

PRODUCTS

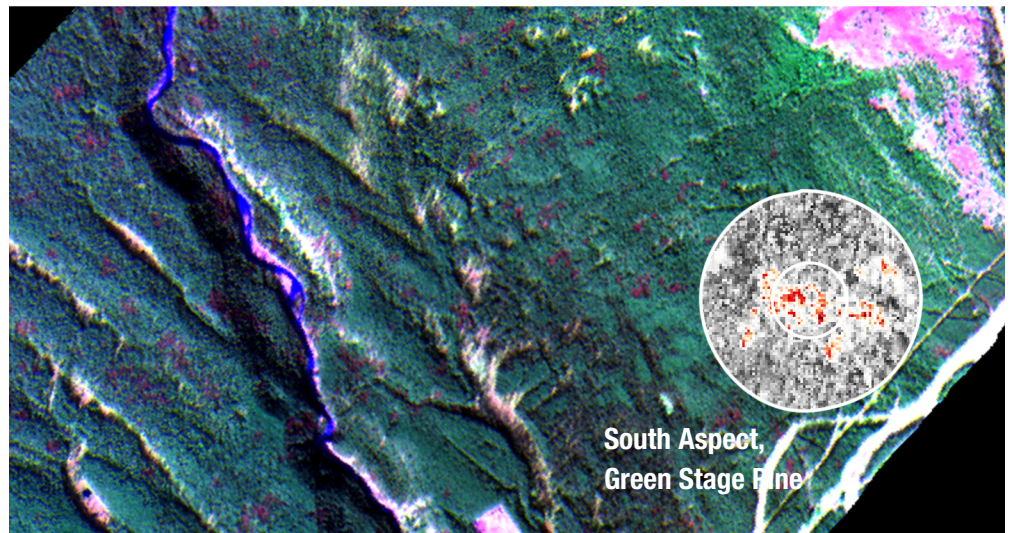
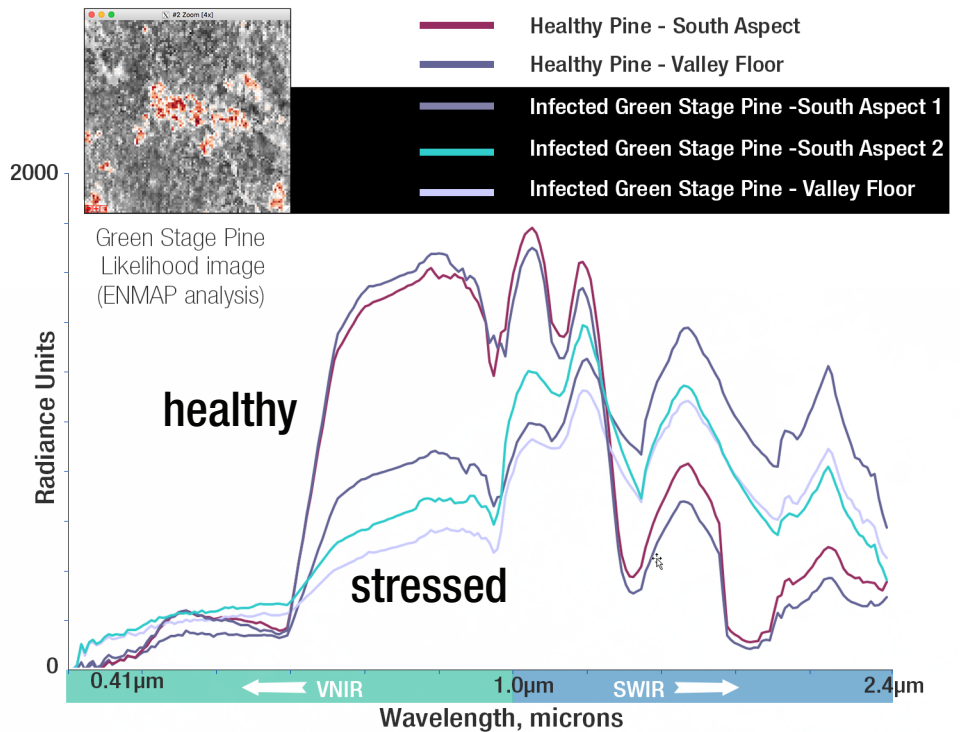
SAVI1000 SINGLE DETECTOR, SCIENTIFIC-GRADE, HYPERSPECTRAL VIS-SWIR IMAGER

Hyperspectral VIS-SWIR Imager
 Continuous 0.4 - 2.5µm Spectral Coverage
 Single Detector
 Single Optical System
 40° FOV
 1000 Spatial Imaging Pixels
 256 Spectral Channels
 Cryo-Cooled
 Custom Diffraction-Limited Fore-Optics
 MCT Detector
 Optional GNSS-Inertial System
 Optional Real-Time Processing
 Easy Lidar Integration
 Typical Resolutions 50cm - 2m



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HYPERSPECTRAL & THERMAL REMOTE SENSING



Simulated SAVI data (CASI-1500h + SASI-600) acquired near Lake Louise, Alberta. 4m resolution. Inset circle shows example of Green Stage stress in pine identified via spectral analysis of SAVI-1000 spectra. Atmospherically corrected. Displayed RGB bands: 1.48 µm, 1.06µm, 0.55µm. Datasets acquired by ITRES. 11000 ft AGL flying height.

