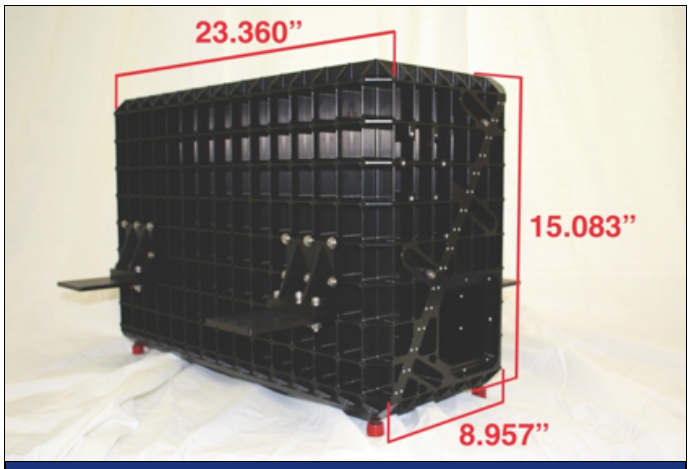
Compact Hyperspectral Advanced Imager
Extended VIS-SWIR

CHAI EVS-1920 *[based on the NASA Enhanced MODIS Airborne Simulator]*

Full VIS-SWIR spectral range and wide swath; total solution science and survey instrument

DESCRIPTION

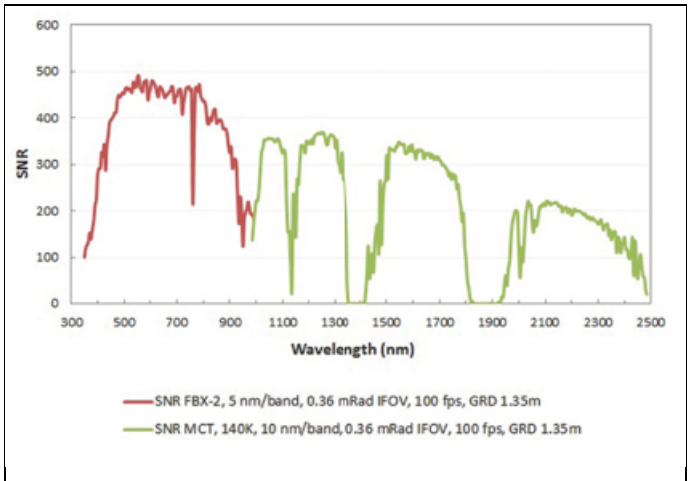
The CHAI EVS-1920 is a next-generation, science-grade hyperspectral imager based on the Enhanced MODIS Airborne Simulator developed by Brandywine Photonics. The EVS-1920 is the widest swath hyperspectral instrument commercially available, with coverage over the full VIS-SWIR spectral range. Its four-mirror telescope and dual Offner spectrograph construction gives spectral capability into the UV and SWIR, and is free of chromatic aberrations found in refractive systems.



CHAI EVS-1920 Instrument

APPLICATIONS

- Earth Science
- Aerial Survey
- Airborne natural resource exploration



CHAI V-2048 Signal to Noise Ratio

ADVANTAGES

- Common field of view for VIS-SWIR with a single all-reflective telescope
- Rugged, environmental stabilized flight enclosure
- Integrated Radiometric Stability Monitor
- Integral flight electronics (no flight rack needed)
- Pilot-mode or automatic INS/GPS mode for single-man operation
- Nitrogen purged for extended life coatings
- Quickly removable Solid State Drives

Contact us for application-specific performance modeling and benchmarking.

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BRANDYWINE PHOTONICS

SPECIFICATIONS

MECHANICALS	ESTIMATE
Minimum Size	419 x 605 x 254 mm
Weight	35 kg
Power	300 watts (500 watts with heater powered on)
Temperature Range	-30 to +40 C
Size does not include laptop, processor or INS.	

OPTICS	SPECIFICATION
Spectrometer Type	Dual Offner
Field of View	40 degrees
Instantaneous FOV	0.36 mRad (other upon request)
Cross Track Pixels	1920 (including 20 dark pixels on edge)
F-Number	f/2.8
Spectral Range	360-980 nm 980-2400 nm
Smile	<0.1 pixels
Keystone	<0.1 pixels
Stray Light	<1e-4 Point Source Transmission
Spectral Bands	275
Spectral Sampling	2.5, 5, 10 nm VNIR 5, 10 nm SWIR
Peak Grating Efficiency	88%
Slit Width	28.8 mm x 15 μm

IMAGE SENSOR	
Image Sensors	1920 x 256 HgCdTe 2048 x 256 FBX CMOS
Full Well Capacity	Gain 0: 500,000 electrons Gain 1: 60,000 electrons Gain 2: 10,000 electrons
Read Noise	Gain 0: < 63 electrons Gain 1: < 42 electrons Gain 2: < 10 electrons
Maximum Frame Rate	120 frames/second (up to 500 fps available)
Camera Interface	USB-3
Data Acquisition	1 Terabyte Solid State Recorder Serial Interface for GPS/INS

CHAI SOFTWARE	
Data Rate	1 Gbps
Trigger Modes	Pilot, GUI, electronic, and Lat/Long triggered acquisition
Visualization	3-band RGB waterfall display of real-time and recorded data
Metadata	Temperature, pressure, and humidity
Data Format	RAW, ENVI BIL, or Processed
Processing	EXPRESSO™

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