Photron

INFINICAM

INFINICAM UC-1.1 is a high-speed streaming camera capable of capturing and transferring 1.2-megapixel of image data to PC memory at 1,000fps via USB 3.1. The latest version of the SDK supports Python, a common language in the computer vision/machine vision field, in addition to C++. This makes real-time image processing with INFINICAM possible with easy intuitive programming. INFINICAM is also compatible with StreamPix and TroublePix Software from Norpix to provide a comprehensive off-the-shelf high-speed camera solution.

Product Features

High-speed image processing made simple

High-speed image processing previously required a dedicated board and complex cabling, but now can be implemented with a single general-purpose USB 3.1 Type C cable and a PC.

Compact, Lightweight, C-mount

The compact and lightweight housing, (55mm x 55mm x 55mm, 280g), makes it easy to install. The C-mount lens compatibility allows for the use of a wide range of lenses.
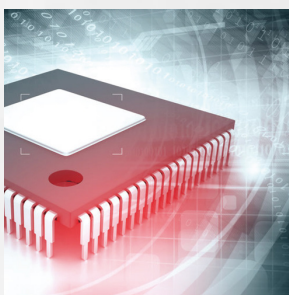
Real-time high-speed image compression

Real-time compression to less than 1/4 the original data volume enables high-speed 1.2-megapixel image streaming at 1,000fps and up to 30,000fps at 1,246 x 16 pixels.

Open development environment

The latest SDKs, development environment, and manuals can be downloaded from: www.photron.com

Sample applications can be accessed at GitHub.

Data capture with just four lines of programming

Example: Initializing the camera and capturing a single image.

```
cam = CameraFactory ().create()
decoder = cam.decoder()
xferData = cam.grab()
img = decoder.decode(xferData)
```

Python is now supported, making programming easier and more intuitive. Utilizing Python script, the camera may be controlled with as few as four lines of code. For example, image acquisition can be coded, as shown in the image to the left, for quick implementation.
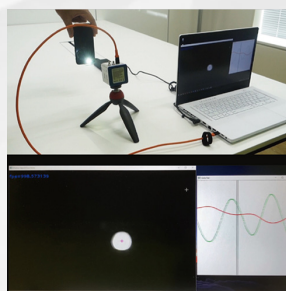
1,000fps real-time image processing

A published sample application can be seen in the example to the left. Here you can see the capture of the LED lights of a smartphone and the calculated output, along with XY coordinate values in real-time. The sample app comes with source code (C++ and Python).

Robot Control

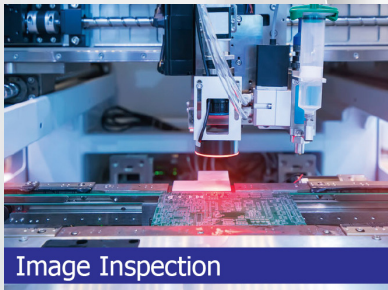**Automatic Tracking**

Bioimaging

Image Inspection

Altitude Control

Object Detection
Object Tracking
Motion Analysis
Object Labeling
Template Matching

Focus Detection
Edge Detection
Surface Roughness Analysis
Optical Flow
Digital Holography

Product Specifications

Model Name	INFINICAM UC-1.1
Sensor Type	CMOS
Sensor Size	12.8mm x 10.24mm
Pixel Size	10μm
Maximum Effective Resolution	1246 x 1024
Maximum Frame Rate (Full Frame)	988fps
Maximum Frame Rate (Split Frame)	31,157fps
Minimum Exposure Time	6.5μsec
Shutter Method	Global Shutter
Dynamic Range	Monochrome 8-bit (color not available)
Interface	USB 3.1 Gen 1 Type-C
Lens Mount	C-mount (5.5mm maximum mount flange)
External Synchronisation Signal	2.5 Vp-p (DIN connector male)
Camera Housing	Unsealed air-cooled (with fan)
Dimensions / Weights	55(W) x 55(H) x 55(D) mm / 280g (excluding protruding parts and accessories)
Storage Temperature / Humidity	20 to 60°C/85% or less (no condensation)
Operating Temperature / Humidity	0-45°C/ 80% or less
DC Power Supply	5V (USB Vbus supply)

Imaging Performance

Resolution	Frames Per Second (fps)
1246 x 1024	50
1246 x 1024	250
1246 x 1024	500
1246 x 1024	988
1246 x 1008	1,000
1246 x 496	2,000
1246 x 176	5,000
1246 x 80	10,000
1246 x 32	20,000
1246 x 16	31,157

* Frame rate can be set from 1 to 31,157fps.
* Exposure time can be set in 0.01μsec increments to 6.5μsec.
* Resolution can be set in increments of 16 pixels height. (Limited for split frames).
* The development environment can impact performance.

Development Environment

OS	Microsoft Windows 10/11 64-bit
CPU	AVX2 - compatible processors
Real-time Image Processing	Multi-core CPU and high-speed SSD (NVMe, PCI-express) recommended
Runtime	Visual C++ 2019 Redistribution Package
Supported Programming Languages	C++ and Python

Main Functions of the SDK

- Initializing the library
- Searching for devices
- Opening and closing devices
- Acquisition and setup of shooting speed/shutter speed
- Clock settings for exposure/non-exposure times
- Acquisition and setting of synchronous signal inputs
- Start and end of continuous transfer
- Obtaining and setting the number of ring buffers
- Image acquisition
- Obtaining and setting quantization tables
- Decoding of compressed data

Off the Shelf High-Speed Camera Software

For users who do not wish to integrate or develop their own application for control of the camera, Infinicam is supported by Norpix TroublePix & StreamPix video recording software (not included). These products support operation as a traditional high-speed camera for applications such as Trouble-shooting, Machine Vision and Streaming.

For more details contact: www.norpix.com

NORPIX
DIGITAL VIDEO RECORDING SOFTWARE AND SOLUTIONS
STREAMPIX & TROUBLEPIX