

TIGER

INTELLIGENT CAMERA SERIES

T9040 CCD 50 MP Camera Link®



Imperx: T9040

The Tiger T9040 CCD camera is an advanced, compact, and durable interline CCD camera providing 10440 x 4800 resolution and frame rates up to 3.5 fps. This 50 MP camera uses the ON Semiconductor KAI-50140 image sensor with 4.5-micron pixels in a 47.0 mm x 21.6 mm image area. The camera provides programmable image resolution, frame rates, gain, offset, external triggering, strobe outputs, temperature monitoring, and user programmable and loadable LUTs. The camera's low-noise, excellent uniformity, and low dark current produce image quality prized in Flat Panel inspection, metrology, and surveillance applications. Optional forced air cooling is available.

Specifications

| Feature | Description | Feature | Description |
|----------------------------------|---|---------------------------------------|--|
| Output Interface | Camera Link® Medium, Base (optional for 40 MHz only) w/PoCL® | Data Correction | Bad pixel correction, four 12-bit LUTs, 2 FFC, Black level, Vertical smear |
| Resolution | 10440 (H) x 4800 (V), 10480 (H) x 4840 (V) max | Minimum Illuminations | 1 Lux, F/ 1.4 |
| Sensor | ON Semiconductor KAI-50140 | Lens Mount | M58 |
| Sensor Format | CCD, 51.7 mm | Supply Voltage Range | 12 V DC (6 V – 30 V), 2.5 A inrush |
| Pixel Size | 4.5 microns square | Power Consumption (Ruggedized) | TBD (58 MHz); 8.16 W (40 MHz) |
| Pixel Clock Rate | 58 MHz (Default), 40 MHz (Optional) | Power Consumption (Industrial) | TBD (58 MHz); 8.76 W (40 MHz) |
| Frame Rate | 3.5 fps (58 MHz), 2.5 fps (40 MHz) | 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) |
| Dynamic Range | > 60 dB | Weight | TBD |
| Output Bit Depth | 8-bit, 10-bit, 12-bit | Vibration, Shock (Ruggedized) | 100G (20-200Hz) XYZ/ 1000G |
| Noise | Read Noise: < 13 electrons | Vibration, Shock (Industrial) | 20G (20-200Hz) XYZ / 200G |
| Analog Gain Control | Manual, Auto (Rug.): 0 – 30 dB (Ruggedized), 0 – 24 dB (Industrial) | Environmental (Ruggedized) | 40 °C to +85 °C Operating, -50 °C to +90 °C Storage |
| Black Level Control | Manual, 1024 steps, Auto | Environmental (Industrial) | -10 °C to +60 °C Operating, -50 °C to +90 °C Storage |
| Digital Gain | 1x – 4x, 0.001x steps | Humidity | 10% to 90% non-condensing |
| Digital Offset | -512 to +511, 1 step increments | MTBF | TBD |
| AEC/AGC | Yes (Ruggedized) | Regulatory | FCC Part 15 Class A, CE, RoHS |
| White Balance | Manual, Auto, Off | | |
| Shutter Speed | 1 µs/step, 1/100,000 to 1/2.5 s (nom) | | |
| 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 (TTL/OPTO via IN1/IN2), 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: T9040 Applications

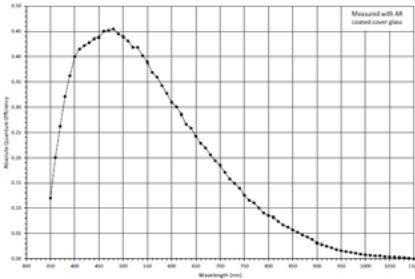
The T9040 incorporates a number of unique features tailored to reduce system complexity, maximize interface bandwidth, and expand the usable operational range.

