QIOPTIQ
Photonics for Innovation
An Excelitas Technologies Company

MeVis-C
MeVis-C/CF Traffic
High-Resolution Inspection Lenses

MeVis-C

High-Resolution Lenses for Megapixel Cameras

LINOS® MeVis-C Lenses are specifically developed for the highest-resolution sensors up to 1".

Exceptional resolution combines with low distortion, minimal light fall off and excellent chromatic correction and color rendition across 450 - 900 nm.

The LINOS MeVis-C Lenses designed with a high numerical aperture and an resolution of less than 2 µm across the entire sensor ensure optimal performance for the most demanding applications.

Premium glass and specialized coatings enable an excellent color rendition. These lenses can resolve up to 200 lp/mm, even at the extreme corners of a 1" sensor. The combination of these key features is unique to our MeVis-C lenses and represents the perfect match for modern high-resolution sensors with up to 1" diameter.

The housing features locking screws for focus and aperture to 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 µm
- 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

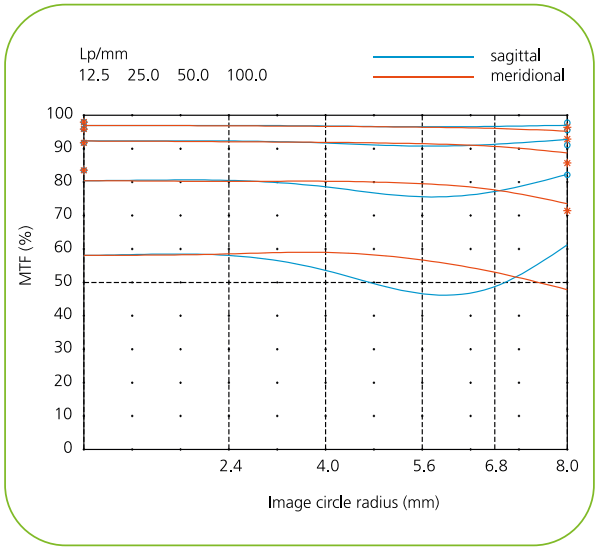
All MeVis-C Lenses are also available with custom coatings. An NIR version with a transmission range from 900 – 1400 nm is also available. Ask your sales manager!

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.



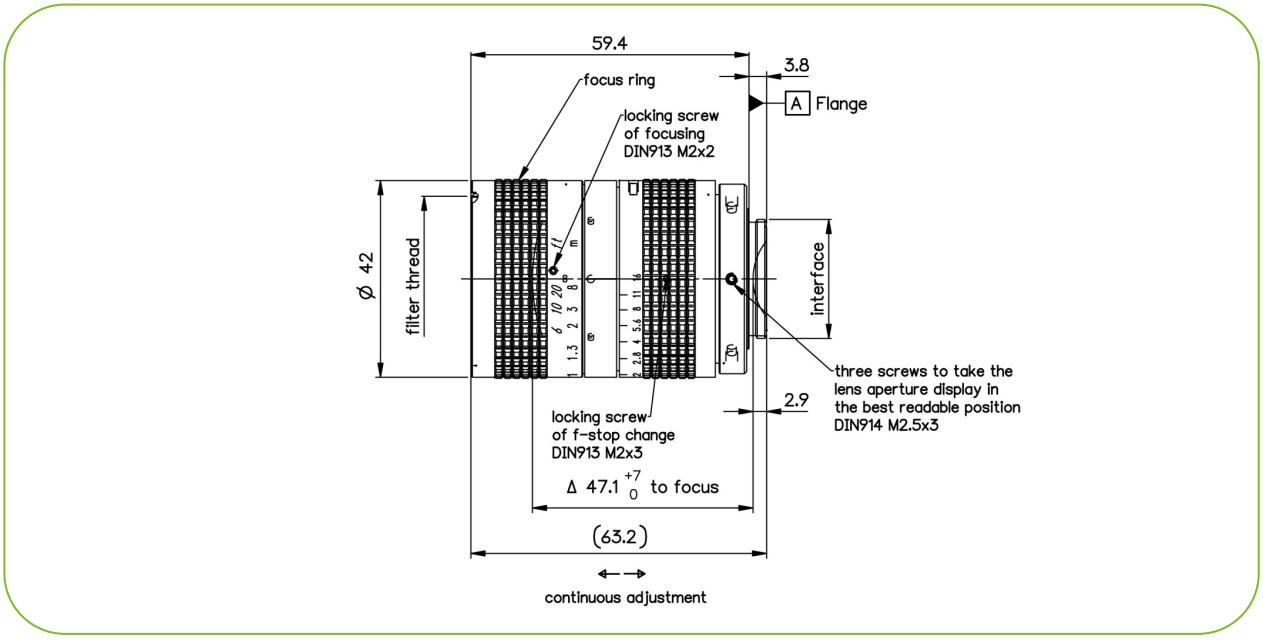
MTF of MeVis-C 1.6/35 @ β'= -0.05 and f-stop = 2.8

