

1280SCICAM

**1280x1024x12 μ m
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 Mpixel resolution in the SWIR!



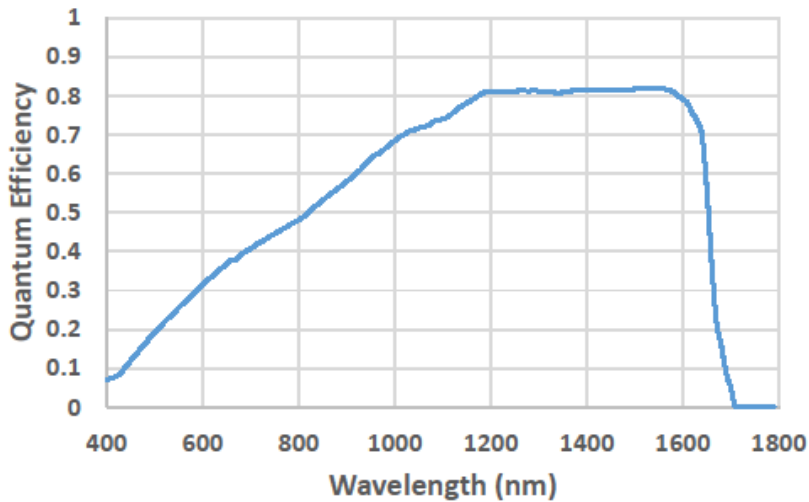
This lattice matched InGaAs camera allows for high resolution SWIR imaging 1280x1024 at high frame rates >93fps at full frame size. This small pitch array, 12 μ m, combined with the high quantum efficiency of the lattice matched InGaAs arrays enables impressive imaging in the SWIR and visible band. The camera has the capability of four setpoints, 20C (no cooling), 0C (fan cooling), -40C, or -60C (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 μ m to 1.7 μ m. 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 μ m pitch**
- **Multiple Temperature Setpoints: 20, 0, -40, and -60C**
- **Snapshot exposure**
- **High frame rate >93fps at 1280x1024**
- **Response from 0.4-1.7 μ m**
- **QE>75% from 1-1.6 μ m**
- **14 bit A/D on chip**
- **Low Read Noise <45e-**
- **Integration times from 50us to >2 minutes**
- **High Dynamic Range >3000:1**
- **F- and C-mount lenses available**

Quantum Efficiency Curve at 25C



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

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*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.