PRODUCT BROCHURE

2019

CHEETAH • TIGER • BOBCAT

MEDICAL & SCIENTIFIC • AUTOMATION & INSPECTION • MILITARY & AEROSPACE

HD-SDI BROADCASTING • TRANSPORTATION & TRAFFIC • AERIAL IMAGING

IMPERX™

BEST CAMERAS • BEST PRICE • BEST FIT

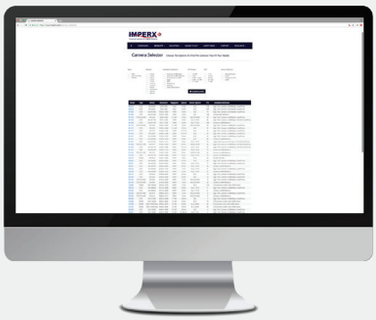
www.imperx.com

Best Quality at the Highest Standards

Rugged Camera Portfolio

For over 17 years, Imperx has been designing and manufacturing ruggedized and industrial cameras which operate in extreme conditions. Designed to perform to the highest standards in harsh environments, the extended operating temperature of our CCD and CMOS cameras is -40˚C to +85˚C with a MTBF > 660,000 hours @ 40˚C. With an aim to clearly understand customer's needs, Imperx finds a tailored approach and customized solutions for an endless array of applications, combined with the benefit and experience of our industry experts. These attributes have made Imperx one of the leading camera manufacturers worldwide, in various markets.

Options to Suit Your Needs



Our cameras are available in many resolutions: from **VGA** to our **50 megapixel super high-resolution camera** and with speeds from 2 fps to over 250 fps. All come with full software support and are available in a variety of interfaces including **10 GigE Vision®, HD-SDI, Power Over Ethernet (PoE)®, Camera Link®, GigE Vision®, USB3 Vision™, and CoaXpress cameras**. They are available with sensor options such as monocrome, color, and TrueSense Sparse CFA.

Reliable Cameras for **Industrial & Commercial** Applications

Imperx provides camera technology and imaging solutions for a diverse range of industries including security and defense, military, automation, machine vision, aerospace, aerial (UAV and drone), inspection, scientific (telescopy and astronomy), medical (endoscopy, microscopy), traffic monitoring, and many more application areas in digital imaging.

Imperx Standards of Quality

Quality Policy

Imperx Management and employees are committed to utilizing the Quality Management System to continually review and improve our products and processes while using innovative technology to meet and exceed our customer's quality, value, and service expectations, as well as to comply with external requirements in providing Digital Cameras and Imaging Solutions for industrial, scientific, medical, aerospace, geological, and security applications.

Code of **Conduct**

- Remain focused on technological innovation and leadership.
- Always strive for quality and excellence in everything we do.
- Continue to grow our business but remain attentive to all of our customers´ wants and needs.
- Stay true to our uncompromising principles of **dedication, respect, fairness, integrity and responsibility** towards customers, employees, suppliers and stakeholders alike.

Our mission is to remain a dominant player in a vibrant global imaging market by continuing to develop innovative imaging technologies and helping our customers reach their full potential with value-added quality products, synergetic cooperation, and support they can count on.

Stay Informed!

SIGN UP FOR OUR NEWSLETTER TO STAY TUNED ON EXCLUSIVE IMPERX UPDATES!

SCAN ME!

