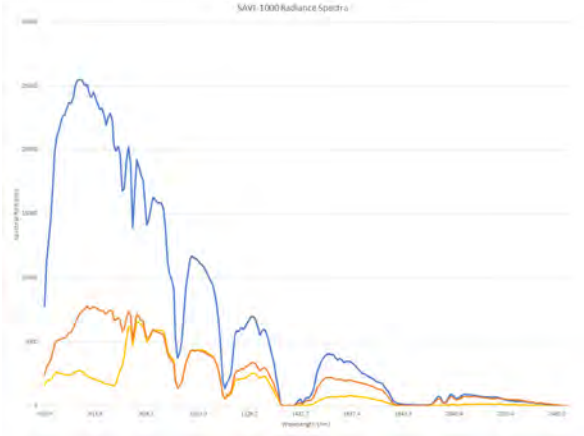
SAVI1000 SINGLE DETECTOR, SCIENTIFIC-GRADE, HYPERSPECTRAL VIS-SWIR IMAGER

Hyperspectral VIS-SWIR Imager
Continuous 0.4 - 2.5µm Spectral Coverage
Single Detector
Single Diffraction Limited Optical System
40° FOV
1000 Spatial Imaging Pixels
256 Spectral Channels
Cryo-Cooled
All-Reflectance Fore-Optics
MCT Detector
Optional GNSS-Inertial System
Optional Real-Time Processing
Easy Lidar Integration
Typical Resolutions 75cm - 2m



ITRES
HYPERSPECTRAL & THERMAL REMOTE SENSING

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 (Continuous Coverage, Single Detector)	0.4-2.5 microns
# Spectral Channels	256
Cooling System	Cryo-cooled
# Across-Track Pixels	1000 ±2%
Total Field of View	40 degrees
f/#	f/2.4
Pixel Size	>24 microns
Dynamic Range	16-bits
Detector Full Well	>1 Me
Maximum FPS, Full Frame	100fps
Data Recording Capacity	≥1TB (SSD, SATA III)
Data Recording Capacity (hr)	3 hours (@ 100fps)
Time Stamping	<1 ms
Diffraction-Limited Optics	Yes

DIMENSIONS, WEIGHTS, AND POWER

ITEM	W / H / D (CM) / WT. (KG)
SHU	48.3 / 82.4 / 51.6 / 49.2kg[1]
SHU Cable Length	3 metres
Power	26-32 VDC, 10 A[1]

[1]*Subject to change*

SUGGESTED ENVIRONMENTAL CONSTRAINTS

Operating Temperature	Ambient -20 to +50°C (-4 to +122°F) RH 20-80% non-condensing
Maximum Altitude	4,500m (15,000 ft) ASL (unpressurized,non-condensing environment)
Storage Temperature	Optimum -30 to +75°C (-22 to +167°F) RH 10-90% non-condensing

OPERATION

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

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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 (GSM 4000 or other)

GEOCORRECTION/ORTHOCORRECTION 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 km^2 /hour at 1 m spatial resolution (195 knots)

SPATIAL RESOLUTION & FLIGHT ALTITUDE

- Resolutions between 75 cm to 2 m possible with unpressurized aircraft speed range: 135-190 knots
- 1m Pixel Example: Flight altitude = 4700 ft AGL, air speed = 195 knots

EMBEDDED CALIBRATION MODULE

- Dark data collection
- Spectral lamp and uniformity measurements

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