

❖ **TM-4100 CL / TMC-4100 CL** 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**
- **Digital Camera Link output and analog output**
- **Full frame integration for long exposures**
- **Image center partial scan (1000, 500, 250 lines)**
- **Automatic channel balancing**
- **Full-frame shutter to 1/16,000 sec.**
- **Asynchronous reset, no-delay, pulse width control shutter**
- **Read-out inhibit control for multiple-camera applications**
- **Automatic channel balancing**
- **Monochrome or color**



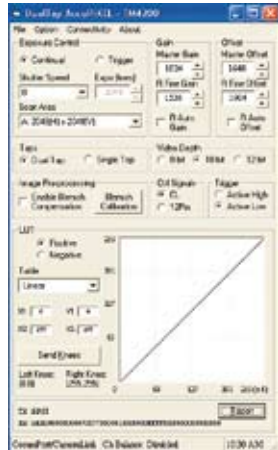
Specifications for TM-4100CL/TMC-4100CL

Specifications	TM-4100CL/TMC-4100CL
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)
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	> 48 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 8-bit x 2-tap Base Camera Link 10-bit x 2-tap Base Camera Link (optional)
Color (RMC/TMC-4100 only)	Raw Bayer output for host-based interpolation
Gamma	Programmable LUT (Gamma 1.0 std)
Lens mount	C-mount (use 1" format lenses)
Power	12V DC ± 10%, 390 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	152 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-4100CL camera:

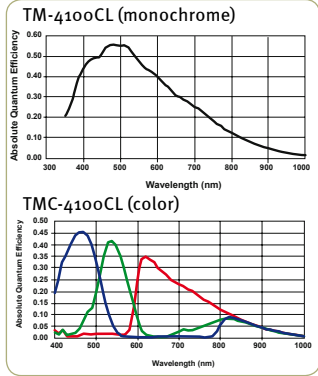
- Shutter control for manual async. and pulse-width control
- Gain control
- Offset control
- Save settings
- Load settings
- Report settings
- LUT setting and graphic display
- Scanning mode selection and option selections
- Channel auto balancing



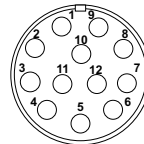
Camera parameters can be uploaded from the PC to the camera. Once these parameters are stored in EEPROMs, an instantaneous change from one setting to another can be done with a delay of few frames in between.

Software available for download at www.jai.com

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 INTEG/ROI |
| 6 VINIT in | 12 NC |

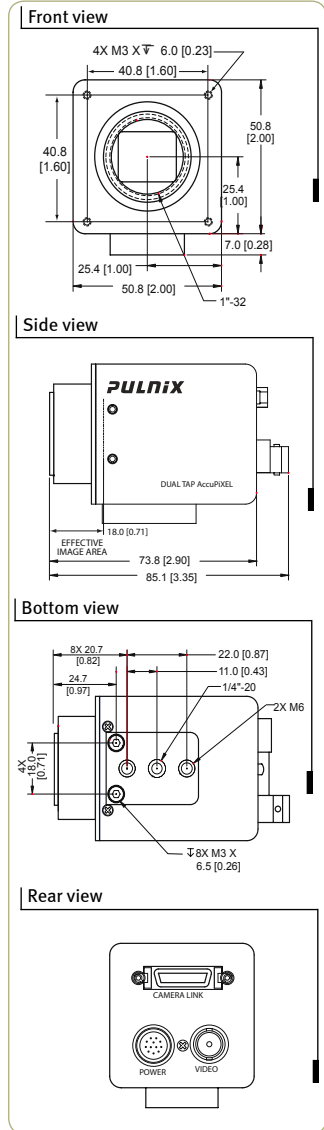
Shutter Speed

	Manual	Async
0	no shutter	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

Ordering Information

Camera	
Lead Processing	TM-4100CL (mono), TMC-4100CL (color)
RoHS Compliant	RM-4100CL (mono), RMC-4100CL (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)
TTL inputs on 12-pin	OP25-2
10-bit output	OP93-1
Optional Accessories (MUST BE ORDERED SEPARATELY)	
I/O	26CL-02-26 (2m)
Power Supply	PD-12UUP (includes power connector)
Power Supply/2m cable	PD-12UU/12P-02S

Dimensions



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