

# Matrox Iris GTR >>

Compact, capable smart camera



## Benefits

**Installs comfortably in confined and dirty industrial environments** by way of a compact IP67-rated design

**Runs typical vision jobs efficiently** using an Intel® dual-core embedded processor

**Captures images at high speed** through a choice of CMOS sensors

**Simplifies vision setup and upkeep** via integrated lens focusing and illumination intensity control

**Interacts with vision and automation devices** by way of real-time digital I/Os

**Synchronizes to the manufacturing line** through the support for incremental rotary encoders

**Communicates with automation controllers and enterprise networks** via a Gigabit Ethernet interface

**Takes on HMI function** by way of VGA and USB connectivity

**Programs effectively for vision inspection and guidance** using the field-proven and established Matrox Imaging Library (MIL)

**Deploys with either leading embedded operating system** through support for both Microsoft® Windows® and Linux®

## 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 resolution in monochrome or color, to meet an application's requirement for scene coverage and detail, type of analysis and throughput. An Intel® Celeron® dual-core processor running Microsoft® Windows® or Linux® gives Matrox Iris GTR the power it needs 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<sup>1</sup>. The Matrox Iris GTR accepts standard C-mount lenses within a dust and liquid proof protective cap. It provides within this cap an interface to a Varioptic Caspian auto-focus lens, enabling focus adjustment directly from the application software. In addition, an LED lighting intensity control output, compatible with Advanced illumination's (Ai) 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 either 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 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.

**Choice of software platform**

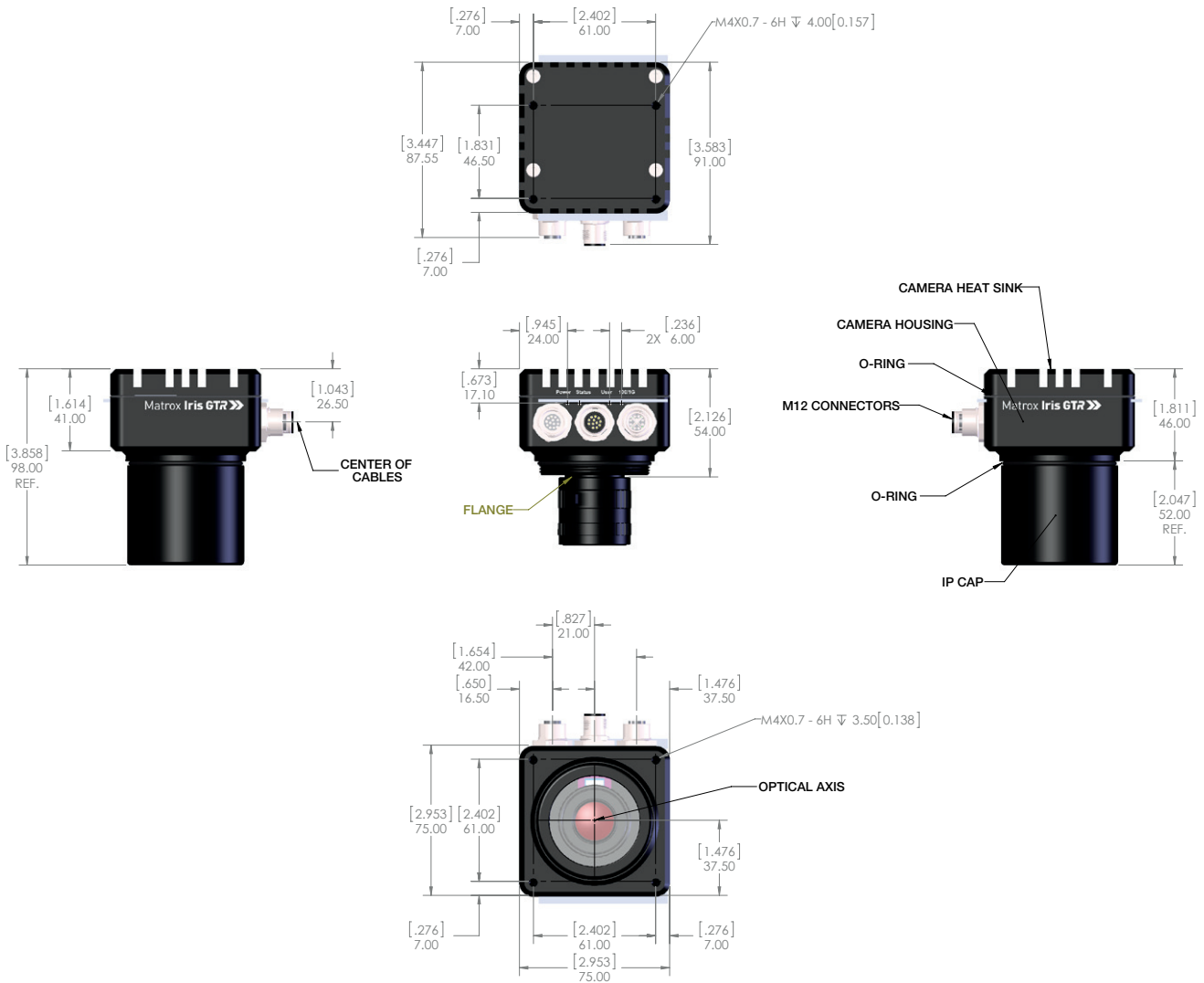
Matrox Iris GTR comes pre-installed with either Microsoft® Windows® Embedded Standard (WES) 7 64-bit or a customized 64-bit Linux® distribution. It can also be set up to run Windows® 8.1 and 10 as well as other Linux® distributions.

