VISION
SYSTEMS TECHNOLOGY

MACHINE VISION
CATALOG

Ultra High Resolution

Line Scan Cameras

Area Scan Cameras

High Speed Cameras

Pixel Shift Cameras

SWIR Cameras

Industrial Lenses

Frame Grabbers

Cables

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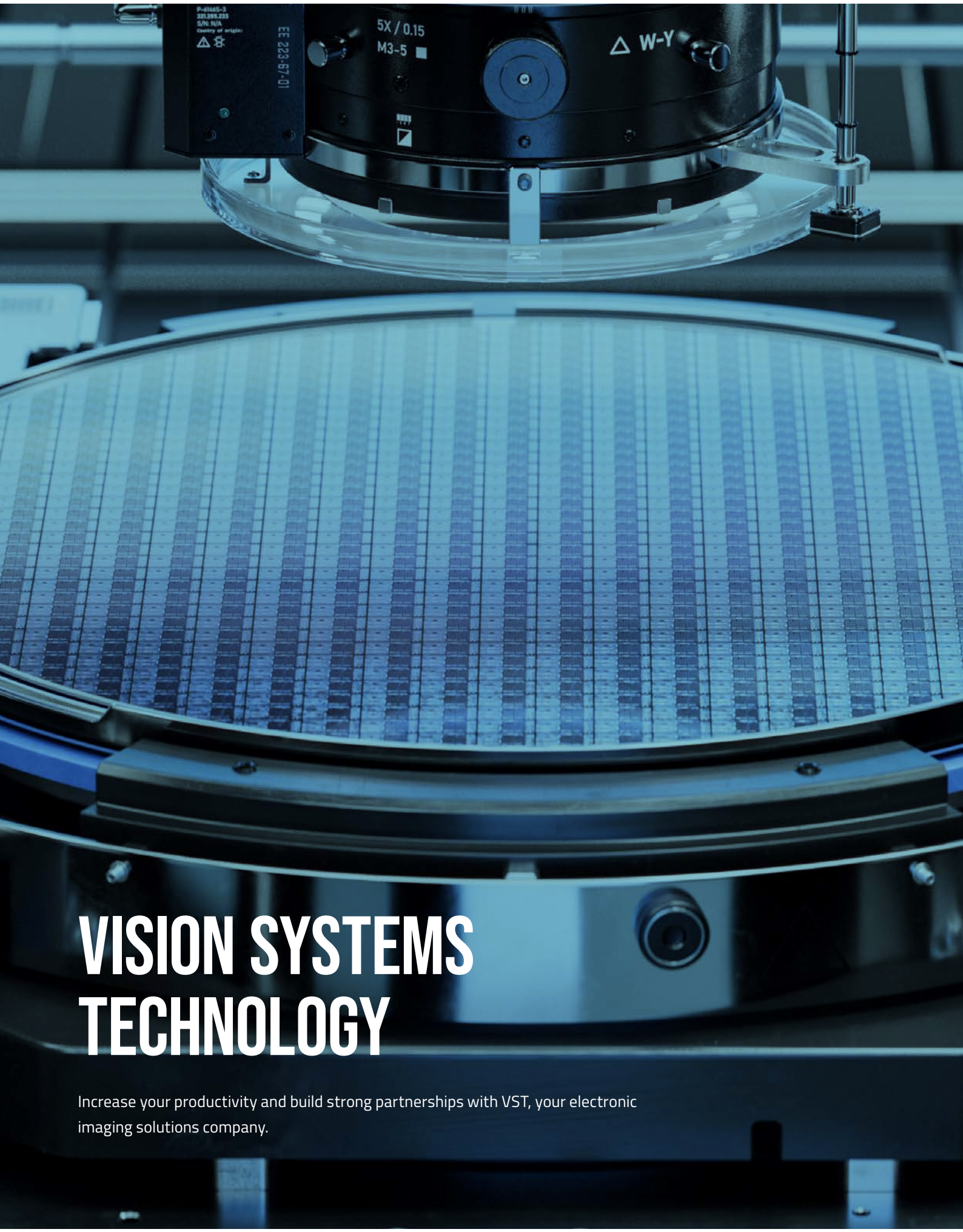
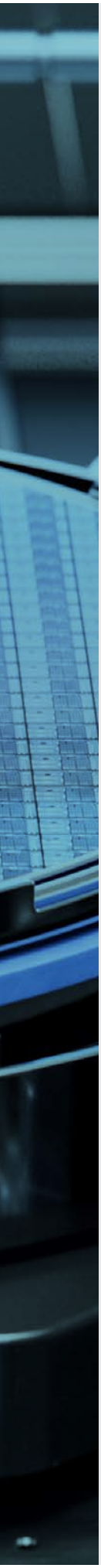


VISION SYSTEMS TECHNOLOGY

Increase your productivity and build strong partnerships with VST, your electronic imaging solutions company.



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A MESSAGE FROM OUR TEAM

Vision Systems Technology

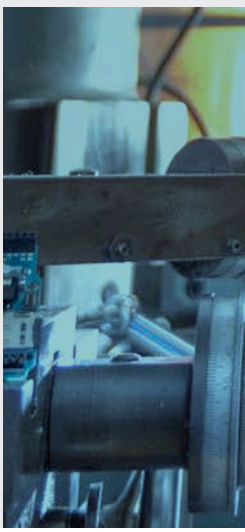
Your Trusted Partner in Advanced Imaging Solutions

Located in San Diego, VST serves as the North American Master Distributor for industry leading brands including Vieworks, SVS-Vistek, and Emergent Vision Technologies. We specialize in providing cutting edge, high resolution cameras for machine vision applications, available in both native and pixel-shift formats.

Our extensive portfolio also includes a comprehensive range of precision lenses from renowned manufacturers such as Vieworks, SPO, Moritex, Zeiss, Computar, and Schneider. Additionally, we offer Euresys image and video acquisition components, including frame grabbers, FPGA IP cores, and advanced image processing software.

At VST, we prioritize understanding your unique requirements and carefully evaluating potential trade-offs to recommend tailored solutions. If your needs extend beyond our offerings, we leverage our industry expertise to help you source the ideal components from trusted external partners. Our deep technical knowledge ensures seamless integration of our imaging components into your systems, minimizing complexity and maximizing efficiency.

More than a supplier, VST is your dedicated partner in delivering robust and reliable imaging solutions for your most demanding applications.




ULTRA HIGH RESOLUTION
AREA SCAN CAMERAS
LINE SCAN CAMERAS
HIGH SPEED CAMERAS
PIXEL SHIFT CAMERAS
INDUSTRIAL LENSES
FRAME GRABBERS
CLARITY IN EVERY PIXEL,
PRECISION IN EVERY PROCESS

VIEWORKS VT SENSE SERIES BACK SIDE ILLUMINATED TDI LINE SCAN CAMERAS

VT Sense Series supports M42 mount, M58 mount, and M95 mount, making it easier to select lenses.

C mount and F mount available for some models

The VT Sense Series incorporates advanced Time Delayed Integration (TDI) technology, enhancing sensitivity by synchronizing signals across multiple lines in a time-delayed mode. This innovative approach boosts sensitivity and supports higher line rates of up to 543 kHz. Ideal for demanding applications such as flat panel inspection, semiconductor inspection, and scientific imaging, the VT Sense Series excels where high sensitivity is essential.

TDI (Time Delayed Integration) line scan cameras are specially designed for applications requiring exceptional sensitivity. Unlike standard line scan cameras, which capture data in a single scan, TDI cameras utilize multiple stages to collect signals, offering up to 256 times the sensitivity. However, conventional TDI sensors have limitations due to their traditional sensor structures.

To overcome these constraints, Vieworks has developed a groundbreaking hybrid TDI line scan sensor. This hybrid sensor, featuring a CCD pixel structure combined with CMOS technology, enables ultra-high-speed image capturing with greater sensitivity. Vieworks has coined this revolutionary sensor technology VTDI (Vieworks TDI), setting a new standard for performance in line scan imaging.

ADVANCED IMAGE PROCESSING OPTIONS

Advanced DSNU and PRNU Correction
Bidirectional Operation with up to 256 TDI Stages

SENSITIVITY ENHANCED BACK SIDE ILLUMINATED

VT Sense Series BSI (back-side illuminated) TDI line scan sensors offer enhanced quantum efficiency (QE) and signal-to-noise ratio (SNR). BSI sensors allow for greater sensitivity and ensure superior image quality in visible, UV, and NIR imaging. With exceptional sensitivity, VT Sense Series demonstrates excellent performance in low-light environments.

HIGH SENSITIVITY AND HIGH SPEED...

VT Sense Series is based on TDI (time delayed integration) technology which increases sensitivity by accumulating signals across multiple lines synchronized in a time-delayed mode. VT Sense Series offers 256 times greater sensitivity with 256 stages and supports higher line rates up to 543 kHz. The series is well-suited for demanding applications including flat panel inspection, semiconductor inspection, and scientific imaging.

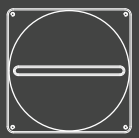
FLAT PANEL INSPECTION

SEMICONDUCTOR INSPECTION

PHARMACEUTICAL INSPECTION

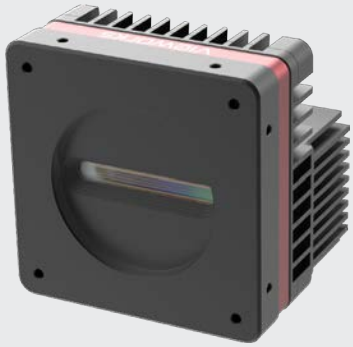
SEMICONDUCTOR
WAFER INSPECTION

USING THE VIEWORKS VTS-9K5X2 LINE SCAN CAMERA FOR SC WAFER INSPECTION



The BSI sensor offers enhanced quantum efficiency (QE) and signal to noise ratio (SNR)

VST CASE STUDY



A semiconductor company leveraged Vieworks high-resolution line scan cameras with CoaXPress-over-Fiber technology to detect microscopic defects, optimize production speeds, and enhance quality control in high-demand fabrication environments.

THE INSPECTION SYSTEM FACED FOUR MAIN CHALLENGES

Resolution and Sensitivity:

Defects such as micro-scratches, pattern misalignments, and contamination particles as small as 50 nanometers had to be detected consistently.

Speed Requirements:

The inspection system needed to handle wafers at production-line speeds to avoid bottlenecks.

Data Bandwidth:

High-resolution line scan cameras generated massive data volumes, demanding a robust data transfer solution without latency.

Environmental Conditions:

The system needed to perform reliably in cleanroom environments while maintaining minimal footprint and power consumption.

A semiconductor manufacturer faced growing challenges in inspecting silicon wafers during production. With wafer sizes increasing and defect tolerances decreasing, the client required an advanced imaging system capable of identifying microscopic imperfections at high speeds.

VST proposed a cutting-edge solution using Vieworks high-resolution line scan cameras integrated with CoaXPress-over-Fiber technology. This system offered exceptional resolution, sensitivity, and imaging speeds, while the CoaXPress over Fiber interface ensured efficient, high-bandwidth data transmission over long distances with minimal interference. Key features such as 16,000-pixel resolution, 200 kHz line rates, and compact fiber-optic connectivity enabled seamless operation in cleanroom environments, enhancing both flexibility and performance.

The deployment of this advanced solution yielded remarkable results. The system consistently identified defects as small as 40 nanometers, exceeding industry standards for wafer inspection. Its high-speed imaging and data transfer capabilities allowed inspection of up to 300 wafers per hour, meeting production demands while maintaining exceptional accuracy. Additionally, the fiber-optic interface simplified system scaling for future capacity needs and minimized downtime through reliable, robust performance. Together, these innovations provided the client with unparalleled quality control and operational efficiency, reinforcing their position as a leader in semiconductor manufacturing.

