



Matrox **Iris GTR** >>

Compact, capable smart camera



Overview

Camera and PC together as one

Matrox® Iris GTR combines fast image sensing, efficient embedded processing, and comprehensive I/O capabilities for an effective all-in-one vision system. It comes with a CMOS image sensor of choice—from a range of increasing resolutions in monochrome or color—to meet application requirements for scene coverage and detail, type of analysis, and throughput. An Intel® Celeron® dual-core processor running Microsoft® Windows® gives Matrox Iris GTR the power needed to perform regular inspection tasks at typical rates on a familiar software platform. Digital I/Os, Gigabit Ethernet and USB ports, and a VGA video output provide the connectivity to fully integrate the Matrox Iris GTR within an automation cell or machine.

Fit for cramped and dirty areas

Matrox Iris GTR occupies a small footprint enabling it to fit in tight spaces. It features an IP67-rated housing and robust M12 connectors for its external interfaces, allowing it to operate in dusty, wet, and other demanding conditions. The Matrox Iris GTR accepts standard C-mount lenses within a dust- and liquid-proof protective cap. Within this cap is an interface to a [Corning® Varioptic® C-C-Series](#) auto-focus lens, enabling focus adjustment directly from the application software. In addition, an LED lighting intensity control output, compatible with [Advanced illumination Inline Control System \(ICS\) 3](#) lighting control, enables direct adjustments from the application software. The ability to adjust the lens focus and control illumination intensity directly from the application software eliminates the need for manual intervention in hard-to-reach places.

Prompt and dependable response

The digital I/Os on the Matrox Iris GTR are managed by a dedicated hardware engine for real-time performance. The real-time I/O engine enables an output event to occur at a precise moment in time, after a certain elapsed time, or following a specific input event. An input event can come directly from an input, including from an incremental rotary encoder or a count derived from an input. A programmed output event is stored in a hardware list, which is traversed based on a clock or an input event. The carrying out of an output event results in a state transition, pulse, or pulse train on a specific output. Multiple hardware timers, which can be cascaded together, are available to count or generate specific events.

Matrox Supersight at a glance

Install comfortably in confined and dirty industrial environments by way 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 by way of real-time digital I/Os

Synchronize to the manufacturing line through the support for incremental rotary encoders

Communicate with automation controllers and enterprise networks via a Gigabit Ethernet interface

Take on HMI function by way of VGA and USB connectivity

Program effectively for vision inspection and guidance using the field-proven and established [Matrox Imaging Library \(MIL\)](#) software

Software Environment

Matrox Iris GTR also includes a hardware-assisted mechanism for PROFINET® communication. This mechanism ensures timely response when the automation controller is set up for a short cycle time or when the processor is too busy performing other tasks.

