Extreme Long-Range Multi-Sensor System

VZ-1000

Capable of recognizing man-sized targets at over 20 kilometers, the General Dynamics VZ-1000 is ideal for target acquisition in ground-based defense and homeland security missions requiring maximum detection distance. The VZ-1000 offers up to four fields-of-view for long-range detection and identification.

With an integrated 60x zoom visible camera and a precision positioning system, the VZ-1000 offers plug and play integration with perimeter surveillance systems. With its ruggedized design and cooled infrared sensor technology, this system allows for maximum threat detection with lower total cost of ownership. This powerful infrared camera is deployed around the world protecting our forces on the ground and ensuring the safety of our borders.

General Dynamics Global Imaging Technologies designs and manufactures a full portfolio of high-performance cameras and camera systems that provide our customers the clarity, accuracy and reliability to capture the shot that matters and successfully complete their mission.

Features

- Cooled 3-5µm Infrared Sensor
- Tri- or Quad-Field-of-View Options
- Integrated 60x Zoom Visible Camera
- Focal Plane Array Choices:
  - 320 x 256
  - 640 x 512
  - 640 x 480 (High Reliability Cooler Option)
- Integrated Precision Positioning System
- 2-Axis Gyro-Stabilization (Optional)
- Auto and Manual Focus
- Laser Rangefinder (Optional)
SYSTEM SPECIFICATIONS

Video Format NTSC / PAL / Differential
Serial Interface RS-422
Power Requirements 18-28VDC (direct to P/T), 100-240VAC or 12VDC (with DCU)
Environmental Unit sealed and dry nitrogen backfilled
Front Element Defroster
Operating Temperature Range: -32°C to +60°C
Non-Operating Temperature Range: -40°C to +71°C
Controls Controls available on a hand held joystick or through a PC via an RS-232/422 link
Proportional Pan and Tilt speed controls
Field of View and Focus Slaving:
Visual/Thermal Field of View Switch
Focus (Auto/Manual)
Auto Scan with 10 tables of 10 userdefined presets, variable speed, dwell, and camera selection
Optional TCP/IP Interface
Weight 170 lbs (77kg) (Pan/tilt head & sensors)

THERMAL CAMERA CHARACTERISTICS

Detector Option 1: 320 x 256
Option 2: 640 x 512
Option 3: 640 x 480
Spectral Band 3–5µm
Type Motorized Remote Focus & TFOV or QFOV Optical System (1000/500/250/95mm)
f/# 4
Field of View Option 1 & 2:
5.8° x 4.3° (Extra Wide – optional Quad Field),
2.2° x 1.7° (Wide),
1.1° x 0.83° (Mid),
0.55° x 0.41° (Narrow)
Option 3:
4.6° x 3.5° (Extra Wide – optional Quad-Field)
1.8° x 1.3° (Wide)
0.88° x 0.66° (Mid)
0.44° x 0.33° (Narrow)
Controls/Features Multiple Color Palettes, Inverse Polarity

VISIBLE CAMERA CHARACTERISTICS

Sensor 1/3” IT CCD
Approx. 380k Pixels (NTSC)
Approx. 440k Pixels (PAL)
FOV (cont. optical zoom) 11.0° to 0.18°
Zoom Optical 60X
Digital 10X
Resolution (TV lines) 560 color, 700 B/W
Min. Illumination <0.2lux, f/1.2 color
<0.01lux, f/1.2 B/W
Signal to Noise >50dB

PAN/TILT HEAD

Pan 360° Continuous
Tilt ±60°
Accuracy ±0.05°
Repeatability ±0.01°
Position Rate Pan <0.01° to >120°/second
Tilt <0.01° to >120°/second

OPTIONAL LASER RANGEFINDER

Laser Type Erbium Glass
Laser Classification Class 1, Eye Safe per ANSI/IEC
Wave Length 1.54µm
Energy/Pulse ~8 millijoules typ
Range Accuracy 5 meters
Maximum Range 20,000 or 30,000 meters