

This highspeed lens is optimized for 16k with 3.5 μm (57.3 mm) and 12k / 5 μm (62.5 mm) line scan sensors but also can be used in many applications with area sensors up to 67mm diagonal. Optimized for a specific magnification of 0.07x the lens provides high performance in a compact and robust package. The V70-Mount interface makes it easy to install numerous mounts and allows the rotation of the lens into the best azimuth.

Key features

- Designed for 16k / 3.5 μm and 12k / 5 μm line scan sensors
- Best azimuth marking
- 400 nm to 1000 nm broadband AR-coating
- Lockable distance and aperture settings

Applications

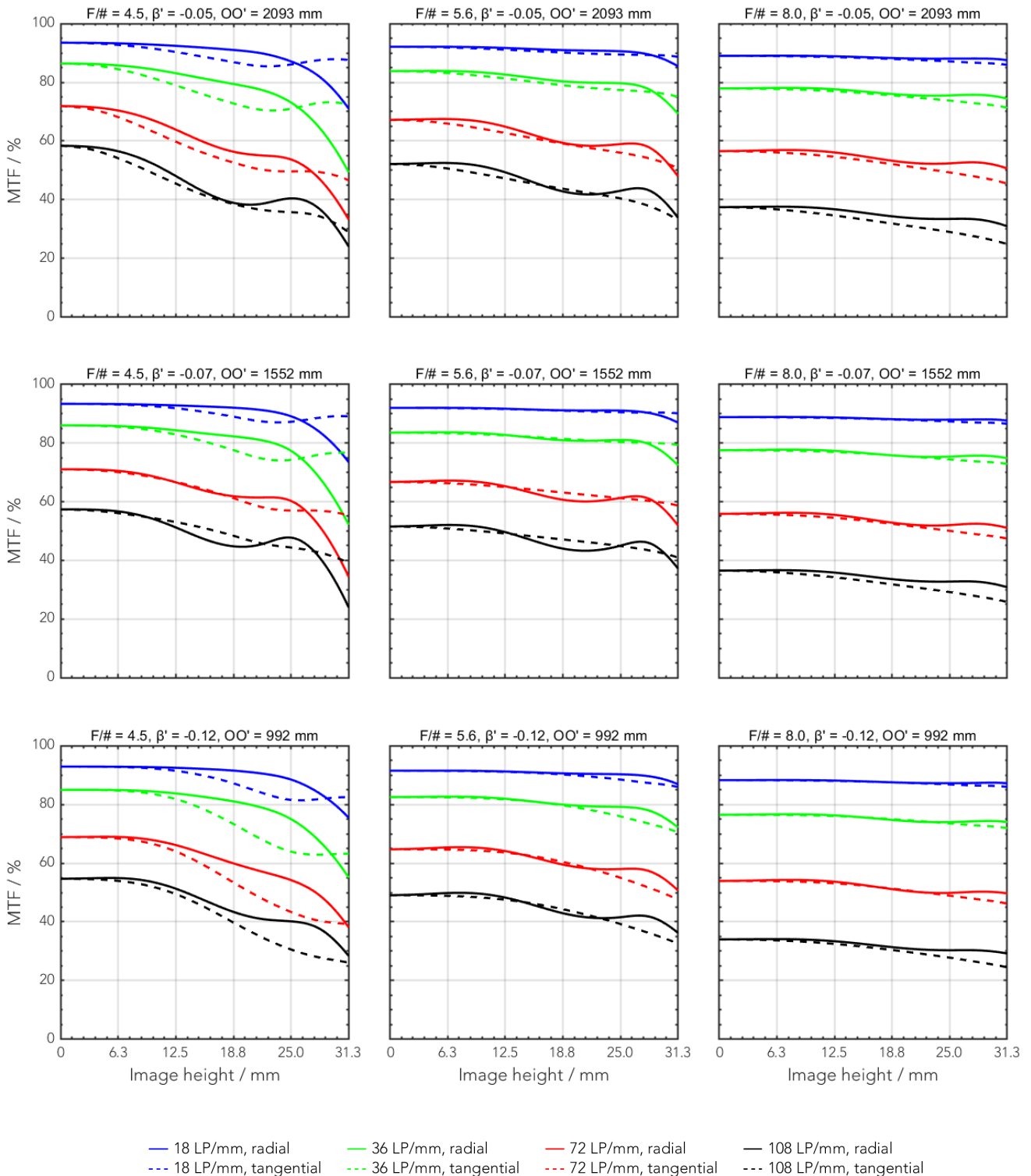
- FPD inspection
- PCB inspection
- High resolution defect detection
- AOI (Automated Optical Inspection)

