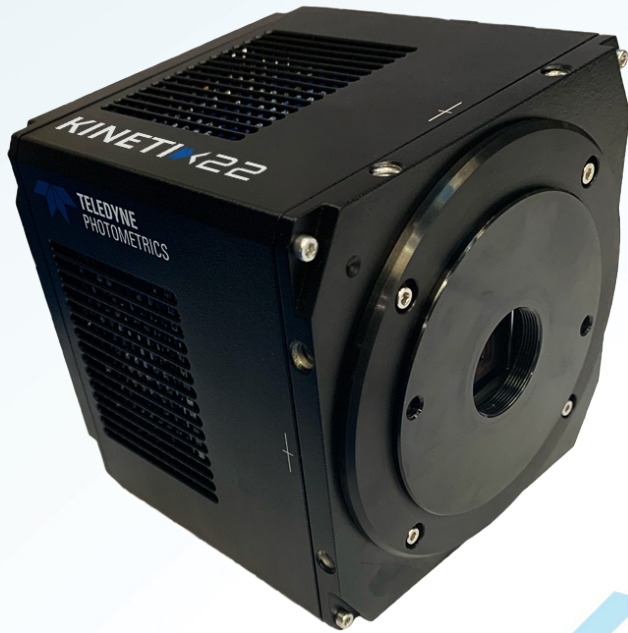# TELEDYNE PHOTOMETRICS
Everywhere**you**look™

KINETIX22

## High Speed, Back-Illuminated sCMOS

22 mm Field Of View

5.76 Megapixel 2400x2400

6.5 µm Pixels

664 Frames Per Second

96% Quantum Efficiency

0.7 e⁻ Read noise

Specifications	Camera Performance
Sensor	Teledyne Photometrics Kinetix Sensor
Active Array Size	2400 x 2400 (5.76 Megapixel)
Pixel Area	6.5 µm x 6.5 µm (42.25 µm²)
Sensor Area	15.6 mm x 15.6 mm 22 mm diagonal
Peak QE%	>96%
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
Full Frame Rate	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	5 µsec/line	0.836 µsec/line	4.71 µsec/line	80.12 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 or 1000 e⁻	1000 e⁻	1000 e⁻

Specification	Camera Interface
Digital Interface	PCI-Express Gen 3 USB 3.2 10 Gbps
Lens Interface	C-Mount
Mounting Points	2x 1/4"-20 TPI 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	