CMOS Cheetah Cameras

Easy to use, fast, precise **CMOS imaging**

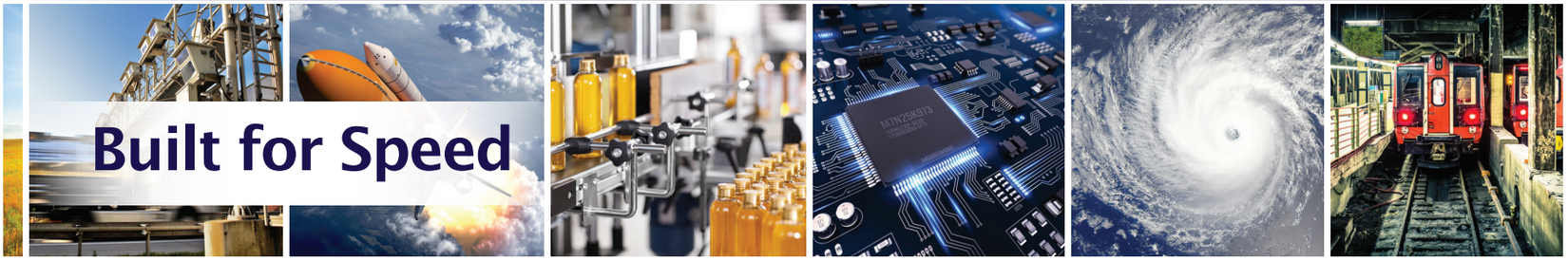
The Imperx **Cheetah CMOS** camera series provides customers with the quality, versatility, and rugged durability needed to meet their most complex and demanding requirements. Featuring the finest CMOS sensor technology from ON Semiconductor and Sony and advanced Imperx image processing, these cameras are ideal for industrial, scientific, medical, aerospace, transportation, and many other uses. An easy-to-use software configuration tool simplifies programming of camera settings and parameters.

The Cheetah series is the first high performance CMOS product line intended not only for machine vision, but also for surveillance, reconnaissance, aerospace, intelligent traffic systems, and more. These cameras have very fast frame rates, low noise, wide dynamic range, and excellent near-infrared sensitivity. They have an extremely flexible architecture so one camera can do multiple jobs (for example, a low resolution video camera and a high resolution still camera).

SCAN ME!

10G is Here!

SENSOR INFO				
CAMERA MODEL	**SENSOR PART NO.**	**SIZE**	**OPTICAL FORMAT**	**RESOLUTION**
C1920	Sony Pregius IMX-174	2MP	1/1.2"	1920 x 1080
C2000	Sony Pregius IMX-265	3MP	1/1.8"	2064 x 1544
C2010	Sony Pregius IMX-265	3MP	1/1.8"	1920 x 1080
C2020	Sony Pregius IMX-252	3MP	1/1.8"	2064 x 1544
C2400	Sony Pregius IMX-264	5MP	2/3"	2464 x 2056
C2410	Sony Pregius IMX-264	5MP	2/3"	2464 x 2056
C2410 Y/Z*	Sony Pregius IMX-250MY/ZR	5MP	2/3"	2464 x 2056
C2420	Sony Pregius IMX-250	5MP	2/3"	2464 x 2056
C2420Y/Z*	Sony Pregius IMX-250MY/ZR	5MP	2/3"	2464 x 2056
C2880	ON Semi KAC-06040	6MP	1"	2832 x 2128
C3210	Sony Pregius IMX-428	7.1MP	1.1"	3216 x 2208
C3220	Sony Pregius IMX-420	7.1MP	1.1"	3216 x 2208
C4010	Sony Pregius IMX-267	9MP	1"	4112 x 2176



Everything you need in **CMOS**

Our CMOS cameras give you control over your imaging with a wide range of models, features, and programming options. Advanced CMOS technology and Imperx engineering expertise provision cameras with excellent uniformity for the highest levels of image quality, unique features like wide dynamic range, flexible trigger/strobe options, and a choice of 10 GigE Vision®, Camera Link™, CoaXPress, Power Over Ethernet (PoE)®, USB3 Vision™, GigE Vision™ HD-SDI and 3G-SDI interfaces.

KEY FEATURES

- ***NEW!*** **10GigE Output Interface**
- Global shutter
- High frame rates
- Full array of output interfaces
- Full range of CMOS Cameras:
  2 to 31 megapixels

Imperx CMOS cameras help customers capture **vital production**, **performance, surveillance**, and **scientific information worldwide**.