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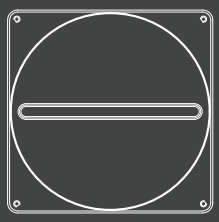
Sensitivity Enhanced Back Side Illuminated (BSI) TDI Line Scan Cameras

BACKSIDE ILLUMINATED TDI LINE SCAN CAMERAS



VIEWORKS VTS SERIES

BACKSIDE ILLUMINATED SENSOR

CXP 6

Model	Resolution	Line Rate	TDI Stage	Pixel Data	Optical Mount	Sensor	Pixel Size (µm²)
VTS-4K5X-H300	4640 x 256	300 kHz	64 / 128 / 192 / 256	8/10/12 bit	M42	Vieworks	5.0 × 5.0

CXP 12

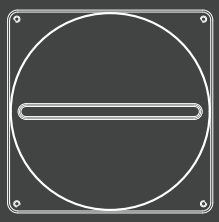
Model	Resolution	Line Rate	TDI Stage	Pixel Data	Optical Mount	Sensor	Pixel Size (µm²)
VTS-9K5X2-H550	9056 x 256	543 kHz	4/8/16/32/96/128/160/192/224/240/248/252/256	8/10/12 bit	M58	GLT5009BSI	5.0 × 5.0
VTS-16K5X2-H300	16384 x 256	300 kHz	64 / 128 / 192 / 256	8/10/12 bit	M95	Vieworks	5.0 × 5.0

CXP OVER FIBER

Model	Resolution	Line Rate	TDI Stage	Pixel Data	Optical Mount	Sensor	Pixel Size (µm²)
VTS-9K5F-H550	9056 x 256	543 kHz	4/8/16/32/96/128/160/192/224/240/248/252/256	8/10/12 bit	M58	GLT5009BSI	5.0 × 5.0

MONOCHROME

TDI LINE SCAN CAMERAS



VIEWORKS VT SERIES

MONOCHROME HYBRID SENSOR

GIGE

Model	Resolution	Line Rate	TDI Stage	Pixel Data	Optical Format	Sensor	Pixel Size (μm²)
VT-3K7G-E38	3200 × 32	38 kHz	32	8/10/12 bit	M42	Vieworks	7.0 × 7.0
VT-3K7G-H38	3200 × 128	38 kHz	32/64/96/128	8/10/12 bit	M42	Vieworks	7.0 × 7.0
VT-4K5G-E26	4640 × 64	26 kHz	64	8/10/12 bit	M42	Vieworks	5.0 × 5.0
VT-4K5G-H26	4640 × 256	26 kHz	64/128/192/256	8/10/12 bit	M42	Vieworks	5.0 × 5.0
VT-6K3.5G-E19	6560 × 64	19 kHz	64	8/10/12 bit	M42	Vieworks	3.5 × 3.5
VT-6K3.5G-H19	6560 × 256	19 kHz	64/128/192/256	8/10/12 bit	M42	Vieworks	3.5 × 3.5

CXP 12

Model	Resolution	Line Rate	TDI Stage	Pixel Data	Optical Format	Sensor	Pixel Size (μm²)
VT-16K5X2-E300	16384 × 64	300 kHz	64	8/10/12 bit	M95	Vieworks	5.0 × 5.0
VT-16K5X2-H300	16384 × 256	300 kHz	64/128/192/256	8/10/12 bit	M95	Vieworks	5.0 × 5.0

CXP 6

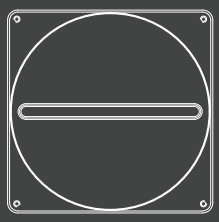
Model	Resolution	Line Rate	TDI Stage	Pixel Data	Optical Format	Sensor	Pixel Size (μm²)
VT-3K7X-E250	3200 × 32	250 kHz	32	8/10/12 bit	M42	Vieworks	7.0 × 7.0
VT-3K7X-H250	3200 × 128	250 kHz	32/64/96/128	8/10/12 bit	M42	Vieworks	7.0 × 7.0
VT-4K5X-E200	4640 × 64	200 kHz	64	8/10/12 bit	M42	Vieworks	5.0 × 5.0
VT-4K5X-H200	4640 × 256	200 kHz	64/128/192/256	8/10/12 bit	M42	Vieworks	5.0 × 5.0
VT-6K3.5X-E160	6560 × 64	160 kHz	64	8/10/12 bit	M42	Vieworks	3.5 × 3.5
VT-6K3.5X-H160	6560 × 256	160 kHz	64/128/192/256	8/10/12 bit	M42	Vieworks	3.5 × 3.5
VT-6K10X-E170	6240 × 32	172 kHz	32	8/10/12 bit	M72	Vieworks	10.0 × 10.0
VT-6K10X-H170	6240 × 128	172 kHz	32/64/96/128	8/10/12 bit	M72	Vieworks	10.0 × 10.0
VT-9K7X-E120	8912 × 32	125 kHz	32	8/10/12 bit	M72	Vieworks	7.0 × 7.0
VT-9K7X-S120	8912 × 128	125 kHz	32/64/96/128	8/10/12 bit	M72	Vieworks	7.0 × 7.0
VT-9K7X-E250	8912 × 32	250 kHz	32	8/10/12 bit	M72	Vieworks	7.0 × 7.0
VT-9K7X-S250	8912 × 128	250 kHz	32/64/96/128	8/10/12 bit	M72	Vieworks	7.0 × 7.0
VT-12K5X-E100	12480 × 64	100 kHz	64	8/10/12 bit	M72	Vieworks	5.0 × 5.0
VT-12K5X-S100	12480 × 256	100 kHz	64/128/192/256	8/10/12 bit	M72	Vieworks	5.0 × 5.0
VT-12K5X-E200	12480 × 64	200 kHz	64	8/10/12 bit	M72	Vieworks	5.0 × 5.0
VT-12K5X-S200	12480 × 256	200 kHz	64/128/192/256	8/10/12 bit	M72	Vieworks	5.0 × 5.0
VT-16K5X-E140	16384 × 64	140 kHz	64	8/10/12 bit	M95	Vieworks	5.0 × 5.0
VT-16K5X-S140	16384 × 256	140 kHz	64/128/192/256	8/10/12 bit	M95	Vieworks	5.0 × 5.0
VT-18K3.5X-E80	17824 × 64	80 kHz	64	8/10/12 bit	M72	Vieworks	3.5 × 3.5
VT-18K3.5X-S80	17824 × 256	80 kHz	64/128/192/256	8/10/12 bit	M72	Vieworks	3.5 × 3.5
VT-18K3.5X-E140	17824 × 64	142 kHz	64	8/10/12 bit	M72	Vieworks	3.5 × 3.5
VT-18K3.5X-S140	17824 × 256	142 kHz	64/128/192/256	8/10/12 bit	M72	Vieworks	3.5 × 3.5
VT-23K3.5X-E100	23360 × 64	100 kHz	64	8/10/12 bit	M95	Vieworks	3.5 × 3.5
VT-23K3.5X-S100	23360 × 256	100 kHz	64/128/192/256	8/10/12 bit	M95	Vieworks	3.5 × 3.5

CAMERA LINK

Model	Resolution	Line Rate	TDI Stage	Pixel Data	Optical Format	Sensor	Pixel Size (μm²)
VT-3K7C-E100	3200 × 32	100 kHz	32	8/10/12 bit	M42	Vieworks	7.0 × 7.0
VT-3K7C-H100	3200 × 128	100 kHz	32/64/96/128	8/10/12 bit	M42	Vieworks	7.0 × 7.0
VT-4K5C-E100	4640 × 64	100 kHz	64	8/10/12 bit	M42	Vieworks	5.0 × 5.0
VT-4K5C-H100	4640 × 256	100 kHz	64/128/192/256	8/10/12 bit	M42	Vieworks	5.0 × 5.0
VT-4K7C-E120	4096 × 32	125 kHz	32	8/10/12 bit	M72	Vieworks	7.0 × 7.0
VT-4K7C-H120	4096 × 128	125 kHz	32/64/96/128	8/10/12 bit	M72	Vieworks	7.0 × 7.0
VT-4K14C-E120	4096 × 16	125 kHz	16	8/10/12 bit	M72	Vieworks	14.0 × 14.0
VT-4K14C-H120	4096 × 64	125 kHz	16/32/48/64	8/10/12 bit	M72	Vieworks	14.0 × 14.0
VT-6K3.5C-E100	6560 × 64	100 kHz	64	8/10/12 bit	M42	Vieworks	3.5 × 3.5
VT-6K3.5C-H100	6560 × 256	100 kHz	64/128/192/256	8/10/12 bit	M42	Vieworks	3.5 × 3.5
VT-9K7C-E80	8912 × 32	94 kHz	32	8/10/12 bit	M72	Vieworks	7.0 × 7.0
VT-9K7C-H80	8912 × 128	94 kHz	32/64/96/128	8/10/12 bit	M72	Vieworks	7.0 × 7.0
VT-12K5C-E60	12480 × 64	67 kHz	64	8/10/12 bit	M72	Vieworks	5.0 × 5.0
VT-12K5C-H60	12480 × 256	67 kHz	64/128/192/256	8/10/12 bit	M72	Vieworks	5.0 × 5.0
VT-18K3.5C-E40	17824 × 64	47 kHz	64	8/10/12 bit	M72	Vieworks	3.5 × 3.5
VT-18K3.5C-H40	17824 × 256	47 kHz	64/128/192/256	8/10/12 bit	M72	Vieworks	3.5 × 3.5

COLOR

TDI LINE SCAN CAMERAS



VIEWORKS VTC SERIES

COLOR HYBRID SENSOR

GIGE

Model	Resolution	Line Rate	TDI Stage	Pixel Data	Optical Mount	Sensor	Pixel Size (µm²)
VTC-2K10.5G-C 19	2160 x 80	19 kHz (Max 100 kHz)	20/40/60/80	8/10/12 bits	M42	Vieworks	10.5 x 10.5

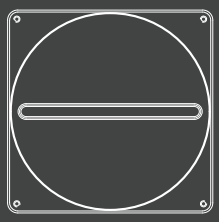
CAMERA LINK

Model	Resolution	Line Rate	TDI Stage	Pixel Data	Optical Mount	Sensor	Pixel Size (µm²)
VTC-2K10.5C-C 100	2160 x 80	100 kHz	20/40/60/80	8/10/12 bits	M42	Vieworks	10.5 x 10.5

CXP 6

Model	Resolution	Line Rate	TDI Stage	Pixel Data	Optical Mount	Sensor	Pixel Size (µm²)
VTC-2K10.5X-C 140	2160 x 80	140 kHz	20/40/60/80	8/10/12 bits	M42	Vieworks	10.5 x 10.5

MONOCHROME
LINE SCAN CAMERAS



VIEWORKS VL SERIES
LINEAR CMOS SENSOR

5 GIGE

Model	Chroma	Resolution	Line Rate	Optical Format	Sensor	Pixel Size (µm²)
VL-2K7NG-M170I-2	Mono	2048 x 2	170 kHz	M42	GL3504	7.0 x 7.0
VL-4K3.5NG-M83I-2	Mono	4096 x 2	83 kHz	M42	GL3504	3.5 x 3.5

10 GIGE

Model	Chroma	Resolution	Line Rate	Optical Format	Sensor	Pixel Size (µm²)
VL-8K7XG-M100I-2	Mono	8192 x 2	100 kHz	M72	GL7008	7.0 x 7.0
VL-16K3.5XG-M60I-2	Mono	16384 x 2	60 kHz	M72	GL3516	3.5 x 3.5

CXP 12

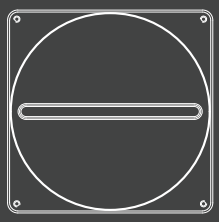
Model	Chroma	Resolution	Line Rate	Optical Format	Sensor	Pixel Size (µm²)
VL-8K7X2-M100I-2	Mono	8192 x 2	200 kHz	M72	GL7008	7.0 x 7.0
VL-16K3.5X2-M120-2	Mono	16384 x 2	120 kHz	M72	GL3516	3.5 x 3.5

CAMERA LINK

Model	Chroma	Resolution	Line Rate	Optical Format	Sensor	Pixel Size (µm²)
VL-2K7C-M200 I-2	Mono	2048 x 2	200 kHz	M42	Vieworks	7.0 x 7.0
VL-4K7C-M200 I-2	Mono	4096 x 2	200 kHz	M42	GL0402	7.0 x 7.0
VL-8K7C-M80F-1	Mono	8192 x 1	80 kHz	M72	AMS DR-1x8k-7	7.0 x 7.0
VL-8K7C-M80F-2	Mono	8192 x 2	80 kHz	M72	AMS DR-2x8k-7	7.0 x 7.0
VL-16K3.5C-M50F-1	Mono	16384 x 1	50 kHz	M72	AMS DR-16k-3.5	3.5 x 3.5

COLOR

LINE SCAN CAMERAS



VIEWORKS VL SERIES

LINEAR CMOS SENSOR

5 GIGE

Model	Chroma	Resolution	Line Rate	Optical Format	Sensor	Pixel Size (µm²)
VL-2K7NG-C44I-4	Color	2048 x 2	44 kHz	M42	GL3504	7.0 x 7.0
VL-4K3.5NG-C42I-2	Color	4096 x 2	42 kHz	M42	GL3504	3.5 x 3.5

10 GIGE

Model	Chroma	Resolution	Line Rate	Optical Format	Sensor	Pixel Size (µm²)
VL-8K7XG-C33I-2	Color	8192 x 2	33 kHz	M72	GL7008	7.0 x 7.0
VL-16K3.5XG-C30I-2	Color	16384 x 2	30 kHz	M72	GL3516	3.5 x 3.5

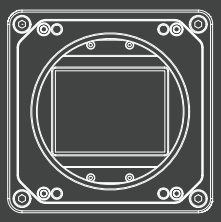
CXP 12

Model	Chroma	Resolution	Line Rate	Optical Format	Sensor	Pixel Size (µm²)
VL-8K7X2-C67-4	Color	8192 x 2	67 kHz	M72	GL7008	7.0 x 7.0
VL-16K3.5X2-C60I-2	Color	16384 x 2	60 kHz	M72	GL3516	3.5 x 3.5

