INNOVATIVE INDUSTRIAL CAMERA SOLUTIONS

● AREA SCAN ● LINE SCAN ● SINGLE-SENSOR ● MULTI-SENSOR

● UV ● VISIBLE ● NIR ● SWIR ● MULTISPECTRAL



Camera Selection Guide

Version 14

www.jai.com

Quality industrial cameras from JAI

No matter what vision business you're in, you must be reliable and deliver results. That calls for an industrial camera supplier with a long, proven track record of delivering cameras with innovative engineering, high-end quality, and long lasting operational reliability and durability.

Our industrial cameras and accessories are routinely expected to perform under the most demanding conditions - from high-speed production and inspection machinery to applications in life sciences, outdoor surveillance, aerospace, and scientific research.

Today, JAI cameras are running in applications and industries around the world, where vision technology is relied upon as an integral part of a production process, product, or service with the aim of improving quality and accuracy of products, lowering production line inspection costs, increasing production yields, creating higher efficiency in road traffic, or porviding the best color images for life sciences applications.

Common to all our customers is that they value the trademark characteristics of our products: proven technology, high reliability, consistent quality and superior image fidelity backed by JAI's long-term viability.

The JAI camera selection guide is also available as an online dynamic selection tool with filters and sorting capabilities. Please also visit www.jai.com to explore the easy-to-use online camera selection guide.



Strict quality assurance throughout the manufacturing process

Every electronic board mounted in a JAI camera undergoes thorough automated optical inspection, x-ray inspection and soldering inspection to ensure flawless electronics. During camera assembly, cameras are further submitted to aging tests, optical tests and a complete finish test including measurements and documentation against the EMVA 1288 standard.

Reliability you can count on

JAI cameras are designed to deliver superb performance under real-world operating conditions. They are built to withstand high vibration effects (up to 10G), high shock occurrence (up to 80G), and to efficiently dissipate heat to minimize breakdowns – even under 24/7/365 workloads. And for added peace of mind, JAI cameras are backed by the industry's best warranties – six full years for Go-X Series cameras and three years for all other models.

Pick your preferred interface

JAI offers a range of different industry standard interfaces, so you are able to choose the interface of your preference for each individual vision task. JAI offers cameras with USB3 Vision, GigE Vision, 10GigE Vision, SFP+, CoaXPress, Camera Link and Mini Camera Link interfaces.

A JAI camera for every vision need

JAI offers a broad range of cameras to suit almost every imaging need in industrial, medical, science and outdoor imaging, including traffic and sports/entertainment applications. You can choose from a wide range of single-sensor cameras starting at very attractive price levels or - if your vision application needs the very best in color fidelity - you can choose from a broad selection of prism-based multi-sensor area scan and line scan cameras. JAI has it all.

Low cost-of-ownership

Every detail in a JAI camera – electronics, mechanicals and software - is carefully engineered to ensure excellent product reliability and supreme image quality. As a result cameras from JAI offer high MTBF numbers, ensuring long lasting and trouble-free operation. For you, this means low cost of ownership for any JAI camera.

Close support - when you need it

JAI´s technical experts monitor incoming support questions round-the-clock and the first vacant support technician will take the case to help you solve your problem and get your project moving. Please visit https://support.jai.com for FAQ's and to open a support ticket.

Area Scan Cameras

Go-X Series
Single-sensor



Compact, affordable CMOS area scan cameras with extra screening to prevent dust in the optical path.

Color & mono: Single CMOS

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Go Series
Single-sensor



JAI's original small CMOS area scan cameras including polarization and UV-sensitive models.

Color & mono: Single CMOS
Mono: Polarization models available
Ultraviolet: UV models available

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Spark Series
Single-sensor



Advanced CMOS area scan cameras delivering high resolution, high frame rates, and high image quality.

Color & mono: Single CMOS

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Apex Series PRISM
Multi-sensor, prism-based



3-CMOS prism-based R-G-B area scan cameras providing better color fidelity and spatial precision than traditional Bayer cameras.

R-G-B: 3 x CMOS

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Apex Medical PRISM
Multi-sensor, prism-based



3-CMOS R-G-B area scan cameras for the ultimate combination of color precision and dust-free image qua-lity for life sciences applications.

R-G-B: 3 x CMOS

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Fusion Series PRISM
Multi-sensor, prism-based



2 and 3-CMOS area scan cameras for simultaneous capture of multiple spectral bands in the visible and NIR regions.

Color-NIR: 2 x CMOS
Color-NIR-NIR / Mono-NIR-NIR: 3 x CMOS
Custom: Flex-Eye™ — Cameras with custom-specified wavebands

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Wave Series
Single-sensor, (WAA-models)



Single-sensor InGaAs area scan cameras for Short Wave InfraRed (SWIR) imaging.

SWIR: Single InGaAs

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Line Scan Cameras

Sweep Series
Single-sensor, trilinear, bilinear, and monochrome



Trilinear, bilinear, and monochrome line scan cameras with fast scan rates and high image quality.

Color: Trilinear CMOS
Color: Bilinear CMOS
Mono: Single CMOS

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Sweep+ Series PRISM
Multi-sensor, prism-based



High performance multi-sensor prism-based line scan cameras combining precision, sensitivity and multispectral options.
R-G-B, R-G-B + NIR, R-G-B + SWIR

SWIR-SWIR: 2 x InGaAs
R-G-B: 3 x CMOS
R-G-B-NIR: 4 x CMOS
R-G-B-SWIR: 3 x CMOS 1x InGaAs

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Wave Series
Single-sensor, (WAL-models)



Single-sensor InGaAs line scan cameras for Short Wave InfraRed (SWIR) imaging.

SWIR: Single InGaAs

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SDK and Control Tools



Standards-based software helps you operate, explore, and develop.

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Camera selection charts

Single-sensor area scan cameras (Frame rate vs. resolution) Page 26

Multi-sensor area scan cameras (Frame rate vs. resolution) Page 27

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Interface types - area scan cameras, multi-sensor (Interface type vs. resolution) Page 29

Line-scan cameras (Line rate vs. resolution) Page 30

Interface, data throughput and cable length Page 31

Go-X Series

Compact, affordable CMOS area scan cameras with extra screening to prevent dust in the optical path.

JAI's Go-X Series is a family of compact, affordable industrial cameras designed to power the next generation of machine vision systems. Featuring state-of-the-art Sony Pregius and Pregius S sensors with resolutions up to 24 megapixels, the Go-X Series delivers high image quality plus a full range of features needed to support all types of vision systems at exceptionally competitive pricing.

Standard capabilities include region-of-interest (ROI), image flipping and mirroring, 2x2 binning, 8/10/12-bit output, blemish compensation and shading correction – plus, advanced features like two different sequencer modes, an intelligent, user-customizable auto-exposure function (ALC), and more.

Most importantly, they feature JAI's total commitment to long-term reliability, including a six-year warranty – the longest in the industry.

JAI's Go-X Series cameras are:

- **Built for non-stop operation:**
  These cameras are built using JAI's proven manufacturing process that has delivered field failure rates of less than two cameras per thousand over the last five years. They're designed to withstand the shock, vibration, and thermal demands of typical industrial environments so they can keep critical inspection systems running 24/7 without fail.

- **Pre-screened for dust and other particles:**
  All Go-X Series models receive special dust prevention measures including cleanroom assembly, internal seals around the sensor compartment, and a screening process to ensure every camera shipped delivers the best possible image quality via a clean, dust-free optical path.

- **Flexible scaling on Pregius S models**
  All models with Pregius S sensors feature JAI's "Xscale" function, enabling users to virtually adjust pixel size and resolution when designing systems to replace old or obsolete cameras.

- **Perfect for a wide range of mainstream applications:**
  Small and lightweight, with a choice of GigE Vision, USB3 Vision, or CoaXPress interfaces, Go-X Series cameras can handle applications for factory automation, life sciences, embedded vision, and much more, and can also mount easily on robotic arms, UAVs, and any other machine vision systems where motion or portability are vital.



Dust seals on all models for supreme image quality

Two sets of mounting holes with 20 mm and 21 mm spacing enable Go-X Series cameras to fit most existing installations with no re-tooling required.



Models with GigE Vision (1000BASE-T) interface

Available with color or monochrome sensors

Dimensions:
29 mm x 29 mm x 55.0 mm



Model	Front View (Lens mount)	Resolution Megapixels (MP) (horizontal x vertical pixels)	Frame rate fps	Sensor format	Pixel size (µm)	Data output (Bit)	Color/ Mono	Sensor name	Interface
GOX-24505-PGE	(C-mount)	24.5 MP (5328 x 4608)	4	1.2" CMOS	2.74 x 2.74	8/10/12	C/M	IMX540 (Pregius S)	GigE Vision (1000BASE-T)
GOX-20405-PGE	(C-mount)	20.3 MP (4512 x 4512)	5	1.1" CMOS	2.74 x 2.74	8/10/12	C/M	IMX541 (Pregius S)	GigE Vision (1000BASE-T)
GOX-20409-PGE	(C-mount)	20.0 MP (5472 x 3648)	5	1"CMOS (Rolling)	2.4 x 2.4	8/10/12	C/M	IMX183 (Starvis)	GigE Vision (1000BASE-T)
GOX-16205-PGE	(C-mount)	16.2 MP (5328 x 3040)	7	1.1" CMOS	2.74 x 2.74	8/10/12	C/M	IMX542 (Pregius S)	GigE Vision (1000BASE-T)
GOX-12405-PGE	(C-mount)	12.4 MP (4128 x 3008)	9	1/1.1" CMOS	2.74 x 2.74	8/10/12	C/M	IMX545 (Pregius S)	GigE Vision (1000BASE-T)
GOX-12409-PGE	(C-mount)	12.2 MP (4016 x 3036)	9	1/1.7" CMOS (Rolling)	1.85 x 1.85	8/10/12	C/M	IMX226 (Starvis)	GigE Vision (1000BASE-T)
GOX-12401-PGE	(C-mount)	12.3 MP (4096 x 3000)	9	1.1" CMOS	3.45 x 3.45	8/10/12	C/M	IMX304 (Pregius)	GigE Vision (1000BASE-T)
GOX-8901-PGE	(C-mount)	8.9 MP (4096 x 2160)	13	1" CMOS	3.45 x 3.45	8/10/12	C/M	IMX267 (Pregius)	GigE Vision (1000BASE-T)
GOX-8105-PGE	(C-mount)	8.1 MP (2856 x 2848)	14	2/3" CMOS	2.74 x 2.74	8/10/12	C/M	IMX546 (Pregius S)	GigE Vision (1000BASE-T)
GOX-6409-PGE	(C-mount)	6.3 MP (3088 x 2064)	18	1/1.8" CMOS (Rolling)	2.4 x 2.4	8	C/M	IMX178 (Starvis)	GigE Vision (1000BASE-T)
GOX-5105-PGE	(C-mount)	5.1 MP (2472 x 2064)	23	1/1.8" CMOS	2.74 x 2.74	8/10/12	C/M	IMX547 (Pregius S)	GigE Vision (1000BASE-T)
GOX-5103-PGE	(C-mount)	5 MP (2448 x 2048)	22	2/3" CMOS	3.45 x 3.45	8/10/12	C/M	IMX264 (Pregius)	GigE Vision (1000BASE-T)
GOX-3201-PGE	(C-mount)	3.2 MP (2048 x 1536)	36	1/1.8" CMOS	3.45 x 3.45	8/10/12	C/M	IMX265 (Pregius)	GigE Vision (1000BASE-T)
GOX-2402-PGE	(C-mount)	2.3 MP (1920 x 1200)	50	1/2.3" CMOS	3.45 x 3.45	8/10/12	C/M	IMX392 (Pregius)	GigE Vision (1000BASE-T)

Models with GigE Vision (5GBASE-T) interface

Available with color or monochrome sensors

Dimensions:
29 mm x 29 mm x 68.5 mm



Model	Front View (Lens mount)	Resolution Megapixels (MP) (horizontal x vertical pixels)	Frame rate fps	Sensor format	Pixel size (µm)	Data output (Bit)	Color/ Mono	Sensor name	Interface
GOX-24505-5GE	(C-mount)	24.5 MP (5328 x 4608)	22	1.2" CMOS	2.74 x 2.74	8/10/12	C/M	IMX540 (Pregius S)	GigE Vision (5GBASE-T)
GOX-20405-5GE	(C-mount)	20.3 MP (4512 x 4512)	27	1.1" CMOS	2.74 x 2.74	8/10/12	C/M	IMX541 (Pregius S)	GigE Vision (5GBASE-T)
GOX-16205-5GE	(C-mount)	16.2 MP (5328 x 3040)	33	1.1" CMOS	2.74 x 2.74	8/10/12	C/M	IMX542 (Pregius S)	GigE Vision (5GBASE-T)
GOX-12405-5GE	(C-mount)	12.4 MP (4128 x 3008)	43	1/1.1" CMOS	2.74 x 2.74	8/10/12	C/M	IMX545 (Pregius S)	GigE Vision (5GBASE-T)
GOX-8105-5GE	(C-mount)	8.1 MP (2856 x 2848)	66	2/3" CMOS	2.74 x 2.74	8/10/12	C/M	IMX546 (Pregius S)	GigE Vision (5GBASE-T)
GOX-5105-5GE	(C-mount)	5.1 MP (2472 x 2064)	103	1/1.8" CMOS	2.74 x 2.74	8/10/12	C/M	IMX547 (Pregius S)	GigE Vision (5GBASE-T)

For Models with USB Vision and CoaXPress interface see next page.

