

CHEETAH

RUGGEDIZED 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 lighting applications.

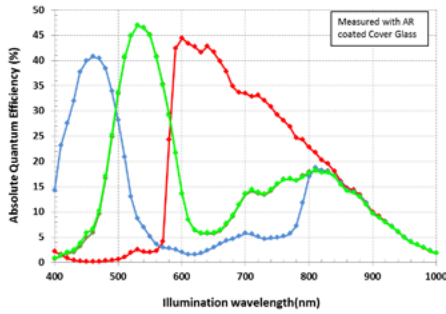
Feature	Description	Feature	Description
Interfaces available	Camera Link® Base, Full/Deca (CLF) w/PoCL	Strobe Output	2 strobes, programmable position and duration
Resolution	4000 x 3000	Pulse Generator	Yes, programmable
Sensor	KAC-12040, CMOS Color/Mono	Image Enhancement	
Sensor Format	18.8 mm (H) x 14.1 mm (V) 23.5 mm diagonal 4/3" optical format	Data Corrections	Defective/hot pixel correction (static, dynamic)
Pixel Size		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	(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.

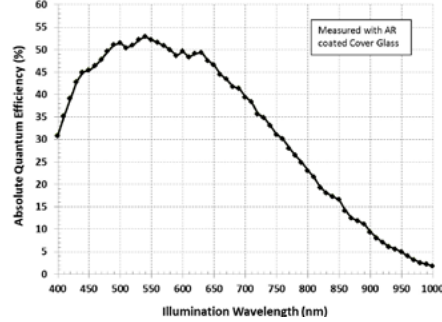
Color Spectral Response

KAC-12040



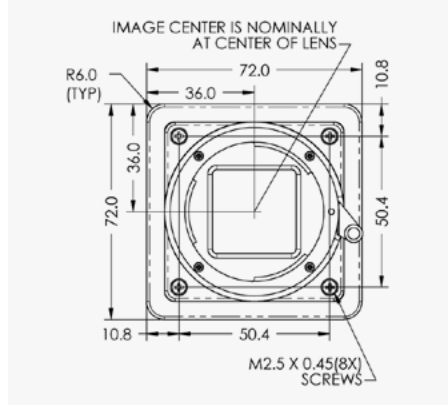
Mono Spectral Response

KAC-12040

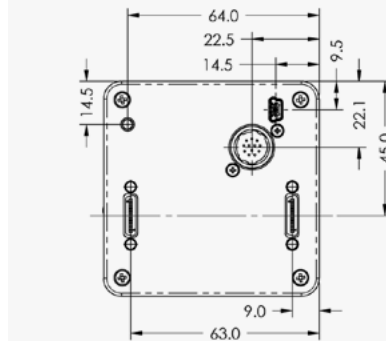


Dimensions

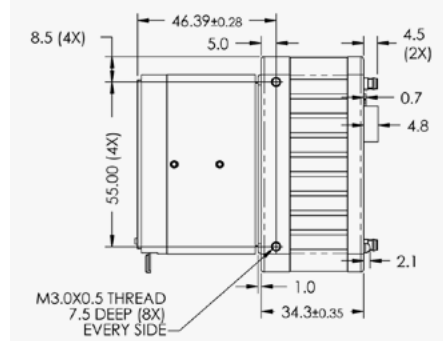
FRONT



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
DDTC Registered (Directorate of Defense Trade Controls, US Department of State)



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CHEETAH

RUGGEDIZED CAMERA SERIES

C2880 CMOS 6 MP USB3



Imperx: C2880

The C2880 incorporates the On Semiconductor KAC-06040 CMOS image sensor with a native resolution of 2832 x 2128 in a 1" optical format. The GenICam™ compliant USB3 camera delivers up to 55 frames per second in either global or rolling shutter mode using the USB3 interface. Extended dynamic range technology coupled with extremely robust blooming suppression produce clean imagery in even the most severe uncontrolled lighting applications. Cheetah cameras incorporate "smart" wide dynamic range technology that 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. The camera also provides two acquisition frames for seamless switching between frames independently. CMOS technology eliminates smear columns from areas of ultra-bright intensity and specular reflections in uncontrolled lighting applications.

