

GHOLOGRAPHIC COMPANY



Machine Vision

Lenses / Camera



Benefits

- **High Quality Product**
- **Guarantee for quality**
- **Best price**
- **Save your time & cost in getting best product from us.**



Machine Vision

With more than 100 years of history and experience in optical design and manufacturing, **Qioptiq** is renowned for its standardized high end products and customized premium solutions for machine vision.

Basler is a leading global manufacturer of digital cameras for industrial applications, medical devices, traffic systems, and the video surveillance market. Our products offer easy integration, compact size, and a very strong price/performance ratio. These characteristics are the decisive factors allowing Basler to hold a leading position in the GigE Vision arena.

Applications :

Inspection & Metrology

Projection and Prepress

Semiconductors and Microelectronics

Biotech Lab Instruments



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Machine Vision Lenses

With the trend towards smaller pixels and larger image sensors, it is literally impossible to utilize standard economy CCTV lenses without sacrificing imaging performance.

Qioptiq offers the highest-performance optics to fully leverage the resolution and sensor size potential of today's premium cameras.

OUR MACHINE VISION LENSES:

- Rodagon Lenses
- MeVis-C Lenses
- inspec.x-UV/M/L Lenses
- Macro CCD Lenses
- Telecentric Lenses
- Fetura Advanced Programmable Zoom Lenses
- Optem Precision Micro Inspection Lenses
- Optem Long-Working Distance Objectives



Rodagon Lenses

The high resolution of the Apo-Rodagon-D lenses make them an optimum solution for cameras with a pixel size down to 5µm. The high resolution is accompanied by ultra low distortions and neglectable color fringing. The lenses are optimized for magnification range from 1:2 to 1:1. All lenses have the “Leica-thread“ M39x1.26“ lens mount in common

You may choose out of various lens types for different requirements:

- **Rogonar-S:**

Inexpensive lens with good imaging performance. Optimum price/performance ratio

- **Rodagon:**

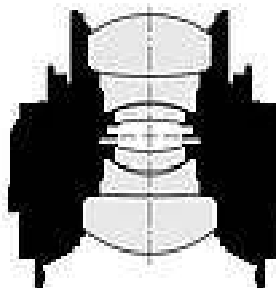
High performance lens featuring a highly consistent imaging quality and broad magnification range

- **Rodagon-WA:**

High performance lens with extended viewing angle-shorter focal length for the same image field possible

- **Apo-Rodagon-N:**

Apochromatically corrected lens designed to meet the highest requirements in an especially broad magnification range



Rogonar Lenses

The Rogonar is available with the standard focal length of 50 mm. It has a click-stop diaphragm and an illuminated f-number scale.

The large image field allows use with large format line-scan and area-scan cameras. The lenses are compatible with

Nearly any common mount through the use of our broad range of mechanical accessories.

Lens	film size	scale (optimal)	Filter thread	Flange focal length	Overall length	lens diameter	Screw thread
50 mm f/2,8	24x36mm	2-8x (4x)	-	38,0	32,0	42,0	39,0
75 mm f/4,5	6x6cm	2-6x (4x)	-	63,1	32,0	42,0	39,0
25 mm f/4,0	13x17mm	10-30x (20x)	30,5	23,0	28,0	40,5	32,5
35 mm f/4,0	18x24mm	10-30x (20x)	30,5	34,0	28,0	40,5	32,5
50 mm f/2,8	24x36mm	2-10x (4x)	40,5	47,0	37,5	50,0	39
60 mm f/4,5	40x40mm	2-10x (4x)	40,5	52,5	36,5	50,0	39
75 mm f/4,5	6x6cm	2-10x (4x)	40,5	65,5	36,5	50,0	39
90 mm f/4,5	6x7cm	2-8x (4x)	40,5	80,0	36,5	50,0	39
105 mm f/4,5	6x9cm	2-8x (4x)	40,5	95,0	36,5	50,0	39
135 mm f/4,5	9x12cm/4x5"	2-6x (4x)	52	129,5	38,0	60,0	50
150 mm f/4,5	9x12cm/4x5"	2-6x (4x)	52	138,0	36,8	60,0	50



Rodagon Lenses

The lens type Rodagon, with brilliant reproduction over the whole scale range of conventional enlargers, with focal lengths up to 135 mm have proven to be excellent macro lenses for SLR cameras and to be high-resolution taking lenses for CCD cameras in combination with the Rodenstock focusing device Modular-Focus.

Lens	film size	scale (optimal)	Filter thread	Flange focal length	Overall length	lens diameter	Screw thread
35 mm f/4,0	24x24mm	5-30x (20x)	30,5	35,6	32,5	40,5	32,5
50 mm f/2,8	24x36mm	2-15x (10x)	40,5	43,5	43,5	50,0	39,0
60 mm f/4,0	40x40mm	2-10x (10x)	40,5	56,0	41,0	50,0	39,0
80 mm f/4,0	6x7cm	2-10x (6x)	40,5	74,7	44,5	50,0	39,0
105 mm f/5,6	6x9cm	2-10x (6x)	40,5	99,5	41,0	50,0	39,0
135 mm f/5,6	9x12cm/4x5"	2-10x (6x)	40,5	128,0	45,5	50,0	39,0
150 mm f/5,6	9x12cm/4x5"	2-10x (6x)	52,0	146,0	49,8	60,0	50,0
180 mm f/5,6	13x18cm/5x7"	2-8x (5x)	58,0	177,0	59,8	60,0	50,0
210 mm f/5,6	13x18cm/5x7"	2-8x (4x)	67,0	201,0	67,2	70,0	58,0
240 mm f/5,6	18x24/8x10"	2-8x (4x)	77,0	230,0	77,0	80,0	72,0
300 mm f/5,6	18x24/8x10"	2-8x (4x)	86,0	283,0	93,0	90,0	72,0
360 mm f/6,3	24x30/10x12"	2-8x (2,5x)	95,0	300,0	110,6	100,0	90,0

Lens	film size	scale (optimal)	Filter thread	Flange focal length	Overall length	lens diameter	Screw thread
50 mm f/2,8	24x36mm	15-50x (25x)	40,5	47,0	45,0	50,0	39,0
105 mm f/5,6	6x9cm	10-40x (20x)	40,5	100,3	38,0	60,0	50,0
150 mm f/5,6	9x12cm/4x5"	10-40x (20x)	49,0	141,8	50,6	60,0	50,0
210 mm f/5,6	13x18cm/5x7"	8-30x (20x)	67,0	179,5	65,9	74,5	72,0
240 mm f/5,6	13x18cm/5x7"	8-30x (20x)	77,0	230,6	76,9	80,0	72,0
300 mm f/5,6	18x24/8x10"	8-30x (20x)	86,0	253,3	93,5	93,5	90,0
360 mm f/6,8	18x24/8x10"	8-30x (20x)	105,0	304,2	116,5	110,0	90,0
480 mm f/8,4	24x30/10x12"	8-30x (20x)	112,0	412,0	146,8	115,0	110,0



