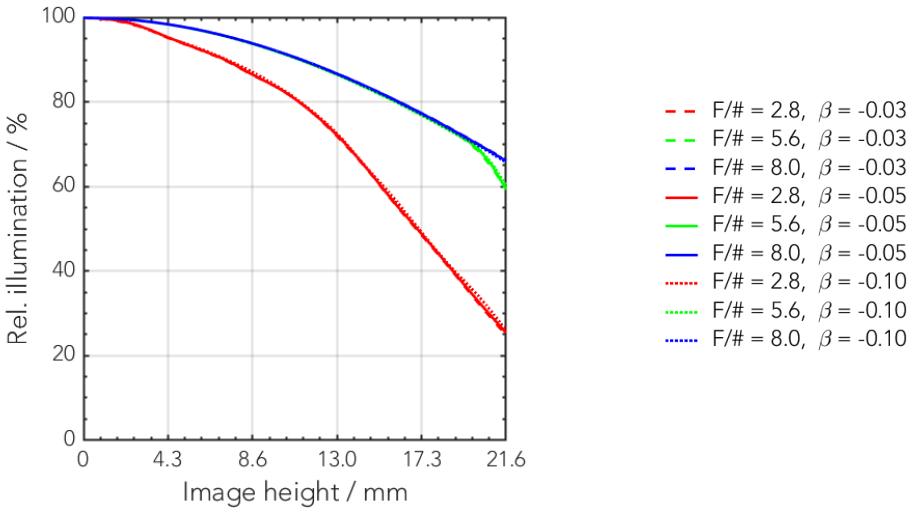
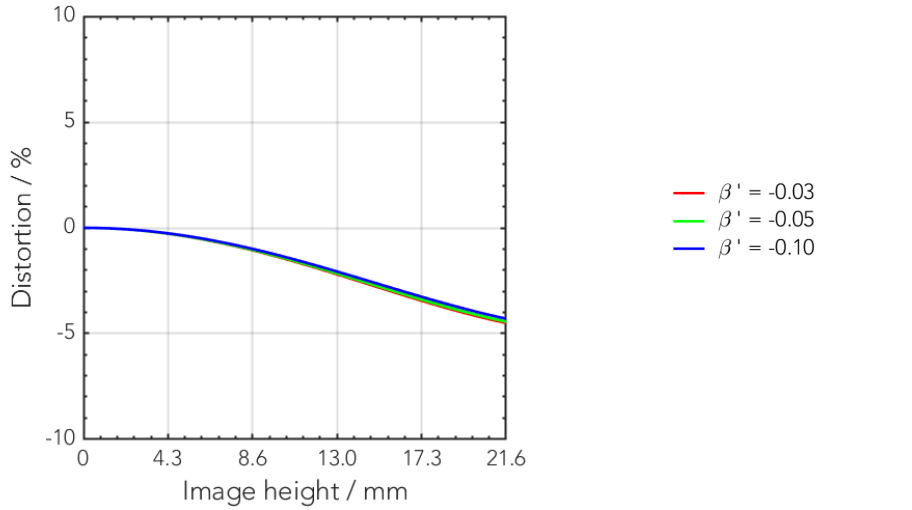
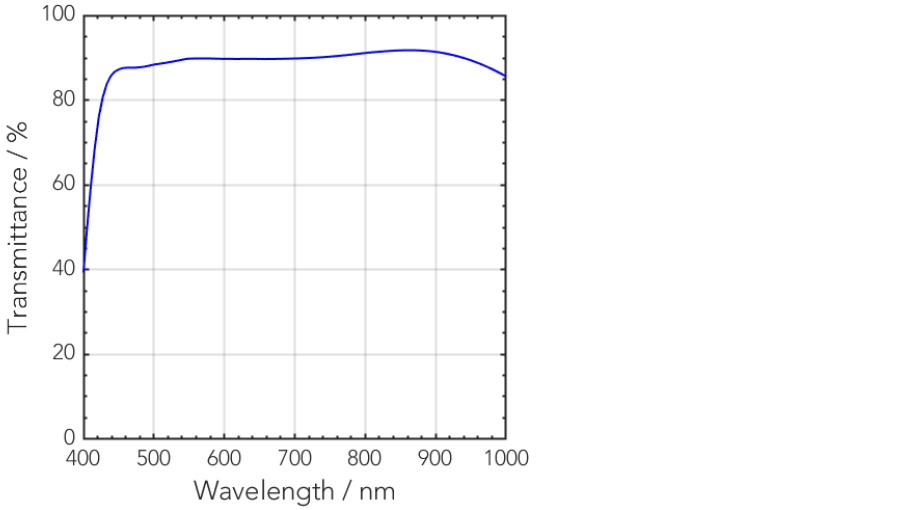
## Rel. illumination vs. image height




