The Vega is a revolutionary multi-sensor PTZ camera boasting a long-range 135X visible day/night camera, long-range HD 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 ingestion. 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 ONVIF 1/2.8" CMOS Sensor
- 15.4–2075mm HD IR-Corrected Zoom Lens (with IZE 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
- 1280×1024 10µm, 30Hz Real-Time X-Hot Cooled Thermal Imager w/HD-SDI
- 10µm Pixel Pitch Provides 50% More Pixels on Target than 15µm Sensors
- 100–1200mm f4.0 Auto-Focus Germanium Thermal Lens (6.4–0.61° HFOV)
- 20,000+ Hour Lifetime Cyrogenic Cooler
- Up to 30km of Human Detection and 55km of Vehicle Detection*
- MIL-STD-810F, -50°–+65°C and IP66/67 with Anti-Corrosion Finish
- Elliptical Synchronous Drive, Gyro-Stabilized Heavy Duty Pan/Tilt
- Endless 360° Rotation Pan/Tilt with Speeds from 0.001–60°/s and up to 0.00036° Resolution with Zero Backlash
- 1535nm 23km Rated LRF with 50–250mm Range Accuracy using InGaAs Detector

*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
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 1/1.8” Starlight progressive scan CMOS sensor with an HD resolution of 1920×1080 and a fantastic signal to noise ratio of 55dB. The 1/1.8” 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 with clear color images by day and high-sensitivity black and white images at night. The 1/1.8” sensor’s fantastic low light sensitivity gets the most detail out of the lower light levels that are an unavoidable reality with long-range lenses. 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.

Long-Range 135X Zoom Lens

The Vega comes equipped with a precision engineered 15.5–2075mm IR-corrected zoom lens with our Integrated Zoom Extender (IZE), offering an incredible 135X zoom range from 26° through to a very narrow 0.2° FOV when paired with the 1/1.8” sensor. That’s equivalent to a “full-frame” DSLR camera using a 10,000mm lens. Infiniti’s IZE doubler outperforms standard doublers both in quality and uptime. Image sharpness remains high (90% vs the 40–60% of most doublers) and there is no image blackout when enabling or disabling the IZE. 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 haze, smoke and light fog that render standard visible cameras unusable. Infiniti’s long-range 135X zoom range camera is a perfect synergy between state-of-the-art hardware and the latest image processing for unparalleled range and performance.

Optional 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.
THE VEGA’S

Thermal Camera

X-Hot Cooled Thermal Core

The cooled thermal camera is equipped with Infiniti’s new X-Hot MWIR thermal sensor, enabling 24/7 imaging that relies on heat to allow it to see in complete darkness as well as through smoke and light fog. The X-Hot is revolutionary technology that is based on a superlattice design which runs at significantly higher temperatures than InSb and MCT, greatly reducing the workload of the cryo cooler. This extends cooler lifetime and minimizes required maintenance. A core sensitivity of 0.025°C, as well as its advanced DICE (Dynamic Image Contrast Enhancement) processing, defective pixel replacement, gaussian noise reduction filter, and automatic gain control (AGC) come together to create an optimized image with maximum clarity and contrast.

10μm Pixel Pitch with HD Resolution

The 1280×1024 HD sensor is four times the resolution of a typical SD 640×512 camera, providing a both wider field of view as well as increased detail for improved situational awareness. Its 10μm pixel pitch provides 50% more pixels on target than a 15μm pixel pitch sensor. A 1200mm lens on a 10μm sensor is equivalent to an 1800mm lens on a 15μm sensor, which makes this the ideal configuration for long-range imaging.

1200mm Germanium Zoom Lens

The Vega boasts a 100–1200mm f/4.0 germanium autofocus zoom lens for long-range detection of thermal targets. It offers a 6.4° to 0.61° field of view for both wide-angle viewing as well as extreme long-range detection. The large diameter f/4.0 lens collects nearly twice as much thermal energy as a smaller f/5.5 lens. Our lens also integrates auto focus for fast sharp, high-contrast images, allowing for vehicle detection up to 50km (based on DRI standards*).

*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
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 60°/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.

