

## ❖ TM-2030 CL / TMC-2030 CL

Progressive Scan CCD



- 1" progressive scan IT CCD imager (KAI-2093)
- 1920(H) x 1080(V) pixels (HDTV format)
- 7.4  $\mu\text{m}$  square pixels
- 32 fps in dual-tap mode
- SW selectable single-tap mode @ 16 fps
- 12-bit A/D (linear) or 8-bit/10-bit with look-up table (LUT)
- Digital Camera Link output and analog output
- Full-frame shutter to 1/16,000 sec.
- Asynchronous reset, no-delay, pulse width control shutter
- Defective pixel compensation
- PIV (particle imaging velocimetry) mode
- Automatic channel balancing
- GUI or serial commands for external control
- Monochrome or color



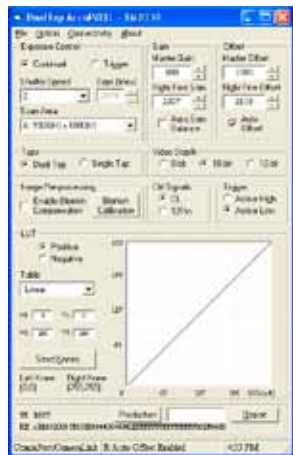
# Specifications for TM-2030CL/TMC-2030CL

Specifications		TM-2030CL/TMC-2030CL
Sensor		1" progressive scan interline transfer CCD
Active area		14.2mm x 8.0mm
Active pixels		1920 (H) x 1080 (V)
Cell size		7.4 μm x 7.4 μm
Readout modes		1920 (H) x 1080 (V) @ 32 Hz (dual-tap) or 16 Hz (single-tap) selectable
Synchronization		Internal/External auto switch HD/VD, 4.0 Vp-p impedance 4.7K Ω VD = 32.3 Hz ± 2%, non-interlace HD = 36.4 kHz ± 2%
Pixel clock		40.00 MHz
S/N ratio		>57 dB
Sensitivity	Mono Color	0.45 lux f=1.4 (no shutter) @ 32 fps, 3.6 lux f=1.4 (no shutter) @ 32 fps, Pixel sensitivity: 14 μV/e-
Video output	Analog Digital	1.0 Vp-p, 75 Ω 8-bit x 2-tap Base Camera Link 10-bit x 2-tap Base Camera Link 12-bit x 2-tap Base Camera Link
Color (RMC/TMC-2030 only)		Raw Bayer output for host-based interpolation
Gamma		Programmable LUT (1.0 std)
Shutter speed (programmable)		1/32 to 1/16,000 sec in increments of 27.5 μs
Lens mount		C mount (use 1" format lenses)
Power		12V DC ± 10%, 520 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 74 mm
Weight		188 g (without tripod)

## GUI Interface

A user-friendly GUI (graphical user interface) is provided. This interface allows users to control the following functions of the TM-2030CL camera:

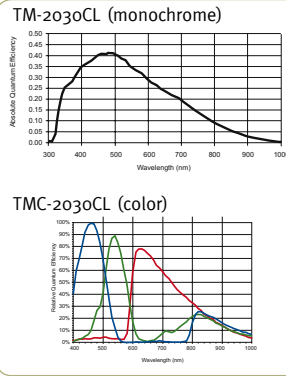
- Shutter control for manual async. and pulse-width control
- Gain control
- Offset control
- Save settings
- Load settings
- Report settings
- LUT setting and graphic display
- Scanning mode selection and option selections
- Channel auto balancing



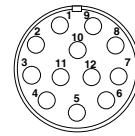
Camera parameters can be uploaded from the PC to the camera. Once these parameters are stored in EEPROMs, an instantaneous change from one setting to another can be done with a delay of few frames in between.

Software available for download at [www.jai.com](http://www.jai.com)

## Spectral Response



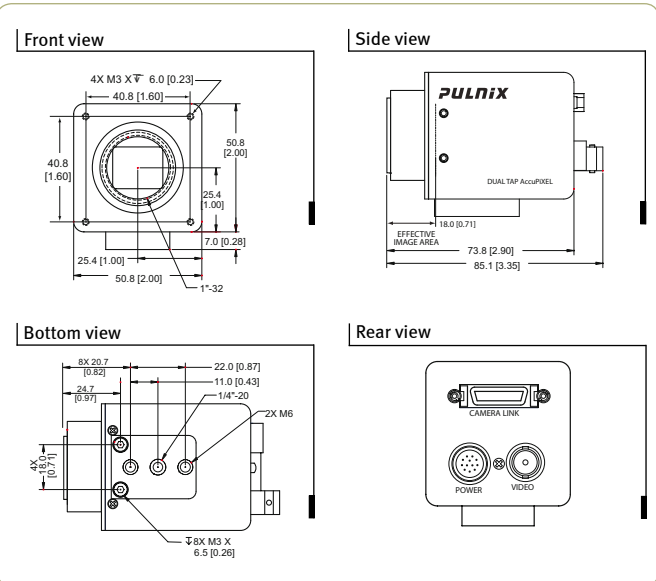
## Connector Pin-out



### 12-Pin Connector

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

## Dimensions



## Ordering Information

Camera	
Lead Processing	TM-2030CL (mono), TMC-2030CL (color)
RoHS Compliant	RM-2030CL (mono), RMC-2030CL (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)
Optional Accessories (must be ordered separately)	
I/O	26CL-02-26 (2m), 26CL-05-26 (5m)
Power Supply/2m cable	PD-12-UU/12P-02S
Power Supply	PD-12UUP (includes power connector)

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See the possibilities

