VEGA-2075-875CTZ-GS-IP

THE VEGA

INFINITI

Military Grade PTZ Camera System

Shown with optional ZLID Illuminator.

The Vega is a revolutionary multi-sensor PTZ camera boasting a long-range 135X visible day/night camera, long-range thermal infrared zoom, and optional ZLID NIR illumination with LRF. This multi-sensor payload enables the Vega to provide high resolution imaging in virtually any environment from heavy fog to complete darkness. Designed for accurate positioning of weapons systems, the pan/tilt unit meets and exceeds MIL-STD-810F military ratings for shock, vibration, temperature and dust/water ingression. This makes the Vega the ultimate long-range camera system for 24/7 situational awareness and long-range recognition and identification of targets.

Key Features:

- Ultra Long-Range Military Grade Multi-Sensor PTZ Surveillance System
- Day/Night 1080p HD IP RTSP 1/2.8" CMOS Sensor
- 15.4–1037.5mm HD IR-Corrected Zoom Lens with Motorized HD IR Doubler
- 20°–0.15° Horizontal Field of View Results in a 135X Zoom Range
- Autofocus, Motorized Fog/Parasitic Light Filter & Temperature Calibration
- Image Enhancements: WDR, HLC, EIS, 3DNR, Fog/Haze Reduction
- 640×480 15µm MCT or InSb Cooled Thermal Imager with DICE
- 38–875mm *f*/5.5 Continuous Zoom Auto-Focus Thermal Lens
- 14–0.65° Horizontal Field of View for a 22X Thermal Zoom Range
- Up to 27km of Human Detection and 43km of Vehicle Detection*
- 20,000+ Hour Lifetime Cyrogenic Cooler
- Designed to MIL-STD-810F, -5°–+55°C and IP66 with Anti-Corrosion Finish
- Elliptical Synchronous Drive, Gyro-Stabilized Heavy Duty Pan/Tilt
- Endless 360° Rotation Pan/Tilt with Speeds from 0.001–45°/s and Up to 0.00036° Resolution with Zero Backlash
- Optional ZLID Laser IR Illumination for 1–5km in Complete Darkness
- Optional 1535nm 23km Rated LRF with 50~250mm Range Accuracy

*DRI detection ratings are based on industry-wide standards (Johnson's Criteria) that can be misleading if not understood. For more information, please see our whitepaper about understanding DRI measurements at: www.infinitioptics.com/dri

1080p FULL HD
2MP Sensor

135X ZOOM
15.4–2075mm Zoom Lens

ZLID™
1–5km Zoom Laser IR Diode

COOLED InSb THERMAL
Cooled Thermal

22X Ge ZOOM
Thermal Zoom Lens

DICE
Thermal Image Enhancement

PTZ
PTZ Controls

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THE VEGA'S

HD Visible Camera with ZLID

Visible/NIR Optical HD Camera

The Vega's visible camera was designed and optimized for long range surveillance. It uses a 1/2.8" progressive scan CMOS sensor with an HD resolution of 1920×1080 and a fantastic signal to noise ratio of 55dB. The 1/2.8" sensor has excellent spectral sensitivity for both visible and NIR wavelengths and features an automatic IR cut filter, making it a true day/night camera providing clear color images by day and black and white images at night. The 1/2.8" sensor provides the best balance between light sensitivity and maximum zoom, making it particularly suited for long range surveillance. The Viper also integrates the latest technology in real-time image processing such as BLC, HLC, WDR, EIS, 3D DNR, ABF, Defog/Haze etc. Each of these image enhancements can be automatic or user-defined and calibrated based on the application requirements. Since the camera is native IP, all of these settings can be changed and configured remotely, along with remote PTZ and zoom control.

Fog Filter (Visible Cut) Disabled

Fog Filter (Visible Cut) Enabled

Long Range 135X Zoom Lens

The Vega comes equipped with a precision engineered 15.5–2075mm IR-corrected zoom lens with motorized HD doubler, offering an incredible 135X zoom range from 20.6° through to a very narrow 0.15° FOV when paired with the 1/2.8" sensor. That's equivalent to a "full-frame" DSLR camera using a 13,500mm lens. Infiniti's zoom optics are built with the highest quality Japanese fluorite ELD low dispersion glass, and the integrated rapid auto focus allows long range recognition and identification of targets without operator intervention. The lens also incorporates a motorized fog filter that is used with the camera's monochrome mode and de-haze image processing to see through fog, smoke, smog and haze that render standard optical cameras unusable. Infiniti's HD Zoom camera is a perfect synergy between precision craftsmanship, state of the art sensor hardware and the latest image processing for unparalleled range and performance.

See through windows with ZLID

Optional IR ZLID Laser Illumination

IR illumination allows for detailed video when there isn't enough natural light, however for long-range IR illumination a laser is needed. Many laser illuminators overexpose the center of the screen and leave the edges dark. Infiniti's ZLID (Zoom Laser IR Diode) technology synchronizes the IR intensity and area illumination with the zoom lens for outstanding active IR performance, eliminating over-exposure, washout, and hot-spots for clear images in complete darkness.

