TM-4200GE/TMC-4200GE

Progressive Scan CCD

- *1.2” progressive scan IT CCD (Kodak KAI-4021)*
- *2048 x 2048 resolution @ 15 fps dual-tap*
- *7.4 µm square pixels*
- *Software-selectable single-tap mode available @ 8 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 (1000, 500, 250 lines)*
- *2X2 binning and user-definable variable partial scan*
- *Full-frame shutter to 1/16,000 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*

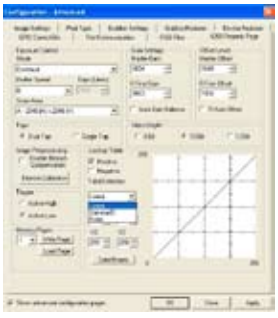
Specifications for TM-4200GE/TMC-4200GE

Specifications		TM-4200GE/TMC-4200GE
Sensor		1.2" progressive scan interline transfer CCD
Active area		15.15mm x 15.15mm
Active pixels		2048 (H) x 2048 (V)
Cell size		7.4 µm x 7.4 µm
Readout modes	A	2048 (H) x 2048 (V) @ 15 Hz
	B	2048 (H) x 1000 (V) @ 28 Hz (partial scan)
	C	2048 (H) x 500 (V) @ 50 Hz (partial scan)
	D	2048 (H) x 250 (V) @ 80 Hz (partial scan)
	U	User-definable partial scan
Synchronization		Internal/External auto switch HD/VD, 4.0 Vp-p impedance 4.7K Ω VD=14.79 Hz ± 2%, non-interlace HD=30.78 kHz ± 2%
Pixel clock		40.00 MHz
S/N ratio		› 58 dB
Sensitivity	Mono	0.12 lux f=1.4 (no shutter) @ 15 fps,
	Color	0.8 lux f=1.4 (no shutter) @ 15 fps, Pixel sensitivity: 31 µV/e-
Video output	Analog	1.0 Vp-p, 75 Ω
	Digital	Gigabit Ethernet (8-bit/10-bit/12-bit)
Color (TMC/RMC-4200 only)		Raw Bayer output for host-based interpolation
Gamma		Programmable LUT (Gamma 1.0 std)
Shutter speed (programmable)		1/15 to 1/16,000 in increments of 32.5 µs
Lens mount		C, F, M42 mount (use ›1" format lenses)
Power		12V DC ± 10%, 590 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		214 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

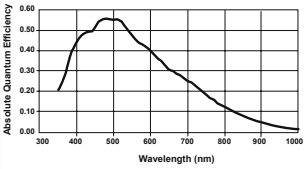


The SDK also provides functions for controlling the grabbing of images, and configuring local I/Os, by means of an integrated API and a set of powerful C++ classes. Changes in the camera's acquisition modes automatically update the API for easy image acquisition. CPU usage is only a few percent, due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

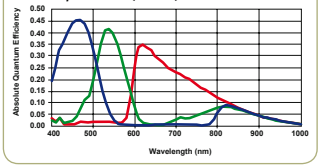
Software available for download at www.jai.com

Spectral Response

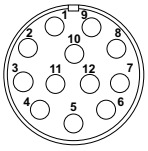
TM-4200GE (monochrome)



TMC-4200GE (color)



Connector Pin-out



12-Pin Connector

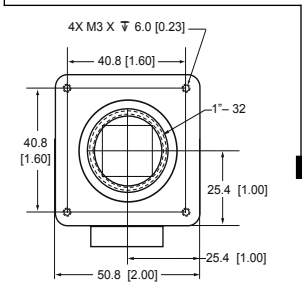
1	GND (power)	7	VD in
2	+12V	8	Strobe out
3	GND (analog)	9	HD in
4	Video out	10	NC
5	GND (digital)	11	Reserved
6	VINIT in	12	NC

Shutter Speed

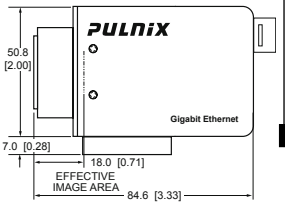
	Manual	Async
0	1/frame rate	no shutter
1	1/60	1/16,000
2	1/125	1/8,000
3	1/250	1/4,000
4	1/500	1/2,000
5	1/1,000	1/1,000
6	1/2,000	1/500
7	1/4,000	1/250
8	1/8,000	1/125
9	1/16,000	Ext. pulse width control

Dimensions

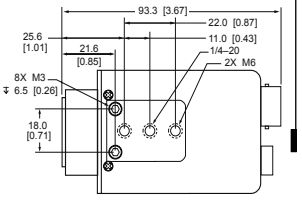
Front view



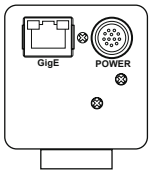
Side view



Bottom view



Rear view



Ordering Information

Camera	
Lead Processing	TM-4200GE (mono), TMC-4200GE (color)
RoHS Compliant	RM-4200GE (mono), RMC-4200GE (color)
Optional Functions	
Internal IR Filter Added	OP3-1 (monochrome only)
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	PD-12UUP (includes power connector)
Power Supply/2m cable	PD-12UU/12P-02S

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

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