

Sensors Unlimited Image Analysis

Software for SWIR Imaging

The Image Analysis Software provides full camera control with an easy-to-use graphical user interface. It provides single-scan, continuous, averaged, windowed, video or triggered video image acquisition, storage and retrieval, with options to stream to RAM or disk.

Storage options in binary, bitmap, png, text, avi or jpeg file formats, with choice of scaling options and provisions for separate storage of background images. The Image Analysis Software provides for multiple user-created line profiles, histograms, and spot meters.

This software works with all Sensor Unlimited camera families including line-scan, full-frame and windowed area cameras. It works with the National Instruments frame-grabber cards via the NI-IMAQ driver software.

Includes image intensity scaling options for autoscale to min-max, to 90% of max, fixed limits or bit shifted. Image enhancement options, including histogram equalization, are available to provide increased contrast within all intensity ranges.

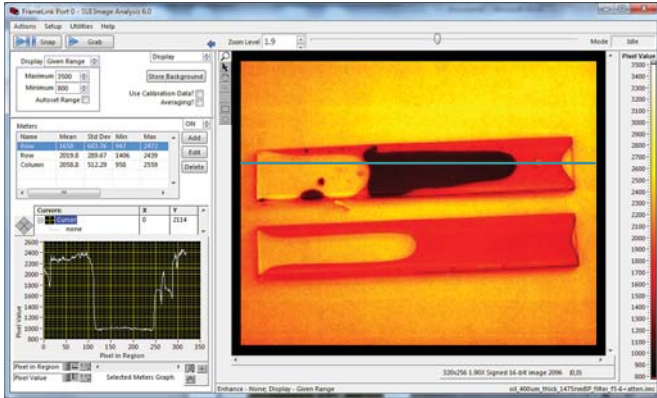
FEATURES

- Windows XP SP3 or later
- P-III 800 MHz Pentium compatible or better, with 500 MB of free hard drive space
- SXGA Display (1280 x 1024) or higher resolution
- 512 MB RAM memory minimum, 1.25 GB free for ~ 2 minute movie capture (7200 frames at 60 fps)

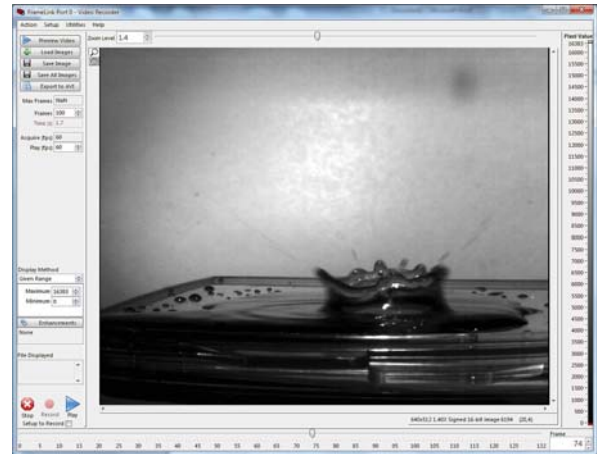
Screen Capture above: Image of water tower captured with GA1280JSX camera. To the visible cameras, an even coat of paint is observed; the SWIR camera 'sees' the paint layers and thickness differences



UTC Aerospace Systems



Line Profile: The ROI window graph on the lower left shows the pixel intensity profile along the horizontal green line on top of the image of the upper cuvette. This cuvette holds both water and used motor oil, while the lower one just has oil. SWIR imaging through a 1475 nm bandpass filter causes the water to appear black while the oil is red and airbubbles in yellow in this pseudo-colored image.



Video Recorder: The Video Recorder utility shows one frame of a video of water dropping onto a plate. The utility permits acquiring frames into computer RAM or to stream images onto media storage memory. Images can be recorded from the cameras at full speed and played back in slow motion, making use of all display and enhancement options. Frames can be stored individually or converted to a compressed AVI.

SYSTEM REQUIREMENTS

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| Operating System | Windows XP SP3 or later |
| Frame Grabber | National Instruments PCI-1422 (RS-1422 interface) National Instruments Camera Link® compatible frame grabbers: PCIe-1426, PCIe-1427, PCI-1428, PCIe-1429, PCIe-1430, PCIe-1433 Imperx Camera Link® ExpressCards and PCIe frame grabber cards |
| Computer | P-III 800 MHz Pentium compatible or better, with 500 MB of free hard drive space |
| Display | SXGA (1280 x 1024) or higher resolution |
| Memory | 512 MB minimum, 1.25 GB free for ~ 2 minute movie capture (7200 frames at 60 fps) |
| Software drivers ¹ (included on distribution CD) | National Instruments IMAQ® version 4.7.3 or higher (NI LabVIEW Run-time Engine automatically installed with this software) |
| Camera ^{1,2} | All M, KT, H, LD, J, C, CSX and 2048 camera product families from Sensors Unlimited |

¹ Camera not needed for installation or for analysis of stored image files in compatible formats

² Image Analysis software is included on the support media storage devices shipped with Sensors Unlimited cameras. Contact Sensors Unlimited to obtain a copy of the media device containing this software, the appropriate NI compatible ICD file for the camera and the camera manual (a small fee may apply).

Legal Notices

This software program is provided free of charge for the purpose of demonstrating the operation and usage of the Sensors Unlimited Inc. (SUI) camera products. SUI makes no warranties of any kind for this software program, either expressed or implied as to any matter including, but not limited to, warranty of fitness for any purpose, warranty of non-infringement of trademarks, patents or copyrights, or warranty of merchantability. Users acknowledge that the program is a research tool, and that it is being supplied "as is," without any accompanying services or improvements from Sensors Unlimited.

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