Area Scan Cameras / Single-Sensor



Models with USB3 Vision interface

Available with color or monochrome sensors

Dimensions: 29 mm x 29 mm x 51.5 mm

Model	Front View (Lens mount)	Resolution Megapixels (MP) (horizontal x vertical pixels)	Frame rate fps	Sensor format	Pixel size (µm)	Data output (Bit)	Color/ Mono	Sensor name	Interface
GOX-12401-USB	(C-mount)	12.3 MP (4096 x 3000)	23	1.1" CMOS	3.45 x 3.45	8/10/12	C/M	IMX304 (Pregius)	USB3 Vision
GOX-8901-USB	(C-mount)	8.9 MP (4096 x 2160)	32	1" CMOS	3.45 x 3.45	8/10/12	C/M	IMX267 (Pregius)	USB3 Vision
GOX-5102-USB	(C-mount)	5 MP (2448 x 2048)	74	2/3" CMOS	3.45 x 3.45	8/10/12	C/M	IMX250 (Pregius)	USB3 Vision
GOX-5103-USB	(C-mount)	5 MP (2448 x 2048)	35	2/3" CMOS	3.45 x 3.45	8/10/12	C/M	IMX264 (Pregius)	USB3 Vision
GOX-3200-USB	(C-mount)	3.2 MP (2048 x 1536)	119	1/1.8" CMOS	3.45 x 3.45	8/10/12	C/M	IMX252 (Pregius)	USB3 Vision
GOX-3201-USB	(C-mount)	3.2 MP (2048 x 1536)	55	1/1.8" CMOS	3.45 x 3.45	8/10/12	C/M	IMX265 (Pregius)	USB3 Vision
GOX-2402-USB	(C-mount)	2.3 MP (1920 x 1200)	162	1/2.3" CMOS	3.45 x 3.45	8/10/12	C/M	IMX392 (Pregius)	USB3 Vision



Models with CoaXPress (1xCXP-6) interface

Available with color or monochrome sensors

Dimensions: 29 mm x 29 mm x 55.0 mm

Model	Front View (Lens mount)	Resolution Megapixels (MP) (horizontal x vertical pixels)	Frame rate fps	Sensor format	Pixel size (µm)	Data output (Bit)	Color/ Mono	Sensor name	Interface
GOX-24505-CXP	(C-mount)	24.5 MP (5328 x 4608)	24	1.2" CMOS	2.74 x 2.74	8/10/12	C/M	IMX540 (Pregius S)	CoaXPress CXP-6 1-connector
GOX-20405-CXP	(C-mount)	20.3 MP (4512 x 4512)	29	1.1" CMOS	2.74 x 2.74	8/10/12	C/M	IMX541 (Pregius S)	CoaXPress CXP-6 1-connector
GOX-16205-CXP	(C-mount)	16.2 MP (5328 x 3040)	36	1.1" CMOS	2.74 x 2.74	8/10/12	C/M	IMX542 (Pregius S)	CoaXPress CXP-6 1-connector
GOX-12405-CXP	(C-mount)	12.4 MP (4128 x 3008)	47	1/1.1" CMOS	2.74 x 2.74	8/10/12	C/M	IMX545 (Pregius S)	CoaXPress CXP-6 1-connector
GOX-8105-CXP	(C-mount)	8.1 MP (2856 x 2848)	71	2/3" CMOS	2.74 x 2.74	8/10/12	C/M	IMX546 (Pregius S)	CoaXPress CXP-6 1-connector
GOX-5105-CXP	(C-mount)	5.1 MP (2472 x 2064)	112	1/1.8" CMOS	2.74 x 2.74	8/10/12	C/M	IMX547 (Pregius S)	CoaXPress CXP-6 1-connector

Affordable and reliable.
Go-X Series is the perfect choice for
your next vision system.



The Go-X Series features state-of-the-art Sony CMOS image sensors, with resolutions from 2.3 to 24 megapixels, so you can choose the right resolution, performance, and price point for your application. A set of pre-qualified lenses is also available to help you get maximum image quality from your Go-X Series camera.

Go Series

JAI's original small CMOS area scan cameras including polarization and UV-sensitive models.

JAI's Go Series delivers an exceptional blend of small size, high versatility, and excellent performance, all at an entry-level price, making them the perfect starting point for a wide range of machine vision applications.

The GO-5000 for example - packs a high performance 5-megapixel CMOS sensor into a compact form factor that fits in your fingertips and weighs only 46 grams. Using a combination of ROI and binning capabilities, this tiny camera can become almost anything you want - from a superfast VGA camera (at nearly 450 fps) to a super sensitive camera using binning to create 10-micron, or even 20-micron effective pixel sizes.

Other Go Series models feature Sony's proven CMOS sensor technology, providing exceptional low-noise characteristics for outstanding sensitivity and image quality.

All Go Series cameras are built for the real world, with robust housings and extensive shock (80G) and vibration (10G) testing to maximize their ability to withstand the rigors of industrial environments. Go Series cameras come with full 3-year warranties.

Go Series cameras offer many advantages, including:

- **Small size and weight:**
  Go Series cameras measure 29 x 29 x 41.5 mm (excluding lens mount) and weigh less than 50 grams, enabling them to fit into small spaces or into vehicles or other applications where weight and size is critical.

- **High frame rates:**
  High performance CMOS sensor technology lets Go Series cameras run at frame rates as fast as 107 fps for 5 megapixel resolution or 165.5 fps for 2.35 megapixels.

- **High image quality:**
  CMOS technology, large pixels, global shutter, a built-in lookup table, multi-ROI, sequencer, and other advanced features help ensure image quality and operational flexibility beyond entry-level expectations.

- **Support for polarization and UV imaging:**
  The Go Series features two models equipped with on-sensor polarizer grids to support polarization imaging applications plus four models offering extended UV sensitivity.



Small and robust industrial area scan cameras at a great price/performance point.



Check the table below for a list of all available Go Series cameras.

	Model	Front View (Lens mount)	Resolution Megapixels (MP) (horizontal x vertical pixels)	Frame rate fps	Sensor format	Pixel size (µm)	Data output (Bit)	Color/ Mono	Sensor name (Shutter type)	Interface
UV sensitive	GO-8105M-5GE-UV	(C-mount)	8.1 MP (2856 x 2848)	66	2/3" CMOS	2.74 x 2.74	8/10/12	Mono UV	IMX487 (Global)	GigE Vision (5GBASE-T)
UV sensitive	GO-8105M-5GE-UV-GL (Glassless)	(C-mount)	8.1 MP (2856 x 2848)	66	2/3" CMOS	2.74 x 2.74	8/10/12	Mono UV	IMX487 (Global)	GigE Vision (5GBASE-T)
	GO-5100-USB	(C-mount)	5 MP (2464 x 2056	74	2/3" CMOS	3.45 x 3.45	8/10/12	C/M	IMX250 (Global)	USB3 Vision
Polarization	GO-5100MP-USB	(C-mount)	5 MP (2464 x 2056)	74	2/3" CMOS	3.45 x 3.45	8/10/12	Mono Polari-zation	IMX250MZR (Global)	USB3 Vision
	GO-5100-PGE-1	(C-mount)	5 MP (2464 x 2056)	22.7	2/3'' CMOS	3.45 x 3.45	8/10/12	C/M	IMX250 (Global)	GigE Vision (1000BASE-T)
Polarization	GO-5100MP-PGE	(C-mount)	5 MP (2464 x 2056)	22.7	2/3" CMOS	3.45 x 3.45	8/10/12	Mono Polari-zation	IMX250MZR (Global)	GigE Vision (1000BASE-T)
	GO-5101-PGE-1	(C-mount)	5 MP (2464 x 2056)	22.7	2/3" CMOS	3.45 x 3.45	8/10/12	C/M	IMX264 (Global)	GigE Vision (1000BASE-T)
	GO-5101-PMCL-1	(C-mount)	5 MP (2464 x 2056)	35	2/3" CMOS	3.45 x 3.45	8/10/12	C/M	IMX264 (Global)	Power over Mini Camera Link Full
	GO-5000-PMCL-1	(C-mount)	5 MP (2560 x 2048)	107	1'' CMOS	5.0 x 5.0	8/10/12	M	Lince5M (Global)	Power over Mini Camera Link Full
UV sensitive	GO-5000M-PMCL-UV-1	(C-mount)	5 MP (2560 x 2048)	107	1'' CMOS	5.0 x 5.0	8/10/12	Mono UV	Lince5M (Global)	Power over Mini Camera Link Full
	GO-5000-USB	(C-mount)	5 MP (2560 x 2048)	62	1'' CMOS	5.0 x 5.0	8/10/12	M	Lince5M (Global)	USB3 Vision
UV sensitive	GO-5000M-USB-UV	(C-mount)	5 MP (2560 x 2048)	62	1'' CMOS	5.0 x 5.0	8/10/12	Mono UV	Lince5M (Global)	USB3 Vision
	GO-5000-PGE-1	(C-mount)	5 MP (2560 x 2048)	22.3	1'' CMOS	5.0 x 5.0	8/10/12	M	Lince5M (Global)	GigE Vision (1000BASE-T)
UV sensitive	GO-5000M-PGE-UV-1	(C-mount)	5 MP (2560 x 2048)	22	1'' CMOS	5.0 x 5.0	8/10/12	Mono UV	Lince5M (Global)	GigE Vision (1000BASE-T)
	GO-2400-PMCL-1	(C-mount)	2.35 MP (1936 x 1216)	165.5	1/1.2" CMOS	5.86 x 5.86	8/10/12	C/M	IMX174 (Global)	Power over Mini Camera Link Full
	GO-2400-USB	(C-mount)	2.35 MP (1936 x 1216)	159	1/1.2" CMOS	5.86 x 5.86	8/10/12	C/M	IMX174 (Global)	USB3 Vision
	GO-2400-PGE-1	(C-mount)	2.35 MP (1936 x 1216)	48	1/1.2" CMOS	5.86 x 5.86	8/10/12	C/M	IMX174 (Global)	GigE Vision (1000BASE-T)
	GO-2401-PGE-1	(C-mount)	2.35 MP (1936 x 1216)	41	1/1.2" CMOS	5.86 x 5.86	8/10/12	C/M	IMX249 (Global)	GigE Vision (1000BASE-T)

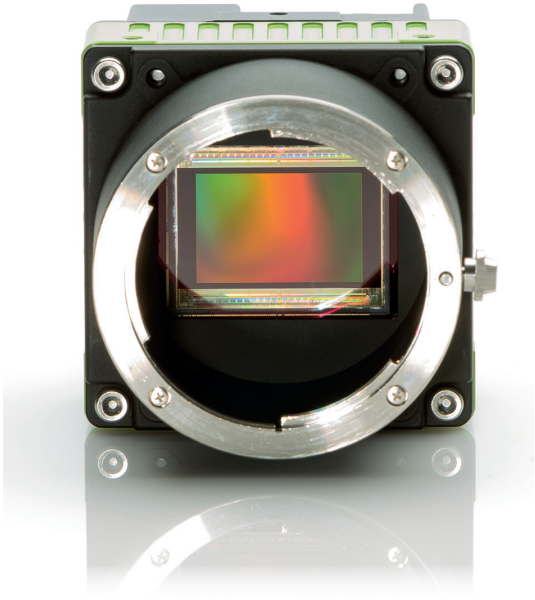
Datasheets and manuals for each model with detailed specifications are available at www.jai.com

Spark Series

Advanced area scan cameras delivering high resolution, high frame rates, and high image quality.

