



Remote Chemical and Biological Fluorescence Imaging System

SeePhase™



SeePhase™ I-5300



Remote fluorescence lifetime imaging systems (SeePhase™) for the real time detection, identification and classification of chemical and biological fluorescent markers in the battlefield.

The SeePhase™ system is based on the integration of ROI's leading technologies:

- frequency domain fluorescence lifetime-resolved imaging using time gated "phase-locked" detection,
- remote laser induced fluorescence excitation.
- laser scanning and full imaging configurations.



SeePhase™ 500



SeePhase™ 1500



SeePhase™ 5000

• The SeePhase™ system offers the ability to extract the fluorescence lifetime "finger-print" signature of target fluorescent taggants in the presence of complex background auto-fluorescent signals with similar overlapping spectra typically present in the battlefield.

Key Features

- Fluorescence/Phosphorescence lifetime
- High spatial imaging resolution
- Remote surveillance (1 km coverage)
- Airborne and terrestrial coverage
- Three-dimensional images
- Microsecond response times
- Insensitive to black body radiation noise

Applications

- Standoff and airborne CBW agent detection
- Mines and explosives detection
- Algae and contamination in water systems
- Pipelines and hydrocarbons leak detection
- Light armored vehicles
- Shipboard, shore, and port facilities

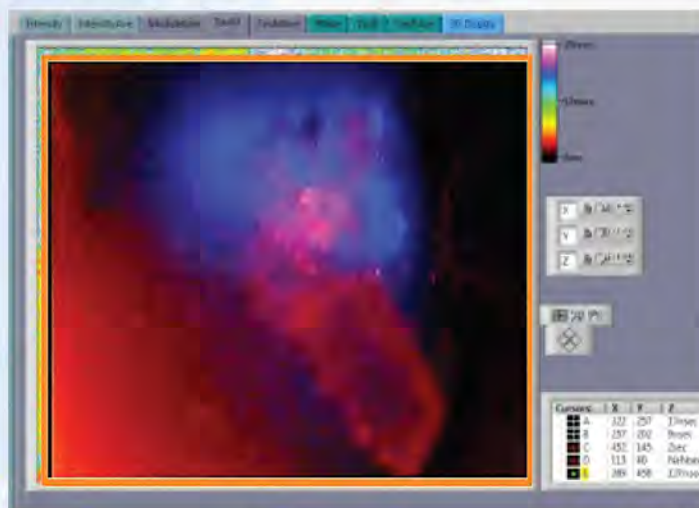
SeePhase™ System Specifications

Model No.	500	1500	5000	5300	5300-I
Monitoring Mode	Frequency vs. Time	Frequency vs. Time	Phase vs. Frequency	Phase vs. Frequency	Phase vs. Frequency
Frequency Mode	Phase-Locked	Phase-Locked	Frequency Sweep	Frequency Sweep	Frequency Sweep
Fluorescence Lifetime Range	140 μ sec - 100 nsec	140 μ sec - 100 nsec	140 μ sec - 200 psec	70 μ sec - 50 psec	70 μ sec - 100 psec
Modulation Frequency Range	20 kHz to 200 kHz	20 kHz to 200 kHz	20 kHz to 100 MHz	50 kHz to 400 MHz	20 kHz to 300 MHz
Modulation Frequency Resolution	0.1 kHz	0.1 kHz	0.1 kHz	0.1 kHz	0.1 kHz
Excitation Source Type	Light Emitting Diode	Laser Diode	Laser Diode	Laser Diode	Laser Diode
Excitation Source Wavelength	250-nm to 850-nm	360-nm to 850-nm	360-nm to 850-nm	360-nm to 850-nm	360-nm to 850-nm
Excitation Source Power	1-mW to 10 mW	1-mW to 1000-mW	1-mW to 1000-mW	1-mW to 1000-mW	1-mW to 1000-mW
Detector	APD or PMT	PMT	2D-PMT	2D-PMT	CCD Camera
Emission Wavelength Selection	Optical Filter	Optical Filter	Optical Filter	Optical Filter	Optical Filter
Remote Sensing	Fiber Bundle	Imaging Telescope	Imaging Telescope	Imaging Telescope	Imaging Telescope
Laser Scanner	N.A.	2-D Galvanometer	2-D Galvanometer	2-D Galvanometer	2D- Full CCD Imaging
Fiber Optic Connector	Multimode-SMA				
Data Display	LabView Graphical Interface				
Data Communication	RS-232/USB				
Power Supply	12V/500 mA	115/220 VAC External	115/220 VAC External	115/220 VAC External	115/220 VAC External

General Description

Redondo Optics SeePhase™ system is based on measuring the laser induced fluorescence lifetime of target fluorophores in response to a spatially and temporally modulated laser light excitation signal at eye safe energy levels.

The fluorescence lifetime of the target fluorophores is measured using the principle of “frequency-domain” or “phase-locked” detection.



Contact Information

For further information on this or other products, please contact our sales department at (310) 406-1295 or e-mail sales@redondooptics.com.



Redondo Optics