

# CHEETAH

RUGGEDIZED CAMERA SERIES

Front View

Rear View

## C4181

## CMOS 16 MP

Dual CXP-6

### Imperx: C4181

The C4181 features the ON Semiconductor Python NOIP1xx016KA CMOS image sensor with a native resolution of 4096 x 4096 in an APS-H optical format. The GenICam™ compliant camera delivers up to 68 frames per second in global shutter mode using a dual CXP-6 CoaXPress® interface. CMOS technology eliminates smear columns from areas of ultra-bright intensity and specular reflections in uncontrolled lighting applications. The Imperx Cheetah line provides excellent image quality with Imperx proprietary processing. In addition, Imperx puts you in control and gives you full access to raw data without corrections. Using the simple, intuitive GenICam™ compliant graphical user interface, you can quickly apply image corrections, if desired. Flexibility and image quality make the C4181 suitable for a broad range of diverse and demanding applications. Imperx can help optimize the camera to your exacting requirements.

### Specifications

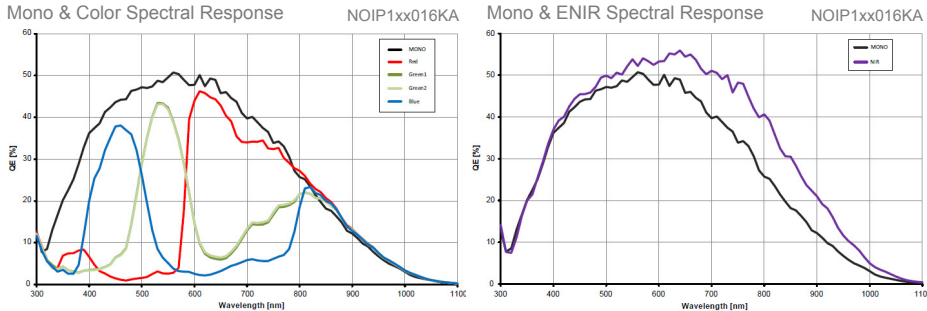
Feature	Description	Feature	Description
Output Interface	2-channel CXP-6 CoaXPress® w/PoCXP	Strobe Output	2 strobes, programmable position and duration
Resolution	4096 (H) x 4096 (V)	Pulse Generator	Yes, programmable
Sensor	Python NOIP1xx016KA, CMOS Color/Mono/ENIR	Data Correction	2 LUTs pre-programmed with Gamma 0.45 Bad pixel correction (static), Flat field correction, Fixed pattern noise
Sensor Format	18.4 mm (H) x 18.4 mm (V), 26 mm diagonal, APS-H optical format	Lens Mount	F-Mount (default), M42, EF Canon (passive or active)
Pixel Size	4.5 microns square	Power over CoaXPress (PoCXP)	Yes
NIR Sensitivity	Mono: 850 nm: 18%, 950 nm: 6% ENIR: 850 nm: 30%, 950 nm: 11%	Power consumption	Typical: 8.5 W, Maximum: 9.4 W
Shutter	Global shutter (GS)	Size - Width/Height/Length	72.0 mm (W) x 72.0 mm (H) x 33.8 mm (L)
Fixed Pattern Noise	<0.9 LSB	Weight	379g
Sensor Digitization	10-bit	Vibration, Shock	Complies with IEC60068-2-64 & IEC60068-2-27
Frame Rate	68 fps (8-bit), 54.8 fps (10-bit)	Environmental	-40 °C to +70 °C Operating -50 °C to +90 °C Storage
Dynamic Range	59 dB	Humidity	10% to 90% non-condensing
Row Overhead Time (ROT)	Zero	MTBF	>323,000 hours @ 40 °C (Telcordia SR-332)
Output Bit Depth	8, 10-bit	Military Standard	MIL-STD-810G
Analog Gain Control	1x, 1.26x, 1.87x, 3.17x	Regulatory	FCC Part 15 Class A, CE, RoHS, UKCA
Digital Gain	1x (0 dB) to 15.9 (24 dB) with a precision of 0.001x (AGC available)		
AEC/AGC	Yes		
Black Level Offset	Manual (-511...+511), Auto		
White Balance	Manual, Auto, Off		
Shutter Speed	1 µs/step, 40 µs to 1.0 s		
Exposure Control	Off, Internal, External (AEC available)		
Regions of Interest (ROI)	1 ROI		
Averaging Decimation	1 x 2, 2 x 1, 2 x 2		
Sub-sampling	1 x 2, 2 x 1, 2 x 2		
Trigger Inputs	External, Pulse generator, Software		
Trigger Options	Edge, Debounce		
Trigger Modes	Trigger over CoaXPress, Internal, External, Software		
External Inputs/Outputs	2 IN (OPTO, LVTTTL) / 2 OUT (OPTO, TTL)		

