

VEGA

INFINITI

Ultra Long-Range Multi-Sensor PTZ Camera

The Vega offers the highest level of customization with the ability to integrate various technologies and sensors including ZLID illumination up to 6km, LRFs (Laser Range Finders) rated up to 38km, radar Slew-to-Cue integration for automated tracking, and GPS telemetry. Heavy duty gearing systems ensure that the systems are self-locking even when not in operation. Weatherproof military connectors and corrosion resistant anodized aluminum is available for enclosures, ensuring these systems will stand up to any environment.

Key Features:

- › 15.4-2075mm HD IR-Corrected Zoom Lens (with IZE doubler)
- › 27°-0.2° Horizontal Field of View gives a 135X Zoom Range
- › 550X Zoom Ratio with 110° Wide-Angle Spotter Camera
- › 1280x1024 or 640x480 Cooled Thermal Imager
- › Thermal Lens Options Available with up to 1400mm
- › 125° to 0.39° Thermal HFOV, Depending on Lens and Sensor
- › Optional ZLID™ Illumination for up to 6km of High Definition NIR Imaging in Complete Darkness
- › Endless 360° Rotation Pan/Tilt with Speeds up to 0.001-100°/s
- › Up to 0.00036° Resolution Pan/Tilt with Low Backlash
- › Rugged IP66/67 and -50° to +65°C with Anti-Corrosion Finish

Optional Features:

- › 38km Rated LRF
- › 1280x1024 HD Cooled Thermal
- › HD SWIR Camera
- › GPS & DMC for Accurate Positioning
- › Static Mount
- › Laser Dazzler or Spot/Strobe Light
- › Gyro Stabilization
- › Many Other Customizations Available



Appearance will vary based on configuration options.

15mm-800 53X 4MP	36mm-700 MWIR ^{HD}			
15.5mm-1235 79X 2MP	70mm-1015 MWIR ^{HD}	1km ZLID™		
15mm-800 53X 8MP	46mm-1100 MWIR	2km ZLID™		
10.6mm-1015 95X 8MP	92mm-1200 MWIR ^{HD}	4km ZLID™		
15.4mm-2075 135X 2MP	85mm-1400 MWIR	6km ZLID™		

Multiple Zoom Lens Options up to 2075mm

Long-Range Thermal up to 1400mm Zoom

Optional IR Illumination up to 6km

Waterproof with Military Connectors

Optional Gyro Stabilization

Optional InGaAs LRF

View the Vega on our website:

THE VEGA'S

Visible/NIR HD Zoom Camera

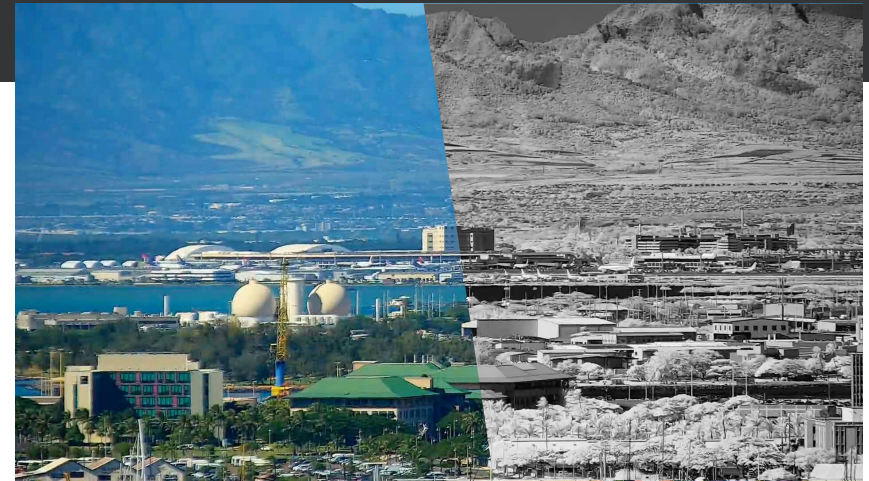
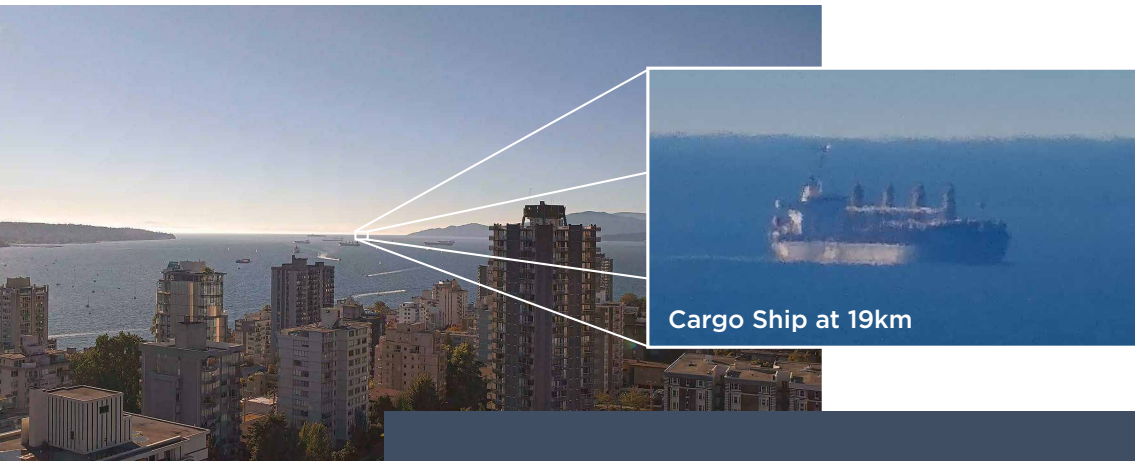
 INFINITI