CAMERA LINK

Model	Chroma	Resolution	Line Rate	Optical Format	Sensor	Pixel Size (µm²)
VL-2K7C-C100 I-2	Color	2048 x 2	100 kHz	M42	Vieworks	7.0 x 7.0
VL-4K7C-C100 I-2	Color	4096 x 2	100 kHz	M42	GL0402	7.0 x 7.0
VL-8K7C-C80F-2	Color	8192 x 2	80 kHz	M72	AMS DR-2x8k-7 RGB	7.0 x 7.0

HIGH PERFORMANCE AREA SCAN CAMERAS



VIEWORKS VC SERIES

CMOS IMAGE SENSOR

10 GIGE

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	Diagonal	Optical		
VC-25M10G-M/C 41 I	5120 × 5120	41.7 fps	8/10/12 bit	10 GigE	12.8 x 12.8	18.1 mm	1.1"	GMAX0505	2.5 × 2.5

CXP FIBER

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	Diagonal	Optical		
VC-21MDF-M/C 460 I	5120 × 4096	454 fps	8/10 bit	CXP Fiber	23.04 x 18.43	29.5 mm	APS-C	GSPRINT4521	4.5 × 4.5

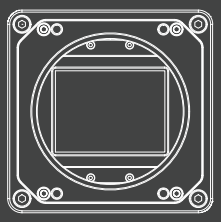
CXP 12

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	Diagonal	Optical		
VC-5MX2-M/C 289	2592 × 2160	289 fps	8/10 bit	CXP-12	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 bit	CXP-12	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 bit	CXP-12	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 bit	CXP-12	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 bit	CXP-12	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 bit	CXP-12	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	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 bit	CXP-12	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 bit	CXP-12	46.15 x 32.87	56.73 mm	3.6"	IMX661	3.45 × 3.45

CXP 6

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	Diagonal	Optical		
VC-4MX-M 144 F	2048 × 2048	144 fps	8 bit	CXP-6	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 bit	CXP-6	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 bit	CXP-6	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 bit	CXP-6	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 bit	CXP-6	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 bit	CXP-6	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 bit	CXP-6	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 bit	CXP-6	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 bit	CXP-6	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 bit	CXP-6	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 bit	CXP-6	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 bit	CXP-6	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 bit	CXP-6	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 bit	CXP-6	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 bit	CXP-6	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 bit	CXP-6	53.36 x 40.01	66.7 mm	4.2"	IMX411	3.76 × 3.76

HIGH PERFORMANCE AREA SCAN CAMERAS



VIEWORKS VC SERIES

CMOS IMAGE SENSOR

CAMERA LINK

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	Diagonal	Optical		
VC-2MC-M/C 150	2048 × 1088	148.5 fps	8/10 bit	Camera Link	11.26 x 5.98	12.75 mm	2/3"	CMV2000	5.5 × 5.5
VC-2MC-M/C 340	2048 × 1088	337.6 fps	8/10 bit	Camera Link	11.26 x 5.98	12.75 mm	2/3"	CMV2000	5.5 × 5.5
VC-3MC-M/C 280	1696 × 1710	285 fps	8 bit	Camera Link	13.57 x 13.68	19.27 mm	1.2"	LUPA3000	8.0 × 8.0
VC-4MC-M/C 80	2048 × 2048	78.9 fps	8/10 bit	Camera Link	11.26 x 11.26	15.92 mm	1"	CMV4000	5.5 × 5.5
VC-4MC-M/C 180	2048 × 2048	179.5 fps	8/10 bit	Camera Link	11.26 x 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 bit	Camera Link	67.08 x 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 bit	Camera Link	6.5 x 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 bit	Camera Link	10.5 x 5.4	11.8 mm	2/3"	GMAX2509	2.5 × 2.5
VC-12MC-M/C 65	4096 × 3072	64.3 fps	8/10 bit	Camera Link	22.53 x 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 bit	Camera Link	18.76 x 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 bit	Camera Link	11.27 x 10.24	15.22 mm	1"	GMAX2518	2.5×2.5
VC-25MC-M/C 30	5120 × 5120	30.9 fps	8/10 bit	Camera Link	23.04 x 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 bit	Camera Link	23.04 x 23.04	32.58 mm	APS-H	PYTHON-25K	4.5 × 4.5
VC-25MC-M/C 31 I	5120 x 5120	31.7 fps	8/10/12 bit	Camera Link	12.8 x 12.8	18.1 mm	1.1"	GMAX0505	2.5 x 2.5
VC-31MC-M/C 26 H	6464 × 4852	26.2 fps	8/10/12 bit	Camera Link	22.30 x 16.73	27.9 mm	APS-C	IMX342	3.45 × 3.45
VC-61MC-M/C 13 H	9568 × 6380	13.68 fps	8/10/12 bit	Camera Link	35.98 x 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 bit	Camera Link	31.00 x 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 bit	Camera Link	43.80 x 32.87	55 mm	3.4"	IMX461	3.76 × 3.76
VC-103MC-M/C 7 I	11264 x 9200	7.6 fps	8/10/12 bit	Camera Link	36.1 x 29.4	46.6 mm	2.9"	GMAX32103	3.2 x 3.2
VC-127MC-M/C 6 H	13376 x 9528	6.2 fps	8/10/12 bit	Camera Link	46.15 x 32.87	56.73	3.6"	IMX661	3.45 x 3.45
VC-151MC-M/C 5 H	14192 x 10640	5.5 fps	8/10/12 bit	Camera Link	53.36 x 40.01	66.7 mm	4.2"	IMX411	3.76 x 3.76

VIEWORKS VP SERIES ULTRA HIGH RESOLUTION COOLED AREA SCAN CAMERAS

High performance area scan cameras with thermoelectric cooling technology

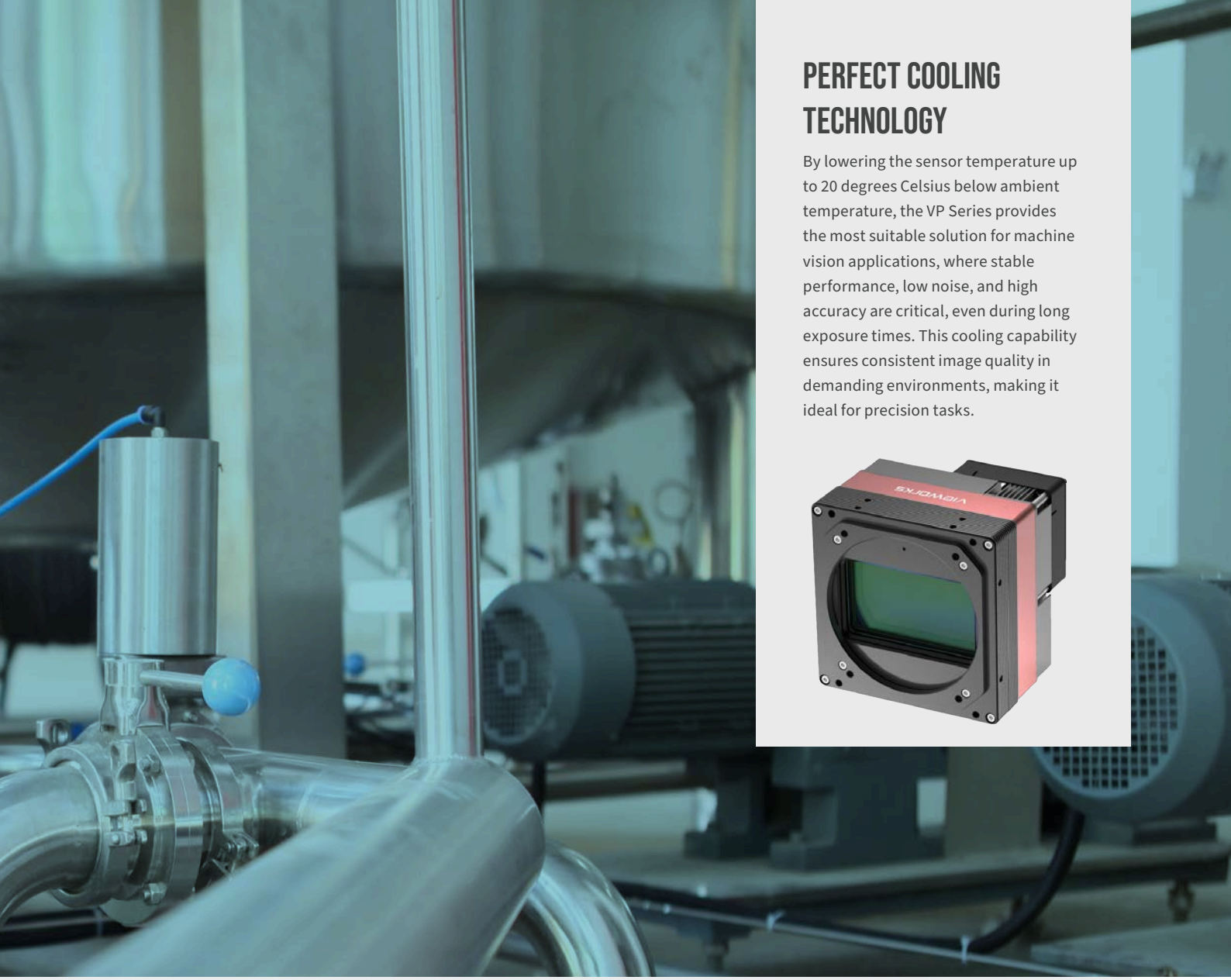
25 MP to 288 MP

The VP-288MX2 is an advanced 288-megapixel camera featuring the cutting-edge Syncron High-Speed Global Shutter CMOS Image Sensor. With a resolution of 24,000 × 12,000 pixels and a capture rate of 15 frames per second, this camera delivers exceptional detail, making it ideal for applications like industrial inspection, scientific research, medical imaging, and document digitization.
A key feature of the VP-288MX2 is its use of thermoelectric Peltier (TEC) cooling technology, designed to maintain the image sensor's temperature up to 20 degrees below the ambient temperature. This innovative cooling system, widely used in demanding medical and industrial markets, helps reduce thermal noise and ensures stable performance by preventing overheating.

The TEC cooling system enhances the camera's sensitivity, enabling long exposure times without compromising image quality. This is especially useful in low-light environments or when capturing fine details over time. By stabilizing the temperature, the VP-288MX2 ensures consistent, high-quality imaging in challenging conditions, making it a reliable choice for high-resolution tasks across industries.

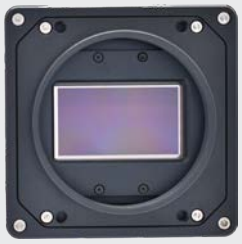
288 MEGAPIXEL GLOBAL SHUTTER

Advanced DSNU and PRNU Correction
CXP-12 interface up to 15 fps at 50 Gbps



PERFECT COOLING TECHNOLOGY

By lowering the sensor temperature up to 20 degrees Celsius below ambient temperature, the VP Series provides the most suitable solution for machine vision applications, where stable performance, low noise, and high accuracy are critical, even during long exposure times. This cooling capability ensures consistent image quality in demanding environments, making it ideal for precision tasks.



EXCELLENT HEAT DISSIPATION STRUCTURE...

Peltier cooling transfers heat from the camera's image sensor to a cold plate using the thermoelectric effect where electricity is passed through two different materials to create a temperature difference. This cooling system helps maintain optimal sensor temperature, reducing thermal noise and ensuring stable image quality. To prevent condensation, which can affect image quality, the system removes the moisture that forms on the cold surface of the Peltier by using Vieworks' proprietary heating structure.

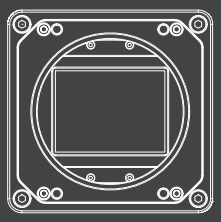
FLAT PANEL INSPECTION

SEMICONDUCTOR INSPECTION

PHARMACEUTICAL INSPECTION

COOLED

AREA SCAN CAMERAS



VIEWORKS VP SERIES

CMOS IMAGE SENSOR

CAMERA LINK

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	Diagonal	Optical		
VP-25M/C 30	5120 x 5120	30.9 fps	8/10 bit	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 bit	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 bit	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 bit	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 bit	Camera Link	43.80 x 32.87	55 mm	3.4"	IMX461	3.76 x 3.76
VP-103MC-M/C 7 I	11264 x 9200	7.6 fps	8/10/12 bit	Camera Link	36.1 x 29.4	46.6 mm	2.9"	GMAX32103	3.2 x 3.2
VP-127MC-M/C 6 H	13376 x 9528	6.2 fps	8/10/12 bit	Camera Link	46.15 x 32.87	56.73 mm	3.6"	IMX661	3.45 x 3.45
VP-151MC-M/C 5 H	14192 x 10640	5.5 fps	8/10/12 bit	Camera Link	53.36 x 40.01	66.7 mm	4.2"	IMX411	3.76 x 3.76

CXP 6

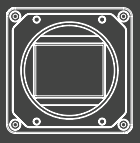
Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	Diagonal	Optical		
VP-31MX-M/C 35 H	6464 x 4852	35.4 fps	8/10/12 bit	CXP-06	22.30 x 16.73	27.9 mm	APS-C	IMX342	3.45 x 3.45
VP-61MX-M/C 18 H	9568 x 6380	17.93 fps	8/10/12/14/16 bit	CXP-06	35.98 x 23.99	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 bit	CXP-06	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 bit	CXP-06	43.80 x 32.87	55 mm	3.4"	IMX461	3.76 x 3.76
VP-151MX-M/C 6 H	14192 x 10640	6.2 fps	8/10/12/14/16 bit	CXP-06	53.36 x 40.01	66.7 mm	4.2"	IMX411	3.76 x 3.76

CXP 12

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	Diagonal	Optical		
VP-103MX2-M/C 24 I	11264 x 9200	24.7 fps	8/10/12 bit	CXP-12	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 bit	CXP-12	46.15 x 32.87	56.73 mm	3.6"	IMX661	3.45 x 3.45
VP-144MX2-M 15	12000 x 12000	15 fps	8/10/12 bit	CXP-12	42.0 x 42.0	59.39 mm	3.3"	DCS144M	3.5 x 3.5
VP-152MX2-M 16	16544 x 9200	16.3 fps	8/10/12 bit	CXP-12	53.0 x 29.4	60.6 mm	Medium	Vieworks	3.2 x 3.2
VP-288MX2-M 15	24000 x 12000	15 fps	8/10/12 bit	CXP-12	84.0 x 42.0	93.91 mm	4.96"	DCS288M	3.5 x 3.5

ELECTRIC VEHICLE
BATTERY INSPECTION

USING THE VIEWORKS VN-200MX PIXEL SHIFT CAMERA FOR EV BATTERY INSPECTION



The resolution of the sensor can be extended from 4x up to 9x without additional equipment.