## Imperx: C4181 Applications

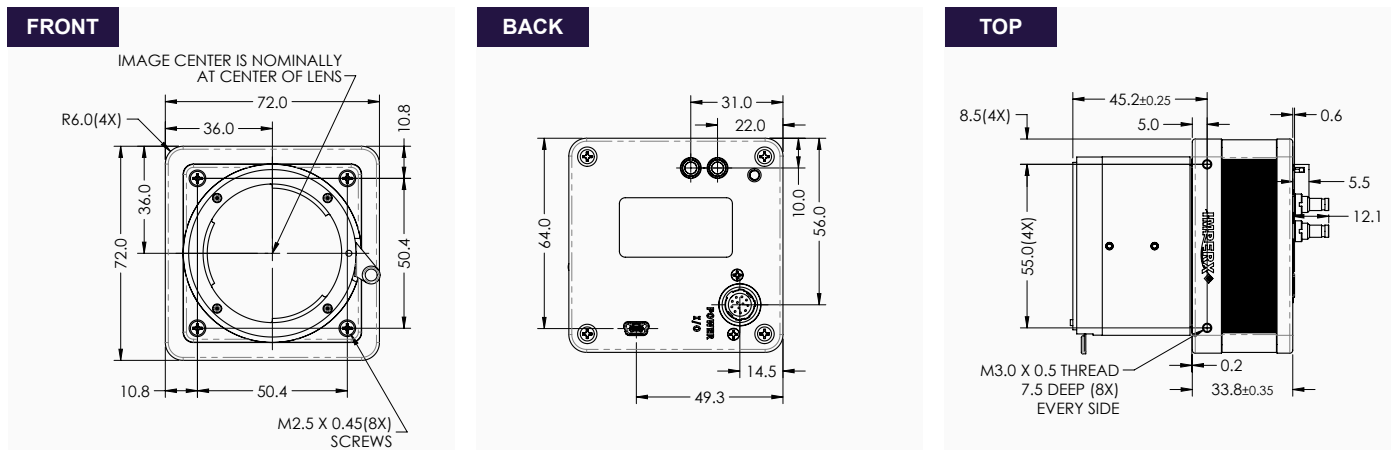
The C4181 incorporates a number of unique features tailored to reduce system complexity, maximize interface bandwidth, and expand the usable operational range.

Aerospace • Surveillance • Ball Grid Array • Printed Circuit Board Inspection • Motion Analysis • Machine Vision • Industrial Inspection • Intelligent Traffic Systems • Aerial Imaging • Open Road Tolling Systems

## Absolute Quantum Efficiency



## Dimensions



## Ordering Information

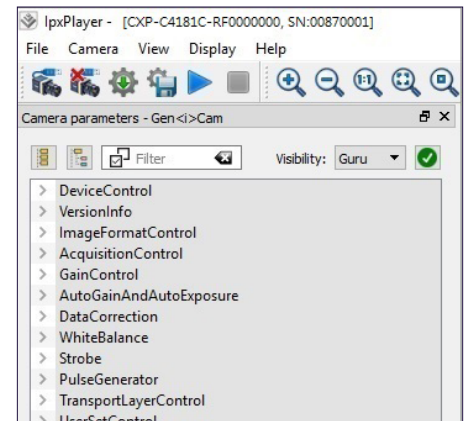
**Output Interface**  
2-channel CXP-6 CoaXPress® with Power over CoaXPress

**Sensor Types available**  
Monochrome  
Bayer Color  
NIR

**Lens Mounts**  
F-Mount (Default)  
M42  
EF Canon

**Accessories (Sold separately)**  
CBL-PWIO01: Cable Power; Hirose 12p (F) to loose end; 2 meters

## Gen<I>Cam Compliant Camera Configurator



## Hirose Connectors

I/O Interface	CXP-connectors
<ol style="list-style-type: none"> <li>Reserved</li> <li>Reserved</li> <li>Reserved</li> <li>Reserved</li> <li>OUT2 OPTO -</li> <li>OUT1 TTL Gnd</li> <li>OUT1 TTL Signal</li> <li>IN1 OPTO +</li> <li>IN2 TTL Signal</li> <li>IN1 OPTO -</li> <li>IN2 TTL Gnd</li> <li>OUT2 OPTO +</li> </ol>	Two DIN 1.0/2.3 75-ohm connectors

Connector: Hirose HR10A-10R-12PB(71)

Rev: cxp\_c4181\_r6\_2021

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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