

Univid SWIR

Universal Video SWIR Microscope



Univid SWIR Video Microscope with the 4 Position Turret

Photon Emission Microscopy (PEM) is a non-invasive fault isolation technique that captures photons emitted from a failure site. The PEM image is then merged with a visual image to locate the fault. Photon emission can be caused by faults such as latch-up, leakage current, and junction damage.

Univid SWIR pairs our Univid Universal Video Microscope with the SW640-5 SWIR camera to conduct PEM. Add visible and NIR cameras in addition to Optotherm's SWIR camera for visual camera probing and high sensitivity NIR PEM.

A 45° mirror block diverts the optical path to one of three cameras. A beam splitter block is positioned in infinity space and can be removed from the optical path for maximum light throughput.



The Univid SWIR Video Microscope can be mounted along side our LWIR camera in the Freestanding Enclosure.

Features

- 2 infinity space ports for light injection and future accessories
- 200mm tube lens: custom tube lens coatings available for visible, NIR, and SWIR
- 25mm or 1 inch optical filters can be inserted in any camera, infinity space, or turret port.
- Tube lens transmission from 400 to 2,000 nm
- C-mount camera adapters. Compatible with cameras up to 2/3" sensor size.
- Optional 4 position turret with M26 objectives (compatible with our 2X, 5X, 10X, 20X, and 50X lenses)

Applications

- Photon Emission Faults Detected:
 - Latch-up
 - Junction damage
 - Dielectric breakdown
 - Hot electrons
 - Semiconductor ESD related faults
 - Leakage current
 - Gate oxide defect
- Semiconductor inspection

How it Works

- The infinity space block with a beam splitter can be installed for use with the light injection block. The infinity block allows the beam splitter to be completely removed from the optical path between lens and camera for maximum light throughput.
- The camera block with a 45° mirror enables quick diversion of optical path to one of three camera ports.
- The optional 4 position turret can be added to easily rotate between objective lenses.

Thermalize Image Analysis Software Capabilities

In addition to PEM, Thermalize provides an extensive set of analysis tools to help you characterize the performance of electronic and micro-mechanical devices in the following ways:

Lock-in thermography (LIT)	The process of automatically and repeatedly powering an electronic device at regular intervals while thermal images of the device are analyzed by software
Image Overlay	Import pictures or schematics to overlay with thermal images and lock-in hot spots
Image Subtraction	Analyze delta temperature from an unpowered state
Emissivity Tables	Emissivity correction by regions or pixel-by-pixel to compensate for surface emissivity variations
Instrument Control	Direct control of numerous Tektronix source meters during lock-in tests
Sequences	Create movies of thermal events for post-test analysis
Regions	Draw regions to display temperature statistics
Graphs	Real time line profiles, histograms, and strip charts of temperature statistics

SW640-5 SWIR Camera, 100Hz Specifications

The SWIR camera mounts to the top of the Univid microscope. All lenses can be mounted onto [PN0792] 4 Position Lens Turret or directly to the Univid microscope.

Wavelength Range	400-1700nm
Array Size	640 x 480 pixels
Frame Rate	100 Hz (max)
Sensor Size	1/4 inch
Pixel Pitch	5µm
Detector	InGaAs, cooled
Compatible Microscopic Lenses	0.5X, 2X, 5X, 10X, 20X, 50X
Compatible Wide FOV Lenses	SW-6-M (80 x 60 mm - 200 x 150 mm) SW-35-M (16 x 12 mm - 40 x 30 mm)
Lens Mount	C-mount



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