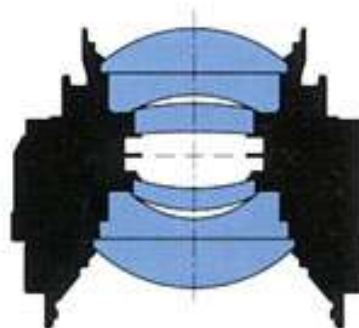
Rodagon -WA Lenses

The Rodagon-WA has a shorter focal length and a large angle of view and achieves a 70% larger projection area than conventional enlarging lenses with standard focal lengths. It is therefore eminently suitable for section enlargements on units with short columns. Clumsy wall or floor projections can so be avoided.

Thanks to the shorter projection distance the negative carrier and the filter adjustment controls can still be operated easily when high enlargements are required.

The 6 element Rodagon-WA provides the same reproduction performance as the Rodagon lens type.

Lens	film size	scale (optimal)	Filter thread	Flange focal length	Overall length	lens diameter	Screw thread
40 mm f/4,0	24x36mm	4-20x (10x)	40,5	36,5	37,2	50,0	39,0
60 mm f/4,0	6x7cm	4-15x (8x)	40,5	55,5	41,0	50,0	39,0
80 mm f/4,0	6x9cm	4-15x (8x)	40,5	77,0	44,0	50,0	39,0
120 mm f/5,6	9x12cm/4x5"	4-15x (6x)	52,0	116,4	59,0	60,0	50,0



Apo - Rodagon N Lenses

The apochromatically corrected high-performance lenses of the Apo-Rodagon-N series guarantee perfect results which will satisfy the highest demands.

The correction of the 7 element lenses (6 elements for focal length 50 mm) was given highest priority and so ensures the full elimination of irritating visible colour fringes on high-contrast borders. All monochromatic imaging errors have also been greatly reduced to give this lens type its unsurpassed image reproduction performance.

Lens	film size	scale (optimal)	Filter thread	Flange focal length	Overall length	lens diameter	Screw thread
50 mm f/2,8	24x36mm	2-20x (10x)	40,5	46,0	46,5	50,0	39,0
80 mm f/4,0	6x7cm	2-15x (10x)	40,5	77,0	43,0	50,0	39,0
105 mm f/4,0	6x9cm	2-15x (6x)	40,5	99,1	54,3	50,0	39,0
150 mm f/4,0	9x12cm/4x5"	2-15x (6x)	67,0	144,5	78,2	70,0	50,0

Lens	film size	scale (optimal)	Filter thread	Flange focal length	Overall length	lens diameter	Screw thread
75 mm f/4,0	6x6cm	0,9-1,2 (1x)	40,5	136,7 (1:1)	53 0	50,0	39,0
120 mm f/5,6	24x36mm	0,7-1,5x (1x)					
		0,5-3x (2x)					



Rodagon –F Lenses

Precision Optics for F-Mount

The Rodagon F is available in different versions with fixed apertures from F/2.8 to F/5.6 and with focal lengths of 40, 50, and 60mm. The fixed aperture prevents accidental changes of the iris or slowly shifting aperture values through vibrations effectively.

The image circle of the lens is 44mm and is therefore large enough for sensors with 35mm format and the popular 41-mm line sensors.

No moving parts. Suitable for 35mm sensors and 41mm line sensors

Features:

- Proven imaging performance
- Rugged and compact design
- Excellent cost-performance ratio
- General Specifications:
- Max. Lens Ø: 59 mm
- Flange focal distance for ∞ : 46.5 mm
- Image circle Ø at 1: ∞ and fully open diaphragm: 44 mm

Part No.	Reference	Focal length (mm)	Aperture ratio	Surface-focal plane distance to the rear (mm)	Lens name
0703-090-000-25	280.0040.001.025	40	1:04	24.5	Rodagon-F 40
0703-090-000-26	280.0040.001.026	40	01:05.6	24.5	Rodagon-F 40
0703-089-000-24	280.0050.001.024	50	01:02.8	24.2	Rodagon-F 50
0703-089-000-25	280.0050.001.025	50	1:04	24.2	Rodagon-F 50
0703-089-000-26	280.0050.001.026	50	01:05.6	24.2	Rodagon-F 50
0703-087-000-25	280.0060.001.025	60	1:04	30.1	Rodagon-F 60
0703-087-000-26	280.0060.001.026	60	01:05.6	30.1	Rodagon-F 60



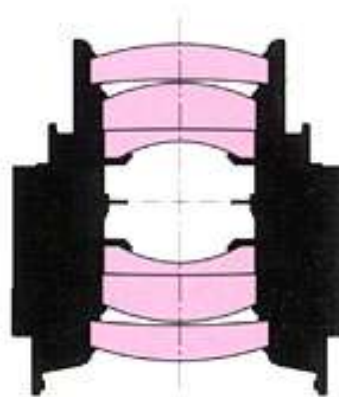
Apo - Rodagon D Lenses

High performance lenses for large imaging sensors and Line-Scan applications

All lenses can also be used in retro position to achieve the inverse magnification. Features:

- Specially designed for scanning applications and large image sensors
- Optimized for 1:2 to 2:1 imaging
- Suitable for cameras with a pixel size down to 7 μm
- General Specifications:
- Max. Lens $\varnothing$ without flange d: 502)
- Thread e: M39x1/26"
- Filter thread a: M40.5x0.5

Reference	Part No.	Aperture ratio	Focal length (mm)	Support dimensions for ∞ b (mm)	Lens length c (mm)	Surface-focal plane distance to the rear g (mm)	Image circle $\varnothing$ at 1: ∞ and fully open diaphragm (mm)	Lens name
273.0075.001.040	0703-005-000-40	1:4.0	75	136.7 at $\beta = -1$	53	18.7	80 (at 1:1) ¹⁾	Apo-Rodagon-D 1x
273.0075.002.040	0703-028-000-21	1:4.5	75	109.4 at $\beta = 0.5$	43	12.5	80 (at 1:2) ¹⁾	Apo-Rodagon-D 2x
273.0120.001.040	0703-043-000-20	1:5.6	120	232.8 at $\beta = 1$ x	43	12.7	80 (at 1:2) ¹⁾	Apo-Rodagon-D 120





Apo - Rodagon HR Lenses

High performance lenses in compact and robust housing

Combines the best features of popular inspec.x L and Apo Rodagon D lens series

Features:

- High resolution at an attractive price
- No moving parts
- Suitable for cameras with a pixel size down to 5 μm
- Excellent for 12k/5 μm line scan cameras.
- May be used to replace Apo Rodagon D2x75mm if higher resolution is needed.

