

PULNiX TM-4100GE



The TM-4100GE is a miniature, very high-resolution (4.2 Mpixels) monochrome progressive scan CCD camera with Gigabit Ethernet output and a frame rate of 15 fps at full 2048 x 2048 resolution. The TM-4100GE features the latest Kodak KAI-4021 CCD imager for the best image quality and sensitivity. Applications for the TM-4100GE 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
- 7.4 μm square pixels
- Color version (RGB Bayer CFA) is available as TMC-4100GE†
- Miniature 51 x 51 x 82 mm housing
- High speed point-to-point connection, up to 1Gbps
- Gigabit Ethernet output (8-bit/10-bit), 100 m with CAT 5E or CAT 6 cable
- 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
- Automatic dual-channel compensation
- Extensive software developer's kit (SDK)



TM-4100GE 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 μ m x 7.4 μ m
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 4.7 Ω VD=14.79 Hz \pm 2%, non-interlace HD=30.78 kHz \pm 2%
Data Clock Output	40.00 MHz
Resolution	Digital: 2048 (H) x 2048 (V)
S/N Ratio	50 dB min.
Min. Illumination	Monochrome: 0.12 lux Color: 0.8 lux f=1.4 (no shutter) @ 15 fps Sensitivity: 31 μ V/e-
Video	Gigabit Ethernet
Gamma	Programmable LUT (Gamma 1.0 std)
Lens Mount	C-mount (use >1" format lenses)
Power Requirement	12V DC \pm 10%, 590 mA (typical at 25 $^{\circ}$ C)
Operating Temp.	-10 $^{\circ}$ C to 50 $^{\circ}$ C
Vibration	7 Grms (10 Hz to 2000 Hz) Random
Shock	70G, 11 ms, half-sine
Size (W x H x L)	51mm x 51mm x 85mm
Weight	197 grams, 6.9 oz (without tripod)

MUST BE ORDERED SEPARATELY

Optional Functions	Adjustable back-focus front end, 10-bit output
Optional Accessories	
Power Cable	12P-02S
Power Supply	PD-12UUP series (includes power connector)

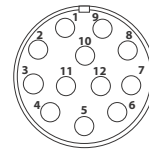
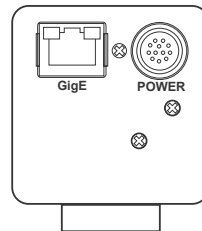
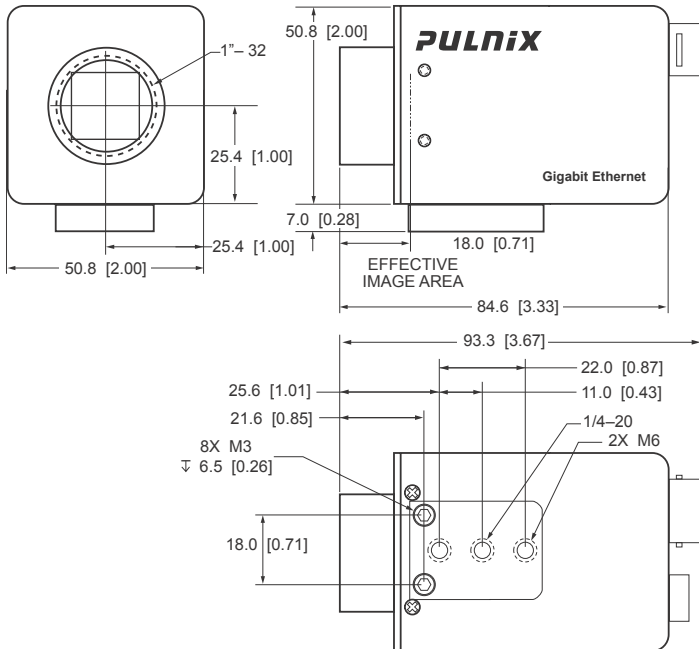
* Image quality will degrade with increasing temperature.

Graphical User Interface

A user-friendly GUI (graphical user interface) is provided. This interface allows users to control the following functions of the TM-4100GE 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.



12-Pin Connector

1 GND (power)	7 VD in
2 +12V	8 GND
3 GND (analog)	9 HD in
4 Reserved	10 RXD(RS-232)
5 GND (digital)	11 INTEG/ROI
6 VINIT in	12 TXD(RS-232)

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