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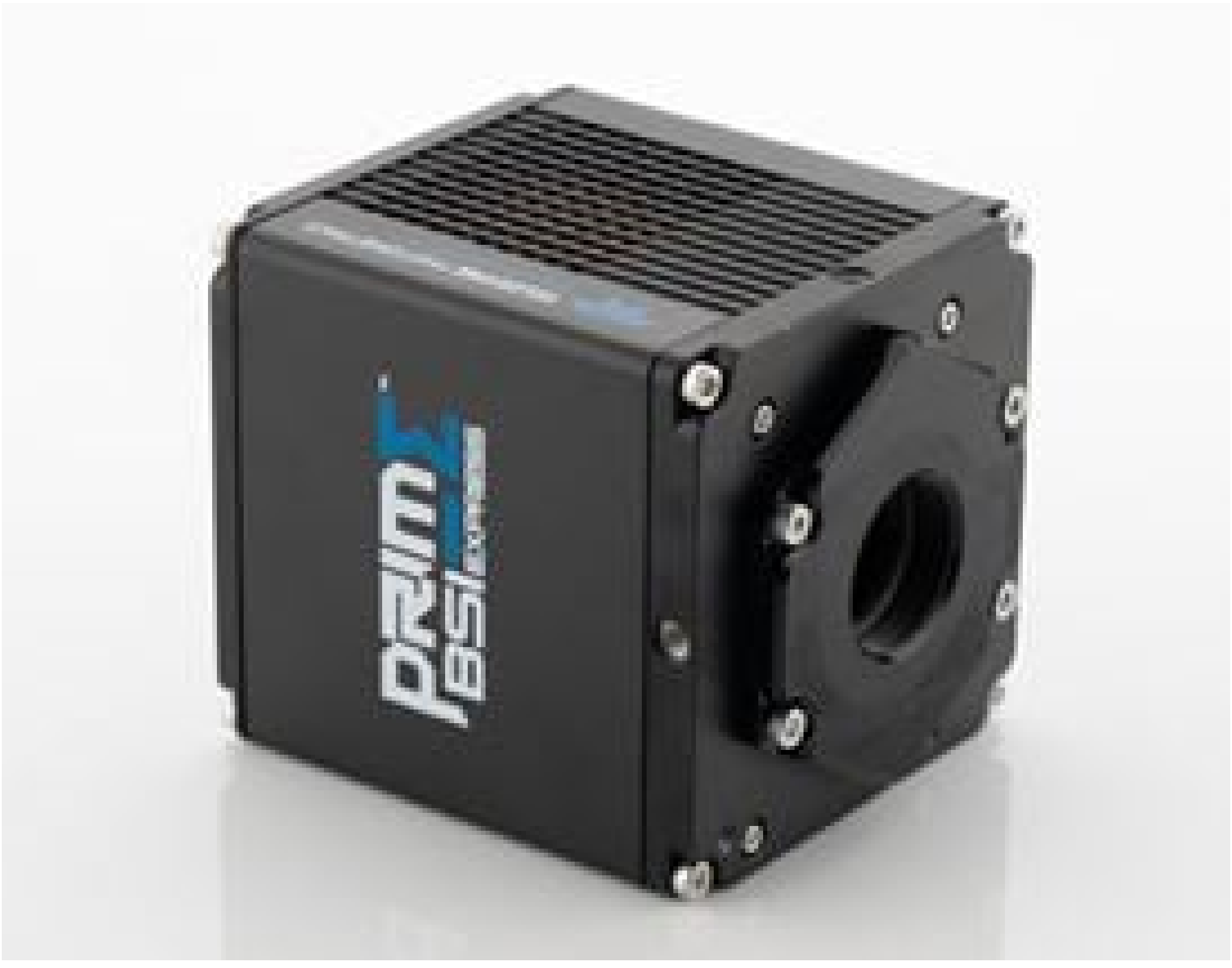
Photometrics Prime BSI Express, USB 3.2 Camera, 1T-01-PRIME-BSI-EXP



Teledyne Authorized Distributor

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Product Downloads

Spectrum:
Monochrome

General

Type:
Monochrome Camera

Model Number:
1T-01-PRIME-BSI-EXP

Manufacturer:
Teledyne Photometrics

Camera Series:
Prime BSI Express

Note:
Includes:
USB 3.2 Gen 2 Cables
USB 3.2 Gen 2 Interface Card
12V/ 5A power supply with international power cord set
(2) Single-line MMCX trigger cables
USB memory device containing PVCAM library and drivers
Quick Installation Guide

Physical & Mechanical Properties

Dimensions (mm):
78 x 78 x 88

Weight (g):
760

Housing:
Full

Optical Properties

Wavelength Range (nm):
200 - 1100

Sensor

Sensor Format:
1.2"