JAI's Spark Series is the perfect choice for applications that demand high-quality images with high resolution and the highest possible throughput. Spark Series cameras feature the latest CMOS sensors with resolutions up to 45 megapixels.

With high sensitivity, industrial grade construction, and an attractive price point, it's easy to see why the Spark Series is an ideal solution for high performance vision applications.



The ultimate in megapixel-per-second performance

Here are some of the advantages you get with JAI Spark cameras:

- **High throughput:**
  Spark Series cameras deliver outstanding megapixels-per-second performance, such as 45-meagpixels at up to 52 fps, 12-megapixels at up to 189 fps and 5-megapixels at up to 253 fps. Using flexible Region-of-Interest (ROI) capabilities, even higher frame rates can be obtained.

- **Excellent image quality and unique features:**
  Despite their speed, Spark Series cameras feature advanced functions like single exposure high dynamic range (HDR), multi-region-of-interest, integrated auto-shutter/auto-gain exposure control (ALC), built-in iris control circuits, and efficient global shutters to ensure low noise, high quality images with high pixel uniformity and no shutter distortion.

- **Outstanding durability:**
  Whether outdoors, on vehicles, or in rugged factory environments, Spark Series cameras provide reliable performance under real-world conditions - with high shock and vibration ratings (80G/10G) and excellent temperature ratings, including some models capable of operating from -45˚C to +70˚C.



The Spark Series SP-45000-CXP4A can provide 8K TV resolution at 60 fps for 10-bit/12-bit output and over 65 fps for 8-bit.

The table below lists all available Spark Series cameras.

Model	Front View (Lens mount)	Resolution Megapixels (MP) (horizontal x vertical pixels)	Frame rate fps	Sensor format	Pixel size (µm)	Data output (Bit)	Color/ Mono	Sensor name (Shutter type)	Interface
SP-45000-CXP4A	 F-mount M-42x1-mount	45 MP (8192 x 5460)	52	Super 35mm CMOS	3.2 x 3.2	8/10/12	C/M	XGS 45000 (Global)	 CoaXPress CXP-12 4-connector
SP-45000-CXP4	 F-mount M-42x1-mount	45 MP (8192 x 5460)	51	Super 35mm CMOS	3.2 x 3.2	8/10/12	C/M	XGS 45000 (Global)	 CoaXPress CXP-6 4-connector
SP-45001-CXP2A	 F-mount	45 MP (8192 x 5460)	38	Super 35mm CMOS	3.2 x 3.2	8/10/12	C/M	XGS 45000 (Global)	 CoaXPress CXP-12 2-connector
SP-45001-CXP4	 F-mount M-42x1-mount M-42Ax1-mount	45 MP (8192 x 5460)	38	Super 35mm CMOS	3.2 x 3.2	8/10/12	C/M	XGS 45000 (Global)	 CoaXPress CXP-6 4-connector
SP-25000-CXP4A	 C-mount	26 MP (5120 x 5120)	150	1.1" CMOS	2.5 x 2.5	8	C/M	GMAX0505 (Global)	 CoaXPress CXP-12 4-connector
SP-20000-CXP2	 F-mount M-42x1-mount	20 MP (5120 x 3840)	30	41 mm CMOS	6.4 x 6.4	8/10/12 RGB	C/M	CMV20000 (Global)	 CoaXPress CXP-6 2-connector
SP-20000-PMCL	 F-mount M-42Ax1-mount	20 MP (5120 x 3840)	30	41 mm CMOS	6.4 x 6.4	8/10/12	M	CMV20000 (Global)	 Power over Mini Camera Link Deca
SP-20000-USB	 F-mount M-42x1-mount	20 MP (5120 x 3840)	16	41 mm CMOS	6.4 x 6.4	8/10/12	M	CMV20000 (Global)	 USB3 Vision
SP-12400-PMCL	 C-mount	12.4 MP (4112 x 3008)	64	1.1" CMOS	3.45 x 3.45	8/10/12	C/M	IMX253 (Global)	 Power over Mini Camera Link Deca
SP-12401-USB	 C-mount	12.4 MP (4112 x 3008)	23	1.1" CMOS	3.45 x 3.45	8/10/12	C/M	IMX304 (Global)	 USB3 Vision
SP-12401-PGE	 C-mount	12.4 MP (4112 x 3008)	9	1.1" CMOS	3.45 x 3.45	8/10/12	C/M	IMX304 (Global)	 GigE Vision (1000BASE-T)
SP-12000-CXP4	 F-mount M-42Ax1-mount	12 MP (4096 x 3072)	189	APS-C CMOS	5.5 x 5.5	8/10/12	C/M	CMV12000 (Global)	 CoaXPress CXP-6 4-connector
SP-5000-CXP4	 M-42x1-mount C-mount	5 MP (2560 x 2048)	253	1" CMOS	5.0 x 5.0	8/10/12	C/M	Lince5M (Global)	 CoaXPress CXP-6 4-connector
SP-5000-CXP2	 M-42x1-mount C-mount	5 MP (2560 x 2048)	211	1" CMOS	5.0 x 5.0	8/10/12 RGB	C/M	Lince5M (Global)	 CoaXPress CXP-6 2-connector
SP-5000-USB	 C-mount	5 MP (2560 x 2048)	62	1" CMOS	5.0 x 5.0	8/10/12	C/M	Lince5M (Global)	 USB3 Vision

Datasheets and manuals for each model with detailed specifications are available at www.jai.com

Apex Series

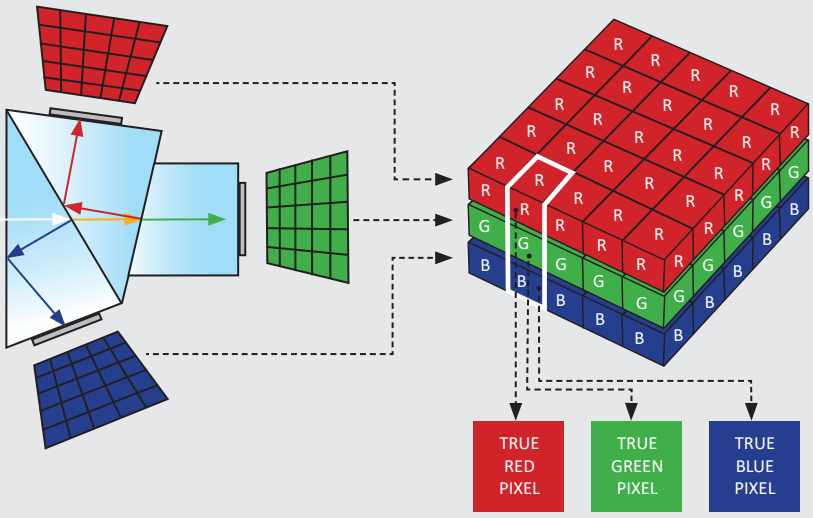
3-CMOS area scan cameras providing better color fidelity and spatial precision than traditional Bayer color cameras.

JAI's Apex Series is a range of 3-CMOS area scan cameras delivering advanced R-G-B color imaging that's ideal for demanding machine vision applications across a diverse range of industries.

Advanced prism technology separates the incoming light into red, green, and blue wavelengths, which are directed to three precisely-aligned image sensors.

- **Accurate colors:**
  More accurate per-pixel color values than those derived from Bayer color cameras with interpolation routines.
- **Steep spectral curves:**
  Steep spectral curves (less crosstalk) producing exceptionally accurate color image data.
- **Sharper details:**
  More precise spatial resolution, enabling more accurate edge detection and the ability to resolve smaller details.

Prism-based imaging



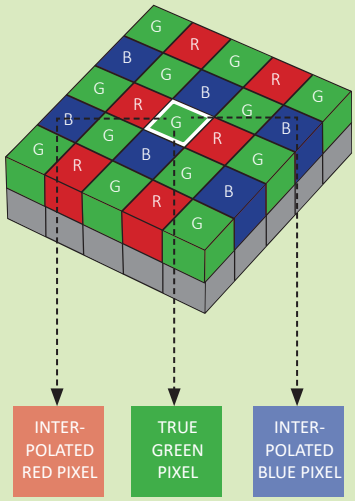
Prism-Based imaging:

True-to-life colors

The in-camera prism divides light into its red, green, and blue wavelengths, which are then captured by three precisely aligned CMOS sensors. The three images are combined into a single R-G-B image with more accurate per-pixel color values and better spatial precision, outperforming traditional color cameras that rely on the Bayer mosaic color interpolation technique.

vs.

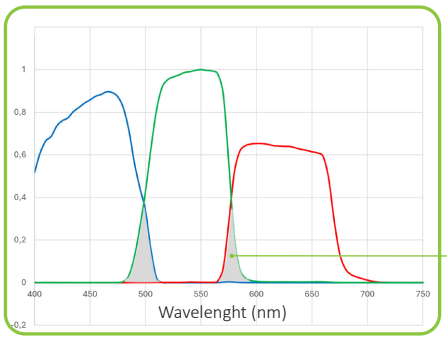
Bayer Mosaic imaging



Bayer Mosaic imaging:

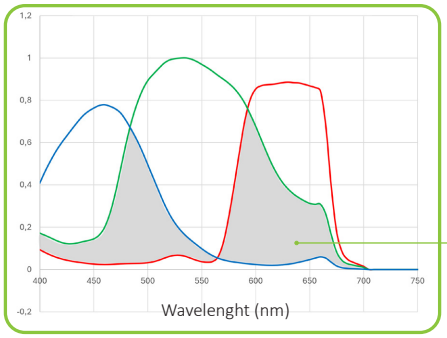
Interpolated colors

In the Bayer technique, each pixel is filtered to capture only one of the three primary colors. As a result, no single pixel can fully represent all red, green, and blue values. To create a full-color image, the Bayer technique interpolates the missing color information by referencing the surrounding pixels. This process estimates the red, green, and blue values for each pixel, based on its neighbors. The result of this interpolation technique is lower color accuracy and lower resolution compared with a prism-based camera.



AP-5100T - Prism area scan camera with
3 x IMX548 monochrome sensors.

Minimal color crosstalk



GOX-5105C - Bayer area scan camera with 1 x IMX547 color sensor.

Large color crosstalk



Check the table below for a list af Apex Series Cameras.