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)

Optional Accessories:

- Rapid Deployment Kit

Other Features

- Gyro Stabilized
- Military Grade & IP66
- Military Connectors
- Radar Integration

WWW.INFINITIOPTICS.COM  1-866-969-6463  INFO@INFINITIOPTICS.COM
### THE VEGA'S Specifications

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<th>Optional Starlight Sensor</th>
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<td>1/2.8&quot; Progressive Scan CMOS</td>
<td>1/1.8&quot; Progressive Scan Exmor CMOS</td>
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<tr>
<td><strong>Max Resolution</strong></td>
<td>1920×1080 pixels</td>
<td></td>
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<tr>
<td><strong>Minimum Illumination @ f/1.2</strong></td>
<td>0.02 Lux (Color), 0.005 Lux (B&amp;W)</td>
<td>0.002 Lux (Color), 0.0002 Lux (B&amp;W)</td>
</tr>
<tr>
<td><strong>Lens</strong></td>
<td>15.4mm–1037.5mm (30.8–2075mm with doubler on) Auto Focus</td>
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<tr>
<td><strong>Zoom Factor</strong></td>
<td>135X with motorized doubler</td>
<td></td>
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<tr>
<td><strong>Angle of View</strong></td>
<td>19.3° – 0.15° Horizontal FOV</td>
<td>27° – 0.2° Horizontal FOV</td>
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<tr>
<td><strong>Fog/Haze Filter</strong></td>
<td>Motorized</td>
<td></td>
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<td><strong>Auto Temperature Optimization</strong></td>
<td>Adjusts the lens elements to mitigate the effects of thermal expansion</td>
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<td><strong>Backlight Compensation</strong></td>
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<td>BLC / HLC / WDR (120dB)</td>
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<td><strong>IP Protocol</strong></td>
<td>ONVIF</td>
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<td><strong>Compression</strong></td>
<td>H.264 / H.265 (Smart Codecs)</td>
<td></td>
</tr>
</tbody>
</table>

#### IR Illuminator (optional)
- **ZLID**: Zoom Laser Infrared Diode
- **Illumination Distance**: 1-5km

#### 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 Imager
- **100–1200mm Lens**
  - **Image Sensor**: X-Hot 10μm 1280×1024 MWIR Sensor
  - **Thermal Sensitivity**: < 25mK
  - **Lens (Motorized Focus)**: 100–1200mm (12X) f/4.0 Autofocus Ge Zoom Lens
  - **Field Of View**: 6.4° – 0.61° HFOV (±3%) 7.3° – 0.73° HFOV (±3%) 20.7° – 1.06° HFOV (±3%)
  - **Image Enhancement**: Digital Image Contrast Enhancement (DICE) and Digital Zoom
  - **Cooler Lifetime**: 20,000+ hour rated Rotary Stirling Cycle Cooler
  - **Video Out**: SDI (IP Optional)

- **Optional 100–1000mm Lens**
  - **Image Sensor**: 100–1000mm (10X) f/4.0 Autofocus Ge Zoom Lens
  - **Field Of View**: 7.3° – 0.73° HFOV (±3%)

- **Optional 35–695mm Lens**
  - **Image Sensor**: 35–695mm (22X) f/4.0 Autofocus Ge Zoom Lens
  - **Field Of View**: 20.7° – 1.06° HFOV (±3%)

#### Pan/Tilt Positioner
- **with 1200mm or 1000mm Thermal System**
  - **Drive Unit**: Elliptical Synchronous Drive, Low to Zero Backlash
  - **Pan Angle & Speed**: Endless 360°, 0.001°/s - 60°/s
  - **Tilt Angle & Speed**: +65° to -65°, 0.001°/s - 60°/s
  - **Encoder Resolution**: 0.00036° Magnetic Encoder absolute positioning
  - **Gyro Stabilization**: 0.05° – 0.085° (with Balanced Payload) 0.15° (with Balanced Payload)
  - **Accuracy**: 0.005° 0.02°

#### Environmental
- **Operational Temperature**: -50°C to +65°C (with heater, -20°C without heater), Humidity: 90%±3% RH
- **Electrical**: Designed to meet or exceed MIL-STD-810F, EMI MIL-STD-461E, IP66/67

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

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


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