Part No.	Focal length (mm)	F-number	Image circle $\varnothing$ (mm)	Lens name
0703-109-000-20	75	5.6	62	Apo-Rodagon-HR 0.5X 5.6/75
0703-109-000-21	75	8	62	Apo-Rodagon-HR 0.5X 8/75
0703-109-000-22	75	11	62	Apo-Rodagon-HR 0.5X 11/75



NIR Lenses

Specially designed for the spectral range of 800 – 1400nm

Features:

- Highest transmission of up to 98% in NIR wavelength range
- Optimized for applications in e.g. solar cell testing, food inspection, pharmaceutical applications

Part No.	Focal length (mm)	Aperture	Maximum image circle (mm)	Camera Mount	Magnification range	Lens name
0020-004-000-42	16	1.6	11	C-Mount	-0.1 ... ∞	MeVis-C 1.6/16
0020-002-000-42	25	1.6	16	C-Mount	-0.1 ... ∞	MeVis-C 1.6/25m
0020-001-000-42	35	1.6	16	C-Mount	-0.1 ... ∞	MeVis-C 1.6/35m
0020-003-000-42	50	1.8	16	C-Mount	-0.075 ... ∞	MeVis-C 1.8/50m
0009-243-000-42	50	1.4	29	F-Mount	0.07 ... ∞	inspec.x M 1.4/50
0701-028-000-24	75	4.5	80	Universal	0.03 ... -0.8	Apo Rodagon D 1x



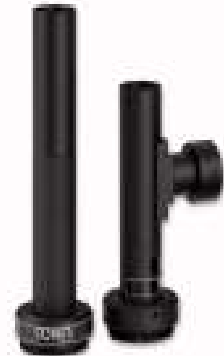
Macro CCD

Designed for C mount CCD cameras

Highest resolution, excellent contrast, color neutrality, distortion free

Features:

- Huge range of magnifications available
- Designed for 1/2" and 2/3" sensors
- Outstanding performance
- 2X to 8X available with or without coaxial illumination



Macro Lenses for Magnifications 0.14x to 1x

Part No.	Reference	Lens designation	Lens focal length (mm)	Available fixed diaphragm apertures (geometric value, in relation to 1: ∞)	Magnification on CCD
0009-189-000-40	260-0014-001-020	Macro CCD Lens 0.14x	15	4	0.14x (1:7.1)
0009-189-000-41	260-0014-001-021	Macro CCD Lens 0.14x	15	5.6	0.14x (1:7.1)
0009-189-000-42	260-0014-001-022	Macro CCD Lens 0.14x	15	8	0.14x (1:7.1)
0009-190-000-40	260-0030-001-020	Macro CCD Lens 0.3x	24	3.5	0.3x (1:3.3)
0009-190-000-41	260-0030-001-021	Macro CCD Lens 0.3x	24	5.6	0.3x (1:3.3)
0009-190-000-42	260-0030-001-022	Macro CCD Lens 0.3x	24	8	0.3x (1:3.3)
0009-191-000-40	260-0050-001-020	Macro CCD Lens 0.5x	35	5.6	0.5x (1:2)
0009-191-000-41	260-0050-001-021	Macro CCD Lens 0.5x	35	8	0.5 x (1:2)
0009-192-000-41	260-0100-001-020	Macro CCD Lens 1x	50	4	1x (1:1)
0009-192-000-42	260-0100-001-021	Macro CCD Lens 1x	50	5.6	1x (1:1)
0009-192-000-43	260-0100-001-022	Macro CCD Lens 1x	50	8	1 x (1:1)

Macro Lenses for Magnifications 2x to 8x

Part No.	Reference	Lens designation	Lens focal length (mm)	With vertical epi-illuminator	Without epi-illuminator
0009-193-000-40	261-0200-001-020	Macro CCD Lens 2x	26		x
0009-205-000-40	261-0200-002-020	Macro CCD Lens 2x	26	x	
0009-194-000-40	261-0400-001-020	Macro CCD Lens 4x	20		x
0009-206-000-40	261-0400-002-020	Macro CCD Lens 4x	20	x	
0009-195-000-40	261-0600-001-020	Macro CCD Lens 6x	13		x
0009-199-000-40	261-0600-002-020	Macro CCD Lens 6x	13	x	
0009-196-000-40	261-0800-001-020	Macro CCD Lens 8x	9		x
0009-200-000-40	261-0800-002-020	Macro CCD Lens 8x	9	x	

Machine Vision C Mount Lenses

Machine Vision lenses for Multi-Megapixel cameras

Features:

- Large image field up to 1 inch
- For pixel size even below 2 μm
- High numerical aperture
- General Specifications
- Transmission range: 450 – 1000 nm
- Camera Mount: C-Mount
- Depth of thread: 3.5 mm
- Focusing: manual, lockable
- Iris diaphragm: manual, lockable
- Filter thread: M35.5 $\times$ 0.5
- Diameter: 42 mm

Part No.	Reference	Focal length (mm)	F-number	Max. sensor size	Minimum focus distance (m)	F-number range	Length L (mm)	Weight (g)
0020-005-000-40	266.0012.001.040	12	1.8	2/3"	0.03	1.8-11	63.9	240
0020-004-000-40	266.0016.001.040	16	1.6	2/3"	0.22	1.6-16	51.5	170
0020-002-000-40	266.0025.001.040	25	1.6	1"	0.32	1.6-16	44.1	156
0020-001-000-40	266.0035.001.040	35	1.6	1"	0.45	1.6-16	59.4	210
0020-003-000-40	266.0050.001.040	50	1.8	1"	0.76	1.8-16	67.5	240



Machine Vision Compact C Mount Lenses

With optical performance equal to Me-Vis lenses but improved in a compact, robust lens package with a fixed aperture.

