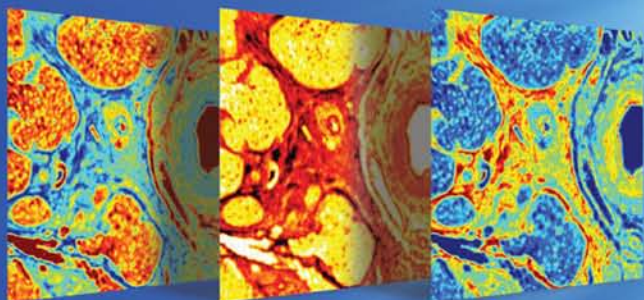


SHINING A
NEW LIGHT ON
INFRARED IMAGING™

SperoTM



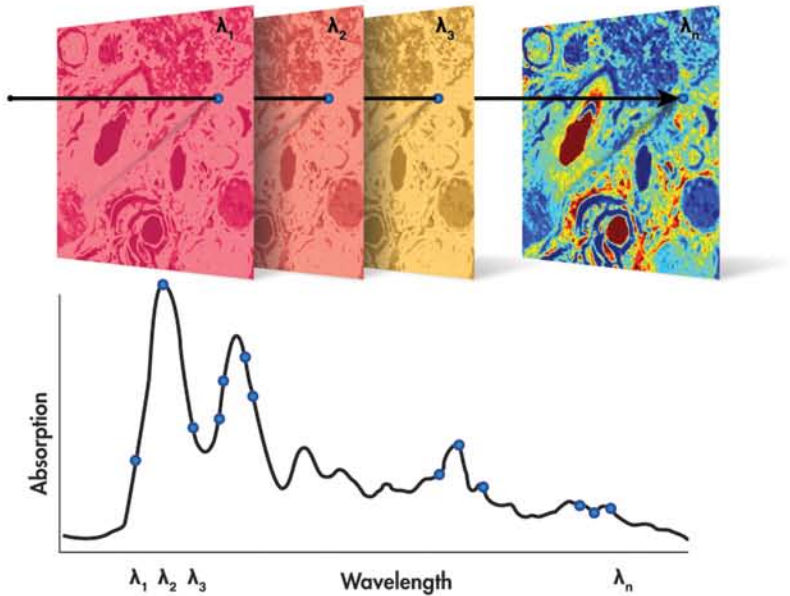
The World's First Laser-based
Infrared Microscopy Platform

DAYLIGHT
SOLUTIONS®



INFRARED MICROSCOPY WILL NEVER BE THE SAME

It's finally here. A breakthrough approach to infrared microscopy that opens a whole new world of research possibilities. Spero™, from Daylight Solutions, is the world's first laser-based infrared microscopy platform, representing a true breakthrough in high-performance spectral imaging. Spectral imaging allows a user to visualize the chemical content across a sample, and Spero provides this data with higher spatial resolution, larger fields of view, and dramatically faster than existing instruments. And for the first time, chemical imaging can be done in real-time with Spero's innovative Live Mode.



- **Unparalleled Visibility**

Ultra-bright, tunable laser source offers high-resolution with a wide field of view and a novel chemical imaging technique not previously available. See comparison chart below.

- **Instantaneous Results in Live Mode**

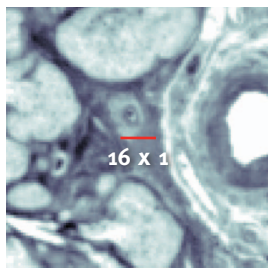
Produces hyperspectral data cubes in minutes and also supports live discrete frequency imaging, eliminating standard, time-consuming workflow steps to acquire data.

- **Small Resource Footprint**

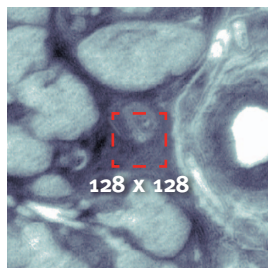
Not only is the microscope small enough to sit on a desktop, it's also easy to use and features an uncooled focal plane array.