Model	Front View (Lens mount)	Resolution Megapixels (MP) (horizontal x vertical pixels)	Frame rate fps	Sensor format	Pixel size (µm)	Data output (Bit)	Color/ Mono	Sensor name (Shutter type)	Interface
AP-5100T-CXPA NEW	(C-mount)	3 x 5.1 MP (2464 x 2056)	75	1/1.8" CMOS	2.74 x 2.74	8/10/12	R-G-B	IMX548 (Global)	CoaXPress (CXP-12) 1-connector
AP-5100T-MCL NEW	(C-mount)	3 x 5.1 MP (2464 x 2056)	51	1/1.8" CMOS	2.74 x 2.74	8/10/12	R-G-B	IMX548 (Global)	Mini Camera Link Deca
AP-5100T-5GE NEW	(C-mount)	3 x 5.1 MP (2464 x 2056)	34	1/1.8" CMOS	2.74 x 2.74	8/10/12	R-G-B	IMX548 (Global)	GigE Vision (5GBASE-T)
AP-3200T-10GE	(C-mount)	3 x 3.2 MP (2064 x 1544)	106	1/1.8" CMOS	3.45 x 3.45	8/10/12	R-G-B	IMX252 (Global)	GigE Vision (10GBASE-T)
AP-3200T-PMCL	(C-mount)	3 x 3.2 MP (2064 x 1544)	55	1/1.8" 3-CMOS	3.45 x 3.45	8/10/12	R-G-B	IMX265 (Global)	Power over Mini Camera Link Deca
AP-3200T-USB *	(C-mount)	3 x 3.2 MP (2064 x 1544)	38	1/1.8" 3-CMOS	3.45 x 3.45	8/10/12	R-G-B	IMX265 (Global)	USB3 Vision
AP-3200T-PGE *	(C-mount)	3 x 3.2 MP (2064 x 1544)	12	1/1.8" 3-CMOS	3.45 x 3.45	8/10/12	R-G-B	IMX265 (Global)	GigE Vision (1000BASE-T)
AP-1600T-PMCL	(C-mount)	3 x 1.6 MP (1456 x 1088)	126	1/2.9" 3-CMOS	3.45 x 3.45	8/10/12	R-G-B	IMX273 (Global)	Power over Mini Camera Link Deca
AP-1600T-USB *	(C-mount)	3 x 1.6 MP (1456 x 1088)	79	1/2.9" 3-CMOS	3.45 x 3.45	8/10/12	R-G-B	IMX273 (Global)	USB3 Vision
AP-1600T-PGE	(C-mount)	3 x 1.6 MP (1456 x 1088)	24	1/2.9" 3-CMOS	3.45 x 3.45	8/10/12	R-G-B	IMX273 (Global)	GigE Vision (1000BASE-T)

*) Models also available without IR-cut filter (NF):
AP-3200T-USB-NF
AP-3200T-PGE-NF
AP-1600T-USB-NF

Datasheets and manuals for each model with detailed specifications are available at www.jai.com

Apex Medical & Life Sciences Solutions

Superior dust suppression for maximum image quality

Compatible with Image-Pro image analysis software packages

The ultimate combination of color precision and dust-free image quality for medical and life sciences applications

JAI's Apex Series includes a set of high-performance prism color cameras specially designed to deliver unsurpassed image quality for medical and life sciences applications.

Like all Apex cameras, these models deliver color precision and color differentiation far exceeding what can be achieved by image optimization algorithms in Bayer cameras. They feature the latest in CMOS global shutter sensor technology for outstanding low-light sensitivity and excellent frame rates.

The Apex Medical and Life Sciences cameras are equipped with USB3 Vision interfaces for high throughput and easy integration. And they offer a range of unique features not found in "med" cameras from other manufacturers including built-in color space conversion, color binning options, and models with extended sensitivity in the near infrared spectrum.

Most importantly, they provide the industry's highest level of protection against dust and other foreign object debris to ensure maximum image quality for microscopy applications and other life sciences vision systems.

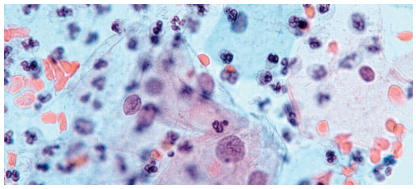


A standard USB connection supports 38 fps for 3.2-megapixel models and up to 79 fps for 1.6-megapixel models providing ample performance for a wide range of medical and life sciences applications.

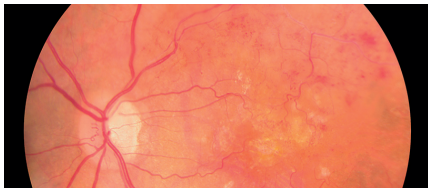
- **Unmatched color imaging capability:**
  With up to 3 x 3.2 megapixels of R-G-B resolution, the Apex Medical cameras can see details that are obscured by the interpolation algorithms of Bayer cameras. True color output enables critical color differentiation in digital pathology, ophthalmology, surgery, and other life sciences applications where absolute precision is required.

- **The industry's best dust protection:**
  JAI is the first in the industry to fully document its high standards for dust suppression in manufacturing and shipment. Building on the cleanroom procedures it has long used to assemble all prism cameras, JAI has added special coatings and external seals on lens mounts, internal seals between the electronics and the sensor compartment, and even more stringent cleanroom procedures to prevent dust on the prism, sensor, or elsewhere in the optical path. A rigorous inspection process using high-magnification telecentric lenses ensures that all Apex "LSX" models deliver the industry's highest level of dust suppression.

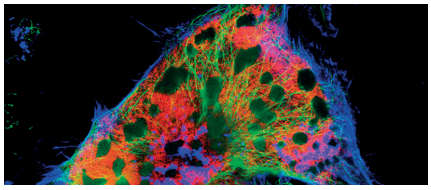
- **Compatibility with leading microscopy software:**
  For microscopy-based applications, JAI's Medical and Life Sciences cameras deliver outstanding image quality along with full integration to the Image-Pro image analysis platform from Media Cybernetics. Image-Pro provides a broad range of functionality to capture, process, measure, analyze, and share microscopy images needed for a wide range of medical and life sciences applications.



Digital pathology
With supreme color reproduction, high spatial resolution and color enhancement tools, the Apex cameras are ideal for medical and life sciences systems used for tissue slice analysis, cell classification and more.



Ophthalmology
For ophthalmologists, looking at retina, optic nerve head, micro vessels etc., image accuracy and color precision are key factors in disease diagnostics and treatment. JAI Apex cameras do the job.



Fluorescence microscopy
In microscopy, fluorescent stains (fluorophores) are often added to make specific cell proteins and other organic compounds observable. JAI's prism cameras catch the subtlest color differences.



Endoscopy and surgical imaging
High resolution Apex cameras help to discern subtle color variations and fine details, enabling doctors and/or staff to more precisely differentiate tissue types.



Dermatology research
In modern dermatology research and diagnostics, digital imaging is becoming increasingly important. JAI´s Apex prism-based 3-CMOS cameras deliver the most accurate images of skin color nuances and pigments.



Medical quality inspection
Modern medicine demands the highest possible quality standards in everything from medicine to syringes, to catheters, to surgical tools. To inspect these products, high quality imaging systems are mandatory.

Model	Front View (Lens mount)	Resolution Megapixels (MP) (horizontal x vertical pixels)	Frame rate fps	Sensor format	Pixel size (µm)	Data output (Bit)	Color/ Mono	Sensor name (Shutter type)	Interface
AP-3200T-USB-LSX *)	 (C-mount)	3 x 3.2 MP (2064 x 1544)	38	1/1.8" 3-CMOS	3.45 x 3.45	8/10/12	R-G-B	IMX265 (Global)	 USB3 Vision
AP-3200T-USB-LS *)	 (C-mount)	3 x 3.2 MP (2064 x 1544)	38	1/1.8" 3-CMOS	3.45 x 3.45	8/10/12	R-G-B	IMX265 (Global)	 USB3 Vision
AP-3200T-USB *)	 (C-mount)	3 x 3.2 MP (2064 x 1544)	38	1/1.8" 3-CMOS	3.45 x 3.45	8/10/12	R-G-B	IMX265 (Global)	 USB3 Vision
AP-1600T-USB-LSX *)	 (C-mount)	3 x 1.6 MP (1456 x 1088)	79	1/2.9" 3-CMOS	3.45 x 3.45	8/10/12	R-G-B	IMX273 (Global)	 USB3 Vision
AP-1600T-USB *)	 (C-mount)	3 x 1.6 MP (1456 x 1088)	79	1/2.9" 3-CMOS	3.45 x 3.45	8/10/12	R-G-B	IMX273 (Global)	 USB3 Vision

Notes: LS = white housing, standard dust suppression. LSX = white housing, maximum dust suppression.

*) Models also available without IR-cut filter :

AP-3200T-USB-NF-LSX
AP-3200T-USB-NF-LS
AP-1600T-USB-NF-LSX
AP-3200T-USB-NF
AP-1600T-USB-NF

Fusion Series

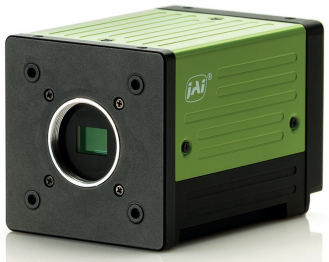
Now featuring Flex-Eye™ customization technology! Design the perfect multispectral configuration to fit your application

Multi-sensor area scan cameras with unique capabilities for multispectral imaging.

JAI's Fusion Series of multispectral prism cameras provide simultaneous images of multiple wavebands through a single optical path. The cameras split incoming light into two or three separate sensors with precise pixel-to-pixel alignment regardless of motion or viewing angle.

Several standard models with predefined configurations of visible and near-infrared (NIR) wavebands are available. Or you can use JAI's innovative Flex-Eye technology to design your own configuration with two or three custom wavebands perfectly tailored to your system requirements.

Fusion Series cameras are ideal for life sciences or surgical applications using NIR fluorescence; for intelligent farming techniques such as NDVI/NDRE vegetation analysis or autonomous weed removal systems; for fruit, vegetable, and other types of food sorting or inspection; for electronics/PCB inspection; and much more.



Innovative solutions for multispectral imaging.



Visible image

NIR image
Foreign object

With Fusion Series and Flex-Eye you get:

- **Prism-based multispectral solution:**
  Standard or custom-designed configurations provide up to three wavebands and up to 3.2 megapixels per channel with perfect alignment between all wavebands, eliminating issues due to viewing angles, motion, or demosaicing.

- **Custom-specified wavebands:**
  Using the Flex-Eye concept, custom-specified wavebands can be as narrow as 25 nm, located exactly where needed in the 405-1000 nm range (visible - NIR).



- **High performance multi-stream output:**
  Both standard and customized Fusion Series cameras feature high-speed 10GigE interfaces that automatically adapt to network speeds and provide simultaneous multi-stream output over a single cable to allow wavebands to be analyzed separately or combined on the host processor.



JAI's Fusion Series of multispectral area scan cameras perform simultaneous, separate imaging of visible and NIR light through a single lens. Standard and custom configurations can be used to inspect surface properties in visible wavebands, plus subsurface, fluorescence, or other non-visible characteristics in one or more NIR wavebands.


Visible image


NIR image



Visible image


NIR image


Visible image


NIR image

Fusion Series Standard Multispectral Cameras

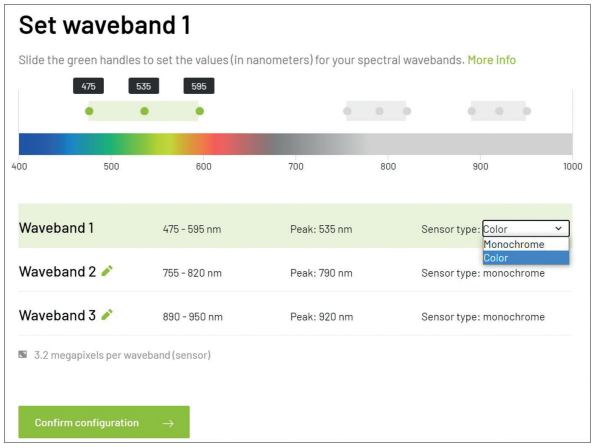
Model	Front View (Lens mount)	Resolution Megapixels (MP) (horizontal x vertical pixels)	Frame rate fps	Sensor format	Pixel size (µm)	Data output (Bit)	Color/ Mono	Sensor name (Shutter type)	Interface
FS-3200T-10GE-NNC	(C-mount)	3 x 3.2 MP (2064 x 1544)	107	1/1.8" 3-CMOS	3.45 x 3.45	8/10/12	C/NIR/ NIR	IMX252 (Global)	GigE Vision (10GBASE-T)
FS-3200D-10GE	(C-mount)	2 x 3.2 MP (2064 x 1544)	123	1/1.8" 2-CMOS	3.45 x 3.45	8/10/12	C/NIR	IMX252 (Global)	GigE Vision (10GBASE-T)
FS-1600T-10GE-NNM	(C-mount)	3 x 1.6 MP (1456 x 1088)	213	1/2.9" 3-CMOS	3.45 x 3.45	8/10/12	M/NIR/ NIR	IMX273 (Global)	GigE Vision (10GBASE-T)
FS-1600D-10GE	(C-mount)	2 x 1.6 MP (1456 x 1088)	226	1/2.9" 2-CMOS	3.45 x 3.45	8/10/12	C/NIR	IMX273 (Global)	GigE Vision (10GBASE-T)

Datasheets and manuals for each model with detailed specifications are available at www.jai.com

Flex-Eye Custom Multispectral "Base Models"

Model	Front View (Lens mount)	Resolution Megapixels (MP) (horizontal x vertical pixels)	Frame rate fps	Sensor format	Pixel size (µm)	Data output (Bit)	Color/ Mono	Sensor name (Shutter type)	Interface
FSFE-3200T-10GE (Flex-Eye)	(C-mount)	3 x 3.2 MP (2064 x 1544)	107	1/1.8" 3-CMOS	3.45 x 3.45	8/10/12	3 custom bands	IMX252 (Global)	GigE Vision (10GBASE-T)
FSFE-3200D-10GE (Flex-Eye)	(C-mount)	2 x 3.2 MP (2064 x 1544)	123	1/1.8" 2-CMOS	3.45 x 3.45	8/10/12	2 custom bands	IMX252 (Global)	GigE Vision (10GBASE-T)
FSFE-1600T-10GE (Flex-Eye)	(C-mount)	3 x 1.6 MP (1456 x 1088)	213	1/2.9" 3-CMOS	3.45 x 3.45	8/10/12	3 custom bands	IMX273 (Global)	GigE Vision (10GBASE-T)
FSFE-1600D-10GE (Flex-Eye)	(C-mount)	2 x 1.6 MP (1456 x 1088)	226	1/2.9" 2-CMOS	3.45 x 3.45	8/10/12	2 custom bands	IMX273 (Global)	GigE Vision (10GBASE-T)

Datasheets and manuals for each Fusion Series Flex-Eye base model with detailed specifications are available at www.jai.com



For customized multispectral solutions, the Flex-Eye online configurator provides an easy, step-by-step process. The intuitive GUI with built-in validation rules enables users to quickly submit specifications that meet their unique requirements.

