

# 1280MVCam

**1280 x 1024 x 12  $\mu\text{m}$**   
**InGaAs Machine Vision / Industrial Camera**

**Model # 1280MV-12-A1-InGaAs-1.7**

***The Princeton Infrared Technologies' compact MVCam series SWIR and visible camera supports the highest commercially available frame rate at MegaPixel resolution with no ITAR restrictions!***



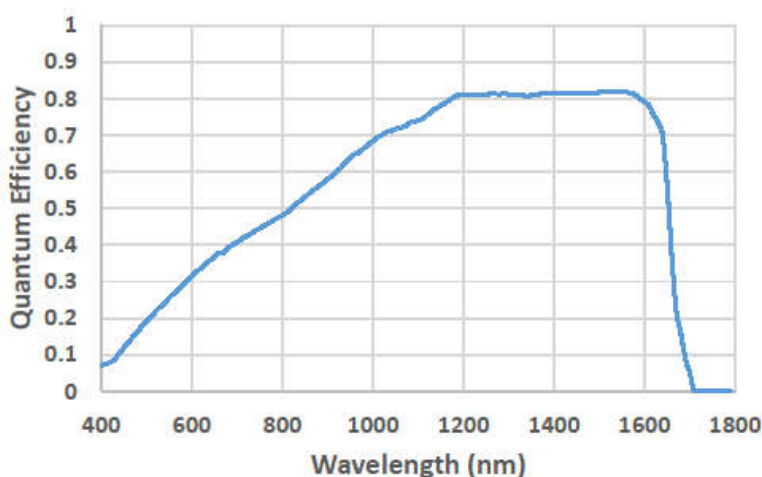
This MegaPixel InGaAs camera provides 1280x1024 resolution shortwave infrared (SWIR) imagery at up to 95 frames per second (fps), with higher frame rates for user selectable regions of interest (ROI). At 12  $\mu\text{m}$  pixel pitch, the MVCam InGaAs image sensor yields extremely low dark current and high quantum efficiency, providing sensitivity across the SWIR and visible wavelength bands from 0.4 to 1.7  $\mu\text{m}$ . The standard camera configuration uses a single stage thermoelectric cooler integrated in a sealed package to stabilize the image sensor at 20°C with no moving parts like a cooling fan.

MVCam's advanced digital array (PIRT1280A1-12) generates 14-bit digital image data with no image lag and read noise less than 45 e-, which is lower than all other industrial SWIR cameras. The camera uses medium configuration Camera Link™ to output the video imagery at the full data rate of 95 fps. Base Camera Link™ can also be used at lower frame rates. Princeton Infrared Technologies' MVCam is the ideal camera for high resolution machine vision and microscopy applications.

## Features

- 1280x1024 resolution
- 12  $\mu\text{m}$  pitch
- 20°C standard image sensor temperature setpoint
- Snapshot exposure
- 95 fps at 1280x1024
- User selectable ROI
- 0.4-1.7  $\mu\text{m}$  responsivity
- $\geq 75\%$  QE for 1.0-1.6  $\mu\text{m}$
- 14-bit on chip A/D
- $\leq 45$  e- read noise
- 50  $\mu\text{s}$  to 200 ms integration times at standard image sensor temperature setpoint
- $\geq 3000:1$  dynamic range
- F- and C-mount lenses available

## Quantum Efficiency Curve at 20°C



Parameter	Unit	Min	Typical	Max	Comments
Full resolution	pixels		1280x1024		
Selectable resolution (ROI)	pixels	608x84x1			top value is smallest selectable ROI which results in increase in possible frame rate, lower value is smallest selectable increment
Pixel pitch	µm		12		
Full well	e-	38k	45k		
Frame rate 1280x1024	frames/second			95	
512x512				385	
Data output	bits			14	medium Camera Link™*
Quantum efficiency	electron/photon		0.75 at 1.5 µm		see full QE curve above
Fill factor	%	99		100	
Responsivity	µm	0.40		1.68	at 20°C image sensor temp
Integration time at 20°C	s	50x10 <sup>-6</sup>		0.270	max integration time corresponds to filling 2/3 of the full well at max dark signal
Dark signal rate	ke-/s		28	125	at 20°C image sensor temp
Read noise	e- (RMS)		35	45	at 20°C image sensor temp
Inoperable pixels	%			0.5	at 20°C image sensor temp
Non-linearity	%			1	across 98% of dynamic range
Size	mm		86 x 86 x 73		excluding lens
Weight	g		800		excluding lens
Power	W			≤5	at 25°C ambient
Ambient operating temperature	°C	0		40	

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\*Princeton Infrared Technologies recommends use of Camera Link™ cables shorter than 5 m for reliable camera operation.