Features:

- Highest Optical performance
- Compact and robust mechanics
- C-Mount
- Up to 1" sensors

Part No.	Focal length (mm)	Aperture	Maximum image circle (mm)	Magnification range	Lens name
0020-007-000-20	25	1.6	16	-0.1 ... ∞	MeVis-CF 1.6/25
0020-007-000-22	25	2.8	16	-0.1 ... ∞	MeVis-CF 2.8/25
0020-007-000-21	25	1	16	-0.1 ... ∞	MeVis-CF 4/25



Machine Vision Motorized C Mount Lenses

Motorization of the MeVis-Cm lenses enables automated adjustment of the focus and diaphragm

Features:

- Motorized diaphragm and focus
- User configurable connections
- Rugged and industry-compatible version
- General Specifications
- Transmission range: 450 – 1000 nm
- Camera Mount: C-Mount
- Depth of thread: 3.5 mm
- Focusing Iris diaphragm: Single, motorized
- Length: 66mm
- Filter thread: M39 x0.5
- Diameter: 69 mm

Part No.	Focal length (mm)	F-number	Max. sensor size	Minimum focus distance (m)	F-number range	Length L (mm)	Weight (g)
G038414000	16	1.6	2/3"	0.22	1.6-16	370	240
G038415000	25	1.6	1"	0.32	1.6-16	356	170
G038416000	35	1.6	1"	0.45	1.6-16	410	156
G038417000	50	1.8	1"	0.76	1.8-16	440	210



UV Camera Lenses

Suitable for high resolution imaging with UV cameras in the wavelength range of 240 – 700 nm. Excellent for surface inspection and quality control of semiconductor materials. Other UV applications include forensic, pharmaceutical and biomedical imaging. Also, oil contamination and leakage can be detected.

Features:

- For applications down to 240nm
- Designed for high-resolution megapixel cameras
- Minimized focal shift over the complete wavelength range
- Precision manual focus with durable, full metal construction
- General Specifications:
- Max. CCD Format: 2/3" (optimized for 1/2")
- Angular FOV at working distance 10.5° (at 400 mm object distance in diagonal) calculated for 2/3"
- FOV at Min. Working distance 80 mm (at 400 mm object distance in diagonal) calculated for 2/3"
- Temperature: -20 °C to +50 °C

Part No.	Working Distance (m)	Lens name
G033550000	0.4 – 0.8	inspec.x 2.8/50 UV-VIS APO
G033551000	0.7 – 1.5	inspec.x 2.8/50 UV-VIS APO
G033552000	1.5 – ∞	inspec.x 2.8/50 UV-VIS APO



Inspec.X M Lenses

Lenses for high resolution 35mm linescan and areascan applications

Equipped with lockable manual focus and manual iris

Features:

- Outstanding MTF performance
- Large magnification range
- Rugged mechanical design
- F-mount, flexible for other camera mounts

Part No.	Reference	Focal length (mm)	Maximum image circle (mm)	Magnification range	Lens name
0703-073-000-23	269.0100.001.000	100	43.3 (35mm format)	$\infty - 0.5$	inspec.x M 2.8/100
0009-243-000-40	269.0050.001.040	50	28	$\infty - 0.15$	inspec.x M 1.4/50





Inspec.X L Lenses

Premium High Resolution Lenses for Line Scan sensors up to 66mm

Equipped with lockable manual focus and manual iris

Diffraction limited performance lenses

Features:

- For line sensors up to 66mm
- Designed for high contrast imaging with 12k/5 μ m sensors
- Focus and aperture lockable
- To preserved diffraction limited performance while using coaxial illumination at high magnifications, lenses with 3X, 3.5X and 5X magnification now also come in a new prism version.

Part No.	Reference	Focal length (mm)	Maximum image circle (mm)	Magnification range	Lens name
0019-002-000-49	268.0060.001.049	60	66	$\infty - 0.2$	inspec.x L 4/60
0019-003-000-49	268.0100.001.049	100	66	$\infty - 0.2$	inspec.x L 4/100
0703-085-000-20	268.0105.001.085	105	66	-0.25 – -0.45	inspec.x L 5.6/105
0703-084-000-20	268.0105.001.084	105	66	-0.4 – -0.65	inspec.x L 5.6/105
0703-083-000-20	268.0105.001.083	105	66	-0.6 – -0.9	inspec.x L 5.6/105
0703-082-000-20	268.0105.001.082	105	66	-0.85 – -1.2	inspec.x L 5.6/105
0703-104-000-20		105	66	-2.8 – -3.2	inspec.x L 4/105 3X
0703-105-000-20		105	66	-2.8 – -3.2	inspec.x L 4/105 3X prism
0703-095-000-21	268.0105.001.095	105	66	-3.3 – -3.7	inspec.x L 4/105 3.5X
0703-107-000-20		105	66	-3.3 – -3.7	inspec.x L 4/105 3.5X prism
0703-102-000-20	268.0105.001.102	105	66	-4.8 – -5.2	inspec.x L 3.5/105 5X
0703-108-000-20		105	66	-4.8 – -5.2	inspec.x L 3.5/105 5X prism

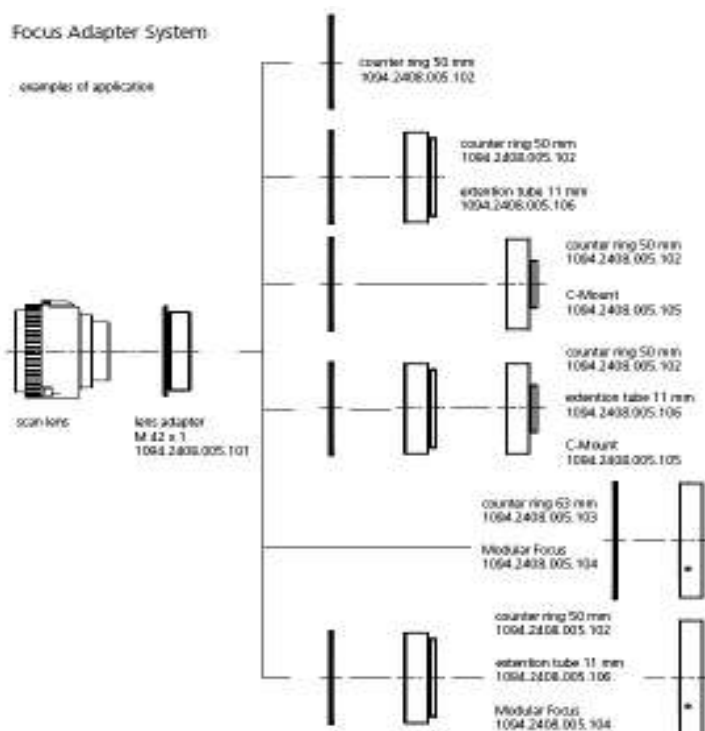


Focus Adapter System

Part no.	Reference	Mechanical accessories
2408-005-101-00	1094-2408-005-101	Lens adapter from M39 (Leica) to M42x1
2408-005-102-00	1094-2408-005-102	Retaining ring 50 mm
2408-005-103-00	1094-2408-005-103	Retaining ring 63 mm
2408-005-104-00		Adapter for connection to existing camera adapter Modular Focus
2408-005-105-00	1094-2408-005-105	Camera adapter C-mount
2408-005-106-00	1094-2408-005-106	Extension tube 11 mm

