Founded in 1976, Matrox is a privately held company based in Montreal, Canada. Imaging, Graphics, 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.

The Matrox Imaging Advantage

**Assured Quality & Longevity**
We adhere 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 our dedicated team of QA specialists.

**Trusted Industry Standards**
Matrox Imaging champions industry standards in our design and production. We leverage these standards to deliver quality compatible products, protecting our customers' best interests by ensuring our hardware and software components work with as many third-party products as possible.

**Comprehensive Customer Support**
Our devoted front-line support and applications teams are on call to offer timely product installation, usage, and integration assistance, while the exclusive Matrox Imaging Vision Squad provides hands-on support, helping assess application feasibility, recommend best methods, and even prototype solutions.

**Tailored Customer Training**
Matrox Vision Academy comprises online and on-premises training for our vision software tools. On-premises intensive training courses are regularly held at Matrox headquarters, and can also be customized for onsite delivery. 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.
Industries & Applications

Industry leaders rely on Matrox Imaging technology. We ensure that customers stay with us over multiple product generations by consistently meeting their demands for cutting-edge technology, technical assistance, integration support, and the highest manufacturing standards.

### Industries Served
- Automotive manufacturing
- Electronics manufacturing
- Flat panel display manufacturing
- Food & beverage production
- Medical device manufacturing
- Logistics
- Medical imaging
- Packaging
- Pharmaceutical production
- Semiconductor manufacturing
- Surveillance
- Transportation
- Medical device manufacturing
- Medical imaging
- Packaging
- Pharmaceutical production
- Semiconductor manufacturing
- Surveillance
- Transportation

### Applications
- **Image processing and analysis software** readies images for effective examination using grey scale, edge, and color information for study, diagnoses, and quality control. The software is also capable of offloading to FPGA-based hardware.
- **Image compression and video encoding** uses software and hardware to prepare images and video for optimal storage and distribution. Matrox Imaging products offer support for the JPEG, JPEG2000, and H.264 standards.
- **Machine and robot guidance** employs vision software to accurately locate and determine the pose of objects and features; great repeatability is crucial for guiding automated fabrication and manufacturing using machines and industrial robots. Intensity and geometric-based pattern-recognition tools are key aspects of the software.
- **ID mark reading and verification software** helps ensure effective item tracking and tracing during manufacturing, packaging, and distribution, as well as general automated handling. It reads widely-used barcodes and 2D symbologies, including direct part marking (DPM), and verifies decodability against established standards. Matrox Imaging software performs OCR on product information text made up of solid-stroke and dot-matrix characters.
- **Image and video capture** comes via software and hardware that reliably captures SD, HD, UHD, and non-standard definition images and video delivered using the Camera Link®, Camera Link HS®, CoaXpress®, DVI-D, GigE Vision®, SDI, and USB3 Vision® digital interface standards as well as legacy analog formats.
- **Visual inspection and measurement software** inspects assemblies, components, packaging, parts, and materials for presence/absence, anomalies, defects, flaws, and conformity to quality standards. The software includes tools to take accurate and repeatable measurements in both 2D and 3D.
Matrox Design Assistant
Matrox Design Assistant is an integrated development environment (IDE) for Windows for creating machine vision applications using a flowchart instead of writing traditional program code. In addition to building a flowchart, the IDE enables users to design a graphical web-based operator interface for the application.

Matrox Design Assistant at a glance

- Solve machine vision applications quickly and easily without writing program code by using an intuitive flowchart-based methodology
- Choose the best platform for the job within a hardware-independent environment that supports any PC with any GigE Vision or USB3 Vision camera
- Deploy the same project simultaneously on a rugged and reliable Matrox vision controller and smart camera
- Tackle machine vision applications with utmost confidence using field-proven tools for analyzing, locating, measuring, reading, and verifying
- Use a single program for creating both the application logic and operator interface
- Work with multiple cameras within the same project
- Rely on a common underlying vision library for the same results with a Matrox smart camera, vision controller, or third-party computer
- Maximize productivity with instant feedback on image analysis and processing operations
- Receive immediate, pertinent assistance through an integrated contextual guide
- Communicate actions and results to other automation and enterprise equipment via discrete Matrox I/Os, RS-232, and Ethernet (TCP/IP, EtherNet/IP™, Modbus®, PROFINET®, and native robot interfaces)
- Maintain control and independence through the ability to create custom flowchart steps
- Increase productivity and reduce development costs with access to Matrox Vision Academy, our online and on-premises training and support for Matrox Imaging vision software tools

1. The software may be protected by one or more patents; see www.matrox.com/patents for more information.
Matrox Imaging Library (MIL)

MIL is a software development kit (SDK) with a comprehensive collection of tools for coding machine vision, image analysis, and medical imaging applications. The SDK includes tools for every step in the process, from application feasibility to prototyping, through to development and ultimately deployment.