**Field-proven application development software**

Matrox Iris GTR is supported by Matrox Imaging Library (MIL), a comprehensive collection of software tools for developing machine vision applications. MIL features programming functions for image capture, processing, analysis, annotation, display and archiving. These tools are designed to enhance productivity, thereby reducing the time and effort required to bring your solution to market. Refer to the MIL datasheet for more information.

preliminary

**Dimensions**



Dimensions: (inches) millimeters

## Specifications

Model	GTR300MW GTR300ML	GTR300CMW GTR300CML	GTR1300MW GTR1300ML	GTR1300CMW GTR1300CML	GTR2000MW GTR2000ML	GTR2000CMW GTR2000CML	GTR5000MW GTR5000ML	GTR5000CMW GTR5000CML
<b>Sensor</b>								
Model	PYTHON 300		PYTHON 1300		PYTHON 2000		PYTHON 5000	
Type	CMOS		CMOS		CMOS		CMOS	
Geometry	¼"	¼"	½"	½"	2/3"	2/3"	1"	1"
Format	Monochrome	Color	Monochrome	Color	Monochrome	Color	Monochrome	Color
Resolution (H x V)	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 (H x V)	4.8 µm x 4.8 µm							
Gain range	0 - 19.4dB							
Shutter speeds	30 µsec to 4 sec							
External trigger latency	7.1 µs		7.2 µs		8.0 µs		8.0 µs	
Ext. trigger to strobe output delay	9.1 µs		9.2 µs		10 µs		10 µs	
<b>Processor, memory and storage</b>								
Processor	Intel® Celeron® N2807 (dual core 1.58 GHz)							
Memory	2GB DDR3L SDRAM							
Storage	32GB eMMC							
<b>Interfaces</b>								
Network	Gigabit Ethernet							
HMI	VGA and USB 2.0 (for keyboard and mouse)							
Digital I/Os	3 opto-coupled inputs (with incremental rotary encoder support), 1 dedicated opto-coupled trigger and 4 outputs							
Other	dedicated 0-10V LED lighting intensity control for Ai ICS 3 and dedicated interface for Varioptic Caspian auto-focus lens							
<b>Mechanical, electrical and environmental information</b>								
Dimensions	Refer to Dimensions							
Lens type	C-mount							
Connectors	M12-8 pins female for Ethernet; M12-12 pins female for power, digital IOs and LED lighting intensity control, M12-12 pins male for VGA and USB							
Weight	T.B.D.							
Power consumption	450 mA @ 24VDC or 10.8W (typical)							
Operating temperature	0°C to 50°C (32°F to 122°F) <sup>2</sup>							
Ventilation requirements	natural convection							
Certifications	T.B.C.							
<b>Software environment (pre-installed)</b>								
...MW models	Microsoft® Windows® Embedded Standard 7 64-bit							
...ML models	Matrox Fedora Remix Linux® 64-bit							

