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

- *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*

GigE VISION ™

jAi ®

See the possibilities

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	1600 (H) x 1200 (V) @ 34 Hz
	B	1600 (H) x 600 (V) @ 58 Hz (partial scan)
	C	1600 (H) x 300 (V) @ 90 Hz (partial scan)
	D	1600 (H) x 150 (V) @ 122 Hz (partial scan)
	U	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	0.4 lux f=1.4 (no shutter) @ 34 fps,
	Color	2.4 lux f=1.4 (no shutter) @ 34 fps, Pixel sensitivity: 30 μV/e-
Video output	Analog	1.0 Vp-p, 75 Ω
	Digital	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)

Spectral Response

TM-2040GE (monochrome)

TMC-2040GE (color)

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

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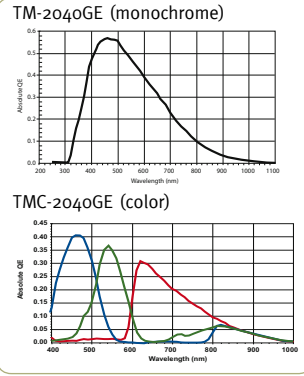
- Shutter control for manual async. and pulse width control
- Gain control
- A/D reference voltage control
- Save settings
- Load settings
- Report settings
- LUT setting and graphic display
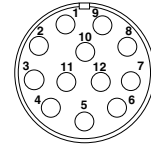- Scanning mode selection and Option selections

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.

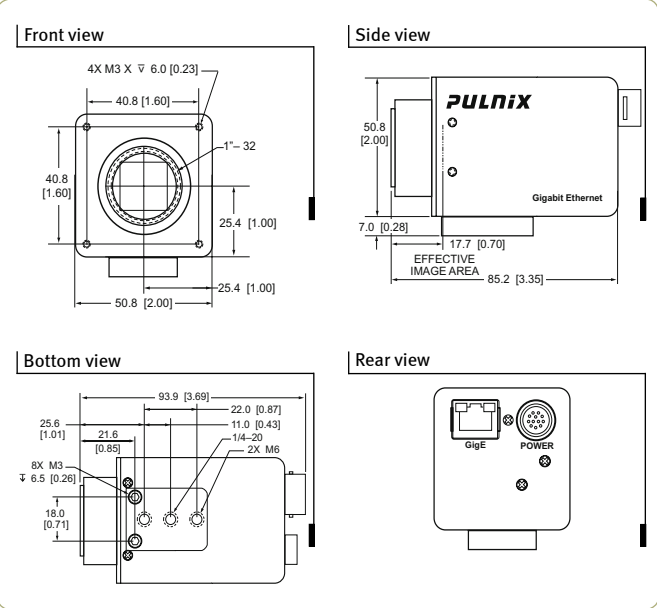Software available for download at www.jai.com

Dimensions

Front view

Side view

Bottom view

Rear view

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)

Europe, Middle East & Africa
Phone +45 4457 8888
Fax +45 4491 8880

Asia Pacific
Phone +81 45 440 0154
Fax +81 45 440 0166

Americas
Phone (Toll-Free) 1 800 445 5444
Phone +1 408 383 0300

Visit our web site on www.jai.com

10432 Rev B.05.16.2007

See the possibilities