

IMPERX

CHEETAH

INTELLIGENT CAMERA SERIES

C4181

CMOS 16 MP



Imperx: C4181

The C4181 incorporates the On Semiconductor Python NOIP1SN016KA CMOS image sensor with a native resolution of 4096 x 4096 in a 35mm optical format delivering up to 40 frames per second in either global or rolling shutter mode with either a Camera Link® Deca or PoCL output. 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. However, Imperx puts you in control and gives you full access to raw data without corrections. By using the simple intuitive Graphical User Interface, you can quickly apply or remove image corrections. The C4181's flexibility and image quality make it suitable for a broad range of diverse and demanding applications, but "one size doesn't fit all" and Imperx can help optimize the camera to your exacting requirements.

Specifications

Feature	Description	Feature	Description
Interfaces available	Camera Link® Base, Full/Deca (CLF) w/PoCL	Strobe Output	2 strobes, programmable position and duration
Resolution	4096 x 4096	Pulse Generator	Yes, programmable
Sensor	Python NOIP1SN016KA, CMOS Color/Mono	Image Enhancement	Two 12-bit LUT: 1 LUT Pre-programmable 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
Pixel Size	4.5 µm	Lens Mount	F-Mount (Default), M42, EF Canon
NIR Sensitivity	850nm: 18%, 950nm: 6%; ENIR: 850nm: 30%, 950nm: 11%	Supply Voltage Range	12VDC (5V – 30V), 1.5 A inrush
Shutter	Global shutter (GS)	Camera Current	Typical: 0.52A, Maximum: 0.66A
Fixed Pattern Noise	<0.9 LSB	PoCL	PoCL capable in medium/full mode
Digitization	10 bit	Size - Width/Height/Length	72.0mm (W) x 72.0mm (H) x 34.7mm (L) – Applies to all interfaces
Frame Rate	40 fps (10 bit), 50 fps (8 bit)	Weight	385g
CameraLink Clock Rate	85MHz	Vibration, Shock	UNTESTED
Pixel Clock Rate	32MHz to 360 MHz	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	>323,062.11 hours @ 40°C (Telcordia SR-332 Method 1)
Bit Depth	8, 10 bit	Regulatory	FCC Part 15 Class B, CE, RoHS
Analog Gain Control	1x, 1.26x, 1.87x, 3.17x		
Digital Gain	30 dB		
White Balance	Manual, auto, off		
Shutter Speed	1 µs/step, 4 µs to 1.0 sec		
Exposure Control	Off, internal, external		
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, computer		
Trigger Options	Edge, debounce		
Trigger Modes	Internal, External, Computer		
External Inputs/Outputs	1-LVTTL + 1 OPTO, 1 TTL + 1 OPTO		

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 • 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

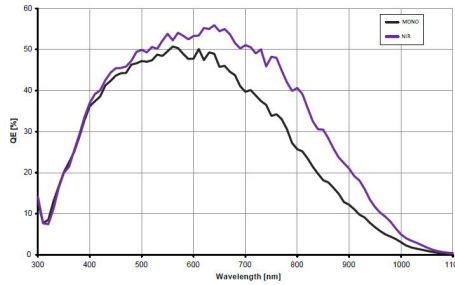
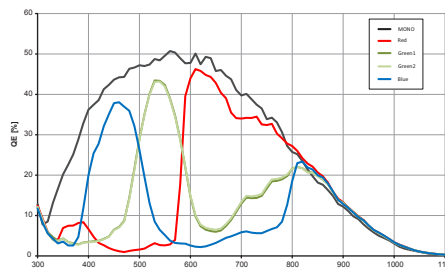
Mono & Color Spectral Response

NOIP1SN016KA

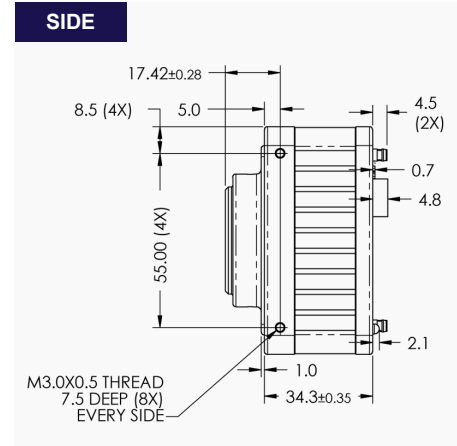
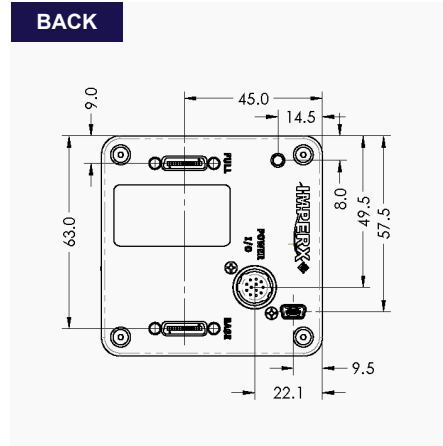
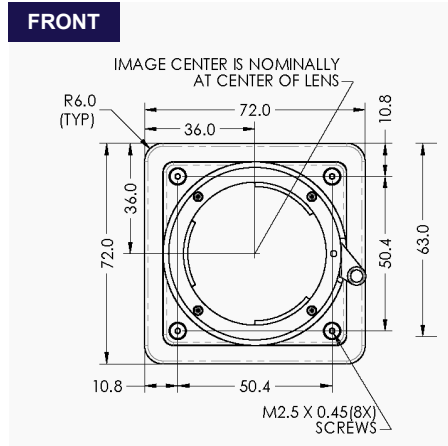
Mono & ENIR Spectral Response

NOIP1SN016KA

Quantum Efficiency



Dimensions

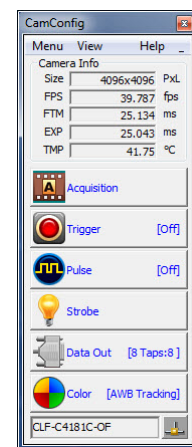


Ordering Information

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

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

Software/Drivers/Interface



IMPERX 6421 Congress Ave., Boca Raton, FL 33487, USA
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Hirose Connectors

Power and I/O Interface
<ol style="list-style-type: none"> 12V DC Return +12V DC Reserved Reserved OUT2 OPTO - OUT1 TTL Gnd 7. OUT1 TTL Signal 8. IN1 OPTO + 9. IN2 TTL Signal 10. IN1 OPTO - 11. IN2 TTL Gnd 12. OUT2 OPTO +

Quality Management System ISO 9001:2008 Registered
Environmental Management System ISO 14001:2004 Registered
DDTC Registered (Directorate of Defense Trade Controls, US Department of State)



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