



Available
for deep learning
training

Matrox **4Sight XV6** >>>

Expandable entry-level vision controller



Overview

Ideal for intensive machine vision applications

Matrox® 4Sight XV6 is an expandable ruggedized computer designed for demanding imaging workloads. Its reliable platform is ideal for video acquisition, offering four full-height, half-length PCIe® expansion slots designed to host multiple cards, including frame grabbers operating at full performance. It can support up to three displays—VGA, DVI-D, HDMI™, and/or DisplayPort™—from the available outputs.

This powerful vision controller is the latest iteration of the Matrox 4Sight series, delivering desktop-level processing performance and ample expansion, all packaged in a small, sturdy casing. Powered by an eighth-generation Intel® Core™ processor, the Matrox 4Sight XV6 is capable of supporting intensive machine vision applications.

Wide range of expansion options

Camera interfaces abound and Matrox 4Sight XV6 provides support for these either directly or with one or more expansion boards. The addition of Matrox Imaging frame grabber boards enables video capture from Camera Link, CoaXPress, DisplayPort, HDMI, and SDI sources including cameras.

Frame grabbers from the [Matrox Radiant eV-CL series](#) provide Camera Link connectivity. Adding [Matrox Rapixo CXP](#) cards delivers up to four CoaXPress 2.0 connections, as well as FPGA processing offload. Use of a [Matrox Clarity UHD](#) card allows for capture of eight independent video streams.

Gigabit Ethernet connectivity with Power-over-Ethernet (PoE) support, perfect for interfacing to GigE Vision cameras, is available with [Matrox Concord PoE](#) frame grabbers and [Matrox Indio](#) I/O cards. Matrox Concord PoE can also provide optional Trigger-over-Ethernet (ToE) capability while the Matrox Indio can alternatively deliver hardware-assisted PROFINET® communication and provides real-time I/O capabilities. Finally, an NVIDIA® GPU can be used to accelerate deep learning training.

Solid construction

The Matrox 4Sight XV6 fits readily into tough industrial environments, including warehouses, plants, and manufacturing or fabrication facilities. A full steel chassis protects the system from rough conditions; efficient cooling ensures steady functioning for consistent maximum performance. Serviceable air filters keep the interior of the unit free of foreign particles.

Matrox 4Sight XV6 at a glance

Tackle demanding imaging applications using an eighth-generation Intel Core processor

Capture directly from GigE Vision® and USB3 Vision® cameras

Broaden support for Camera Link®, CoaXPress®, DisplayPort, HDMI, and SDI video interfaces using [Matrox Imaging frame grabbers](#)

Customize I/O capabilities through four PCIe slots accepting full-height, half-length cards

Install in space-limited industrial environments given its small footprint and rugged design

Streamline application development using the [Matrox Design Assistant X](#) flowchart-based integrated development environment (IDE) or the [Matrox Imaging Library \(MIL\) X](#) software development kit (SDK)

Ready for deep learning training with suitably equipped and configured model

Software Environment

Microsoft Windows 10 IoT Enterprise

Matrox 4Sight XV6 comes pre-installed with Microsoft® Windows® 10 IoT Enterprise 2019 (64-bit), which provides the familiarity, performance, and reliability of Windows 10, including multi-language support.

Field-proven application development software

Matrox 4Sight XV6 is supported by [MIL X¹](#) software—a comprehensive SDK with a 25-year history of reliable performance. This toolkit features interactive software and programming functions for image capture, processing, analysis, annotation, display, and archiving operations, with the accuracy and robustness needed to tackle the most demanding machine vision applications. Refer to the MIL X datasheet for more information.

