

Vadzo Imaging Launches Innova GigE Camera Lineup for Robotics and Distributed Industrial Vision Systems

2 MP to 8.4 MP GigE camera lineup featuring Sony Starvis 2, Pregius S, Onsemi global shutter sensors, PoE, ONVIF, IEEE 1588 PTP, and VISPA NXT SDK

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/EINPresswire.com/ -- Vadzo Imaging today announced the [Innova ONVIF GigE camera](#) lineup, the [Innova-234CGS Global Shutter GigE Camera](#), [Innova-662CRS HDR GigE Camera](#), [Innova-900MGS Global Shutter GigE Camera](#), and [Innova-678 4K HDR ONVIF GigE Camera](#), purpose-built for robotics,

industrial automation, smart surveillance, medical devices, and distributed embedded vision deployments. Powered by the Onsemi AR0234, Sony STARVIS IMX662, Sony Pregius S IMX900, and Sony Starvis 2 IMX678 sensors, respectively, the four cameras combine long-distance GigE connectivity, IEEE 1588 PTP synchronization, PoE power delivery, and ONVIF-compliant streaming in a lineup designed for multi-camera robotic architectures that demand placement flexibility, frame-accurate synchronization, and network-managed operation.

Why GigE is the Right Interface for Robotics and Distributed Vision Applications

USB reliably operates approximately 5 meters. MIPI CSI-2 is constrained to board-level integration. For robotics architectures where cameras are distributed across robotic arms, mobile platforms, conveyor systems or inspection stations, these interfaces introduce hard limitations in placement, scalability, and system design.

GigE supports cable runs up to 100 meters over standard Cat5e/Cat6 while delivering both power and data via PoE over a single cable. This enables flexible camera placement across robotic systems without additional wiring complexity and allows cameras to be deployed across distributed nodes within a unified network architecture. ONVIF-compliant streaming enables direct integration with existing network infrastructure and video management systems already



Low Latency. Scalable. Built for Robotics
Vadzo Innova GigE Cameras for Robotics Applications
Engineered for conveyor-based sorting systems, dynamic warehouse aisles, and inline inspection across distributed multi-camera vision setups

Innova-234CGS

- 2MP - 3.2MP Resolution
- Up to 100m Cable Length
- Global & Rolling Shutter
- Up to 200° FOV
- Up to 120+ dB HDR
- 40°C to 85°C Operation

ROHS COMPLIANT | NDAA COMPLIANT | REACH COMPLIANT | ONVIF COMPLIANT | onsemi | SONY

Sony Starvis 2 IMX678 | Sony Starvis 2 IMX662 | Sony Pregius S IMX900 | Onsemi AR0234 Global Shutter

used in industrial environments.

IEEE 1588 PTP synchronization enables sub-microsecond timestamp alignment across multiple cameras, supporting stereo vision, sensor fusion, and coordinated perception across robotic systems. Combined with Ethernet transmission and low-latency streaming, GigE enables real-time data flow required for robotic navigation, manipulation, and inspection at scale.

"Robotics deployments increasingly require multi-camera systems that are distributed, synchronized, and network-managed rather than directly tethered to a single compute unit. The Innova GigE Camera lineup is designed around these architectures, combining long-distance connectivity, precise synchronization, and cost-efficient scaling for real-world robotic vision systems," said Ashu Gupta, Product Manager, Vadzo Imaging.

Innova-678CRS - 8.4MP Sony IMX678 STARVIS 2 HDR 4K ONVIF GigE Camera

The Innova-678CRS Sony Starivs2 4K ONVIF GigE camera brings 4K resolution and Sony's STARVIS 2 generation imaging to GigE deployments requiring both high spatial detail and reliable performance across day/night and variable-light conditions. The IMX678 sensor - 1/1.8" format, 2.0 µm pixel, 8.4MP (3856×2180) - delivers up to 110 dB HDR for accurate capture in high-contrast outdoor and mixed-illumination environments, with enhanced NIR sensitivity for after-dark and IR-assisted imaging. An auto-switching IR-cut filter enables seamless day/night transitions without manual intervention, making it well suited for perimeter security, smart city infrastructure, and outdoor inspection systems. GigE with PoE (802.3af) and GPIO support maintains the single-cable simplicity and trigger integration of the broader Innova lineup.

