

TIGER

INTELLIGENT CAMERA SERIES

T2040 CCD 4 MP Camera Link®



Imperx: T2040

The Tiger T2040 CCD camera is an advanced, ruggedized, and economical digital camera providing 2048 x 2048 resolution, frame rates up to 34 fps. The camera features programmable image resolution, frame rates, gain, offset, external triggering, strobe outputs, transfer function correction, temperature monitoring, and user programmable LUTs, FFC, and Defect Correction Tables. The camera is fully field upgradable with optional forced air cooling available.

Specifications

Feature	Description	Feature	Description
Output Interface	Camera Link® Medium w/PoCL®	Data Correction	Bad pixel correction, four 12-bit LUTs, 2 FFC, Black level, Vertical smear
Resolution	2048 (H) x 2048 (V), 2072 (H) x 2072 (V) max	Minimum Illuminations	1 Lux, F/ 1.4
Sensor	ON Semiconductor KAI-04070 Color/Mono/ Sparse CFA	Lens Mount	F-Mount (Default), C-Mount, M42, EOS Canon
Sensor Format	CCD, 4/3" optical format	Supply Voltage Range	12 VDC (6 V – 30 V), 2.5 A inrush
Pixel Size	7.4 microns square	Power Consumption (Ruggedized)	7.8 W (typ.)
Frame Rate	34 fps	Power Consumption (Industrial)	8.4 W (typ.)
Dynamic Range	70 dB	Size - Width/Height/Length	69.5 mm (W) x 69.5 mm (H) x 51.5 mm (L) (Ruggedized, no fan) 69.5 mm (W) x 76.3 mm (H) x 51.5 mm (L) (Industrial, with fan)
Output Bit Depth	8-bit, 10-bit, 12-bit	Weight	450g
Noise	12 electrons rms	Vibration, Shock (Ruggedized)	100G (20-200 Hz) XYZ/ 1000G
Analog Gain Control	Manual, Auto (Ruggedized); 0 – 30 dB (Ruggedized), 0 – 24 dB (Industrial)	Vibration, Shock (Industrial)	20G (20-200 Hz) XYZ/ 200G
Black Level Control	Manual, 1024 steps, Auto	Environmental (Ruggedized)	-40 °C to +85 °C Operating, -50 °C to +90 °C Storage
Digital Gain	1x – 4x, 0.001x steps	Environmental (Industrial)	-10 °C to +60 °C Operating, -50 °C to +90 °C Storage
Digital Offset	-512 to +511, 1 step increments	Humidity	10% to 90% non-condensing
AEC/AGC	Yes (Ruggedized)	MTBF	TBD
White Balance	Manual, Auto, Off	Regulatory	FCC Part 15 Class A, CE, RoHS
Shutter Speed	1/100,000 to 1/34 s (nom) in 1 µs steps		
Exposure Control	Auto (Ruggedized), External, Internal		
Long Integration	Up to 16 seconds		
Regions of Interest (ROI)	2 ROIs (Ruggedized) or 1 ROI (Industrial). Any line to any line, any pixel to any pixel		
Binning H/V	1x, 2x, 4x (Independent for H & V)		
Trigger Inputs	External, Pulse generator, Software, Computer		
Trigger Options	Edge, Pulse width, Trigger filter, Trigger delay, Debounce		
Trigger Modes	Standard, Double, Fast		
External Inputs/Outputs	2 IN (OPTO, LVTTTL) / 2 OUT (OPTO, TTL)		
Strobe Output	2 strobes (Ruggedized) or 1 strobe (Industrial). Programmable position and duration		
Pulse Generator	Yes, programmable		

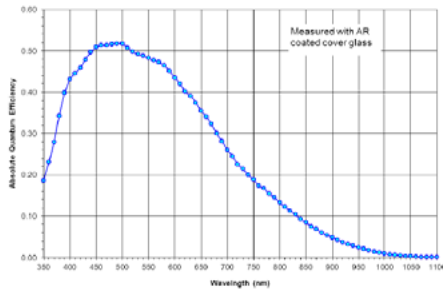
Imperx: T2040 Applications

The T2040 incorporates a number of unique features tailored to reduce system complexity, maximize interface bandwidth, and expand the usable operational range.

