



# PRODUCT GUIDE

2023

# About Us

## Vision Systems Technology

Vision Systems Technology was founded in 2010 by Kris Balch (former Technical Director of Kodak's Motion Analysis Systems Division) to create value through robust industrial imaging solutions by improving quality and productivity to drive down manufacturing costs.

VST is a North American Master Distributor of Vieworks, Teledyne, SVS-Vistek, Emergent Vision Technologies, Indigo Imaging, Kaya Instruments, and Hikrobot. We offer the highest resolution cameras commercially available for Machine Vision applications in both native and pixel shift formats. We have a full range of lenses from Vieworks, SPO Telecentric, Moritex, Zeiss Industrial, Computar, and Schneider. We stock cables and offer frame grabbers from Euresys, Kaya Instruments, and Teledyne.

## Core Values

**INTEGRITY** – We operate with honesty, truth, and honor in all our interactions

**INNOVATION** – We combine creative thinking with the latest technology

**ACCOUNTABILITY** – We provide excellent service to build strong customer relationships

## What Sets us Apart

We are an industry known expert in high speed and ultra high resolution imaging.

We are the leading experts in North America on advanced ultra high resolution Pixel Shift cameras, up to 1,359 megapixels.

We provide exceptional consultative engineering pre/post sales support.

We offer free demos to qualified customers for 30 or 60 day evaluation before purchase.

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# VIEWWORKS: VC SERIES

## High Speed CMOS Cameras

VC Series is a family of high resolution CMOS cameras for machine vision. Equipped with the latest global or rolling shutter CMOS image sensor technology available today, the camera series offers not only high speed image processing capabilities but also precise exposure control. With a wide range of camera resolutions, these cameras are ideal for use in various industrial inspection and scientific research applications.



### Ultra High Resolution and High Speed

High resolution up to 151 megapixels  
High speed up to 337.6 fps

### Better Usability

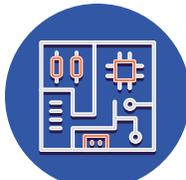
- Programmable cameras
- Easy firmware updates
- Global shutter & rolling shutter
- 10 Gigabit Ethernet interface
- Camera Link interface
- CoaXPress interface

## CAMERA LINK

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm <sup>2</sup> )
					H x V (mm <sup>2</sup> )	Diagonal	Optical		
VC-2MC-M/C 150	2048 × 1088	148.5 fps	8/10 bits	Camera Link	11.26 × 5.98	12.75 mm	2/3"	CMV2000	5.5 × 5.5
VC-2MC-M/C 340	2048 × 1088	337.6 fps	8/10 bits	Camera Link	11.26 × 5.98	12.75 mm	2/3"	CMV2000	5.5 × 5.5
VC-3MC-M/C 280	1696 × 1710	285 fps	8 bits	Camera Link	13.57 × 13.68	19.27 mm	1.2"	LUPA3000	8.0 × 8.0
VC-4MC-M/C 80	2048 × 2048	78.9 fps	8/10 bits	Camera Link	11.26 × 11.26	15.92 mm	1"	CMV4000	5.5 × 5.5
VC-4MC-M/C 180	2048 × 2048	179.5 fps	8/10 bits	Camera Link	11.26 × 11.26	15.92 mm	1"	CMV4000	5.5 × 5.5
VC-5MC-M/C 110 H	2448 × 2048	109.5 fps	8/10/12 bits	Camera Link	67.08 × 56.12	8.8 mm	1/1.8"	IMX547	2.74 × 2.74
VC-5MC-M/C 120	2600 × 2160	120.6 fps	8/10/12 bits	Camera Link	6.5 × 5.4	8.45 mm	1/2"	GMAX2505	2.5 × 2.5
VC-9MC-M/C 90	4200 × 2160	90.7 fps	8/10/12 bits	Camera Link	10.5 × 5.4	11.8 mm	2/3"	GMAX2509	2.5 × 2.5
VC-12MC-M/C 65	4096 × 3072	64.3 fps	8/10 bits	Camera Link	22.53 × 16.90	28.14 mm	APS - like	CMV12000	5.5 × 5.5
VC-17MC-M/C 48 H	5440 × 3076	48.4 fps	8/10/12 bits	Camera Link	18.76 × 10.61	21.7 mm	4/3"	IMX387	3.45 × 3.45
VC-18MC-M/C 45	4504 × 4096	44.9 fps	8/10/12 bits	Camera Link	11.27 × 10.24	15.22 mm	1"	GMAX2518	2.5×2.5
VC-25MC-M/C 30	5120 × 5120	30.9 fps	8/10 bits	Camera Link	23.04 × 23.04	32.58 mm	35 mm	VITA-25K	4.5 × 4.5
VC-25MC-M/C 30 D	5120 × 5120	30.1 fps	8/10 bits	Camera Link	23.04 × 23.04	32.58 mm	APS-H	PYTHON-25K	4.5 × 4.5
VC-25MC-M/C 31 I	5120 × 5120	31.7 fps	8/10/12 bits	Camera Link	12.8 × 12.8	18.1 mm	1.1"	GMAX0505	2.5 × 2.5
VC-31MC-M/C 26 H	6464 × 4852	26.2 fps	8/10/12 bits	Camera Link	22.30 × 16.73	27.9 mm	APS-C	IMX342	3.45 × 3.45
VC-50MC-M/C 18	7920 × 6004	17.5 fps	8/10/12 bits	Camera Link	36.43 × 27.62	45.72 mm	35 mm	CMV 50000	4.6 × 4.6
VC-61MC-M/C 13 H	9568 × 6380	13.68 fps	8/10/12 bits	Camera Link	35.98 × 23.99	43.3 mm	2.7"	IMX455	3.76 × 3.76
VC-71MC-M/C 4	10000 × 7096	4.2 fps	8/10/12 bits	Camera Link	31.00 × 24.11	38 mm	35 mm	CHR71000	3.1 × 3.1
VC-101MC-M/C 8 H	11648 × 8742	8.1 fps	8/10/12 bits	Camera Link	43.80 × 32.87	55 mm	3.4"	IMX461	3.76 × 3.76
VC-151MC-M/C 5 H	14192 × 10640	5.5 fps	8/10/12 bits	Camera Link	53.36 × 40.01	66.7 mm	4.2"	IMX411	3.76 × 3.76



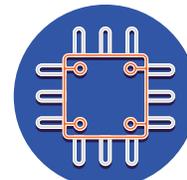
Flat Panel Display



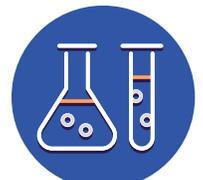
Printed Circuit Board



Auto Slide Scanning



Semiconductor



Life Sciences

## CXP-6

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (μm <sup>2</sup> )
					H x V (mm <sup>2</sup> )	Diagonal	Optical		
VC-4MX-M 144 F	2048 × 2048	144 fps	8 bits	CXP-6 1 Lane	11.26 x 11.26	15.92 mm	1"	CMV4000	5.5 × 5.5
VC-12MX-M/C 65 H	4096 × 3000	64.6 fps	8 bits	CXP-6 4 Lanes	14.13 x 10.35	17.6 mm	1.1"	IMX253	3.45 × 3.45
VC-12MX-M/C 180	4096 × 3072	180 fps	8 bits	CXP-6 4 Lanes	22.53 x 16.90	28.16 mm	APS-like	CMV 12000	5.5 × 5.5
VC-12MX-M/C 330 F	4096 × 3072	330 fps	8 bits	CXP-6 8 Lanes	22.53 x 16.90	28.16 mm	APS-like	CMV 12000	5.5 × 5.5
VC-17MX-M/C 61 H	5440 × 3076	61.3 fps	8/10/12 bits	CXP-6 4 Lanes	18.76 x 10.61	21.7 mm	4/3"	IMX387	3.45 × 3.45
VC-25MX-M/C 42 I	5120 × 5120	41.7 fps	8/10/12 bits	CXP-6 2 Lanes	12.8 x 12.8	18.1 mm	1.1"	GMAX0505	2.5 × 2.5
VC-25MX-M/C 72	5120 × 5120	72 fps	8/10 bits	CXP-6 4 Lanes	23.04 x 23.04	32.58 mm	35 mm	VITA-25K	4.5 × 4.5
VC-25MX-M/C 81 D	5120 × 5120	81 fps	8 bits	CXP-6 4 Lanes	23.04 x 23.04	32.58 mm	APS-H	PYTHON-25K	4.5 × 4.5
VC-25MX-M/C 91 I	5120 × 5120	91.3 fps	8/10 bits	CXP-6 4 Lanes	12.8 x 12.8	18.1 mm	1.1"	GMAX0505	2.5 × 2.5
VC-31MX-M/C 35 H	6464 × 4852	35.4 fps	8/10/12 bits	CXP-6 4 Lanes	22.30 x 16.73	27.9 mm	APS-C	IMX342	3.45 × 3.45
VC-50MX-M/C 30	7920 × 6004	30 fps	8/10/12 bits	CXP-6 4 Lanes	36.43 x 27.62	45.72 mm	35 mm	CMV 50000	4.6 × 4.6
VC-61MX-M/C 18 H	9568 × 6380	17.93 fps	8/10/12/14/16 bits	CXP-6 4 Lanes	35.98 x 23.99	43.3 mm	2.7"	IMX455	3.76 × 3.76
VC-65MX-M/C 31 I	9344 × 7000	31 fps	8/10/12 bits	CXP-6 4 Lanes	29.9 x 22.4	37.4 mm	2.3"	GMAX3265	3.2 × 3.2
VC-65MX-M/C 35 I	9344 × 7000	35.5 fps	8/10 bits	CXP-6 4 Lanes	29.9 x 22.4	37.4 mm	2.3"	GMAX3265	3.2 × 3.2
VC-101MX-M/C 9 H	11648 × 8742	8.7 fps	8/10/12/14/16 bits	CXP-6 4 Lanes	43.80 x 32.87	55 mm	3.4"	IMX461	3.76 × 3.76
VC-151MX-M/C 6 H	14192 × 10640	6.2 fps	8/10/12/14/16 bits	CXP-6 4 Lanes	53.36 x 40.01	66.7 mm	4.2"	IMX411	3.76 × 3.76

## CXP 12

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (μm <sup>2</sup> )
					H x V (mm <sup>2</sup> )	Diagonal	Optical		
VC-5MX2-M/C 289	2592 × 2160	289 fps	8/10 bits	CXP-12 2 Lanes	6.5 x 5.4	8.45 mm	1/2"	GMAX2505	2.5 × 2.5
VC-9MX2-M/C 262	4192 × 2160	262 fps	8/10 bits	CXP-12 2 Lanes	10.5 x 5.4	11.8 mm	2/3"	GMAX2509	2.5 × 2.5
VC-12MX2-M/C 330 F	4096 × 3072	335 fps	8 bits	CXP-12 4 Lanes	22.53 x 16.90	28.16 mm	APS-like	CMV 12000	5.5 × 5.5
VC-18MX2-M/C 132	4480 × 4096	132 fps	8/10 bits	CXP-12 4 Lanes	11.27 x 10.24	15.22 mm	1"	GMAX2518	2.5×2.5
VC-21MX2-M/C 230 I	5120 × 4096	229 fps	8/10/12 bits	CXP-12 4 Lanes	23.04 x 18.43	29.5 mm	APS-C	GSPRINT 4521	4.5 × 4.5
VC-25MX2-M/C 150 I	5120 × 5120	150.2 fps	8/10 bits	CXP-12 4 Lanes	12.8 x 12.8	18.1 mm	1.1"	GMAX0505	2.5 × 2.5
VC-65MX2-M/C 71 I	9344 × 7000	71.1 fps	8/10 bits	CXP-12 4 Lanes	29.9 x 22.4	37.4 mm	2.3"	GMAX3265	3.2 × 3.2
VC-103MX2-M/C 24 I	11264 × 9200	24.7 fps	8/10/12 bits	CXP-12 4 Lanes	36.1 x 29.4	46.6 mm	2.9"	GMAX32103	3.2 × 3.2
VC-127MX2-M/C 21 H	13376 × 9528	21.9 fps	8/10/12/14 bits	CXP-12 4 Lanes	46.15 x 32.87	56.73 mm	3.6"	IMX661	3.45 × 3.45

## 10 GigE

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (μm <sup>2</sup> )
					H x V (mm <sup>2</sup> )	Diagonal	Optical		
VC-25M10G-M/C 41 I	5120 × 5120	41.7 fps	8/10p/10/12p/12 bits	10 GigE	12.8 x 12.8	18.1 mm	1.1"	GMAX0505	2.5 × 2.5



Intelligent Traffic



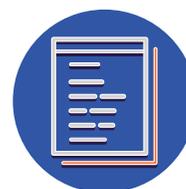
Motion Analysis



Pharmaceutical



Food &amp; Beverage



Document Digitizing

# VIEWWORKS: VN SERIES

## Ultra High Resolution Pixel Shifting Cameras

VN Series of pixel shift cameras is designed for applications where an object is stationary and extremely high resolution is required. Equipped with the Vieworks advanced pixel shifting technology based on a precise piezoelectric stage, VN Series can increase the original resolution up to 9 times.



