

CHEETAH

RUGGEDIZED CAMERA SERIES

C4080 CMOS 12 MP USB3



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. The GenICam™ compliant USB3 camera delivers up to 29 frames per second in either global or rolling shutter mode with a USB3 interface. Extended dynamic range technology coupled with extremely robust blooming suppression produce clean imagery in even the most severe uncontrolled lighting applications. Additionally, 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	4000 x 3000	Pulse Generator	Yes, programmable
Sensor	KAC-12040, CMOS Color/Mono	Image Enhancement	Vertical/Horizontal flip. Two 12-bit LUT: 1 LUT Pre-programmed with Gamma 0.45
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 (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: 0.32A, Maximum: 0.35A
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	19 fps (12 bit), 23 fps (10 bit), 29 fps (8 bit)	Weight	370 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)
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		
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

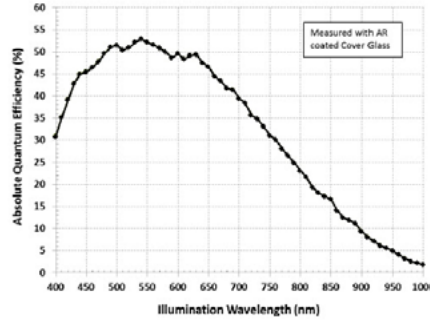
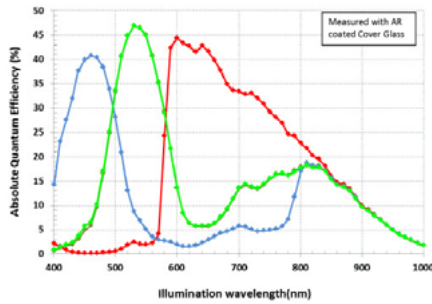
Absolute Quantum Efficiency

Color Spectral Response

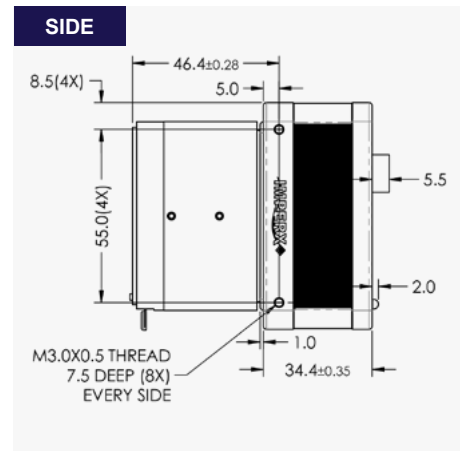
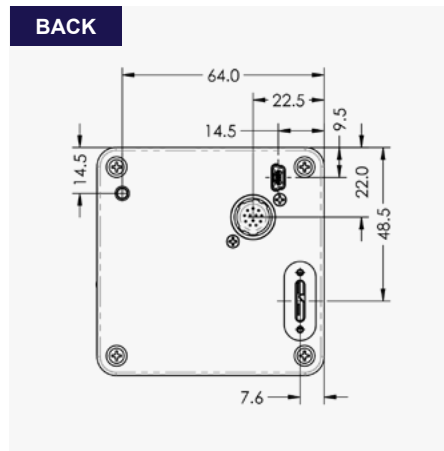
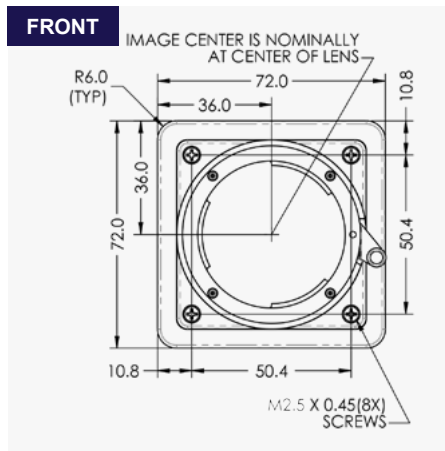
KAC-12040

Mono Spectral Response

KAC-12040



Dimensions



Ordering Information

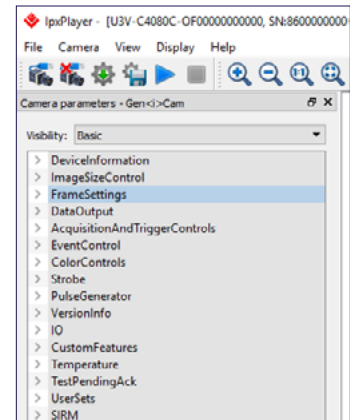
Interface Available
Camera Link® Full (CLF)
USB3

Sensor Types available
Monochrome
Bayer Color

Lens Mounts
F-Mount (Default)
C-Mount
M42
EF

Accessories (Sold separately)
PS12V04A-Power Supply w/ 1 input and 1 output

GenICam Compliant Camera Configurator



Hirose Connectors

Power and I/O Interface	
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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