C5180
CMOS 25 MP
USB3

Imperx: *C5180*

The C5180 features the ON Semiconductor Python NOIP1xx025KA CMOS image sensor with a native resolution of 5120 x 5120 in an APS-H optical format. The GenICam™ compliant USB3 camera delivers up to 13 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 C5180 suitable for a broad range of diverse and demanding applications. Imperx can help optimize the camera to your exacting requirements.
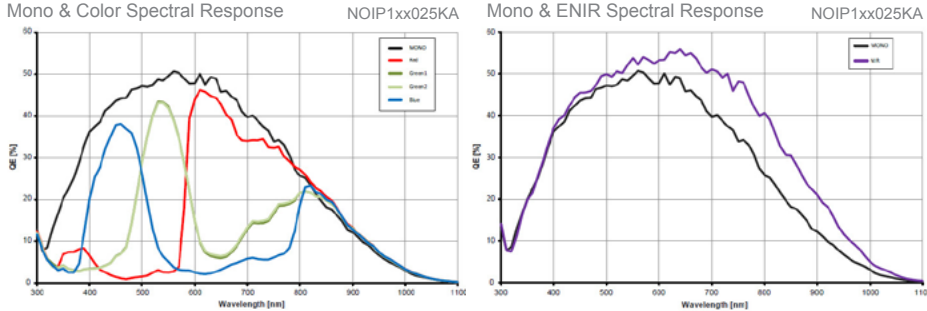
Specifications

Feature	Description
Interfaces available	USB3
Resolution	5120 x 5120
Sensor	Python NOIP1xx025KA, CMOS Color/Mono/ENIR
Sensor Format	23 mm (H) x 23 mm (V) 32.5 mm diagonal APS-H 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	6 fps (10 bit), 13 fps (8 bit)
Pixel Clock	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. (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, 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) 1.5A inrush without enabled Canon controller
	12VDC (6.5V – 33V) 1.5A inrush with enabled Canon controller
Camera Current	Typical: 0.51A, Maximum: 0.66A
Size - Width/Height/Length	72.0mm (W) x 72.0mm (H) x 34.7mm (L) – Applies to all interfaces
Weight	379g
Vibration, Shock	TBD
Environmental	-40°C to +85°C Operating, -50°C to +90°C Storage
Humidity	10% to 90% non-condensing
MTBF	>323,000 hours @ 40°C (Telcordia SR-332)
Military Standard	MIL-STD-810F
Regulatory	FCC Part 15 Class A, CE, RoHs

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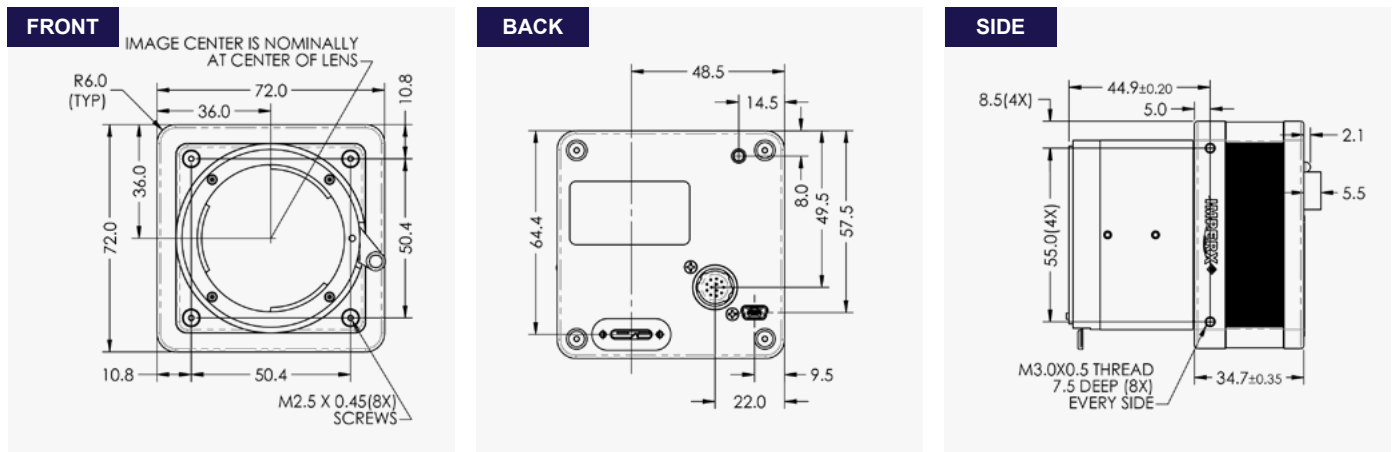Industrial Cameras & Imaging Systems

Imperx: *C5180 Applications*

The C5180 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
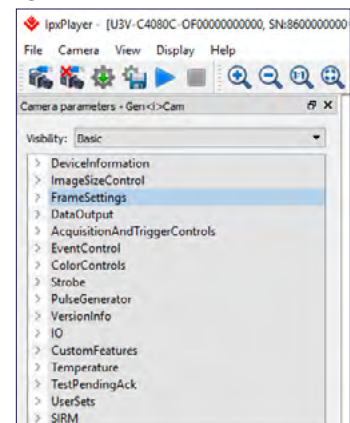
Absolute Quantum Efficiency

Mono & Color Spectral Response   NOIP1xx025KA

Mono & ENIR Spectral Response   NOIP1xx025KA

Dimensions

FRONT

BACK

SIDE

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

1. 12 VDC Return
2. +12V DC
3. Reserved
4. Reserved
5. OUT2 OPTO -
6. OUT1 TTL Gnd
7. OUT1 TTL Signal
8. IN1 OPTO +
9. IN2 TTL Signal
10. IN1 OPTO -
11. IN2 TTL Gnd
12. OUT2 OPTO +

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