### Outstanding Pixel Shift Technology

Vieworks proprietary nano-stage pixel shifting technology increases the resolution up to 9 times

### Field Proven Performance and Reliability

Adopted by major FPD manufacturers with stable performance and reliability.

### Better Usability

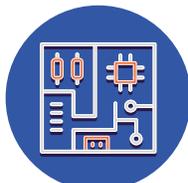
- Programmable cameras
- Easy firmware updates
- Global shutter & rolling shutter
- 10 Gigabit Ethernet interface
- Camera Link interface
- CoaXPress interface

## COAXPRESS

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size ( $\mu\text{m}^2$ )
					H x V (mm <sup>2</sup> )	Diagonal	Optical		
VN-25MX-M/C 72	5120 x 5120 (15360 x 15360)	72 fps	8/10 bits	CXP-6 4 Lanes	23.04 x 23.04	32.58 mm	35 mm	VITA25K	4.5 x 4.5
VN-200MX-M/C 30	7920 x 6004 (23760 x 18012)	30 fps	8/10/12 bits	CXP-6 4 Lanes	36.43 x 27.62	45.72	35 mm	CMV50000	4.6 x 4.6



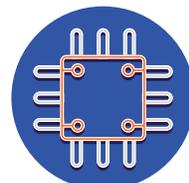
Flat Panel Display



Printed Circuit Board



Film Scanning



Semiconductor



Document Digitizing

# VIEWWORKS: VNP SERIES

## Pixel Shifting Cameras with Thermoelectric Cooling Technology

The VNP-604MX is the world’s highest resolution pixel shift camera commercially available. VNP Series is equipped with thermoelectric cooling, and is designed not only for applications where extremely high resolution is required, but also for situations in which high image quality is essential. The thermoelectric cooling maintains the operating temperature of the image sensor at up to 15 degrees below ambient temperature to reduce noise significantly.

Our pixel shifting technology is based on a precise piezoelectric stage, providing either a 1/3 or 1/2 sub-pixel resolution which renders resolutions of 604 million pixels at 1.5 fps to 1.359 million pixels at 0.69 fps. When a pixel shift camera has a color sensor, the capability of producing TRUE COLOR (RGB) is possible for the native resolution. The CXP-6 interface supports transmitting image data at up to 25 Gbps using four coaxial cables delivering unique and unparalleled imaging performance.

Even the most demanding applications such as FPD, PCB and semiconductor inspections have embraced pixel shift technology as an affordable alternative to use multiple cameras to create the same image super resolution. As an example, one pixel shift camera can replace (9) cameras, (9) camera cables, (9) power supplies & (9) lenses. This is a tremendous reduction of hardware complexity and reliability since one camera + hardware is all that is required. Pixel shift cameras are also an affordable alternative to massive super sensors where a camera has a huge sensor which drives up the price of a super resolution camera not to mention the custom optics often required.

### Outstanding Pixel Shift Technology

Steadily maintains the operating sensor temperature up to 20 degrees below ambient temperature

### Perfect Cooling Technology

Steadily maintains the operating sensor temperature up to 15 degrees below ambient temperature and removes the moisture that forms on the cold surface of the Peltier by using Vieworks signature heating structure

### Better Usability

- Programmable cameras
- Easy firmware updates
- FFC (Flat Field Correction)
- Pixel defect correction
- CoaXPress interface

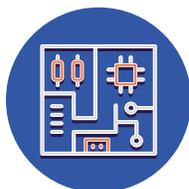


## COAXPRESS

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm <sup>2</sup> )
					H x V (mm <sup>2</sup> )	Diagonal	Optical		
VNP-200MX-M/C 30	7920 x 6004 (23760 x 18012)	30 fps	8/10/12 bits	CXP-6 4 Lanes	36.43 x 27.62	45.72 mm	35 mm	CMV50000	4.6 x 4.6
VNP-604MX-M/C 6 H	14192 x 10640 (28384 x 21280)	6.2 fps	8/10/12 bits	CXP-6 4 Lanes	53.36 x 40.01	66.7 mm	4.2"	IMX411	3.76 x 3.76



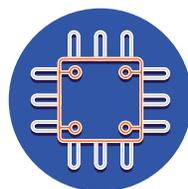
Microscopy



Printed Circuit Board



Film Scanning



Semiconductor



Document Digitizing

# VIEWWORKS: VP SERIES

## High Performance Cameras with Thermoelectric Cooling Technology

VP series cameras are thermoelectric cooled, high performance cameras. These cameras use cooling technology developed for and used by many demanding market customers. The TEC maintains the operating temperature of the image sensor at up to 20 degrees below ambient temperature. These cameras can provide either stable operating conditions or the ability to expose for long period of time to increase camera sensitivity.



### Perfect Cooling Technology

Steadily maintains the operating sensor temperature up to 20 degrees below ambient temperature

### Excellent Heat Dissipation Structure

Removes the moisture that forms on the cold surface of the Peltier by using Vieworks signature heating structure

### Better Usability

- Programmable cameras
- Easy firmware updates
- FFC (Flat Field Correction)
- Pixel defect correction
- Camera Link interface
- CoaXPress interface

## CAMERA LINK

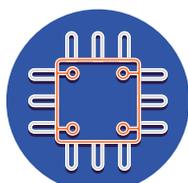
Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (μm <sup>2</sup> )
					H x V (mm <sup>2</sup> )	Diagonal	Optical		
VP-25M/C 30	5120 x 5120	30.9 fps	8/10 bits	Camera Link	23.04 x 23.04	32.58 mm	35 mm	VITA25K	4.5 x 4.5
VP-31MC-M/C 26 H	6464 x 4852	26.2 fps	8/10/12 bits	Camera Link	22.30 x 16.73	27.9 mm	APS-C	IMX342	3.45 x 3.45
VP-61MC-M/C 13 H	9568 x 6380	13.68 fps	8/10/12 bits	Camera Link	35.98 x 23.99	43.3 mm	2.7"	IMX455	3.76 x 3.76
VP-71MC-M/C 4	10000 x 7096	4.2 fps	8/10/12 bits	Camera Link	31.00 x 24.11	38 mm	35 mm	CHR71000	3.1 x 3.1
VP-101MC-M/C 8 H	11648 x 8742	8.1 fps	8/10/12 bits	Camera Link	43.80 x 32.87	55 mm	3.4"	IMX461	3.76 x 3.76
VP-151MC-M/C 5 H	14192 x 10640	5.5 fps	8/10/12 bits	Camera Link	53.36 x 40.01	66.7 mm	4.2"	IMX411	3.76 x 3.76

## COAXPRESS

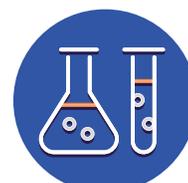
Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (μm <sup>2</sup> )
					H x V (mm <sup>2</sup> )	Diagonal	Optical		
VP-31MX-M/C 35 H	6464 x 4852	35.4 fps	8/10/12 bits	CXP-06 4 Lanes	22.30 x 16.73	27.9 mm	APS-C	IMX342	3.45 x 3.45
VP-50MX-M/C 30	7920 x 6004	30 fps	8/10/12 bits	CXP-06 4 Lanes	36.43 x 27.62	45.72 mm	35 mm	CMV50000	4.6 x 4.6
VP-61MX-M/C 18 H	9568 x 6380	17.93 fps	8/10/12/14/16 bits	CXP-06 4 Lanes	35.98 x 23.99	43.3 mm	2.7"	IMX455	3.76 x 3.76
VP-65MX-M/C 31 I	9344 x 7000	31 fps	8/10/12 bits	CXP-06 4 Lanes	29.9 x 22.4	37.4 mm	2.3"	GMAX3265	3.2 x 3.2
VP-101MX-M/C 9 H	11648 x 8742	8.7 fps	8/10/12/14/16 bits	CXP-06 4 Lanes	43.80 x 32.87	55 mm	3.4"	IMX461	3.76 x 3.76
VP-103MX2-M/C 24 I	11264 x 9200	24.7 fps	8/10/12 bits	CXP-12 4 Lanes	36.1 x 29.4	46.6 mm	2.9"	GMAX32103	3.2 x 3.2
VP-127MX2-M/C 21H	13376 x 9528	21.9 fps	8/10/12/14 bits	CXP-12 4 Lanes	46.15 x 32.87	56.73 mm	3.6"	IMX466	3.45 x 3.45
VP-151MX-M/C 6 H	14192 x 10640	6.2 fps	8/10/12/14/16 bits	CXP-06 4 Lanes	53.36 x 40.01	66.7 mm	4.2"	IMX411	3.76 x 3.76
VP-152MX2-M/C 16	16544 x 9200	16.3 fps	8/10/12 bits	CXP-12 4 Lanes	53.0 x 29.4	60.6 mm	Medium Format	Vieworks	3.2 x 3.2
VP-144MX	12000 x 12000	10 fps	8/12 bit	CXP-06 4 Lanes	42.0 x 42.0	59.39 mm	--	Syncron	3.5 x 3.5
VP-216MX	18000 x 12000	10 fps	8/12 bit	CXP-06 4 Lanes	63.0 x 42.0	75.71 mm	-	Syncron	3.5 x 3.5
VP-288MX	24000 x 12000	10 fps	8/12 bit	CXP-06 4 Lanes	84.0 x 42.0	93.91 mm	-	Syncron	3.5 x 3.5



Flat Panel Display



Semiconductor



Life Sciences

# VIEWWORKS: VX SERIES

## Aerial Imaging / Surveillance Cameras

The VX series is ideal for aerial imaging and ground surveillance applications which require photographic quality resolution and easy-to-use system integration. Taking pictures with this camera is made easy with features such as auto exposure, auto gain, auto focus, lens aperture control, and several innovative functions.



### Optimal Solutions for Outdoors

Robust cameras that pass strict reliability tests such as the 10G vibration test and the 70G shock test

### Easy Control

Various functions to support easy control of the camera. Auto exposure, auto focus, auto gain, and lens aperture control

### Better Usability

- Programmable cameras
- Easy firmware updates
- FFC (Flat Field Correction)
- Pixel defect correction
- Anti-smear
- Gigabit Ethernet interface

#### GigE

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (μm <sup>2</sup> )
					H x V (mm <sup>2</sup> )	Diagonal	Optical		
VX-25MG-M 5	5120 x 5120	4.7 fps	8 bits	GigE	23.04 x 23.04	32.58 mm	35 mm	VITA25K	4.5 x 4.5

# VIEWWORKS: VQ SERIES

## Ultra Compact & Cost Effective CMOS Cameras

The VQ series features the smallest cameras and is ideal for a wide range of industrial applications. With their compact housing size and light weight, VQ cameras can simply replace most industrial cameras. Their competitive price and advanced features allow users to enjoy versatile choices for various machine vision applications.



### Ultra Compact Cameras

The smallest cameras with compact housing and lightweight design from 28x28x52 mm in demension

### Seamless Installation

Cost effective with PoE Gigabit Ethernet interface for easy system integration

#### CAMERA LINK

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (μm <sup>2</sup> )
					H x V (mm <sup>2</sup> )	Diagonal	Optical		
VQ-4MC-M/C 180 F	2048 x 2048	180	8/10 bits	Camera Link	11.26 x 11.26	15.92	1"	CMV4000	5.5 x 5.5

#### GigE

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (μm <sup>2</sup> )
					H x V (mm <sup>2</sup> )	Diagonal	Optical		
VQ-400G2-M/C 291 H	728 x 544	291	8/10/12/16 bits	GigE	5.02 x 3.75	6.3 mm	1/2.9"	IMX287	5.5 x 5.5
VQ-1600G2-M/C 77 H	1440 x 1080	77	8/10/12/16 bits	GigE	4.97 x 3.73	6.3 mm	1/2.9"	IMX273	6.9 x 6.9
VQ-2MG2-M/C 52 H	1920 x 1200	52	8/10/12/16 bits	GigE	6.62 x 4.14	7.9 mm	1/2.3"	IMX392	3.45 x 3.45
VQ-3MG2-M/C 38 H	2048 x 1536	38	8/10/12/16 bits	GigE	7.07 x 5.30	8.9 mm	1/1.8"	IMX265	3.45 x 3.45
VQ-5MG2-M/C 24 H	2448 x 2048	24	8/10/12/16 bits	GigE	8.45 x 7.07	11.1 mm	2/3"	IMX264	3.45 x 3.45
VQ-12MG2-M/C 10 H	4096 x 3000	9.9	8/10/12/16 bits	GigE	14.13 x 10.35	17.6 mm	1.1"	IMX304	3.45 x 3.45
VQ-20MG2-M/C 6 H	5472 x 3648	6	8/10/12/16 bits	GigE	13.13 x 8.76	15.86 mm	1"	IMX183	2.4 x 2.4

# VIEWWORKS: VTC SERIES

## High Sensitivity & High Speed Color TDI Line Scan Cameras

VTC Series is a line of Time Delayed Integration (TDI) color line scan cameras that provide faster line rates and higher sensitivity than existing line scan cameras. With hybrid TDI line scan technology combining the strengths of both CCD and CMOS image sensors, the series can acquire True Color images at faster line rates with higher sensitivity. VTC Series is available for Camera Link, CoaXPress, and GigE interfaces to meet application specific requirements. VTDI is a sensor that combines a light sensitivity CCD-based TDI pixel array with CMOS readout electronics, giving the best features from both sensors. It has better sensitivity, higher dynamic range, faster speed, and lower power consumption, offering the best possible solution to diverse machine vision applications.