INTERFACE TYPE						
CLF	**CXP**	**U3V**	**GEV / PoE**	**IP67-GEV**	**3G-SDI / HD-SDI**	**10G**
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			PoE			
			PoE	•	•	
•						
			PoE			
			PoE	•		
			PoE	•		
•						
•						
•	**2xCXP-6**	•				
			PoE	•		
•						
			PoE	•		

CMOS Cheetah Cameras

See Beyond the Glare with **Imperx Polarization Cameras**

Imperx C2410Y/Z and C2420 Y/Z cameras feature the Sony Pregius IMX-250MY/ZR micro-polarized CMOS sensor, available in monochrome (Z) or color (Y) versions and with a unique 2x2 pixel sub-array where each pixel within the sub-array blocks a different polarization angle (0, 45, 90, or 135 degrees). With this camera, the user can obtain images from four different polarization angles in EACH image capture. Imperx software allows the user to select/view images from each polarization angle or save raw image files with all four angles for further processing.

The cameras' rugged design, wide temperature range, and outstanding sensitivity make them the preferred choice for a broad range of applications including reducing glare off glass/water/painted surfaces, visualizing stress in transparent materials, 3D image reconstruction, factory automation, materials science, security, pharmaceutical, packaging, food sorting, and MORE. Contact us at sales@imperx.com and order yours TODAY.

SCAN ME!

SENSOR INFO				
CAMERA MODEL	SENSOR PART NO.	SIZE	OPTICAL FORMAT	RESOLUTION
C4020	Sony Pregius IMX-255	9MP	1"	4112 x 2176
C4080	ON Semi KAC-12040	12MP	4/3"	4000 x 3000
C4110	Sony Pregius IMX-304	12MP	1.1'	4112 x 3008
C4120	Sony Pregius IMX 253	12MP	1.1"	4112 x 3008
C4180	ON Semi Python NOIP1XX012KA	12MP	4/3"	4096 x 3072
C4190	ON Semi Python NOIP1XX012KA	12MP	APS-H	4096 x 3072
C4181	ON Semi Python NOIP1XX016KA	16MP	APS-H	4096 x 4096
C4191	ON Semi Python NOIP1XX016KA	16MP	APS-H	4096 x 4096
C5410	Sony Pregius IMX 387	17MP	4/3"	5472 x 3084
C4410	Sony Pregius IMX 367	20MP	4/3"	4432 x 4436
C5180	ON Semi Python NOIP1SXX25KA	25MP	APS-H	5120 x 5120
C5190	ON Semi Python NOIP1SXX25KA	25MP	APS-H	5120 x 5120
C6410	Sony Pregius IMX 342	31MP	APS-C	6480 x 4860

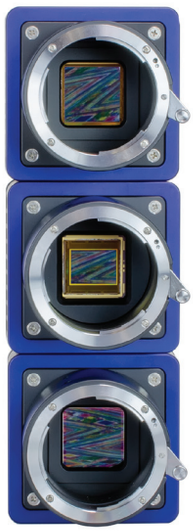
Exceptional Dynamic Range and Low Noise

Simplify Your System with our **Power Over Ethernet (PoE)® Cameras**

Imperx announces new **Cheetah CMOS** cameras with Sony Pregius image sensors and GigE Vision™ Power over Ethernet (PoE)® interface. PoE is a technology that enables network cables to use an existing data connection to carry electrical power over a single Cat5e or Cat6 ethernet cable. Because this cabling is inexpensive and reaches lengths of 100 meters, this interface can go the distance for you. Greatly simplifying any system design, Imperx PoE® cameras eliminate the need for extra power cabling so that you can enhance your productivity and re-distribute your resources where they really count. To learn more about our brand-new PoE® releases as well as our trusted, existing models with this interface, contact us today.

IP67 CAMERA ENCLOSURES

Coming soon, Imperx will offer several Power over Ethernet (PoE)® camera models with IP67 sealed enclosures which are rated to withstand complete immersion in up to 1 meter of water for 30 minutes. By combining Imperx's robust camera design with an IP67 rated housing, the cameras can be utilized in harsh environments.



