

1280SCICAM

**1280x1024x12 μm
InGaAs Science Camera**

Model # 1280SC-12-A1-InGaAs-1.7

The Princeton Infrared Technologies, Inc. SciCam series allows for the longest integration times and highest frame rate at megapixel resolution in the SWIR!



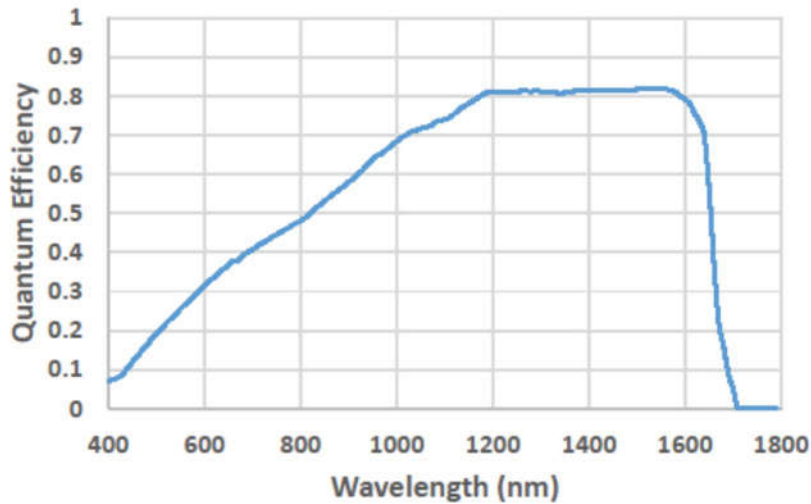
This lattice matched InGaAs camera allows for high resolution SWIR imaging 1280x1024 at high frame rates >93 frames per second (fps) at full frame size. This small pitch array, 12 μm , combined with the high quantum efficiency of the lattice matched InGaAs arrays enables impressive imaging in the SWIR and visible band. The camera has the capability of four setpoints, 20°C (no cooling), 0°C (fan cooling), -40°C, or -60°C (water cooled) using a 3 stage TEC integrated in a vacuum package.

This advance digital array (PIRT1280A1-12) on board offers 14 bit digital output with low read noise of <45e- with no image lag which is lower than every other cooled SWIR scientific camera on the market. This combined with the low dark current InGaAs and 3 stage TEC will enable high sensitivity imaging with very long integration times >2 minutes. The camera has a medium based Camera Link to allow for fast full frame rate imaging >93 frames per second at 1280x1024 at 14 bits. The InGaAs detector provides high quantum efficiency response in the shortwave infrared as well as in the visible with response from 0.4 μm to 1.7 μm . Princeton Infrared Technologies, Inc. offers this powerful camera system with software that integrates to most frame grabber cards. Excellent in high speed machine vision applications as well as microscopy where the small pitch long integration time is advantageous.

Features

- **1280x1024 resolution**
- **Small 12 μm pitch**
- **Multiple Temperature Setpoints: 20, 0, -40, and -60°C**
- **Snapshot exposure**
- **High frame rate >93 fps at 1280x1024**
- **Response from 0.4-1.7 μm**
- **QE>75% from 1-1.6 μm**
- **14 bit A/D on chip**
- **Low Read Noise <45 e-**
- **Integration times from 50 μs to >2 minutes**
- **High Dynamic Range >3000:1**
- **F- and C-mount lenses available**

Quantum Efficiency Curve at 25°C



| Parameter | Unit | Min | Typical | Max | Comments |
|--------------------|-----------------|------|----------------------|------|--|
| Resolution | Resolution | | 1280x1024 | | |
| Pixel Pitch | µm | | 12 | | |
| Full Well | ke- | 38 | 45 | | |
| Frame Rate | | | | | |
| 1280x1024 | Frames/second | | 93 | | |
| 512x512 | | | 385 | | |
| Data output | Bits | 14 | | | Medium Camera Link* |
| Quantum efficiency | Electron/photon | | 0.75 | | Using 1.5 µm light See full QE chart below |
| Fill Factor | % | 99 | 100 | | |
| Responsivity | µm | 0.4 | | 1.68 | At 20°C |
| Integration time | s | | | | Max integration time for 2/3 the full well at max dark signal at the given temperature |
| At 20C | | 5e-6 | 0.270 | | |
| At -60C | | 5e-6 | 120 | | |
| Dark Signal Rate | ke-/s | | 28 | 125 | At 20°C |
| | | | 0.30 | 0.50 | At -60°C |
| Read Noise | e- (RMS) | | 35 | 45 | At 20°C |
| D* | cm-√Hz/W | | 1.1x10 ¹³ | | At 0°C, with 1.5 µm light at 16ms integration time |
| Inoperable Pixels | % | | | 0.5 | At 20°C |
| Non-Linearity | % | | | 1 | Across 98% of dynamic range |
| Size | cm | | 26.7x14x16.5 | | |
| Weight | g | | 5000 | | |
| Power | W | | | <30 | At -50°C with water cooling |

These commodities, technology are subject to the Export Administration Act as declared by the Export Administration Regulations. Diversion contrary to U.S. law is prohibited. This is covered under 6A003.b.4.a (Department of Commerce License is needed)

*Camera Link Cables used with this camera must be less than 5m in length. Over 5m we have detected issues with noise and performance depending on the cable manufacturer.