### The World's First Hybrid TDI Line Scan Sensor

Combines light sensitivity of CCD based TDI pixel array with CMOS readout electronics. High sensitivity of 80 stages with faster speed up to 140 kHz. Higher dynamic range and lower power consumption.

### Various Trigger Methods

Supports a variety of triggers: external trigger, frame start trigger, software trigger, and provides "Rescaler Mode" to set the accuracy.

### Better Usability

- Programmable cameras
- Easy firmware updates
- FFC (Flat Field Correction)
- Pixel defect correction
- Camera Link interface
- CXP and GigE interfaces

#### GigE

Model	Resolution	Line Rate	TDI Stage	Pixel Data	Interface	Sensor	Pixel Size ( $\mu\text{m}^2$ )
VTC-2K10.5G-C 19	2160 x 80	19 kHz (Max 100 kHz)	20/40/60/80	8/10/12 bits	GigE	Vieworks	10.5 x 10.5

#### CAMERA LINK

Model	Resolution	Line Rate	TDI Stage	Pixel Data	Interface	Sensor	Pixel Size ( $\mu\text{m}^2$ )
VTC-2K10.5C-C 100	2160 x 80	100 kHz	20/40/60/80	8/10/12 bits	CameraLink	Vieworks	10.5 x 10.5

#### COAXPRESS

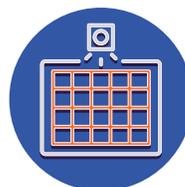
Model	Resolution	Line Rate	TDI Stage	Pixel Data	Interface	Sensor	Pixel Size ( $\mu\text{m}^2$ )
VTC-2K10.5X-C 140	2160 x 80	140 kHz	20/40/60/80	8/10/12 bits	CXP-6 2 Lanes	Vieworks	10.5 x 10.5



Pharmaceutical



Print Scanning



Web Inspection



Food & Beverage

# VIEWWORKS: VL SERIES

## High Performance & Cost Effective Line Scan Cameras

VL Series offers line scan camera models with wide ranging resolution from 2k to 16k, delivering greater speed and more sensitivity than ever before. The VL-16K3.5C-M50 F-1 model delivers maximum line rate of 50 kHz at 16k resolution. Even higher line rate, 80 kHz at 8k resolution can be achieved using the VL-8K7C-M80 F-2 model. The 8k, 4k, and 2k models are available in both monochrome and color. All VL series camera models have exposure control with 100X anti-blooming.



### High Performance & Cost Effective

High resolution up to 16k. Fast speed up to 200 kHz. Camera Link Interface

### Various Image Modes (VL-8K Monochrome model only)

Single line, Dual line (High Sensitivity), Horizontal Binning, Vertical Binning, H & V Binning

### Better Usability

- Compact size for the easy integration into machine vision systems
- M42 / M72 mount and customized mount size

#### MONO

2k / 4k / 8k / 16k Line Scan

Model	Resolution	Line Rate	Pixel Data	Optical Format	Interface	Sensor	Pixel Size (μm <sup>2</sup> )
VL-2K7C-M200 I-2	Monochrome	2048 x 2	200 kHz	M42	Camera Link	Vieworks	7.0 x 7.0
VL-4K7C-M200 I-2	Monochrome	4096 x 2	200 kHz	M42	Camera Link	GL0402	7.0 x 7.0
VL-8K7C-M80F-1	Monochrome	8192 x 1	80 kHz	M72	Camera Link	AMS DR-1x8k-7	7.0 x 7.0
VL-8K7C-M80F-2	Monochrome	8192 x 2	80 kHz	M72	Camera Link	AMS DR-2x8k-7	7.0 x 7.0
VL-16K3.5C-M50F-1	Monochrome	16384 x 1	50 kHz	M72	Camera Link	AMS DR-16k-3.5	3.5 x 3.5

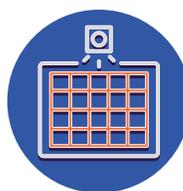
#### COLOR

2k / 4k / 8k Line Scan

Model	Resolution	Line Rate	Pixel Data	Optical Format	Interface	Sensor	Pixel Size (μm <sup>2</sup> )
VL-2K7C-C100 I-2	Color	2048 x 2	100 kHz	M42	Camera Link	Vieworks	7.0 x 7.0
VL-4K7C-C100 I-2	Color	4096 x 2	100 kHz	M42	Camera Link	GL0402	7.0 x 7.0
VL-8K7C-C80F-2	Color	8192 x 2	80 kHz	M72	Camera Link	AMS DR-2x8k-7 RGB	3.5 x 3.5



Print Scanning



Web Inspection

# VIEWWORKS: VT SERIES

## High Sensitivity & High Speed Mono TDI Line Scan Cameras

VT Series, Time Delayed Integration (TDI) line scan cameras, offers a wide variety of resolutions. Vieworks advanced TDI line scan technology, which uses outstanding hybrid image sensors, captures images with up to 256 times higher sensitivity and up to 300 kHz. The series provides three different models based on the mount sizes M42, M72, and M95, all of which are ideal cameras for various applications. In addition, the series adopts various interfaces such as GigE, Camera Link, and CoaXPress for simple integration. All cameras have exposure control with anti-blooming.



### The World's First Hybrid TDI Line Scan Sensor

Combines light sensitivity of CCD based TDI pixel array with CMOS readout electronics. High sensitivity of 256 stages with faster speed up to 300 kHz.

### Various Trigger Methods

Supports a variety of triggers: external trigger, frame start trigger, software trigger, and provides "Rescaler Mode" to set the accuracy.

### Better Usability

- Programmable cameras
- Easy firmware updates
- FFC (Flat Field Correction)
- DSNU, PRNU correction
- Camera Link interface
- CL, CXP and GigE interfaces

## M42 MOUNT

3k / 4k / 6k TDI Line Scan

Model	Resolution	Line Rate	TDI Stage	Pixel Data	Interface	Sensor	Pixel Size (μm <sup>2</sup> )
VT-3K7G-E38	3200 × 32	38 kHz	32	8/10/12 bits	GigE	Vieworks	7.0 × 7.0
VT-3K7G-H38	3200 × 128	38 kHz	32/64/96/128	8/10/12 bits	GigE	Vieworks	7.0 × 7.0
VT-4K5G-E26	4640 × 64	26 kHz	64	8/10/12 bits	GigE	Vieworks	5.0 × 5.0
VT-4K5G-H26	4640 × 256	26 kHz	64/128/192/256	8/10/12 bits	GigE	Vieworks	5.0 × 5.0
VT-6K3.5G-E19	6560 × 64	19 kHz	64	8/10/12 bits	GigE	Vieworks	3.5 × 3.5
VT-6K3.5G-H19	6560 × 256	19 kHz	64/128/192/256	8/10/12 bits	GigE	Vieworks	3.5 × 3.5
VT-3K7C-E100	3200 × 32	100 kHz	32	8/10/12 bits	Camera Link	Vieworks	7.0 × 7.0
VT-3K7C-H100	3200 × 128	100 kHz	32/64/96/128	8/10/12 bits	Camera Link	Vieworks	7.0 × 7.0
VT-4K5C-E100	4640 × 64	100 kHz	64	8/10/12 bits	Camera Link	Vieworks	5.0 × 5.0
VT-4K5C-H100	4640 × 256	100 kHz	64/128/192/256	8/10/12 bits	Camera Link	Vieworks	5.0 × 5.0
VT-6K3.5C-E100	6560 × 64	100 kHz	64	8/10/12 bits	Camera Link	Vieworks	3.5 × 3.5
VT-6K3.5C-H100	6560 × 256	100 kHz	64/128/192/256	8/10/12 bits	Camera Link	Vieworks	3.5 × 3.5
VT-3K7X-E250	3200 × 32	250 kHz	32	8/10/12 bits	CXP-6 2 Lanes	Vieworks	7.0 × 7.0
VT-3K7X-H250	3200 × 128	250 kHz	32/64/96/128	8/10/12 bits	CXP-6 2 Lanes	Vieworks	7.0 × 7.0
VT-4K5X-E200	4640 × 64	200 kHz	64	8/10/12 bits	CXP-6 2 Lanes	Vieworks	5.0 × 5.0
VT-4K5X-H200	4640 × 256	200 kHz	64/128/192/256	8/10/12 bits	CXP-6 2 Lanes	Vieworks	5.0 × 5.0
VT-6K3.5X-E160	6560 × 64	160 kHz	64	8/10/12 bits	CXP-6 2 Lanes	Vieworks	3.5 × 3.5
VT-6K3.5X-H160	6560 × 256	160 kHz	64/128/192/256	8/10/12 bits	CXP-6 2 Lanes	Vieworks	3.5 × 3.5

## M72 MOUNT 4k / 6k / 9k / 12k / 18k TDI Line Scan

Model	Resolution	Line Rate	TDI Stage	Pixel Data	Interface	Sensor	Pixel Size ( $\mu\text{m}^2$ )
VT-4K7C-E120	4096 × 32	125 kHz	32	8/10/12 bits	Camera Link	Vieworks	7.0 × 7.0
VT-4K7C-H120	4096 × 128	125 kHz	32/64/96/128	8/10/12 bits	Camera Link	Vieworks	7.0 × 7.0
VT-4K14C-E120	4096 × 16	125 kHz	16	8/10/12 bits	Camera Link	Vieworks	14.0 × 14.0
VT-4K14C-H120	4096 × 64	125 kHz	16/32/48/64	8/10/12 bits	Camera Link	Vieworks	14.0 × 14.0
VT-9K7C-E80	8912 × 32	94 kHz	32	8/10/12 bits	Camera Link	Vieworks	7.0 × 7.0
VT-9K7C-H80	8912 × 128	94 kHz	32/64/96/128	8/10/12 bits	Camera Link	Vieworks	7.0 × 7.0
VT-12K5C-E60	12480 × 64	67 kHz	64	8/10/12 bits	Camera Link	Vieworks	5.0 × 5.0
VT-12K5C-H60	12480 × 256	67 kHz	64/128/192/256	8/10/12 bits	Camera Link	Vieworks	5.0 × 5.0
VT-18K3.5C-E40	17824 × 64	47 kHz	64	8/10/12 bits	Camera Link	Vieworks	3.5 × 3.5
VT-18K3.5C-H40	17824 × 256	47 kHz	64/128/192/256	8/10/12 bits	Camera Link	Vieworks	3.5 × 3.5
VT-6K10X-E170	6240 × 32	172 kHz	32	8/10/12 bits	CXP-6 4 Lanes	Vieworks	10.0 × 10.0
VT-6K10X-H170	6240 × 128	172 kHz	32/64/96/128	8/10/12 bits	CXP-6 4 Lanes	Vieworks	10.0 × 10.0
VT-9K7X-E120	8912 × 32	125 kHz	32	8/10/12 bits	CXP-6 4 Lanes	Vieworks	7.0 × 7.0
VT-9K7X-H120	8912 × 128	125 kHz	32/64/96/128	8/10/12 bits	CXP-6 4 Lanes	Vieworks	7.0 × 7.0
VT-9K7X-E250	8912 × 32	250 kHz	32	8/10/12 bits	CXP-6 4 Lanes	Vieworks	7.0 × 7.0
VT-9K7X-H250	8912 × 128	250 kHz	32/64/96/128	8/10/12 bits	CXP-6 4 Lanes	Vieworks	7.0 × 7.0
VT-12K5X-E100	12480 × 64	100 kHz	64	8/10/12 bits	CXP-6 4 Lanes	Vieworks	5.0 × 5.0
VT-12K5X-H100	12480 × 256	100 kHz	64/128/192/256	8/10/12 bits	CXP-6 4 Lanes	Vieworks	5.0 × 5.0
VT-12K5X-E200	12480 × 64	200 kHz	64	8/10/12 bits	CXP-6 4 Lanes	Vieworks	5.0 × 5.0
VT-12K5X-H200	12480 × 256	200 kHz	64/128/192/256	8/10/12 bits	CXP-6 4 Lanes	Vieworks	5.0 × 5.0
VT-18K3.5X-E80	17824 × 64	80 kHz	64	8/10/12 bits	CXP-6 4 Lanes	Vieworks	3.5 × 3.5
VT-18K3.5X-H80	17824 × 256	80 kHz	64/128/192/256	8/10/12 bits	CXP-6 4 Lanes	Vieworks	3.5 × 3.5
VT-18K3.5X-E140	17824 × 64	142 kHz	64	8/10/12 bits	CXP-6 4 Lanes	Vieworks	3.5 × 3.5
VT-18K3.5X-H140	17824 × 256	142 kHz	64/128/192/256	8/10/12 bits	CXP-6 4 Lanes	Vieworks	3.5 × 3.5

