KINETIX22 CMOS CAMERA

KEY FEATURES

- Extreme speed: 664 fps full frame
- Large 22 mm sensor
- 95% quantum efficiency
- Ultra-low 0.7 e^- read noise
- Balanced 6.5 µm pixels
- 5.76 megapixel sensor
- Superior background quality
- High dynamic range
- Powerful on-board FPGA processor for advanced features
- C-mount compatible

TYPICAL APPLICATIONS

- Light sheet microscopy
- Voltage and calcium imaging
- Single-molecule imaging (FRET, TIRF, SMLM)
- Super resolution microscopy
- Single molecule imaging
- Spinning disk confocal imaging
- Live cell imaging
- Fluorescence imaging

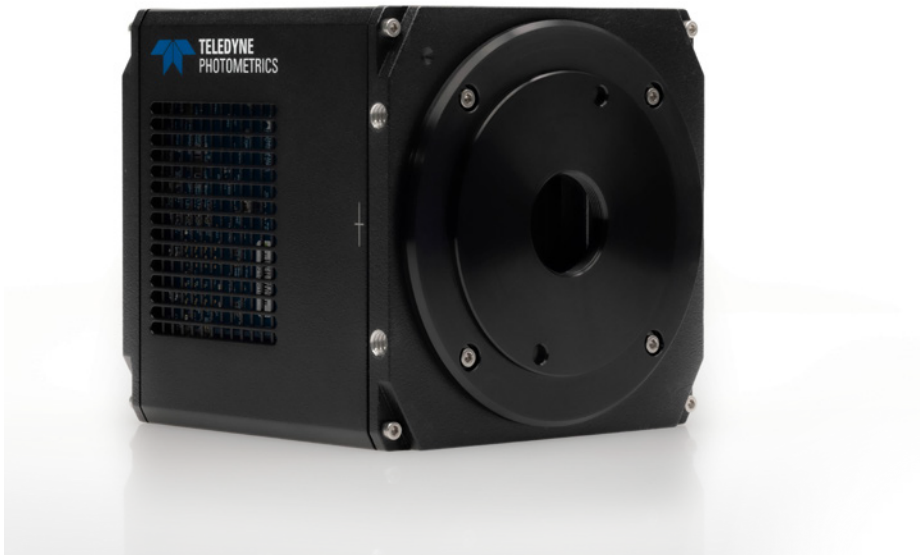
RELIABILITY

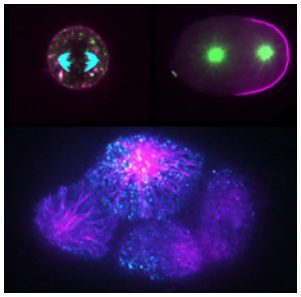
- Three-year warranty
- Extended warranty available

The Next Generation in CMOS Cameras

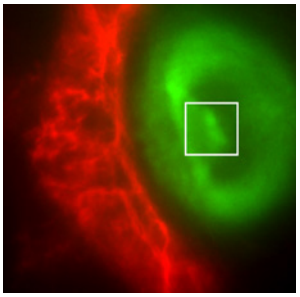
The groundbreaking Kinetix22 CMOS camera delivers extreme imaging speeds across a large 22 mm field of view, all at near-perfect 95% quantum efficiency and with sub-electron read noise. With these impressive features, the Kinetix22 stands as the ultimate solution for scientific imaging.

Faster, larger and more sensitive than typical CMOS cameras, the Kinetix22 empowers you to capture more than ever before, advancing your imaging and research endeavors. Whether you're imaging fast dynamic voltage signals, capturing entire organs and tissues, peering into space, or studying a small handful of molecules, the Kinetix22 will image without compromise.

