

# MeVis-C, MeVis-CF MeVis-C/CF Traffic

High-Resolution Inspection Lenses



# MeVis-C

## High-Resolution Lenses for Megapixel Cameras

The LINOS MeVis-C lenses are specifically developed to be used with the highest resolution sensors available on the market. Exceptionally high resolution across the entire sensor ensures optimal performance for the most demanding applications.

High resolution is paired with low distortion, minimal light fall off and excellent chromatic correction across the entire spectral range of 450 to 900 nm. Premium glass and specialized coatings further combine to deliver very good color rendition. These lenses can resolve up to 200 lp/mm, even to the extreme corners of a 1" sensor. Only MeVis-C lenses combine all these positive optical characteristics and represent the perfect match for modern high-resolution sensors with up to 1" diameter.

The housing features locking screws for focus and aperture that prevent changes due to accidental contact or vibration and shock in harsh environments. Focus and aperture ring operate as smoothly as you would expect from a high-end lens and enable exact focusing and iris adjustment.



- Highest optical performance
- Large image circle up to 1 inch
- For pixel size even below 2  $\mu\text{m}$
- High numerical aperture
  
- Focal length: 12 ... 50 mm
- Magnification range: -0.1 ... 0
- Spectral range: 450-900 nm
- Focusing: manual, lockable
- Iris diaphragm: manual, lockable
- Filter thread: M35.5x0.5
- Lens diameter: 42 mm

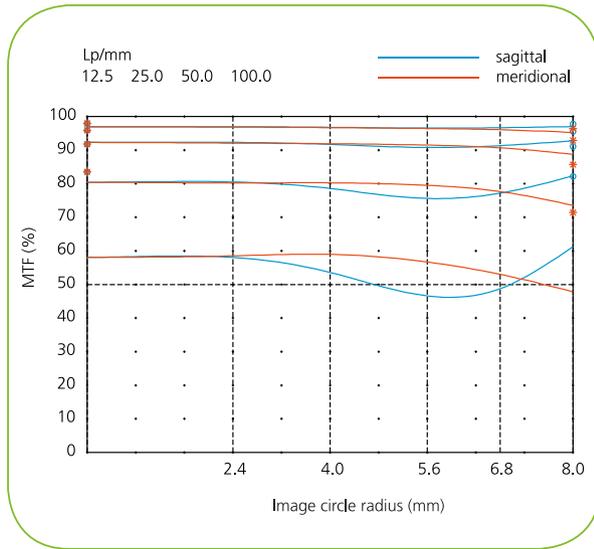
All MeVis-C Lenses are also available with custom coatings. An NIR version with a transmission range from 900 – 1400 nm is also available. Ask your sales manager!

## MeVis-C

Product	Focal length (mm)	F-number	Magnification range	Image circle (mm)	Interface	Part No.
MeVis-C 1.8/12	12	1.8	-0.25 ... 0	11	C-Mount	0020-005-000-40
MeVis-C 1.6/16	16	1.6	-0.1 ... 0	11	C-Mount	0020-004-000-40
MeVis-C 1.6/25	25	1.6	-0.1 ... 0	16	C-Mount	0020-002-000-40
MeVis-C 1.6/35	35	1.6	-0.1 ... 0	16	C-Mount	0020-001-000-40
MeVis-C 1.8/50	50	1.8	-0.075 ... 0	16	C-Mount	0020-003-000-40

# Performance

The following graph displays the optical performance of the MeVis-C 35mm. High resolution is maintained over the whole magnification range. This is a result of the floating element design with internal focusing. The graph shows up 100lp/mm over the whole image circle.