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Matrox Imaging Library (MIL)

Solve applications rather than develop underlying tools by leveraging a toolkit with a 20-year history of reliable performance

Tackle applications with utmost confidence using field-proven tools for analyzing, locating, measuring, reading, and verifying

Harness the full power of today’s hardware through optimizations exploiting SIMD, multi-core CPU, multi-CPU, GPU, and FPGA technologies

Support platforms ranging from smart cameras to high-performance computing (HPC) clusters via a single consistent and intuitive application programming interface (API)

Obtain live images from the interface of choice, with support for analog, Camera Link, Camera Link HS, CoaXPress, DVI-D, GigE Vision, SDI, and USB3 Vision transmission formats

Maintain flexibility and choice by way of support for 32-/64-bit Windows, Linux, and RTX64 (RTOS)

Leverage available programming know-how with support for C, C++, C#, CPython, and Visual Basic languages

Increase productivity and reduce development costs with access to Matrox Vision Academy, our online and on-premises training and support for Matrox Imaging vision software tools

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1. The software may be protected by one or more patents; see www.matrox.com/patents for more information.
2. Only under Windows.
MIL provides a comprehensive set of application programming interfaces, imaging tools and hardware support.
Matrox Iris GTR
Matrox Iris GTR is a line of compact, capable smart cameras designed for system integrators, machine builders, and OEMs alike. Matrox Iris GTR smart cameras are dust-proof, immersion-resistant, extremely rugged, and right at home in tight spots and dirty industrial environments. Develop vision applications for the Matrox Iris GTR by constructing flowcharts using Matrox Design Assistant IDE or by coding using the MIL SDK.

Matrox Iris GTR at a glance

- Install readily in confined and dirty industrial environments because of a compact IP67-rated design
- Run typical vision jobs efficiently using an Intel® dual-core embedded processor
- Capture images at high speed through a choice of CMOS sensors
- Simplify vision setup and upkeep via integrated lens focusing and illumination intensity control
- Interact with vision and automation devices in real time by way of digital I/Os
- Synchronize to the manufacturing line via support for incremental rotary encoders
- Communicate with automation controllers and enterprise networks using standard Gigabit Ethernet interface
- Implement Human-Machine Interface (HMI) function by way of VGA and USB connectivity
- Streamline vision inspection and guidance development using the field-proven and established Matrox Design Assistant flowchart-based IDE or MIL SDK
- Deploy with leading embedded operating systems through support for both Microsoft Windows and Linux
Vision Controllers

Matrox 4Sight GPm and Matrox Supersight
A unique combination of embedded PC technology, compact size, and ruggedness make Matrox Imaging’s vision controllers ideal solutions for cost-sensitive applications. A HPC platform designed for computationally demanding industrial imaging applications is also offered.

Matrox 4Sight GPm at a glance

- **Reduce service stoppages** with a fanless design
- **Inspect multiple sites** through the support for four GigE Vision and four USB3 Vision cameras
- **Simplify cabling for GigE Vision installations** using Power over Ethernet (PoE)-enabled ports
- **Tackle typical vision workloads** with an embedded Intel Core™ processor
- **Connect separately to the factory floor and enterprise networks** via two Gigabit Ethernet ports
- **Synchronize with other equipment** using integrated real-time digital I/Os and RS-232/RS-485 ports
- **Drive up to two operator displays**
- **Install in space-limited hostile environments** because of its small footprint and rugged casing design
- **Run applications in a familiar, reliable, and customizable environment** using the provided Windows Embedded Standard 7
- **Solve applications rather than develop underlying tools** by leveraging Matrox Design Assistant flowchart-based IDE or standard Microsoft development tools and MIL SDK
- **Deploy with confidence** thanks to Matrox Imaging’s commitment to extended lifecycle management