Sweep Series

High performance trilinear, bilinear, and monochrome line scan cameras for a wide range of machine vision applications.

JAI´s Sweep Series features trilinear, bilinear, and monochrome line scan cameras with some of the fastest line rates available for their type and resolution. Equipped with custom-designed image sensors, these cameras deliver exceptional image quality, advanced features, and competitive pricing.

Sweep trilinear line scan models:
JAI offers a range of trilinear color line scan cameras for machine vision applications that do not require the high-precision color data provided by JAI's prism technology in the Sweep+ Series. Trilinear models are available in 2K (3 x 2048 pixels in R-G-B lines), 4K (3 x 4096 pixels in R-G-B lines), and 16K (3 x 16,384 pixels in R-G-B lines) resolutions, with a choice of high-speed interfaces depending on the model: GigE Vision, CoaXPress, and Mini Camera Link. These cameras feature sensors with large pixels for enhanced light sensitivity and pixel binning options for even greater sensitivity. Other key features (depending on model) include spatial compensation, tilted view correction, built-in color space conversion, individual digital gain control for R-G-B, direct encoder connections, flexible trigger settings, and more.

Sweep bilinear line scan models:
JAI's Sweep Series includes compact bilinear color line scan cameras with 4K resolution (2 x 4096 pixels in RB-G lines). These models are available with both a 5GigE Vision interface for high-bandwidth, fast data transfer and a CoaXPress (CXP-6) interface for low-latency, real-time processing. Featuring gap-free image sensors, the bilinear models reduce the need for keystone and spatial compensation.

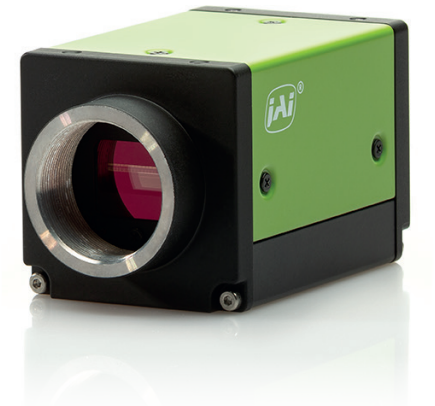
Sweep monochrome line scan models:
JAI's Sweep monochrome line scan cameras are available in resolutions of 2K (1 x 2048 pixels), 4K (1 x 4096 pixels), 8K (1 x 8192 pixels), and 16K (1 x 16384 pixels). These cameras are among the fastest in the industry, with line rates reaching up to 172 kHz, 200 kHz, 100 kHz, and 277 kHz, respectively. Key features include 2x1 horizontal binning, large sensitive pixels, direct encoder connections (select models), flexible trigger settings, and more.

Among the advantages offered by the Sweep Series are:

- **Ultra-fast scan rates:**
  JAI's line scan cameras, equipped with advanced CMOS sensors and high-performance GigE Vision, CoaXPress, and Camera Link interfaces, deliver exceptionally fast scan rates to maximize the throughput of your vision systems.

- **Application flexibility:**
  The Sweep Series supports a wide variety of applications, including food inspection, PCB inspection, battery inspection, display inspection, raw material inspection (e.g., wood and minerals), sports imaging (e.g., finish line), print inspection, waste management, logistics (e.g., postal sorting), and color web inspection of paper, plastics, textiles, and more.

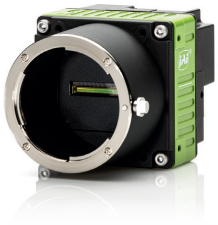
- **Excellent value:**
  All models provide an excellent price-to-performance ratio, allowing you to maximize your camera budget and get more cameras for the same investment.



The new compact trilinear, bilinear, and monochrome line scan cameras feature a 1" C-mount, providing greater flexibility in lens selection.



The new 16K trilinear line scan camera SW-16000TL-CXP4A with M-95 mount.



The Sweep SW-8000M-PMCL is shown with an F-mount but is also available with an M42-mount.

Trilinear and bilinear line scan cameras

Model	Front View (Lens mount)	Resolution (Pixels/line)	Line rate lps (kHz)	Sensor format	Pixel size (µm)	Data output (Bit)	Color/ Mono	Interface
SW-2005TL-5GE NEW	C-mount	2K	44,000 (44 kHz)	14.336 mm Trilinear CMOS	7.0 x 7.0	8/10/12	Trilinear-color	GigE Vision (5GBASE-T)
SW-2005TL-CXP NEW	C-mount	2K	44,000 (44 kHz)	14.336 mm Trilinear CMOS	7.0 x 7.0	8/10/12	Trilinear-color	CoaXPress CXP-6 1-connector
SW-4005BL-5GE NEW	C-mount	4K	42,000 (42 kHz)	14.336 mm Bilinear CMOS	3.5 x 3.5	8/10/12	Bilinear color	GigE Vision (5GBASE-T)
SW-4005BL-CXP NEW	C-mount	4K	42,000 (42 kHz)	14.336 mm Bilinear CMOS	3.5 x 3.5	8/10/12	Bilinear color	CoaXPress CXP-6 1-connector
SW-4000TL-10GE	F-mount M-42Ax1-mount	4K	65,963 (66 kHz)	30.72 mm Trilinear CMOS	7.5 x 7.5	8/10	Trilinear color	GigE Vision (10GBASE-T)
SW-4000TL-SFP	F-mount M-42Ax1-mount	4K	65,963 (66 kHz)	30.72 mm Trilinear CMOS	7.5 x 7.5	8/10	Trilinear color	GigE Vision (10GBASE-T via SFP+)
SW-4000TL-PMCL	F-mount M-42Ax1-mount	4K	65,963 (66 kHz)	30.72 mm Trilinear CMOS	7.5 x 7.5	8/10	Trilinear color	Power over Mini Camera Link Deca
SW-8001TL-MCL NEW	M-72 mount	8K	33,000 (33 kHz)	57.344 mm Trilinear CMOS	7.0 x 7.0	8	Trilinear-Color	Mini Camera Link Deca
SW-16000TL-CXP4A	M-95 mount	16K	100,000 (100 kHz)	81,92 mm Trilinear CMOS	5,0 x 5,0	8/10/12	Trilinear color	CoaXPress CXP-12 4-connectors

Monochrome line scan cameras

Model	Front View (Lens mount)	Resolution (Pixels/line)	Line rate lps (kHz)	Sensor format	Pixel size (µm)	Data output (Bit)	Color/ Mono	Interface
SW-2005M-5GE NEW	C-mount	2K	172,000 (172 kHz)	14.336 mm CMOS	7.0 x 7.0	8/10/12	Mono	GigE Vision (5GBASE-T)
SW-2005M-CXP NEW	C-mount	2K	172,000 (172 kHz)	14.336 mm CMOS	7.0 x 7.0	8/10/12	Mono	CoaXPress CXP-6 1-connector
SW-4005M-5GE NEW	C-mount	4K	84,000 (84 kHz)	14.336 mm CMOS	3.5 x 3.5	8/10/12	Mono	GigE Vision (5GBASE-T)
SW-4005M-CXP NEW	C-mount	4K	84,000 (84 kHz)	14.336 mm CMOS	3.5 x 3.5	8/10/12	Mono	CoaXPress CXP-6 1-connector
Sweep SW-4000M-PMCL	F-mount M-42Ax1-mount	4K	200,000 (200 kHz)	30.72 mm CMOS	7.5 x 7.5	8/10	Mono	Power over Mini Camera Link Deca
Sweep SW-8000M-PMCL	F-mount M-42Ax1-mount	8K	100,000 (100 kHz)	30.72 mm CMOS	3.75 x 5.78	8/10	Mono	Power over Mini Camera Link Deca
SW-8001M-MCL NEW	M-72 mount	8K	100,000 (100 kHz)	57.344 mm CMOS	7.0 x 7.0	8/10/12	Mono	Mini Camera Link Deca
SW-16000M-CXP4A NEW	M-95 mount	16K	277,000 (277 kHz)	81,92 mm CMOS	5,0 x 5,0	8/10/12	Mono	CoaXPress CXP-12 4-connectors
SW-16001M-MCL NEW	M-72 mount	16K	50,000 (50kHz)	57.344 mm CMOS	3.5 x 3.5	8/10	Mono	Mini Camera Link Deca

Datasheets and manuals for each model with detailed specifications are available at www.jai.com

Sweep+ Series

High performance prism-based line scan cameras combining precision, light sensitivity, fast line rates, ease of use, and multispectral options.

JAI's Sweep+ Series uses advanced prism technology to provide the best possible performance, precision, and versatility for line scan cameras in web-based or continuous imaging applications. Multiple line sensors are precisely-aligned to a common optical path providing solutions that are easier to set up, with higher color precision and less color degradation over time than tri-linear or quad-linear color cameras. With efficient manufacturing facilities and reliable and durable technology, these cameras are available at good price/performance points and offer low cost of ownership as well as supreme color line scan image quality.

The Sweep+ Series offers prism-based 4K and 8K line scan cameras with fully backwards-compatible 10 GigE interfaces.



Advanced prism technology supports up to four separate sensors for precise R-G-B, NIR and SWIR imaging capabilities. Depending on the model, the incoming light is split into 2, 3 or 4 spectral bands (SWIR-SWIR), (R-G-B), (R-G-B-NIR), or (R-G-B-SWIR) with perfect pixel-to-pixel alignment.

This is what you get with the Sweep+ Series:

- **Better images in all inspection situations:**
  Eliminates parallax issues (no halo effects) and eliminates complex alignment procedures associated with off-angle viewing or inspection of cylindrical or wavy objects.

- **Lower configuration costs:**
  Lower setup costs due to faster configuration and a single optical plane that simplifies positioning and encoding tasks.

- **High speed with high sensitivity:**
  Advanced sensor technology and better light transmittance through the optical assembly reduces illumination requirements, for better performance at lower cost. High throughput options include the industry's first fully backwards-compatible 10 GigE interfaces, as well as models with SFP+ fiber interfaces. The backwards compatibility supports NBASE-T speeds (5Gbps and 2.5Gbps) and standard 1 GigE (1000BASE-T). Also models with CoaXPress (CXP-12) and Camera Link interface.



