



F40

Next Generation X-Ray Detector High Resolution | High Speed Detachable USB-C 3.0 Cable

Fairchild Imaging X-Ray Sensors (FI-XRS) define the industry standard in x-ray imaging. Building upon decades of field proven designs, we have been the most trusted resource for small format x-ray sensors.

F40 is designed for today's medical and inspection x-ray imaging. F40 uses a 19.5 μ m pixel, high dynamic range, and patented low-noise technology to provide crisp, clear images at a fraction of the x-ray dose. At 10 frames per second, a series of images can quickly be acquired for tomosynthesis. It also may be used in the classic 1 frame per second mode.

Boasting an impressive 10.2 mega pixel resolution, F40 has a 7.2cm x 5.3cm footprint. Unlike other sensors, the linearity of the pixels is over 99%. This provides even data throughout the image, which enhances the capabilities of Artificial Intelligence (AI) algorithms.

Fairchild Imaging's proven dual-gain amplifier architecture results in 16 bits per pixel to encompass the full dynamic range. Low gain and high gain signal paths provide analog to digital conversions at multiple gain factors on a pixel by pixel basis. This process optimizes both dynamic range and low noise, enabling excellent images at the lowest patient doses.

With native Windows and Mac drivers, F40 is optimized for desktop and cloud environments. The proprietary and patented waterproof housing uses an extremely strong material that is radiolucent, protecting sensors from damage, while not impacting the amount of x-ray dose required to obtain a great image.

F40 sensors are proudly designed and manufactured in America.

Key features and benefits

- 10.2 MP resolution
- >20lp/mm in real images
- >90dB dynamic range
- Dual gain operation for low x-ray dose acquisition
- 1- 10 frames per second
- Extremely high signal to noise ratio
- Onboard image correction
- Field replaceable USB 3.0 cable with Type-C plug

Applications

- Human medical imaging
- Veterinary imaging
- Biopsy inspection
- Mechanical Inspection
- Non-destructive testing

Ideal for capturing images in versatile environments

Preliminary specifications

Sensor

Detector	CMOS
Total resolution	10.2 MP
Active area dimension	72.2 mm x 53.4 mm
Active area pixels	3700 x 2736 pixels
Scintillator	Tunable FOP with CsI
Tiling	2-sided tiling (butting)
Chip readout time	25ms
Image delivery speed	0.1s
ADC resolution	14 bits
Data protocol	USB 3.0 w/ type-C plug
Image processing	DDR3 onboard correction files

Housing

Capsule Dimensions (mm)	12 H x 60 W x 86 L
Cable	Detachable, field replaceable
Waterproof	IPX8

Pixel

Pixel size	19.5 μ m x 19.5 μ m
Shutter types	Rolling, global reset
Programmable gains	LG: 1x HG: 10x
Frame rates	1 fps - 10 fps (20 fps on silicon)
Pixel linearity	>99%
Binning	1x1 and 2x2 pixels

Interface

USB cable	USB 3.0 w/ Type-C plug
Operating systems	Windows, MAC
Data type	16 bit

Operating

Power Peak	350 mA
Power idle	50 mV
operating temp	-5°C to 40°C



(F40, shown in actual size.)



For more information contact:
Fairchild Imaging, Inc.
1841 Zanker Rd., Ste. 50
San Jose, CA 95112 USA

T: 1-408-433-2500
E: sales@fcimg.com

Disclaimer and copyright

This document gives only a general description of the product(s) and service(s) and, except where expressly provided otherwise, shall not form any part of any contract. From time to time, changes may be made in the products or the conditions of supply.

Fairchild Imaging is a registered trademark of Fairchild Imaging, Inc.
Hamamatsu is a registered trademark of Hamamatsu Photonics K.K.