

Alticom Vision™ Imaging Systems 25 November 2009

Integrated Components:

- Daylight Camera
- Medium Wave Infrared (MWIR)
- Long Wave Infrared (LWIR)
- Laser Range Finder
- Laser Pointer/Marker
(Class 3b laser by special order)

Overview

Designed for UAVs and Other Moving Platforms

Alticom™ Imaging Systems eliminate the vibration and motion common to lightweight UAVs. These turrets also perform well when integrated into piloted aircraft, boats, balloons and other unsteady, moving vehicles. Payload is made insensitive to platform motion.

Provides persistent video surveillance of a target over a long period of time. Common uses include:

- Insitu Integrator™ Unmanned Aerial Vehicle
- Other UAV & piloted aircraft & Unmanned Surface Vehicles –USV.
- Continuous Operation –no practical limit to maximum operational time
- Readily adapts to Air, Sea and Land platforms.



Alticom Vision™ Multi 8000 Turret
Carried by Insitu™ Integrator UAV.
Photo courtesy of Boeing.

General Specifications

Sphere: 10 inch / 25.4 cm diameter

Approximate Weight: 12.2 pounds / 5550 grams

Power: 28V DC, < 6W, 60W

Internal cooling

Mounting Diameter: 8 inches / 20.32 cm

Gimbal System

Articulation

Endless pan, tilt 30° up and 90° down

Maximum Slew Rate: Approx 50° per sec

Inertial Stabilization Inner Stage

Precision 2-Axis Inner Vernier Stage

Two Axis Gyro-Stabilized

Proprietary Vibration & Movement Stabilization
System

Control Interface

Serial Command, TTL or RS 232
57,600 bps

Operates with an Insitu™ user interface controller system. An Altacam Vision™ controller system can be customized to user requirements.

User Interface

Insitu™ IMUSE
Altacam Vision™ Interface

Integrated Component Instruments

Daylight Camera

Storage Temperature: -20° C to 60° C
Operating Temperature: 0° C to 50° C

The Altacam™ daylight camera provides superior picture quality and high zoom capability. It combines an exceptionally high 36X zoom lens with an expansively wide/telephoto horizontal field -of-view.

Optimized sensitivity in both day and nighttime shooting applications.

General Specificatios

- Daylight Color Camera
- Video Signal: NTSC Interlaced
- Aspect Ratio: 4:3
- Total Number of Pixels: Approx 380,000

Lens

- Horizontal Field -of-View: 57° to 1.7° Optical
- Zoom Continuous Optical to 1.7°
- Additional digital zoom to 0.4°
- Focus: Automatic / Manual

Image

- Shutter: 1/60 sec to 1/10,000sec
- Gain: Automatic/Manual
- Backlight Function
- Enhanced gain 0.6 μm to 1.2 μm function for twilight or artificial light at night

Infrared Sensors

This turret is fitted with two Infrared sensors. These are a Medium Wave Infrared (MWIR) and a Long Wave Infrared (LWIR) sensor.

The Long Wave Infrared sensor provides a wide view to observe a relatively large area. The Medium Wave Infrared sensor offers the ability to zoom in and look at items of interest in greater detail.

Medium Wave Infrared (MWIR)

The Altacam Vision™ MWIR has two optical fields-of-view, 10° and 2.5°.

Offers highly advanced thermal imaging capability and provides a more detailed close up than LWIR. Matches daylight camera performance at night.

MWIR Specifications

General

- Medium Wave Infrared Camera 3.0 to 5.4 μm
- Video Signal: NTSC Interlaced
- Aspect Ratio: 4:3
- Number of pixels: 640 x 480

Lens

- Horizontal Field -of- View: 10° & 2.5° optical
- Zoom: Optical telephoto to 2.5° /
- Digital to 0.625°
- Focus: Manual

Image

- Shutter equivalent 1/500 sec, 1/250 sec, 1/180 sec
- Gain: Automatic/manual; linear/histogram
- Auto-adjust function

Additional Functions:

- Polarity: white hot / black hot
- Artificial Color Palettes
- Non-Uniformity Correction (NUC)

Long Wave Infrared (LWIR)

VOx Microbolometer Technology. Provides a wider field of view than MWIR.

LWIR Specifications

General

- Long Wave Infrared Camera 8 –12 μm
- Video Signal: NTSC Interlaced
- Aspect Ratio: 4:3
- Number of pixels: 320 x 240

Lens

- Horizontal Field -of- View: 18°
- Zoom: 2x digital
- Focus: Manual

Image

- Shutter: Fixed equivalent 1/250 sec
- Gain: Manual-linear/histogram
- Auto-adjust function

Additional Functions:

- Polarity: white hot / black hot
- Non-Uniformity Correction (NUC)

Laser Range Finder

Max Range: 3,280 ft (1,000 m) typical;
6,560 ft (2,000 m) max to reflective target

Range Accuracy:

+/- 1 ft (+/- 30 cm), high quality target

+/- 1 yd (+/- 1 m), low quality target

Eye safety: FDA Class 1 (CFR 21)

Laser Marker

Class 3b laser

Specifications: 808nm, 100mW, <1mrad

Visible through light amplification goggles at over 3 miles.

On/off blinking makes the mark stand out

Options

Image Fusion Option– Daylight and MWIR

User Interface

- Joystick
- Video
- Dejitter–onboard or ground
- Tracking–onboard or ground

Video Transmission

- Wireless
- LANUS
- USB

Athena™ Micro-Guidestar

- Geo-Referencing and Geo-Pointing

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