TELEDYNE IMAGING
Everywhere**you**look

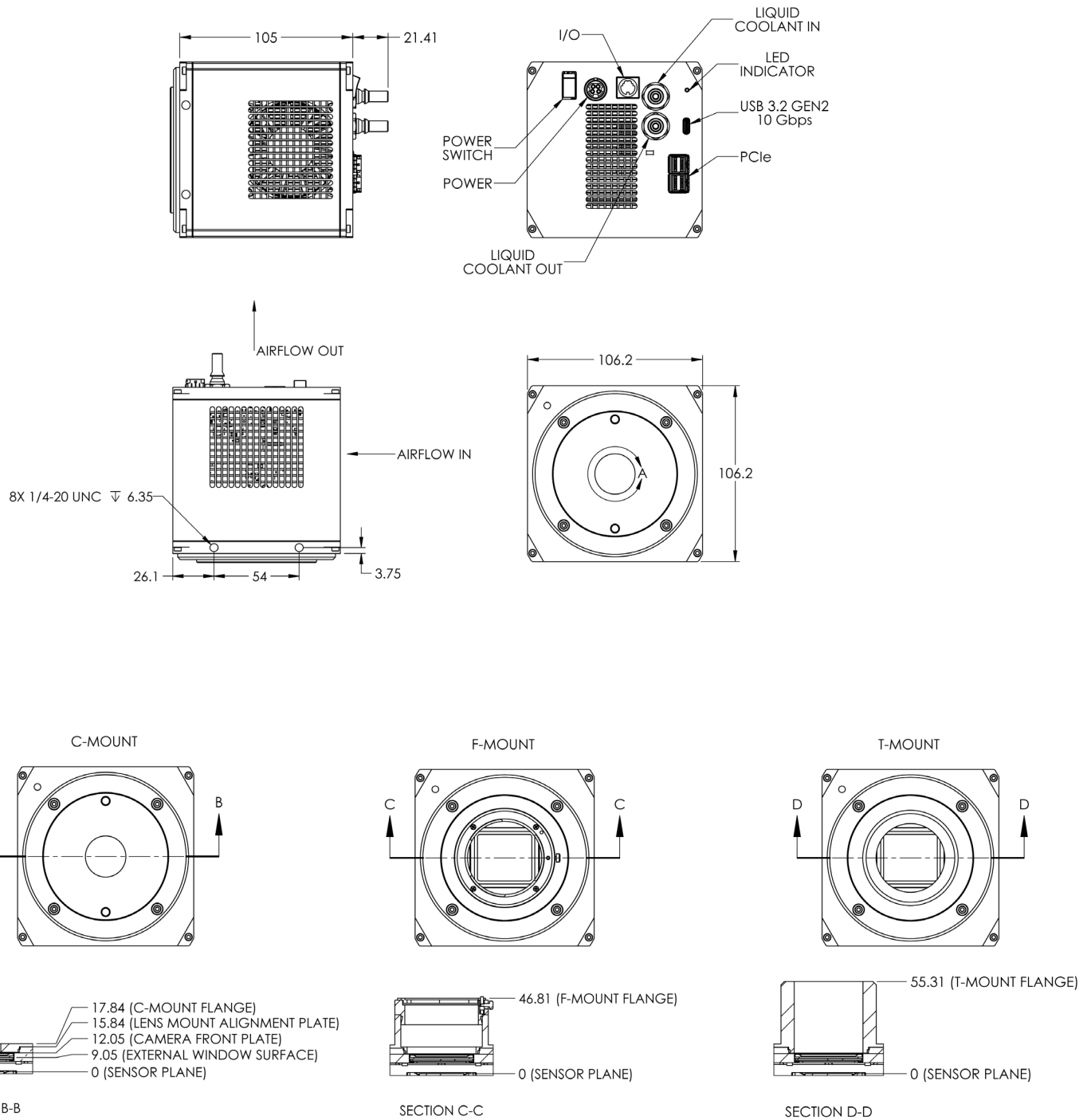Quantum efficiency (%) vs Wavelength (nm)
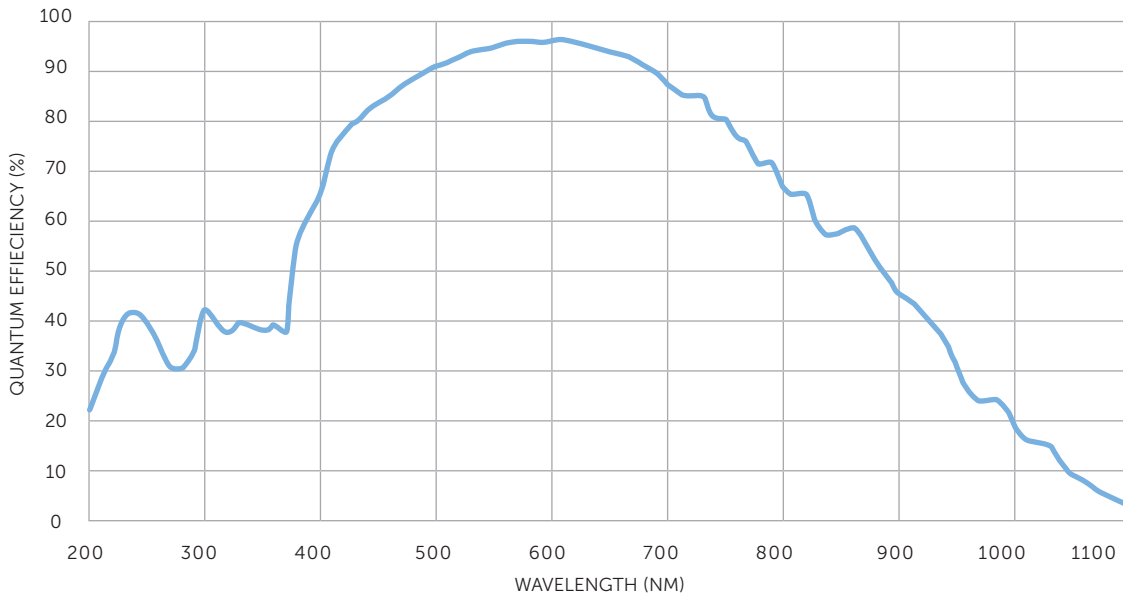
Accessories (Included)

USB 3.2 Cable and Card

Trigger Cable

Power Supply

Quickstart Guide

PCle Card and Cables

Accessories (Optional)

Liquid Circulator

Liquid Cooling Tubes

TELEDYNE IMAGING
Everywhere**you**look

Kinetix Mechanical drawings

Units in Millimetres

105   21.41

I/O

LIQUID COOLANT IN

LED INDICATOR

USB 3.2 GEN2 10 Gbps

PCIe

POWER SWITCH

POWER

LIQUID COOLANT OUT

AIRFLOW OUT

AIRFLOW IN

8X 1/4-20 UNC ⤓ 6.35

26.1   54   3.75

106.2

106.2

A

C-MOUNT

B   B

17.84 (C-MOUNT FLANGE)
15.84 (LENS MOUNT ALIGNMENT PLATE)
12.05 (CAMERA FRONT PLATE)
9.05 (EXTERNAL WINDOW SURFACE)
0 (SENSOR PLANE)

SECTION B-B

F-MOUNT

C   C

46.81 (F-MOUNT FLANGE)

0 (SENSOR PLANE)

SECTION C-C

T-MOUNT

D   D

55.31 (T-MOUNT FLANGE)

0 (SENSOR PLANE)

SECTION D-D

Specifications in this datasheet are subject to change. Refer to the Teledyne Photometrics website for most current specifications.