Prism-based SWIR line scan camera with 2 sensors (SWIR + SWIR)

Model	Front View (Lens mount)	Resolution (Pixels/line)	Line rate lps	Sensor format	Pixel size (µm)	Data output (Bit)	Color/ Mono	Interface
WA-1000D-CL	 (M 52-mount)	2-InGaAs x 1024	39,230 (39 kHz)	25.6 mm	25 x 25	8/10/12	SWIR	 Camera Link Base/Medium

Datasheets and manuals for each model with detailed specifications are available at www.jai.com

Prism-based color line scan cameras with 3 sensors (R-G-B)

Model	Front View (Lens mount)	Resolution (Pixels/line)	Line rate lps (kHz)	Sensor format	Pixel size (µm)	Data output (Bit)	Color/ Mono	Interface
SW-8000T-10GE	 (F-mount)  (M52 mount)	3-CMOS x 8K	49,500 (49 kHz)	30.72 mm 3-CMOS	3.75 x 5.78	8/10	R-G-B	 GigE Vision (10GBASE-T)
SW-8000T-SFP	 (F-mount)  (M52 mount)	3-CMOS x 8K	49,500 (49 kHz)	30.72 mm 3-CMOS	3.75 x 5.78	8/10	R-G-B	 GigE Vision (10GBASE-T via SFP+)
SW-8000T-CXPA NEW	 (F-mount)  (M52 mount)	3-CMOS x 8K	49,500 (49 kHz)	30.72 mm 3-CMOS	3.75 x 5.78	8/10	R-G-B	 CoaXPress CXP-12 1-connector
SW-4000T-10GE	 (F-mount)  (M52 mount)	3-CMOS x 4K	97,000 (97 kHz)	30.72 mm 3-CMOS	7.5 x 7.5 or 7.5 x 10.5	8/10	R-G-B	 GigE Vision (10GBASE-T)
SW-4000T-SFP	 (F-mount)  (M52 mount)	3-CMOS x 4K	97,000 (97 kHz)	30.72 mm 3-CMOS	7.5 x 7.5 or 7.5 x 10.5	8/10	R-G-B	 GigE Vision (10GBASE-T via SFP+)
SW-4000T-CXPA NEW	 (F-mount)  (M52 mount)	3-CMOS x 4K	97,000 (97 kHz)	30.72 mm 3-CMOS	7.5 x 7.5 or 7.5 x 10.5	8/10	R-G-B	 CoaXPress CXP-12 1-connector
SW-4000T-MCL	 (F-mount)  (M52 mount)	3-CMOS x 4K	67,700 (67 kHz)	30.72 mm 3-CMOS	7.5 x 7.5 or 7.5 x 10.5	8/10	R-G-B	 Mini Camera Link Deca
LT-400CL	 (F-mount)  (M52 mount)	3-CMOS x 4K	16,180 (16 kHz)	28.67 mm 3 CMOS	7.0 x 7.0	8/10	R-G-B	 Camera Link Base/Medium
LT-200CL	 (F-mount)  (M52 mount)	3-CMOS x 2K	30,383 (30 kHz)	28.67 mm 3 CMOS	14.0 x 14.0	8/10	R-G-B	 Camera Link Base/Medium
SW-2001T-CL	 (F-mount)  (M52 mount)	3-CCD x 2K	19,048 (19 kHz)	28.7 mm 3-CCD	14.0 x 14.0	8/10	R-G-B	 Camera Link Base/Medium

Prism-based multispectral line scan cameras with 4 sensors (R-G-B + NIR) & (R-G-B + SWIR)

Model	Front View (Lens mount)	Resolution (Pixels/line)	Line rate lps (kHz)	Sensor format	Pixel size (µm)	Data output (Bit)	Color/ Mono	Interface
SW-8000Q-10GE	 (F-mount)  (M52 mount)	4-CMOS x 8K	36,000 (36 kHz)	30.72 mm 4-CMOS	3.75 x 5.78	8/10	R-G-B + NIR	 GigE Vision (10GBASE-T)
SW-8000Q-CXP2A NEW	 (F-mount)  (M52 mount)	4-CMOS x 8K	73,000 (73 kHz)	30.72 mm 4-CMOS	7.5 x 7.5 or 7.5 x 10.5	8/10	R-G-B+NIR	 CoaXPress CXP-12 2-connector
SW-8000Q-SFP	 (F-mount)  (M52 mount)	4-CMOS x 8K	36,000 (36 kHz)	30.72 mm 4-CMOS	3.75 x 5.78	8/10	R-G-B + NIR	 GigE Vision (10GBASE-T via SFP+)
SW-4000Q-CXP2A NEW	 (F-mount) (M52 mount)	4-CMOS x 4K	146,000 (146 kHz)	30.72 mm 4-CMOS	3.75 x 5.78	8/10	R-G-B+NIR	CoaXPress CXP-12 2-connector
SW-4000Q-10GE	(F-mount) (M52 mount)	4-CMOS x 4K	72,000 (72 kHz)	30.72 mm (4-CMOS)	7.5 x 7.5 or 7.5 x 10.5	8/10	R-G-B + NIR	GigE Vision (10GBASE-T)
SW-4000Q-SFP	(F-mount) (M52 mount)	4-CMOS x 4K	72,000 (72 kHz)	30.72 mm (4-CMOS)	7.5 x 7.5 or 7.5 x 10.5	8/10	R-G-B + NIR	GigE Vision (10GBASE-T via SFP+)
SW-4010Q-MCL	n/a. (M52 mount)	3-CMOS x 4K + 1-InGaAs x 1K	39,000 (39 kHz) *	30.72 mm & 26.5 mm	7.5 x 7.5 & 25 x 25	8/10/12	R-G-B + SWIR	Mini Camera Link Dual base
LQ-401-CL	(F-mount) (M52 mount)	4-CMOS x 4K	18,252 (18 kHz)	28.67 mm 4 CMOS	7.0 x 7.0	8/10	R-G-B + NIR	Camera Link Base/Medium
LQ-201-CL	(F-mount) (M52 mount)	4-CMOS x 2K	33,014 (33 kHz)	28.67 mm 4 CMOS	14.0 x 14.0	8/10	R-G-B + NIR	Camera Link Base/Medium
SW-2001Q-CL	(F-mount) (M52 mount)	4-CCD x 2K	19,048 (19 kHz)	28.7 mm 4-CCD	14.0 x 14.0	8/10	R-G-B + NIR	Camera Link Base/Medium

* Line rate shown is for 2K R-G-B plus 1K SWIR resolution

Datasheets and manuals for each model with detailed specifications are available at www.jai.com

Wave Series

High-performance area scan and line scan cameras featuring a single InGaAs sensor capable of detecting Short-Wave Infrared (SWIR) light.

The JAI Wave Series includes area scan and line scan cameras typically equipped with InGaAs (indium gallium arsenide) sensors capable of detecting Short-Wave Infrared (SWIR) light. SWIR imaging is increasingly used in machine vision for inspection, measurement, and monitoring—enabling applications that make the "invisible world visible."

By extending imaging beyond the visible spectrum, JAI's Wave cameras reveal hidden details and provide additional data such as moisture content, material variations, and defects with enhanced contrast. This leads to improved accuracy and efficiency across a wide range of industrial machine vision applications.

Area scan SWIR cameras with extended sensitivity into the visible spectrum.
The Wave Series includes an InGaAs-based area scan model (WAA-models) with resolutions of 1.3 megapixels, offering a frame rate of up to 90 frames per second. An advanced sensor design allows more visible light photons to reach the InGaAs sensor layer, resulting in high quantum efficiency for both visible and SWIR wavelengths.

With a spectral response ranging from 400 nm to approximately 1700 nm, the WAA-1300-GE-TEC model can simultaneously capture both visible and short-wave infrared image data using a single camera. This enables lower system costs and reduces the need for complex image processing.

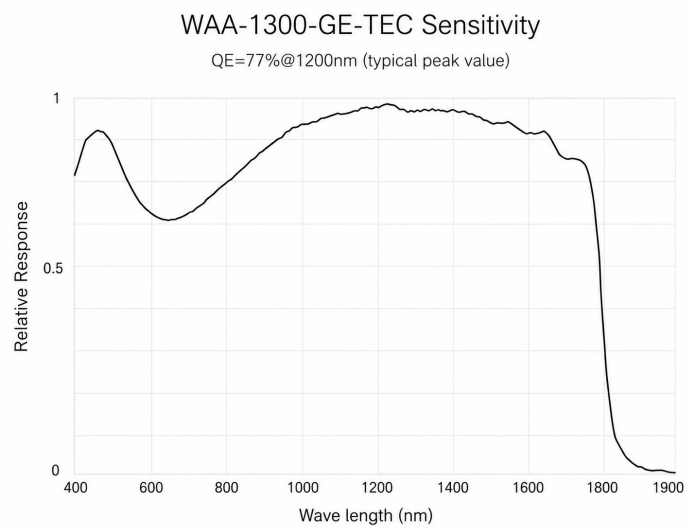
Line Scan SWIR cameras with large pixels and 14-bit output
The Wave Series also includes line scan cameras (WAL-models) with InGaAs sensor technology. Two models are available: a 1K (1024 pixels) and a 2K (2048 pixels) version, offering maximum line rates of 29 kHz and 40 kHz, respectively. Both models feature image sensors with large 12.5 µm square pixels, enabling improved light collection in low-light conditions and delivering a higher signal-to-noise ratio for cleaner, less noisy images. Unique 2k sensor setup allows the usage of C-mount lenses for both cameras (12 mm optical format). In addition to 8-, 10-, and 12-bit outputs, both cameras also support 14-bit video output, providing up to 16,384 grayscale levels for enhanced detection of material differences, defects, and moisture variations.



SWIR area scan camera (model: WAA-1300-GE-TEC). Features single-stage thermo-electric cooling (TEC).



SWIR line scan camera (model: WAL-2001-GE)



The advanced sensor design in the WAA-1300-GE area-scan model enables more photons in the visible range to reach the InGaAs sensor layer, resulting in high quantum efficiency across both visible and SWIR wavelengths (400–1700 nm).

Area scan cameras for visible and Short-Wave Infrared (SWIR) imaging

Model	Front View (Lens mount)	Resolution Megapixels (MP) (horizontal x vertical pixels)	Frame rate	Sensor format	Pixel size (µm)	Data output (Bit)	Color/Mono	Sensor name	Interface
NEW WAA-1300-GE-TEC	(C-mount)	1.3 MP (1280 x 1024)	90	½"	5.0 x 5.0	8/10/12	Mono (Visible+ SWIR)	IMX990	GigE Vision (1000BASE-T)

Line scan cameras for Short-Wave Infrared (SWIR) imaging

Model	Front View (Lens mount)	Resolution (Pixel/line)	Line rate lps (kHz)	Sensor format	Pixel size (µm)	Data output (Bit)	Color/Mono	Sensor name	Interface
NEW WAL-2001-GE	(C-mount)	2K (2048 in line)	40,000 (40 kHz)	12.8 mm (2 x 1k with pixel shift)	12.5 x 12.5	8/10/12/14	Mono (SWIR)	Custom InGaAs	GigE Vision (1000BASE-T
NEW WAL-1001-GE	(C-mount)	1K (1024 in line)	29,000 (29 kHz)	12.8 mm	12.5 x 12.5	8/10/12/14	Mono (SWIR)	Custom InGaAs	GigE Vision (1000BASE-T

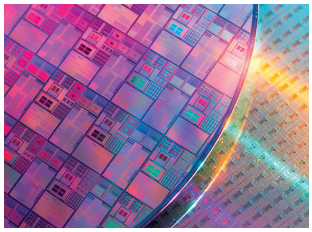
The Wave Series cameras are well suited in a broad range of industrial inspection tasks including:



Food sorting and grading
Moisture and contamination detection, foreign material inspection, and quality grading based on bruising, ripeness, or early mold growth.



Recycling and material sorting
Sorting of similar plastics such as PET, PE, PP, and PS, as well as separation of black and dark plastics.



Semiconductor wafer inspection
Revealing hidden cracks, supporting surface uniformity checks, edge inspection, and accurate wafer alignment.



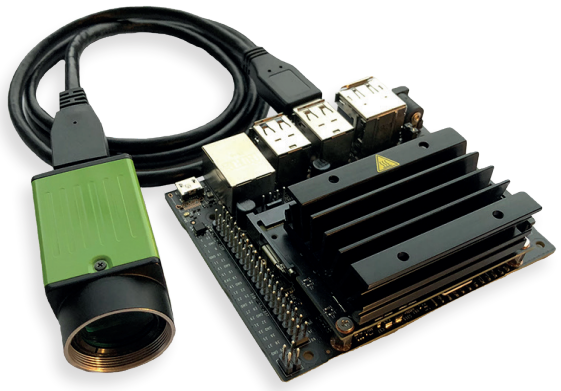
Packaging inspection
Inspection of seal areas, including heat seals and zipper closure misalignments, as well as detection of foreign materials and fill-level inconsistencies.