VST CASE STUDY

An electric vehicle (EV) battery manufacturer sought to optimize the quality assurance process on their production lines. The company needed to inspect electrode sheets and separators used in lithium-ion batteries with ultra-high precision.

THE INSPECTION SYSTEM FACED THREE MAIN CHALLENGES

Microscopic Defect Detection:

Scratches, pinholes, and misalignments smaller than 1 micron needed to be identified reliably.

High Throughput:

The production lines operated at high speeds, requiring rapid image acquisition and processing without compromising accuracy.

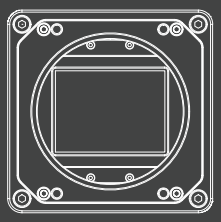
Resolution vs. System Complexity:

Traditional cameras lacked sufficient resolution and upgrading to larger sensors required significant changes to the optical system, increasing cost and complexity.

To address the client's challenges, VST recommended the Vieworks VN-200MX, a cutting-edge pixel shift camera designed for ultra-high-resolution imaging. The VN-200MX features a remarkable 200-megapixel effective resolution achieved through pixel shift technology which captures multiple images by physically shifting the sensor by sub-pixel increments. These images are then combined to produce data with extraordinary detail. This advanced capability allowed the detection of sub-micron defects, significantly enhancing the camera's native resolution. The VN-200MX also seamlessly integrated with the client's existing optical system, eliminating the need for costly upgrades. Paired with Euresys frame grabbers and FPGA-accelerated image processing software, the solution enabled real-time processing while maintaining high throughput without delays.

The project's implementation required close collaboration between VST, the client's engineering team, and system integrators. First, VST conducted a thorough analysis of the client's production environment to tailor the pixel shift parameters for optimal performance. The VN-200MX was then installed with precise alignment to the client's conveyors and lighting systems, ensuring consistent imaging across fast-moving battery components. Custom scripts were developed to process the super-resolution images in real-time, immediately flagging defects for downstream action. Finally, the system underwent rigorous testing and validation to ensure reliable operation under high-speed production conditions. The collaborative effort resulted in a robust solution that met the client's stringent quality and efficiency requirements.

PIXEL SHIFT AREA SCAN CAMERAS



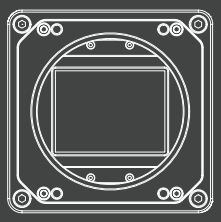
VIEWORKS VN SERIES

CMOS IMAGE SENSOR

CXP 6

Model	Resolution	Expanded Resolution	Frame Rate	Pixel Data	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	Diagonal	Optical		
VN-25MX-M/C 72	5120 x 5120	15360 x 15360	72 fps	8/10 bit	23.04 x 23.04	32.58 mm	35 mm	VITA25K	4.5 x 4.5

COOLED PIXEL SHIFT AREA SCAN CAMERAS



VIEWORKS VNP SERIES

CMOS IMAGE SENSOR

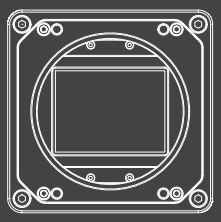
CXP 6

Model	Resolution	Expanded Resolution	Frame Rate	Pixel Data	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	Diagonal	Optical		
VNP-604MX-M/C 6 H	14192 x 10640	28384 x 21280	6.2 fps	8/10/12 bit	53.36 x 40.01	66.7 mm	4.2"	IMX411	3.76 x 3.76

CXP 12

Model	Resolution	Expanded Resolution	Frame Rate	Pixel Data	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	Diagonal	Optical		
VNP-576MX2-M 15	12000 x 12000	24000 x 24000	15 fps	8/10/12 bit	42.0 x 42.0	59.39 mm	3.3"	SCG144M	3.5 x 3.5
VNP-1152MX2-M15	24000 x 12000	48000x 24000	15 fps	8/10/12 bit	84.0 x 84.0	93.91 mm	4.96"	SCG288M	3.5 x 3.5

FOCUS IRIS CONTROLLABLE AREA SCAN CAMERAS



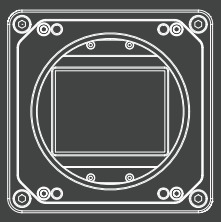
VIEWORKS VX SERIES

CMOS IMAGE SENSOR

GIGE

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	Diagonal	Optical		
VX-25MG-M 5	5120 x 5120	4.7 fps	8 bit	GigE	23.04 x 23.04	32.58 mm	35 mm	VITA25K	4.5 x 4.5

ULTRA COMPACT AREA SCAN CAMERAS



VIEWORKS VZ SERIES

CMOS IMAGE SENSOR

GIGE

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	Diagonal	Optical		
VZ-400G-M/C 302 H	720 × 540	302	8/12 bit	GigE	4.97 x 3.73	6.21 mm	1/2.9"	IMX287	6.9 × 6.9
VZ-1600G-M/C 75 H	1440 × 1080	75	8/12 bit	GigE	4.97 x 3.73	6.21 mm	1/2.9"	IMX273	3.45 × 3.45
VZ-2MG-M/C 60 C	1600 × 1200	60	8/10 bit	GigE	7.2 x 5.4	9.0 mm	1/1.8"	EV76C570	4.5 × 4.5
VZ-2MG-M/C 41 H	1920 × 1200	41	8/12 bit	GigE	11.33 x 7.13	13.39 mm	1/1.2"	IMX249	5.86 × 5.86
VZ-3MG-M/C 37 H	2048 × 1536	37	8/12 bit	GigE	7.07 x 5.3	8.84 mm	1/1.8"	IMX265	3.45 × 3.45
VZ-5MG-M/C 23 H	2448 × 2048	23	8/12 bit	GigE	8.57 x 7.17	11.1 mm	2/3"	IMX264	3.45 × 3.45
VZ-5MG-M 23 H-POL	2448 × 2048	23	8/12 bit	GigE	8.57 x 7.17	11.1 mm	2/3"	IMX264	3.45 × 3.45
VZ-5MG-M/C 23 C	2592 × 1944	23	8/12 bit	GigE	5.7 x 4.28	7.13 mm	1/2.5"	AR0521	2.2 × 2.2
VZ-5MG-M/C 23 C-NIR	2592 × 1944	23	8/12 bit	GigE	5.7 x 4.28	7.13 mm	1/2.5"	AR0522 - NIR	2.2 × 2.2
VZ-6MG-M/C 18H	3072 x 2048	18	8/12 bit	GigE	7.37 x 4.92	8.92 mm	1/1.8"	IMX178	2.4 x 2.4
VZ-12MG-M/C 9 H	4024 × 3036	9	8/12 bit	GigE	7.44 x 5.61	9.33 mm	1/1.7"	IMX226	1.85 × 1.85
VZ-12MG-M/C 9 H1	4024 × 3036	9	8/12 bit	GigE	14.13 x 10.35	17.52 mm	1.1"	IMX304	3.45 × 3.45
VZ-20MG-M/C 6 H	5496 × 3672	6	8/12 bit	GigE	13.13 x 8.76	15.78 mm	1"	IMX183	2.4 × 2.4

USB 3

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	Diagonal	Optical		
VZ-400U-M/C 528 H	720 × 540	528	8/12 bit	GigE	4.97 x 3.73	6.21 mm	1/2.9"	IMX287	6.9 × 6.9
VZ-1600U-M/C 227 H	1440 × 1080	227	8/12 bit	GigE	4.97 x 3.73	6.21 mm	1/2.9"	IMX273	3.45 × 3.45
VZ-2MU-M/C 41 H	1920 × 1200	41	8/10 bit	GigE	11.33 x 7.13	13.39 mm	1/1.2"	IMX249	5.86 × 5.86
VZ-2MU-M/C 168 H	1920 × 1200	168	8/12 bit	GigE	11.33 x 7.13	13.39 mm	1/1.2"	IMX174	5.86 × 5.86
VZ-3MU-M/C 56 H	2048 × 1536	56	8/12 bit	GigE	7.07 x 5.3	8.84 mm	1/1.8"	IMX265	3.45 × 3.45
VZ-5MU-M/C 79 H	2448 × 2048	79	8/12 bit	GigE	8.45 x 7.07	11.02 mm	2/3"	IMX250	3.45 × 3.45
VZ-5MU-M 79 H-POL	2448 × 2048	79	8/12 bit	GigE	8.45 x 7.07	11.02 mm	2/3"	IMX250	3.45 × 3.45
VZ-5MU-M/C 36 H	2448 x 2048	36	8/12 bit	GigE	8.57 x 7.17	11.1 mm	2/3"	IMX264	3.45 x 3.45
VZ-5MU-M 36 H-POL	2448 x 2048	36	8/12 bit	GigE	8.57 x 7.17	11.1 mm	2/3"	IMX264	3.45 x 3.45
VZ-12MU-M/C 32H	4024 x 3036	32	8/12 bit	GigE	7.44 x 5.61	9.33 mm	1/1.7"	IMX226	1.85 x 1.85
VZ-12MU-M/C 23 H	4096 x 3000	23	8/12 bit	GigE	14.13 x 10.35	17.52 mm	1.1"	IMX304	3.45 x 3.45
VZ-12MU-M/C 32 H1	4096 x 3000	32	8/12 bit	GigE	14.13 x 10.35	17.52 mm	1.1"	IMX253	3.45 × 3.45
VZ-20MU-M/C 19 H	5496 × 3672	19	8/12 bit	GigE	13.13 x 8.76	15.78 mm	1"	IMX183	2.4 × 2.4

BEYOND VISIBLE TECHNOLOGY

SVS | PROPERTIES OF LIGHT THAT ARE INVISIBLE TO HUMANS CAN BE MADE VISIBLE WITH CAMERAS FROM SVS-VISTEK.

SWIR

SWIR cameras with SONY SenSWIR sensors offer outstanding performance and precision to meet the most demanding industrial applications.

400 – 1700 nm spectral sensitivity

up to 5.2 MP at 132.6 fps

EXO & FXO SERIES

Ultraviolet

I/O control with integrated strobe controller and firmware features are designed for applications in demanding industrial automation using Sony Pregius UV sensors.

200 – 400 nm spectral sensitivity

up to 12.3 MP at 30 fps

FXO SERIES

Polarized

Polarized cameras are equipped with special image sensors that can measure the polarization properties of light that are imperceptible to the human eye.

Reduce glare and enhance contrast

up to 12.3 MP at 30 fps

EXO SERIES

SWIR CAMERAS IN OPTICAL SORTING

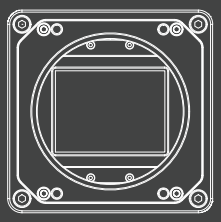
SWIR-Based Optical Sorting System Revolutionizes Apple Processing, Enhancing Quality, Efficiency, and Waste Reduction

A major apple processing facility in the United States implemented a SWIR-based optical sorting system to improve its sorting process. Previously, the facility relied on visible-light cameras and manual labor to inspect apples for external defects, but this method was time-consuming and often missed internal issues like bruising, mold, and over-ripeness. After integrating SWIR cameras, the facility saw significant improvements. The cameras detected internal defects, such as bruising and decay, that were not visible on the surface, allowing the system to reject damaged fruit early and improve product quality. The SWIR system also sped up the sorting process, resulting in higher throughput and productivity. By accurately identifying internal issues without cutting or squeezing the apples, the technology helped reduce waste and ensured only high-quality fruit was packaged. Additionally, the system measured moisture content and ripeness, enabling apples to be sorted at peak freshness, which extended their shelf life.