INTERFACE TYPE						
CLF	CXP	U3V	GEV / PoE	IP67-GEV	3G-SDI / HD-SDI	10G
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•	2xCXP-6	•				
			PoE	•		
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•	2xCXP-6	•	GEV			
	4xCXP-6					
•	2xCXP-6	•	GEV			
	4xCXP-6					
			PoE			
			PoE			
•	2xCXP-6	•	GEV			•
	4xCXP-6					
			PoE			

New Tiger Camera Series Advances CCD **Performance & Value**

In 2018, Imperx added the **Tiger** series of cameras to its existing line of advanced digital CCD cameras. Like the Bobcat series, the Tiger series offers a variety of models, high quality, low noise, flexibility, and dependability, while offering several improvements and new capabilities:

- New imaging platform with latest sensor design and technology
- Resolutions up to 50MP
- Improved NIR sensitivity sensors
- Lower power requirements
- Reduced noise
- Ruggedized and Industrial versions
- Support for active/passive Canon EOS lens
- Simplified feature sets for easier use

The remarkable Tiger cameras use larger, faster sensors (1" to 57mm optical formats) and advanced processing technology to meet ever more demanding applications. Camera resolutions include 50, 47, 29, 16, 8.6, and 4 megapixels and offer a broad range of frame rates.

SCAN ME!

KEY FEATURES

- Ruggedized and Industrial Versions
- Forced Air cooling option available
- Full array of output interfaces
- Full range of CCD Cameras:
  Up to 50 megapixels

SENSOR INFO				
CAMERA MODEL	**SENSOR PART NO**	**SIZE**	**OPTICAL FORMAT**	**RESOLUTION**
T2040	ON Semi KAI-04070	4MP	4/3"	2072 x 2072
T3340	ON Semi KAI-08051	8MP	4/3"	3320 x 2496
T3640	ON Semi KAI-08670	8.6MP	32.0mm	3624 x 2424
T4840	ON Semi KAI-16070	16MP	43.2mm	4880 x 3232
T4940	ON Semi KAI-16050	16MP	32.3mm	4920 x 3280
T6640	ON Semi KAI-29050	29MP	43.3mm	6600 x 4400
T6641	ON Semi KAI-29052	29MP	43.3mm	6600 x 4400
T8040	ON Semi KAI-43140	43MP	43.3mm	8080 x 5400
T8810	ON Semi KAI-47051	47MP	57.0mm	8880 × 5300
T8820	ON Semi KAI-47051	47MP	57.0mm	8880 × 5300
T9040	ON Semi KAI-50140	50MP	51.7mm	10480 x 4840

Minimizing Costs with the Highest Quality

The Right Choice for **Any Budget, Any Scenario**

OUR LINE OF RUGGEDIZED CAMERAS FOR AEROSPACE AND DEFENSE APPLICATIONS

The aerospace and defense industries are an ideal match for Imperx's reliable, tough and competitively priced camera models. All Imperx cameras provide extended operational temperature range with excellent shock-vibration performance.

These products adhere to strict quality protocols and are designed to meet military standards such as MIL SPEC 810G, ensuring durable and dependable performance in the harshest environments.

Ruggedized and Industrial versions assure ***performance*** and ***value***.

RUGGEDIZED VERSION	INDUSTRIAL VERSION
• Tougher environments/ applications	• Durability in a wide range of applications
• Wider temperatures (-40C to +85C)	• Ideal for commercial temperatures (-10C to +60C)
• Greater shock and vibration	• Programming flexibility

IMPERX
TDI MODELS

Time-delayed integration (TDI) refers to an imaging technology used for observing high-speed moving object under low light conditions normally undetectable by classic CCD imaging. TDI mode preserves image quality and sensitivity in fast-moving objects. Select Imperx CCD models support TDI mode for space applications! Contact us for more information.

INTERFACE TYPE	
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CCD Bobcat Cameras

Time-tested with a **proven track record**

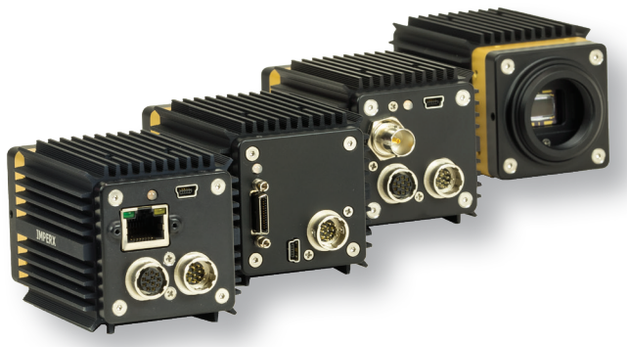
The **Bobcat 2.0** series of cameras are programmable, high quality, low noise, CCD cameras with a high-density FPGA for programmable features. They include 8, 10, 12 or 14-bit output and compatibility with popular output interfaces and range from VGA to 29-megapixel cameras. This series has MTBF of > 660,000 hours @ 40˚C and -40˚C to +85˚C Operating, -50˚C to +90˚C Storage.