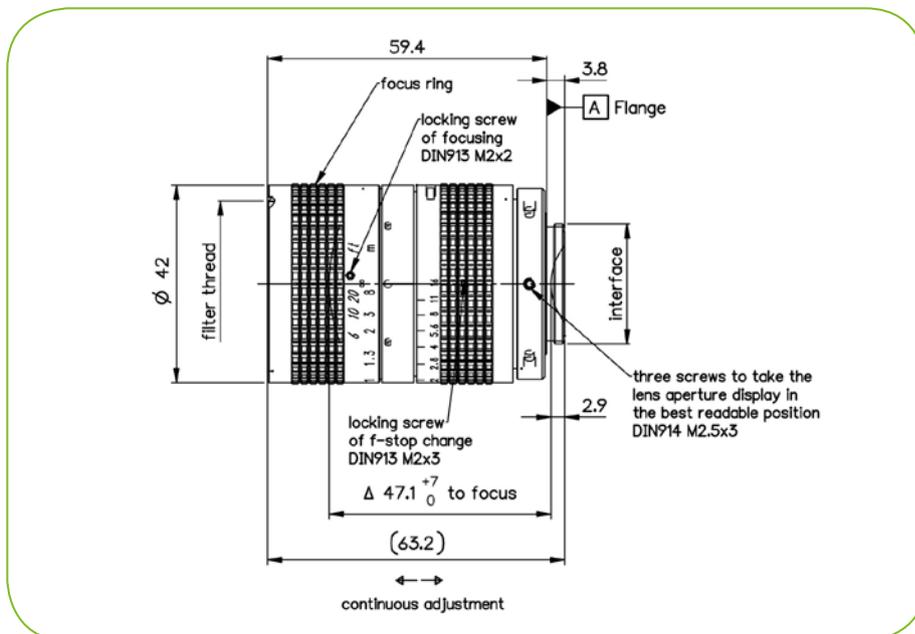
MTF of MeVis-C 1.6/35 @  $\beta' = -0.05$  and f-stop = 2.8

# Application

MeVis-C Lenses offer a long standing, field-proven heritage of premium performance across a wide range of industrial, scientific and biomedical imaging applications. MeVis-C lenses are selected when compromises cannot be made and failure is not an option.

Some example applications are:

- Pharmaceutical package control
- Sorting of pharmaceuticals
- Traffic Monitoring
- Rail and wheel inspection
- 3-D measurement
- Eye tracking systems
- Solar cell inspection – visible and NIR
- Glass inspection
- Tire inspection
- Inspection of contact lenses
- Drug sorting
- Wood inspection
- Forensics
- Inspection of composite materials



MeVis-C 1.6/25

# MeVis-C/CF Traffic

## For Daylight and NIR Without Refocusing

The new MeVis-C traffic lenses feature optimized color correction to eliminate focus-shift between daylight and NIR illumination around 850 nm. This optimized optical design removes the need for refocusing when switching between wavelengths as the focal plane for both illumination cases is identical. The field-proven and well known mechanics of the MeVis-C and MeVis-CF lenses remain unchanged to ensure a robust lens ready for the most demanding industrial use cases.



- Optimized for visual spectrum and NIR with identical focus plane over broad wavelength range
- Highest optical performance
- Large image circle up to 1 inch
- For pixel size even below 2  $\mu\text{m}$
- High numerical aperture
- Spectral range: 450-900 nm
- Focusing: manual, lockable
- Iris diaphragm: manual, lockable
- Filter thread: M35.5x0.5
- Lens diameter: 42 mm

### MeVis-C Traffic / MeVis-CF Traffic

Product	Focal length (mm)	F-number	Magnification range	Image circle (mm)	Interface	Part No.
MeVis-C traffic 1.6/25	25	1.6	-0.1 ... 0	16	C-Mount	0020-002-000-45
MeVis-CF traffic 1.6/25	25	1.6	-0.1 ... 0	16	C-Mount	0020-007-000-30

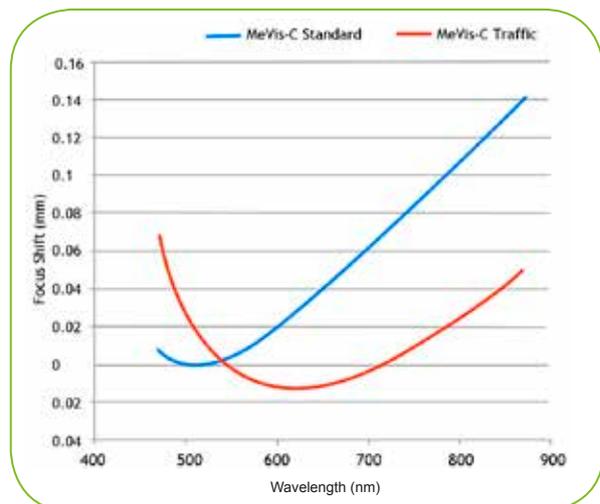
## Application

Some example applications are:

- License plate reading (ANPR)
- Tolling
- High-resolution surveillance and recognition
- Multispectral/Hyperspectral imaging
- Document verification

**Solution MeVis-C/CF Traffic:**  
Adapted longitudinal color aberration curve for zero focus shift at 540 nm and 710 nm.

## Performance



Longitudinal color aberration comparison

## Comparison MeVis-C in VIS and NIR

Standard MeVis-C lenses are optimized for a wavelength range from 400 nm to 700 nm minimizing longitudinal color aberration. Excellent image performance can be achieved within this wavelength range.