Ship at night with ZLID

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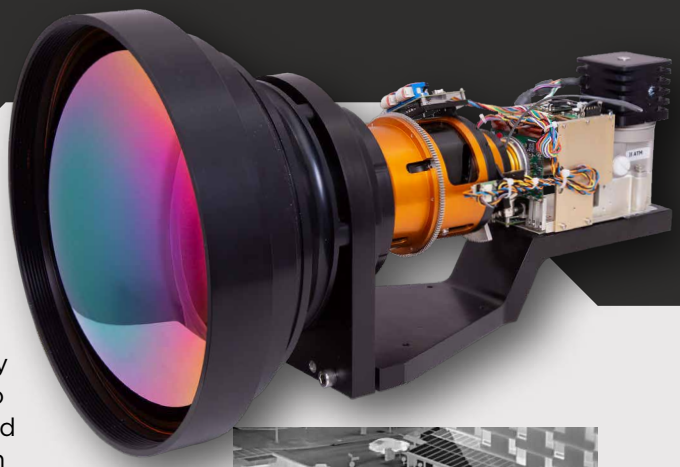
THE VEGA'S
Thermal Imager



See It All

Infiniti's cooled thermal cameras let you see further than any other night vision technology, using heat rather than light to see objects. This cooled thermal imaging camera is equipped with a Mid-Wave Infrared (MWIR), cooled Mercury Cadmium Telluride (MCT) or Indium Animonide (InSb) detector, producing ultra-sharp thermal images of 640×480 pixels. This will satisfy users that want to see the smallest of details and demand the best possible image quality. It allows the user to see more detail and detect smaller objects from a further distance. Coupled with a high sensitivity sensor, and leading germanium optics, this camera offers extreme long-range performance and excellent image quality.

Cooled MCT or InSb Thermal Imager

The Vega contains a high sensitivity 15µm cooled MCT or InSb sensor with a resolution of 640×480 and an ultra-long cooler lifetime of 20,000 hours MTBF. The cooled sensor is able to detect differences in temperature as small as ±0.02°C. This provides more detail for tracking of targets at extreme ranges in total darkness and through most obscurants.

22X Continuous Zoom Germanium Lens

The cooled MCT or InSb thermal core is paired with a precision-engineered *f*/5.5 germanium zoom lens allowing you to view targets with a 22X optical zoom range from 38mm to 875mm. This allows for excellent detection of thermal targets by offering anything from a 14° to 0.65° horizontal field of view. These lenses also feature auto focus capabilities, delivering crisp, clear images even when adjusting zoom. This ensures optimal performance and situational awareness in the wide field of view and crisp details in the narrow field of view.

Extreme Long Range Detection

The Vega is a Mid-Wave Infrared (MWIR) thermal camera which means it operates on 3,600nm–4,900nm wavelengths where terrestrial temperature targets emit most of their infrared energy. Using the built-in Dynamic Image Contrast Enhancement (DICE) for increased contrast and image clarity, the Vega can detect vehicles up to 43km away.* While thermal is a significant investment, it outperforms all other long-range detection solutions, making it the best option for many applications such as perimeter security, border enforcement and coastal surveillance.

DRI Ranges:

27km
Human Detection*

43km
Vehicle Detection*

*DRI detection ratings are based on industry-wide standards (Johnson's Criteria) that can be misleading if not understood. For more information, please see our whitepaper about understanding DRI measurements at: www.infinitioptics.com/dri

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THE VEGA'S

Other Features

Low Backlash Military-Grade Positioner

The Vega uses a weapons-grade positioner designed for military applications and is ruggedized to withstand shock and vibration for use on tanks and navy vessels. This pan/tilt delivers high torque to handle large payloads up to 100kg with achievable speeds from 0.001°/sec up to 115°/sec and an accuracy of 0.05°. It features smooth manual control with configurable acceleration and optional GPS positioning for automatic slew-to-cue tracking when used with Video Analytics, VTMS systems, Radar, AIS and weapon systems. The integrated multi-axis gyro stabilization uses a high-rate MEMS gyro in combination with the pan/tilt to mechanically stabilize the payload, reducing the effects of vibration, oscillation, pitch and roll for operation on tanks, vessels, masts and assault vehicles.

Rugged And Robust

The Vega is comprised of military grade, precision engineered components and manufactured using unique processes to offer absolute performance. It uses military-style connectors to supply power, video, and communication over a single cable, increasing reliability and the amount of time required to install the system. The pan/tilt is built to MIL-STD-810F/G and is sealed to a minimum of IP66/67 making it water and dust proof. It is able to withstand temperatures from –5°C to +55°C and uses a tough anti-corrosion finish for operation in the most brutal and harsh climatic conditions.

