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
Output Interface	USB3
Resolution	4000 x 3000
Sensor	KAC-12040, CMOS Color/Mono
Sensor Format	18.8 mm (H) x 14.1 mm (V) 23.5 mm diagonal 4/3" optical format
Pixel Size	4.7 microns square
NIR Sensitivity	850 nm: 15%, 950 nm: 5%
Shutter	Global shutter (GS), rolling shutter (RS)
Sensor Digitization	10-bit or 12-bit
Frame Rate	29 fps (8-bit), 23 fps (10-bit), 19 fps (12-bit)
Dynamic Range	73 dB (RS), 56 dB (GS)
Output Bit Depth	8, 10, 12-bit
Analog Gain Control	12-bit: 0-12 dB (16 steps); 8 or 10-bit: 0-18 dB (32 steps)
Digital Gain	24 dB (128 steps)
Black Level Offset	Manual, 0 to 2048, 1/step
White Balance	Manual, Auto, Off
Shutter Speed	1 µs/step, 5 µs to 1.0 s (GS), 2 µs to 1.0 s (RS)
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	100 dB (typ.) GS, up to 3 knee points, piece-wise linear
External Inputs/Ouputs	2 IN (OPTO, LVTTL) / 2 OUT (OPTO, TTL)

Feature	Description
Strobe Output	2 strobes, programmable position and duration
Pulse Generator	Yes, programmable
Data Correction	Vertical/Horizontal flip. Two 12-bit LUTs pre-programmed with Gamma 0.45 Defective/hot pixel correction (static, dynamic)
Lens Mount	F-Mount (default), C, M42, EF Canon (passive or active)
Supply Voltage Range	12 V DC (5 V – 33 V), 1.5 A inrush without enabled Canon controller 12 V DC (6.5 V – 33 V), 1.5A inrush with enabled Canon controller
Camera Current	Typical: 0.32 A, Maximum: 0.35 A
Size - Width/Height/Length	72.0 mm (W) x 72.0 mm (H) x 34.4 mm (L)
Weight	370 g
Vibration, Shock	Complies with IEC60068-2-64 and IEC60068-2-27
Environmental	-40 °C to +85 °C Operating -50 °C to +90 °C Storage
Humidity	10% to 90% non-condensing
MTBF	>323,000 hours @ 40°C (Telcordia SR-332)
Military Standard	MIL-STD-810G
Regulatory	FCC Part 15 Class A, CE, RoHs

IMPERX™
Industrial Cameras & Imaging Systems

Imperx: *C4080 Applications*

The U3V-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 ● Intelligent Traffic Systems ● Aerial Imaging ● Open Road Tolling Systems ● Situational Awareness
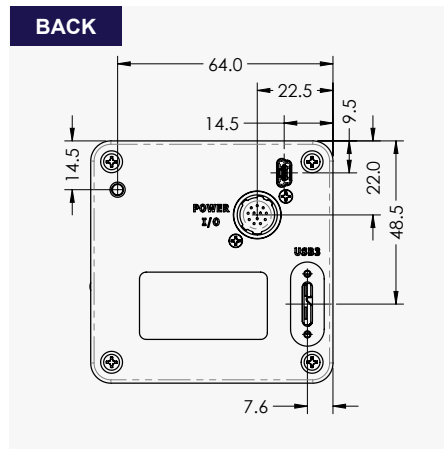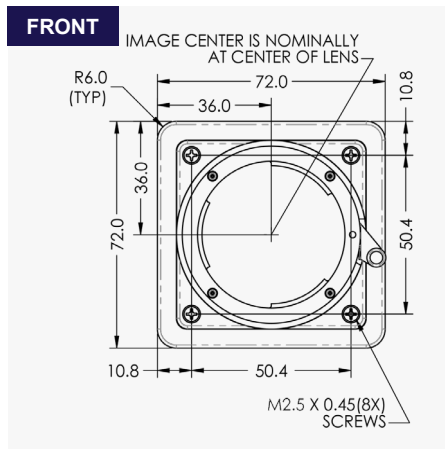
Absolute Quantum Efficiency

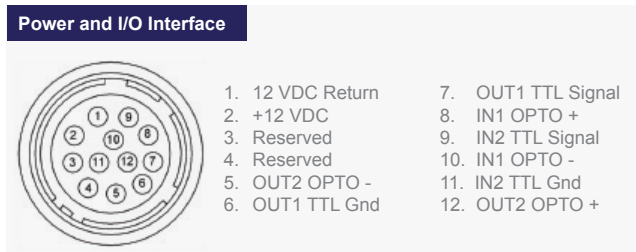Color Spectral Response — KAC-12040

Mono Spectral Response — KAC-12040

Dimensions

FRONT

BACK

TOP
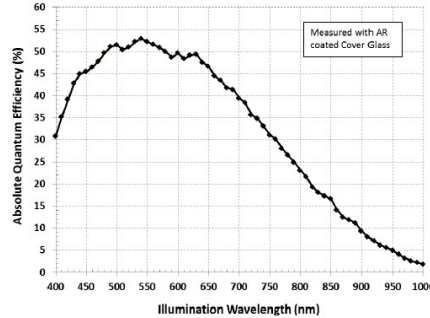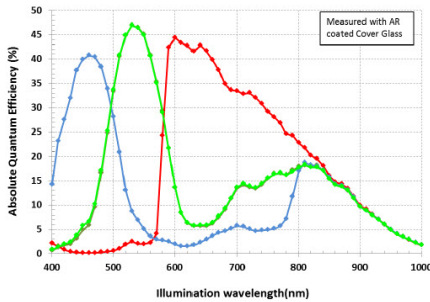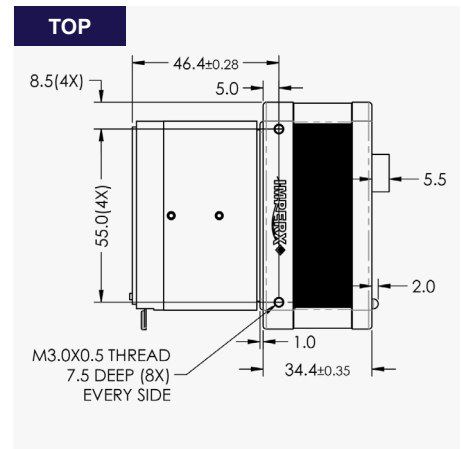
Ordering Information

Output Interface
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

Gen<I>Cam Compliant Camera Configurator

Hirose Connectors

Power and I/O Interface

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 HR10A-10R-12PB(71)

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