Part no.	Reference	Mechanical accessories
2408-012-000-30	1094-2408-012-030	Focus tube for lenses 268.0105.001.082 and .083
2408-012-000-31	1094-2408-012-031	Focus tube for lenses 268.0105.001.084 and .085
2408-012-000-32	1094-2408-012-032	Focus tube for lens 268.0105.001.095
2408-012-000-33		Focus tube for lens 0703-102-000-20

Part no.	Reference	Mechanical accessories
2408-012-000-23	1094-2408-012-023	Focus Unit f'=80mm
2408-012-000-28	1094-2408-012-028	Focus Unit f'=105mm
2408-012-000-29	1094-2408-012-029	Focus Unit f'=135mm
2408-012-000-35	1094-2408-012-035	Focus Unit II f'=80mm *
2408-012-000-36	1094-2408-012-036	Focus Unit II f'=105mm *
2408-012-000-37	1094-2408-012-037	Focus Unit II f'=135mm *



Basler Cameras



Basler ace family offers a unique combination of extremely high performance and low cost in a small 42 mm x 29 mm x 29 mm housing. With a starting price of only 299 € and a design targeted for industrial, medical, and traffic applications,

Basler Scout family is based on a selection of the best Sony CCD sensors, offers a wide variety of resolutions and speeds, and produces outstanding image quality. We also offer models with a high performance CMOS sensor by Aptina. The cameras are available in a variety of housing options and therefore provide maximum flexibility with respect to cost and space requirements.

pylon Driver Package

You can download a free driver and software development kit (DSDK) from below link, Basler pylon. The pylon driver package operates with our GigE, IEEE 1394 and Camera Link cameras and offers reliable and flexible image data exchange between your Basler cameras and the PC, at a low CPU load.

<http://www.baslerweb.com/pylon>



Basler Pylon Driver Package

The pylon driver package operates with all Basler line scan and area scan cameras. It offers stable, reliable and flexible data exchange between Basler cameras and PCs, at a very low CPU load.

The internal architecture of the pylon driver package is based on GenICam Technology, which offers you easy access to the newest camera models and the latest features. Changes to an existing camera device in your application essentially become a plug-and-play process.

The pylon package contains the following main modules. Each one can be individually selected/unselected during the installation process, preventing the installation of unneeded modules on your system.

GigE Vision Filter Driver

GigE Vision Performance Driver

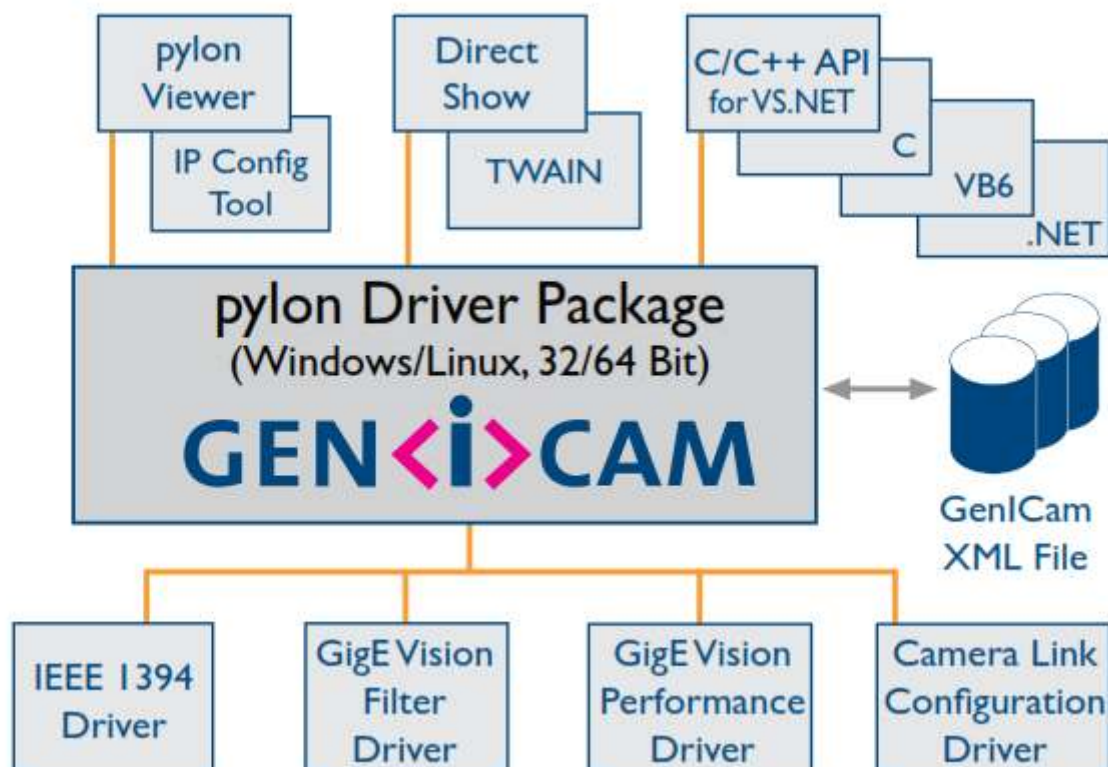
IEEE 1394 Driver

Camera Link Serial Communication Driver

pylon Viewer

IP Configuration Tool

pylon SDK for all cameras; C, C++, C# and VB6 (the 'pylon for Linux' version only supports the GigE interface via a C++ API)





Semiconductor Industry Camera

Basler cameras are designed to meet the needs of all mainstream semiconductor applications. Among their many other features, they offer:

- High speed
- High resolution
- An outstanding price/performance ratio
- Cable lengths up to 100 meters

Typical applications include:

- Automated Optical Inspection (AOI)
- Quality control of semiconductor wafers
- Inspection in dicing and bonding systems
- Process control

Devices such as computers, cell phones, and TVs all use circuits that contain many electronic components. The active electronic components used in these devices are produced on semiconductor wafers. The density and complexity of today's wafers is growing from year to year. This increases the requirements for quality control and for the camera systems used to inspect the materials. Optical inspection systems are required at different steps in the semiconductor production process, from inspection of the unstructured wafer material to inspection of the final circuits.