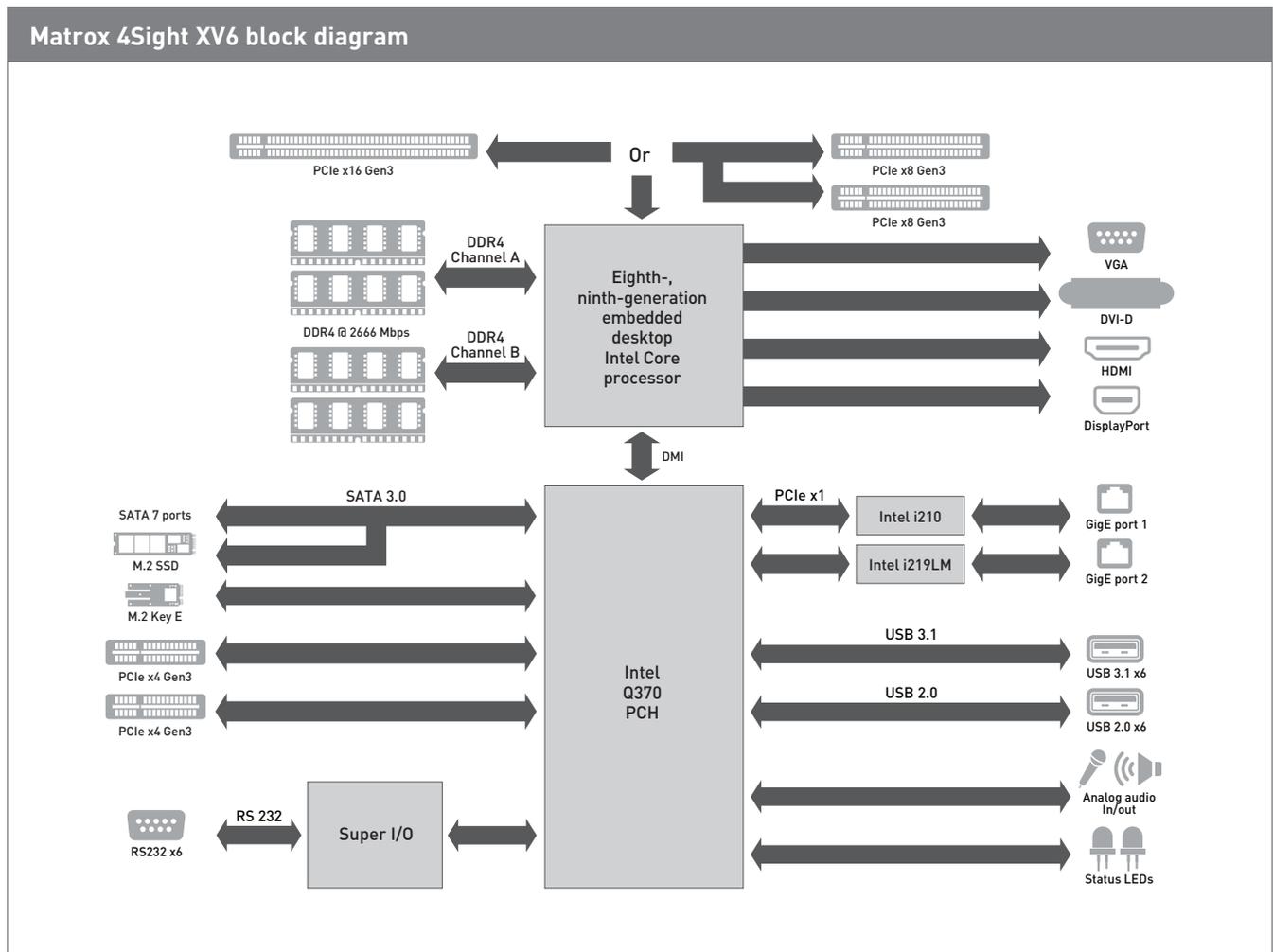
Matrox 4Sight XV6 can also come pre-installed with, and pre-licensed for, [Matrox Design Assistant X](#) software, an intuitive,

versatile, and extendable IDE. Vision applications are created by constructing an intuitive flowchart instead of writing traditional programming code. A custom, web-based operator interface to the application is created through an integrated HTML visual editor. Refer to the Matrox Design Assistant X datasheet for more information.

