

# CHEETAH

INTELLIGENT CAMERA SERIES

## C4080 CMOS 12 MP Camera Link®



### Imperx: C4080

The C4080 incorporates the On Semiconductor KAC-12040 CMOS image sensor with a native resolution of 4000 x 3000 in a 4/3" optical format delivering up to 67 frames per second in either global or rolling shutter mode with a Camera Link® or PoCL Full output. Extended dynamic range technology coupled with extremely robust blooming suppression provide clean imagery in even the most severe uncontrolled lighting applications. Cheetah cameras incorporate "smart" wide dynamic range technology which monitors each pixel's exposure and sets the exposure to one of four user selectable values based on the intensity of the source at the pixel. CMOS technology eliminates smear columns from areas of ultra-bright intensity and specular reflections in uncontrolled lighting applications.

### Specifications

Feature	Description	Feature	Description
Interfaces available	Camera Link® Base, Full/Deca (CLF) w/PoCL	Strobe Output	2 strobes, programmable position and duration
Resolution	4000 x 3000	Pulse Generator	Yes, programmable
Sensor	KAC-12040, CMOS Color/Mono	Image Enhancement	Vertical/Horizontal flip
Sensor Format	18.8 mm (H) x 14.1 mm (V) 23.5 mm diagonal 4/3" optical format	Data Corrections	Defective/hot pixel correction (static, dynamic)
Pixel Size	4.7 µm	Lens Mount	F-Mount (Default), C, M42, EF Canon
NIR Sensitivity	850nm: 15%, 950nm: 5%	Supply Voltage Range	12VDC (5V – 30V), 1.5 A inrush
Shutter	Global shutter (GS), rolling shutter (RS)	Camera Current	Typical: 0.30A, Maximum: 0.33A
Digitization	10 or 12 bit	PoCL	PoCL capable in base/medium/full mode
Frame Rate	27 fps (12 bit), 55 fps (10 bit), 67 fps (8 bit)	Size - Width/Height/Length	72.0mm (W) x 72.0mm (H) x 34.3mm (L) – Applies to all interfaces
Camera Link Clock Rate	85MHz	Weight	385 g
Dynamic Range	73 dB (RS), 56 dB (GS)	Vibration, Shock	TBD
Bit Depth	8, 10, 12 bit	Environmental	-40°C to +85°C Operating, -50°C to +90°C Storage
Analog Gain Control	12-bit: 0-12 dB (16 steps); 8 or 10-bit: 0-18 dB (32 steps)	Humidity	10% to 90% non-condensing
Digital Gain	24 dB (128 steps)	MTBF	> 323,000 hours @ 40°C (Telcordia SR-332 Method 1)
White Balance	Manual, auto, off	Military Standard	MIL-STD-810F
Shutter Speed	1 µs/step, 5 µs to 1.0 sec (GS), 2 µs to 1.0 sec (RS)	Regulatory	FCC Part 15 Class A, CE, RoH
Exposure Control	Off, internal, external		
Regions of Interest (ROI)	1 ROI		
Averaging Decimation	4:1, 9:1 (both color and monochrome)		
Sub-sampling Decimation	N pixels: 2, 4, 6...30 by every M pixels: 2, 4, 6...32		
Trigger Inputs	External, pulse generator, software, computer		
Trigger Options	Edge, debounce		
Trigger Modes	Internal, External, Computer		
Wide Dynamic Range	100dB (typ) GS, up to 3 knee points, piecewise linear		
External Inputs/Outputs	2 IN (OPTO, LVTTTL) / 2 OUT (OPTO, TTL)		

## Imperx: C4080 Applications

The C4080 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 • Aerospace • Intelligent Traffic Systems • Aerial Imaging • Open Road Tolling Systems • Situational Awareness