Specifications

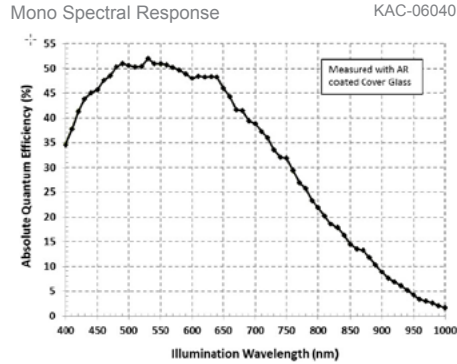
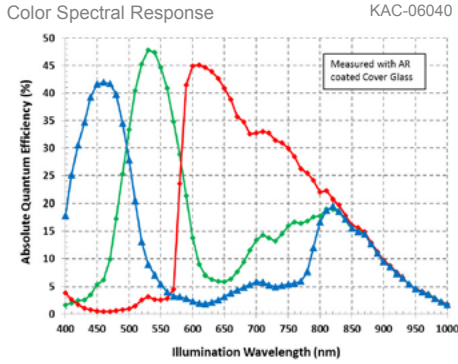
Feature	Description	Feature	Description
Interfaces available	USB3	Strobe Output	2 strobes, programmable position and duration
Resolution	2832 x 2128	Pulse Generator	Yes, programmable
Sensor	KAC-06040, CMOS Color/Mono	Image Enhancement	Vertical/Horizontal flip. Two 12-bit LUT: 1 LUT Pre-programmed with Gamma 0.45
Sensor Format	13.1 mm (H) x 10.0 mm (V) 16.65 mm diagonal 1" optical format	Data Corrections	Defective/hot pixel correction (static, dynamic)
Pixel Size	4.7 µm	Lens Mount	C-Mount (default), F, M42, EF Canon (passive or active)
NIR Sensitivity	850nm: 15%, 950nm: 5%	Supply Voltage Range	12VDC (5V – 33V), 1.5A inrush without enabled Canon controller 12VDC (6.5V – 33V), 1.5A inrush with enabled Canon controller
Shutter	Global shutter (GS), rolling shutter (RS)	Camera Current	Typical: 0.44A, Maximum: 0.46A
Digitization	10 or 12 bit	Size - Width/Height/Length	72.0mm (W) x 72.0mm (H) x 34.4mm (L) – Applies to all interfaces
Frame Rate	35 (12 bit), 43 fps (10 bit), 55 fps (8 bit)	Weight	370g
Dynamic Range	74 dB (RS), 57 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)
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, RoHs
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		
Trigger Options	Edge, debounce		
Trigger Modes	Internal, external, software		
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: C2880 Applications

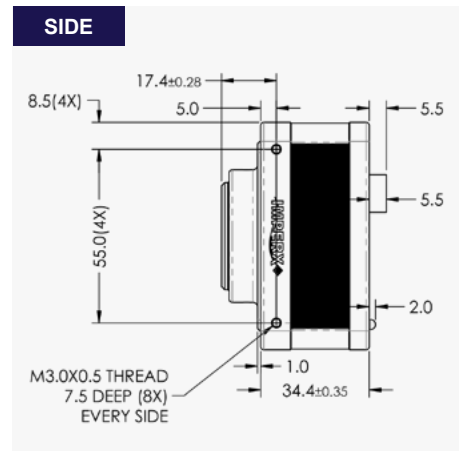
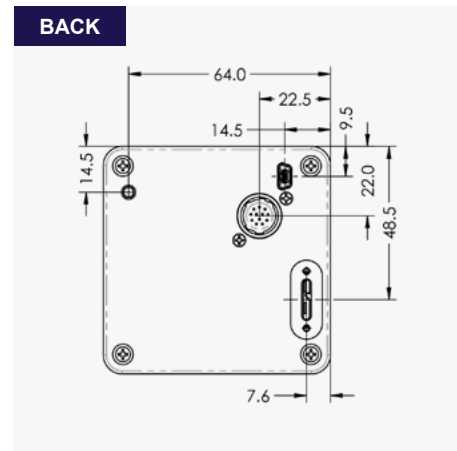
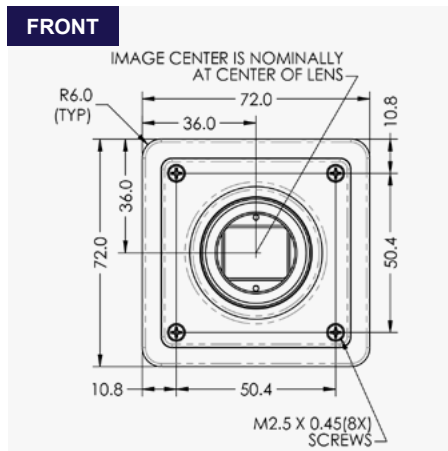
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Aerospace • Satellites • Surveillance • Military and Non-Military Ground Vehicles • Ball Grid Array • Printed Circuit Board Inspection • Motion Analysis • Broadcast Television • Telepresence • Unmanned Aerial Vehicles • Machine Vision • Reconnaissance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

Absolute Quantum Efficiency



Dimensions

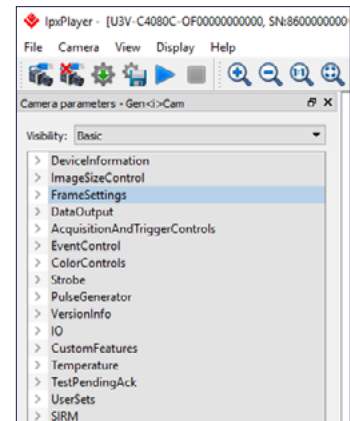


Ordering Information

Interface Available
Camera Link® Full (CLF) USB3
Sensor Types available
Monochrome Bayer Color

Lens Mounts
C-Mount (Default) F-Mount M42 EF Canon
Accessories (Sold separately)
PS12V04A-Power Supply w/ 1 input and 1 output

GenICam Compliant Camera Configurator



Hirose Connectors

Power and I/O Interface												
<table border="0"> <tr> <td>1. 12 VDC Return</td> <td>7. OUT1 TTL Signal</td> </tr> <tr> <td>2. +12 VDC</td> <td>8. IN1 OPTO +</td> </tr> <tr> <td>3. Reserved</td> <td>9. IN2 TTL Signal</td> </tr> <tr> <td>4. Reserved</td> <td>10. IN1 OPTO -</td> </tr> <tr> <td>5. OUT2 OPTO -</td> <td>11. IN2 TTL Gnd</td> </tr> <tr> <td>6. OUT1 TTL Gnd</td> <td>12. OUT2 OPTO +</td> </tr> </table>	1. 12 VDC Return	7. OUT1 TTL Signal	2. +12 VDC	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 +
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