Ready for deep learning training

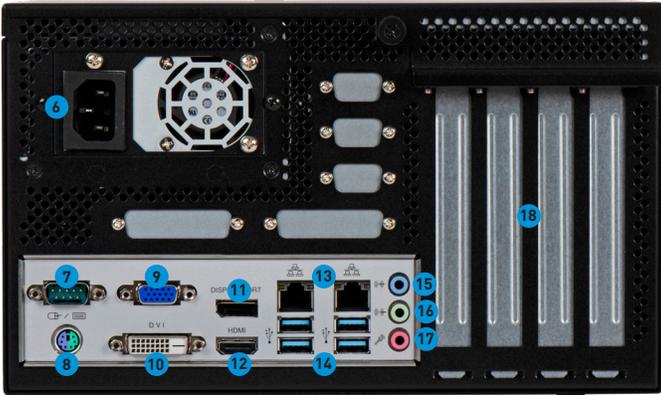
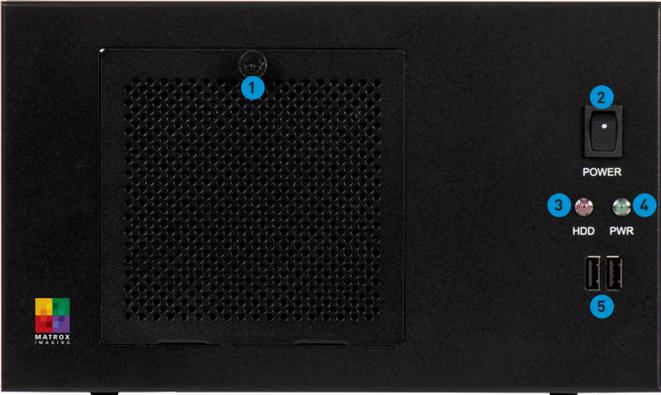
Matrox 4Sight XV6 is also available equipped and configured for deep learning training. Additions include more memory, separate storage for software and training dataset, and a suitable professional NVIDIA GPU card, all to accelerate the training process. The specific model is pre-loaded with the MIL X software, including the MIL CoPilot interactive environment, and comes ready-licensed for using the MIL X Classification package. Refer to the [MIL X datasheet](#) for more information.

Connectivity



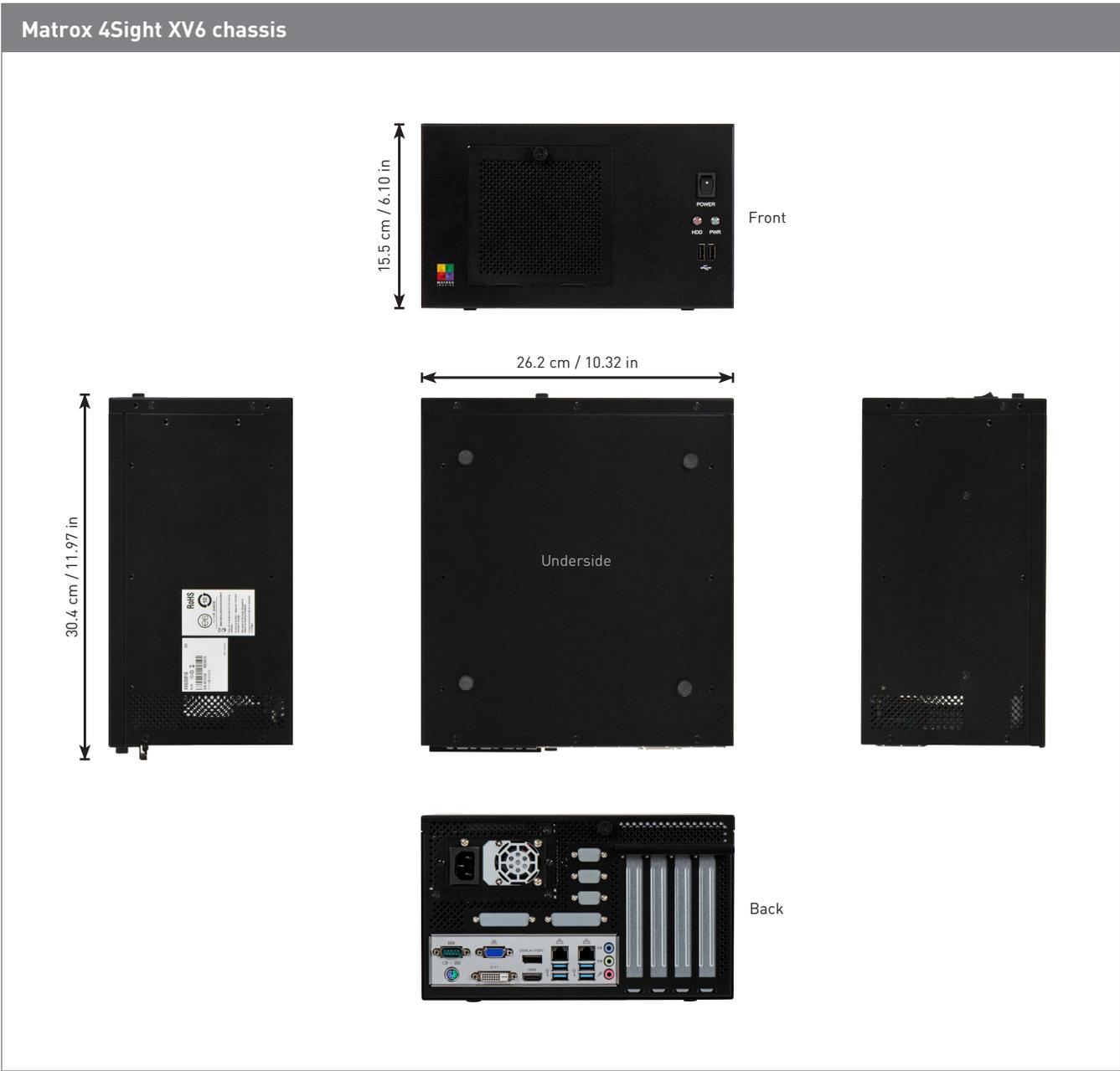
Connectivity (cont.)

