ACQ316

GEIGER-MODE LIDAR CAMERA

ACQUBIT
A 3D-SensIR, Inc. Company

KEY FEATURES

- *Single Photon Sensitivity*
- *32 x 32 Geiger-mode Focal Plane Array*
- *1.06 - 1.5 µm Wavelength Operation*
- *User-defined Range Gate*
- *Non-Uniform Bias (NUB) Correction*
- *Camera Link*

OPTIONAL

- *Portable Computer with Frame-Grabber*

FOCAL PLANE ARRAY FEATURES

- *32 x 32 pixels on 100 µm pitch*
- *32 x 32 GaP microlens array*
- *32 x 32 mesa-etched array*
- *InGaAs/InP Geiger - mode APDs for 1.5 µm wavelength*
- *InGaAs/InP Geiger - mode APDs for 1.06 µm wavelength*
- *Read-out IC supporting: 20 kHz frame rate, 2 µs range gate and 0.5 ns timing bins*
- *Thermoelectric cooled Pin-grid array (PGA) hermetric package*

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1.06 MICRON CAMERA SPECIFICATION

Parameter	Units	Minimum	Typical	Maximum	Conditions
Wavelength Range	nm	920		1100	
Array Format			32 x 32		
Pixel Pitch	µm		100		
Breakdown voltage range	V	60	65	70	SCA @ 243K (-30C)
Pixel Operability	%	95	99	100	
Dark Count Rate (DCR)	kHz	3	5	10	250K at 4V overbias
Photon Detection Efficiency (PDE)	%	25	30	35	at 1.06 um with Microlens
PDE Standard Deviation	%		7	20	Standard deviation vs mean w/ NUB
Cross-talk probablity	ppm			300	pixel-to-pixel probability
timing dynamic range	bit		14		
Frame Rate	kHz	0.1	n/a	20	
Bin Size	ps	500	500	1000	
Timing Jitter	ps	400	450	500	System timing including laser pulse width and jitter
Pixel voltage tunabilty range	V	-0.75	0	0.75	flat NUB = 0V
Gate duration	us	0.5	4	6.7	500ps bin (x2@1ns)
	mtr	75	600	1000	RANGE: 1ns = 15cm
Input Voltage	V	20	28	32	
Power	W	20	30	30	
Weight	lbs		2.5		
Envelope Dimensions	In				4.5 X 4.5 X 4.5

1.55 MICRON CAMERA SPECIFICATION

Parameter	Units	Minimum	Typical	Maximum	Conditions
Wavelength Range	nm	920		1600	
Array Format			32 x 32		
Pixel Pitch	µm		100		
Breakdown voltage range	V	60	65	70	SCA @ 243K (-30C)
Pixel Operability	%	95	99	100	
Dark Count Rate (DCR)	kHz	25	40	60	250K at 4V overbias
Photon Detection Efficiency (PDE)	%	20	30	35	at 1.55 um with Microlens
PDE Standard Deviation	%		7	20	Standard deviation vs mean w/ NUB
Cross-talk probablity	ppm			300	pixel-to-pixel probability
timing dynamic range	bit		14		
Frame Rate	kHz	0.1	n/a	20	
Bin Size	ps	500	500	1000	
Timing Jitter	ps	400	450	500	System timing including laser pulse width and jitter
Pixel voltage tunabilty range	V	-0.75	0	0.75	flat NUB = 0V
Gate duration	us	0.5	4	6.7	500ps bin (x2@1ns)
	mtr	75	600	1000	RANGE: 1ns = 15cm
Input Voltage	V	20	28	32	
Power	W	20	30	30	
Weight	lbs		2.5		
Envelope Dimensions	In				4.5 X 4.5 X 4.5

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