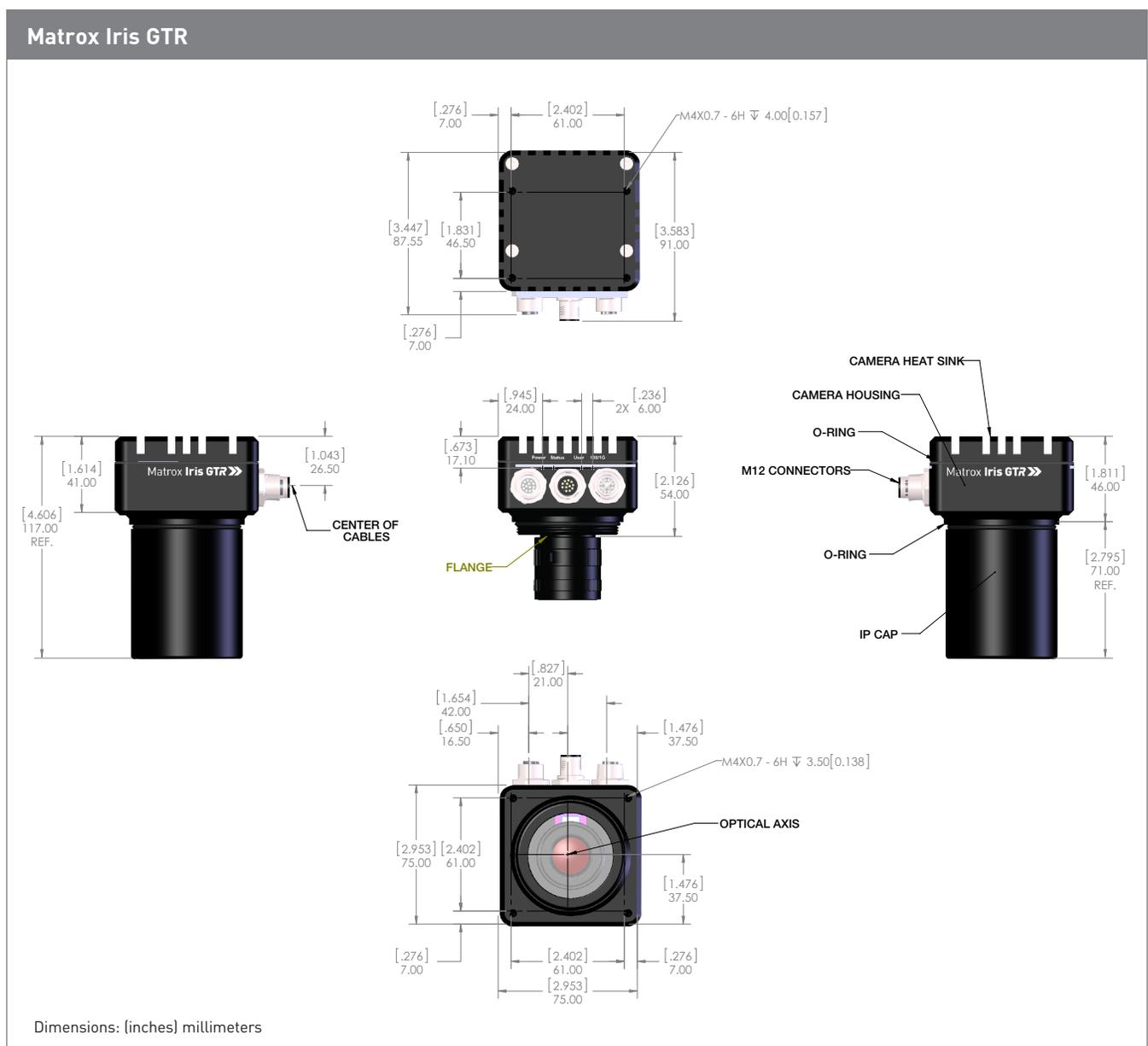
Pre-installed software platform

Matrox Iris GTR comes pre-installed with Microsoft Windows 10 IoT Enterprise 2016 (64-bit).

Field-proven application development software

Matrox Iris GTR is supported by MIL software¹, a comprehensive software development kit (SDK) with a 25-year history of reliable performance. This toolkit features programming functions for image capture, processing, analysis, annotation, display, and archiving operations, with the accuracy and robustness needed to tackle the most demanding applications. Refer to the MIL datasheet for more information.