- Turnkey system
- No maintenance
- Intuitive user interface
- No liquid nitrogen
- No optical alignment

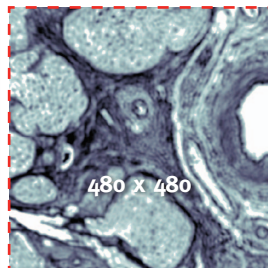
 Detector Field of View



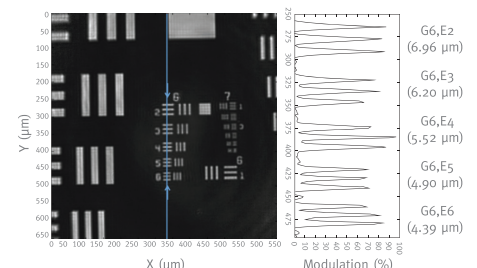
Linear Array FTIR
6.3 μm pixels
Linear Sweep



FPA FTIR
1.1 μm pixels
5 x 5 Mosaic



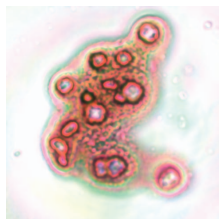
Spero™
1.4 μm pixels
Single Frame



High-resolution, wide-field IR image illuminated at 1555 cm^{-1} demonstrating diffraction-limited resolution below 5 μm and a pixel resolution of 1.4 μm .

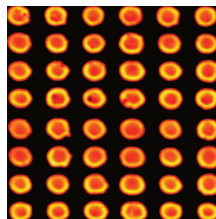
VISUALIZING CHEMISTRY

Spero is powered by Daylight Solutions' proven Quantum Cascade Laser (QCL) technology and is designed specifically for mid-infrared spectral imaging analysis. Spero and its software suite, ChemVision™, provide ground-breaking new chemical imaging capabilities to users in fields ranging from cancer diagnostics and drug discovery to materials research and semiconductor analysis.



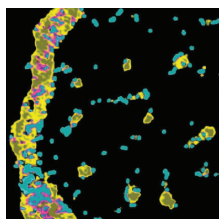
Pharmaceutical

Chemical imaging of active ingredients and contaminants



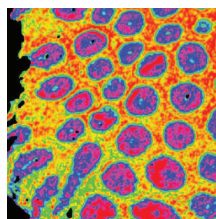
Biofluids

High throughput analysis with large field of view



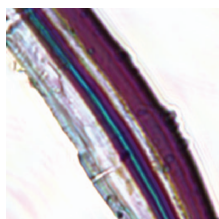
Polymer Analysis

High resolution imaging of polymer mixtures



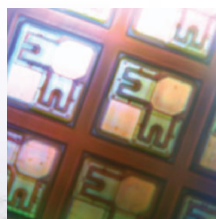
Tissue Diagnostics

High resolution spectral analysis for pathology and drug development



Multi-Layer Films

Failure analysis and reverse engineering



Semiconductor

Process control and analysis of defects



Spero 

SPERO SPECIFICATIONS

SPECIFICATION	MODE of OPERATION		
Parameter	Hi-Mag	Lo-Mag	Visible
Wavelength Coverage	900 cm ⁻¹ - 1800 cm ⁻¹ (5.5 μm – 11.1 μm)		0.45 μm - 0.65 μm
Camera Array Size	480 x 480	480 x 480	3k x 2k
Image Pixel Size	1.4 μm	4.3 μm	0.9 μm
Diffraction-Limited Spatial Resolution	< 5 μm @ λ = 5.5 μm	< 12 μm @ λ = 5.5 μm	< 3 μm @ λ = 0.55 μm
Numerical Aperture	0.70	0.15	0.13
Spectral Resolution	Variable down to 4 cm ⁻¹		N/A
Magnification	12.5X	4X	4X
Working Distance	> 5 mm	> 25 mm	> 15 mm
Field of View	650 μm	2.0 mm	650 μm
Frame Rate	30 fps		30 fps



DAYLIGHT
SOLUTIONS®

www.daylightsolutions.com/spero

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Removal of the IR camera violates U.S. Law and is strictly prohibited without a valid export license issued by the U.S. Department of State, Office of Defense Trade Controls, prescribed in the International Traffic in Arms Regulation (ITAR), Title 22, Code of Federal Regulation, Parts 120-130.