Matrox 4Sight XV6 front and back views



- | | | | | |
|--------------------|------------------|------------------------|----------------------------|-------------------|
| 1. Fan filter door | 5. USB 2.0 ports | 9. VGA output | 13. Gigabit Ethernet ports | 17. Microphone in |
| 2. Power switch | 6. Power input | 10. DVI output | 14. USB 3.1 ports | 18. PCIe slots |
| 3. HDD LED | 7. Serial port | 11. DisplayPort output | 15. Audio in | |
| 4. Power-on LED | 8. PS/2 port | 12. HDMI output | 16. Audio out | |

Connectivity (cont.)



Specifications

Matrox 4Sight XV6	
Motherboard	
Micro-ATX form factor (24.4 x 24.4 cm or 9.6 x 9.6 in)	
Intel Q370 Platform Controller Hub (PCH)	
Four (4) 288-pin DDR4 long-DIMM sockets	
Up to 64 GB DDR4-2666 SDRAM	
Triple display	
One (1) VGA output	
Up to 1920x1200 @ 60 Hz	
One (1) DVI-D output	
Up to 4096x2304 @ 60 Hz	
One (1) HDMI 1.4 output	
Up to 4096x2160 @ 24 Hz	
One (1) DisplayPort 1.2 output	
Up to 4096x2304 @ 60 Hz	
Two (2) Gigabit Ethernet ports (10/100/1,000)	
One (1) Intel Ethernet Connection I210	
One (1) Intel Ethernet Connection I219-LM	
Twelve (12) USB ports	
Four (4) USB 3.1 ports	
Two (2) USB 2.0 ports	
Two (2) USB 3.1 ports (internal)	
Four (4) USB 2.0 ports (internal)	
Eight (8) SATA3 ports (one shared with M.2 Key M)	
Support for RAID 0, 1, 5, and 10	
One (1) mini-PCIe (full/half) connector	
One (1) M.2 Key M (2242/2260/2280) connector (used by 128 GB SSD)	
One (1) M.2 Key E (2230) connector	
Stereo line-in	
Stereo line-out	
Mic-in	
Six (6) serial ports	
One (1) RS-232/RS-422/RS-485 port	
Five (5) RS-232 ports (internal)	
One (1) PS/2 combo connector	
Four (4) PCIe Gen3 slots	
Slot 1: PCIe x16 (x8 if slot 3 used in x8)	
Slot 2: PCIe x4	
Slot 3: PCIe x8 (mechanically x16)	
Slot 4: PCIe x4	
CPU	
Intel Core i5-8500 processor	
Six (6) cores	
3.0–4.1 GHz	
9 MB cache	
Intel UHD Graphics 630 (350 MHz–1.1 GHz)	

