PULNiX TM-4100CL

The TM-4100CL is a miniature, very high-resolution (4.2 Mpixels) monochrome progressive scan CCD camera with dual-tap output and a frame rate of 15 fps at full 2048 x 2048 resolution. The TM-4100CL features the latest Kodak KAI-4021 CCD imager for the best image quality and sensitivity. Applications for the TM-4100CL include machine vision, medical imaging, intelligent transportation systems, high-definition graphics, gauging, and surveillance.

- 1.2” progressive scan IT CCD imager (KAI-4021)
- 2048 x 2048 resolution @ 15 fps
- Color version (RGB Bayer CFA) is available as TMC-4100CL‡
- Miniature 50.8 x 50.8 x 81.5 mm housing
- Digital Camera Link dual-tap output and analog output (Ch. A only)
- Maximum dynamic range control with PULNiX-exclusive, patent-pending built-in look-up table
- Full frame integration for long exposures
- Image center partial scan (1000, 500, 250 lines)
- Full-frame shutter to 1/16,000 sec.
- Asynchronous reset, no-delay shutter
- Read-out-inhibit control for multiple-camera applications
- Camera Link* external control
- Automatic dual-channel compensation

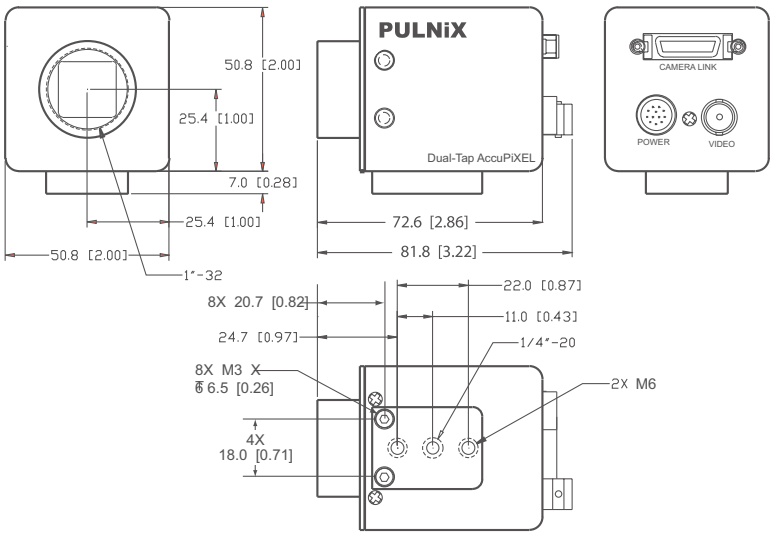
** For more information, see the Camera Link data sheet*
‡ For more information, see the Color AccuPiXEL data sheet

TM-4100CL SPECIFICATIONS

Imager	*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*
Display Mode (Active Pixels) 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)*
Sync	*Internal/External auto switch* *HD/VD, 4.0 Vp-p impedance 4.7Ω* *VD=14.79 Hz ± 2%, non-interlace* *HD=30.78 kHz ± 2%*
Data Clock Output	*40.00 MHz*
Resolution	*Digital: 2048 (H) x 2048 (V)* *Analog: over 800 TV lines (H) x 1600 TV lines (V)*
S/N Ratio	*48 dB min.*
Min. Illumination	*1.0 lux, f=1.4 (no shutter) @ 15 fps* *Sensitivity: 32µ V/e-*
Video	*Analog: 714 mV, 75Ω (900 mV white clip), Ch A only* *Digital output: 8-bit x 2 Camera Link* *10-bit x 2 Camera Link (optional)*
AGC	*OFF*
Gamma	*Programmable LUT (Gamma 1.0 std)*
Lens Mount	*C-mount (use >1" format lenses)*
Power Requirement	*12V DC ± 10%, 600 mA (current measured at 25°)*
Operating Temp.	*-10° C to 45° C*
Vibration	*7 Grms (10 Hz to 2000 Hz) Random*
Shock	*70G, 11 ms, half-sine*
Size (W x H x L)	*50.8mm x 50.8mm x 81.5mm*
Weight	*152 grams, 5.4 oz (without tripod)*

MUST BE ORDERED SEPARATELY	
Optional Functions	*Adjustable back-focus front end, 10-bit output*
Optional Accessories	
I/O CL cable	*26CL-02-26 (2m), 26CL-05-26 (5m)*
Power Cable	*12P-02S*
Power Supply	*PD-12UUP series (includes power connector)*

** Image quality will degrade with increasing temperature.*

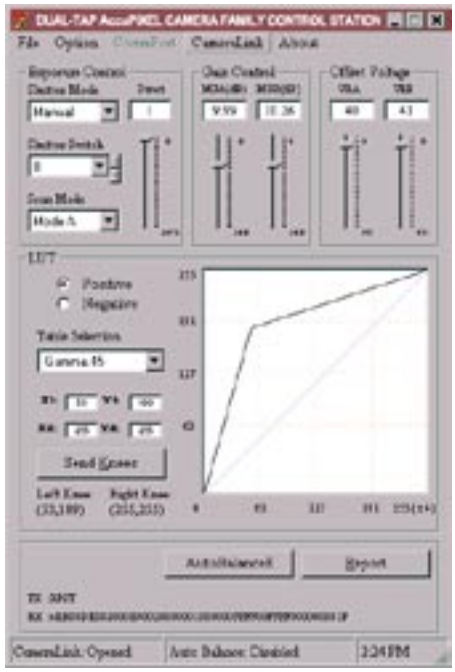


Graphical User Interface

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 a few frames in between.



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