

# ***INFRARED MEASUREMENT SYSTEMS MOBILE INSTRUMENTATION TRUCK***



The Infrared (IR) Measurement Systems Mobile Instrumentation Truck contains all instrumentation and support equipment for the acquisition of IR signature data for survivability/vulnerability analysis or system surface thermal analysis. Data acquisition is possible from test stand engines, aircraft in on-ground or hover operation or aircraft subsystems.

# Self-contained mobile instrumentation system

Primary acquisition instrumentation consists of a CI Systems SR5000 Spectroradiometer (1.3 to 14.5 microns) and an AGA Thermovision Thermal Imaging System (2.0 to 5.6 and 8 to 12 microns).

## Test Vehicle Maximum Dimensions:

- Truck dimensions: 35x8.5x12 ft
- Gross Vehicle Weight: 32000 lbs
- Generator: 30 kW

## CI Systems SR-5000 Spectroradiometer:

This is a PC supported spectroradiometer system incorporating an indium antimonide/mercury cadmium telluride sandwich detector package. The system utilizes a four segment circular variable filter wheel covering 1.3 to 14.5 microns.

## AGA 780 Thermovision System:

This is a dual band thermal imaging system covering the 2.0 - 5.6 and 8.0 - 12.0 micron bands. The system utilizes color and black-and-white monitors with color or black-and-white hard copy output and black-and-white videotape output. Thermal images are digitized with a Thermovision OSCAR-Pericolor digital image processor and stored on tape or disk.

## CI Systems SR-5000 Spectroradiometer

### Optics:

Type	Newtonian
Aperture	5 inch
FOV	12 milliradian (0.75 degree) (optional 10, 8, 4, 8, 3, 2, 1 or 0.5 milliradian)

### Detectors:

Material	InSb/HgCdTe (sandwich)
Oper. Temp.	LN2

**Response:** 1.3 to 14.5 microns

**Filters:** CVF contains four segments

**Bandwidth:** 1.8% of the instantaneous wavelength

**Dynamic Range:** 10 exp 6

**Scan Rates:** 0.5 to 64 seconds

### Chopping Freq:

Variable	50-1000 Hz.
Optional	850 Hz

**Physical Dimen.:** 8.25x14x27 inches

## Data Processing Capabilities:

- CI System Spectroradiometric Data: Custom PC software package which provides integrated data for selected spectral bands, spectral plots, and tabulated spectral data.
- AGA Thermovision: Combination of manufacturer and custom software which provides color or black-and-white hard copy images with temperature scales. Optional output format is a black-and-white thermal imaging video without temperature scales.
- Classified data processing will be conducted off-line at NAWCAD Patuxent River, MD.

## Unique Features:

- ProSurvey 1000 Lidar System - eyesafe laser rangefinder
- Onboard weather station - wind speed, wind direction, humidity, temperature
- Motorola Proteus/URC-200 UHF /VHF Transceiver
- Instrumentation tracking pedestal with video camera system

## Accomplishments:

*Installed and uninstalled engine tests* have been conducted at NAWCAD Trenton, NJ and NAWCAD Lakehurst, MD. Aircraft tests have been conducted at NAWCAD Patuxent River and contractor facilities. *Customers* have included the Navy, Army, engine contractors airframe contractors, and subsystem contractors.

*For more information about the Infrared Measurement Systems Mobile Instrumentation Truck, contact Naval Air Warfare Center Aircraft Division, Patuxent River, MD at 301-757-0433.*

## AGA 780 Thermovision System

**Lenses:** 3.5 degree or 7.0 degree FOV

**Filters:** Band Limiting Filers: 3.5 to 4.0 and 3.5 to 5.6

**Detectors:** InSb and HgCdTe

**Oper. Temp.:** LN2