The adoption of SWIR cameras has revolutionized fruit sorting by providing detailed insights into internal properties like moisture, ripeness, and defects, allowing for more precise and faster sorting. This technology improves product quality, boosts efficiency, reduces waste, and increases throughput, making it a crucial tool in modern fruit processing. As technology advances, the role of SWIR cameras in optical sorting is expected to grow, offering even more advanced solutions for the food and agriculture industries.

BEYOND VISIBLE

AREA SCAN CAMERAS



SVS-VISTEK EXO & FXO SERIES

SONY IMX IMAGE SENSORS

SWIR

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	Diagonal	Optical		
exo991 M GE	0.3	260	8/12 bit	GigE	3.2 x 2.56	4.1 mm	1/4"	IMX991	5.0 x 5.0
exo990 M GE	1.3	94.4	8/12 bit	GigE	6.4 x 5.12	8.2 mm	1/2"	IMX990	5.0 x 5.0
exo990 M U3	1.3	125.4	8/12 bit	USB3	6.4 x 5.12	8.2 mm	1/2"	IMX990	5.0 x 5.0
fxo990 M CX	1.3	134	8/12 bit	CXP-12	6.4 x 5.12	8.2 mm	1/2"	IMX990	5.0 x 5.0
fxo993 M CX	3.1	173.4	8/12 bit	CXP-12	7.07 x 5.3	8.83 mm	1/1.8"	IMX993	3.45 x 3.45
fxo993 M CX-T	3.1	173.4	8/12 bit	CXP-12	7.07 x 5.3	8.83 mm	1/1.8"	IMX993 (TEC)	3.45 x 3.45
fxo993 M XGE	3.1	173.4	8/12 bit	10GigE	7.07 x 5.3	8.83 mm	1/1.8"	IMX993	3.45 x 3.45
fxo993 M XGE-T	3.1	173.4	8/12 bit	10GigE	7.07 x 5.3	8.83 mm	1/1.8"	IMX993 (TEC)	3.45 x 3.45
fxo992 M CX	5.2	132.6	8/12 bit	CXP-12	8.83 x 7.07	11.31 mm	1/1.4"	IMX992	3.45 x 3.45
fxo992 M CX-T	5.2	132.6	8/12 bit	CXP-12	8.83 x 7.07	11.31 mm	1/1.4"	IMX992 (TEC)	3.45 x 3.45
fxo992 M XGE	5.2	132.6	8/12 bit	10GigE	8.83 x 7.07	11.31 mm	1/1.4"	IMX992	3.45 x 3.45
fxo992 M XGE-T	5.2	132.6	8/12 bit	10GigE	8.83 x 7.07	11.31 mm	1/1.4"	IMX992 (TEC)	3.45 x 3.45

ULTRAVIOLET

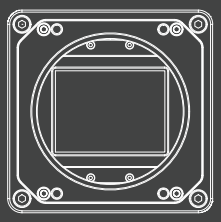
Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	Diagonal	Optical		
fxo487 M CX	8.1	87	8/12 bit	CXP-12 1 Lane	7.78 x 7.78	11 mm	2/3"	IMX487	2.74 x 2.74
fxo487 M CX12-2C	8.1	195	8/12 bit	CXP-12 2 Lanes	7.78 x 7.78	11 mm	2/3"	IMX487	2.74 x 2.74
fxo487 M XGE	8.1	87	8/12 bit	10 GigE	7.78 x 7.78	11 mm	2/3"	IMX487	2.74 x 2.74

POLARIZED

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	Diagonal	Optical		
exo250 Z GE	5	24.5	8/12 bit	GigE	8.45 x 7.07	11.1 mm	2/3"	IMX250	3.45 x 3.45
exo250 Z U3	5	75	8/12 bit	USB3	8.45 x 7.07	11.1 mm	2/3"	IMX250	3.45 x 3.45
exo264 Z GE	5	24.5	8/12 bit	GigE	8.45 x 7.07	11.1 mm	2/3"	IMX264	3.45 x 3.45
exo264 Z U3	5	35	8/12 bit	USB3	8.45 x 7.07	11.1 mm	2/3"	IMX264	3.45 x 3.45
exo253 Z GE	12.3	10	8/12 bit	GigE	14.13 x 10.35	17.52 mm	1.1"	IMX253	3.45 x 3.45
exo253 Z U3	12.3	30	8/12 bit	USB3	14.13 x 10.35	17.52 mm	1.1"	IMX253	3.45 x 3.45

GIGE INTEGRATORS

AREA SCAN CAMERAS



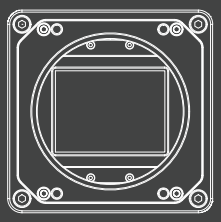
SVS-VISTEK EXO SERIES

CMOS IMAGE SENSOR

GIGE

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	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	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	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
exo304CGE	4096 x 3000	10	8/12 bit	GigE	14.13 x 10.35	17.52 mm	1.1"	IMX304	3.45 x 3.45
exo545CGE	4096 x 3000	10	8/12 bit	GigE	11.22 x 8.22	13.91 mm	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	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	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	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	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	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	APS-C	IMX342	3.45 x 3.45

10 GIGE AND 25 GIGE AREA SCAN CAMERAS



SVS-VISTEK FXO SERIES

SONY PREGIUS S IMAGE SENSOR

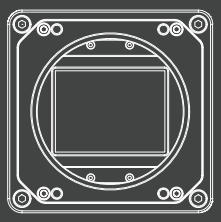
10 GIGE

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	Diagonal	Optical		
fxo547 M/C XGE	2448 x 2048	124	8/12 bit	10GigE	6.71 x 5.61	8.75 mm	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	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	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	1.1"	IMX542	2.74 x 2.74
fxo901 M/C XGE	8016 x 2048	73.6	8/12 bit	10GigE	21.96 x 5.61	22.67 mm	1.4"	IMX901	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	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	1.2"	IMX540	2.74 x 2.74

25 GIGE

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	Diagonal	Optical		
fxo537 M/C 25GE	2448 x 2048	262	8/12 bit	25GigE	6.71 x 5.61	8.75 mm	1/1.8"	IMX537	2.74 x 2.74
fxo536 M/C 25GE	2848 x 2848	195	8/12 bit	25GigE	7.78 x 7.78	11.04 mm	2/3"	IMX536	2.74 x 2.74
fxo535 M/C 25GE	4096 x 3008	182.5	8/12 bit	25GigE	11.22 x 8.24	13.92 mm	1/1.1"	IMX535	2.74 x 2.74
fxo532 M/C 25GE	5328 x 3040	144	8/12 bit	25GigE	14.6 x 8.33	16.81 mm	1.1"	IMX532	2.74 x 2.74
fxo531 M/C 25GE	4512 x 4512	109.5	8/12 bit	25GigE	12.36 x 12.36	17.48 mm	1.1"	IMX531	2.74 x 2.74
fxo530 M/C 25GE	5328 x 4608	96	8/12 bit	25GigE	14.6 x 12.63	19.3 mm	1.2"	IMX530	2.74 x 2.74

10 GIGE HIGH RESOLUTION AREA SCAN CAMERAS



SVS-VISTEK HR SERIES

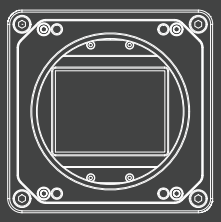
CMOS IMAGE SENSOR

10 GIGE

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	Diagonal	Optical		
hr387 M/C XGE	5440 x 3076	56.4	8/12 bit	10GigE	18.77 x 10.61	21.56	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	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-T*	9568 x 6380	18	8/12 bit	10GigE	35.98 x 23.99	43.24	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

*T = Available with thermoelectric cooling (TEC) and heating with advanced, dust-proof ventilation

10 GIGE ULTRA HIGH RESOLUTION AREA SCAN CAMERAS



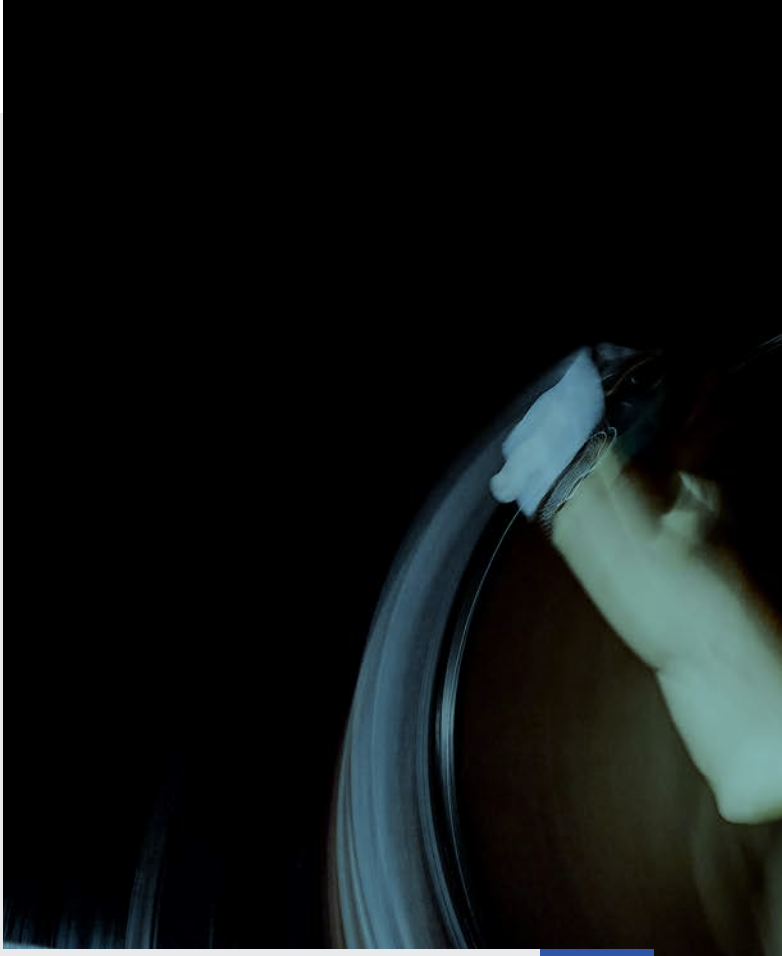
SVS-VISTEK SHR SERIES

CMOS IMAGE SENSOR

10 GIGE

Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (µm²)
					H x V (mm²)	Diagonal	Optical		
shr461 M/C XGE	11648 x 8742	8.7	8/12/16 bit	10GigE	43.8 x 32.87	54.76 mm	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	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

HIGH SPEED TECHNOLOGY



EVT | EMERGENT VISION TECHNOLOGIES IS A LEADING PROVIDER OF GIGE VISION INDUSTRIAL CAMERAS

25 GigE HB Series

Designed for precision and versatility, the HB Series cameras integrate seamlessly into demanding systems, offering an ideal solution for high-speed, high-quality imaging needs.

25GigE QSFP28 — up to 1594 fps

HB SERIES

50 GigE HX Series

Ultra high-speed 50GigE QSFP28 interface offers many benefits including low-cost accessories, low CPU overhead, low latency, low jitter, and accurate multi-camera synchronization using IEEE1588.

50GigE QSFP28 — up to 1730 fps

HX SERIES

100 GigE HZ Series

With robust 100 GigE connectivity, the HZ Series enables real-time, high-throughput data transfer for maximum efficiency and precision in any setting.

100GigE QSFP28 — up to 3462 fps

HZ SERIES

EMERGENT VISION HIGH SPEED CAMERAS

Transforming Sports Analytics with High-Speed Camera Technology

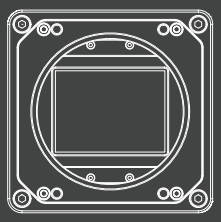
In the highly competitive world of professional sports, data-driven insights have become crucial for improving athlete performance and game strategy. A leading sports analytics company specializing in biomechanics and performance tracking faced a challenge in capturing fast-paced, dynamic movements during games and training sessions. Traditional video systems were unable to provide the high-resolution and frame rate needed to accurately analyze fast athletic motions.

To address this, the company adopted high-speed cameras designed for ultra-fast frame rates and high-resolution imaging. These cameras were integrated into the sports analytics system to capture every subtle detail of player movements, from sprinting to intricate footwork. The cameras provided frame rates far beyond those of traditional systems, ensuring that no critical moment was missed.

The high-speed cameras allowed the team to analyze athletes' biomechanics with unprecedented precision. For example, they could track joint angles, acceleration, and posture during key movements such as jumping or pivoting. This detailed data enabled coaches and trainers to make more informed decisions about player performance, helping to identify areas for improvement, prevent injuries, and optimize training regimens.

By using high-speed cameras in sports analytics, the company delivered more accurate, actionable insights to teams and athletes. This technology not only enhanced player performance but also helped sports scientists understand the finer details of athletic movements, transforming the way teams prepare for competition. The adoption of high-speed cameras revolutionized the sports analytics industry by providing in-depth data that was previously unattainable.

