

Military Grade PTZ Camera System



Shown with 4K Spotter camera and LRF.

The Vega is a revolutionary multi-sensor PTZ camera boasting a long-range 33X visible day/night camera, long-range thermal infrared zoom, and ZLID NIR illumination with LRF. This multi-sensor payload enables the Vega to provide high resolution imaging in virtually any environment from 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 ingress. 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:

- › Turn-Key Long-Range Military Grade Multi-Sensor Surveillance System
- › Day/Night 1080p HD IP ONVIF 1/1.9" CMOS Sensor
- › 33X 30-1000mm Visible Lens with HD IR-Corrected Motorized Doubler (13.65°-0.41° HFOV ±7%)
- › Autofocus & Fog Filter with Auto Temperature Optimization
- › Image Enhancements: WDR, HLC, Noise Reduction, Fog/Haze Reduction
- › 4-5km Rated ZLID IR Illumination that syncs with zoom lens
- › 640×480 15µm, 30Hz Real-Time InSb Cooled Thermal Imager
- › 22X 39-855mm Autofocus Germanium Thermal Lens (14°-0.65° HFOV ±7%)
- › MWIR Cooled Thermal Camera with 20,000 hour cooler
- › Up to 27km of Human Detection and 43km of Vehicle Detection*
- › Rugged -45°-+65°C and IP66/67 Sealed with Anti-Corrosion Finish
- › Advanced Gearing for Zero to Low Backlash Precision Motion Control
- › Endless 360° Rotation with Speeds from 0.001°/s to 110°/s
- › Encoder Resolution of 0.00036° and Accuracy of 0.02°
- › 0.15° Multi-Axis Gyro Stabilization
- › Designed to Meet and Exceed MIL-STD-810F for Shock and Vibration with IP66/67 Sealing
- › 1535nm 19-20km Rated InGaAs 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

33X
ZOOM

30-1000mm
Zoom Lens

ZLID

4km Zoom
Laser IR Diode

COOLED
InSb
THERMAL

Cooled
Thermal

22X
Ge ZOOM

Thermal
Zoom Lens

4K

8MP Spotter
Camera

PTZ

PTZ Controls

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 1/1.9" progressive scan CMOS sensor with an HD resolution of 1920x1080 and a fantastic signal to noise ratio of 55dB. The 1/1.9" 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 1/1.9" Starlight sensor provides superior low-light sensitivity, making it particularly well suited for long-range ZLID illumination performance. The Vega 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.

Long Range 33X Zoom Lens

The Vega comes equipped with a precision engineered 30-1000mm IR-corrected zoom lens, offering a fantastic 33X zoom range from 13.65° through to a narrow 0.41° FOV when paired with the 1/1.9" sensor. That's equivalent to a "full-frame" DSLR camera using a 5000mm 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.

Active 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.



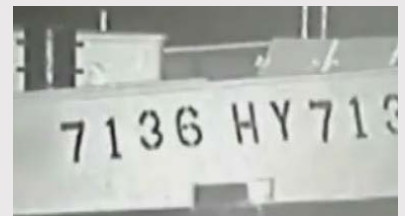
Fog Filter (Visible Cut) Disabled



Fog Filter (Visible Cut) Enabled

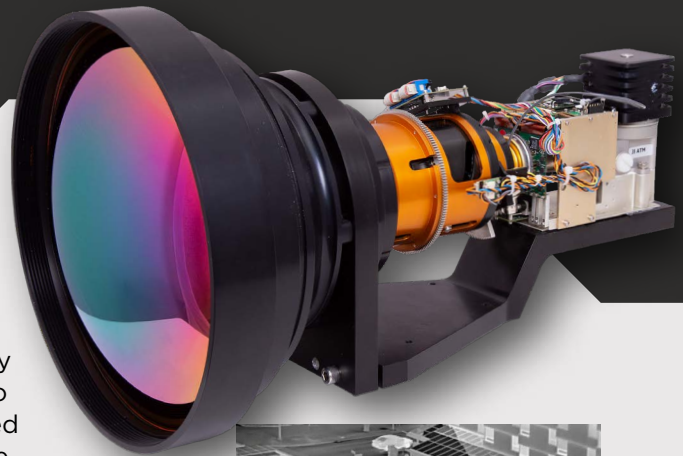


See through windows with ZLID



Ship at night with ZLID

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 Indium Antimonide (InSb) detector, producing ultra-sharp thermal images of 640x480 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 InSb Thermal Imager

The Vega contains a high sensitivity 15μm cooled InSb sensor with a resolution of 640x480 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 InSb thermal core is paired with a precision-engineered f/4.0 germanium zoom lens allowing you to view targets with a 22X optical zoom range from 39mm to 855mm. This allows for excellent detection of thermal targets by offering anything from a 14° to 0.65° horizontal field of view (±7%). 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

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 to 115°/sec and an accuracy of 0.02°. 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.