## M95 MOUNT 16k / 23k TDI Line Scan

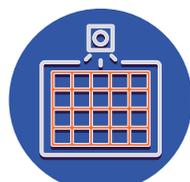
Model	Resolution	Line Rate	TDI Stage	Pixel Data	Interface	Sensor	Pixel Size ( $\mu\text{m}^2$ )
VT-16K5X-E140	16384 × 64	140 kHz	64	8/10/12 bits	CXP-6 4 Lanes	Vieworks	5.0 × 5.0
VT-16K5X-H140	16384 × 256	140 kHz	64/128/192/256	8/10/12 bits	CXP-6 4 Lanes	Vieworks	5.0 × 5.0
VT-16K5X-E300	16384 × 64	300 kHz	64	8/10/12 bits	CXP-6 4 Lanes	Vieworks	5.0 × 5.0
VT-16K5X-H300	16384 × 256	300 kHz	64/128/192/256	8/10/12 bits	CXP-6 4 Lanes	Vieworks	5.0 × 5.0
VT-23K3.5X-E100	23360 × 64	100 kHz	64	8/10/12 bits	CXP-6 4 Lanes	Vieworks	3.5 × 3.5
VT-23K3.5X-H100	23360 × 256	100 kHz	64/128/192/256	8/10/12 bits	CXP-6 4 Lanes	Vieworks	3.5 × 3.5
VT-16K5X2-E300	16384 × 64	300 kHz	64	8/10/12 bits	CXP-12 4 Lanes	Vieworks	5.0 × 5.0
VT-16K5X2-H300	16384 × 256	300 kHz	64/128/192/256	8/10/12 bits	CXP-12 4 Lanes	Vieworks	5.0 × 5.0



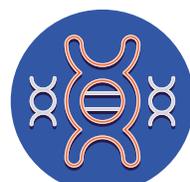
Flat Panel Display



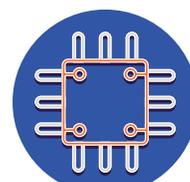
Print Scanning



Web Inspection



DNA Sequencer



Semiconductor

# EMERGENT: HR SERIES

## 10 GigE Area Scan

HR Series cameras are equipped with a high speed 10GigE SFP+ interface. They feature the latest CMOS sensors with global shutter technology from Sony and AMS. Models range from 0.5 to 50 megapixels with frame rates up to 1,586 fps at full resolution. SFP+ provides three options to cover cable length requirements from one meter and up to 10 kilometers without the need for fiber converters or repeaters.



### Sony Pregius S Sensor Technology

Selected camera models with Sony Pregius S new sensor technology that features back-illuminated pixel structure.

### Camera Benefits

Multi-camera synchronization at  $<1\mu\text{s}$ , low CPU overhead, and excellent price performance ratio. IP67 housing

### Spectrum Options

Visible, Near-Infrared, and Polarized

## 10GigE

Model	Chroma	Resolution	Frame Rate	Interface	Sensor	Pixel Size
HR-500-S	Color / Mono	0.5MP	1586fps	10GigE SFP+	Sony IMX426	9×9μm
HR-1800-S	Color / Mono	1.76MP	660fps	10GigE SFP+	Sony IMX425	9×9μm
HR-2000	Color / Mono / NIR	2MP	338fps	10GigE SFP+	AMS CMV2000	5.5×5.5μm
HR-2000-S	Color / Mono	2.01MP	485fps	10GigE SFP+	Sony IMX422	4.5×4.5μm
HR-2800-S	Color / Mono	2.8MP	410fps	10GigE SFP+	Sony IMX421	4.5×4.5μm
HR-3000-S	Color / Mono	3.2MP	216fps	10GigE SFP+	Sony IMX252LLR	3.45×3.45μm
HR-4000	Color / Mono / NIR	4MP	179fps	10GigE SFP+	AMS CMV4000	5.5×5.5 m
HR-5000-S	Color / Mono / Polarized	5MP	163fps	10GigE SFP+	Sony IMX250LLR	3.45×3.45μm
HR-5000-SB	Color / Mono	5.1MP	240fps	10GigE SFP+	Sony IMX537	2.74×2.74μm
HR-5000-SBL	Color / Mono	5.1MP	99fps	10GigE SFP+	Sony IMX547	2.74×2.74μm
HR-7000-S	Color / Mono	7.06MP	170fps	10GigE SFP+	Sony IMX420	4.45×4.45μm
HR-8000-S	Color / Mono	8.9MP	110fps	10GigE SFP+	Sony IMX255LLR	3.45×3.45μm
HR-8000-SB	Color / Mono / UV	8.1MP	145fps	10GigE SFP+	Sony IMX536	2.74×2.74μm
HR-8000-SBL	Color / Mono	8.1MP	73fps	10GigE SFP+	Sony IMX546	2.74×2.74μm
HR-12000	Color / Mono	12MP	84fps	10GigE SFP+	AMS CMV12000	5.5×5.5μm
HR-12000-S	Color / Mono / Polarized	12MP	80fps	10GigE SFP+	Sony IMX253LLR	3.45×3.45μm
HR-12000-SB	Color / Mono	12.4MP	100fps	10GigE SFP+	Sony IMX535	2.74×2.74μm
HR-12000-SBL	Color / Mono	12.4MP	68fps	10GigE SFP+	Sony IMX545	2.74×2.74μm
HR-16000-SB	Color / Mono	16.13MP	77fps	10GigE SFP+	Sony IMX532	2.74×2.74μm
HR-16000-SBL	Color / Mono	16.13MP	52fps	10GigE SFP+	Sony IMX542	2.74×2.74μm
HR-17000-S	Color / Mono	16.8MP	61fps	10GigE SFP+	Sony IMX387	3.45×3.45μm
HR-20000	Color / Mono	20MP	32fps	10GigE SFP+	AMS CMV20000	6.4×6.4μm
HR-20000-S	Color / Mono	19.5MP	43fps	10GigE SFP+	Sony IMX367	3.45×3.45μm
HR-20000-SB	Color / Mono	20.28MP	61fps	10GigE SFP+	Sony IMX531	2.74×2.74μm
HR-20000-SBL	Color / Mono	20.28MP	43fps	10GigE SFP+	Sony IMX541	2.74×2.74μm
HR-25000-SB	Color / Mono	24.47MP	51fps	10GigE SFP+	Sony IMX530	2.74×2.74μm
HR-25000-SBL	Color / Mono	24.47MP	35fps	10GigE SFP+	Sony IMX540	2.74×2.74μm
HR-30000-S	Color / Mono	31.36MP	35fps	10GigE SFP+	Sony IMX342	3.45×3.45μm
HR-50000	Color / Mono	50MP	23fps	10GigE SFP+	AMS CMV50000	4.6×4.6μm

# EMERGENT: HT SERIES

## Outstanding Image with 10GigE Interface

HT Series cameras are equipped with a 10GBaseT-RJ45 connection. With their sleek smaller case and CAT6A connection, these cameras have the familiarity of GigE but with 10 times the speed. Using CAT6A cabling, you can get cable lengths up to 100 meters. They feature the latest CMOS sensors with global shutter technology from Sony and AMS.



### Sony Pregius S Sensor Technology

Selected camera models with Sony Pregius S new sensor technology that features back-illuminated pixel structure.

### Camera Benefits

Multi-camera synchronization at  $<1\mu\text{s}$ , low CPU overhead, and excellent price performance ratio. IP67 housing

### Spectrum Options

Visible, Near-Infrared, and Polarized

## 10GigE

Model	Chroma	Resolution	Frame Rate	Interface	Sensor	Pixel Size
HT-500-S	Color / Mono	0.5MP	1586fps	10GigE RJ45	Sony IMX426	9×9μm
HT-1800-S	Color / Mono	1.76MP	660fps	10GigE RJ45	Sony IMX425	9×9μm
HT-2000	Color / Mono / NIR	2MP	338fps	10GigE RJ45	AMS CMV2000	5.5×5.5μm
HT-2000-S	Color / Mono	2.01MP	485fps	10GigE RJ45	Sony IMX422	4.5×4.5μm
HT-2800-S	Color / Mono	2.8MP	410fps	10GigE RJ45	Sony IMX421	4.5×4.5μm
HT-3000-S	Color / Mono	3.2MP	216fps	10GigE RJ45	Sony IMX252LLR	3.45×3.45μm
HT-4000	Color / Mono / NIR	4MP	179fps	10GigE RJ45	AMS CMV4000	5.5×5.5μm
HT-5000-S	Color / Mono / Polarized	5MP	163fps	10GigE RJ45	Sony IMX250LLR	3.45×3.45μm
HT-5000-SB	Color / Mono	5.1MP	240fps	10GigE RJ45	Sony IMX537	2.74×2.74μm
HT-5000-SBL	Color / Mono	5.1MP	99fps	10GigE RJ45	Sony IMX547	2.74×2.74μm
HT-7000-S	Color / Mono	7.06MP	170fps	10GigE RJ45	Sony IMX420	4.45×4.45μm
HT-8000-S	Color / Mono	8.9MP	110fps	10GigE RJ45	Sony IMX255LLR	3.45×3.45μm
HT-8000-SB	Color / Mono	8.1MP	145fps	10GigE RJ45	Sony IMX536	2.74×2.74μm
HT-8000-SBL	Color / Mono	8.1MP	73fps	10GigE RJ45	Sony IMX546	2.74×2.74μm
HT-12000	Color / Mono	12MP	84fps	10GigE RJ45	AMS CMV12000	5.5×5.5μm
HT-12000-S	Color / Mono / Polarized	12MP	80fps	10GigE RJ45	Sony IMX253LLR	3.45×3.45μm
HT-12000-S	Color / Mono	12.4MP	100fps	10GigE RJ45	Sony IMX535	2.74×2.74μm
HT-12000-SBL	Color / Mono	12.4MP	68fps	10GigE RJ45	Sony IMX545	2.74×2.74μm
HT-16000-SB	Color / Mono	16.13MP	77fps	10GigE RJ45	Sony IMX532	2.74×2.74μm
HT-16000-SBL	Color / Mono	16.13MP	52fps	10GigE RJ45	Sony IMX542	2.74×2.74μm
HT-17000-S	Color / Mono	16.8MP	61fps	10GigE RJ45	Sony IMX387	3.45×3.45μm
HT-20000	Color / Mono	20MP	32fps	10GigE RJ45	AMS CMV20000	6.4×6.4μm
HT-20000-S	Color / Mono	19.5MP	43fps	10GigE RJ45	Sony IMX367	3.45×3.45μm
HT-20000-SB	Color / Mono	20.28MP	61fps	10GigE RJ45	Sony IMX531	2.74×2.74μm
HT-20000-SBL	Color / Mono	20.28MP	43fps	10GigE RJ45	Sony IMX541	2.74×2.74μm
HT-25000-SB	Color / Mono	24.47MP	51fps	10GigE RJ45	Sony IMX530	2.74×2.74μm
HT-25000-SBL	Color / Mono	24.47MP	35fps	10GigE RJ45	Sony IMX540	2.74×2.74μm
HT-30000-S-M	Color / Mono	31.36MP	35fps	10GigE RJ45	Sony IMX342	3.45×3.45μm
HT-50000-M	Color / Mono	50MP	23fps	10GigE RJ45	AMS CMV50000	4.6×4.6μm

# EMERGENT: HB SERIES

## 25 GigE Area Scan

HB series cameras feature the latest CMOS sensors with global shutter technology from Sony, AMS, and Gpixel. The 25GigE SFP28 interface offers many benefits including low cost accessories, low CPU overhead, low latency, low jitter, and accurate multi-camera synchronization using IEEE 1588. In addition, SFP28 offers three supported cabling options for cable lengths from 1M to 10KM.