VIS/NIR Optical Camera

Infiniti's zoom camera modules utilize high-end CMOS sensors to offer excellent spectral sensitivity in the visible and near-infrared wavelengths of light, providing high-quality images optimized for long-range surveillance. They are designed to provide industry-leading performance and quality, with image resolutions ranging from 2MP (1080p HD) to 8MP (4K UHD) and 12MP. Precision engineered IR-corrected continuous zoom lens options offer a range of focal lengths with up to 135X optical zoom and integrated rapid autofocus to allow for long-range surveillance of targets without operator intervention.

Wide Angle Spotters

The Vega PTZ can also support our optional wide angle spotter cameras. By integrating a second high resolution sensor with a wide angle lens, operators can maintain wide area situational awareness while simultaneously achieving detailed surveillance of targets at long ranges.



Standard Color Visible Image
(Optical Fog Filter Disabled)

NIR Image
(Optical Fog Filter Enabled)

Optical Fog Filter (NIR Only Mode)

While most surveillance cameras offer a nighttime NIR + visible mode for optimized sensitivity in low light, the Vega's cameras are also equipped with our NIR bandpass filter (also referred to as a "fog filter") allowing users to isolate the NIR (near-infrared) wavelength of light during the day for clearer long-range daytime imaging.

Long-range imaging needs to see through large amounts of atmosphere which often contains particulates like smoke, haze/fog, and other atmospheric distortions. Cutting out the visible wavelength and isolating the NIR can mitigate the effects of smoke, haze and light fog, producing an image with better contrast and less distortion. Our optical fog filter lenses incorporate a motorized filter that is used with the camera's monochrome mode and de-haze image processing to see through smoke, smog and haze.

THE VEGA'S ZLID™ & Thermal Technologies

See in the Dark with ZLID™

IR illumination allows for detailed video when there isn't enough natural light, however common IR LED illuminators have very limited ranges. For long-range 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.



See Further with Thermal

The Vega boasts industry-leading thermal cameras with uncooled LWIR and cooled MWIR options from resolution of 384×288 up to 1280×1024 HD to ensure mission success.

Thermal cameras, unlike traditional visible cameras, use heat rather than light to see objects. Humans, animals, and vehicles are all quite hot in contrast to most surroundings, making intruders hiding in shadows or bushes easy to spot. Thermal images are also unaffected by bright lights and can see through atmospheric obstructions such as smoke, dust, and light fog. This makes thermal imaging an ideal technology for many applications including surveillance and security, search and rescue, fire fighting, marine and land navigation, wide area situational assessment, and much more.



Thermal Imaging Options: Cooled vs Uncooled

Uncooled Long Wave Infrared (LWIR)

Infiniti uses a cutting-edge 12µm LWIR VOx uncooled thermal sensor with resolutions of 384x288 up to 1280x1024 HD. The 12µm pixel pitch gives the camera a narrower field of view without changing the lens. This means we are able to achieve 40% further range than 17µm and 25% further range than 15µm sensors while delivering a sensitivity of 0.05°C.

The Vega pairs these sensors with precision-engineered continuous zoom germanium lenses such as the 10X zoom 31-310mm (14.1°-1.42° HFOV) and 13X zoom 30-415mm (14.6°-1.06° HFOV) to provide both long-range and wide-angle views.