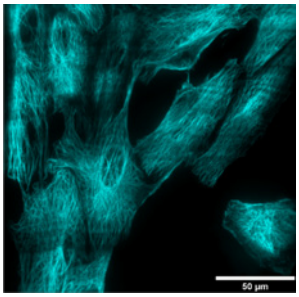




iSIM Live Cell Imaging
Dr. Daniel Dickinson



High Speed Voltage Imaging
Dr. Davide Raccuglia



OPM Light Sheet
Prof. Clemens Kaminski

KINETIX22 SPECIFICATIONS

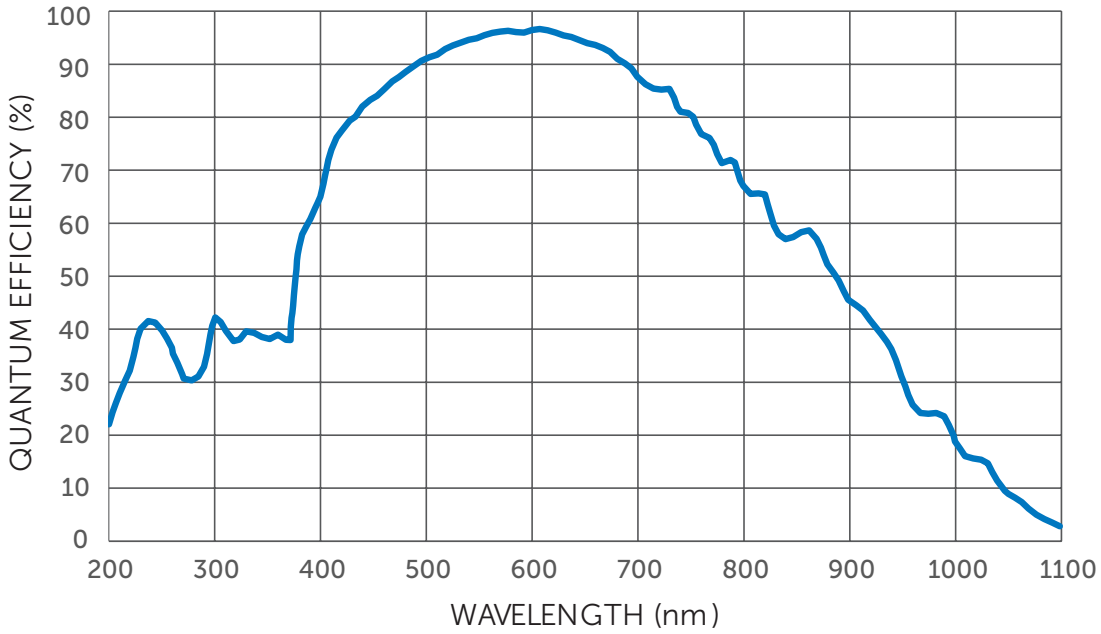
SPECIFICATIONS	Camera Performance
Sensor	GPixel GSense GSENSE6510 CMOS
Active Array Size	2400 x 2400 (5.76 megapixel)
Pixel Area	6.5 x 6.5 µm (42.25 µm^2)
Sensor Area	15.6 mm x 15.6 mm (22 mm diagonal)
Peak QE%	95%
Readout Modes	Rolling shutter
	Effective global shutter
	Programmable scan mode (PCIe only)
Digital Binning	Symmetrical and asymmetrical binning up to 4 x 4 pixels
Linearity	> 99%
Cooling Options	Air cooled or liquid cooled (0 °C)
Digital Interfaces	USB 3.2gen2 10 Gbps
	PCI-Express Gen 3
Lens Interfaces	C-mount
Mounting Points	8 x 1/4"-20 UNC
Camera Weight	1.8 kg, 4 lbs

CAMERA MODES

SPECIFICATIONS	Dynamic Range	Speed	Sensitivity	Sub-Electron
Bit Depth	16-bit	8-bit	12-bit	16-bit
Frame Rate (Full Frame)	111 fps	664 fps	118 fps	6.9 fps
Read Noise	1.6 e$^-$	2.0 e$^-$	1.2 e$^-$	0.7 e$^-$
Cooling	0 °C	0 °C	0 °C	0 °C
Line Time	3.749 µsec/line	0.625 µsec/line	3.5312 µsec/line	60.1 µsec/line
Dark Current	1.27 e$^-$/p/sec	3.0 e$^-$/p/sec	1.03 e$^-$/p/sec	0.477 e$^-$/p/sec
Conversation Gain	0.23 e$^-$/count	0.85e$^-$/count	0.25 e$^-$/count	0.015 e$^-$/count
Full Well Capacity	15000 e$^-$	200 e$^-$	1000 e$^-$	1000 e$^-$

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 four trigger out cables to control multiple light sources at multiple exposure times
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	
EFFECTIVE GLOBAL SHUTTER TRIGGER MODES	
All Row	Expose out signal high for exposure time, maintains exposure time but drops frame rate
Rolling Shutter	Expose out signal high for exposure time - readout time. Keeps frame rate but drops exposure time.
OUTPUT TRIGGER SIGNALS	
Expose Out (up to four signals), Read Out, Trigger Ready	