10 GIGE HIGH SPEED SFP+ AREA SCAN CAMERAS



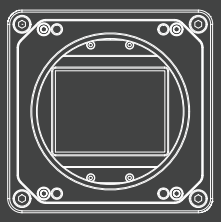
EMERGENT VISION HR SERIES

10 GIGE SFP+ INTERFACE

10 GIGE

Model	Chroma	Resolution	Frame Rate	Interface	Sensor	Pixel Size (µm)
HR-500-S	Color / Mono	0.5MP	1586fps	10GigE SFP+	IMX426	9.0 x 9.0
HR-1800-S	Color / Mono	1.76MP	660fps	10GigE SFP+	IMX425	9.0 x 9.0
HR-2000	Color / Mono / NIR	2MP	338fps	10GigE SFP+	CMV2000	5.5 x 5.5
HR-2000-S	Color / Mono	2.01MP	485fps	10GigE SFP+	IMX422	4.5 x 4.5
HR-2800-S	Color / Mono	2.8MP	410fps	10GigE SFP+	IMX421	4.5 x 4.5
HR-3000-S	Color / Mono	3.2MP	216fps	10GigE SFP+	IMX252LLR	3.45 x 3.45
HR-4000	Color / Mono / NIR	4MP	179fps	10GigE SFP+	AMS CMV4000	5.5 x 5.5
HR-5000-S	Color / Mono / Polarized	5MP	163fps	10GigE SFP+	IMX250LLR	3.45 x 3.45
HR-5000-SB	Color / Mono	5.1MP	240fps	10GigE SFP+	MX537	2.74 x 2.74
HR-5000-SBL	Color / Mono	5.1MP	99fps	10GigE SFP+	MX547	2.74 x 2.74
HR-7000-S	Color / Mono	7.06MP	170fps	10GigE SFP+	IMX420	4.45 x 4.45
HR-8000-S	Color / Mono	8.9MP	110fps	10GigE SFP+	IMX255	3.45 x 3.45
HR-8000-SB	Color / Mono / UV	8.1MP	145fps	10GigE SFP+	IMX536	2.74 x 2.74
HR-8000-SBL	Color / Mono	8.1MP	73fps	10GigE SFP+	IMX546	2.74 x 2.74
HR-12000	Color / Mono	12MP	84fps	10GigE SFP+	CMV12000	5.5 x 5.5
HR-12000-S	Color / Mono / Polarized	12MP	80fps	10GigE SFP+	IMX253	3.45 x 3.45
HR-12000-SB	Color / Mono	12.4MP	100fps	10GigE SFP+	IMX535	2.74 x 2.74
HR-12000-SBL	Color / Mono	12.4MP	68fps	10GigE SFP+	IMX545	2.74 x 2.74
HR-16000-SB	Color / Mono	16.13MP	77fps	10GigE SFP+	IMX532	2.74 x 2.74
HR-16000-SBL	Color / Mono	16.13MP	52fps	10GigE SFP+	IMX542	2.74 x 2.74
HR-17000-S	Color / Mono	16.8MP	61fps	10GigE SFP+	IMX387	3.45 x 3.45
HR-20000	Color / Mono	20MP	32fps	10GigE SFP+	CMV20000	6.4 x 6.4
HR-20000-S	Color / Mono	19.5MP	43fps	10GigE SFP+	IMX367	3.45 x 3.45
HR-20000-SB	Color / Mono	20.28MP	61fps	10GigE SFP+	IMX531	2.74 x 2.74
HR-20000-SBL	Color / Mono	20.28MP	43fps	10GigE SFP+	IMX541	2.74 x 2.74
HR-25000-SB	Color / Mono	24.47MP	51fps	10GigE SFP+	IMX530	2.74 x 2.74
HR-25000-SBL	Color / Mono	24.47MP	35fps	10GigE SFP+	IMX540	2.74 x 2.74
HR-30000-S	Color / Mono	31.36MP	35fps	10GigE SFP+	IMX342	3.45 x 3.45
HR-50000	Color / Mono	50MP	23fps	10GigE SFP+	AMS CMV50000	4.6 x 4.6

25 GIGE HIGH SPEED SFP28 AREA SCAN CAMERAS



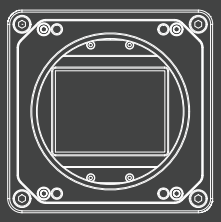
EMERGENT VISION HB SERIES

25 GIGE SFP28 INTERFACE

25 GIGE

Model	Chroma	Resolution	Frame Rate	Interface	Sensor	Pixel Size (μm)
HB-500-S	Color / Mono	0.5MP	1594.7fps	25GigE SFP28	IMX426	9.0 x 9.0
HB-1800-S	Color / Mono	1.76MP	662.1fps	25GigE SFP28	IMX425	9.0 x 9.0
HB-2000-S	Color / Mono	2.01MP	477.6fps	25GigE SFP28	IMX422	4.5 x 4.5
HB-2800-S	Color / Mono	2.8MP	409.2fps	25GigE SFP28	IMX421	4.5 x 4.5
HB-5000-G	Color / Mono	5.61MP	290fps	25GigE SFP28	GMAX2505	2.5 x 2.5
HB-5000-SB	Color / Mono	5.1MP	269fps	25GigE SFP28	IMX537	2.74 x 2.74
HB-7000-S	Color / Mono	7.06MP	207.1fps	25GigE SFP28	IMX420	4.5 x 4.5
HB-8000-SB	Color / Mono / UV	8.1MP	201fps	25GigE SFP28	IMX536	2.74 x 2.74
HB-9000-G	Color / Mono	9.07MP	290fps	25GigE SFP28	GMAX2509	2.5 x 2.5
HB-12000	Color / Mono	12MP	188fps	25GigE SFP28	CMV12000	5.5 x 5.5
HB-12000-SB	Color / Mono	12.4MP	192fps	25GigE SFP28	IMX535	2.74 x 2.74
HB-16000-SB	Color / Mono	16.13MP	145fps	25GigE SFP28	IMX532	2.74 x 2.74
HB-17000-S	Color / Mono	16.8MP	61fps	25GigE SFP28	IMX387	3.45 x 3.45
HB-18000-G	Color / Mono	18.5MP	125fps	25GigE SFP28	GMAX2518	2.5 x 2.5
HB-20000-S	Color / Mono	19.5MP	43fps	25GigE SFP28	IMX367	3.45 x 3.45
HB-20000-SB	Color / Mono	20.28MP	100fps	25GigE SFP28	IMX531	2.74 x 2.74
HB-25000-G	Color / Mono	26.21MP	75fps	25GigE SFP28	GMAX0505	2.5 x 2.5
HB-25000-SB	Color / Mono	24.47MP	98fps	25GigE SFP28	IMX530	2.74 x 2.74
HB-30000-S	Color / Mono	31.36MP	35.4fps	25GigE SFP28	IMX342	3.45 x 3.45
HB-50000	Color / Mono	50MP	30fps	25GigE SFP28	CMV50000	4.6 x 4.6
HB-65000-G	Color / Mono	65MP	35fps	25GigE SFP28	GMAX3265	3.2 x 3.2
HB-127-S	Color / Mono	127.7MP	19.9fps	25GigE SFP28	IMX661	3.45 x 3.45

50 GIGE HIGH SPEED QSFP28 AREA SCAN CAMERAS



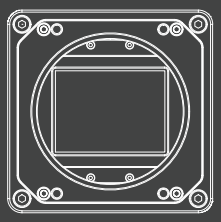
EMERGENT VISION HX SERIES

50 GIGE QSFP28 INTERFACE

50 GIGE

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

100 GIGE HIGH SPEED QSFP28 AREA SCAN CAMERAS



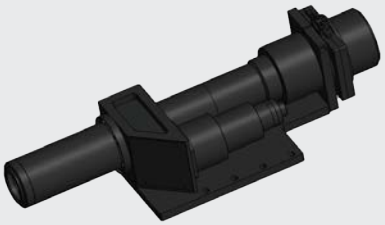
EMERGENT VISION HZ SERIES

100 GIGE QSFP28 INTERFACE

100 GIGE

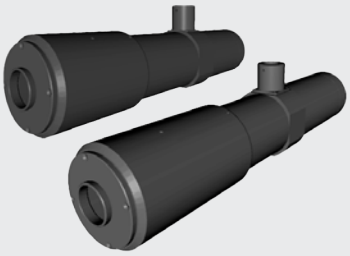
Model	Chroma	Resolution	Frame Rate	Interface	Sensor	Pixel Size
HZ-2000-G	Color / Mono	2.5MP	3462fps	100GigE QSFP28	GSPRINT4502	4.5 x 4.5
HZ-10000-G	Color / Mono	10MP	1000fps	100GigE QSFP28	GSPRINT4510	4.5 x 4.5
HZ-12000-SB	Color / Mono	12.4MP	590fps	100GigE QSFP28	IMX926	2.74 x 2.74
HZ-14000-GB	Color / Mono	14MP	670fps	100GigE QSFP28	GSPRINT551 BSI	5.5 x 5.5
HZ-21000-G	Color / Mono	21MP	542fps	100GigE QSFP28	GSPRINT4521	4.5 x 4.5
HZ-25000-SB	Color / Mono	24.47MP	394fps	100GigE QSFP28	IMX925	2.74 x 2.74
HZ-65000-G	Color / Mono	65.4MP	71fps	100GigE QSFP28	GMAX3265	3.2 x 3.2
HZ-100-G	Color / Mono	103.7MP	24fps	100GigE QSFP28	GMAX32103	3.2 x 3.2
HZ-150-G	Color / Mono	152MP	16fps	100GigE QSFP28	GMAX32152	3.2 x 3.2

SPO TELECENTRIC LENSES



APO LENSES

Minimum chromatic aberration



SWIR LENSES

Optimized for 900 - 1700 nm wavelength

CMM LENSES

Compact Microscope Module

TCL HS LENSES

High resolution and small pixel sizes

TCL 4M LENSES

High resolution and high contrast

TCL 5M LENSES

Optimized for 5MP sensor cameras

TCL LWD LENSES

Long working distance telecentric

TCL LINE SCAN LENSES

4k to 16k line scan with inner coaxial illumination

SPO Optics is a recognized expert in the development and production of telecentric lenses

Precise Metrology Applications

DOUBLE SIDED LENSES

Suited for image sensor diagonals from 11mm to 43mm

TCL 47M LENSES

For 47MP snesors with a diagonal of 56.7mm

TCL 25M LENSES

For 25MP snesors with a diagonal of 32mm

TCL UHR LENSES

Designed for the small pixel size camera

TCL HR LENSES

Designed for cameras with 4.65 pixel size

TCL ST LENSES

Fixed magnification with coaxial illumination

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SPO NON-TELECENTRIC LENSES

SPO offers design solutions for custom lenses and special optical modules

Standard and Precision Optics

SPO specializes in providing top-tier machine vision lenses designed to elevate the performance of your industrial imaging systems. With an extensive range of lenses optimized for various applications, SPO ensures superior clarity, accuracy, and durability in even the most demanding environments. Whether you are dealing with quality control, robotics, or automation processes, SPO Optics' machine vision lenses are engineered to deliver high-resolution imaging and excellent light transmission, making them perfect for both standard and specialized setups. Their precision design and robust construction promise consistent, reliable results, enhancing productivity and minimizing system downtime.

Durability with proven performance

Every machine vision application requires tailored solutions, which is why SPO offers a diverse selection of lenses with varying focal lengths, aperture sizes, and mounting options. SPO lenses feature advanced coatings that minimize distortion, glare, and chromatic aberration, ensuring sharp and accurate imaging even in complex scenarios. Backed by years of expertise and cutting-edge technology, SPO provides exceptional lens solutions and comprehensive support to help you achieve optimal imaging performance in any industrial setting.

Telecentricity Experts

SPO Optics is a recognized expert in the development and production of telecentric lenses, offering high-precision solutions that eliminate distortion and ensure consistent image quality across a wide range of industrial applications. Telecentric lenses from SPO are specifically designed to maintain constant magnification regardless of the object's distance from the lens, making them ideal for applications requiring exceptional dimensional accuracy and measurement consistency. These lenses excel in applications such as 3D imaging, inspection, and metrology, where maintaining the true size of objects without perspective distortion is crucial. With advanced telecentric technology, SPO Optics ensures precise measurements and reliable results, solidifying their reputation as a leader in the field of industrial vision systems.

www.visionsystech.com

KNOWN FOR TELECENTRIC LENSES, SPO ALSO OFFERS A WIDE SELECTION OF NON-TELECENTRIC LENSES

GENERAL LENSES

When telecentricity is not required

Non-Telecentric lens (NTL) are perfectly designed for high resolution and nearly zero distortion. The compact design makes for cost effective optics.

LINE SCAN LENSES

High resolution and high contrast

The NTL Line Scan lenses are compatible 4k and 8k line scan sensors with interchangable mounts for any length back flange.