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 LINOS® MeVis-C/CF-mount traffic lenses feature optimized color correction to eliminate focus-shift between daylight and NIR illumination at approximately 850 nm. This optimized optical design eliminates the need for refocusing when switching between wavelengths as the focal plane for both illumination instances 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 applications.

- 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 µm
- 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

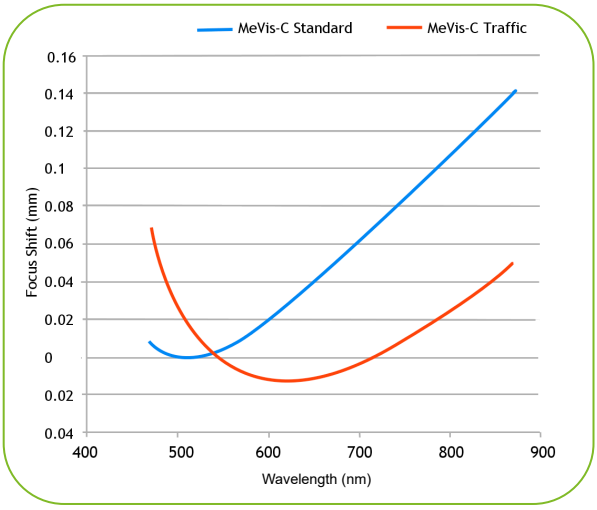
Application

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

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Comparison MeVis-C in VIS and NIR

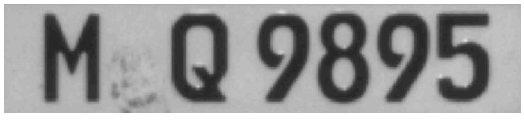
Standard MeVis-C lenses are optimized for a wavelength range from 400 nm to 700 nm minimizing longitudinal color aberration. Excellent image performance can be achieved within this wavelength range.

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.

