

AA3509DS

ABS

LIGHTWEIGHT

Airborne Scanner

For the AA3509DS, the workhorse ABS design has been adapted to airborne platforms where lower weight, smaller size and reduced power are important considerations. Both weight and power are reduced by half, compared to the standard design.

The ABS system is a 2 or 3 optical port scanner which simultaneously records two or more spectral bands onto a remote disk drive. All spectral bands are spatially co-registered. Using the built-in blackbody references, the ABS provides calibrated thermal information to determine temperature relationships for a wide variety of remote sensing applications.

The compact scan head and electronics can be installed in a wide range of aircraft.

The system performs simultaneous scanning for thermal infrared plus one or more additional spectral regions: such as shortwave infrared, visible/near infrared, RGB color or ultraviolet. Bandpass filters can be used to obtain specific spectral bands in the V/NIR (0.4 1.1 μm) region.

An integrated GPS/INS subsystem supplies data for orthorectification using the provided *ImageMapper* software utility. The system performs a Built-In Test at startup, delivering a high level of confidence in mission success.

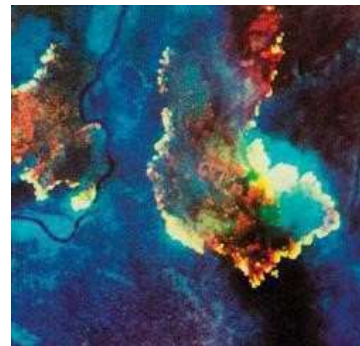
The lightweight ABS provides operator control via a menu driven graphical user interface that runs on a remote workstation or laptop computer.



Scan Head



Control Console



Forest fire smoke is penetrated here using several region of the infrared to pinpoint hot spots and fire fronts for ground personnel. (Courtesy of NASA/Ames Research Center) NASA does not endorse any commercial product.

Oil spill monitoring using thermal IR and UV channels. The UV assists in determining total area of oil slick while the IR is used for oil thickness estimates. (Courtesy of the North Sea Directorate)



DaedalusScanners Imaging Systems



PARTIAL LIST OF APPLICATIONS	UV	RGB	MWIR	LWIR
Ground water discharge				X
Offshore spring mapping				X
Thermal discharge mapping				X
Fire detection and mapping			X	X
Oil spill detection and mapping	X			X
Oil thickness assessment		X		X
Thermal inertia mapping		X	X	X

Examples of typical applications and their recommended spectral combinations are depicted in the chart above.

Note: the ABS can be upgraded to the 10-band or 16-band AMS (Airborne Multispectral Scanner)

PHYSICAL SPECIFICATIONS

	Height	Width	Depth
SCAN HEAD	38 cm	38 cm	38 cm
ELECTRONICS	18 cm	51 cm	50 cm
System weight 25 kg			

ENVIRONMENTAL SPECIFICATIONS

	Temperature	Rel. Humidity	Altitude
SCAN HEAD	-55 to +70 C	0-95%	50,000 ft
ELECTRONICS	+5 to +50 C	20-80%	25,000 ft

This product is exportable to most countries without license (NLR)

SPECIFICATIONS:

STANDARD DETECTORS:

UV & LWIR – two band system

OPTIONAL DETECTORS:

RGB, MWIR – three band, five band or six band system

IFOV: 5 mrad.

Smaller IFOV optional

DIGITIZED FIELD OF VIEW: 90°

SCAN RATES: 100, 50, 25, 12.5 scans/sec

DETECTOR COOLING: Closed cycle: No LN₂

OPERATOR INTERFACE

External computer or laptop PC connected to Control Console by Ethernet. Custom designed GUI controls all instrument functions.

POWER REQUIREMENTS

28 ±3 VDC, 10 amp.

IMAGE DISPLAY

Real-time scrolling water-fall display

DIGITIZATION PRECISION: 16-bit

THERMAL REFERENCE SOURCES

Two field-filling blackbodies are built in; one passive (ambient) and one controlled by the operator. Each blackbody is viewed once per scan mirror revolution.

ImageMapper

The AA3509DS includes software for generating GIS compatible, north-up orthorectified image files from the ABS. ImageMapper uses position and orientation information recorded in flight and a DEM, producing image maps upon completion of the flight line or post-flight.

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