Key specs: 8.4MP (3856×2180) | Sony IMX678 STARVIS 2 | Rolling Shutter | 1/1.8" 2.0µmBSI Pixel | GigE (100/1000Base-T) | ONVIF | PoE 802.3af | HDR (110 dB) | NIR | Auto IR-Cut Filter | S-Mount (M12) | GPIO | -30°C to 70°C

Innova-234CGS - 2MP Onsemi AR0234 Global Shutter ONVIF GigE Camera

The Innova-234CGS Onsemi AR0234 Global Shutter GigE camera is built around the Onsemi AR0234 sensor with a 1/2.6" optical format and 3.0 µm pixel size, delivering 2MP (1920×1200) global shutter imaging over GigE with ONVIF compliance, PoE (802.3af), RJ45 connectivity, and GPIO support for trigger and synchronization, enabling distortion-free capture in high-speed robotics environments. Its global shutter architecture eliminates motion artifacts during rapid movement while 2MP resolution supports low-latency streaming with efficient data throughput across Ethernet networks. For robotics deployments, it enables precise tracking in robotic arms, conveyor systems, and pick-and-place operations, with GigE connectivity supporting distributed camera placement and simplified power and data delivery via PoE, and an operating range of -40°C to 85°C ensuring reliable performance in industrial conditions.

Key specs: 2MP (1920×1200) | Onsemi AR0234 | Global Shutter | 1/2.6" 3.0µm BSI Pixel | GigE (100/1000Base-T) | ONVIF | PoE 802.3af | H.264/H.265/MJPEG | RJ45 | GPIO | -40°C to 85°C

Innova-900MGS - 3.2MP Sony IMX900 Monochrome Global Shutter ONVIF GigE Camera

The Innova-900MGS Sony Pregius S™ IMX900 Global Shutter ONVIF GigE camera is powered by the Sony Pregius S™ IMX900 sensor with a 1/3.1" format and 2.25 µm pixel size, delivering 3.2MP (2064×1552) monochrome global shutter imaging with Quad HDR (up to 120dB), high NIR sensitivity, and fast auto-exposure over GigE with ONVIF compliance and PoE (802.3af), enabling high-precision imaging for robotics and industrial inspection systems. Its global shutter ensures distortion-free capture during high-speed operation while monochrome output improves sensitivity and reduces processing overhead for real-time vision pipelines. For robotics applications, it supports structured light, IR-based vision, and precision inspection workflows, with GigE connectivity enabling multi-camera deployment across distributed systems and reliable operation from -30°C to 70°C in demanding environments.

Key specs: 3.2MP (2064×1552) | Sony IMX900 | Global Shutter | 1/3.1" 2.25µm BSI Pixel | GigE (100/1000Base-T) | ONVIF | PoE 802.3af | Quad HDR (120dB) | NIR | RJ45 | -30°C to 70°C

Innova-662CRS - 2MP Sony IMX662 Low-Light HDR ONVIF GigE Camera

The Innova-662CRS Sony Starvis 2 IMX662 ONVIF GigE Camera pairs the Sony Starvis 2 IMX662 sensor with GigE, ONVIF Profile S and T compliance, PoE (802.3af), IEEE 1588 PTP synchronization, onboard dewarping, and up to 200° diagonal field of view, delivering a flexible imaging solution for robotics and industrial systems. At 2MP (1920×1080) and up to 60fps, its Fusion HDR and NIR sensitivity enable reliable imaging across low-light and variable lighting environments while maintaining low-latency streaming. For robotics deployments, the wide field of view reduces the number of cameras required for area coverage, PTP synchronization enables sub-microsecond timestamp alignment across multi-camera systems, and onboard dewarping reduces post-processing load on the host while GigE connectivity supports distributed camera placement with simplified power and data delivery via PoE.

Key specs: 2MP FHD (1920×1080) | Sony IMX662 | 1/2.8" | 2.9 µm | GigE | ONVIF Profile S/T | PoE 802.3af | IEEE 1588 PTP | Fusion HDR | NIR | Up to 200° DFOV | Onboard dewarping | -40°C to 85°C

VISPA NXT SDK: Camera Control for Developers

All Innova cameras are supported by Vadzo's VISPA NXT SDK, providing programmatic control over streaming, encoding, camera parameters, GPIO, and firmware updates. The SDK supports C, C++, and Python, with compatibility across Windows, Linux, and Android platforms for robotics and embedded vision development.

Robotics Applications

PTP synchronization across the Innova lineup enables frame-accurate coordination in multi-camera robotic systems, supporting stereo vision, sensor fusion, and distributed perception architectures. GigE networking allows multiple cameras to be deployed across robotic platforms with centralized or edge-based processing.

Perimeter Security, Smart City, and Day/Night Outdoor Imaging - Innova-678CRS 4K HDR ONVIF GigE camera

Outdoor surveillance nodes, smart city cameras, and perimeter security systems face a consistent challenge: Scenes shift from direct sunlight to deep shadow within a single frame, and day-to-night transitions require automatic optical adaptation. The Innova-678CRS addresses both with 110 dB HDR for high-contrast scene handling and an auto IR-cut filter that switches between colour and NIR modes without host-side intervention. At 8.4MP (3856×2180), it captures sufficient spatial detail for license plate identification, face detection at distance, and wide-area coverage with fewer camera nodes. GigE with PoE simplifies infrastructure in outdoor deployments where running dedicated power is impractical.