### Sony Pregius S Sensor Technology

Selected camera models with Sony Pregius S new sensor technology that features back-illuminated pixel structure that delivers distortion free, high imaging performance and miniturization

### Camera Benefits

Multi-camera synchronization at  $<1\mu\text{s}$ , low CPU overhead, and excellent price performance ratio. IP67 housing

### Spectrum Options

Visible, UV

## 25GigE

Model	Chroma	Resolution	Frame Rate	Interface	Sensor	Pixel Size
HB-500-S	Color / Mono	0.5MP	1594.7fps	25GigE SFP28	Sony IMX426	9x9μm
HB-1800-S	Color / Mono	1.76MP	662.1fps	25GigE SFP28	Sony IMX425	9x9μm
HB-2000-S	Color / Mono	2.01MP	477.6fps	25GigE SFP28	Sony IMX422	4.5x4.5μm
HB-2800-S	Color / Mono	2.8MP	409.2fps	25GigE SFP28	Sony IMX421	4.5x4.5μm
HB-5000-G	Color / Mono	5.61MP	290fps	25GigE SFP28	Gpixel GMAX2505	2.5x2.5μm
HB-5000-SB	Color / Mono	5.1MP	269fps	25GigE SFP28	Sony S IMX537	2.74x2.74μm
HB-7000-S	Color / Mono	7.06MP	207.1fps	25GigE SFP28	Sony IMX420	4.5x4.5μm
HB-8000-SB	Color / Mono / UV	8.1MP	201fps	25GigE SFP28	Sony S IMX536	2.74x2.74μm
HB-9000-G	Color / Mono	9.07MP	290fps	25GigE SFP28	Gpixel GMAX2509	2.5x2.5μm
HB-12000	Color / Mono	12MP	188fps	25GigE SFP28	AMS CMV12000	5.5x5.5μm
HB-12000-SB	Color / Mono	12.4MP	192fps	25GigE SFP28	Sony S IMX535	2.74x2.74μm
HB-16000-SB	Color / Mono	16.13MP	145fps	25GigE SFP28	Sony S IMX532	2.74x2.74μm
HB-17000-S	Color / Mono	16.8MP	61fps	25GigE SFP28	Sony IMX387	3.45x3.45μm
HB-18000-G	Color / Mono	18.5MP	125fps	25GigE SFP28	Gpixel GMAX2518	2.5x2.5μm
HB-20000-S	Color / Mono	19.5MP	43fps	25GigE SFP28	Sony IMX367	3.45x3.45μm
HB-20000-SB	Color / Mono	20.28MP	100fps	25GigE SFP28	Sony S IMX531	2.74x2.74μm
HB-25000-G	Color / Mono	26.21MP	75fps	25GigE SFP28	Gpixel GMAX0505	2.5x2.5μm
HB-25000-SB	Color / Mono	24.47MP	98fps	25GigE SFP28	Sony S IMX530	2.74x2.74μm
HB-30000-S	Color / Mono	31.36MP	35.4fps	25GigE SFP28	Sony IMX342	3.45x3.45μm
HB-50000	Color / Mono	50MP	30fps	25GigE SFP28	AMS CMV50000	4.6x4.6μm
HB-65000-G	Color / Mono	65MP	35fps	25GigE SFP28	Gpixel GMAX3265	3.2x3.2μm
HB-127-S	Color / Mono	127.7MP	19.9fps	25GigE SFP28	Sony IMX661	3.45x3.45μm

# EMERGENT: HX & HZ SERIES

## 50 & 100 GigE Area Scan

The HX Series and HZ Series camera models feature the latest CMOS sensors with global shutter technology from Gpixel. The QSFP28-50GigE (HX) and QSFP28-100GigE (HZ) interface offers many benefits including low-cost accessories, low CPU overhead, low latency, low jitter, and accurate multi-camera synchronization using IEEE 1588. In addition, QSFP28 offers three supported cabling options for cable lengths from 1M to 10KM.



### Gsprint CMOS sensors by Gpixel

specifically designed for high speed applications requiring higher frame rates and/or high dynamic range

### HX Series (Xtreme)

As the successor to the successful 25GigE technology, QSFP28-50GigE offers extreme performance thanks to new advancements in sensor technology

### HZ Series (Zenith)

as the industry's fastest interface QSFP28-100GigE offers unmatched performance with ultra high data and frame rates thanks to new advancements in sensor technology

#### 50GigE

Model	Chroma	Resolution	Frame Rate	Interface	Sensor	Pixel Size
HX-2000-G	Color / Mono	2.5MP	1730fps	50GigE QSFP28	GSPRINT4502	4.5×4.5μm
HX-10000-G	Color / Mono	10MP	500fps	50GigE QSFP28	GSPRINT4510	4.5×4.5μm
HX-21000-G	Color / Mono	21MP	300fps	50GigE QSFP28	GSPRINT4521	4.5×4.5μm
HX-65000-G	Color / Mono	65.4MP	71fps	50GigE QSFP28	GMAX3265	3.2×3.2μm
HX-100-G	Color / Mono	103.7MP	24fps	50GigE QSFP28	GMAX32103	3.2×3.2μm
HX-150-G	Color / Mono	152MP	16fps	50GigE QSFP28	GMAX32152	3.2×3.2μm

#### 100GigE

Model	Chroma	Resolution	Frame Rate	Interface	Sensor	Pixel Size
HZ-2000-G	Color / Mono	2.5MP	3462fps	100GigE QSFP28	GSPRINT4502	4.5×4.5μm
HZ-10000-G	Color / Mono	10MP	1000fps	100GigE QSFP28	GSPRINT4510	4.5×4.5μm
HZ-21000-G	Color / Mono	21MP	542fps	100GigE QSFP28	GSPRINT4521	4.5×4.5μm
HZ-65000-G	Color / Mono	65.4MP	71fps	100GigE QSFP28	GMAX3265	3.2×3.2μm
HZ-100-G	Color / Mono	103.7MP	24fps	100GigE QSFP28	GMAX32103	3.2×3.2μm
HZ-150-G	Color / Mono	152MP	16fps	100GigE QSFP28	GMAX32152	3.2×3.2μm



Virtual Reality



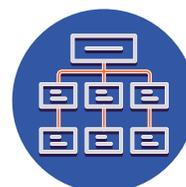
Motion Analysis



Automation



Intelligent Traffic



Logistics

# SVS-VISTEK: EXO SERIES

## The Integrator's Camera

With uniform size and standard interfaces comes simple interchangeability, allowing the system integrator to easily adapt a solution to varying conditions and requirements - with minimal design effort. SVS-Vistek meets precisely these needs. The EXO series is a perfect match with its uniform form factor and feature set, combined with industry standard interfaces. A solution for virtually every case, allowing smooth and effortless up- or downscaling. Once designed in, the implementations can be varied endlessly.



### System Integration

Easy to integrate with its uniform mounting holes, the EXO provides a stable suspension bracket for any kind of lens

### Extended Temperature Range

A tight thermal connection of the low-power dissipation electronics and the sensor to the aluminium unibody housing enables for most EXOs operation in an extended operating temperature range from -10°C to +60°C

### Flexible and Economic

Powerful imaging features, a variety of in- and outputs, PLC functionality and an integrated multichannel strobe controller help system integrators to be in perfect control of any machine vision request

## GigE

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm <sup>2</sup> )
					H x V (mm <sup>2</sup> )	Diagonal	Optical		
exo273 M/C GE	1440 x 1080	79	8/12 bit	GigE	4.97 x 3.73	6.21 mm	1/2.9"	IMX273	3.45 x 3.45
exo174 M/C GE	1920 x 1200	53.6	8/12 bit	GigE	11.25 x 7.03	13.27 mm	1/1.2"	IMX174	5.86 x 5.86
exo249 M/C GE	1920 x 1200	41	8/12 bit	GigE	11.25 x 7.03	13.27 mm	1/1.2"	IMX249	5.86 x 5.86
exo265 M/C GE	2048 x 1536	39	8/12 bit	GigE	7.07 x 5.3	8.83 mm	1/1.8"	IMX265	3.45 x 3.45
exo4000 M/C GE	2048 x 2048	29.5	8/12 bit	GigE	11.26 x 11.26	15.93 mm	1"	CMV4000	5.5 x 5.5
exo250 M/C GE	2448 x 2048	24.5	8/12 bit	GigE	8.45 x 7.07	11.01 mm	2/3"	IMX250	3.45 x 3.45
exo264 M/C GE	2448 x 2048	24.5	8/12 bit	GigE	8.45 x 7.07	11.01 mm	2/3"	IMX264	3.45 x 3.45
exo547 M/C GE	2448 x 2048	24.5	8/12 bit	GigE	6.71 x 5.61	8.75 mm	8.8mm (Type 1/1.8)	IMX547	2.74 x 2.74
exo428 M/C GE	3208 x 2200	17.4	8/12 bit	GigE	14.44 x 9.9	17.5 mm	1.1"	IMX428	4.5 x 4.5
exo546 M/C GE	2840 x 2840	15	8/12 bit	GigE	7.8 x 7.8	11 mm	11.1mm (Type 2/3)	IMX546	2.74 x 2.74
exo267 M/C GE	4096 x 2160	13.5	8/12 bit	GigE	14.13 x 7.45	15.98 mm	1"	IMX267	3.45 x 3.45
exo304 M/C GE	4096 x 3000	10	8/12 bit	GigE	14.13 x 10.35	17.52 mm	1.1"	IMX304	3.45 x 3.45
exo545 M/C GE	4096 x 3000	10	8/12 bit	GigE	11.22 x 8.22	13.91 mm	14mm (Type 1/1.1)	IMX545	2.74 x 2.74
exo542 M/C GE	5320 x 3032	7	8/12 bit	GigE	14.58 x 8.31	16.78 mm	16.8mm (Type 1.1)	IMX542	2.74 x 2.74
exo387 M/C GE	5456 x 3076	7.4	8/12 bit	GigE	18.82 x 10.61	21.61 mm	21.7mm (4/3)	IMX387	3.45 x 3.45
exo367 M/C GE	4416 x 4428	6.2	8/12 bit	GigE	15.24 x 15.28	21.58 mm	21.6mm (4/3)	IMX367	3.45 x 3.45
exo183 M/C GE	5496 x 3672	6	8/12 bit	GigE	13.19 x 8.81	15.86 mm	1"	IMX183	2.4 x 2.4
exo541 M/C GE	4504 x 4504	6	8/12 bit	GigE	12.34 x 12.34	17.45 mm	17.5mm (Type 1.1)	IMX541	2.74 x 2.74
exo540 M/C GE	5320 x 4600	5	8/12 bit	GigE	14.58 x 12.6	19.27 mm	19.3mm (Type 1.2)	IMX540	2.74 x 2.74
exo342 M/C GE	6464 x 4852	3.8	8/12 bit	GigE	22.3 x 16.74	27.88 mm	27.9mm (APS-C)	IMX342	3.45 x 3.45

# SVS-VISTEK: FXO SERIES

## Outstanding Image with 10GigE Interface

The brand new FXO series combines the outstanding image quality of the Sony Pregius S sensor with the most modern high-speed interfaces. 10GigE and CoaXPress-12 are supported. The integrated strobe controller facilitates the construction of slim applications. The fourth generation of the Pregius S sensor from Sony with global shutter shines with outstanding image quality and is the heart of the FXO series. The 2.74  $\mu\text{m}$  pixel has a high sensitivity to light and at the same time very low noise. The excellent homogeneity and dynamic range of the image is setting standards.



### Sony Pregius S Sensor

The fourth generation of the Pregius S sensor from Sony with global shutter shines with outstanding image quality and is the heart of the FXO series.

### Precision Time Protocol

Precision Time Protocol (PTP), which enables multiple cameras with a common time base using the GigE Vision protocol for synchronized image acquisition, or the use of Power-over-Ethernet (PoE) to reduce connections and cables.

### Flexible and Economic

The FXO offers an extremely flexible, powerful and, at the same time, economical camera concept. The small pixel enables the use of cheaper lenses for the high resolutions.

## 10GigE

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size ( $\mu\text{m}^2$ )
					H x V (mm <sup>2</sup> )	Diagonal	Optical		
fxo547 M/C XGE	2448 x 2048	124	8/12 bit	10GigE	6.71 x 5.61	8.75 mm	8.8 mm (Type 1/1.8)	IMX547	2.74 x 2.74
fxo546 M/C XGE	2840 x 2840	88	8/12 bit	10GigE	7.78 x 7.78	11 mm	11.1 mm (Type 2/3)	IMX546	2.74 x 2.74
fxo545 M/C XGE	4096 x 3000	61	8/12 bit	10GigE	11.22 x 8.22	13.91 mm	14 mm (Type 1/1.1)	IMX545	2.74 x 2.74
fxo542 M/C XGE	5320 x 3032	45.6	8/12 bit	10GigE	14.58 x 8.31	16.78 mm	16.8 mm (Type 1.1)	IMX542	2.74 x 2.74
fxo541 M/C XGE	4504 x 4504	35.7	8/12 bit	10GigE	12.34 x 12.34	17.45 mm	17.5 mm (Type 1.1)	IMX541	2.74 x 2.74
fxo540 M/C XGE	5320 x 4600	30.4	8/12 bit	10GigE	14.58 x 12.6	19.27 mm	19.3 mm (Type 1.2)	IMX540	2.74 x 2.74

## CXP-12

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size ( $\mu\text{m}^2$ )
					H x V (mm <sup>2</sup> )	Diagonal	Optical		
fxo547 M/C CX	2448 x 2048	124	8/12 bit	CXP-12	6.71 x 5.61	8.75 mm	8.8 mm (Type 1/1.8)	IMX547	2.74 x 2.74
fxo546 M/C CX	2840 x 2840	88	8/12 bit	CXP-12	7.76 x 7.76	10.99 mm	11.1 mm (Type 2/3)	IMX546	2.74 x 2.74
fxo545 M/C CX	4096 x 3000	61	8/12 bit	CXP-12	11.22 x 8.22	13.91 mm	14 mm (Type 1/1.1)	IMX545	2.74 x 2.74
fxo542 M/C CX	5320 x 3032	45.6	8/12 bit	CXP-12	14.58 x 8.31	16.78 mm	16.8 mm (Type 1.1)	IMX542	2.74 x 2.74
fxo541 M/C CX	4480 x 4504	35.7	8/12 bit	CXP-12	12.28 x 12.34	17.41 mm	17.5 mm (Type 1.1)	IMX541	2.74 x 2.74
fxo540 M/C CX	5312 x 4600	30.4	8/12 bit	CXP-12	14.55 x 12.6	19.25 mm	19.3 mm (Type 1.2)	IMX540	2.74 x 2.74

# SVS-VISTEK: HR SERIES

## Details on Speed

The HR Series combines high resolution image sensors with powerful machine vision interfaces. High resolution sensors require special care in managing the homogeneity of the image. Excellent tap balancing, lens shading correction for demanding optical tasks and customizable defective pixel correction ensure outstanding linearity, homogeneity and low noise. High-resolution sensors require special care in managing the homogeneity of the image. Excellent tap balancing, lens shading correction for demanding optical tasks and customizable defective pixel correction ensure outstanding linearity, homogeneity and low noise.



