

CHEETAH

RUGGEDIZED CAMERA SERIES

C4181 CMOS 16 MP USB3



Imperx: C4181

The C4181 features the ON Semiconductor Python NOIP1xx016KA CMOS image sensor with a native resolution of 4096 x 4096 in a APS-H optical format. The GenICam™ compliant USB3 camera delivers up to 20 frames per second in global shutter mode using the USB3 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 Graphical User Interface, you can quickly apply or remove image corrections. 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
Interfaces available	USB3	Strobe Output	2 strobes, programmable position and duration
Resolution	4096 x 4096	Pulse Generator	Yes, programmable
Sensor	Python NOIP1xx016KA, CMOS Color/Mono/ENIR	Image Enhancement	Two LUTs: 1 LUT pre-programmed with Gamma 0.45
Sensor Format	18.4 mm (H) x 18.4 mm (V) 26.0 mm diagonal 35mm optical format	Data Corrections	Defective/hot pixel correction (static, dynamic) flat field correction, fixed pattern noise
Pixel Size	4.5 µm	Lens Mount	F-Mount (default), M42, EF Canon (passive or active)
NIR Sensitivity	Mono: 850nm: 18%, 950nm: 6% ENIR: 850nm: 30%, 950nm: 11%	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)	Camera Current	Typical: 0.52A, Maximum: 0.66A
Fixed Pattern Noise	<0.9 LSB	Size - Width/Height/Length	72.0mm (W) x 72.0mm (H) x 34.7mm (L) – Applies to all interfaces
Digitization	10 bit	Weight	379g
Frame Rate	10 fps (10 bit), 20 fps (8 bit)	Vibration, Shock	TBD
Pixel Clock	32MHz to 360MHz	Environmental	-40°C to +85°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)
Bit Depth	8, 10 bit	Military Standard	MIL-STD-810F
Analog Gain Control	1x, 1.26x, 1.87x, 3.17x	Regulatory	FCC Part 15 Class A, CE, RoHS
Digital Gain	1x (0dB) to 15.9 (24 dB) with a precision of 0.001x. (AGC available)		
White Balance	Manual, auto, off		
Shutter Speed	1 µs/step, 40 µs to 1.0 sec		
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 Decimation	1 x 2, 2 x 1, 2 x 2		
Trigger Inputs	External, pulse generator, software		
Trigger Options	Edge, debounce		
Trigger Modes	Internal, external, software		
External Inputs/Outputs	2 IN (OPTO, LVTTTL) / 2 OUT (OPTO, TTL)		

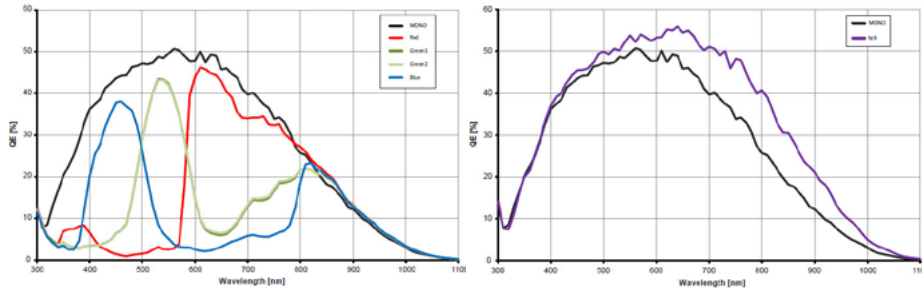
Imperx: C4181 Applications

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

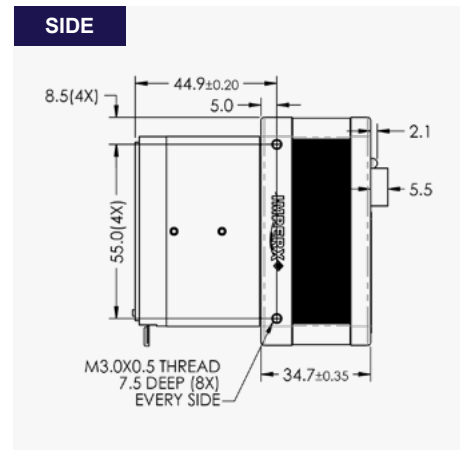
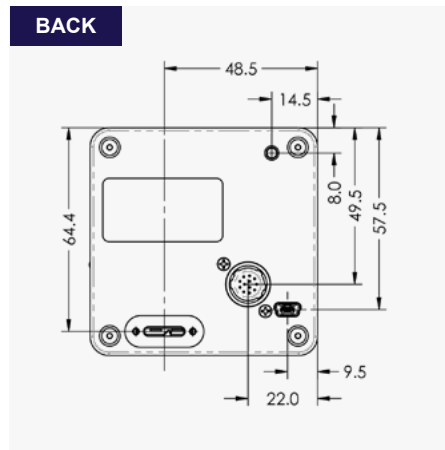
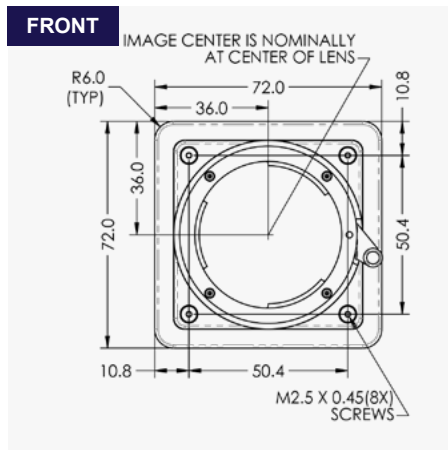
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Absolute Quantum Efficiency

Mono & Color Spectral Response NOIP1xx016KA Mono & ENIR Spectral Response NOIP1xx016KA



Dimensions

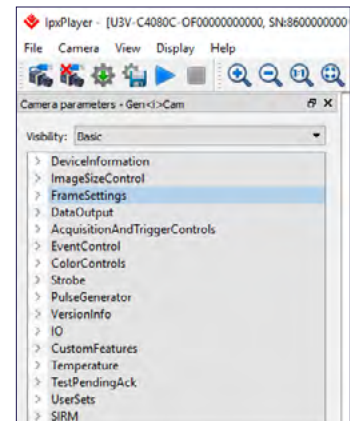


Ordering Information

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

Lens Mounts
F Mount (Default) 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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Quality Management System ISO 9001:2015 Registered
Environmental Management System ISO 14001:2015 Registered
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