Area Scan Camera : ACE Series



Camera model	Resolution horizontal/ vertical	Frame Rate	Mono/Color	Interface
acA640-90gc	658 pixels x 492 pixels	90 fps	Color	Gigabit Ethernet
acA640-90gm	659 pixels x 494 pixels	90 fps	Mono	Gigabit Ethernet
acA640-100gc	658 pixels x 492 pixels	100 fps	Color	Gigabit Ethernet
acA640-100gm	659 pixels x 494 pixels	100 fps	Mono	Gigabit Ethernet
acA645-100gc	658 pixels x 492 pixels	100 fps	Color	Gigabit Ethernet
acA645-100gm	659 pixels x 494 pixels	100 fps	Mono	Gigabit Ethernet
acA750-30gc	748 pixels x 576 pixels	30 fps	Color	Gigabit Ethernet
acA750-30gm	752 pixels x 580 pixels	30 fps	Mono	Gigabit Ethernet
acA780-75gc	782 pixels x 582 pixels	75 fps	Color	Gigabit Ethernet
acA780-75gm	782 pixels x 582 pixels	75 fps	Mono	Gigabit Ethernet
acA1300-30gc	1294 pixels x 964 pixels	30 fps	Color	Gigabit Ethernet
acA1300-30gm	1296 pixels x 966 pixels	30 fps	Mono	Gigabit Ethernet
acA1600-20gc	1624 pixels x 1234 pixels	20 fps	Color	Gigabit Ethernet
acA1600-20gm	1628 pixels x 1236 pixels	20 fps	Mono	Gigabit Ethernet
acA2000-50gc	2048 pixels x 1088 pixels	50 fps	Color	Gigabit Ethernet
acA2000-50gm	2048 pixels x 1088 pixels	50 fps	Mono	Gigabit Ethernet
acA2000-50gm NIR	2048 pixels x 1088 pixels	50 fps	Mono	Gigabit Ethernet
acA2040-25gc	2048 pixels x 2048 pixels	25 fps	Color	Gigabit Ethernet
acA2040-25gm	2048 pixels x 2048 pixels	25 fps	Mono	Gigabit Ethernet
acA2040-25gm NIR	2048 pixels x 2048 pixels	25 fps	Mono	Gigabit Ethernet
acA2500-14gc	2590 pixels x 1942 pixels	14 fps	Color	Gigabit Ethernet
acA2500-14gm	2592 pixels x 1944 pixels	14 fps	Mono	Gigabit Ethernet



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Area Scan Camera : Aviator Series



High performance, exceptional image quality, outstanding price/performance ratio

The Basler aviator series includes state-of-the-art high speed cameras with either a Camera Link or a Gigabit Ethernet interface. They deliver excellent image quality, even at high capture rates. Basler aviator cameras are equipped with Kodak's latest CCD sensor generation with four data outputs (4 taps). These sensors are up to four times faster than standard CCD sensors with the same resolution.

Basler aviator cameras employ all of the tap balancing know-how that Basler developers acquired during the integration of 2 tap Kodak sensors into our highly successful pilot series.

The advantages of the Basler aviator family include:

- Resolutions of 1, 2 (4:3 and HDTV), and 4 MP
- Max. capture rate of 120 fps
- Standardized GigE and Camera Link interface
- Excellent linearity, high dynamic range, and low noise level
- Extremely attractive price/performance ratio
- Fully quality tested and calibrated for consistently high performance and reliability

Camera model	Resolution horizontal/vertical	Frame Rate	Mono/Color	Interface
avA1000-100gc	1024 pixels x 1024 pixels	101 fps	Color	Gigabit Ethernet
avA1000-100gm	1024 pixels x 1024 pixels	101 fps	Mono	Gigabit Ethernet
avA1600-50gc	1600 pixels x 1200 pixels	55 fps	Color	Gigabit Ethernet
avA1600-50gm	1600 pixels x 1200 pixels	55 fps	Mono	Gigabit Ethernet
avA1900-50gc	1920 pixels x 1080 pixels	51 fps	Color	Gigabit Ethernet
avA1900-50gm	1920 pixels x 1080 pixels	51 fps	Mono	Gigabit Ethernet
avA2300-25gc	2330 pixels x 1750 pixels	26 fps	Color	Gigabit Ethernet
avA2300-25gm	2330 pixels x 1750 pixels	26 fps	Mono	Gigabit Ethernet



Area Scan Camera : Pilot Series



Excellent image quality, slim design, easily integrated

The high performance Basler pilot camera family includes GigE camera models with a variety of Kodak CCD sensors and one Sony CCD sensor. These cameras take maximum advantage of Kodak sensor technology and provide exceptionally good image quality. Basler pilot cameras can often substitute for more costly Camera Link cameras and frame grabbers.

The advantages of the Basler pilot family include:

- Resolutions from VGA to 5 MP
- Max. capture rate of 210 fps
- Standardized GigE interface
- Outstanding image quality
- Small, rugged housing for easy integration
- Fully quality tested and calibrated for consistently high performance and reliability

Camera model	Resolution horizontal/ vertical	Frame Rate	Mono/Color	Interface
piA640-210gc	648 pixels x 488 pixels	210 fps	Color	Gigabit Ethernet
piA640-210gm	648 pixels x 488 pixels	210 fps	Mono	Gigabit Ethernet
piA1000-48gc	1000 pixels x 1000 pixels	48 fps	Color	Gigabit Ethernet
piA1000-48gm	1004 pixels x 1004 pixels	48 fps	Mono	Gigabit Ethernet
piA1000-60gc	1000 pixels x 1000 pixels	60 fps	Color	Gigabit Ethernet
piA1000-60gm	1004 pixels x 1004 pixels	60 fps	Mono	Gigabit Ethernet
piA1600-35gc	1608 pixels x 1208 pixels	35 fps	Color	Gigabit Ethernet
piA1600-35gm	1608 pixels x 1208 pixels	35 fps	Mono	Gigabit Ethernet
piA1900-32gc	1926 pixels x 1082 pixels	32 fps	Color	Gigabit Ethernet
piA1900-32gm	1928 pixels x 1084 pixels	32 fps	Mono	Gigabit Ethernet
piA2400-17gc	2454 pixels x 2056 pixels	17 fps	Color	Gigabit Ethernet
piA2400-17gm	2456 pixels x 2058 pixels	17 fps	Mono	Gigabit Ethernet



Area Scan Camera : Scout Series



More than 60 models, proven worldwide, versatile

The cameras are available in a variety of housing options and therefore provide maximum flexibility with respect to cost and space requirements.