The **Bobcat series** features advanced, fully programmable CCD cameras designed for imaging applications that require high quality images with powerful features and flexibility.

SCAN ME!

KEY FEATURES

- Standard and Overclocked modes
- Debounce Control
- Up to 8 ROIs
- 2x 12 bit LUTs
- Auto-Exposure Control/Auto-Gain control with Programmable limits
- Programmable trigger delay
- Auto White Balance
- Programmable frames per trigger & triggers per frame



SENSOR INFO					
CAMERA MODEL	SENSOR PART NO	SIZE	OPTICAL FORMAT	RESOLUTION	MAX FPS: CL
B1410	Sony ICX-285 EXview HAD	1.4 MP	2/3"	1392 x 1040	30
B3320	ON Semi KAI-08050	8 MP	4/3"	3312 x 2488	10.6
B3340	ON Semi KAI-08050	8 MP	4/3"	3312 x 2488	21
B4020	ON Semi KAI-11002	11 MP	43.3mm	4032 x 2688	6.4
B4820	ON Semi KAI-16000	16 MP	43.3mm	4904 x 3280	4.2
B4821	ON Semi KAI-16050	16 MP	APS-H	4920 x 3280	4.2
B4841	ON Semi KAI-16050	16 MP	32.36mm	4920 x 3280	8.8
B4822	ON Semi KAI-16070	16 MP	35mm	4880 x 3256	4.1
B4842	ON Semi KAI-16070	16 MP	43.2mm	4880 x 3265	7.9
B6620	ON Semi KAI-29050	29 MP	35mm	6600 x 4400	2.4
B6640	ON Semi KAI-29050	29 MP	43.3mm	6600 x 4400	4.7

Continuous Process **Monitoring/Recording**

Imperx's *patented* **EIPVR:** *EtherNet/IP™ Process Video Recorder*

EVENT ANALYSIS

Our comprehensive, yet easy-to-use, view utility allows the user to view recorded events with:

- User configurable playback speed
- Ability to crop video and save shorter video clips
- Ability to add bookmarks with user notes
- Automatically polls the video server for new videos
- ActiveX controls included

FEATURES

- Trigger via EtherNet/IP™
- File Server for Unlimited Video Storage
- IEEE-1588 Compliant
- ActiveX Controls
- Optional PoE Ring Light
- Multiple Camera Enclosures

SCAN ME!

RELIABLE CAMERA DESIGN

- Operating Temperature: -40° to +90°C
- MTBF > 660,000 hours
- Supports up to 4 cameras recording simultaneously in either monochrome or color

INTERFACE TYPE			
CLF	CXP	GEV	POE
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High-Performance Framegrabbers

The Best Choice for **High-Performance Vision Applications**

Imperx VCE series of frame grabber cards are professional, state of the art video capture cards, that allow users to view and store in real time mega-pixel video images from Camera Link, SDI and analog video sources onto notebook and desktop computers.

The cards are capable of capturing single or multiple frames, and standard AVI clips from any compliant video source. Each captured frame can be stamped with a user message along with the date and time of capture. The cards offer an easy to use camera configuration and viewer utility, allowing for fast integration of the card into demanding machine vision environments. A full software suite, including drivers, C/C++ SDK complete with sample source code and an application program, is provided with each VCE card.

Imperx leads the frame grabber market and was the first to introduce Camera Link®, HD-SDI and full analog video streaming to laptop computers. Our laptop and desktop frame grabbers feature "Self-Learn" software, and advancement that eliminated the need for camera configuration files. Contact us at sales@imperx.com and order yours TODAY.

