

# 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!*



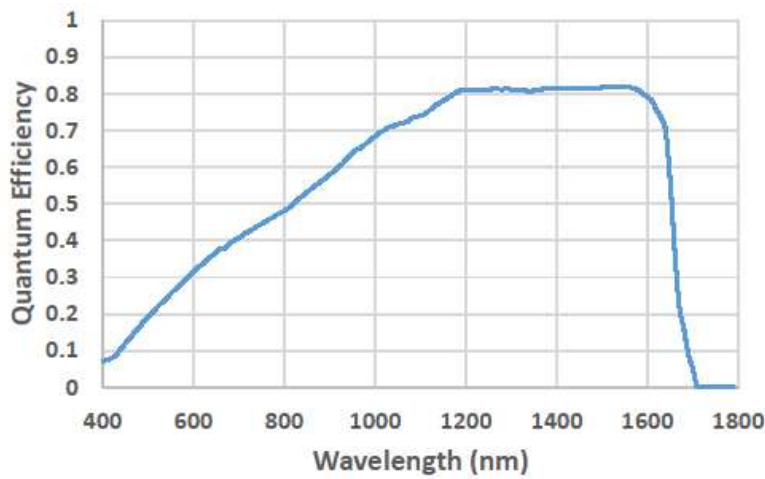
This MegaPixel InGaAs camera provides 1280x1024 resolution shortwave infrared (SWIR) imagery at up to 90 frames per second (fps), with higher frame rates available for user selectable regions of interest (ROI). At 12  $\mu\text{m}$  pixel pitch, the MVCam InGaAs image sensor yields extremely low dark 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 without the use of a cooling fan or other moving parts.

MVCam's advanced digital array (PIRT1280A1-12) generates 14-bit digital image data with no image lag and read noise typically at 75 e<sup>-</sup>. The camera utilizes a medium configuration Camera Link™ output for full data rate of 90 fps and base Camera Link™ for 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
- 90 fps at 1280x1024
- User selectable ROI
- Response from 0.4-1.7  $\mu\text{m}$
- QE  $\geq 75\%$  from 1.0-1.6  $\mu\text{m}$
- 14-bit A/D on chip
- Read noise <90e<sup>-</sup>
- Integration times from 50  $\mu\text{s}$  to 200 ms
- >1000:1 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	608x8 4x1			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	ke-	70	80		
Frame rate 1280x1024 512x512	frames/second			90 385	
Data output	bits			14	*medium Camera Link™
Quantum efficiency	electron/photon		0.75 at 1.5 µm		see full QE curve above
Fill factor	%			100	
Spectral response range	µm	0.40		1.68	at 20°C
Integration time at 20°C	s	50x10 <sup>-6</sup>		0.2	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
Read noise	e- (RMS)		75	90	at 20°C
Inoperable pixels	%			0.5	at 20°C
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 5m for reliable camera operation.