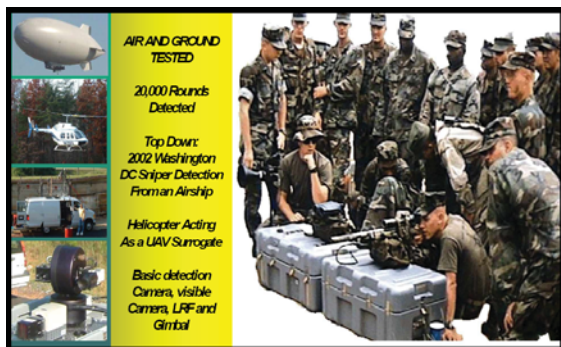


## VIPER - Vectored Infrared Personnel Engagement and Return Fire

The VIPER is a muzzle flash detection system that processes midwave infrared camera information in order to detect and locate the discharge of firearms. The VIPER sensor architecture provides detection, location and response to gunfire. After detecting and locating the gunfire, the sensor transitions imagers or remote operated weapons to provide target confirmation, designation and counter fire response.

VIPER components include a wide view lens on a midwave IR camera. Camera data is provided to a real time signal/imaging processor that declares and locates the gunshot. Supporting components include an acoustic ranging and confirmation suite, magnetic compass, and user display and alarm. Gunfire detection can be declared within 70msec of the firing event. A gunfire declaration can be presented before a round has traveled its first 150 feet from the weapon. For shots from longer range, the system has provided alerts in time to implement a reaction prior to shot impact.



Series 8500

### VIPER VALUE PROPOSITION

VIPER, tested extensively against over 20,000 rounds of various small arms, works beyond effective ranges of the weapons.

Low Lifecycle Cost	<ul style="list-style-type: none"> <li>Subcomponent replacement, calibration and tested at operational level, minimal training on equipment</li> <li>Imager alignment at intermediate level</li> <li>Camera repairs at depot level</li> <li>Minimum lost time with subcomponent replacements</li> </ul>
Best Industry Warranty	<ul style="list-style-type: none"> <li>COTS components with pre-existing warranties</li> </ul>
Scalability	<ul style="list-style-type: none"> <li>Low end upgrade includes just detection and control (legacy system linked)</li> <li>High end upgrade provides integrated imagery/response systems</li> <li>Network capable, force multiplier, and one user controls multiple sensors</li> </ul>
High Quality	<ul style="list-style-type: none"> <li>Integrates respected, volume sales, components</li> <li>Customer specified configurations ensures mission reliability</li> <li>MTBF = Critical component IR Camera FPA 20,000 hours+</li> <li>MTTR &lt; Three days for critical component with replacements on hand. 10 weeks for camera repairs to FPA</li> </ul>
Highly Accurate	<ul style="list-style-type: none"> <li>Detection Coverage over 140° field of view</li> <li>Detection Resolution .5° or less in elevation</li> <li>Detection Range extends out to three times maximum effective range of weapons (actual capability classified)</li> <li>Detection capability from vehicle at 35 mph</li> </ul>
Government Approved	<ul style="list-style-type: none"> <li>Developed for US Government and in use with US forces</li> </ul>

### HARDWARE FEATURES

### HARDWARE BENEFITS

Wide Lens Area Detection Camera	Indigo Phoenix 320x256 InSb midwave camera operating at 120 Hz
Lens	Anamorphic lens; 140x17 degree FOV
Imaging Gimbal	Slew Rate >90° per second
Visible Camera	Electronic stabilization, Zoom 1.7 degree, auto zoom, bullet aim point compensation
Night Camera	Long Wave Infrared, selectable field of view, bullet aim point compensation
Laser Ranger Finder	1500 Meter +/- 1 meter accuracy - Vectronics
Detection Computer	Equipped with a DataCube MaxPCI image processor
User PC	Standard PC; Touch Screen
GPS	GPS receiver for geolocation
Configurations	Multiple product configurations are available depending on your needs

## SOFTWARE FEATURES

PC Viewing Station Software	The PC displays both camera feeds on a single PC screen
Detection Algorithms	Temporal filter; Spatial filter; BG estimator; Tracking Filter; Latency Filter
Location Software	Discriminator; Pixel Locator; Angle Cal; Geolocation; User Interface

## SOFTWARE BENEFITS

## APPLICATIONS

### Military

DoD, All Bases and Critical Facilities

### Commercial

Police Department, Law Enforcement

### Nuclear

Power Plants, Production Facilities and Reclamation Facilities

### Industrial

Ports and Harbors



Selections from a variety of employment configurations, all of which can be tailored to match specific applications, existing legacy surveillance systems and geography. The system can be integrated with colocated (on-board) or remoted (off-board) imaging and designation/illumination devices. Prior systems have integrated visible, short wave, long wave imagers, laser rangefinder, and laser designators. The detection suite has been linked to remote counterfire weapons where the weapon aiming device processes position commands.

## SPECIFICATIONS

### HARDWARE

Detection Unit Weight	60 lb
Detection Unit Dimensions (LxWxH) Inches	13x10x12
Power	1000 to 1800 watts converter
Voltage	120 VAC or 12/24 VDC converter

### SOFTWARE

Detection Algorithms Rate	120 frames per second
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