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



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**Spectrum:**  
Monochrome

**General**

**Type:**  
Monochrome Camera

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

**Manufacturer:**  
Teledyne Photometrics

Prime BSI Express **Camera Series:**

**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

78 x 78 x 88 **Dimensions (mm):**

760 **Weight (g):**

Full **Housing:**

## Optical Properties

200 - 1100 **Wavelength Range (nm):**

## Sensor

1.2" **Sensor Format:**

4.20 **Resolution (Megapixels):**

95.00 **Frame Rate (fps):**

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

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

GPixel Gsense 2020BSI **Imaging Sensor:**

Progressive Scan CMOS **Type of Sensor:**

Rolling **Shutter Type:**

11, 12, 16 bit **Pixel Depth:**

6µs- 10s **Exposure Time:**

89 **Dynamic Range (dB):**

## Hardware & Interface Connectivity

USB 3.2 Gen 2 **Connector:**

Power over GPIO with [#90-399](#) **Power Supply:**

1 configurable input, 3 configurable outputs **GPIOs:**

Hardware Trigger (GPIO) or Software Trigger **Synchronization:**

Back Panel **Interface Port Orientation:**

BNC **GPIO Connector Type:**

## Threading & Mounting

C-Mount **Mount:**

(1) ¼-20 thread per side **Mounting Threads:**

## Environmental & Durability Factors

0 to 30 **Operating Temperature (°C):**

-20 to 60 **Storage Temperature (°C):**

## Regulatory Compliance

Exempt **RoHS 2015:**

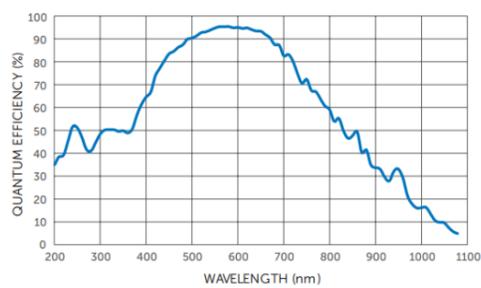
## Product Details

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



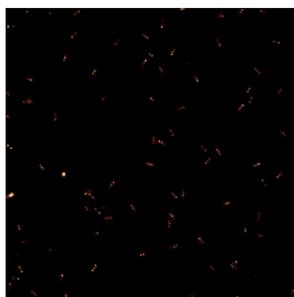
Teledyne  
Authorized  
Distributor

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<sup>-</sup> 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.



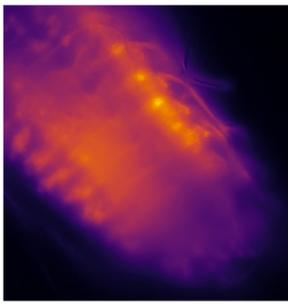
### Sensitivity

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<sup>-</sup> read noise to deliver the most sensitive camera based on sCMOS technology at 95 frames per second.



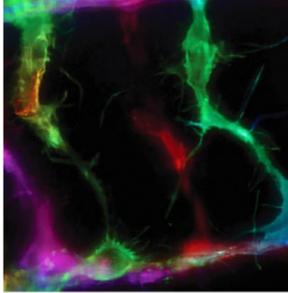
### Resolution and Pixel Size

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 ( $\sim 1 e^-$ ), 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.