Gyro
Stabilized



MIL-STD
810F
Military Grade
& IP66



Military
Connectors



Radar
Integration

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 MIL-STD-810F/G tested and is sealed to a minimum of IP66/67 making it water and dust proof. It is able to withstand temperatures from -50°C to +65°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

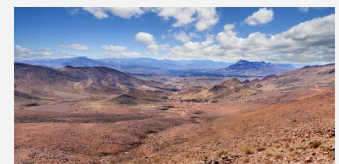
The Octagon Platform HTTP API is an IP interface for accessing Ascendent and Infiniti Octagon platform devices. This API acts as a unified point-of-contact for client software and services to access the sensors and devices within a system. The goal is to provide consistent, logical, and reliable connectivity 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.

ADDITIONAL UPGRADES:



LRF (up to 20km range)



111° Wide Angle 8MP
UHD Spotter Camera for
Situational Awareness

OPTIONAL ACCESSORIES:



Rapid
Deployment
Kit

THE VEGA'S Specifications



Visible Cameras	1000mm 30X Zoom	Wide-Angle 4K Spotter
Image Sensor	1/1.9" Starlight Progressive Scan CMOS	1/1.8" Progressive Scan CMOS
Max Resolution	1920×1080 pixels	3840×2160 pixels
Minimum Illumination	0.01 Lux (Color), 0.005 Lux (B&W) @ f/1.2	0.08 Lux (Color), 0.04 Lux (B&W) @ f/1.6
Lens	30mm-1000mm HD Zoom	2.8mm
Auto Focus	12-bit Rapid Auto Focus	No
Zoom Factor	30X	Fixed
Field of View (±7%)	13.65° - 0.41° Horizontal FOV	111° Horizontal FOV
Fog/Haze Filter	Motorized Visible Cut Filter	No
Backlight Compensation	BLC / HLC / WDR (120dB)	BLC / HLC / WDR (120dB)
IP Protocol	ONVIF, H.264 / H.265 (Smart Codecs supported) / MJPEG	

Thermal Camera	
Image Sensor	High Sensitivity Cooled InSb
Array Format	640×480 pixels (NTSC) / 640×512 pixels (PAL)
Pixel Pitch	15µm
Lens	39-855mm Continuous Zoom, f/5.5 (±5%)
Field of View (±7%)	14°-0.65° Horizontal FOV
Image Optimizations	Dynamic Image Contrast Enhancement (DICE) and Digital Zoom
Thermal Sensitivity	20-25mK
Cooler Lifetime	20,000 hours MTBF
IP Protocol (via Encoder)	ONVIF, H.264 (Smart Codec supported) / MJPEG

IR Illuminator (optional)	
Type	Zoom Laser IR Diode (ZLID)
Max Illumination Distance	4-5km Rated
Wavelength	808nm
NOHD	280m

LRF (optional)	
LRF Type	350µJ InGaAs APD Erbium-Glass Pulsed Laser
Aperture Receiver	50mm
Accuracy	50-250mm Rated (based on ideal conditions)
Extended Range	19-20km (based on multi-pulse with 15% reflectivity in ideal conditions)
Vehicle Range	11km (based on multi-pulse in ideal conditions)
Minimum Target Separation	7.5m
Lifetime MTBF	45 million shots

Octagon Platform	
Hardware Model	OCT-R
Control Interfaces	HTTP API, Serial (RS485)

Pan/Tilt Positioner	
Drive Unit	Elliptical Synchronous Drive, Low to Zero Backlash
Pan Angle & Speed	Endless 360° 0.001°/s - 110°/s
Tilt Angle & Speed	+55° to -55°, 0.001 - 110°/s
Encoder Resolution	0.00036° Magnetic Encoder absolute positioning
Gyro Stabilization	0.15° (variable depending on motion of platform)
Accuracy	0.02°

Environmental	
Operational Temperature	-50°C to +65°C (with heater, -20°C without heater), Humidity: 90%±3% RH
Environmental	Designed to meet or exceed MIL-STD-810F, EMI MIL-STD-461E
Ingress Protection	Camera Enclosure: IP66, Pan/Tilt: IP67

Electrical	
Input Voltage	48V DC
Power Consumption	500W Max (Before cooling options)

Physical	
Weight	80kg
Dimensions	967mm × 625mm × 382mm

*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, Wide-Angle Thermal Spotter Camera, or Military GPS