## Ordering Information

### Hardware

#### Part number & Description

<b>GTR300MW</b>	Matrox Iris GTR smart camera with monochrome 640x480 sensor, dual-core Celeron® CPU, 2GB of memory, 32GB eMMC storage and Microsoft® Windows® Embedded Standard 7 (64 bit)
<b>GTR300CMW</b>	Matrox Iris GTR smart camera with color 640x480 sensor, dual-core Celeron® CPU, 2GB of memory, 32GB eMMC storage and Microsoft® Windows® Embedded Standard 7 (64 bit)
<b>GTR1300MW</b>	Matrox Iris GTR smart camera with monochrome 1280x1024 sensor, dual-core Celeron® CPU, 2GB of memory, 32GB eMMC storage and Microsoft® Windows® Embedded Standard 7 (64 bit)
<b>GTR1300CMW</b>	Matrox Iris GTR smart camera with color 1280x1024 sensor, dual-core Celeron® CPU, 2GB of memory, 32GB eMMC storage and Microsoft® Windows® Embedded Standard 7 (64 bit)
<b>GTR2000MW</b>	Matrox Iris GTR smart camera with monochrome 1920x1200 sensor, dual-core Celeron® CPU, 2GB of memory, 32GB eMMC storage and Microsoft® Windows® Embedded Standard 7 (64 bit)
<b>GTR2000CMW</b>	Matrox Iris GTR smart camera with color 1920x1200 sensor, dual-core Celeron® CPU, 2GB of memory, 32GB eMMC storage and Microsoft® Windows® Embedded Standard 7 (64 bit)
<b>GTR5000MW</b>	Matrox Iris GTR smart camera with monochrome 2592x2048 sensor, dual-core Celeron® CPU, 2GB of memory, 32GB eMMC storage and Microsoft® Windows® Embedded Standard 7 (64 bit)
<b>GTR5000CMW</b>	Matrox Iris GTR smart camera with color 2592x2048 sensor, dual-core Celeron® CPU, 2GB of memory, 32GB eMMC storage and Microsoft® Windows® Embedded Standard 7 (64 bit)

### Software

Refer to MIL datasheet.

### Hardware cont.

#### Part number & Description

<b>GTR300ML</b>	Matrox Iris GTR smart camera with monochrome 640x480 sensor, dual-core Celeron® CPU, 2GB of memory, 32GB eMMC storage and Matrox Fedora Remix Linux (64 bit)
<b>GTR300CML</b>	Matrox Iris GTR smart camera with color 640x480 sensor, dual-core Celeron® CPU, 2GB of memory, 32GB eMMC storage and Matrox Fedora Remix Linux (64 bit)
<b>GTR1300ML</b>	Matrox Iris GTR smart camera with monochrome 1280 x 1024 sensor, dual-core Celeron® CPU, 2GB of memory, 32GB eMMC storage and Matrox Fedora Remix Linux (64 bit)
<b>GTR1300CML</b>	Matrox Iris GTR smart camera with color 1280 x 1024 sensor, dual-core Celeron® CPU, 2GB of memory, 32GB eMMC storage and Matrox Fedora Remix Linux (64 bit)
<b>GTR2000ML</b>	Matrox Iris GTR smart camera with monochrome 1920 x 1200 sensor, dual-core Celeron® CPU, 2GB of memory, 32GB eMMC storage and Matrox Fedora Remix Linux (64 bit)
<b>GTR2000CML</b>	Matrox Iris GTR smart camera with color 1920 x 1200 sensor, dual-core Celeron® CPU, 2GB of memory, 32GB eMMC storage and Matrox Fedora Remix Linux (64 bit)
<b>GTR5000ML</b>	Matrox Iris GTR smart camera with monochrome 2592 x 2048 sensor, dual-core Celeron® CPU, 2GB of memory, 32GB eMMC storage and Matrox Fedora Remix Linux (64 bit)
<b>GTR5000CML</b>	Matrox Iris GTR smart camera with color 2592 x 2048 sensor, dual-core Celeron® CPU, 2GB of memory, 32GB eMMC storage and Matrox Fedora Remix Linux (64 bit)
<b>GTR-CBL-PWR/3</b>	9.8' or 3m cable for Matrox Iris GTR to connect power, discrete I/Os and LED lighting intensity control. M12 to open end.
<b>GTR-CBL-ETH/5</b>	16.4' or 5m Ethernet cable for Matrox Iris GTR. M12 to RJ45 connector.
<b>GTR-CBL-VGAUSB</b>	3.2' or 1m cable for Iris GTR to connect VGA and USB. M12 to HD-15 and USB connectors.

#### Endnotes:

1. Also available as just a board set for deeper custom integration. Contact a Matrox Imaging representative for more information.
2. With smart camera mounted on a suitable metallic bracket.

#### Corporate headquarters:

**Matrox Electronic Systems Ltd.**  
 1055 St. Regis Blvd.  
 Dorval, Quebec H9P 2T4  
 Canada  
 Tel: +1 (514) 685-2630  
 Fax: +1 (514) 822-6273

For more information, please call: 1-800-804-6243 (toll free in North America) or (514) 822-6020 or e-mail: [imaging.info@matrox.com](mailto:imaging.info@matrox.com) or <http://www.matrox.com/imaging>

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