Resolution (Megapixels):
4.20

Frame Rate (fps):
95.00

Pixels (H x V):
2,048 x 2,048

Sensing Area, H x V (mm):
13.31 x 13.31

Imaging Sensor:
GPixel Gsense 2020BSI

Type of Sensor:
Progressive Scan CMOS

Shutter Type:
Rolling

Pixel Depth:
11, 12, 16 bit

Exposure Time:
6µs - 10s

Dynamic Range (dB):
89

Hardware & Interface Connectivity

Connector:
USB 3.2 Gen 2

Power Supply:
Power over GPIO with **#90-399**

GPIOs:
1 configurable input, 3 configurable outputs

Synchronization:
Hardware Trigger (GPIO) or Software Trigger

Interface Port Orientation:
Back Panel

GPIO Connector Type:
BNC

Threading & Mounting

Mount:
C-Mount

Mounting Threads:
(1) ¼–20 thread per side

Environmental & Durability Factors

Operating Temperature (°C):
0 to 30

Storage Temperature (°C):
–20 to 60

Regulatory Compliance

RoHS 2015:
Exempt

Certificate of Conformance:

View

Reach 247:

Contains SVHC(s)

Product Details

- Highly Sensitive Back-Illuminated sCMOS for Scientific Applications
- 95% QE and Ultra-Low 1.0 e- Read Noise
- 95 fps Over USB 3.2
- Scientific Cameras for High Sensitivity Microscopy Applications

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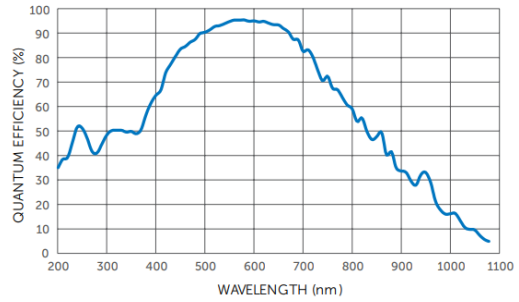
Teledyne Photometrics Prime BSI Express USB 3.2 Cameras feature a highly sensitive back-illuminated sCMOS sensor. This sensor provides a 95% peak quantum efficiency and ultra-low 1.0 e- median read noise, delivering a high signal-to-noise ratio and outstanding performance in low-light imaging conditions. These cameras are designed to achieve up to 95 frames per second using a USB 3.2 interface, enabling high-speed imaging and fast data transfer. Teledyne Photometrics Prime BSI Express USB 3.2 Cameras are ideal for fluorescence, calcium imaging, and live-cell microscopy. These cameras include Teledyne's proprietary-designed software platforms, Beacon and PVCAM, for optimizing camera performance and ease of system integration.

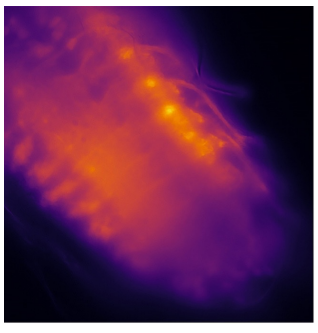


Sensitivity

The Prime BSI Express sCMOS camera delivers high sensitivity, high speed, and reliable quantitative imaging in a compact and easily integrated design. Built around a backside-illuminated scientific CMOS sensor, the camera achieves up to 95% peak quantum efficiency, enabling exceptional photon detection for demanding low-light microscopy applications. The Prime BSI express combines quantum efficiency with a low 1.0 e- read noise to deliver the most sensitive camera based on sCMOS technology at 95 frames per second.

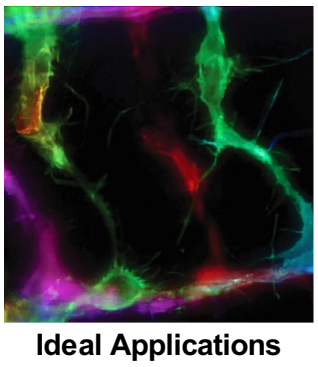
Resolution and Pixel Size

With a 2048 × 2048 resolution and 6.5 µm pixels, the Prime BSI Express provides an optimal balance between spatial resolution and sensitivity, making it well suited for a wide range of fluorescence imaging techniques. The camera reaches full-frame acquisition speeds of up to 95 frames per second, ensuring that fast biological dynamics can be captured without missed events.



Performance and Integration

Designed for both research and system integration, the camera combines low read noise (~1 e-), high dynamic range, and programmable scan modes to support advanced imaging workflows while maintaining precise and quantitative data acquisition. Its compact form factor and USB 3.2 Gen2 interface simplify integration into modern microscopy platforms and OEM imaging systems.



Ideal Applications

The Prime BSI Express is ideal for applications requiring both sensitivity and speed, including live-cell imaging, spinning disk confocal microscopy, light-sheet microscopy, calcium imaging, and super-resolution techniques.

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