Dimensions



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

Specifications

Matrox Iris GTR								
Hardware								
Model	GTR300	GTR300C	GTR1300	GTR1300C	GTR2000	GTR2000C	GTR5000	GTR5000C
Sensor model	PYTHON 300		PYTHON 1300		PYTHON 2000		PYTHON 5000	
Sensor type	CMOS							
Sensor geometry	1/4 in		1/2 in		2/3 in		1 in	
Format	Mono-chrome	Color	Mono-chrome	Color	Mono-chrome	Color	Mono-chrome	Color
Resolution	640 x 480		1280 x 1024		1920 x 1200		2592 x 2048	
Frame rate (effective)	Up to 293 fps	Up to 147 fps	Up to 85 fps	Up to 35 fps	Up to 45 fps	Up to 20 fps	Up to 21 fps	Up to 8.5 fps
Pixel size	4.8 x 4.8 μm							
Gain range	0 to 19.4 dB							
Shutter speeds	50 μsec to 4 sec							
External trigger latency	7.1 μs		7.2 μs		8.0 μs			
External trigger to strobe output delay	9.1 μs		9.2 μs		10 μs			
Processor	Intel Celeron N2807 (dual core 1.58 GHz)							
Memory	2 GB DDR3L SDRAM							
Storage	32 GB eMMC							
Network	Gigabit Ethernet							
HMI	VGA							
	USB 2.0 (for keyboard and mouse)							
Others	Dedicated 0 V-10 V LED lighting intensity control for Advanced illumination ICS 3 Note: See Third-party Accessories for more details.							
	Dedicated interface for Corning Varioptic C-C Series auto-focus lens Note: See Third-party Accessories for more details.							
Digital I/Os	Three (3) opto-coupled inputs (with incremental rotary encoder support)							
	One (1) dedicated opto-coupled trigger input							
	Three (3) opto-coupled trigger outputs							
Connectors	M12-8 pins (female) for Ethernet							
	M12-12 pins (female) for power, digital I/Os, and LED lighting intensity control							
	M12-12 pins (male) for VGA and USB							
Power consumption	450 mA @ 24 VDC							
	10.8 W (typical)							
Dimensions	Refer to Dimensions diagram							
Weight	460 g							
Lens type	C-mount							
Operating temperature	0°C to 50°C (32°F to 122°F)							
Ventilation requirements	Natural convection							

Specifications (cont.)

Matrox Iris GTR	
Hardware	
Certifications	FCC Part 15 Class A, CE mark
	EN55011 Class A, EN61326-1 industrial environment
	ICES-003/NMB-003 Class A
	RCM Class A: IP67 enclosure (IEC 60529: dust-tight and protected against temporary immersion)
	Shock and vibration: EN60721-3-3/A2, Category 3M8
	Shock: IEC 60068-2-27, 50 g, 3 ms, type II, half sine
	Random vibration: IEC60068-2-64, 10 Hz to 500 Hz, 5 g, 100 min
	Sine vibration: IEC60068-2-6, 10 Hz to 500 Hz, 5 g

Ordering Information

Part number	Description
Hardware	
GTR300	Matrox Iris GTR smart camera with monochrome 640x480 sensor, dual-core Celeron® CPU, 2 GB of memory, 32 GB eMMC storage.
GTR300C	Matrox Iris GTR smart camera with color 640x480 sensor, dual-core Celeron CPU, 2 GB of memory, 32 GB eMMC storage.
GTR1300	Matrox Iris GTR smart camera with monochrome 1280x1024 sensor, dual-core Celeron CPU, 2 GB of memory, 32 GB eMMC storage.
GTR1300C	Matrox Iris GTR smart camera with color 1280x1024 sensor, dual-core Celeron CPU, 2 GB of memory, 32 GB eMMC storage.
GTR2000	Matrox Iris GTR smart camera with monochrome 1920x1200 sensor, dual-core Celeron CPU, 2 GB of memory, 32 GB eMMC storage.
GTR2000C	Matrox Iris GTR smart camera with color 1920x1200 sensor, dual-core Celeron CPU, 2 GB of memory, 32 GB eMMC storage.
GTR5000	Matrox Iris GTR smart camera with monochrome 2592x2048 sensor, dual-core Celeron CPU, 2 GB of memory, 32 GB eMMC storage.
GTR5000C	Matrox Iris GTR smart camera with color 2592x2048 sensor, dual-core Celeron CPU, 2 GB of memory, 32 GB eMMC storage.
GTR-STARTERKIT	Matrox Iris GTR starter kit for all models except GTR5000(C). Includes power supply, 12 mm C-mount lens, Ethernet cable, power cable, VGA/USB cable, and breakout board for digital I/Os. Note: For development purposes only. Not to be used for deployment.
GTR5000-STRKIT	Matrox Iris GTR starter kit for GTR5000(C). Includes power supply, 12 mm C-mount lens for 5 MPixel sensor, Ethernet cable, power cable, VGA/USB cable, and breakout board for digital I/Os. Note: For development purposes only. Not to be used for deployment.
GTR-CBL-PWR/3	9.8 ft (3 m) cable for Matrox Iris GTR to connect power, discrete I/Os, and LED lighting intensity control. M12 to open end.
GTR-CBL-ETH/5	16.4 ft (5 m) Ethernet cable for Matrox Iris GTR. M12 to RJ45 connector.
GTR-CBLVGAUSB	3.2 ft (1 m) cable for Matrox Iris GTR to connect VGA and USB. M12 to HD-15 and USB connectors.

