

See Beyond the Visible

Extending sCMOS Imaging into the MWIR

pco.panda 4.2
sCMOS Camera



Upconversion Platform v1

MWIR Imaging Using Upconversion

About the Demonstration

This setup demonstrates next-generation MWIR imaging using real-time signal upconversion and a VIS/NIR high-performance sCMOS camera. By converting MWIR images for detection with silicon sensor technology, the system combines the benefits of MWIR imaging with the outstanding sensitivity, high resolution, high speed, and wide dynamic range of advanced sCMOS cameras. The system delivers a flexible and scalable platform for industrial inspection, process monitoring, scientific imaging, and thermal analysis.

Also on display: An sCMOS camera without upconversion module for direct comparison.

pco.panda 4.2 sCMOS Camera

This high-performance sCMOS camera is ideally suited for upconversion-based MWIR imaging. Combining high sensitivity, low noise, and high-resolution image acquisition, it captures converted infrared images with outstanding image quality while maintaining a compact and easy-to-integrate form factor.

KEY FEATURES

- 2048 × 2048 pixel resolution
- High frame rates and wide dynamic range
- Single-cable operation via USB 3.1
- Low light mode



In cooperation with:



Spiral Photonics Upconversion Platform

This innovative imaging platform unlocks new possibilities for silicon-based imaging. By converting broadband infrared images into wavelengths detectable by silicon sensors, while preserving spectral information. It combines exceptional image quality, system flexibility, and broad application versatility in a scalable and easy-to-integrate solution.

KEY FEATURES

- SWIR and MWIR imaging with silicon image sensors
- Enables high-speed, high-resolution IR imaging
- Cost-effective and scalable architecture
- No cryogenic cooling required

Applications

In-situ material recognition • Industrial inspection • Semiconductor inspection • Spatial thermal analysis • High-speed production monitoring • Non-destructive testing • Gas leak analysis • Multi- & Hyperspectral imaging • Waste separation • Classification of plastic materials • Defense applications • Process monitoring • Scientific imaging • Industrial quality control



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