SDK and Control Tools

Standards-based software helps you to operate, explore, and develop.

JAI provides a variety of free software tools to get you started or to take you all the way to a finished application. The eBUS SDK for JAI is a robust software package featuring a huge library of sample code to provide a quick-start platform for a wide range of development projects. The eBUS SDK for JAI complies fully with the GigE Vision®, USB3 Vision® and GENiCAM™ standards providing a clean, modular architecture with a single set of functions to simplify coding. Of course, JAI cameras are also compatible with a wide range of third-party software libraries capable of supporting the most complex machine vision applications.

For basic camera control, the eBUS Player for JAI allows users to control the parameters of GigE Vision and USB3 Vision cameras by providing access to their GenICam-compliant XML files. The player receives video and allows users to view streaming data and adjust device configuration settings to determine optimal settings for the vision system. For cameras equipped with Camera Link or CoaXPress interfaces, specialized control tool software is provided either by JAI or by frame grabber manufacturers, again by leveraging the standards-driven design of the cameras.



With JAI's software solutions you get:

- **Fast and easy setup:**
  The eBUS Player for JAI's graphical user interface allows the user to see and activate all the available features and functions of the connected GigE Vision or USB3 Vision cameras quickly and easily based on an XML file stored within the camera's firmware. By following a few simple steps in the manual, you can start streaming live video within minutes to verify basic operating parameters. Similar capabilities are provided through the specialized control tools for Camera Link and CoaXPress cameras.

- **Support for Windows, Linux, and embedded platforms:**
  JAI's free SDK is available in versions supporting Windows and several Linux distributions, as well as a version compatible with the Linux-for-ARM processors in the NVIDIA Jetson family of embedded processor boards. It is also compatible with the JAI Developer Suite, a high-level API that streamlines code writing and provides easy integration with the OpenCV computer vision software library.

- **Extensive third-party compatibility:**
  JAI's support of industry standards like GenICam, and GenTL provides compatibility with a wide range of popular third-party software tools and libraries for machine vision and/or scientific application development. Contact JAI regarding specific software compatibility questions.

A free SDK supports Windows, Linux, and Linux for ARM embedded system development.

The perfect software starting point











GiGE VISION™

5GiGE VISION™

10GiGE VISION™

USB VISION™

CAMERA Link®

CoaXPress

GEN<i>CAM

CAMERA SELECTION CHART: **AREA SCAN CAMERAS**, SINGLE - SENSOR

Frames/ second	0.3 – 4.0 Megapixels	5.0 - 9.0 Megapixels	12.0 – 20.0 Megapixels	20.1 - 45.0 Megapixels
130-260*	GO-2400-PMCL 2.35 MP 165 FPS GOX-2402-USB 2.3 MP 162 FPS GO-2400-USB 2.35 MP 160 FPS	SP-5000-CXP4 5 MP 253 FPS SP-5000-CXP2 5 MP 211 FPS	SP-12000-CXP4 12 MP 189 FPS	SP-25000-CXP4A 25 MP 150 FPS
91-129	GOX-3200-USB 3.2 MP 119 FPS	GOX-5105-5GE 5.1 MP 103 FPS GOX-5105-CXP 5.1 MP 112 FPS GO-5000-PMCL 5 MP 107 FPS GO-5000M-PMCL-UV 5 MP 107 FPS		
71-90	WAA-1300-GE-TEC 1.3 MP 90 FPS	GOX-5102-USB 5 MP 74 FPS GO-5100-USB 5 MP 74 FPS GO-5100MP-USB 5 MP 74 FPS GOX-8105-CXP 8.1 MP 71 FPS GOX-8105-5GE 8.1 MP 66 FPS GO-8105M-5GE-UV 8.1 MP 66 FPS		
61-70		SP-5000-USB 5 MP 62 FPS GO-5000-USB 5 MP 62 FPS GO-5000M-USB-UV 5 MP 62 FPS	SP-12400-PMCL 12 MP 64 FPS	
51-60	GOX-3201-USB 3.2 MP 55 FPS GOX-2402-PGE 2.3 MP 50 FPS			SP-45000-CXP4A 45 MP 52 FPS SP-45000-CXP4 45 MP 51 FPS
41-50	GOX-2400-PGE 2.35 MP 48 FPS		GOX-12405-CXP 12.4 MP 47 FPS GOX-12405-5GE 12.4 MP 43 FPS	
31-40	GOX-3201-PGE 3.2 MP 36 FPS GO-2401-PGE 2.35 MP 33 FPS	GOX-5103-USB 5 MP 35 FPS GO-5101-PMCL 5 MP 35 FPS GOX-8901-USB 8.9 MP 32 FPS	GOX-16205-CXP 16.2 MP 36 FPS GOX-16205-5GE 16.2 MP 33 FPS	SP-45001-CXP2A 45 MP 38 FPS SP-45001-CXP4 45 MP 38 FPS
21-30		GOX-5105-PGE 5.1 MP 23 FPS GOX-5103-PGE 5 MP 22 FPS GO-5100-PGE 5 MP 22 FPS GO-5100MP-PGE 5 MP 22 FPS GO-5000-PGE 5 MP 22 FPS GO-5000M-PGE-UV 5 MP 22 FPS GO-5101-PGE 5 MP 22 FPS	SP-20000-CXP2 20 MP 30 FPS SP-20000-PMCL 20 MP 30 FPS SP-12401-USB 12.4 MP 23 FPS GOX-12401-USB 12.4 MP 23 FPS	GOX-20405-CXP 20.3 MP 29 FPS GOX-20405-5GE 20.3 MP 27 FPS GOX-24505-CXP 24.5 MP 24 FPS GOX-24505-5GE 24.5 MP 22 FPS
4-20		GOX-6409-PGE 6.3 MP 18 FPS GOX-8105-PGE 8.1 MP 14 FPS GOX-8901-PGE 8.9 MP 13 FPS	SP-20000-USB 20 MP 16 FPS SP-12401-PGE 12.4 MP 9 FPS GOX-12405-PGE 12.4 MP 9 FPS GOX-12401-PGE 12.4 MP 9 FPS GOX-12409-PGE 12.2 MP 9 FPS GOX-16205-PGE 16.2 MP 7 FPS GOX-20409-PGE 20 MP 5 FPS	GOX-20405-PGE 20.3 MP 5 FPS GOX-24505-PGE 24.5 MP 4 FPS

GOX= Go-X Series (see page 4) **GO**= Go Series (see page 8) **SP**= Spark Series (see page 10) **WAA** = Wave Series (see page 22)

*) Higher frames can be obtained by using Region of Interest (ROI). ROI is available in selected models.
All JAI area scan cameras are available in color and monochrome versions except for polarized and UV models.

= Visible color & mono
= Polarization
= UV Sensitive
= SWIR monochrome

CAMERA SELECTION CHART: **AREA SCAN CAMERAS**, MULTI-SENSOR

Frames/ second	1.6 Megapixels	3.2 Megapixels	5.1 Megapixels
151-250	FS-1600D-10GE 2x1.6 MP 226 FPS CUSTOM FSFE-1600D-10GE 2x1.6 MP 226 FPS FS-1600T-10GE-NNM 3x1.6 MP 213 FPS CUSTOM FSFE-1600T-10GE 3x1.6 MP 213 FPS		
41-150	AP-1600T-PMCL 3x1.6 MP 126 FPS Note 2 AP-1600T-USB 3x1.6 MP 78 FPS	FS-3200D-10GE 2x3.2 MP 123 FPS CUSTOM FSFE-3200D-10GE 2x3.2 MP 123 FPS FS-3200T-10GE-NNC 3x3.2 MP 107 FPS CUSTOM FSFE-3200T-10GE 3x3.2 MP 107 FPS AP-3200T-10GE 3x3.2 MP 106 FPS AP-3200T-PMCL 3x3.2 MP 55 FPS	AP-5100T-CXPA 3x5.1 MP 75 FPS AP-5100T-MCL 3x5.1 MP 51 FPS
31-40		Note 1 AP-3200T-USB 3x3.2 MP 38 FPS	AP-5100T-5GE 3x5.1 MP 34 FPS
21-30	AP-1600T-PGE 3x1.6 MP 24 FPS		
10-20		AP-3200T-PGE 3x3.2 MP 12 FPS	

AP= Apex Series (see page 12) FS= Fusion Series (see page 16)

Note 1: Model variants of AP-3200T-USB:
AP-3200T-USB (Green housing)
AP-3200T-USB-LS (LS = White housing, standard dust suppression)
AP-3200T-USB-LSX (LSX = White housing, maximum dust suppression)
AP-3200T-USB-NF (NF = No IR-cut filter, green housing)
AP-3200T-USB-NF-LS (NF-LS = No IR-cut filter, white housing, standard dust suppression)
AP-3200T-USB-NF-LSX (NF-LSX = No IR-cut filter, white housing, maximum dust suppression)

Note 2: Model variants of AP-1600T-USB:
AP-1600T-USB (Green housing)
AP-1600T-USB-LSX (LSX = White housing, maximum dust suppression)
AP-1600T-USB-NF (NF = No IR-cut filter, green housing)
AP-1600T-USB-NF-LSX (NF-LSX = No IR-cut filter, white housing, maximum dust suppression)

- 3-CMOS Red/Green/Blue
- 3-CMOS: Bayer-NIR-NIR multispectral
- 3-CMOS: Monochrome-NIR-NIR multispectral
- CUSTOM 3-CMOS: Flex-Eye custom multispectral
- 2-CMOS: Bayer-NIR multispectral
- CUSTOM 2-CMOS: Flex-Eye custom multispectral

