CHEETAH

RUGGEDIZED CAMERA SERIES

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 a 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
Interfaces available	Camera Link® Base, Full/Deca (CLF) w/PoCL
Resolution	4096 x 4096
Sensor	Python NOIP1XX016KA, CMOS Color/Mono/ ENIR
Sensor Format	18.4 mm (H) x 18.4 mm (V) 26.0 mm diagonal 35mm optical format
Pixel Size	4.5 µm
NIR Sensitivity	Mono: 850nm: 18%, 950nm: 6% ENIR: 850nm: 30%, 950nm: 11%
Shutter	Global shutter (GS)
Fixed Pattern Noise	<0.9 LSB
Digitization	10 bit
Frame Rate	40 fps (10 bit), 50 fps (8 bit)
Camera Link Clock Rate	85MHz
Pixel Clock Rate	32MHz to 360MHz
Dynamic Range	59 dB
Row Overhead Time (ROT)	Zero
Bit Depth	8, 10 bit
Analog Gain Control	1x, 1.26x, 1.87x, 3.17x
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
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, LVTTL) / 2 OUT (OPTO, TTL)

Feature	Description
Strobe Output	2 strobes, programmable position and duration
Pulse Generator	Yes, programmable
Image Enhancement	Two LUTs: 1 LUT pre-programmed with Gamma 0.45
Data Corrections	Defective/hot pixel correction (static, dynamic), flat field correction, fixed pattern noise
Lens Mount	F-Mount (Default), M42, EF Canon (passive or active)
Supply Voltage Range	12VDC (5V – 33V), 1.5 A inrush
Camera Current	Typical: 0.52A, Maximum: 0.66A
PoCL	PoCL capable in medium/full mode
Size - Width/Height/Length	72.0mm (W) x 72.0mm (H) x 33.8mm (L) – Applies to all interfaces
Weight	379g
Vibration, Shock	TBD
Environmental	-40ºC to +85ºC Operating, -50ºC to +90ºC Storage
Humidity	10% to 90% non-condensing
MTBF	>323,000 hours @ 40°C (Telcordia SR-332 Method 1)
Military Standard	MIL-STD-810F
Regulatory	FCC Part 15 Class A, CE, RoHs

IMPERX
Industrial Cameras & Imaging Systems

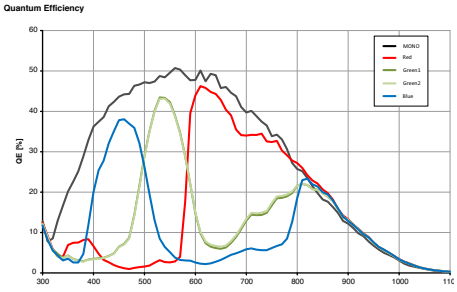
Imperx: *C4181 Applications*

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

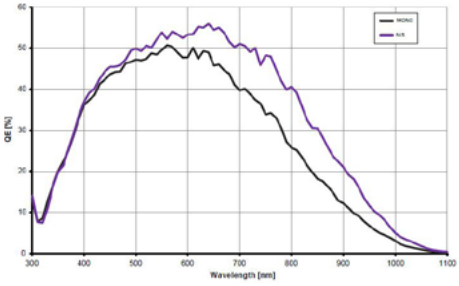
Aerospace ● Satellites ● Surveillance ● Military and Non-Military Ground Vehicles ● Ball Grid Array ● Printed Circuit Board Inspection ● Motion Analysis ● Broadcast Television ● Telepresence ● Unmanned Aerial Vehicles ● Machine Vision ● Reconnaissance ● Aerospace ● Intelligent Traffic Systems ● Aerial Imaging ● Open Road Tolling Systems ● Situational Awareness

Absolute Quantum Efficiency

Mono & Color Spectral Response NOIP1xx16KA

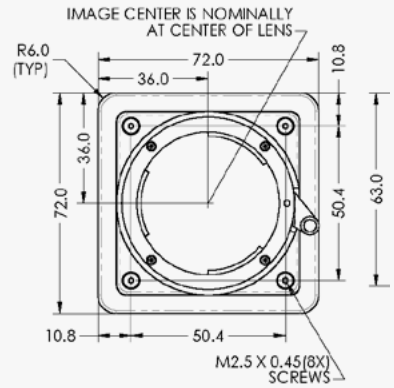


Mono & ENIR Spectral Response NOIP1xx16KA



Dimensions

FRONT



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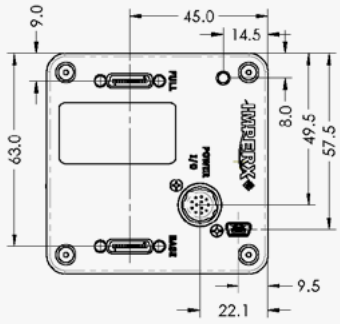
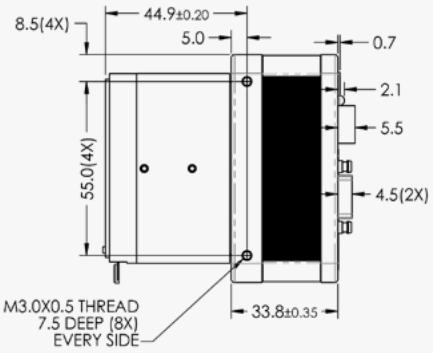


SIDE



Ordering Information

Interface Available

- Camera Link® Full (CLF)
- GigE Vision®
- USB3

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

Software/Drivers/Interface

Hirose Connectors

Power and I/O Interface

1. 12V DC Return	7. OUT1 TTL Signal
2. +12V DC	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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