Specifications (cont.)

Matrox 4Sight XV6	
Memory Options	
16 GB DDR4-2666	
32 GB DDR4-2666	
Storage Options	
128 GB M.2 2280 SATA3 SSD	
256 GB 2.5 in SATA MLC SSD + 256 GB M.2 2280 NVME SSD	
Chassis	
Dimensions (L x W x H): 26.2 x 29.2 x 15.5 cm (10.3 x 11.5 x 6.1 in)	
Heavy-duty steel	
Horizontal or vertical mounting	
120 mm 138 CFM cooling fan	
Four (4) PCIe full-height, half-length expansion slots	
Two (2) USB ports in the front	
Power switch	
Power and HDD notification LEDs	
Mounting	
Horizontal or vertical	
Power Supply	
Integrated 400 W power supply	
AC input	
100–240 VAC	
50–60 Hz	
80 Plus Gold rated	
Power-factor corrected	
Supplemental power connectors	
Two (2) SATA power (12 VDC & 5 VDC)	
Two (2) 6-pin + 2-pin PCIe power	
Certifications	
FCC Class A	
CE Class A	
RoHS-compliant	
Environmental	
Operating temperature: 10°C to 45°C (50°F to 113°F)	
Storage temperature: -40°C to 85°C (-40°F to 185°F)	
Relative humidity: Up to 90% (non-condensing)	
Software	
Pre-loaded with Microsoft Windows 10 IoT Enterprise 2019 (64-bit)	
Pre-loaded with MIL X run-time and Matrox Design Assistant X run-time environments	
Optionally pre-loaded with MIL X development environment including MIL CoPilot interactive environment	
Optionally pre-loaded with Matrox Design Assistant X development and run-time environments	