Remote Connectivity and User Friendly

The Vega can be viewed remotely in real-time from anywhere in the world on a PC using Infiniti's VMS or web client, or on your mobile device with our iPhone or Android apps. It is also controllable by touch screen, mouse, VMS systems, DVR/NVR or PTZ joystick.

Octagon Platform

The Octagon Platform HTTP API is an IP interface for accessing Ascendent and Infiniti Octagon platform devices. This API acts as a unified point-of-contact for client software and services to access the sensors and devices within a system. The goal is to provide consistent, logical, and reliable connectivity to our web server(s) that exposes deep integration capabilities while simplifying interactions with our multi-faceted architecture.

Communication is also available via Serial, using the industry-standard protocol Pelco-D. This performs regular PTZ operation of the devices with the standard command set. It exposes advanced and peripheral functionality via a list of 'Special Function Presets', for any commands not available natively in the Pelco-D specification.

Gyro Stabilized

Voltage Regulation

Military Grade & IP66

Military Connectors

Radar Integration

OPTIONAL ACCESSORIES:

Spotlight

LRF (up to 20km range)

90° Wide Angle 8MP UHD Spotter Camera for Situational Awareness

Rapid Deployment Kit

THE VEGA'S

Specifications

INFINITI ELECTRO-OPTICS

Optical Assembly	1/2.8" HD Sensor	Optional Starlight Sensor
Image Sensor	1/2.8" Progressive Scan CMOS	1/1.8" Progressive Scan Exmor CMOS
Max Resolution	1920×1080 pixels	
Minimum Illumination @ f/1.2	0.02 Lux (Color), 0.005 Lux (B&W)	0.002 Lux (Color), 0.0002 Lux (B&W)
Lens	15.4mm–1037.5mm (30.8–2075mm with doubler on) Auto Focus	
Zoom Factor	135X with motorized doubler	
Angle of View	19.3° – 0.15° Horizontal FOV	27° – 0.2° Horizontal FOV
Fog/Haze Filter	Motorized	
Automatic Temperature Optimaztion	Adjusts the lens elements to mitigate the effects of thermal expansion	
Backlight Compensation	BLC / HLC / WDR (140dB)	BLC / HLC / WDR (120dB)
IP Protocol	RTSP	
Compression	H.264 / H.265 (Smart Codecs)	
ZLID Illuminator (optional)		
Illumination Distance	1-5km Zoom Laser Infrared Diode	
LRF (optional)		
LRF Type	750µJ InGaAs APD Erbium-Glass Pulsed Laser	
Accuracy	50-250mm	
Range	23km (see LRF ratings)	
Fusion Board for Geo-Location	3-Axis MEMS Gyroscope, Accelerometer and DMC	

Thermal Camera Assembly	875mm Lens	Optional 435mm	Optional 1075mm	Optional 1400mm
Image Sensor	High Sensitivity Cooled MCT or InSb			
Array Format	640×480 pixels (NTSC) / 640×512 pixels (PAL)			
Pixel Pitch	15µm			
Germanium Zoom Lens	38-875mm Zoom (22X), ƒ/5.5	18–435mm Zoom (24X), ƒ/5.5	46–1075mm Zoom (23X), ƒ5.5	70–1400mm Zoom (20X), ƒ5.5
Field of View (±7%)	14°–0.65° HFOV	29°–1.3°HFOV	11.9° – 0.5° HFOV	7.8° – 0.39° HFOV
Image Optimizations	Dynamic Image Contrast Enhancement (DICE) and Digital Zoom			
Thermal Sensitivity	20–25mK			
Cooler Lifetime	10,000 hours MTBF (20,000 hours optional)			

Pan/Tilt Positioner	with 875mm Thermal System	with 1400mm Thermal System
Drive Unit	Elliptical Synchronous Drive, Low to Zero Backlash	
Pan Angle & Speed	Endless 360° 0.001°/s – 45°/s	Endless 360° 0.001°/s – 110°/s
Tilt Angle & Speed	+65° to -65°, 0.001 – 45°/s (+90° to -90° optional)	+65° to -65°, 0.001 – 70°/s (+90° to -90° optional)
Encoder Resolution	0.00036° Magnetic Encoder absolute positioning	
Gyro Stabilization	0.15° (with Balanced Payload)	0.05° – 0.085° (with Balanced Payload)
Accuracy	0.02°	0.005°
Environmental		
Operational Temperature	-5°C to +55°C (-45°C with optional heater), Humidity: 90%±3% RH	
Environmental	Designed to meet or exceed MIL-STD-810F, EMI MIL-STD-461E, IP66	
Electrical		
Input Voltage	48V DC	
Power Consumption	500W Max (Before cooling options)	

*Specifications subject to change. **Approximate maximum detection rating under ideal conditions based on Johnson's Criteria (2 pixels of detection).

Optional Features: Thermal Enclosure Cooling, Wiper and Washer for Visible, Anodized Enclosure, Wide-Angle Thermal Spotter Camera, Wide-Angle 4K Visible Spotter Camera, or Military GPS