### 10GigE

An advantage is the reliable, cost-effective transmission of the image data over a distance of more than 100 m with standard network technology.

### Easy Integration

The clean design according to well established standards like GigE Vision, 10 GigE Vision and GenICam ensure rapid integration into the final application.

### Housing with M58 Lens thread

The M58 lens thread (FFD 11.48 mm / F-mount optional) has been designed so that almost all lenses can be connected using appropriate adapters and adjusted to optimum effect for your imaging task.

## 10GigE

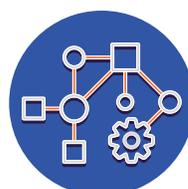
Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm <sup>2</sup> )
					H x V (mm <sup>2</sup> )	Diagonal	Optical		
hr387 M/C XGE	5440 x 3076	56.4	8/12 bit	10GigE	18.77 x 10.61	21.56	21.7 mm (4/3)	IMX387	3.45 x 3.45
hr342 M/C XGE	6464 x 4852	35.4	8/12 bit	10GigE	22.3 x 16.74	27.88	27.9 mm (APS-C)	IMX342	3.45 x 3.45
hr51 M/C XGE	8424 x 6032	23.7	8/12 bit	10GigE	38.75 x 27.75	47.66	35 mm	GMAX4651	4.6 x 4.6
hr455 M/C XGE	9568 x 6380	18	8/12 bit	10GigE	35.98 x 23.99	43.24	43.3 mm (Type 2.7)	IMX455	3.76 x 3.76
hr65 M/C XGE	9344 x 7000	17.4	8/12 bit	10GigE	29.9 x 22.4	37.36	37.4 mm	GMAX3265	3.2 x 3.2



Optical Metrology



Rail Inspection



Factory Automation



Intelligent Traffic

# SVS-VISTEK: SHR SERIES

## Made for Great Tasks

Large pixels have many advantages when it comes to camera image quality - physics speaks a clear language. Some high end jobs require perfect image quality of a type that cannot be achieved without these large pixels. This is where the SHR comes into its own. Already in the camera electronics, large sensors require special attention for getting homogenous images. Excellent tap balancing and an outstanding mechanical and optical precision make this camera suited for the most demanding imaging tasks. Low noise and state-of-the-art linearity are completed with user defined pixel correction and user defined shading correction.



### High Structural Precision

The half-frame SHR is equipped with a standardized M72 lens (FFD 19.55) thread and can therefore be used with a wide selection of lenses and adapter rings. Thanks to the short flange distance of 19.55 mm, top-end lens systems for virtually all applications can be used.

### Programmable

Industrial TTL-24V I/O interface with SafeTrigger, programmable logic functions, sequencers and timers, RS232

### 10 GigE Interface Model

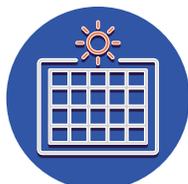
The economical high-performance 10 GigE interface offers high data transfer speeds of up to 1.1 GB/s for these large images. A special frame grabber is not required.

## 10GigE

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm <sup>2</sup> )
					H x V (mm <sup>2</sup> )	Diagonal	Optical		
shr461 M/C XGE	11648 x 8742	8.7	8/12/16 bit	10GigE	43.8 x 32.87	54.76 mm	55 mm (Type 3.4)	IMX461	3.76 x 3.76
shr661 M/C XGE	13392 x 9528	8.2	8/12 bit	10GigE	46.2 x 32.87	56.7 mm	56.73 (Type 3.6)	IMX661	3.45 x 3.45
shr411 M/C XGE	14192 x 10640	6.1	8/12/16 bit	10GigE	53.36 x 40.01	66.69 mm	Medium Format	IMX411	3.76 x 3.76

## COAXPRESS

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm <sup>2</sup> )
					H x V (mm <sup>2</sup> )	Diagonal	Optical		
shr461 M/C CX	11648 x 8742	8.7	8/10/12/16 bit	CXP-6	43.8 x 32.87	54.76 mm	55 mm (Type 3.4)	IMX461	3.76 x 3.76
shr661 M/C CX12	13392 x 9528	20.3	8/10/12/16 bit	CXP-12	46.2 x 32.87	56.7 mm	56.73 (Type 3.6)	IMX661	3.45 x 3.45
shr411 M/C CX	14192 x 10640	6.1	8/10/12/16 bit	CXP-6	53.36 x 40.01	66.69 mm	Medium Format	IMX411	3.76 x 3.76



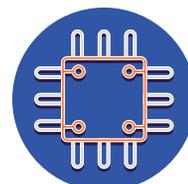
Photovoltaics



Aerial Imaging



Flat Panel Display



Semiconductor

# INDIGO: IDG SERIES

## Details on Speed

The IDG series from Indigo Imaging is an advanced industrial camera. The 43 megapixel GMAX0806 sensor is the highest sCMOS sensor available and offers very low read noise, low dark current, and high quality images. The global shutter provides excellent stopping power for moving objects, avoiding motion blur. The dynamic range is 68.3 db. The IDG series offers a wide dynamic range mode where the darkest shadows and the brightest areas both can be imaged with 78 dB. Available with either an f-mount or an M58 thread mount.



### sCMOS

Scientific CMOS, or sCMOS, is a state-of-the-art scientific imaging sensor technology for life sciences and physical sciences from quantum optics and solar astronomy to developmental biology. sCMOS offers performance features that make it perfect for quantitative scientific measurement and it produces exceptional scientific images. Its development has brought many innovations in the production and operation of the sensor, from its physics and electronics, to the software developments for processing and analysing images.

### 5 $\mu$ m Defect Detection

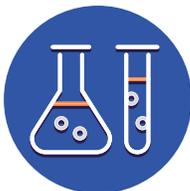
The camera's innovative signal pre-processing function can effectively improve MURA detection rate, the contrast can be as low as 1%, showing significant advantages in the field of high-efficiency screen inspection applications.

## CAMERA LINK

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size ( $\mu\text{m}^2$ )
					H x V (mm <sup>2</sup> )	Diagonal	Optical		
IDG 4500 M/C	7920 x 5436	16 fps	8/12 bit	Camera Link	--	--	1.7	GMAX0806	2.8 x 2.8

## COAXPRESS

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size ( $\mu\text{m}^2$ )
					H x V (mm <sup>2</sup> )	Diagonal	Optical		
IDG 6500 M/C	9344 x 7000	30 fps	8/12 bit	CXP-6	29.9 x 22.4	--	2.3	GMAX3265	3.2 x 3.2



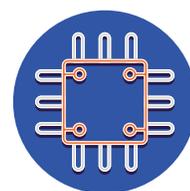
Life Sciences



Solar Astronomy



Microscopy



Semiconductor

# KAYA: JETCAM

## High Speed Cameras with Fiber Interface

JetCam is a high speed high-end yet low-cost global shutter family of CMOS cameras. With 40Gbps Fiber interface, it supports high quality video at rates up to 2400fps and resolution of up to 25 Megapixels. It was designed with an innovative approach to achieve precise and clear results. JetCam with Komodo Fiber Frame Grabber is a perfect solution for different kinds of applications (such as sport events broadcasting and sport analytics, motion analysis, traffic control, industrial inspection, 3D applications and so on), providing the highest quality video.



### Fiber Optic Cable Interface

Allows for long cable runs with tremendous bandwidth. Fiber cables and connectors have made huge advances in robustness, flexibility, convenience and affordability.

### Fast Frame Rates

High quality video at rates up to 2400 fps

### Quality Control

Kaya Instruments follows strict rules of quality control, for all aspects of design, manufacturing, operations and support. KAYA Instruments holds ISO certificate 9001:2015. The company's products are tested and certificated to appropriate standards, such as CE, UL, FCC etc.

#### CLHS 40G (QSFP+)

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size ( $\mu\text{m}^2$ )
					H x V (mm <sup>2</sup> )	Diagonal	Optical		
JetCam 19	1920 x 1080	2360 fps	8/10 bit	QSFP+	--	--	4/3	LUX19HS	10 x 10
JetCam 160	4704 x 3416	228 fps	8/10 bit	QSFP+	--	--	4/3	LUX160	3.9 x 3.9

#### CLHS 20G (2xSFP+)

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size ( $\mu\text{m}^2$ )
					H x V (mm <sup>2</sup> )	Diagonal	Optical		
JetCam 19	1920 x 1080	2360 fps	8/10 bit	2xSFP+	--	--	4/3	LUX19HS	10 x 10
JetCam 160	4704 x 3416	114 fps	8/10 bit	2xSFP+	--	--	4/3	LUX160	3.9 x 3.9



Broadcasting



Motion Analysis



Ordnance Testing

# TELEDYNE: GENIE NANO

## Small Package Big Functionality

The Genie Nano is a CMOS GigE camera that redefines low cost performance. Genie Nano starts with industry leading CMOS sensors and adds proprietary camera technology for breakthrough speed and a robust build quality for wide operating temperature. Genie Nano is designed to use a range of leading CMOS image sensors, including models from Sony's Pregius and ON Semiconductor's Python lines. With resolutions up to 25 megapixels, the Nano delivers high speed, low noise, and global shutters.



### Break Through the GigE Limit

Teledyne DALSA's proprietary TurboDrive technology allows Genie Nano to deliver its full image quality at faster frame rates—often 150% or higher—with no changes to your GigE network. Get the fastest gigabit ethernet camera on the market.

### Wide Selection

Genie Nano offers models for mono, color, and NIR response. Available lens mounts include C, CS, and F-mount.

### Built for Reliability

A wide operating temperature range, from -20° to 60° C (housing), helps extend camera life and increases system reliability.

#### 10GigE

Model	Resolution	Sensor	Spectrum	Interface	Pixel Size (µm <sup>2</sup> )	Max Frame Rate
10G 6200	6144 x 6144	Teledyne e2v Emerald 36M	Color / Mono	10GigE	2.5 µm	20 fps
10G 8200	8192 x 8192	Teledyne e2v Emerald 67M	Color / Mono	10GigE	2.5 µm	15 fps

#### 5GigE

Model	Resolution	Sensor	Spectrum	Interface	Pixel Size (µm <sup>2</sup> )	Max Frame Rate
5G 2050	2064 x 1544	Sony IMX252	Color / Mono	5GigE	3.45 µm	Standard: 187 fps TurboDrive: 187 fps
5G 2450	2464 x 2056	Sony IMX250	Color / Mono	5GigE	3.45 µm	Standard: 121 fps TurboDrive: 141 fps
5G 4040	4112 x 3008	Sony IMX253	Color / Mono	5GigE	3.45 µm	Standard: 49 fps TurboDrive: 63 fps
5G 4060	4112 x 2176	Sony IMX255	Color / Mono	5GigE	3.45 µm	Standard: 68 fps TurboDrive: 88 fps
5G 4500	4500 x 4500	On-semi XGS20000	Color / Mono	5GigE	3.2 µm	Standard: 28.9 fps TurboDrive: 30 fps
5G 5420	5420 x 5420	On-semi XGS30000	Color / Mono	5GigE	3.2 µm	Standard: 15 fps TurboDrive: 19.3 fps
5G 8100	8192 x 5420	On-semi XGS45000	Color / Mono	5GigE	3.2 µm	Standard: 14 fps TurboDrive: 19.3 fps

#### CAMERA LINK

Model	Resolution	Sensor	Spectrum	Interface	Pixel Size (µm <sup>2</sup> )	Max Frame Rate
CL 2420	2448 x 2048	Sony IMX264	Color / Mono	Camera Link	3.45 µm	35 fps
CL 2450	2464 x 2056	Sony IMX250	Color / Mono	Camera Link	3.45 µm	141 fps
CL 4020	4112 x 3008	Sony IMX304	Color / Mono	Camera Link	3.45 µm	20 fps
CL 4040	4112 x 3008	Sony IMX253	Color / Mono	Camera Link	3.45 µm	64 fps
CL 4060	4112 x 2176	Sony IMX255	Color / Mono	Camera Link	3.45 µm	88 fps
CL 4090	4096 x 4096	On-Semi Python 16K	Color / Mono / NIR	Camera Link	4.5 µm	45 fps
CL 5100	5112 x 5112	On-Semi Python 25K	Color / Mono / NIR	Camera Link	4.5 µm	32 fps