Technical specifications

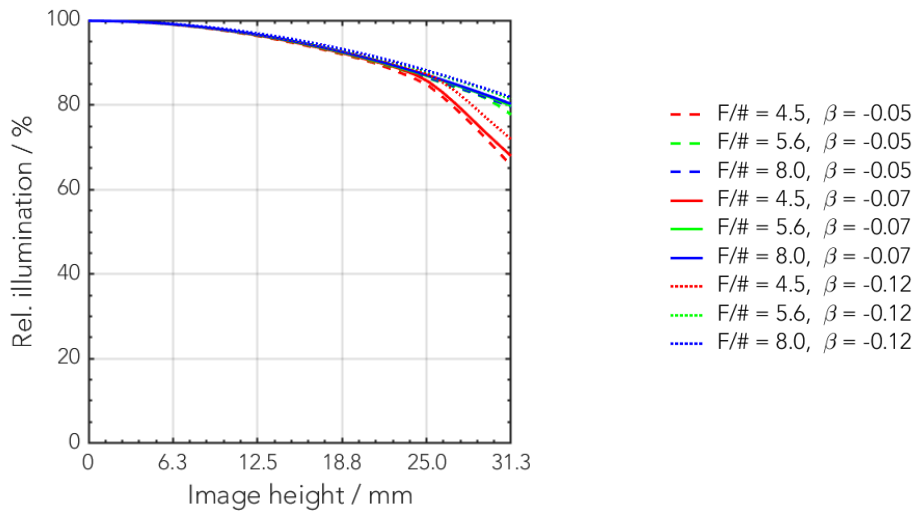
| | |
|-------------------------------------|-------------------------|
| Type [standard] | V70 |
| ID [standard] | 1068013 |
| Interface | V70-Mount |
| Focal length [mm] | 95 |
| F/# range | F/4.5 ... F/8 |
| Numerical aperture [object image] | 0.007 0.10 |
| Max. sensor size [mm] | 62.5 |
| Max. angle of view [°] | 34 |
| Rec. magnification range | -0.07 (-0.17 ... -0.03) |
| Rec. working distance range [mm] | 601 ... 3209 |
| Max. mechanical focus travel [mm] | 23.9 |
| Filter thread [mm] | M52 x 0.75 |
| Storage temperature [°C] | -25 ... +70 |
| Net. weight [standard] [g] | 735 |
| Additional info | - |
| f'eff [mm] | 95.00 |
| SF [mm] | -50.28 |
| S'F' [mm] | 53.16 |
| HH' [mm] | -1.92 |
| β' P | 1.00 |
| SEP [mm] | 44.59 |
| S'AP [mm] | -41.96 |
| Σd [mm] | 84.63 |

MTF charts

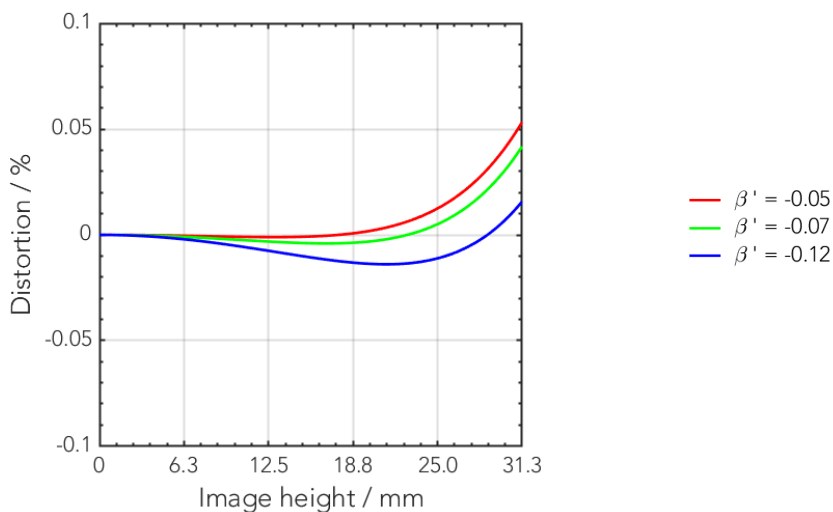
| Spectrum name | VIS | | | | | |
|------------------|-----|-----|-----|-----|-----|-----|
| Wavelengths [nm] | 425 | 475 | 525 | 575 | 625 | 675 |
| Rel. weights [%] | 8 | 16 | 23 | 22 | 19 | 13 |