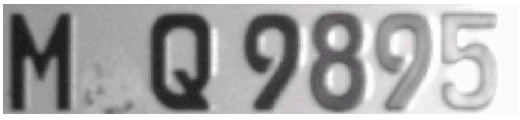
Mevis-C in VIS light, distance 10 m

Mevis-C in NIR light, distance 10 m

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

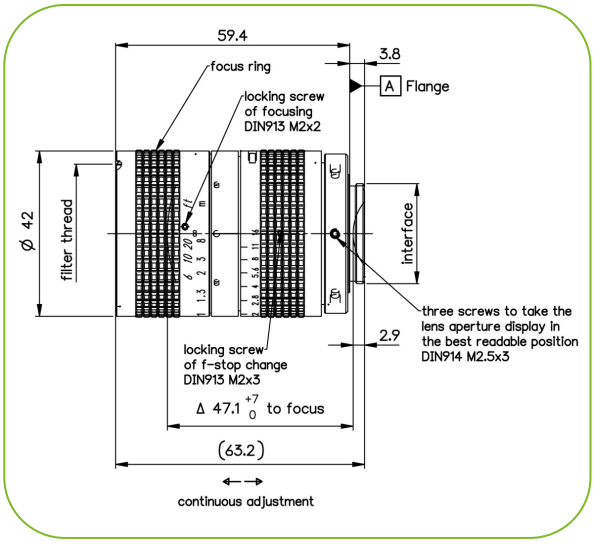


Mevis-C Traffic in VIS light, distance 10 m

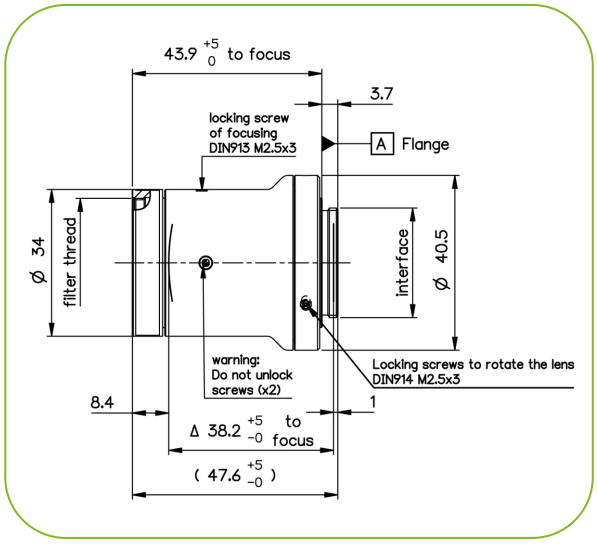


Mevis-C Traffic in NIR light, distance 10 m

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

MachVis Software

Lens Selection and Configurator Software

Excelitas has developed a software tool that simplifies your tasks for imaging and machine vision needs

MachVis is specifically designed to help you identify and select the most suitable lenses and accessories. Your benefit is a high-resolution and stable image on your sensor. With MachVis, Excelitas offers you a software with a user-friendly interface for quick and comprehensive solutions.

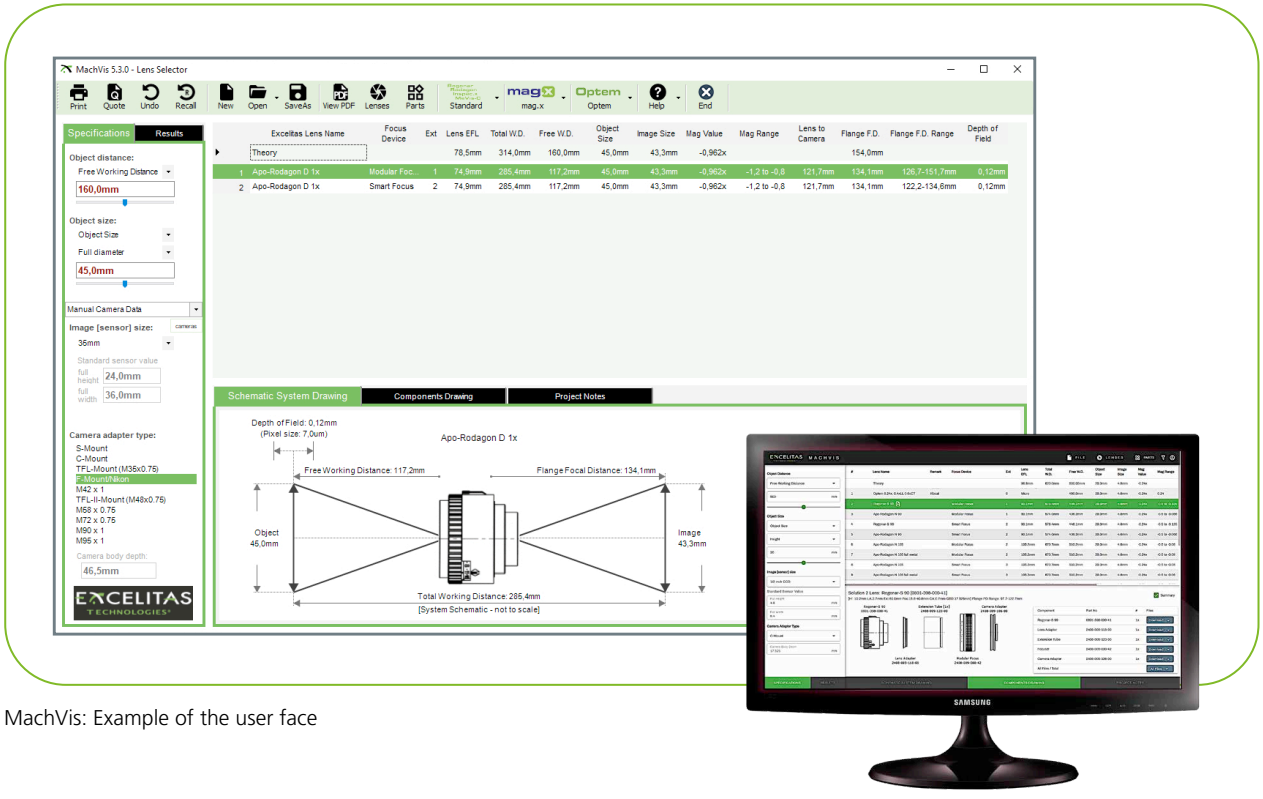
Based upon four key parameters of your application,

- Working distance
- Object size (or magnification)
- Sensor size
- Camera mount

MachVis will provide the lens solutions that are most suitable to your specification:

All necessary optical components as well as mechanical accessories, are directly downloadable of the 3D data for a smooth integration into the project are available with a single click. Configurators are available for the more complex microscope systems, where e.g. the motorization, the installation of zoom systems, beam splitters, filters and, last but not least, the coupling of the illumination open up a virtually unlimited range of possibilities and flexibility. With this features, MachVis reaches a new level from selection to an optical configuration software.