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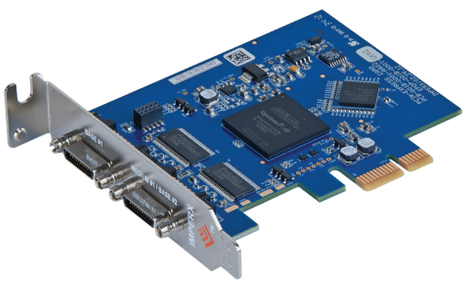

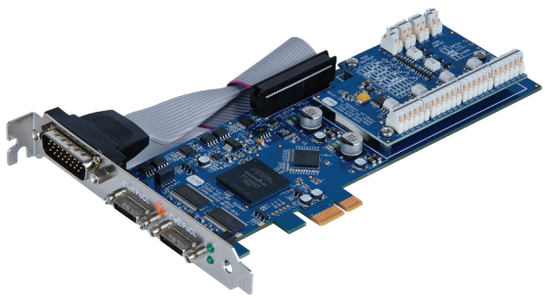

FRAMEGRABBER INFO

MODEL	FORM FACTOR	BANDWIDTH	INPUT
VCE-HDPCIe01	PCIe x 1 Desktop	2.5 Gbps	HD/SD-SDI, Single BNC with Loop Through Output
VCE-HDmPCIe01	Mini PCIe x 1 Desktop	2.5 Gbps	HD/SD-SDI, Single BNC with Loop Through Output
VCE-HDEX02	ExpressCard/34 Laptop	2.5 Gbps	HD/SD-SDI, Single BNC
VCE-HDEX03	ExpressCard/54 Laptop	2.5 Gbps	HD/SD-SDI, Single BNC
VCE-CLPCIe01	PCIe x 1 Desktop	2.5 Gbps	Base or Medium Camera Link® (HDR/SDR)
VCE-CLPCIe02	PCIe x 1 Desktop	2.5 Gbps	Base or Medium Camera Link® (HDR/SDR)
VCE-CLPCIe03	PCIe x 4 Desktop	10 Gbps	Base or Medium Camera Link® (HDR/SDR)
VCE-CLPCIe04	PCIe x 4 Desktop	10 Gbps	Base, Medium, Full or 80-bit Camera Link® (HDR/SDR)
VCE-CLEX01	ExpressCard/54 Laptop	2.5 Gbps	Base or Medium Camera Link® (HDR/SDR)
VCE-CLEX02	ExpressCard/34 Laptop	2.5 Gbps	Base Camera Link® (HDR/SDR)
VCE-ANEX01	ExpressCard/54 Laptop	2.5 Gbps	N/A
VCE-ANEX02	ExpressCard/54 Laptop	2.5 Gbps	N/A
VCE-ANEX03	ExpressCard/34 Laptop	2.5 Gbps	N/A
VCE-PRO-C	Cardbus (PCMCIA) Laptop	N/A	N/A

Industrial Components for Added Reliability

Simple Set-up, **Easy to Use**

Our line of Digital and Analog frame grabbers are designed to work with laptops, PDAs, and other mobile vision systems. All models use industrial components for added reliability, and provide the functionality, performance and versatility required for the most demanding mobile imaging applications. Our frame grabbers are noted for their ease of set-up and use.

KEY FEATURES

- Available in various form factors including PCIe x1 for desk tops, ExpressCard/54, ExpressCard/34 and PCMCIA for laptops
- Supports Base or Medium Camera Link®, SD/HD SDI and NTSC/PAL/RS170 interfaces
- PCI Express compliant providing 2.5 Gbps of bandwidth or Cardbus compliant providing 1 Gbps of bandwidth
- Intelligent scatter/gather DMA for fast, efficient use of PCI Express or Cardbus bandwidth and system memory
- Flow-through pipeline architecture for low latency
- Includes many advanced features such as look up tables, gamma correction, histograms, RGB gain/offset with auto-white balance, hex pixel dump, color space conversion, Bayer pattern interpolation, programmable pulse generators, etc.

