

# IMPERX

## CHEETAH

### INTELLIGENT CAMERA SERIES

## C4180

### CCD 12 MP



#### Imperx: C4180

The C4180 incorporates the On Semiconductor Python NOIP1SN012KA CMOS image sensor with a native resolution of 4096 x 3072 in a 4/3" optical format delivering up to 54 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 C4180'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 3072	Pulse Generator	Yes, programmable
Sensor	Python NOIP1SN012KA, CMOS Color/Mono	Image Enhancement	Two 12-bit LUT: 1 LUT Pre-programmable with Gamma 0.45
Sensor Format	18.4 mm (H) x 13.8 mm (V) 23 mm diagonal 4/3" optical format	Data Corrections	Defective/hot pixel correction (static, dynamic)
Pixel Size	4.5 µm	Lens Mount	F-Mount (Default), C, 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	54 fps (10 bit), 67 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: C4180 Applications

The C4180 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

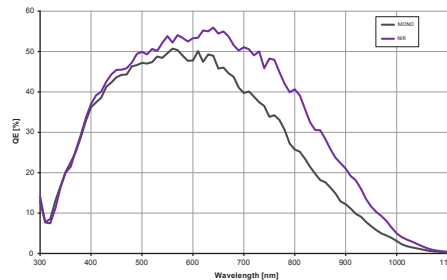
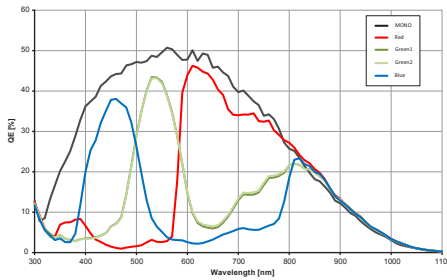
QE Curve for Mono & Color

NOIP1SN012KA

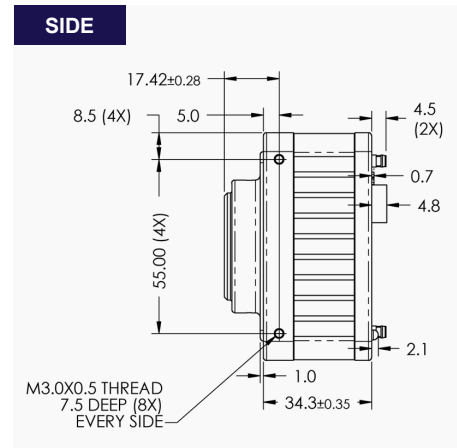
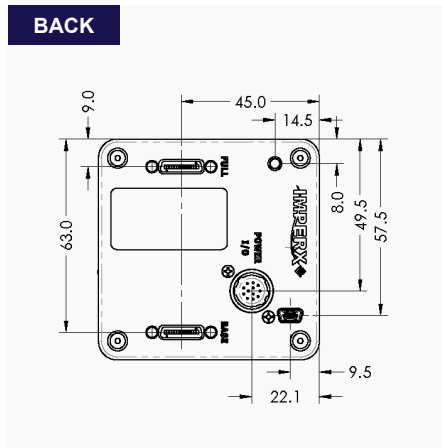
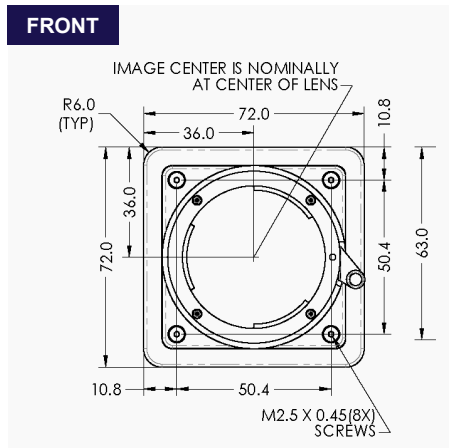
QE Curve for Standard & NIR Mono

NOIP1SN012KA

Quantum Efficiency



## Dimensions



## Ordering Information

**Interface Available**

Camera Link® Full (CLF)

**Sensor Types available**

Monochrome  
Bayer Color

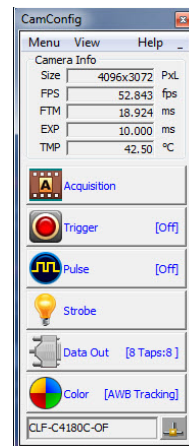
**Lens Mounts**

F Mount (Default)  
M42  
EF Canon  
C Mount

**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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