TELEDYNE PHOTOMETRICS
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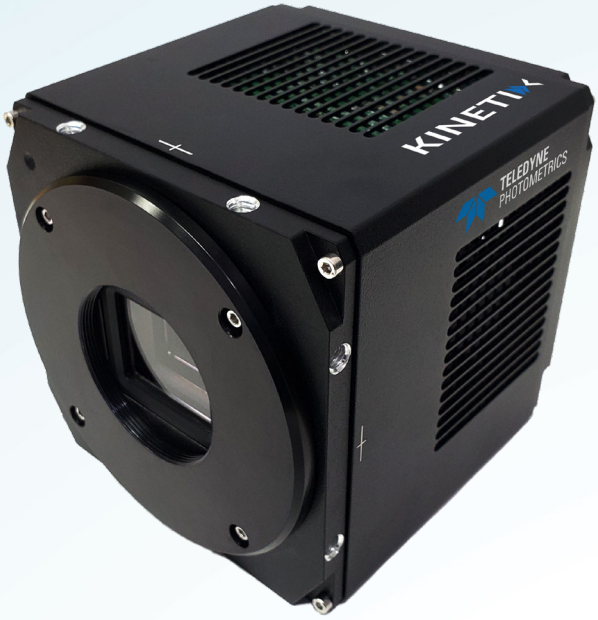


KINETIX

The New Category In sCMOS Cameras

10 Megapixel
6.5 µm Pixel Size
498 Frames Per Second
29.4 mm Field Of View
95% Quantum Efficiency

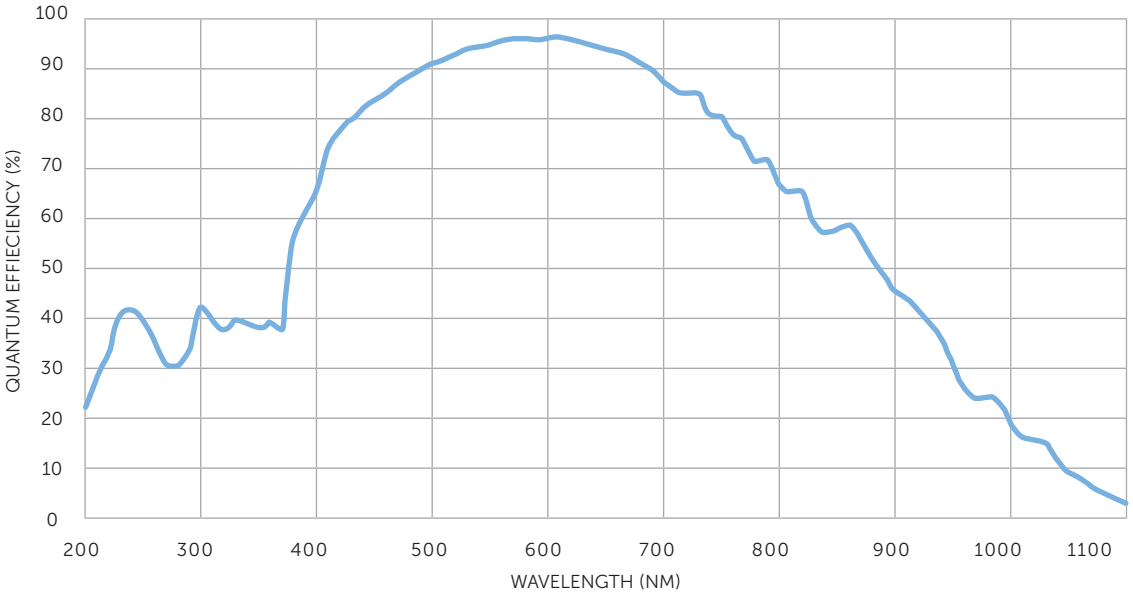
Specifications	Camera Performance
Sensor	Teledyne Photometrics Kinetix Sensor
Active Array Size	3200 x 3200 (10.24 Megapixel)
Pixel Area	6.5µm x 6.5µm (42.25µm^2)
Sensor Area	20.8mm x 20.8mm 29.4mm diagonal
Peak QE%	>95%
Readout Mode	Rolling Shutter Effective Global Shutter Programmable Scan Mode
Digital 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$^-$	1000 e$^-$	1000 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
Camera Weight	1.8 Kg, 4 lbs

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



Accessories (Included)

USB 3.2 Card/Cable

Trigger Cable

Power Supply

Quickstart Guide

PCIe Card/Cable

Accessories (Additional)

Liquid Circulator

Liquid Cooling Tubes

Frame Rate

Array Size	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

Line Scan ROI Frame Rates in KHz

Array Size	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

Kinetix Mechanical drawings

Units in Millimetres