Ordering Information

Part number	Description
Hardware	
XV6I5M16	Matrox 4Sight XV6 integrated unit with Intel Core i5-8500, 16 GB DDR4 RAM, 128 GB M.2 MLC SSD, and Microsoft Windows 10 IoT Enterprise (64-bit). Pre-loaded with MIL X and Matrox Design Assistant X run-time environments and licensed for MIL X Interface, DMIL, and Industrial Communication run-time packages. Note: The use of this product is governed by Microsoft Software License Terms , among others
XV6I5M16DA	Matrox 4Sight XV6 integrated unit with Intel Core i5-8500, 16 GB DDR4 RAM, 128 GB M.2 MLC SSD, and Microsoft Windows 10 IoT Enterprise (64-bit). Pre-loaded with Matrox Design Assistant X design-time and run-time environments. Includes installation media with Matrox Design Assistant X IDE and a maintenance registration number. Partially pre-licensed for Matrox Design Assistant X. Note: The use of this product is governed by Microsoft Software License Terms , among others
XV6I5M16DA+	Matrox 4Sight XV6 integrated unit with Intel Core i5-8500, 16 GB DDR4 RAM, 128 GB M.2 MLC SSD, and Microsoft Windows 10 IoT Enterprise (64-bit). Pre-loaded with Matrox Design Assistant X design-time and run-time environments. Includes installation media with Matrox Design Assistant X IDE and a maintenance registration number. Fully pre-licensed for Matrox Design Assistant X. Note: The use of this product is governed by Microsoft Software License Terms , among others
XV6I5M32CT	Matrox 4Sight XV6 integrated unit for deep learning training with Intel Core i5-8500, 32 GB DDR4 RAM, 256 GB SATA SSD for software, 256 GB NVME SSD for training dataset, NVIDIA Quadro RTX 4000 GPU, and Microsoft Windows 10 IoT Enterprise (64-bit). Pre-loaded with MIL X development environment and licensed for MIL X Interface, DMIL, and Classification run-time packages. Note: The use of this product is governed by Microsoft Software License Terms , among others
Software	
MIL X Development Toolkit and Run-Time/Supplemental Licenses	
Refer to MIL X datasheet. Note: Complete MIL X SDK sold separately.	
Matrox Design Assistant X Development Package	
Included with XV6I5M16DA and XV6I5M16DA+	Matrox 4Sight XV6 with Matrox Design Assistant X comes with installation media and Matrox Design Assistant X maintenance registration number. Refer to the Matrox Design Assistant X datasheet for more information. The vision controller is pre-loaded with the Matrox Design Assistant X design-time and run-time environment. The partially licensed model (XV6I5M16DA) enables pattern recognition (PatternMatching step), feature extraction and analysis (BlobAnalysis step), 1D and 2D measurements (Measurement, BeadInspection, and Metrology steps), color analysis (ColorMatcher step), 1D and 2D code reading and verification (CodeReader and CodeGrade steps), 2D calibration, basic image processing (IntensityChecker, ImageProcessing, and EdgeLocator steps; not EdgeFinder), image compression, and industrial communication. Note: For partially licensed model (XV6I5M16DA), the use of 3D functionality as well as additional pattern recognition (ModelFinder), shape finding (RectangleFinder, CircleFinder, EllipseFinder, and SegmentFinder), character recognition (StringReader and SureDotOCR), classification (CNNClassIndex and CNNClassMap), and registration (PhotometricStereo) steps requires an additional license purchased separately. Refer to the MIL X datasheet – MIL X Run-Time Licenses section for ordering details. Distributed MIL package license is required on a third-party PC in order to connect to it remotely from the design-time environment. Contact a Matrox Imaging or a local representative for more information.

Endnotes:

1. The software may be protected by one or more patents; see www.matrox.com/patents for more information.

The Matrox Imaging advantage



Assured quality & longevity

Adhering to industry best practices in all hardware manufacturing and software development, product designs pay careful attention to component selection to secure consistent long-term availability. Matrox Imaging is able to meet Copy Exact and Revision Change Control procurement requirements in particular circumstances, backed by a dedicated team of QA specialists.



Trusted industry standards

Matrox Imaging champions industry standards in its design and production. Leveraging these standards to deliver quality compatible products, Matrox Imaging protects its customers' best interests by ensuring hardware and software components work with as many third-party products as possible.



Comprehensive customer support

Devoted front-line support and applications teams are on call to offer timely product installation, usage, and integration assistance. Matrox Professional Services delivers deep technical assistance to help customers develop their particular applications in a timely fashion. Services include personalized training and device interfacing as well as application feasibility, prototyping, troubleshooting, and debugging.



Tailored customer training

Matrox Vision Academy comprises online and on-premises training for Matrox Imaging vision software tools. On-premises intensive training courses are regularly held at Matrox headquarters, and can also be customized for onsite delivery. The Matrox Vision Academy online training platform hosts a comprehensive set of on-demand videos available when and where needed.



Long-standing global network

Matrox Imaging customers benefit from a global network of distributors who offer complementary products and support, and integrators who build customized vision systems. These relationships are built on years of mutual trust and span the globe, ensuring customer access to only the best assistance in the industry.



About Matrox Imaging

Founded in 1976, Matrox is a privately held company based in Montreal, Canada. Imaging and Video divisions provide leading component-level solutions, leveraging the others' expertise and industry relations to provide innovative, timely products.

Matrox Imaging is an established and trusted supplier to top OEMs and integrators involved in machine vision, image analysis, and medical imaging industries. The components consist of smart cameras, vision controllers, I/O cards, and frame grabbers, all designed to provide optimum price-performance within a common software environment.

Contact Matrox

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Serving: Canada, United States, Latin America, Europe, Asia, Asia-Pacific, and Oceania

www.matrox.com/imaging

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