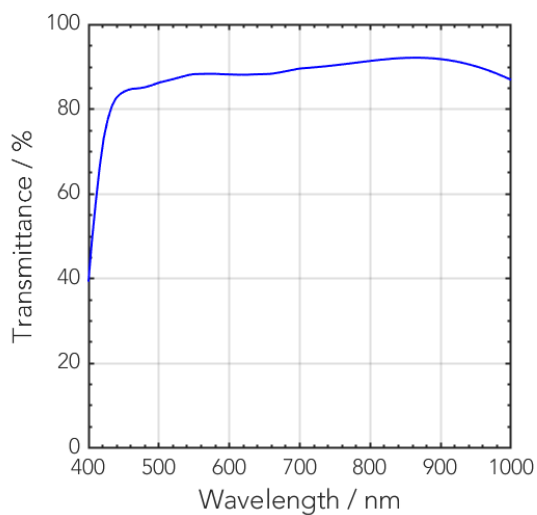
Rel. illumination vs. image height



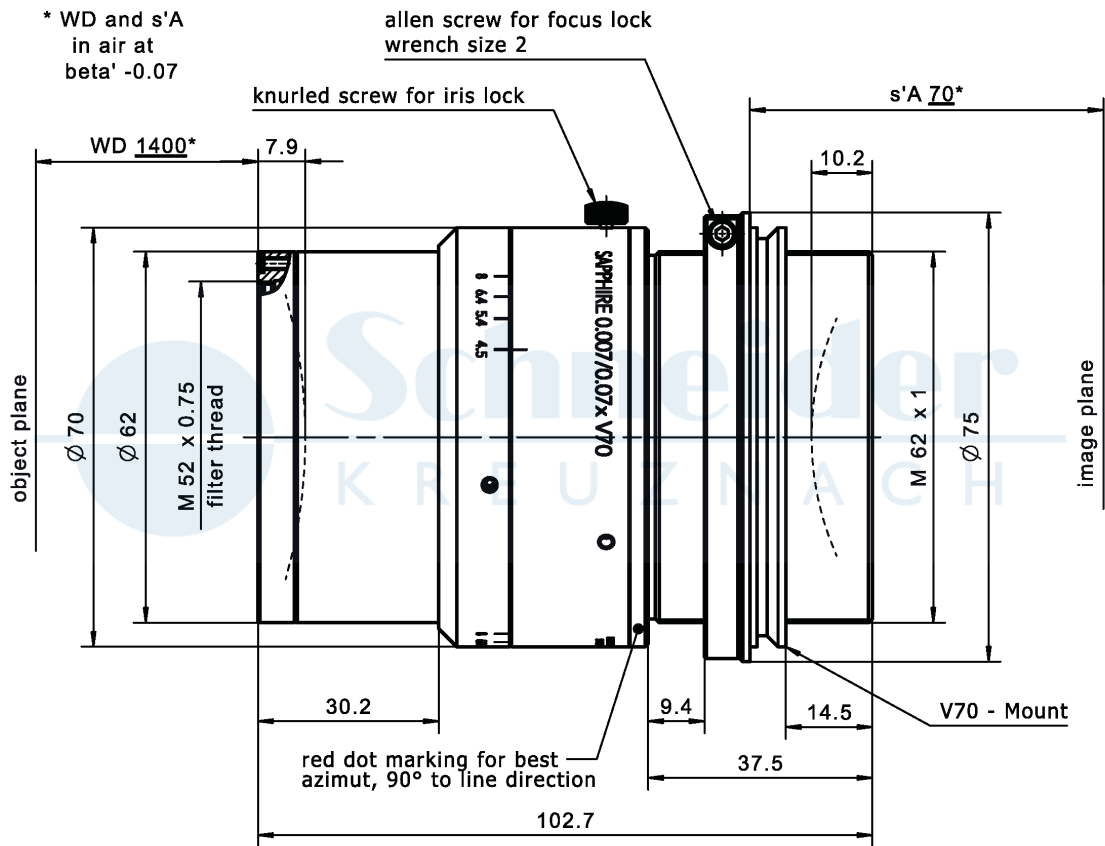
Distortion vs. image height



Transmittance vs. wavelength



Technical drawings



| Accessories | Mount | Eff. length | ID |
|----------------|-------------------------|-------------|---------|
| Adapter | V70 / M72 x 0.75 | 10 mm | 1072419 |
| | M72 x 0.75 / M42 x 1 | 6 mm | 1079515 |
| | M72 x 0.75 / M58 x 0.75 | 4 mm | 1075556 |
| | M72 x 0.75 / M90 x 1 | 4 mm | 1084879 |
| | M72 x 0.75 / M95 x 1 | 4 mm | 1077013 |
| Extension tube | M72 x 0.75 / M72 x 0.75 | 5 mm | 1072420 |
| | M72 x 0.75 / M72 x 0.75 | 10 mm | 1072421 |
| | M72 x 0.75 / M72 x 0.75 | 25 mm | 26406 |
| | M72 x 0.75 / M72 x 0.75 | 50 mm | 1054733 |
| | M72 x 0.75 / M72 x 0.75 | 100 mm | 1079483 |
| | M90 x 1 / M90 x 1 | 10 mm | 1084875 |
| | M90 x 1 / M90 x 1 | 25 mm | 1084876 |
| | M90 x 1 / M90 x 1 | 50 mm | 1084877 |
| | M90 x 1 / M90 x 1 | 100 mm | 1084878 |
| | M95 x 1 / M95 x 1 | 10 mm | 1077290 |
| | M95 x 1 / M95 x 1 | 25 mm | 1062892 |
| | M95 x 1 / M95 x 1 | 50 mm | 1062893 |
| | M95 x 1 / M95 x 1 | 100 mm | 1062894 |
| | M95 x 1 / M95 x 1 | 200 mm | 1077291 |

| 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 |
| $\beta'P$ | 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 |
| Σd | 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) |
| β' | 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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