The advantages of the Basler scout family include:

- Resolutions from VGA to 2 MP
- Max. capture rate of 120 fps
- Standardized GigE and FireWire-b interface
- Available with a C-mount or a CS-mount lens adapter and a 90° offset head
- Small, rugged housing for easy integration
- Fully quality tested and calibrated for consistently high performance and reliability





Area Scan Camera : Scout Series



Camera model	Resolution horizontal/vertical	Frame Rate	Mono/Color	Interface
scA640-70gc	658 pixels x 492 pixels	70 fps	Color	Gigabit Ethernet
scA640-70gm	659 pixels x 494 pixels	70 fps	Mono	Gigabit Ethernet
scA640-74gc	658 pixels x 492 pixels	79 fps	Color	Gigabit Ethernet
scA640-74gm	659 pixels x 494 pixels	79 fps	Mono	Gigabit Ethernet
scA640-120gc	658 pixels x 492 pixels	122 fps	Color	Gigabit Ethernet
scA640-120gm	659 pixels x 494 pixels	122 fps	Mono	Gigabit Ethernet
scA750-60gc	750 pixels x 480 pixels	64 fps	Color	Gigabit Ethernet
scA750-60gm	752 pixels x 480 pixels	64 fps	Mono	Gigabit Ethernet
scA780-54gc	780 pixels x 580 pixels	55 fps	Color	Gigabit Ethernet
scA780-54gm	782 pixels x 582 pixels	55 fps	Mono	Gigabit Ethernet
scA1000-30gc	1032 pixels x 778 pixels	31 fps	Color	Gigabit Ethernet
scA1000-30gm	1034 pixels x 779 pixels	31 fps	Mono	Gigabit Ethernet
scA1300-32gc	1294 pixels x 964 pixels	32 fps	Color	Gigabit Ethernet
scA1300-32gm	1296 pixels x 966 pixels	32 fps	Mono	Gigabit Ethernet
scA1390-17gc	1390 pixels x 1038 pixels	17 fps	Color	Gigabit Ethernet
scA1390-17gm	1392 pixels x 1040 pixels	17 fps	Mono	Gigabit Ethernet
scA1400-17gc	1390 pixels x 1038 pixels	17 fps	Color	Gigabit Ethernet
scA1400-17gm	1392 pixels x 1040 pixels	17 fps	Mono	Gigabit Ethernet
scA1400-30gc	1390 pixels x 1038 pixels	30 fps	Color	Gigabit Ethernet
scA1400-30gm	1392 pixels x 1040 pixels	30 fps	Mono	Gigabit Ethernet
scA1600-14gc	1624 pixels x 1234 pixels	14 fps	Color	Gigabit Ethernet
scA1600-14gm	1626 pixels x 1236 pixels	14 fps	Mono	Gigabit Ethernet
scA1600-28gc	1624 pixels x 1234 pixels	28 fps	Color	Gigabit Ethernet
scA1600-28gm	1626 pixels x 1236 pixels	28 fps	Mono	Gigabit Ethernet



Area Scan Camera



Camera model	Resolution horizontal/vertical	Frame Rate	Mono/Color	Interface
scA640-70fc	658 pixels x 492 pixels	71 fps	Color	FireWire-b
scA640-70fm	659 pixels x 494 pixels	71 fps	Mono	FireWire-b
scA640-74fc	658 pixels x 492 pixels	74 fps	Color	FireWire-b
scA640-74fm	659 pixels x 494 pixels	74 fps	Mono	FireWire-b
scA640-120fc	658 pixels x 492 pixels	120 fps	Color	FireWire-b
scA640-120fm	659 pixels x 494 pixels	122 fps	Mono	FireWire-b
scA750-60fc	750 pixels x 480 pixels	64 fps	Color	FireWire-b
scA750-60fm	752 pixels x 480 pixels	64 fps	Mono	FireWire-b
scA780-54fc	780 pixels x 580 pixels	54 fps	Color	FireWire-b
scA780-54fm	782 pixels x 582 pixels	58 fps	Mono	FireWire-b
scA1000-30fc	1032 pixels x 778 pixels	30 fps	Color	FireWire-b
scA1000-30fm	1034 pixels x 779 pixels	30 fps	Mono	FireWire-b
scA1300-32fc	1294 pixels x 964 pixels	32 fps	Color	FireWire-b
scA1300-32fm	1296 pixels x 966 pixels	32 fps	Mono	FireWire-b
scA1390-17fc	1390 pixels x 1038 pixels	17 fps	Color	FireWire-b
scA1390-17fm	1392 pixels x 1040 pixels	17 fps	Mono	FireWire-b
scA1400-17fc	1390 pixels x 1038 pixels	17 fps	Color	FireWire-b
scA1400-17fm	1392 pixels x 1040 pixels	17 fps	Mono	FireWire-b
scA1400-30fc	1390 pixels x 1038 pixels	30 fps	Color	FireWire-b
scA1400-30fm	1392 pixels x 1040 pixels	30 fps	Mono	FireWire-b
scA1600-14fc	1624 pixels x 1234 pixels	14 fps	Color	FireWire-b
scA1600-14fm	1628 pixels x 1236 pixels	14 fps	Mono	FireWire-b
scA1600-28fc	1624 pixels x 1230 pixels	28 fps	Color	FireWire-b
scA1600-28fm	1628 pixels x 1236 pixels	28 fps	Mono	FireWire-b

Area Scan Camera



Camera model	Resolution horizontal/vertical	Frame Rate	Mono/Color	Interface
slA750-60fm	752 pixels x 480 pixels	64 fps	Mono	FireWire-b
slA1000-30fm	1034 pixels x 779 pixels	30 fps	Mono	FireWire-b
slA1390-17fm	1392 pixels x 1040 pixels	17 fps	Mono	FireWire-b
slA1600-14fm	1628 pixels x 1236 pixels	14 fps	Mono	FireWire-b
A102f	1392 pixels x 1040 pixels	15 fps	Mono	FireWire-a
A102fc	1388 pixels x 1038 pixels	15 fps	Color	FireWire-a
A311f	659 pixels x 494 pixels	73 fps	Mono	FireWire-a
A311fc	658 pixels x 492 pixels	73 fps	Color	FireWire-a
A312f	782 pixels x 582 pixels	53 fps	Mono	FireWire-a
A312fc	780 pixels x 580 pixels	53 fps	Color	FireWire-a
A601f	656 pixels x 491 pixels	60 fps	Mono	FireWire-a
A601fc	656 pixels x 490 pixels	60 fps	Color	FireWire-a
A602f	656 pixels x 491 pixels	100 fps	Mono	FireWire-a
A602fc	656 pixels x 490 pixels	100 fps	Color	FireWire-a
A622f	1280 pixels x 1024 pixels	25 fps	Mono	FireWire-a
A631f	1392 pixels x 1040 pixels	18.7 fps	Mono	FireWire-a
A631fc	1388 pixels x 1038 pixels	18.7 fps	Color	FireWire-a
A641f	1624 pixels x 1236 pixels	14 fps	Mono	FireWire-a
A641fc	1624 pixels x 1236 pixels	14 fps	Color	FireWire-a





