

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!



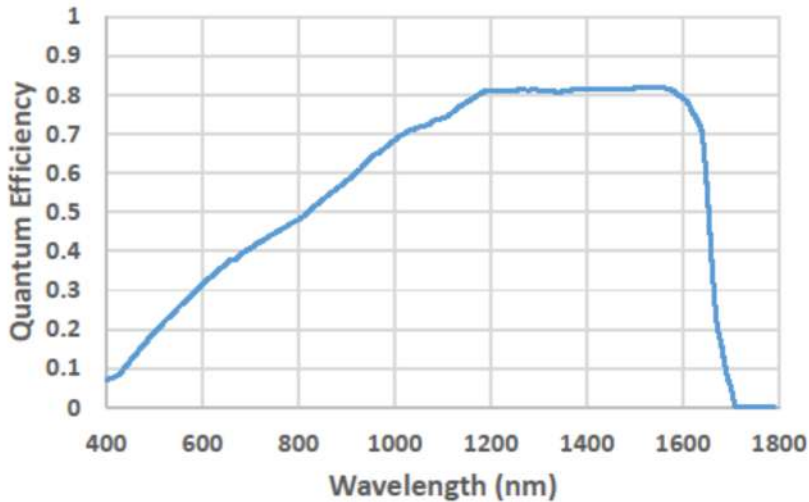
This lattice matched InGaAs camera allows for high resolution SWIR imaging 1280x1024 at high frame rates >95fps at full frame size. This small pitch array, 12 μ m, combined with the high quantum efficiency of the lattice matched InGaAs arrays enables impressive imaging in the SWIR and visible band. The camera has the capability of three setpoints, 25C (no cooling), 0C (fan cooling) 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 <40e- with no image lag which is lower than all cooled SWIR scientific cameras. This combined with the low dark current InGaAs and 3 stage TEC will enable high sensitivity imaging with very long integration times >5 minutes. The camera has a medium based Camera Link to allow for fast full frame rate imaging >95 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 is advantageous.

Features

- **1280x1024 resolution**
- **Small 12 μ m pitch**
- **Multiple Temperature Setpoints: 25, 0 and -50C**
- **Snapshot exposure**
- **High frame rate >95fps 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 <40e-**
- **Integration times from 50us to >5 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	um		12		
Full Well	e-	48k	50k		
Frame Rate 1280x1024 640x512	Frames/second		95 390		
Data output	Bits	14			Medium Camera Link
Quantum efficiency	Electron/photon		0.75		Using 1.5um light See full QE chart below
Fill Factor	%	99	100		
Responsivity	um	0.4		1.68	At 25C
Integration time At 25C At 0C At -50C	s	5e-6 5e-6 5e-6		0.080 1.010 143.0	Max integration time for half the full well at max dark signal at the given temperature
Dark Signal Rate	ke-/s		180	250 0.160	At 25C At -50C
Read Noise	e-/ (scan) ^{1/2}		35	45	At 25C
D*	cm-√Hz/W		1.3x10 ¹³		At 0C, with 1.5um light at 16ms integration time
Inoperable Pixels	%			0.5	At 25C
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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