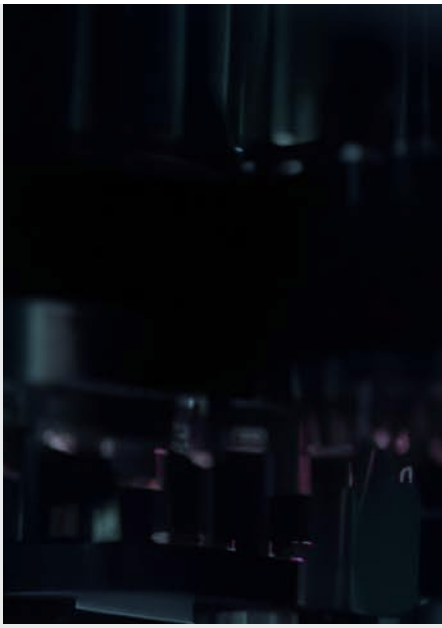
CMM LENSES

Compact Microscope Module

This microscope system has an image distance set to infinity. Used in microscopy and metrology industries.

GOOD FOR FACTORY AUTOMATION WHEN TELECENTRICITY IS NOT REQUIRED

VIEWORKS VEO LENSES



VEO JM SERIES

Optimized for 16k TDI Line Scan Cameras

VEO JK SERIES

Optimized for 16k & 23k VT Series (M95) and High Resolution Area Scan Cameras

VEO CS SERIES

Optimized for 12k TDI Line Scan Cameras

VEO HJ SERIES

Optimized for Large Format Sensor with Image Circle Diameter of 90 mm to 60 mm

VEO YK SERIES

Optimized for Image Circle Diameter of 43.2 mm

Working closely with Schneider Kreuznach, a global leader in industrial lenses, Vieworks co-developed a line of lenses optimized for Vieworks area scan and line scan cameras.

VEO lenses specifically designed to maximize the performance of Vieworks cameras


High Performance
Industrial Lenses
VEO Series lenses demonstrate exceptionally high performance regarding modulation transfer function (MTF), a measurement of a lens' ability to resolve fine detail.
The VEO Series is particullarly effective in detecting submicron defects, perfect for FPD inspection where large area, high speed inspection is essential.
WWW.VISIONSYSTECH.COM

MORITEX LENSES

MORITEX's strength also lies in their knowledge of the core technologies required for machine vision, such as lenses, LED/fiber illuminations, and cameras.

Vision creating value

As a leading optical components and solutions provider in the machine vision industry, MORITEX's mission is to provide high-quality products, technical solutions, and services for customers all over the world through leading technological innovation and product creation. Through half a century, their technical team has been accumulating professional technology and rich project experience in the field of machine vision imaging technology and optical technologies. Their products and services cover the needs of machine vision applications in multiple industries, including semiconductor, mini/micro LED, new energy, FPD, 3C, electronics, automotive, printing and textile, railway, intelligent transportation and so on.

One stop optical technology company

MORITEX is a one stop company which provides various optical technology solutions based on its broad knowledge in optical design and manufacturing. Not only do they offer the excellent combination of lenses and illumination, they can also provide custom integrated solutions for modules and systems using their core lens and illumination technology.

MORITEX has joined Cognex

In 2023, MORITEX joined Cognex. As a moving forward technology company, they will continue to keep the advantages of technological innovation and product creation, provide customers with leading and reliable optical components and solutions, and continue to grow and develop together with all customers.

www.visionsystech.com

CONSISTENT FULL FIELD PERFORMANCE FROM PRODUCT TO PRODUCT

TELECENTRIC LENSES

High percise image in DOF

A telecentric lens projects all its chief rays parallel to the optical axis. In other words, it can only receive light that is perpendicular to the lens.

BI-TELECENTRIC LENSES

Features a camera adjustment function

Unique optical design reults in the tightest object and image side telecentricity and near zero distortion performance.

MACRO LENSES

Distortion free high performance

These short, compact non-telecentric lenses with high performance and reasonable cost are ideal for alignment and inspection applications.

LINE SCAN / LARGE FORMAT LENSES

Support image sensors 2k to 16k

Assorted range of lens solutions designed for large format high resolution line scan cameras used for glass, web, TFT inspections.

COMPREHENSIVE ARRAY OF OPTICAL SOLUTIONS FOR ANY APPLICATIONS

COMPUTAR
MACHINE VISION LENSES

LENS CONNECT

allows remote control of zoom, focus, and iris via USB

FIXED FOCAL

lenses that are small, lightweight, and robust

SWIR

Designed for 2/3 inch sensors

MACRO ZOOM

Variable-magnification macro lenses

TELECENTRIC

Optimal magnification and working distance

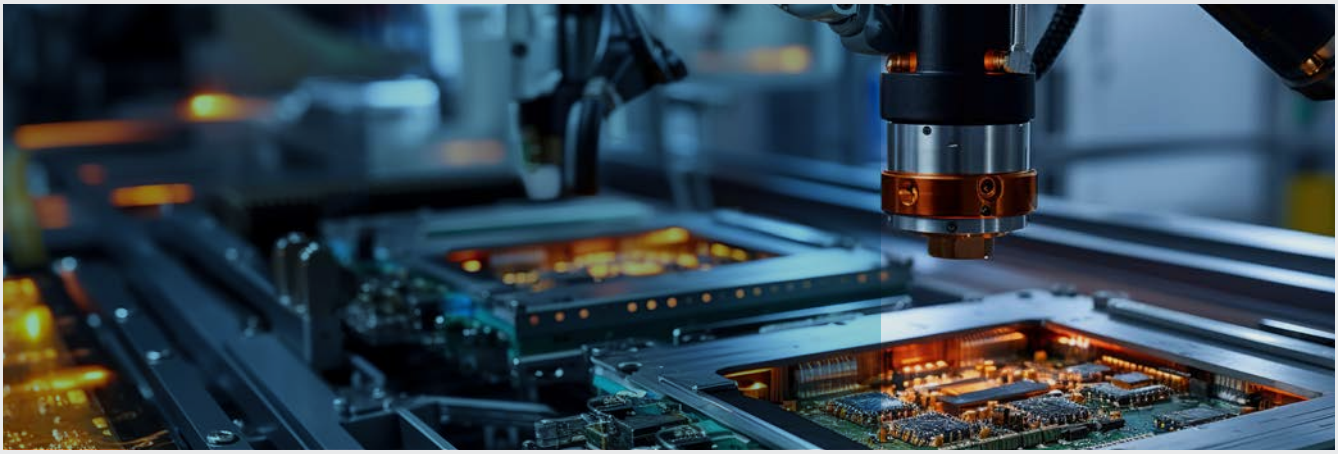
S MOUNT

S-mount fixed focal lenses for machine vision

Computar is an industrial lens brand that boasts the biggest market share in the world. C
back a hundred years as a creative trading company through the CBC Group, with half a c
industry-leading manufacturer of industrial lenses. Their ingenuity in developing product
Computar's growth to this day.

Computar brings together diverse ideas and cutting-edge technology from multiple fields

ZEISS INDUSTRIAL LENSES



ZEISS Industrial Lenses deliver excellent results due to their outstanding imaging performance and precise manual adjustment options.

Industrial lenses from ZEISS for outstanding results

Zeiss machine vision lenses are engineered to deliver exceptional precision and clarity, making them the ideal choice for demanding industrial and automation applications. With a rich history of optical excellence, Zeiss lenses provide unparalleled image quality, even in the most challenging environments. Whether you're working with high-speed production lines, intricate inspection systems, or complex robotic vision tasks, these lenses offer superior performance with minimal distortion, ensuring accurate results every time. Built with durability and reliability in mind, Zeiss machine vision lenses are the trusted solution for optimizing efficiency and boosting productivity across various industries.

Durability with proven performance

They particulary stand out in regard to durability due to their robust metal housing which withstands high shock and extreme temperatures. Due to their low distortion, objects can be detected with precision from varying distances.

The ZEISS anti-reflective coating reduces unwanted reflections to a minimum and increases contrast. ZEISS Industrial Lenses' fixing screws are practical for use in rugged conditions. With these screws, both the aperture and the manual focus can be locked into place.

www.visionsystech.com

ENSURING RELIABLE RESULTS WITH HIGH PERFORMANCE OPTICS

ZEISS DIMENSION LENSES

High precision for greater efficiency

The ZEISS lenses developed for use with a C-mount are designed for image sensors up to a size of 4/3” and offer exceptional image quality in a compact, lightweight, and rugged aluminum housing.

ZEISS INTERLOCK LENSES

Lenses with optimized locking screws

The ZEISS Interlock family of lenses cover linescan sensors up to 43 mm (4k to 8k) or full frame area sensors with 24 x 36 mm (up to 42 MP).

ZEISS INTERLOCK COMPACT LENSES

Compact lenses for large image circles

The outstanding difference of ZEISS Interlock Compact lenses against traditional F-Mount types is the M42x1 mount with a very short flange focal distance (FFD) of only 18.0 mm.

ZEISS OTUS LENSES

Uncompromising image quality

ZEISS Otus Lenses offer the possibility to image fast at low light with practically no aberrations. The lenses operate at f/1.4 without any compromises in performance.

ZEISS CLASSIC LENSES

Proven design in a sturdy metal housing

The ZEISS Classis lens family offers extraordinary image quality with high contrast for technical and industrial applications in addition to a precise fixture for focus and aperture.

OUTSTANDING IMAGING PERFORMANCE AND PRECISE MANUAL ADJUSTMENT OPTIONS

SCHNEIDER INDUSTRIAL LENSES

COMPACT LENSES

Durable compact C-Mount optimized for specific working distances

FAST LENSES

Impressive F0.95 aperture to deliver optimal imaging in low-light

LARGE FORMAT LENSES

For image circles ranging from 30 mm to 135 mm

SWIR LENSES

SWIR lenses optimized to perform across various sensor and pixel sizes

V-MOUNT LENSES

A diverse selection of accessories for nearly any machine vision requirement

TELECENTRIC LENSES

When absolute measurement accuracy is essential

Schneider-Kreuznach industrial lenses are expertly engineered for machine vision applica
durability and performance in a wide range of industrial environments. The comprehensi
designed to meet the specific requirements of industrial image processing. From standar

Persision Manufacturing: Each lens is produced with meticulous engineering, ensuring reliability and accuracy

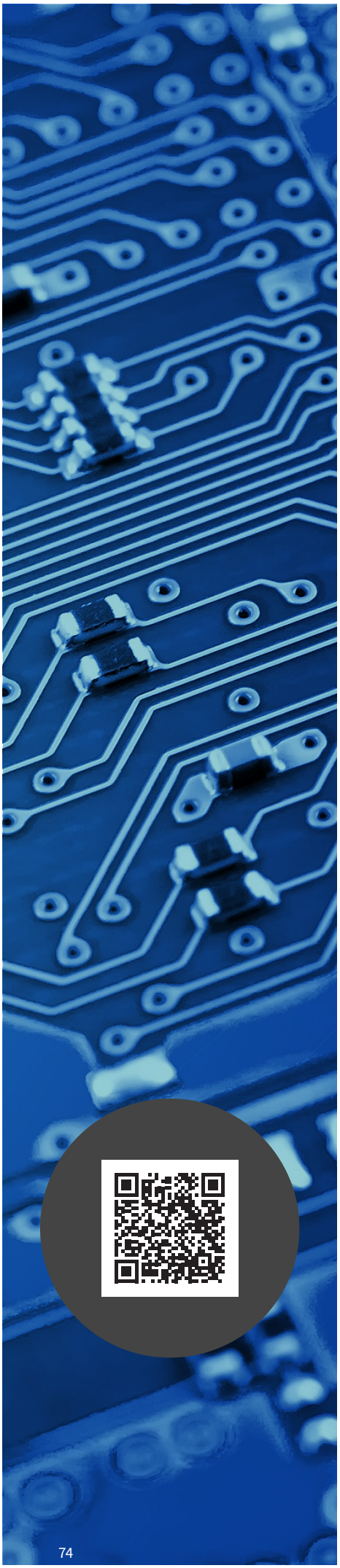
For Machine Vision Applications

LINE SCAN LENSES

Specially designed for large line scan sensors

ations, delivering precision,
ve range of lenses is
rd to custom-built lenses.

WWW.VISIONSYSTECH.COM



EURESYS FRAME GRABBERS

Euresys is an innovative high-tech design company, providing image and video acquisition components, frame grabbers, image analysis software, and FPGA IP Cores.

The company's image acquisition expertise covers analog and digital video acquisition, FPGA programming, high-frequency electronics, video compression, and camera control.

Their software image analysis expertise includes 3D inspection, defect detection using deep learning, sub-pixel measurement, pattern matching, color analysis, optical character recognition, barcode reading, and verification.

Euresys also excels in the integration of machine vision technologies, offering comprehensive solutions that bridge the gap between hardware and software. The company's deep knowledge of image acquisition and processing ensures seamless system development and deployment across a variety of industries. With a strong focus on innovation, Euresys provides advanced products that leverage cutting-edge standards such as GigE Vision, CoaXPress, USB3 Vision, and MIPI, ensuring high-performance data transmission and processing. Their collaboration with Sensor to Image further strengthens their portfolio, allowing them to deliver FPGA-based imaging solutions that offer unparalleled flexibility, speed, and scalability. This expertise in both software and hardware enables Euresys to provide custom-tailored solutions that meet the evolving demands of complex vision systems, delivering unmatched precision and reliability.