High-Speed Conveyor Sorting and Pick Systems: Innova-234CGS AR0234 Global Shutter GigE Camera

Parcel sorting lines, electronic assembly conveyors, and high-speed pick systems require distortion-free imaging to track fast-moving items without positional error. Rolling shutter introduces skew and motion artifacts at these speeds, directly impacting pick accuracy and placement timing. The Innova-234CGS delivers 2MP global shutter imaging over GigE, ensuring artifact-free capture during rapid motion while low-latency streaming and GPIO trigger support enable tight synchronization with robotic actuators across multi-station conveyor setups.

Autonomous Mobile Robots in Dynamic Warehouse Aisles: Innova-662CRS IMX662 Low-Light HDR GigE Camera

Warehouse aisles combine bright dock doors, dim storage zones, reflective floors, and moving obstacles, creating rapidly changing lighting conditions that impact navigation reliability. The Innova-662CRS combines Fusion HDR and NIR sensitivity to maintain consistent imaging across these transitions while its up to 200° DFOV enables wider environmental coverage with fewer cameras on mobile platforms. GigE connectivity supports stable, real-time streaming across fleet deployments, and PTP synchronization ensures aligned perception across multiple robots operating in the same facility.

Inline Quality Inspection and Surface Defect Detection: Innova-900MGS IMX900 Monochrome Global Shutter GigE Camera

Inline inspection systems for PCBs, machined parts, and packaged goods require high dynamic range and distortion-free capture to reliably detect fine defects such as scratches, misalignment,

and surface inconsistencies. The Innova-900MGS delivers 3.2MP monochrome global shutter imaging with Quad HDR and high NIR sensitivity, enabling consistent contrast and detail in structured light and IR-based inspection setups. Its global shutter ensures accurate frame capture on moving production lines while GigE networking enables synchronized multi-camera inspection across high-throughput manufacturing systems.

Availability

Vadzo Imaging's Innova ONVIF GigE camera lineup, including the Innova-234CGS, Innova-662CRS, and Innova-900MGS, is available for evaluation, prototyping, and production deployment across robotics and industrial automation systems. Robotics developers, system integrators, and OEMs can access evaluation kits, detailed technical documentation, and integration support directly from Vadzo to accelerate development cycles and reduce system validation time.

Global customers can procure Innova cameras through Vadzo's official channels, with international shipping to key robotics and industrial markets including the U.S., U.K., Germany, Israel, South Korea, Japan and worldwide markets. Vadzo supports volume production programs, multi-camera deployment planning, and customization services, including optics, firmware, and form factor modifications for robotics platforms.

FAQ

What is IEEE 1588 PTP synchronization and why does it matter for robotics?

IEEE 1588 Precision Time Protocol (PTP) aligns timestamps across multiple networked cameras to sub-microsecond accuracy. In robotic systems, this enables stereo vision, sensor fusion, and coordinated perception across distributed camera nodes - ensuring all cameras capture the same moment regardless of network latency.

Can Innova GigE camera be powered without a separate power supply?

Yes. All four Innova GigE camera products support Power over Ethernet (PoE 802.3af), delivering both power and data over a single standard Cat5e/Cat6 cable, eliminating the need for separate power infrastructure at each camera node.

What is the maximum cable distance supported by Innova GigE cameras?

GigE supports cable runs up to 100 metres over standard Cat5e/Cat6, significantly exceeding the ~5 metre practical limit of USB and the board-level constraints of MIPI CSI-2.

Do Innova cameras require proprietary software or drivers?

No. All Innova GigE camera products are ONVIF compliant for interoperability across network

video management systems. The VISPA NXT SDK provides additional programmatic control in C, C++, and Python across Windows, Linux, and Android for custom development.

About Vadzo Imaging

Vadzo Imaging is a global provider of embedded vision solutions, delivering high-performance cameras for robotics, UAVs, industrial automation, and edge AI applications. The company specializes in sensor integration, HDR imaging, and interface platforms including USB, MIPI, and GigE, enabling developers to build vision systems for autonomous navigation, robotic manipulation, inspection, and intelligent monitoring.

Vadzo's solutions combine camera hardware, ISP optimization, and software platforms, including VISPA NXT SDK for GigE cameras, providing developers with control over streaming, encoding, camera parameters, and system integration. With support for NVIDIA Jetson, Raspberry Pi, Qualcomm RB series, and NXP i.MX platforms, Vadzo enables OEMs and integrators to accelerate development, simplify deployment, and scale robotic vision systems across production environments.

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