



Kinetix

High Speed Imaging Kinetix sCMOS Camera Datasheet

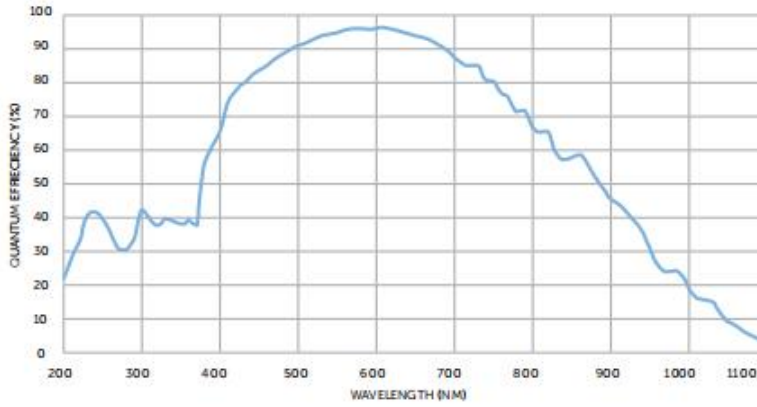
Specifications	Camera Performance
Sensor	Teledyne Photometrics Kinetix Sensor
Active Array Size	3200 x 3200 (10.24 Megapixel)
Pixel Area	6.5µm x 6.5µm (42.25µm ²)
Sensor Area	20.8mm x 20.8mm 29.4mm diagonal
Peak QE%	>95%
Readout Mode	Rolling Shutter Effective Global Shutter Programmable Scan Mode
Digital Binning	Symmetrical and Asymmetrical Binning up to 4x4 pixels
Linearity	>99%
Cooling Options	Air Cooled Liquid Cooled

Camera Modes				
Specifications	Dynamic Range	Speed	Sensitivity (CMS)	Sub-Electron (8x CMS)
Bit-Depth	16-bit	8-bit	12-bit	16-bit
Frame Rate (Full Frame)	83 fps	498 fps	88 fps	5.2 fps
Read Noise	1.6e ⁻	2.0e ⁻	1.2e ⁻	0.7e ⁻
Cooling	0° C	0° C	0° C	0° C
Line Time	3.749 µsec/line	0.625 µsec/line	3.53125 µsec/line	60.1 µSec/line
Dark Current	1.27 e ⁻ /p/sec	3 e ⁻ /p/sec	1.03 e ⁻ /p/sec	0.477 e ⁻ /p/sec
Conversion Gain	0.23 e ⁻ /count	0.85 e ⁻ /count	0.25 e ⁻ /count	0.015 e ⁻ /count
Full Well Capacity	15000 e ⁻	200 e ⁻	3000 e ⁻	3000 e ⁻

Specification	Camera Interface
Digital Interface	PCI-Express Gen 3 USB 3.2 10 Gbps
Lens Interface	T-Mount F-Mount C-Mount Swappable Mounts
Mounting Points	2x 1/4" mounting points per side

Triggering Mode	Function
Input Trigger Modes	Trigger First: Sequence triggered on first rising edge
	Level Trigger: Exposure time is controlled by length of high trigger signal
	Edge Trigger: Each frame in sequence triggered by rising edge
	SMART Streaming: Fast iteration through multiple exposure times works with the 4 trigger outs to control multiple sources at multiple exposure time
Output Trigger Modes	Any Row: Expose signal is high while any row is acquiring data
	First Row: Expose signal is high while first row is acquiring data.
	Line Output: Expose signal provides rising edge for each row advanced by the rolling shutter readout
Effective Global Shutter Trigger Modes	All Rows: Expose out signal is high for Exposure time this keeps exposure time but drops frame rate
	Rolling Shutter: Expose out signal is high for Exposure time - readout time this keeps frame rate but drops exposure time
Output Trigger Signals	Expose Out (up to four signals), Read Out, Trigger Ready

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Accessories (Included)

- USB 3.2 Card/Cable
- Trigger Cable
- Power Supply
- Quickstart Guide
- PCIe Card/Cable

Accessories (Additional)

- Liquid Circulator
- Liquid Cooling Tubes

Array Size	Frame Rate							
	Dynamic Range		Speed		Sensitivity (CMS)		Sub-Electron	
	PCI-E	USB	PCI-E	USB	PCI-E	USB	PCI-E	USB
3200 x 3200	83	39	498	79	88	52	5.2	5.2
3200 x 2304	115	54	691	110	122	72	7.2	7.2
3200 x 2048	130	61	778	122	138	81	8.1	8.1
3200 x 1600	166	78	996	158	176	104	10.4	10.4

Array Size	Line Scan ROI Frame Rates in KHz			
	Dynamic Range	Speed	Sensitivity (CMS)	Sub-Electron
3200 x 64	4.1	21.1	4.3	0.2
3200 x 32	8.1	36.4	8.3	0.5
3200 x 16	15.7	57.1	15.7	0.8
3200 x 8	29.6	80.0	28.3	1.4
3200 x 4	53.3	99.4	47.2	2.1
3200 x 2	88.9	107.2	47.2	2.7

Based on measurement using PCIe interface on a Kinetix having firmware 30.32.1