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

Absolute Quantum Efficiency

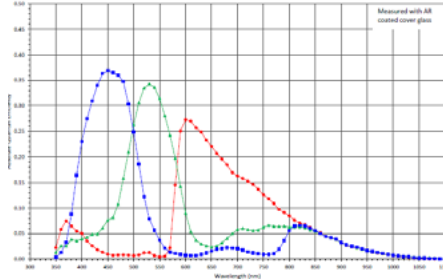
Monochrome with Microlens

KAI-50140

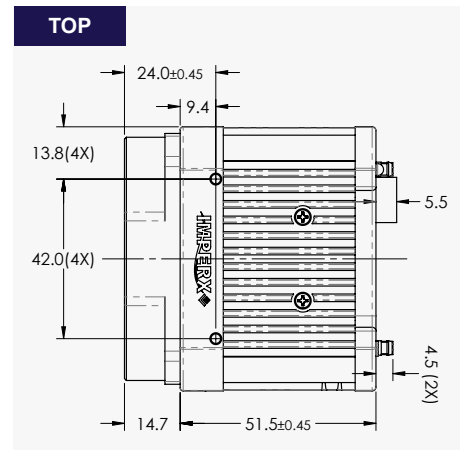
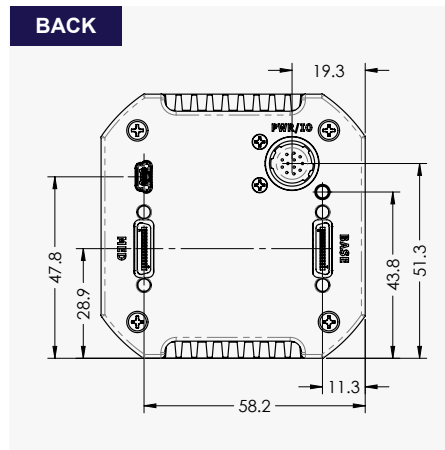
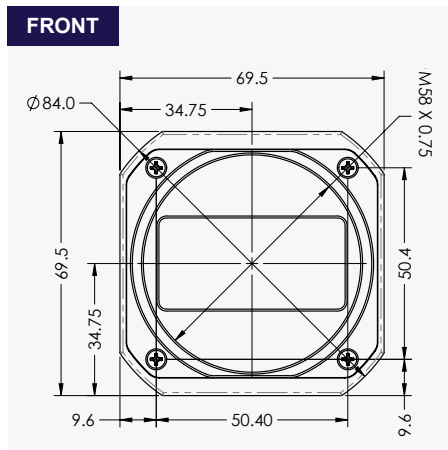


Color (Bayer RGB) with Microlens

KAI-50140



Dimensions

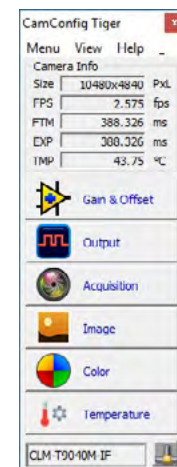


Ordering Information

| |
|----------------------------------|
| Output Interface |
| Camera Link® Medium (CLM) w/PoCL |
| Sensor Types available |
| Monochrome |
| Bayer Color |
| Clock Option |
| 58 MHz (Default) |
| 40 MHz (Optional) |

| |
|---|
| Lens Mounts |
| M58 |
| Ordering |
| Ruggedized Industrial |
| Accessories (Sold separately) |
| PS12V04A-Power Supply w/ 1 input and 1 output |

Software/Drivers/Interface



Hirose Connectors

| |
|--|
| Power and I/O Interface |
| |
| <ol style="list-style-type: none"> 12V DC Return +12 VDC Reserved Reserved OUT2 OPTO - OUT1 TTL Gnd OUT1 TTL Signal IN1 OPTO + IN2 TTL Signal IN1 OPTO - IN2 TTL Gnd OUT2 OPTO + |

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

Rev: cl_t9040_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)



IMPERX 6421 Congress Ave., Boca Raton, FL 33487, USA
 Tel: +1-561-989-0006. Email: sales@imperx.com

WWW.IMPERX.COM

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