KINETIX22 QE CURVE



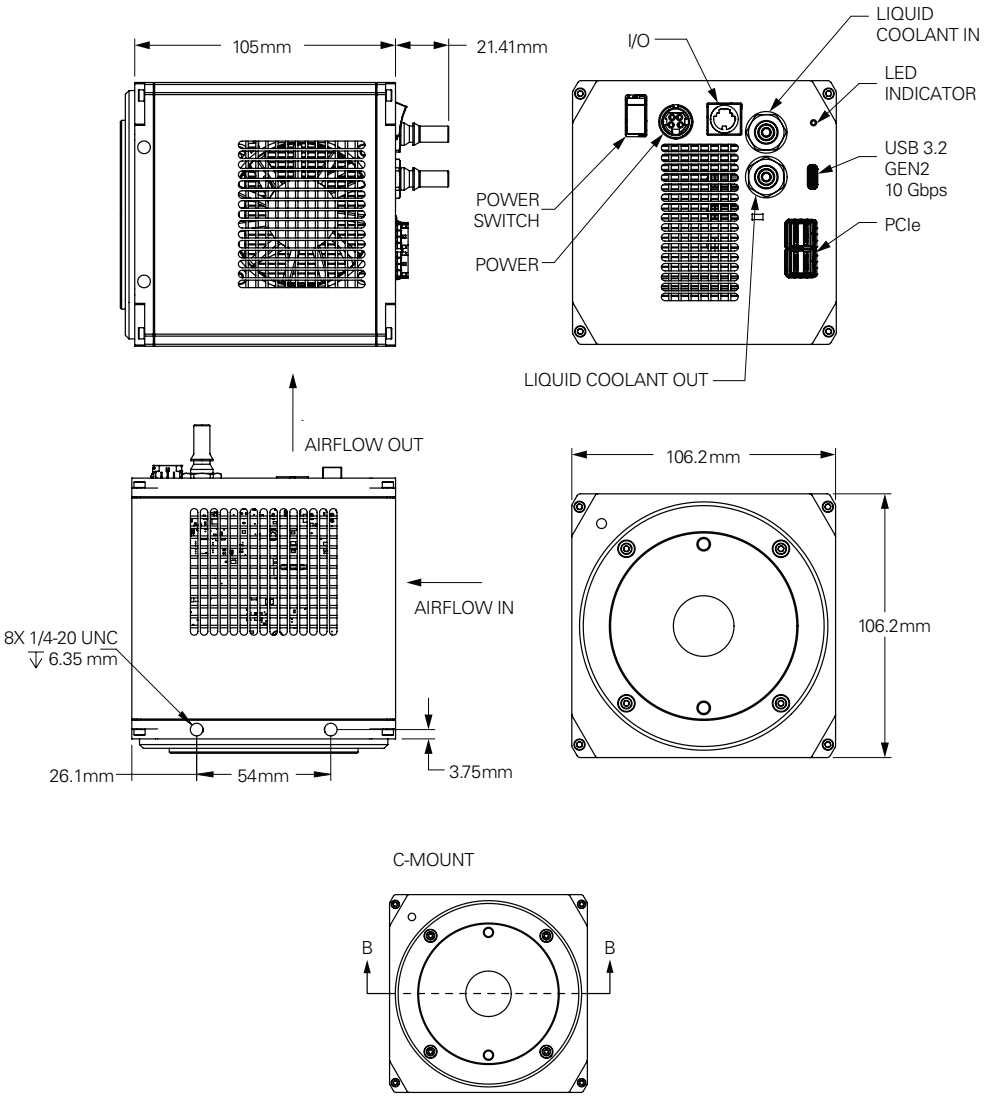
KINETIX22 SPEED TABLE

FRAME RATES (HZ)								
ARRAY SIZE	DYNAMIC RANGE		SPEED		SENSITIVITY		SUB-ELECTRON	
	PCIe	USB	PCIe	USB	PCIe	USB	PCIe	USB
2400 x 2400	111	71	663	142	118	94	6.9	6.9
2400 x 2304	116	74	691	146	123	99	7.2	7.2
2400 x 2048	130	83	777	166	138	111	8.1	8.1
2400 x 1200	222	142	1320	282	236	188	13.9	13.9
2400 x 512	520	330	3053	650	551	437	32.3	32.3
512 x 512	520	520	3053	2766	551	551	32.3	32.3

LINE SCAN FRAME RATES* (HZ)				
ARRAY SIZE	DYNAMIC RANGE	SPEED	SENSITIVITY	SUB-ELECTRON
2400 x 64	4,100	21,100	4,300	200
2400 x 32	8,100	36,400	8,300	500
2400 x 16	15,700	57,100	15,700	800
2400 x 8	29,600	80,000	28,300	1,400
2400 x 4	53,300	99,400	47,200	2,100
2400 x 2	88,900	107,200	77,200	2,700

*Based on measurements using a PCIe interface and a Kinetix22 on firmware 30.32.1

KINETIX22 DIMENSIONAL OUTLINES (UNIT: MM)



KINETIX22 ACCESSORIES

ACCESSORIES (INCLUDED)	
PCIe Interface Card	C-mount faceplates
PCIe data cable, 3m (x2)	Power supply (12V/10A DC)
USB C-C data cable, 3m	PVCAM drivers/software
USB A-C data cable, 0.9m	Quick installation guide
BNC trigger cable	Performance and gain test data

FOR MORE INFORMATION REACH OUT ONLINE:

CONTACT US: photometrics.com/contact
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