

▪ 1600 x 1200 ▪ 34 FPS ▪ GigE Vision  

❖ TM-2040 GE / TMC-2040 GE Progressive Scan CCD



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- 1" progressive scan IT CCD (Kodak KAI-2020)
- 1600 x 1200 pixels @ 34 fps dual-tap mode
- 7.4 μm square pixels
- SW selectable single-tap mode @ 17 fps
- 12-bit A/D (linear) or 8-bit/10-bit with look-up table (LUT)
- GigE Vision Ethernet output and analog output
- 100 m with standard CAT 5E or CAT 6 cable
- Image center partial scan (600, 300, 150 lines)
- User-programmable variable partial scan
- 2X binning (H & V independently selectable)
- Full-frame shutter to 1/32,000 sec.
- Asynchronous reset, no-delay, pulse width control shutter
- Defective pixel compensation
- PIV (particle imaging velocimetry) mode
- Extensive software developer's kit (SDK)
- Monochrome or color

GigETM
VISION



Specifications for TM-2040GE/TMC-2040GE

Specifications		TM-2040GE/TMC-2040GE
Sensor		1" progressive scan interline transfer CCD
Active area		11.8mm x 8.8mm
Active pixels		1600 (H) x 1200 (V)
Cell size		7.4 μm x 7.4 μm
Readout modes	A B C D U	1600 (H) x 1200 (V) @ 34 Hz 1600 (H) x 600 (V) @ 58 Hz (partial scan) 1600 (H) x 300 (V) @ 90 Hz (partial scan) 1600 (H) x 150 (V) @ 122 Hz (partial scan) user-programmable partial scan
Synchronization		Internal/External auto switch HD/VD, 4.0 Vp-p impedance 4.7K Ω VD= 34 Hz ± 2%, non-interlace HD= 41.7 kHz ± 2%
Pixel clock		40.00 MHz
S/N ratio		>58 dB
Sensitivity	Mono Color	0.4 lux f=1.4 (no shutter) @ 34 fps, 2.4 lux f=1.4 (no shutter) @ 34 fps, Pixel sensitivity: 30 μV/e-
Video output	Analog Digital	1.0 Vp-p, 75 Ω Gigabit Ethernet (8-bit/10-bit/12-bit)
Color (RMC/TMC-2040 only)		Raw Bayer output for host-based interpolation
Gamma		Programmable LUT (Gamma 1.0 std)
Shutter speed (programmable)		1/34 to 1/32,000 sec in increments of 24 μs
Lens mount		C, F, M42 mount (use 1" format lenses)
Power		12V DC ± 10%, 800 mA (typical at 25° C)
Operating temperature		-10° C to 50° C
Vibration		7 Grms (10 Hz to 2000 Hz) Random
Shock		70 G, 11 ms, half-sine
Dimensions (H x W x L)		51 mm x 51 mm x 85 mm
Weight		216 g (without tripod)

GUI Interface

A user-friendly graphical user interface (GUI), provided as part of the camera's extensive software development kit (SDK), allows users to control various camera functions, including:

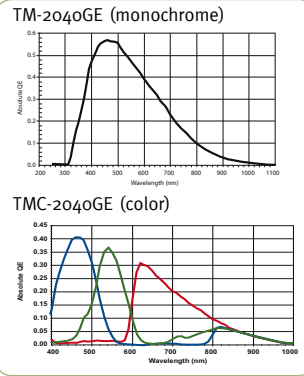
- Shutter control for manual async. and pulse width control
- Gain control
- A/D reference voltage control
- Save settings
- Load settings
- Report settings
- LUT setting and graphic display
- Scanning mode selection and Option selections



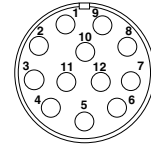
The SDK also provides functions for controlling the grabbing of images, and configuring local I/Os, by means of an integrated API and a set of powerful C++ classes. Changes in the camera's acquisition modes automatically update the API for easy image acquisition. CPU usage is only a few percent, thanks to the TCP/IP offload engine.

Software available for download at www.jai.com

Spectral Response



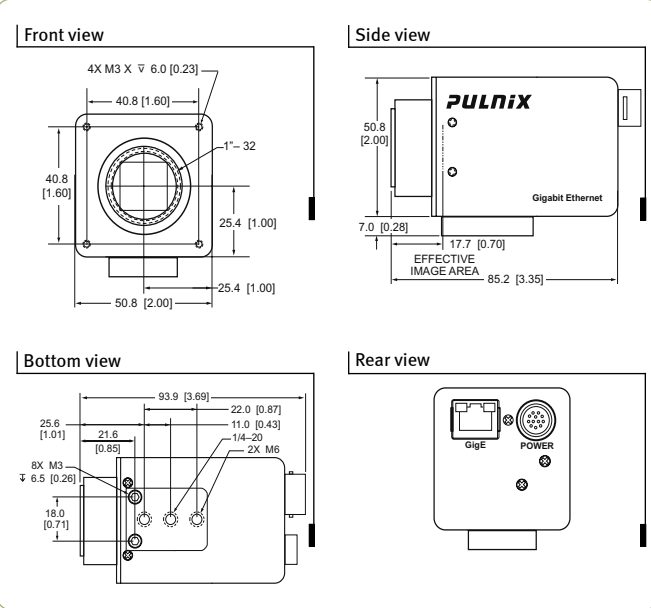
Connector Pin-out



12-Pin Connector

- | | |
|-----------------|--------------|
| 1 GND (power) | 7 VD in |
| 2 +12V | 8 Strobe out |
| 3 GND (analog) | 9 HD in |
| 4 Video out | 10 Reserved |
| 5 GND (digital) | 11 Reserved |
| 6 VINIT in | 12 Reserved |

Dimensions



Ordering Information

Camera	
Lead Processing	TM-2040GE (mono), TMC-2040GE (color)
RoHS Compliant	RM-2040GE (mono), RMC-2040GE (color)
Optional Functions	
Internal IR Filter Added	OP3-1
Optical Filter Removal	OP3-2 (color only)
Glassless CCD Imager	OP21
Ultraviolet Imager	OP21-UV (monochrome only)
F mount	OP65-6
M42 mount	OP65-7
M42 mount, 10mm back focus	OP65-8
Optional Accessories (must be ordered separately)	
Power Supply/2m cable	PD-12UUP/12P-02S
Power Supply	PD-12UUP series (includes power connector)

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