1. Offers support for multiple languages; only one language version can be used at any given time.

Matrox Supersight at a glance

- **Tackle extreme applications with certainty** using a high-performance compute cluster platform
- **Harness the full power of multicore CPU, GPU, and FPGA technology** to offload image processing and enhance acceleration
- **Eliminate I/O bottlenecks** with a unique PCIe® switched fabric backplane architecture
- **Interface directly to external process equipment** through the integrated Gigabit Ethernet, RS-232/RS-485, and USB connectivity
- **Minimize the need for revalidation** by using a lifecycle-managed platform with consistent long-term availability
- **Simplify system integration** with an integrated platform from a single vendor and pre-qualified third-party components
- **Run applications under an established operating system** with factory-installed Windows 7 for Embedded Systems
- **Solve applications rather than develop underlying tools** by leveraging standard Microsoft development tools and MIL SDK
Matrox Indio provides industrial I/O and communication capabilities to turn any PC running Matrox vision software into a genuine vision controller. The versatile card offers discrete hardware-managed I/Os for the real-time synchronization of a vision application with automation devices. It also provides Gigabit Ethernet connectivity for interfacing with programmable logic/automation controllers or GigE Vision cameras equipped for PoE.

**Matrox Indio at a glance**

- **Facilitate computer integration** by means of a PCIe x1 interface
- **Enable real-time synchronization** via 16 discrete digital I/Os with hardware-assisted management
- **Gain straightforward access to I/Os** through a standard D-Sub connector
- **Use on the factory-floor and in a lab environment** thanks to 24V and TTL-compatible signaling support
- **Protect against unintended use** with options for optical isolation and resettable fuses
- **Track moving production lines** with support for two rotary incremental encoders
- **Troubleshoot issues** using convenient status indicator LED for each I/O assist
- **Conduct industrial communication or video capture** using the Gigabit Ethernet interface
- **Manage using field-proven and established MIL SDK or Matrox Design Assistant** flowchart-based IDE
Frame Grabbers

Matrox Clarity, Concord, and Radiant Series
Matrox Imaging provides the industry’s most comprehensive frame grabber lineup, ranging from entry-level models for very cost-sensitive applications to models integrating flexible, high-rate acquisition and pre-processing capabilities. These frame grabbers combine rich functionality and unbeatable value, and help reduce development and validation costs through a managed lifecycle offering consistent long-term availability.

Matrox Clarity Series at a glance
- Capture video sources—legacy to the latest—through support for SD analog to UHD digital formats
- Connect and switch between different video sources via Mini DisplayPort, HD-BNC, HDMI, and custom analog DVI connectivity
- Handle multiple video sources with the simultaneous capture of up to four HD or two UHD streams1
- Optimize video transmission and storage through onboard multi-stream H.264 encoding
- Minimize system footprint by way of a single-slot PCIe card design
- Simplify application development using the MIL SDK
- Deploy on a platform of choice, with support for 64-bit Windows and Linux2

Matrox Concord Series at a glance
- Interface with ease using Gigabit Ethernet network interface cards (NICs)
- Streamline deployment with cards pre-licensed for use with GigE Vision support in MIL SDK and Matrox Design Assistant flowchart-based IDE
- Avoid manual adjustments to driver properties; unlike generic NICs, the Concord’s driver is optimally preset for GigE Vision
- Maintain flexibility and choice, with support for 32-/64-bit Windows, Linux, and RTX64 (RTOS)

Matrox Radiant Series at a glance
- Capture from the next generation of higher resolution and higher speed cameras, through Camera Link, Camera Link HS, or CoaXPress interfaces
- Eliminate lost pixels and missed frames through a PCIe 2.0 x8 host interface and ample on-board buffering
- Maintain flexibility and choice through support for 32-/64-bit Windows, Linux3, and RTX64 (RTOS)3
- Simplify application development using the MIL SDK
- Reduce cabling complexity and simplify system connectivity with Power over Camera Link (PoCL) and Power over CoaXPress (PoCXP) support
- Offload some host processing with on-board peak location for 3D profiling, Bayer interpolation, color space conversion, and look-up tables
- Optimize multi-camera applications with support for multiple camera connections per board

1. Alternatively, a maximum combined bandwidth of 4 GB/sec.
2. Ask for availability.
3. Select availability for Linux and RTX64 (RTOS); contact Matrox Imaging for more information.
Matrox Imaging prides itself on world-class production whether carried out in-house or outsourced. Strict adherence to industry best practices—including a specially designed on-site clean room—ensures all hardware manufacturing and software development meets the highest standards. Our comprehensive distribution channel ensures products reach OEMs and integrators in a timely manner.