Aerospace • Satellites • Surveillance • Military and Non-Military Ground Vehicles • Ball Grid Array • Printed Circuit Board Inspection • Motion Analysis • Broadcast Television • Telepresence • Unmanned Aerial Vehicles • Machine Vision • Reconnaissance • Intelligent Traffic Systems • Aerial Imaging • Open Road Tolling Systems • Situational Awareness • Scientific • Particle Velocity

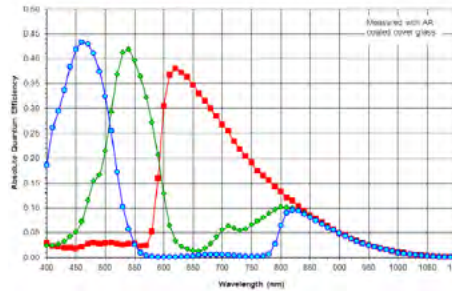
Absolute Quantum Efficiency

Monochrome with Microlens KAI-04070



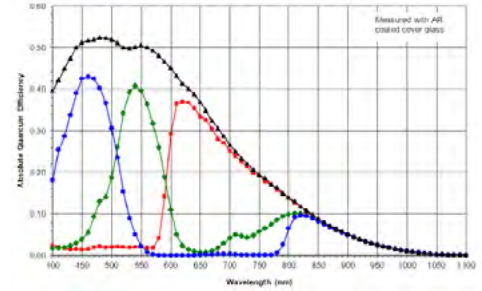
KAI-04070

Color (Bayer RGB) with Microlens KAI-04070

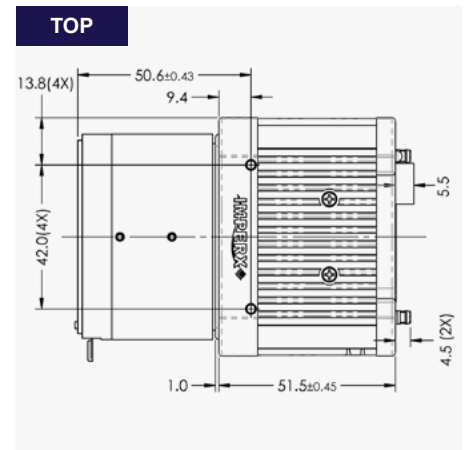
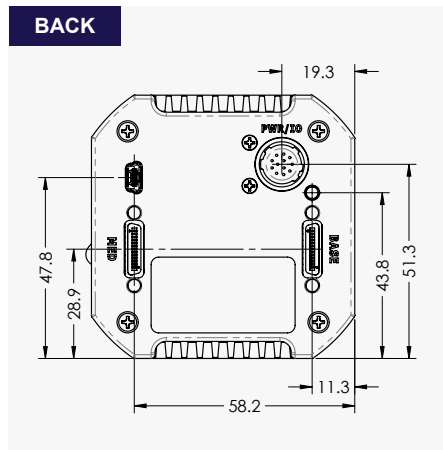
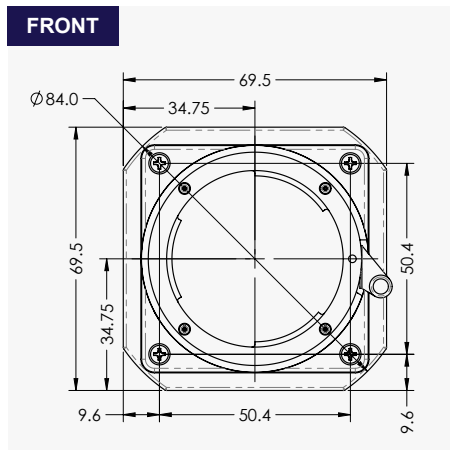


KAI-04070

Color (TRUESENSE Sparse CFA) with Microlens KAI-04070



Dimensions

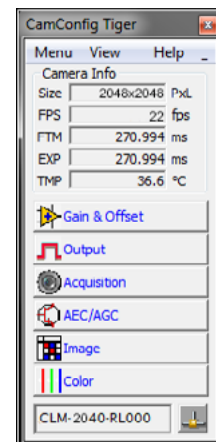


Ordering Information

Output Interface
Camera Link® Medium (CLM) w/PoCL®
Sensor Types available
Monochrome
Bayer Color
Sparse CFA

Lens Mounts
F-Mount (default) M42
C-Mount EF Canon
Ordering
Ruggedized Industrial
Accessories (Sold separately)
PS12v04A-Power Supply w/ 1 input and 1 output

Camera Link GUI



Hirose Connectors

Power and I/O Interface
<ul style="list-style-type: none"> 1. 12 VDC Return 2. +12 VDC 3. Reserved 4. Reserved 5. OUT2 OPTO - 6. OUT1 TTL Gnd 7. OUT1 TTL Signal 8. IN1 OPTO + 9. IN2 TTL Signal 10. IN1 OPTO - 11. IN2 TTL Gnd 12. OUT2 OPTO +

Connector: Hirose HR 10A-10R-12PB(71)

Rev: cl_t2040_r2_2019

Quality Management System ISO 9001:2015 Registered
 Environmental Management System ISO 14001:2015 Registered
 DDTC Registered (Directorate of Defense Trade Controls, US Department of State)



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