SAVI1000 256 CHANNEL, 1000 PIXEL, **SINGLE DETECTOR**, WIDE SWATH VIS-SWIR IMAGER

Invasive Species / Optical Water Quality / Coral Reefs / Wetlands / Forestry / Agriculture / Change Detection / Target Detection and Synthetic Materials / Vegetation Classifications / Geological Exploration / Vegetation Speciation / Aquatic Pollution Presence / Utility Corridors / Mineral Composition

VNIR to SWIR coverage across a single detector array using single set of custom optics. Benefits:

- consistent spatial resolution and image swath width across both spectral regions
- Tighter spectral coregistration than systems using separate arrays and optical systems - improved spectral analysis
- Simplified installation

PERFORMANCE

Spectral Range	0.4-2.5 microns
(Continuous Coverage, Single Detector)	
# Spectral Channels	256
Cooling System	Cryo-cooled
# Across-Track Pixels	1000 ±5%
Total Field of View	40 degrees
f/#	f/2.4
Spectral Width	8.2nm (average)
Sampling/Row	
Spectral Resolution (FWHM)	<12nm
Dynamic Range	14-bits
Detector Full Well	>1 Me
Maximum FPS, Full Frame	>90fps
Data Recording Capacity	≥1TB (SSD, SATA III)
Data Recording Capacity (hr)	3 hours (@ 90fps)
Time Stamping	<1 ms
Diffraction-Limited Optics	Yes

DIMENSIONS, WEIGHTS, AND POWER

ITEM	W / H / D (CM) / WT. (KG)
SHU, Control, Recording	35.6 / 85.9 / 18.9 / 40kg ¹
SHU Cable Length	3 metres
Power	26-32 VDC, 15A ¹
	¹ Subject to change

ENVIRONMENTAL CONSTRAINTS

Operating Temperature	Ambient -10 to +40°C (+14 to +104°F) RH 20-50% non-condensing
Maximum Altitude	3,048m (10,000 ft) ASL (unpressurized, non-condensing environment)
Storage Temperature	Optimum -20 to +60°C (-4 to +140°F) RH 10-90% non-condensing

OPERATION

Display	15" sunlight readable, 1024x768 resolution. High altitude display available.
Operator	Control Via keyboard, Windows OS
Real-Time Display	Scene Image, automated sensor health diagnostics, signal level display
Remote Diagnostics/Control	IP protocol ready remote diagnostic and control capability
Data Storage	Swappable mass storage
Multiple Sensor Operation	Up to 5 ITRES imagers may be simultaneously operated via MuSIC™ System

DATA PROCESSING SYSTEM

- Processing software Linux or Windows-based
- Playback software (Quicklook)
- Generates 16-32 bit BIP format data compatible with ENVI (BIL, BSQ formats possible)
- ASCII format ancillary QC data output – clocking, attitude, logging, GPS, and sensor health monitoring information
- Outputs diagnostic information
- Selectable band output

GEOCORRECTION SYSTEM

- GNSS-Inertial integration to POS AV (other systems available)
- Data synchronization (GPS, attitude, and image streams)
- Precision positional accuracy
- Single bundle adjustment per installation
- Stabilized mount option

GEOCORRECTION/ORTHO CORRECTION SOFTWARE

- Best nadir pixel selection function during mosaicking
- Accepts Lidar, Ifsar, and USGS DEM inputs
- Nearest neighbor algorithm used – maintains radiometric fidelity
- Separately stores ancillary data (e.g. pointing vector, DEM) detection (optional)

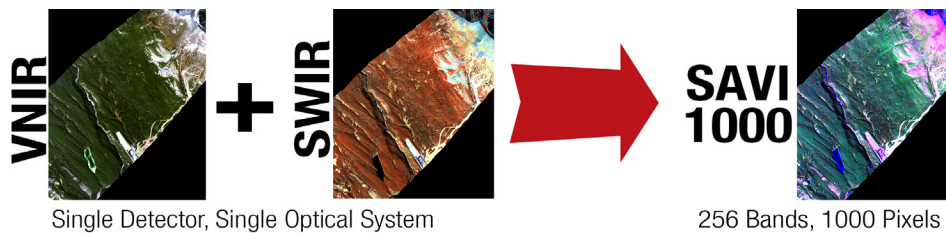
MOSAIC HOURLY COVERAGE

Real-world operational assumptions: 35% sidelap, 3.5 minute turns, zig-zag flight direction, 90 Hz frame rate. Finer/coarser pixel resolutions possible.

- At least 117 km² /hour at 1 m spatial resolution (130 knots)

SPATIAL RESOLUTION & FLIGHT ALTITUDE

- Resolutions between 50 cm to 2 m possible with unpressurized aircraft speed range: 115-190 knots
- 1m Pixel Example: Flight altitude = 4700 ft AGL, air speed = 130 knots



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All ITRES sensors are calibrated to traceable standards.
Specifications subject to change without notice.