GRABLINK FRAME GRABBERS

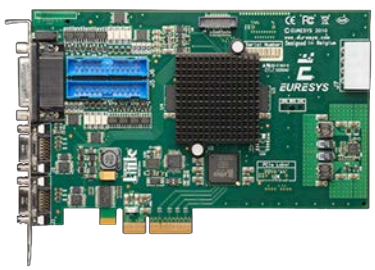
Model	Description
Grablink Duo	Frame grabber for one full- or two base-configuration Camera Link cameras
Grablink Full XR	Frame grabber for one full-configuration Camera Link camera with support for extra long cables
Grablink Full	Frame grabber for one full-configuration Camera Link camera
Grablink DualBase	Frame grabber for two base-configuration Camera Link cameras
Grablink Base	Frame grabber for one base-configuration Camera Link camera

COAXLINK FRAME GRABBERS

Model	Interface	Description
CoaxlinkQSFP+	CXP over Fiber	Four-connection CoaXPress-over-Fiber frame grabber
Coaxlink Quad CXP-12 3D-LLE	CXP-12	Four-connection CoaXPress CXP-12 frame grabber with on-board laser line extraction for 3D profiling
Coaxlink Quad CXP-12	CXP-12	Four-connection CoaXPress CXP-12 frame grabber
Coaxlink Quad CXP-12 Value	CXP-12	Four-connection CoaXPress CXP-12 frame grabber
Coaxlink Quad CXP-12 DF	CXP-12	Four-connection CoaXPress CXP-12 frame grabber with Data Forwarding
Coaxlink Quad CXP-12 JPEG	CXP-12	Four-connection CoaXPress CXP-12 frame grabber with JPEG compression
Coaxlink Duo CXP-12	CXP-12	Two-connection CoaXPress CXP-12 frame grabber
Coaxlink Mon CXP-12 LH	CXP-12	One-connection CoaXPress CXP-12 frame grabber
Coaxlink Octo	CXP-6	PCIe 3.0 eight-connection CoaXPress frame grabber
Coaxlink Quad G3 DF	CXP-6	PCIe 3.0 four-connection CoaXPress frame grabber with data forwarding
Coaxlink Quad G3	CXP-6	PCIe 3.0 four-connection CoaXPress frame grabber (fan-cooled heatsink)
Coaxlink Quad G3 LH	CXP-6	PCIe 3.0 four-connection CoaXPress frame grabber (passive heatsink)
Coaxlink Quad G3 LLE	CXP-6	Quad CXP-6 frame grabber with on-board laser line extraction for 3D profiling

CONVERTERS

Model	Interface	Description
Coaxlink CXP-12 to QSFP+ Converter	CXP to Fiber	Four-connection CoaXPress CXP-12 to CoaXPress-over-Fiber converter



ACQUIRE IMAGES FROM THE FASTEST AND HIGHEST RESOLUTION CAMERAS WITH THE HIGHEST DATA ACQUISITION RATE IN THE INDUSTRY

ACQUISITION SOFTWARE

eGrabber

eGrabber Memento

eGrabber Studio

eGrabber Driver

eGrabber add-ons

eGrabber GigeLink

eGrabber Recorder

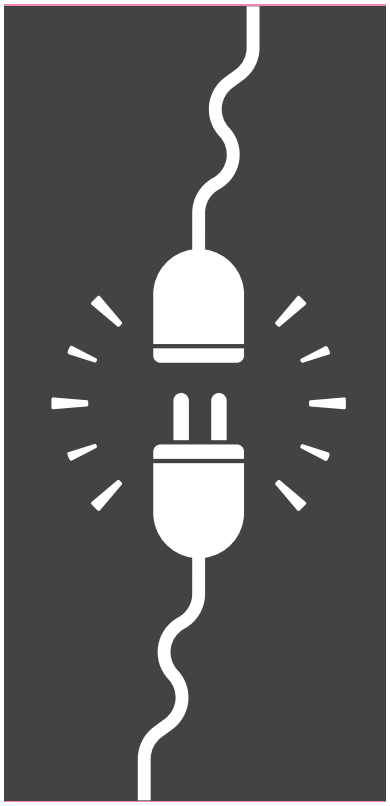
FEATURES

Custom Logic

GenICam

C2C-Link

ECCO / ECCO+



Machine Vision Cables

In the machine vision industry, choosing the right cable for image data transmission is crucial to ensuring high-speed, reliable communication between cameras and processing units. Camera Link cables have long been a standard for industrial imaging systems, offering high bandwidth and low latency for real-time data transfer. This versatile interface typically uses high-density connectors, with options such as Base, Medium, and Full configurations to suit various camera resolutions and frame rates. Camera Link cables provide excellent signal integrity, making them ideal for applications requiring high-quality image acquisition in automated inspection, robotics, and scientific research.

As the demand for faster data rates increases, newer interfaces such as CoaXPress (CXP) have gained popularity. CoaXPress 6 (CXP-6) and CoaXPress 12 (CXP-12) cables offer significantly higher bandwidth than Camera Link, with CXP-6 supporting up to 6.25 Gbps and CXP-12 providing up to 12.5 Gbps of data transfer. These cables use coaxial connectors to transmit both power and data, providing a simplified and robust connection. For even greater flexibility and longer cable lengths, CoaXPress over fiber optic cables are increasingly used, as they can transmit data over much greater distances without signal degradation. This makes fiber-optic CXP ideal for large-scale systems in areas like surveillance, factory automation, and transportation, where long-distance, high-speed transmission is essential for performance and reliability.

POWER SUPPLIES

Vision Systems Technology offers a comprehensive range of high-quality power supplies, designed to meet the needs of various industrial applications. Our power supplies are available with 4, 6, or 12-pin Hirose connectors, providing flexible connection options to suit a wide array of equipment. We stock an extensive selection of standard power supplies, including 12VDC options (110VAC), as well as trigger cables, ensuring seamless integration with your machine vision systems. Additionally, we understand that each industrial application has unique power requirements, which is why we offer customization services to tailor power supplies to your specific needs. Whether you require standard or customized solutions, Vision Systems Technology ensures reliable, efficient, and durable power delivery to keep your systems running smoothly. Trust us to provide the right power solution for your demanding vision and automation needs.

Vision Systems Technology is your trusted source for all your industrial camera cable needs. We stock a wide variety of cable connections and can customize to meet your needs.

Camera Link Cables

Camera Link High Speed Cables

CoaXPress Cables: CXP-6, CXP-12, CXP Fiber

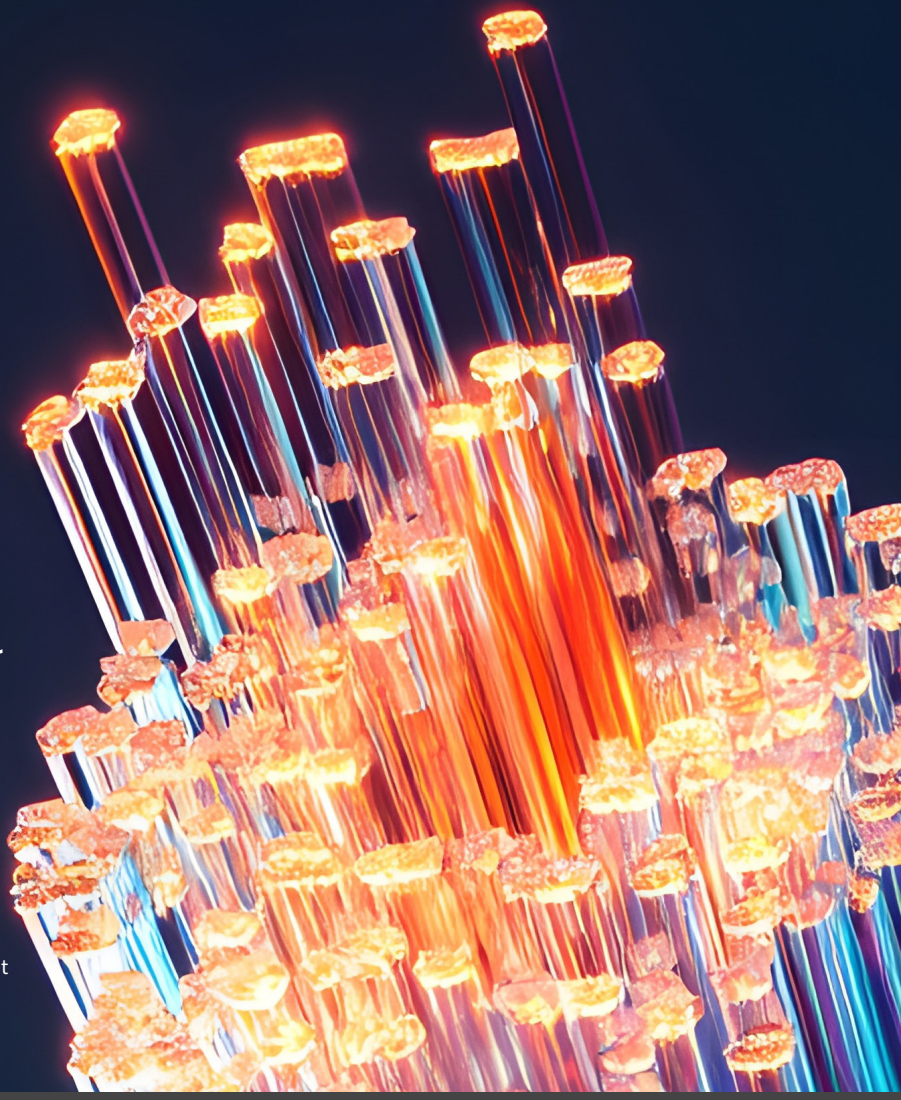
GigE Cables: GigE, 5GigE, 10GigE, 25GigE, 50 GigE, 100 GigE

CXP over FIBER

CoaXPress-over-Fiber is a light but significant extension of the existing CoaXPress specification to support transport over fiber optics.

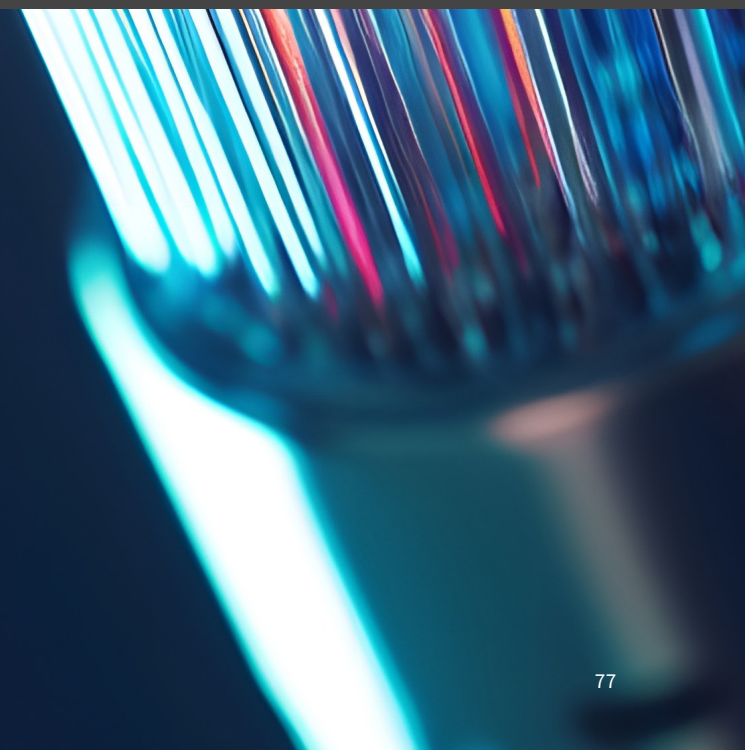
CoaXPress (CXP) is the de-facto standard for high-bandwidth computer vision applications. CoaXPress' top speed is CXP-12, a 12.5 Gbps (Gigabit per second) link over a coaxial copper cable. As link aggregation is common with CoaXPress, a bandwidth of 50 Gbps (12.5 x 4) is easily achievable with four CXP-12 links.

CoaXPress-over-Fiber has been initially designed as an add-on to the CoaXPress specification. It provides a way to run the CoaXPress protocol, as it is, unmodified, over a standard Ethernet connection, including fiber optics. As such, CoaXPress-over-Fiber uses standard electronics, connectors, and cables designed for Ethernet, but the protocol is CoaXPress, not Ethernet, not GigE Vision.



What is the bandwidth of CoaXPress-over-Fiber?

The initial configuration of CoaXPress-over-Fiber is 4 x 10 Gbps on a single QSFP+ module for a total of 40 Gbps per camera. This represents exactly the same net bandwidth as four CXP-12 links over four copper coaxial cables. Today's S2I IP Cores offer support for the 4×10 = 40 Gbps (QSFP+), and 4×25 Gbps = 100 Gbps (QSFP28) implementations. And a clear path is defined towards a 4xX50 = 200 Gbps (QSFP56) implementation.



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SYSTEMS TECHNOLOGY

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