## GigE

Model	Resolution	Sensor	Spectrum	Interface	Pixel Size ( $\mu\text{m}^2$ )	Max Frame Rate
640	672 x 512	On-Semi Python300 P1	Color / Mono / NIR	GigE	4.8 $\mu\text{m}$	Standard: 350 fps TurboDrive: 800 fps
700	728 x 544	Sony IMX287	Color / Mono	GigE	6.9 $\mu\text{m}$	Standard: 308 fps TurboDrive: 310.7 fps
810	816 x 624	Sony IMX433	Color / Mono	GigE	9 $\mu\text{m}$	Standard: 160 fps TurboDrive: 160 fps
1240	1280 x 1024	On-Semi Python1300 P3	Color / Mono	GigE	4.8 $\mu\text{m}$	Standard: 92 fps TurboDrive: 93 fps
1280	1280 x 1024	On-Semi Python1300 P1	Color / Mono / NIR	GigE	4.8 $\mu\text{m}$	Standard: 92 fps TurboDrive: 200 fps
1450	1456 x 1088	Sony IMX273	Color / Mono	GigE	3.45 $\mu\text{m}$	Standard: 76 fps TurboDrive: 150 fps
1610	1608 x 1104	Sony IMX432	Color / Mono	GigE	9 $\mu\text{m}$	Standard: 63 fps TurboDrive: 90 fps
1630	1632 x 1248	Sony IMX430	Color / Mono	GigE	4.5 $\mu\text{m}$	Standard: 57 fps TurboDrive: 85 fps
1920	1936 x 1216	Sony IMX249	Color / Mono	GigE	5.86 $\mu\text{m}$	Standard: 38.8 fps TurboDrive: 38.8 fps
1930	1984 x 1264	On-Semi Python2000 P1	Color / Mono / NIR	GigE	4.8 $\mu\text{m}$	Standard: 48 fps TurboDrive: 110 fps
1940	1936 x 1216	Sony IMX174	Color / Mono	GigE	5.86 $\mu\text{m}$	Standard: 51 fps TurboDrive: 83.9 fps
1950	1936 x 1216	Sony IMX392	Color / Mono	GigE	3.45 $\mu\text{m}$	Standard: 51 fps TurboDrive: 102 fps
2020	2064 x 1544	Sony IMX265	Color / Mono	GigE	3.45 $\mu\text{m}$	Standard: 38 fps TurboDrive: 53 fps
2050	2064 x 1544	Sony IMX252	Color / Mono	GigE	3.45 $\mu\text{m}$	Standard: 37.8 fps TurboDrive: 82 fps
2420	2464 x 2056	Sony IMX264	Color / Mono	GigE	3.45 $\mu\text{m}$	Standard: 23.8 fps TurboDrive: 34.4 fps
2450	2464 x 2056	Sony IMX250	Color / Mono	GigE	3.45 $\mu\text{m}$	Standard: 23.8 fps TurboDrive: 52 fps
2590	2592 x 2048	On-Semi Python5000 P1	Color / Mono / NIR	GigE	4.8 $\mu\text{m}$	Standard: 22.7 fps TurboDrive: 47 fps
4020	4112 x 3008	Sony IMX304	Color / Mono	GigE	3.45 $\mu\text{m}$	Standard: 9.7 fps TurboDrive: 20 fps
4030	4112 x 2176	Sony IMX267	Color / Mono	GigE	3.45 $\mu\text{m}$	Standard: 13.4 fps TurboDrive: 28 fps
4040	4112 x 3008	Sony IMX253	Color / Mono	GigE	3.45 $\mu\text{m}$	Standard: 9.7 fps TurboDrive: 20 fps
4060	4112 x 2176	Sony IMX255	Color / Mono	GigE	3.45 $\mu\text{m}$	Standard: 13.4 fps TurboDrive: 28 fps
4900	4912 x 3684	On-Semi AR1820HS	Color	GigE	1.25 $\mu\text{m}$	Standard: 6.6 fps TurboDrive: 13 fps
4090	4096 x 4096	On-Semi Python16K	Color / Mono / NIR	GigE	4.5 $\mu\text{m}$	Standard: 7.1 fps TurboDrive: 14 fps
5100	5120 x 5120	On-Semi Python25K	Color / Mono / NIR	GigE	4.5 $\mu\text{m}$	Standard: 4.6 fps TurboDrive: 9.5 fps

## COXPRESS

Model	Resolution	Sensor	Spectrum	Interface	Pixel Size ( $\mu\text{m}^2$ )	Max Frame Rate
CXP 4090	4096 x 4096	On-Semi Python 16K	Color / Mono / NIR	CXP-6	4.5 $\mu\text{m}$	120 fps
CXP 5100	5120 x 5120	On-Semi Python 25K	Color / Mono / NIR	CXP-6	4.5 $\mu\text{m}$	80 fps
CXP 6200	6144 x 6144	Teledyne E2V Emerald 36M Color	Color / Mono	CXP-6	2.5 $\mu\text{m}$	43 fps
CXP 8200	8192 x 8192	Teledyne E2V Emerald 67M Color	Color / Mono	CXP-6	2.5 $\mu\text{m}$	30 fps

# TELEDYNE: FALCON4

## More Pixels - More Frames - More Power

Using Teledyne Imaging's advanced CMOS architectures, the Falcon4-CLHS cameras offer unique, unprecedented capabilities for large area, high-resolution, high-speed imaging. When high-speed and high-resolution imaging are top priorities, the new range of Falcon4-CLHS cameras deliver. Available in multiple resolutions ranging from 11.2 megapixels to 86 megapixels, the high-speed 11M model can capture images at up to 600 fps, greatly increasing imaging system efficiency. While higher resolution models like 37M, 67M and 86M offer incredible resolution and throughput for a variety of challenging applications.



### High Frame Rate Applications

The Falcon4-CLHS M4480 / M4400's large pixel width and very high frame rate offer a powerful solution to many imaging challenges.

### Ultra High Resolution

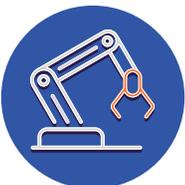
With models like 86M and 67M, delivering up to 16 and 90 fps respectively, these cameras offer unique, unprecedented capabilities for large area, high-resolution, high-speed imaging. Available in monochrome, these cameras are also sensitive into the NIR spectrum

### Programability

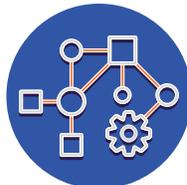
Customizable user settings: Programmable exposure time, Adjustable analog / digital gain and offset, Adjustable integration time and frame rate, Test patterns and cameradiagnostics

## CAMERA LINK HS

Model	Resolution	Sensor	Spectrum	Interface	Pixel Size ( $\mu\text{m}^2$ )	Max Frame Rate
Falcon4-CLHS 86M	10720 x 8064	Teledyne DALSA IA-M1-0086M 86 MP	Mono	Camera Link	6 $\mu\text{m}$	16 fps
Falcon4-CLHS M4400	4480 x 2496	Teledyne e2v Lince 11 MP	Mono	Camera Link	6 $\mu\text{m}$	330 fps
Falcon4-CLHS M4480	4480 x 2496	Teledyne e2v Lince 11 MP	Mono	Camera Link	6 $\mu\text{m}$	600 fps
Falcon4-CLHS M6200	6144 x 6144	Teledyne e2v Emerald 37M	Mono	Camera Link	2.5 $\mu\text{m}$	120 fps
Falcon4-CLHS M8200	8192 x 8192	Teledyne e2v Emerald 67M	Mono	Camera Link	2.5 $\mu\text{m}$	90 fps



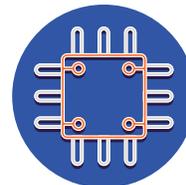
Robotics



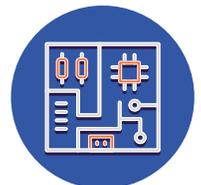
Factory Automation



Aerial Imaging



Semiconductor



PCB Inspection

# TELEDYNE: PIRANHA

## Line Scan - Multispectral - TDI Line Scan

The Piranha4 cameras offer advanced features such as sub-pixel spatial correction, areas of interest (up to 4 at a time) to reduce data processing and simplify cabling, as well as dual-line area mode to double line rate, HDR mode, shading and lens correction. The Piranha4 is built for the real world with features to ease system integration. The advanced GenICam compliant user interface makes it easy to set up and control camera parameters such as exposure control, FFC, white balance, gain, test patterns, diagnostics and more.



### Line Scan

line scanning eliminates the frame overlaps required to build a seamless image. Frame overlaps represent redundant data that uses up precious processing bandwidth, particularly in high-speed, high-resolution applications.

### Multispectral

the Piranha4 multi-spectral camera delivers superb color plus near-infrared (NIR) fidelity, spectrally independent outputs, all in a compact footprint and with an easy to use interface.

### TDI Line Scan

With more effective integration time, you can increase the speed of the target object or inspection web. The camera, combined with the XTIUM Camera Link HS frame grabber, offers a complete solution for the next generation Automatic Optical Inspection.

## LINE SCAN

Model	Resolution	Spectrum	Interface	Pixel Size ( $\mu\text{m}^2$ )	Max Line Rate
Piranha4 2k, 50/100 kHz	2048 x 2	Mono	Camera Link	10.56 $\mu\text{m}$	100 kHz
Piranha4 2k, 100/200 kHz	2048 x 2	Mono	Camera Link	10.56 $\mu\text{m}$	200 kHz
Piranha4 4k, 50/100 kHz	4096 x 2	Mono	Camera Link	10.56 $\mu\text{m}$	100 kHz
Piranha4 4k, 100/200 kHz	4096 x 2	Mono	Camera Link	10.56 $\mu\text{m}$	200 kHz
Piranha4 8k, 70 kHz	8192 x 2	Mono	Camera Link	7.04 $\mu\text{m}$	70 kHz
Piranha4 Color 2k, 40 kHz	2048 x 3	Color	Camera Link	14.08 $\mu\text{m}$	40 kHz
Piranha4 Color 2k, 70 kHz	2048 x 3	Color	Camera Link	14.08 $\mu\text{m}$	70 kHz
Piranha4 Color 4k, 40 kHz	4096 x 3	Color	Camera Link	10.56 $\mu\text{m}$	40 kHz
Piranha4 Color 4k, 70 kHz	4096 x 3	Color	Camera Link	10.56 $\mu\text{m}$	70 kHz
Piranha4 Color 8k, 50 kHz	8192 x 2	Color	Camera Link	7.04 $\mu\text{m}$	50 kHz
Piranha4 Trilinear Color 8k, 33 kHz	8192 x 3	Color	Camera Link	7.5 $\mu\text{m}$	33 kHz

## MULTISPECTRAL

Model	Resolution	Spectrum	Interface	Pixel Size ( $\mu\text{m}^2$ )	Max Line Rate
Piranha4 Multispectral 2k, 70 kHz	2048 x 4	Mono, Color	Camera Link	14.08 $\mu\text{m}$	70 kHz
Piranha4 Multispectral RGB+NIR 2k, 70 kHz	2048 x 4	Color, NIR	Camera Link	14.08 $\mu\text{m}$	70 kHz

## TDI LINE SCAN

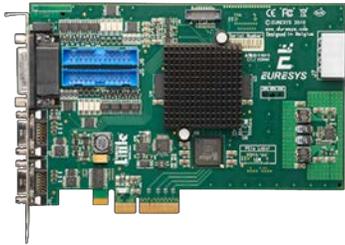
Model	Resolution	Spectrum	Interface	Pixel Size ( $\mu\text{m}^2$ )	Max Line Rate
Piranha XL Color 16k, 40 kHz	16352 x 12	Color	Camera Link HS	5 $\mu\text{m}$	40 kHz
Piranha XL Color 16k, 70 kHz	16352 x 12	Color	Camera Link HS	5 $\mu\text{m}$	70 kHz

# EURESYS: FRAME GRABBERS

## Image Acquisition Tools

Euresys is a leading and innovative high-tech company, designer and provider of image and video acquisition components, frame grabbers, FPGA IP cores and image processing software. Euresys is active in the computer vision, machine vision, factory automation and medical imaging.

The company's image acquisition expertise covers analog and digital video acquisition, FPGA programming, high-frequency electronics, video compression and also camera control. Recently strengthened by the acquisition of the company Sensor to Image, its 30 years of imaging know-how includes GigE Vision, USB3 Vision, CoaXPress, Camera Link and GenICam.