In addition to the LINOS® Machine Vision Lenses, the OPTEM® Fusion Micro-imaging System and the Qioptiq mag.x® Microscope system, the PCO® Scientific Cameras are also available from Excelitas now.



MachVis: Example of the user face

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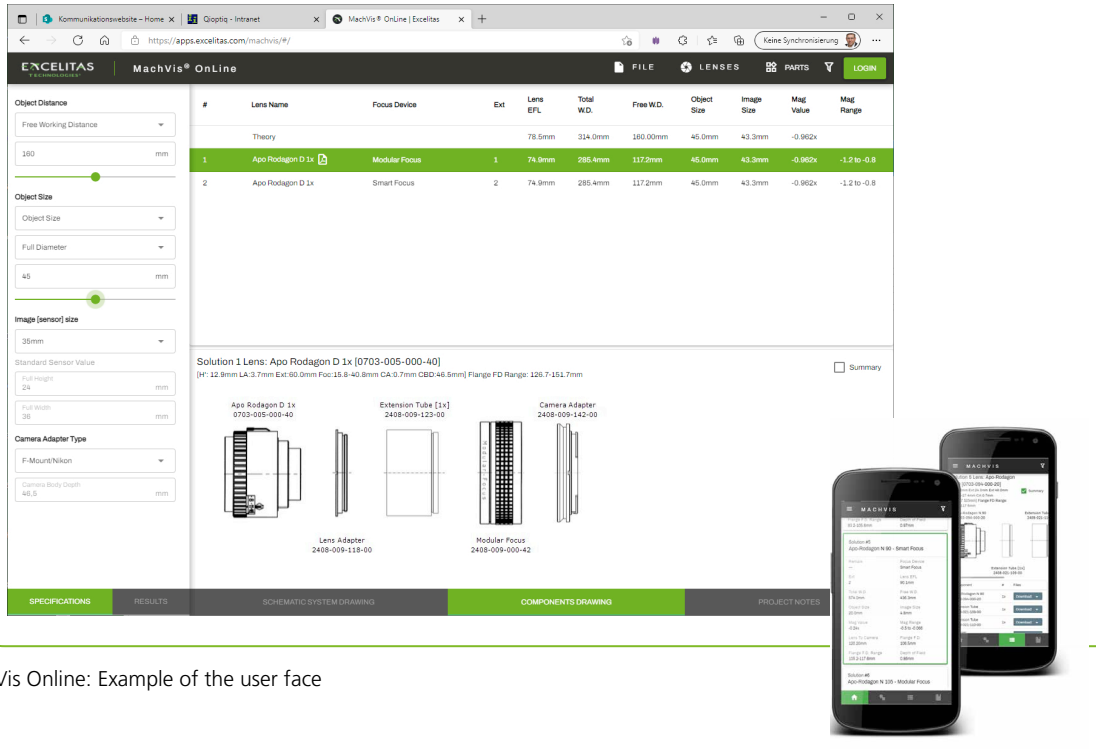
Apart from the geometric optical calculation based on the parameters provided by the user, the software also acts as a product database, providing quick and easy access to all product data and presenting an instant schematic representation of the entire optical system.

With **MachVis Online** it is possible to access MachVis directly without the need to download and install any software. Let MachVis online convince you and receive more flexibility and independence. MachVis not only helps to identify the perfect lens solution, it saves your time in the lens selection and configuration process.

Try our new online application today and create your own user profile so you can access your individual configurations on any mobile device!

MachVis or
MachVis Online:
Access for FREE!

For access or download and further information, please go to www.excelitas.com/product/machvis-lens-configurator.



MachVis Online: Example of the user face

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Discover the capabilities, knowledge, equipment and technology of Qioptiq

The Vision Technology product area covers the whole range of industrial magnification tasks from Macro to Micro and Line-Scan to Area-Scan.

Enabling the future through light.

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