CAMERA SELECTION CHART-INTERFACES: AREA SCAN CAMERAS, SINGLE - SENSOR

	Models with USB3 Vision interface USB = USB3 Vision:	Models with GigE Vision interface 10GE = 10GBASE-T GigE Vision 5GE = 5GBASE-T GigE Vision PGE = 1000BASE-T GigE Vision	Models with CoaXPress interface CXP = CoaXPress with 1-connector: CXP2 = CoaXPress with 2-connectors: CXP4 = CoaXPress with 4-connectors	Models with Camera Link interface CL = Camera Link MCL = Mini Camera Link PMCL = Power over Mini Camera Link
20.1 - 45.0 Megapixels		GOX-24505-5GE 24.5 MP 22 FPS GOX-24505-PGE 24.5 MP 4 FPS GOX-20405-5GE 20.3 MP 27 FPS GOX-20405-PGE 20.3 MP 5 FPS	SP-45000-CXP4A 45 MP 52 FPS SP-45000-CXP4 45 MP 51 FPS SP-45001-CXP2A 45 MP 38 FPS SP-45001-CXP4 45 MP 38 FPS SP-25000-CXP4A 25 MP 150 FPS GOX-24505-CXP 24.5 MP 24 FPS GOX-20405-CXP 20.3 MP 29 FPS	
12.0 – 20.0 Megapixels	SP-20000-USB 20 MP 16 FPS SP-12401-USB 12.4 MP 23 FPS GOX-12401-USB 12.4 MP 23 FPS	GOX-20409-PGE 20 MP 5 FPS GOX-16205-5GE 16.2 MP 33 FPS GOX-16205-PGE 16.2 MP 7 FPS GOX-12405-5GE 12.4 MP 43 FPS GOX-12405-PGE 12.4 MP 9 FPS SP-12401-PGE 12.4 MP 9 FPS GOX-12401-PGE 12.4 MP 9 FPS GOX-12409-PGE 12.2 MP 9 FPS	SP-20000-CXP2 20 MP 30 FPS GOX-16205-CXP 16.2 MP 36 FPS GOX-12405-CXP 12.4 MP 47 FPS SP-12000-CPX4 12 MP 189 FPS	SP-20000-PMCL 20 MP 30 FPS SP-12400-PMCL 12.4 MP 64 FPS
5.0 - 9.0 Megapixels	GOX-8901-USB 8.9 MP 32 FPS SP-5000-USB 5 MP 62 FPS GO-5000-USB 5 MP 62 FPS GO-5000M-USB-UV 5 MP 62 FPS GO-5100-USB 5 MP 62 FPS GO-5100MP-USB 5 MP 74 FPS GOX-5102-USB 5 MP 74 FPS GOX-5103-USB 5 MP 35FPS	GOX-8901-PGE 8.9 MP 13 FPS GOX-8105-5GE 8.1 MP 66 FPS GO-8105M-5GE-UV 8.1 MP 66 FPS GOX-8105-PGE 8.1 MP 14 FPS GOX-6409-PGE 6.3 MP 18 FPS GOX-5105-5GE 5.1 MP 103 FPS GOX-5105-PGE 5.1 MP 23 FPS GO-5000-PGE 5 MP 22 FPS GO-5000M-PGE-UV 5 MP 22 FPS GO-5100-PGE 5 MP 22 FPS GO-5100MP-PGE 5 MP 22 FPS GO-5101-PGE 5 MP 22 FPS GOX-5103-PGE 5 MP 22 FPS	GOX-8105-CXP 8.1 MP 71 FPS GOX-5105-CXP 5.1 MP 112 FPS SP-5000-CPX4 5 MP 253 FPS SP-5000-CXP2 5 MP 211 FPS	GO-5000-PMCL 5 MP 107 FPS GO-5000M-PMCL-UV 5 MP 107 FPS GO-5101-PMCL 5 MP 35 FPS
0.3 – 4.0 Megapixels	GOX-3200-USB 3.2 MP 119 FPS GOX-3201-USB 3.2MP 55 FPS GO-2400-USB 2.35 MP 160 FPS GOX-2402-USB 2.3 MP 162 FPS	GOX-3201-PGE 3.2 MP 36 FPS GO-2400-PGE 2.35 MP 48 FPS GO-2401-PGE 2.35 MP 33 FPS GOX-2402-PGE 2.3 MP 50 FPS WAA-1300-GE-TEC 1.3 MP 90 FPS		GO-2400-PMCL 2.35 MP 165 FPS

GOX= Go-X Series (see page 4) GO= Go Series (see page 8) SP= Spark Series (see page 10) WAA = Wave Series (see page 22)

= Visible color & mono = Polarization = UV Sensitive = SWIR monochrome

CAMERA SELECTION CHART-INTERFACES: AREA SCAN CAMERAS, MULTI-SENSOR

	Models with USB3 Vision interface USB = USB3 Vision:	Models with GigE Vision interface 10GE = 10GBASE-T GigE Vision 5GE = 5GBASE-T GigE Vision PGE = Power over Ethernet/GigE Vision	Models with CoaXPress interface CXP = CoaXPress with 1-connector: CXP2 = CoaXPress with 2-connectors: CXP4 = CoaXPress with 4-connectors	Models with Camera Link interface CL = Camera Link MCL = Mini Camera Link PMCL = Power over Mini Camera Link
2.1 – 4.0 Megapixels	AP-1600T-USB | 3x1.6 MP | 79 FPS AP-3200T-USB | 3x3.2 MP | 38 FPS	AP-5100T-5GE | 3x5.1 MP | 34 FPS AP-3200T-10GE | 3x3.2 MP | 106 FPS AP-3200T-PGE | 3x3.2 MP | 12 FPS AP-1600T-PGE | 3x1.6 MP | 24 FPS FS-3200D-10GE | 2x3.2 MP | 123 FPS CUSTOM FSFE-3200D-10GE | 2x3.2 MP | 123 FPS FS-3200T-10GE-NNC | 3x3.2 MP | 107 FPS CUSTOM FSFE-3200T-10GE | 3x3.2 MP | 107 FPS	AP-5100T-CXPA | 3x5.1 MP | 75 FPS	AP-5100T-MCL | 3x5.1 MP | 51 FPS AP-3200T-PMCL | 3x3.2 MP | 55 FPS AP-1600T-PMCL | 3x1.6 MP | 126 FPS
1.0 – 2.0 Megapixels		FS-1600D-10GE | 2x1.6 MP | 226 FPS CUSTOM FSFE-1600D-10GE | 2x1.6 MP | 226 FPS CUSTOM FSFE-1600T-10GE | 3x1.6 MP | 213 FPS FSFE-1600T-10GE-NNM | 3x1.6 MP | 213 FPS		

AP= Apex Series (see page 12) FS= Fusion Series (see page 16) FSFE= Fusion Flex-Eye (see page 16)

- 3-CMOS Red/Green/Blue
- 3-CMOS: Bayer-NIR-NIR multispectral
- 3-CMOS: Monochrome -NIR-NIR- multispectral
- 2-CMOS: Bayer-NIR multispectral
- CUSTOM 3-CMOS: Flex-Eye custom multispectral
- CUSTOM 2-CMOS: Flex-Eye custom multispectral

CAMERA SELECTION CHART: LINE SCAN CAMERAS

Line Rate:	1K (1024 pixels) & 2K (2048 pixels)	4K (4096 pixels)	8K (8192) and 16K (16384 pixels)
101,000-277,000 (101-277 kHz)	(Monochrome) SW-2005M-5GE 2K 172 kHz (Monochrome) SW-2005M-CXP 2K 172 kHz	(Monochrome) SW-4000M-PMCL 4K 200 kHz (Prism) SW-4000Q-CXP2A 4K 146 kHz	(Monochrome) SW-16000M-CXP4A 16K 277 kHz
90,000-100,000 (90-100 kHz)		(Prism) SW-4000T-10GE 4K 97 kHz (Prism) SW-4000T-SFP+ 4K 97 kHz (Prism) SW-4000T-CXPA 4K 97 kHz	(Triliniar) SW-16000TL-CXP4A 16K 100 kHz (Monochrome) SW-8001M-MCL 8K 100 kHz (Monochrome) SW-8000M-PMCL 8K 100 kHz
70,000-89,000 (70-89 kHz)		(Monochrome) SW-4005M-5GE 4K 84 kHz (Monochrome) SW-4005M-CXP 4K 84 kHz (Prism) SW-4000Q-10GE 4K 72 kHz (Prism) SW-4000Q-SFP+ 4K 72 kHz	(Prism) SW-8000Q-CXP2A 8K 73 kHz
40,000-69,000 (40-69 kHz)	(Triliniar) SW-2005TL-5GE 2K 44 kHz (Triliniar) SW-2005TL-CXP 2K 44 kHz (SWIR) WAL-2001-GE 2K 40 kHz	(Prism) SW-4000T-MCL 4K 68 kHz (Triliniar) SW-4000TL-PMCL 4K 66 kHz (Triliniar) SW-4000TL-10GE 4K 66 kHz (Triliniar) SW-4000TL-SFP+ 4K 66 kHz (Biliniar) SW-4005BL-5GE 4K 42 kHz (Biliniar) SW-4005BL-CXP 4K 42 kHz	(Monochrome) SW-16001M-MCL 16K 50 kHz (Prism) SW-8000T-10GE 8K 49 kHz (Prism) SW-8000T-SFP 8K 49 kHz (Prism) SW-8000T-CXPA 8K 49 kHz
15,000-39,000 (15-39 kHz)	(Prism - SWIR) WA-1000D-CL 1K 39 kHz (Prism) LQ-201-CL 2K 33 kHz (Prism) LT-200-CL 2K 30 kHz (Prism) SW-2001Q-CL (CCD) 2K 19 kHz (Prism) SW-2001T-CL (CCD) 2K 19 kHz SWIR WAL-1001-GE 1K 15 kHz	(Prism) SW-4010Q-MCL 4K 39 kHz (Prism) LQ-401-CL 4K 18 kHz (Prism) LT-400-CL 4K 18 kHz	(Prism) SW-8000Q-10GE 8K 36 kHz (Prism) SW-8000Q-SFP 8K 36 kHz (Triliniar) SW-8001TL-MCL 8K 33 kHz
Pixels per line:			

(Biliniar) Bilinear: Red/Blue/Green

(Triliniar) Trilinear: Red/Green/Blue

(Prism) Prism 3-CMOS: Red/Green/Blue

(Prism) Prism 4-CMOS: Red/Green/Blue + NIR

(Prism) Prism 3-CMOS: Red/Green/Blue + 1-InGaAs (SWIR)

(Prism - SWIR) Prism 2-InGaAs (SWIR)

(SWIR) 1-InGaAs (SWIR)

(Monochrome) 1-CMOS: Monochrome

INTERFACE, DATA THROUGHPUT AND CABLE LENGTH

CoaXPress

CXP = CoaXPress with 1 x connector	CXP2 = CoaXPress with 2 x connectors	CXP4 = CoaXPress with 4 x connectors
In CXP-3 configuration Max interface throughput: 3.125 Gbit/s Effective data throughput: 312 MB/S Max cable length: 85 meters	**In CXP-3 configuration** Max interface throughput: 2 x 3.125 Gbit/s = 6.25 Gbit/s Effective data throughput: 625 MB/S Max cable length: 85 meters	**In CXP-3 configuration** Max interface throughput: 4 x 3.125 Gbit/s = 12.5 Gbit/s Effective data throughput: 1250 MB/S Max cable length: 85 meters
In CXP-6 configuration Max interface throughput: 6.25 Gbit/s Effective data throughput: 625 MB/S Max cable length: 35 meters	**In CXP-6 configuration** Max interface throughput: 2 x 6.25 Gbit/s = 12.5 Gbit/s Effective data throughput: 1250 MB/S Max cable length: 35 meters	**In CXP-6 configuration** Max interface throughput: 4 x 6.25 Gbit/s = 25 Gbit/s Effective data throughput: 2500 MB/S Max cable length: 35 meters
In CXP-12 configuration Max interface throughput: 12.5 Gbit/s Effective data throughput: 1250 MB/s Max cable length: 25 meters	**In CXP-12 configuration** Max interface throughput: 2 x 12.5 Gbit/s = 25 Gbit/s Effective data throughput: 2500 MB/s Max cable length: 25 meters	**In CXP-12 configuration** Max interface throughput: 4 x 12.5 Gbit/s = 50 Gbit/s Effective data throughput: 5000 MB/s Max cable length: 25 meters

GigE Vision / 5GigE Vision / 10GigE Vision

PGE = GigE Vision 1000BASE-T	5GE = GigE Vision (5GBASE-T)	10GE = GigE Vision (10GBASE-T)
Max interface throughput: 1 Gbit/s Effective data throughput: 115 MB/S Max cable length: 100 meters	Max interface throughput: 5 Gbit/s Effective data throughput: 560 MB/S Max cable length: 100 meters	Max interface throughput: 10 Gbit/s Effective data throughput: 1150 MB/S Max cable length: 100 meters

Camera Link / mini Camera Link

In Base configuration CL = Camera Link interface MCL = Mini Camera Link PMCL = Power Over Mini Camera Link	**In Medium configuration** CL = Camera Link interface MCL = Mini Camera Link PMCL = Power Over Mini Camera Link	**In Full configuration** CL = Camera Link interface MCL = Mini Camera Link PMCL = Power Over Mini Camera Link	**In full 80-bit Deca configuration** CL = Camera Link interface MCL = Mini Camera Link PMCL = Power Over Mini Camera Link
Max interface throughput: 2.0 Gbit/s Effective data throughput: 255 MB/S * Max cable length: 10 meters	Max interface throughput: 4.08 Gbit/s Effective data throughput: 510 MB/S* Max cable length: 10 meters	Max interface throughput: 5.44 Gbit/s Effective data throughput: 680 MB/S* Max cable length: 10 meters	Max interface throughput: 6.80 Gbit/s Effective data throughput: 850 MB/S* Max cable length: 7 meters

**) Depending on sensor tap configuration.*

USB3 Vision

USB = USB3 Vision Interface
Max interface throughput: 5 Gbit/s Effective data throughput: 400 MB/S Max cable length 3 – 5 meters

The USB3 Vision interface also supports "power over the interface" as a standard capability. (Except where the power requirements of the camera exceeds the capacity of the interface. Consult the documentation for details.)



Please also check out the online
Camera Selection Guide at www.jai.com

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