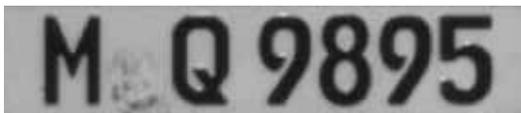
MeVis-C in VIS light, distance 10 m

Standard MeVis-C lenses achieve high IR transmission values at 850 nm, however longitudinal color aberrations lead to a blurred image at 850 nm. Refocusing is needed.

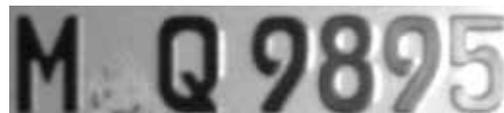


MeVis-C in NIR light, distance 10 m

## Comparison MeVis-C Traffic: Your Solution for Day and Night



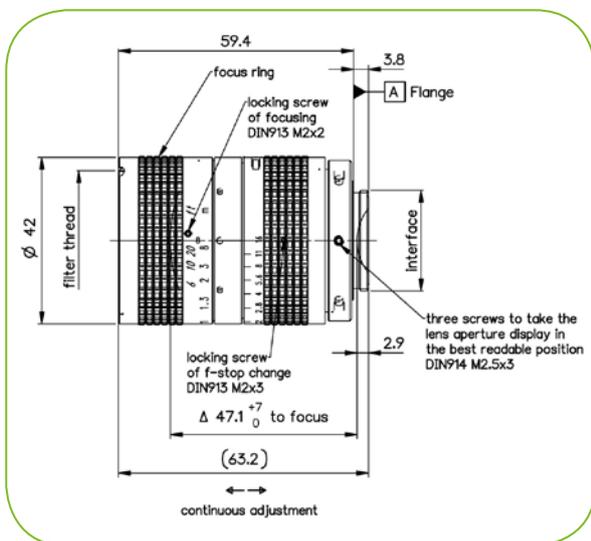
MeVis-C Traffic in VIS light, distance 10 m



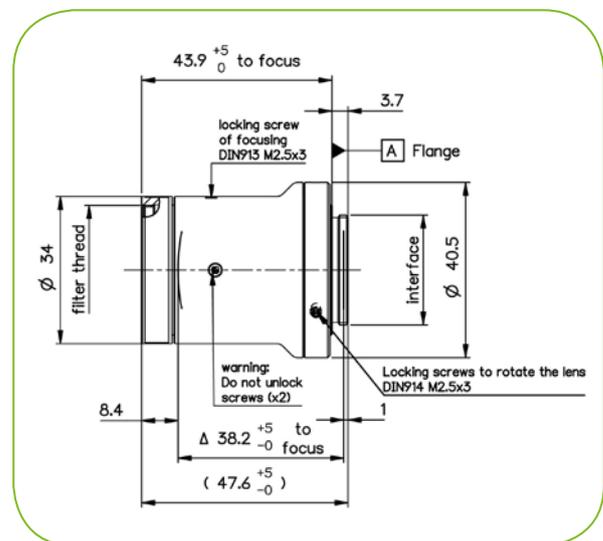
MeVis-C Traffic in NIR light, distance 10 m

Both images taken with our MeVis-C traffic lens and open aperture without refocusing: no change in image sharpness visible. Perfectly sharp images

for further processing with very different illumination wavelengths.



MeVis-C traffic 1.6/25



MeVis-CF traffic 1.6/25

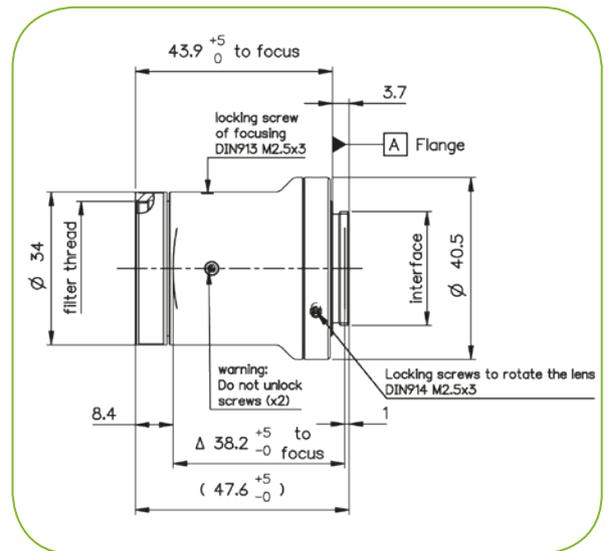
# MeVis-CF

## Superior Optical Performance Packaged in a Compact and Robust Housing

With the new MeVis-CF series, Qioptiq introduces a new line of lenses to serve applications requiring the best possible imaging quality from a compact, robust lens package. The optical performance is equal to the renowned MeVis-C series, but the mechanics are designed to be as simple as possible.