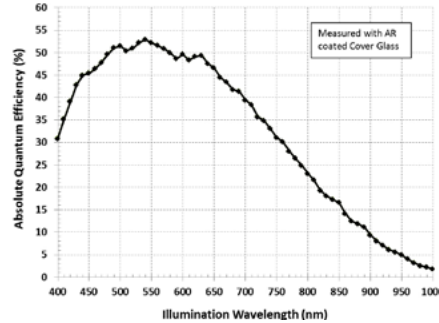
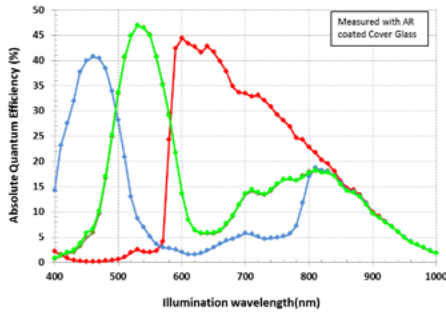
## Absolute Quantum Efficiency

Color Spectral Response

KAC-12040

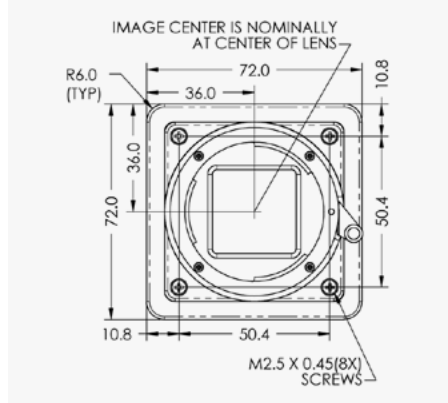
Mono Spectral Response

KAC-12040

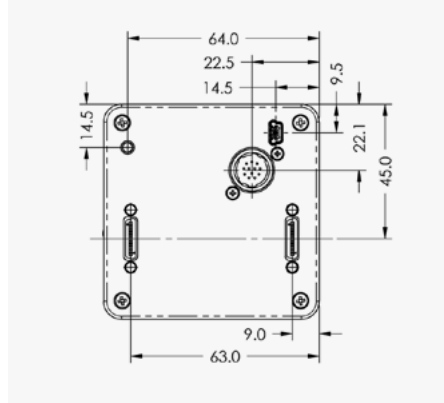


## Dimensions

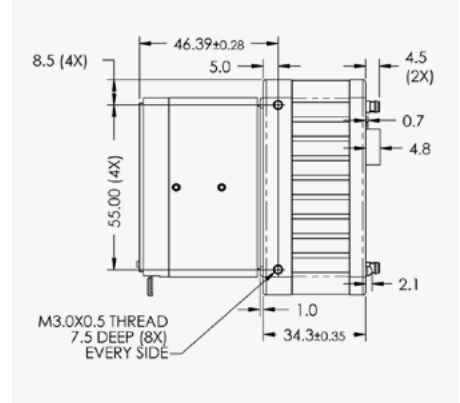
### FRONT



### BACK



### SIDE



## Ordering Information

### Interface Available

Camera Link® Full (CLF)  
USB3 (U3V)

### Sensor Types available

Monochrome  
Bayer Color

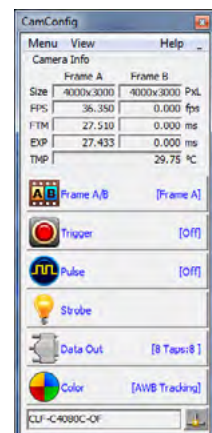
### Lens Mounts

F-Mount (Default)  
C-Mount  
M42  
EF Canon

### Accessories (Sold separately)

PS12V04A-Power Supply w/ 1 input and 1 output

## Software/Drivers/Interface



## Hirose Connectors

### Power and I/O Interface



- |                  |                    |
|------------------|--------------------|
| 1. 12V DC Return | 7. OUT1 TTL Signal |
| 2. +12V DC       | 8. IN1 OPTO +      |
| 3. Reserved      | 9. IN2 TTL Signal  |
| 4. Reserved      | 10. IN1 OPTO -     |
| 5. OUT2 OPTO -   | 11. IN2 TTL Gnd    |
| 6. OUT1 TTL Gnd  | 12. OUT2 OPTO +    |

Quality Management System ISO 9001:2015 Registered  
Environmental Management System ISO 14001:2015 Registered  
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