## COAXLINK SERIES

Model	Description	Information
Coaxlink QSFP+	Four-connection CoaXPress-over-fiber frame grabber	PCIe 3.0 (Gen 3) x8 bus: 6,700 MB/s bus bandwidth
Coaxlink CXP-12 to QSFP+ Converter	Four-connection CoaXPress CXP-12 to CoaXPress-over-fiber converter	5,000 MB/s camera bandwidth
Coaxlink Quad CXP-12	Four-connection CoaXPress CXP-12 frame grabber	PCIe 3.0 (Gen 3) x8 bus: 6,700 MB/s bus bandwidth
Coaxlink Quad CXP-12 JPEG	Four-connection CoaXPress CXP-12 frame grabber with JPEG compression	PCIe 3.0 (Gen 3) x8 bus: 6,700 MB/s bus bandwidth
Coaxlink Quad CXP-12 Value	Four-connection CoaXPress CXP-12 frame grabber	PCIe 3.0 (Gen 3) x8 bus: 6,700 MB/s bus bandwidth
Coaxlink Quad CXP-12 DF	Four-connection CoaXPress CXP-12 frame grabber with Data Forwarding	PCIe 3.0 (Gen 3) x8 bus: 6,700 MB/s bus bandwidth
Coaxlink Duo CXP-12	Two-connection CoaXPress CXP-12 frame grabber	PCIe 3.0 (Gen 3) x4 bus: 3,300 MB/s bus bandwidth
Coaxlink Mono CXP-12 LH	One-connection CoaXPress CXP-12 frame grabber	PCIe 3.0 (Gen 3) x4 bus: 3,300 MB/s bus bandwidth
Coaxlink Octo	PCIe 3.0 eight-connection CoaXPress frame grabber	PCIe 3.0 (Gen 3) x8 bus: 6,700 MB/s bus bandwidth
Coaxlink Quad G3 DF	PCIe 3.0 four-connection CoaXPress frame grabber with data forwarding	PCIe 3.0 (Gen 3) x4 bus: 3,300 MB/s bus bandwidth
Coaxlink Quad G3	PCIe 3.0 four-connection CoaXPress frame grabber (fan-cooled heatsink)	PCIe 3.0 (Gen 3) x4 bus: 3,300 MB/s bus bandwidth
Coaxlink Quad G3 LH	PCIe 3.0 four-connection CoaXPress frame grabber (passive heatsink)	PCIe 3.0 (Gen 3) x4 bus: 3,300 MB/s bus bandwidth
Coaxlink Quad 3D-LLE	Quad CXP-6 frame grabber with on-board laser line extraction for 3D profiling	Real-time generation of 16-bit 3D height maps
Coaxlink Duo PCIe/104-EMB	Two-connection ruggedized CoaXPress frame grabber	PCIe 2.0 (Gen 2) x4 bus: 1,700 MB/s delivery bandwidth
Coaxlink Duo PCIe/104-MIL	Two-connection military-grade CoaXPress frame grabber	PCIe 2.0 (Gen 2) x4 bus: 1,700 MB/s delivery bandwidth

## GRABLINK SERIES

Model	Description	Information
Grablink Duo	Frame grabber for one full- or two base-configuration Camera Link cameras	PCIe Gen 2 x4 bus
Grablink Full XR	Frame grabber for one full-configuration CL camera with support for extra long cables	PCIe x4 bus: 850 MB/s sustained delivery bandwidth
Grablink Full	Frame grabber for one full-configuration Camera Link camera	PCIe x4 bus: 850 MB/s sustained delivery bandwidth
Grablink DualBase	Frame grabber for two base-configuration Camera Link cameras	PCIe x4 bus: 850 MB/s sustained delivery bandwidth
Grablink Base	Frame grabber for one base-configuration Camera Link camera	PCIe x1 bus: 200 MB/s sustained delivery bandwidth

# KAYA: FRAME GRABBERS

## Image Acquisition Tools

Supporting most performance-demanding Machine Vision protocols, such as CoaXPress 12G, Camera Link HS, 10 GigE and Fiber. Ideally suited for industrial, defense and aerospace Machine Vision Systems. These products are complimented by sophisticated application software package and SDK, for Windows and Linux OS's. Easy integration with most advanced software libraries, such as Halcon, Matlab and Labview allows seamless custom application development.



## FRAME GRABBERS

Model	Description
Predator II Single Channel CoaXPress 12G Frame Grabber	Predator II is a low-cost Frame Grabber supporting CoaXPress 12G standard. The Predator II is capable of receiving video streams from a single CoaXPress link. The Frame Grabber supports standard CoaXPress bitrates up to 12.5 Gbps including PoCXP. This CoaXPress frame grabber is ideally suited for industrial, defense and aerospace Machine Vision Systems applications.
Komodo II 4CH CoaXPress 12G Frame Grabber	Komodo II is best in class Frame Grabber supporting CoaXPress standard. The Komodo II is capable of receiving video streams from up to 4 CoaXPress links in single, dual or quad modes. Each link supports standard CoaXPress bitrates up to 12.5 Gbps. This CoaXPress Frame Grabber is ideally suited for industrial, defense and aerospace Machine Vision Systems and applications.
Komodo II CLHS Frame Grabber	Komodo II Fiber is high-performance yet low-cost frame grabber card supporting four SFP+ 10Gbps transceivers (optical). The card is based on powerful FPGA, 55Gbps throughput and 4GB DDR4 SODIMM. A high speed 8 lane Gen 3.0 PCI express interface allows fast video transfers between optical links and computer memory while a versatile GPIO with multi-standard support enables connection to external devices.
Komodo 8CH CoaXPress Frame Grabber	Komodo is best in class Frame Grabber supporting CoaXPress standard. The Komodo is capable of receiving video streams from up to 8 CoaXPress links in single, dual, quad or octal modes. It is used for simultaneous capture from up to two quad link cameras. Each link supports standard CoaXPress bitrates up to 6.25 Gbps. This CoaXPress Frame Grabber is ideally suited for industrial, defense and aerospace Machine Vision Systems and applications.
Komodo 4CH CoaXPress Frame Grabber	Komodo is best in class Frame Grabber supporting CoaXPress standard. The Komodo is capable of receiving video streams from up to 4 CoaXPress links in single, dual or quad modes. Each link supports standard CoaXPress bitrates up to 6.25 Gbps. This CoaXPress Frame Grabber is ideally suited for industrial, defense and aerospace Machine Vision Systems and applications.
Komodo 4CH CoaXPress Frame Grabber w Data Forwarding	Komodo is best in class Frame Grabber supporting CoaXPress standard. The Komodo is capable of receiving video streams from up to 4 CoaXPress links in single, dual or quad modes with simultaneous forwarding of the video stream to next in the chain frame grabber. Each link supports standard CoaXPress bitrates up to 6.25 Gbps. This CoaXPress Frame Grabber is ideally suited for industrial, defense and aerospace Machine Vision Systems and applications.
Komodo II CoaXPress PCIe/104 Frame Grabber	Komodo II CoaXPress 12G PCIe/104 is the best in class Frame Grabber, supporting the CoaXPress 2.0 standard. It can receive video streams from up to 4 CoaXPress links in single, dual or quad modes. It can also be used for simultaneous capture from multiple cameras. Each link supports standard CoaXPress bitrates of up to 12.5 Gbps.
Komodo II 2CH CoaXPress 12G Frame Grabber	Komodo II is best in class Frame Grabber supporting CoaXPress standard. The Komodo II is capable of receiving video streams from up to 2 CoaXPress links in single or dual modes. Each link supports standard CoaXPress bitrates up to 12.5 Gbps. This CoaXPress Frame Grabber is ideally suited for industrial, defense and aerospace Machine Vision Systems and applications.
Komodo II CoaXPress Over Fiber Frame Grabber	Komodo II Fiber is high-performance yet low-cost frame grabber card supporting four SFP+ 10Gbps transceivers (optical). The card is based on powerful FPGA, 55Gbps throughput and 4GB DDR4 SODIMM. A high speed 8 lane Gen 3.0 PCI express interface allows fast video transfers between optical links and computer memory while a versatile GPIO with multi-standard support enables connection to external devices.

# LENSES: MACHINE VISION



## VIEWORKS INDUSTRIAL LENSES

Working closely with Schneider Kreuznach, a global leader in industrial lenses, Vieworks has co-developed the VEO line of lenses optimized for Vieworks area scan and line scan cameras. A total of thirteen models have been released under four sub-series. VEO lenses demonstrate exceptionally high performance regarding modulation transfer function (MTF), a measurement of a lens' ability to resolve fine detail. VEO series is particularly effective in detecting submicron defects, perfect for FPD inspection.



## ZEISS INDUSTRIAL LENSES

Zeiss lenses are widely used in aerial imaging, automated slide scanning, BGA and PCB inspection, document digitizing, fast frame imaging, film scanning, flat panel inspection, industrial imaging, industrial vision systems, intelligence surveillance reconnaissance (ISR), intelligent transport systems, interferometry, machine vision, microscopy, military, mobile mapping, motion analysis, ophthalmology, ordinance testing, red light enforcement, remote sensing, remote sensing and scanning, research design and testing, scientific imaging, transmission electron microscopy (TEM), unmanned aerial vehicle (UAV) and wafer inspection.



## SPO INDUSTRIAL LENSES

SPO offers both Double-Sided Telecentric & Standard (Object Side) Telecentric lenses with an extensive selection of working distances, magnification ratios, resolutions and options including coaxial light ports, aperture control, and focusing units. We can provide Blackbox data to assist in your modeling of the lens for your application. Each lens is shipped with factory test data which confirms the lens performance and a quality inspection check prior to shipment. SPO can make lens modifications fast and affordable for your machine vision requirements. We can provide free demos for qualified OEMs.



## MORITEX INDUSTRIAL LENSES

Taking advantage of cutting-edge optical design expertise, MORITEX's high-performance machine vision lenses ensure accurate imaging performance for machine vision systems used in assembly and inspection processes on manufacturing lines. We proudly offer MORITEX's line of Telecentric Lenses, Bi-Telecentric Lenses, FA (Macro and Line Scan) Lenses as well as Telecentric Illuminators.



## COMPUTAR INDUSTRIAL LENSES

Computar Optics has set the pace, pioneering new and innovative lenses that out-class the competition at every turn. With a solid foundation based on Japanese engineering and agile production facilities spanning the globe, we operate under a dual mandate to create the highest-quality optics products, at a price point that works within your budget.



## SCHNEIDER INDUSTRIAL LENSES

Schneider Optics supports the highest resolution cameras and the largest line scan cameras with their high quality megapixel-class lenses which are well suited for factory automation and precision measurement applications. Schneider Optics lenses are optically corrected and broadband coated for the spectral range of 400-1000nm, 400-700nm, and 700-1000nm, offering optimal transmission across the VIS-NIR spectral range. Schneider Optics is one of the superior lens manufacturers that publishes and warrants lp/mm, MTF, and transmission data for its lens products. We can provide free demos for qualified OEMs.

# CABLES: MACHINE VISION



## CAMERA LINK CABLES

We offer Camera Link cables, which conform to Camera Link digital interface standards, to compliment our extensive range of industrial machine vision digital cameras. We offer the highest quality cables and connectors to match your industrial, motion video and frame grabber applications.



## CAMERA LINK HIGH SPEED CABLES

Camera Link HS cables are designed to specifically meet the demanding needs of vision and imaging applications. Its low latency, low jitter, real-time signals between a camera and a frame grabber carry image data and configuration data. The interface takes the key strengths of Camera Link and adds new features and functions to meet customer's demands today and tomorrow.



## COAXPRESS CABLES

We offer a wide variety of CoaXPress cables. CoaXPress is the other new standard in the machine vision market. The power supply and remote control device are transmitted via a single coax cable, which creates point-to-point connection between camera and frame grabber.



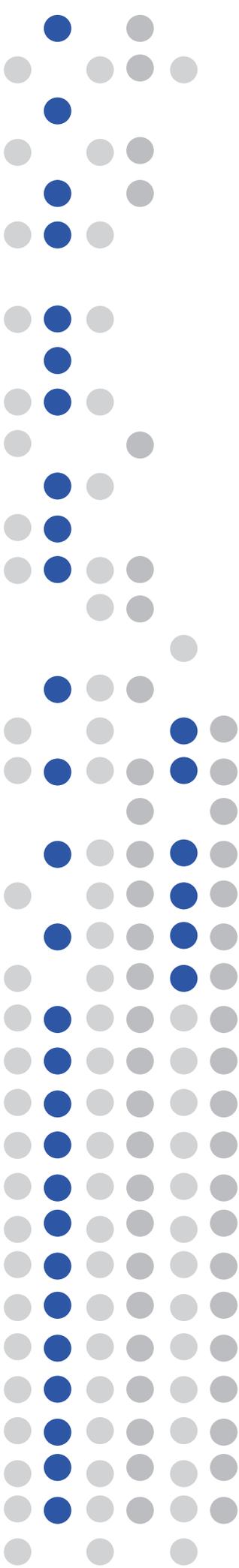
## GIGABIT ETHERNET CABLES

GigE Vision is a camera interface standard which allows fast image transferring, offered at a low cost. GigE Vision cables come in very long lengths. GigE Vision offers many benefits including: High bandwidth (125 MB/s) transfers large images quickly in real time and uncompromised data transfer up to 100 meters in length.



## POWER SUPPLIES

Vision Systems Technology offers a wide variety of power supplies. All are available with 4, 6 or 12 pin Hirose connectors. We stock a wide variety of standard power supplies and can customize to meet your specific industrial application needs. 12VDC Power Supply (110VAC) and trigger cables.



## Vision Systems Technology

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