## Distortion vs. image height




## Transmittance vs. wavelength

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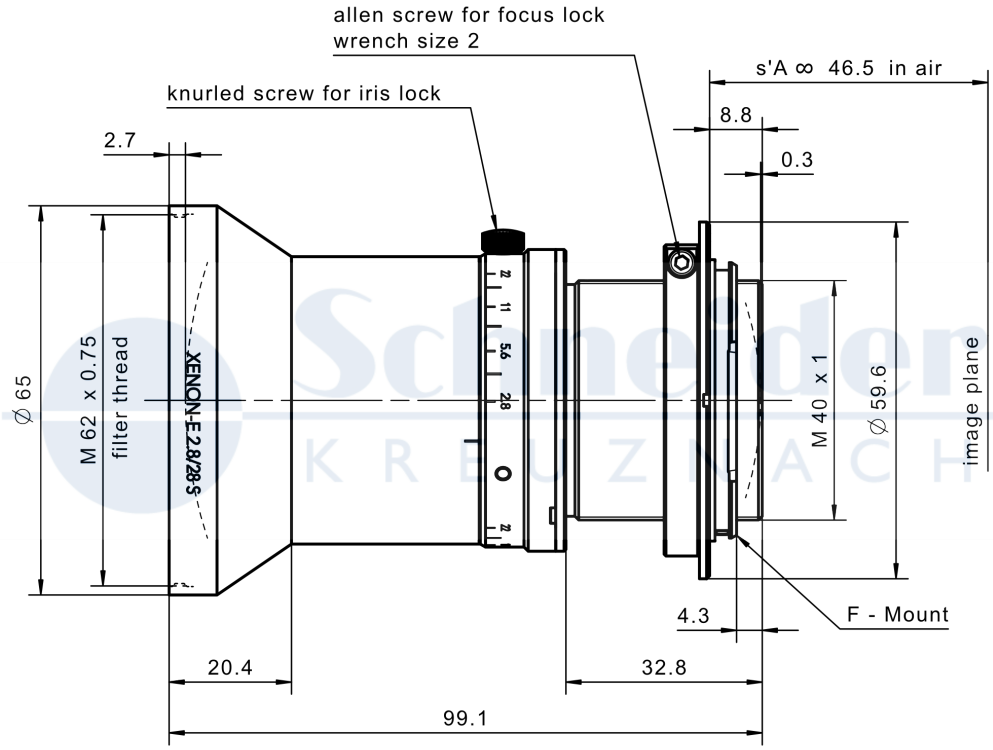
## Technical drawings




standard

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| Annotation | |
|---|---|
| Focal length | Nominal focal length |
| F/# range | Image space F-number range for infinity focus position |
| Numerical aperture | Maximum real numerical aperture (depending on recommended magnification range either for infinity or respective fixed magnification) |
| Max. sensor size | Image circle diameter |
| Max. angle of view | Angle of view associated with maximum sensor size (depending on recommended magnification range either for infinity or respective fixed magnification) |
| Rec. magnification range | Magnification range as recommended by Schneider-Kreuznach |
| Rec. working distance range | Working distance, i.e. distance between object and first mechanical element, associated with recommended magnification range |
| Max. mechanical focus travel | Maximum possible movement of the lens from infinity position (depending on recommended magnification range either for infinity or respective fixed magnification) |
| Net weight | weight of unpacked lens without lens cap |
| f'eff | Effective focal length |
| SF | Distance between vertex of first lens surface and object space focal point |
| S'F' | Distance between vertex of last lens surface and image space focal point (back focal distance at infinity) |
| HH' | Distance between principal planes |
| ß'P | Pupil magnification (= exit pupil diameter / entrance pupil diameter) |
| SEP | Distance between vertex of first lens surface and entrance pupil |
| S'AP | Distance between vertex of last lens surface and exit pupil |
| Σ d | Distance between vertices of first and last lens surface |
| s'A | Flange focal distance (in air) for infinite object distance (depending on recommended magnification range either for infinity or respective fixed magnification) |
| ß' | Magnification (= image size / object size), negative value because image is inverted |
| OO' | Distance between object and image |

Unless otherwise stated all dimensions in this data sheet are in mm.

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