PoCL® ExpressCard®

INPUT TYPE AND SPECS						
HDI-SDI	CL	PCI / PCI EXPRESS	ANALOG	SMPTE 292M 274M 296 M	DESKTOP	LAPTOP
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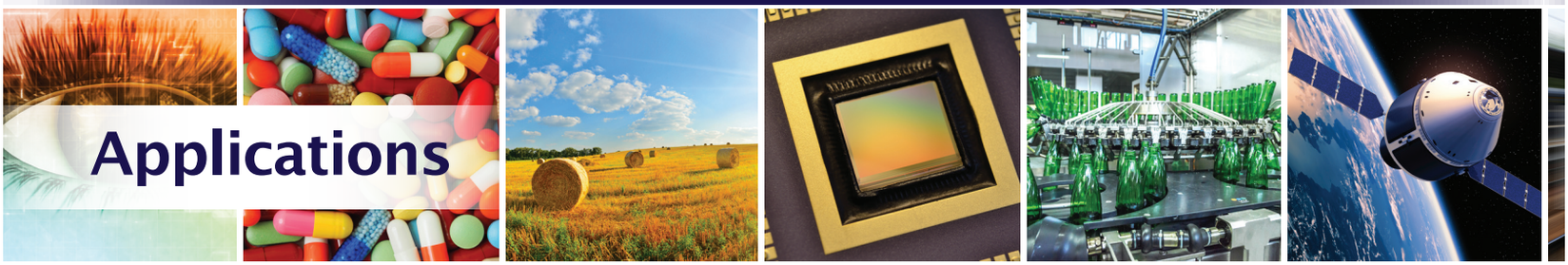

Applications

ACADEMIA
AERIAL IMAGING
AEROSPACE
AGRICULTURE
AUTOMATION
AUTOMOTIVE
BIOSCIENCES
CONSERVATION
DEFENSE
EARTH DRILLING
ELECTRONICS
FLAT PANEL INSPECTION
FLAW DETECTION
FOOD & PACKAGING
HEAVY MACHINERY
INSPECTION
LABORATORY
MACHINE TOOLS
MACHINE VISION
MANUFACTURING
MEASUREMENT
MEDICAL
MEDICAL RESEARCH
METROLOGY
MILITARY
NON-DESTRUCTIVE TESTING
OIL & GAS
PACKAGING
PARCEL SORTING
PHARMACEUTICAL
PIV
RAILROAD INSPECTION
RECONNAISSANCE
RED LIGHT ENFORCEMEMENT
RESEARCH
ROBOTICS
SEMICONDUCTOR
SOLAR PANEL INSPECTION
STEEL INDUSTRY
SURVEILLANCE
THREAT DETECTION
TRAFFIC MONITORING
TRANSPORTATION
UAV
WEB INSPECTION

*Have you seen our **Camera Selector?***

Choose The Options To Find
The Cameras That Fit Your Needs.

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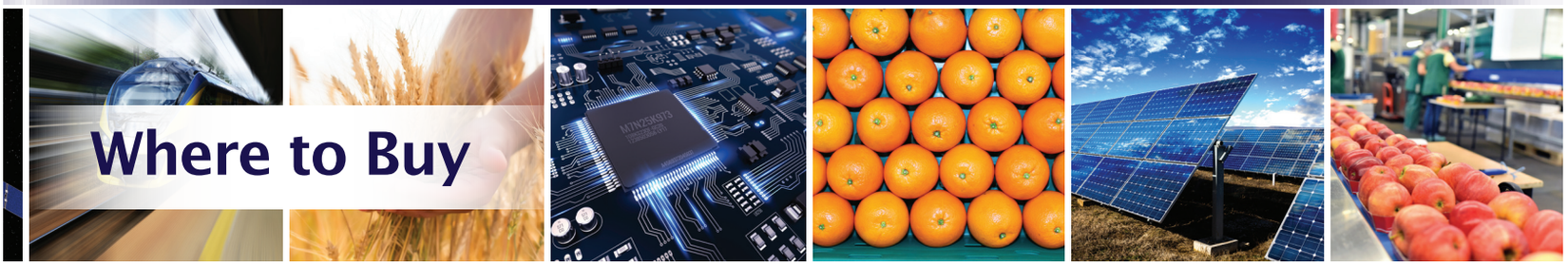

Imperx's Worldwide Presence

ASIA • EUROPE • UNITED STATES • AUSTRALIA

CANADA • SOUTH AMERICA • RUSSIA

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