Third-Party Accessories

Supplier	Description
Optics	
Corning Varioptic	C-Series C-39N0-160-I2C : Variable focus 16 mm effective focal length (EFL) liquid lens with I2C control
Corning Varioptic	C-Series C-390N0-250-I2C : Variable focus 25 mm EFL liquid lens with I2C control
Illumination	
Advanced illumination	ICS 3 Inline Control System : Continuous and strobe mode inline controller
Smart Vision Lights	EZ Mount Ring Light : Ring light with built-in driver
Smart Vision Lights	Mini Ring Light : Ring light with built-in driver
Buchner	Rondo-LX IP67 : Ring light with mechanical adapter
Buchner	Helios IP67 : Ring light with mechanical adapter
Cables	
Components Express	MI-1-X-L0-XXM : M12 X-Code Gigabit Ethernet cable, straight
Components Express	MI-1-X-L2-XXM : M12 X-Code Gigabit Ethernet cable, right angle
Components Express	MI-K0-X-L0-XXM : M12 X-Code to industrial Ethernet cable
Components Express	GTR-VGA-USB : VGA/USB I/O breakout cable (contact CEI for application and configuration details)
Components Express	GTR-LTYCBL : Light breakout cable (contact CEI for application and configuration details)
Components Express	GTR-YCBL : Power breakout cable for camera and light (contact CEI for application and configuration details)
Phoenix Contact	SAC-12P-MS/5,0-PVC SCO : 5 m cable to connect power, discrete I/Os, and LED lighting intensity control. M12 to open end
Phoenix Contact	SAC-12P-MS/10,0-PVC SCO : 10 m cable to connect power, discrete I/Os, and LED lighting intensity control. M12 to open end
Phoenix Contact	NBC-MSX/2,0-94F/R4AC SCO : 2 m Ethernet cable. M12 to RJ45 connector
Phoenix Contact	NBC-MSX/10,0-94F/R4AC SCO : 10 m Ethernet cable. M12 to RJ45 connector
Light Brackets	
Components Express	E-GTR-LB : Iris GTR flip light bracket with light plate
Components Express	EN-SL-A : Swivel link mount adapter, fits SLM-1 and ASFB-1
Lens Covers	
Components Express	EN-DC55-xx : 55mm O.D., clear LP286 filter available in either 30mm, 40mm, 50mm, 60mm, 70mm, 75mm, 80mm, 90mm, 100mm lengths
Components Express	EN-DC55-55x : 55mm O.D., LP286 filter 55mm length available in either clear, red, blue, orange, VIS Bandpass/UV/NIR Block and Near IR Bandpass
Components Express	EN-DC55-25-XR : Lens cover extension ring
Components Express	GMLC-75-PW : Disposable protective window for EN-DC55 lens covers

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, 3D sensors, vision controllers, I/O cards, and frame grabbers, all designed to provide optimum price-performance within a common software environment.

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

www.matrox.com/imaging

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