Area Scan Camera



Camera model	Resolution horizontal/vertical	Frame Rate	Mono/Color	Interface
A402k	2352 pixels x 1726 pixels	24 fps	Mono	Camera Link
A403k	2352 pixels x 1726 pixels	48 fps	Mono	Camera Link
A404k	2352 pixels x 1726 pixels	96 fps	Mono	Camera Link
A405k	2320 pixels x 1726 pixels	167 fps	Mono	Camera Link
A406k	2320 pixels x 1726 pixels	209 fps	Mono	Camera Link
A501k	1280 pixels x 1024 pixels	74 fps	Mono	Camera Link
A503k	1280 pixels x 1024 pixels	402 fps	Mono	Camera Link
A504k	1280 pixels x 1024 pixels	500 fps	Mono	Camera Link
acA2000-340kc	2048 pixels x 1088 pixels	340 fps	Color	Camera Link
acA2000-340km	2048 pixels x 1088 pixels	340 fps	Mono	Camera Link
acA2040-180kc	2046 pixels x 2046 pixels	180 fps	Color	Camera Link
acA2040-180km	2048 pixels x 2048 pixels	180 fps	Mono	Camera Link
avA1000-120kc	1024 pixels x 1024 pixels	120 fps	Color	Camera Link
avA1000-120km	1024 pixels x 1024 pixels	120 fps	Mono	Camera Link
avA1600-65kc	1600 pixels x 1200 pixels	67 fps	Color	Camera Link
avA1600-65km	1600 pixels x 1200 pixels	67 fps	Mono	Camera Link
avA1900-60kc	1920 pixels x 1080 pixels	62 fps	Color	Camera Link
avA1900-60km	1920 pixels x 1080 pixels	62 fps	Mono	Camera Link
avA2300-30kc	2330 pixels x 1750 pixels	31 fps	Color	Camera Link
avA2300-30km	2330 pixels x 1750 pixels	31 fps	Mono	Camera Link

Line Scan Camera



Outstanding price/performance ratio, high speeds, ideal housing design

The racer series offers line scan cameras with an exceptional price/performance ratio. The cameras are available with a variety of resolutions and with a GigE or a Camera Link interface.

They provide high performance thanks to the newest CMOS technology. racer cameras have a compact, slim industrial housing ideally suited for multi-camera systems with many line scan cameras installed next to each other.

The advantages of the Basler racer series include:

- Resolutions: 2k, 4k first – 6k, 8k, 12k before the end of 2012
- Max. line rate of 80 kHz via Camera Link
- Max. line rate of 48 kHz via GigE
- PoCL (Power over Camera Link) functionality
- Mini camera link plugs permit the use of low priced cables
- Outstanding price/performance ratio
- Fully quality tested and calibrated for consistently high performance and reliability

Camera model	Resolution	Linerate	Mono/Color	Interface
raL2048-48gm	2048 pixels	48.00 kHz	Mono	Gigabit Ethernet
raL4096-24gm	4096 pixels	24.00 kHz	Mono	Gigabit Ethernet
ruL1024-19gm	1024 pixels	18.70 kHz	Mono	Gigabit Ethernet
ruL1024-36gm	1024 pixels	35.70 kHz	Mono	Gigabit Ethernet
ruL1024-57gm	1024 pixels	56.10 kHz	Mono	Gigabit Ethernet
ruL2048-10gm	2048 pixels	9.70 kHz	Mono	Gigabit Ethernet
ruL2048-19gm	2048 pixels	18.70 kHz	Mono	Gigabit Ethernet
ruL2048-30gm	2048 pixels	29.20 kHz	Mono	Gigabit Ethernet
ruL2098-10gc	3 x 2098 pixels	9.20 kHz	Color	Gigabit Ethernet





Line Scan Camera



Camera model	Resolution	Linerate	Mono/Color	Interface
spl2048-39kc	2 x 2048 pixels	38.60 kHz	Color	Camera Link
spl2048-70kc	2 x 2048 pixels	70.00 kHz	Color	Camera Link
spl2048-70km	2 x 2048 pixels	70.00 kHz	Mono	Camera Link
spl2048-140km	2 x 2048 pixels	140.00 kHz	Mono	Camera Link
spl4096-39kc	2 x 4096 pixels	38.60 kHz	Color	Camera Link
spl4096-39km	2 x 4096 pixels	38.60 kHz	Mono	Camera Link
spl4096-70kc	2 x 4096 pixels	70.00 kHz	Color	Camera Link
spl4096-70km	2 x 4096 pixels	70.00 kHz	Mono	Camera Link
spl4096-140km	2 x 4096 pixels	140.00 kHz	Mono	Camera Link
spl8192-39kc	2 x 8192 pixels	38.60 kHz	Color	Camera Link
spl8192-70km	2 x 8192 pixels	70.00 kHz	Mono	Camera Link
L301k	3 x 2098 pixels	9.20 kHz	Mono	Camera Link
L301kc	3 x 2098 pixels	9.20 kHz	Color	Camera Link
L304k	3 x 4080 pixels	7.20 kHz	Mono	Camera Link
L304kc	3 x 4080 pixels	7.20 kHz	Color	Camera Link
L401k	4080 pixels	7.10 kHz	Mono	Camera Link
L402k	4080 pixels	14.10 kHz	Mono	Camera Link
L801k	8160 pixels	4.70 kHz	Mono	Camera Link
L802k	8160 pixels	9.40 kHz	Mono	Camera Link
L803k	8160 pixels	14.10 kHz	Mono	Camera Link
L101k-1k	1024 pixels	19.00 kHz	Mono	Camera Link
L101k-2k	2048 pixels	9.50 kHz	Mono	Camera Link
L103k-1k	1024 pixels	35.70 kHz	Mono	Camera Link
L103k-2k	2048 pixels	18.70 kHz	Mono	Camera Link
L104k-1k	1024 pixels	58.50 kHz	Mono	Camera Link
L104k-2k	2048 pixels	29.20 kHz	Mono	Camera Link

Camera Accessories

we offer a wide variety of accessories designed to help you get the most out of your camera. To ensure full compatibility, all accessories are tested with our cameras. Cables and power supplies are all EMC proven for industrial conditions by our support team.

Our portfolio includes several accessories in each of the following categories:

- Cables
- Connectors
- Frame Grabbers and Cards
- Lens Mounts
- Optics
- Power Supplies
- Tripod Mounts
- Others





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