

CHEETAH

RUGGEDIZED CAMERA SERIES

Front View

Rear View

C4181

CMOS 16 MP

Camera Link®

Imperx: C4181

The C4181 incorporates the On Semiconductor Python NOIP1XX016KA CMOS image sensor with a native resolution of 4096 x 4096 in an APS-H optical format delivering up to 50 frames per second in global shutter mode with a Camera Link® Deca, 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
Output Interface	Camera Link® Base, Full/Deca (CLF) w/PoCL	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 Defective/hot pixel correction (static, dynamic), Flat field correction, Fixed pattern noise correction
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)
Pixel Size	4.5 microns square	Supply Voltage Range	12 V DC (5 V – 33 V) 1.5 A inrush
NIR Sensitivity	Mono: 850 nm: 18%, 950 nm: 6% ENIR: 850 nm: 30%, 950 nm: 11%	Camera Current	Typical: 0.52 A, Maximum: 0.66 A
Shutter	Global shutter (GS)	PoCL	PoCL capable in Medium/Full mode
Fixed Pattern Noise	<0.9 LSB	Size - Width/Height/Length	72.0 mm (W) x 72.0 mm (H) x 33.8 mm (L)
Sensor Digitization	10-bit	Weight	379 g
Frame Rate	50 fps (8-bit), 40 (10-bit)	Vibration, Shock	Complies with IEC60068-2-64 and IEC60068-2-27
Camera Link Clock Rate	85 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	>323,000 hours @ 40 °C (Telcordia SR-332 Method 1)
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, Auto		
AEC/AGC	Yes		
Black Level Offset	Manual (-512...+511), Auto		
White Balance	Manual, Auto, Off		
Shutter Speed	1 µs/step, 40 µs to 1.0 s		
Exposure Control	Off, Internal, External, Auto		
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	2 IN (OPTO, LVTTTL) / 2 OUT (OPTO, TTL)		

Imperx: C4181 Applications

The CLF-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 • Intelligent Traffic Systems • Aerial Imaging • Open Road Tolling Systems • Situational Awareness

Absolute Quantum Efficiency

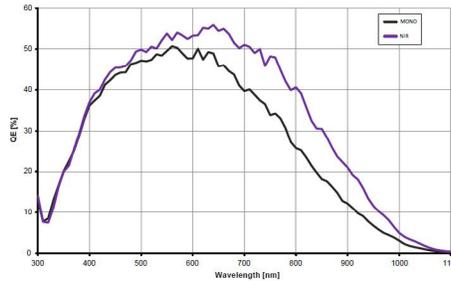
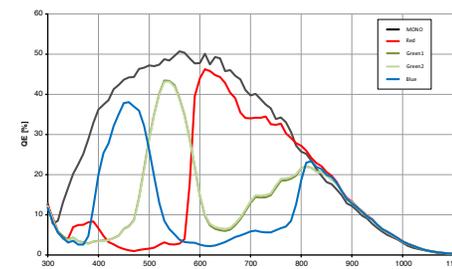
Mono & Color Spectral Response

NOIP1xx16KA

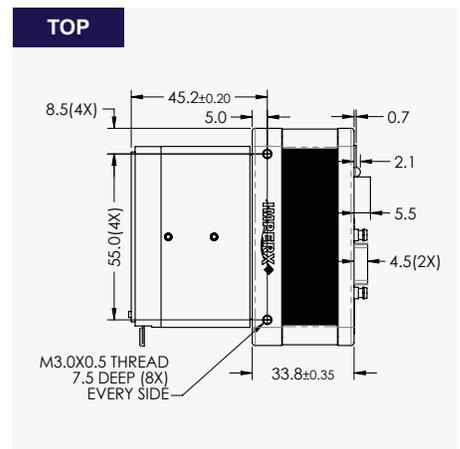
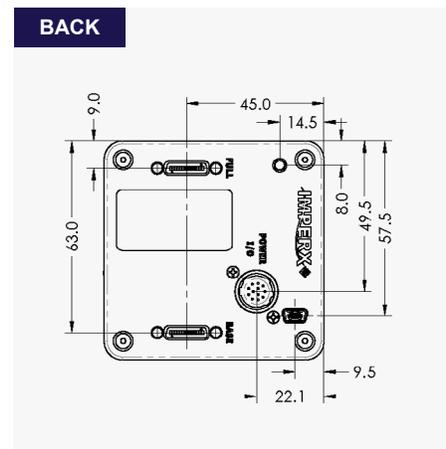
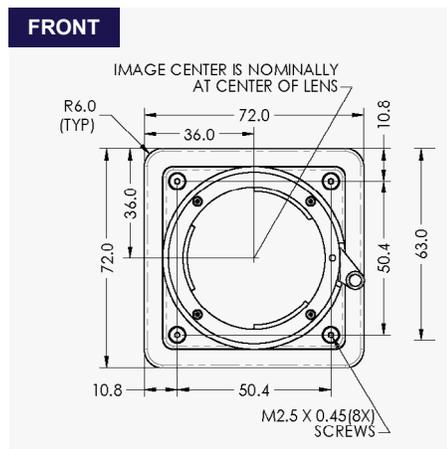
Mono & ENIR Spectral Response

NOIP1xx16KA

Quantum Efficiency



Dimensions



Ordering Information

Output Interface
Camera Link® Full (CLF) w/PoCL®
Sensor Types available
Monochrome
Bayer Color
NIR

Lens Mounts
F Mount (Default)
M42
EF Canon (Passive)
Accessories (Sold separately)
PS12V14A-Power Supply w/ 1 input and 1 output

Software/Drivers/Interface



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 OUT1 TTL Signal IN1 OPTO + IN2 TTL Signal IN1 OPTO - IN2 TTL Gnd OUT2 OPTO +

Connector: Hirose HR 10A-10R-12PB(71)

Rev: c_l_c4181_r3_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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