The major difference to the standard MeVis-C Series is the fixed aperture. This enhances durability, reduces size for compact installation and offers a more cost-effective design. The lenses are available in several versions offering a variety of apertures.

- Highest optical performance
  - Fixed aperture
  - Large image circle up to 1 inch
  - For pixel size even below 2  $\mu\text{m}$
  - High numerical aperture
  - Compact and robust mechanics
- 
- Focal length: 16 ... 50 mm
  - Magnification range: -0.1 ... 0
  - Spectral range: 450-900 nm
  - Focusing: manual, lockable
  - Iris diaphragm: fix



MeVis-CF 1.6/25

## MeVis-CF

Product	Focal length (mm)	F-number	Magnification range	Image circle (mm)	Interface	Part No.
MeVis-CF 1.6/16	16	1.6	-0.1 ... 0	11	C-Mount	0020-009-000-20
MeVis-CF 2.8/16	16	2.8	-0.1 ... 0	11	C-Mount	0020-009-000-21
MeVis-CF 4.0/16	16	4.0	-0.1 ... 0	11	C-Mount	0020-009-000-22
MeVis-CF 1.6/25	25	1.6	-0.1 ... 0	16	C-Mount	0020-007-000-20
MeVis-CF 2.8/25	25	2.8	-0.1 ... 0	16	C-Mount	0020-007-000-22
MeVis-CF 4.0/25	25	4.0	-0.1 ... 0	16	C-Mount	0020-007-000-21
MeVis-CF 1.6/35	35	1.6	-0.1 ... 0	16	C-Mount	0020-008-000-20
MeVis-CF 2.8/35	35	2.8	-0.1 ... 0	16	C-Mount	0020-008-000-21
MeVis-CF 4.0/35	35	4.0	-0.1 ... 0	16	C-Mount	0020-008-000-22
MeVis-CF 1.8/50	50	1.8	-0.075 ... 0	16	C-Mount	0020-010-000-20
MeVis-CF 2.8/50	50	2.8	-0.075 ... 0	16	C-Mount	0020-010-000-21
MeVis-CF 4.0/50	50	4.0	-0.075 ... 0	16	C-Mount	0020-010-000-22

# MachVis Software

## Lens Selection Software

MachVis software is designed to help you find the right lens for your machine vision application. Starting with four simple parameters:

- Object size
- Working distance
- Sensor size
- Camera mount

MachVis calculates the necessary optical parameters and then, from the extensive LINOS Lens catalogue, selects all suitable lenses that meet your specifications.

If mechanical accessories (e.g. focussing units, extension tubes etc.) are needed, MachVis will create a printable, itemized list of the required parts. MachVis also generates a schematic drawing of the lens and accessories in the order of assembly.

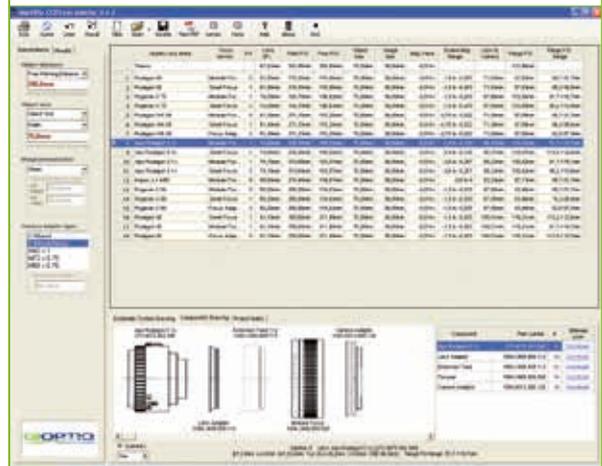
Specifications, along with your own project notes, may be saved to disk for later recall. Data-sheets (PDF) for each lens may be viewed for a more detailed analysis.



Download MachVis

For download and further information, please go to [www.qioptiq.com/request-machvis-software.html](http://www.qioptiq.com/request-machvis-software.html). Download now for free!

### Workflow: From the choice of lens...



... to the three-dimensional model



... to the final system.



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