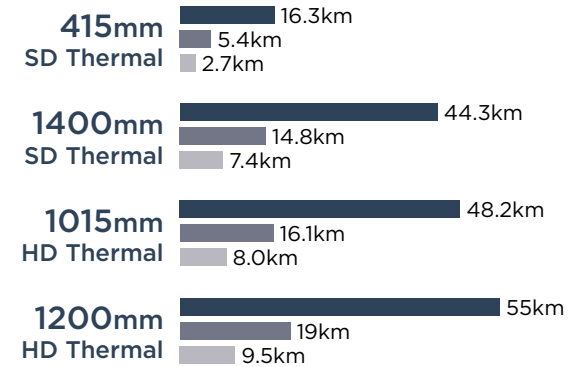
Cooled Mid-Wave Infrared (MWIR)

The Vega also offers both SD and HD cooled thermal sensor options. MWIR sensors use integrated cyro-coolers to cool the sensors down to -196°C (InSb) or -123°C (X-Hot). This exponentially increases the sensitivity of the thermal camera allowing it to use smaller and more powerful lenses than uncooled LWIR cameras.

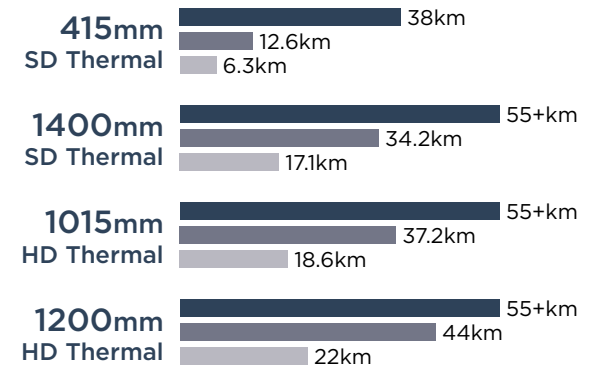
Our SD options pair an InSb sensor with impressive precision-engineered germanium lenses such as the 23X zoom 38-875mm, the 24X zoom 46-1100mm or the 16X zoom 85-1400mm boasting an HFOV as narrow as 0.39°.

Our HD options utilize a 10µm X-Hot sensor which provides 50% longer range and is up to 400% higher resolution than traditional 15µm sensors. This means a 1200mm lens on our X-Hot sensor is equivalent to a 1800mm lens on a traditional 15µm sensor, allowing it to provide more pixels on target for increased detail at long distances. The X-Hot sensor can be paired with our various zoom lenses with long-range capabilities from 410mm to 1200mm. This makes the Vega capable of a vehicle detection rating* of over 55km for vehicles, and 44km human detection based on DRI ratings in ideal conditions.

Human DRI:



Vehicle DRI:



■ DETECTION*
■ RECOGNITION*
■ IDENTIFICATION*

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

Visible/NIR Camera Options

		2075-LSM	8M-95X	8M-53X	79X	4M-53X
Simulated FOV @ 1km						
Pixels Per Meter @ 1km		553ppm	508ppm	400ppm	329ppm	274ppm
DORI	D: 25ppm	22,133m Detection	20,300m Detection	16,000m Detection	13,173m Detection	10,944m Detection
	O: 62ppm	8,925m Observation	8,815m Observation	6,452m Observation	5,312m Observation	4,413m Observation
	R: 125ppm	4,427m Recognition	4,060m Recognition	3,200m Recognition	2,635m Recognition	2,189m Recognition
	I: 250ppm	2,213m Identification	2,030m Identification	1,600m Identification	1,317m Identification	1,094m Identification
Output Resolution		2MP/1080p @ 60fps (1920x1080)	8MP/4K @ 30fps (3840x2160)	8MP/4K @ 30fps (3840x2160)	2MP/1080p @ 60fps (1920x1080)	4MP @ 30fps (2688x1520)
Image Sensor		2.0 Megapixel 1/2" W CMOS	8.4 Megapixel 1/1.8" W CMOS	8.4 Megapixel 1/1.8" W CMOS	4.1 Megapixel 1/2" W CMOS	4.1 Megapixel 1/1.7" W CMOS
Lens	Focal Length	15.4-2075mm (with IZE doubler)	10.6-1015mm	15-800mm	15.5-1235mm	15-800mm
	Zoom	135X Optical Zoom, 4X Digital	95X Optical Zoom + 16X Digital	53X Optical Zoom + 16X Digital	79X Optical Zoom + 16X Digital	53X Optical Zoom + 16X Digital
	Angle of View	27°-0.2° Horizontal (0.05° with 4X Digital Zoom)	42.0°-0.43° Horizontal (0.05° with 8X Digital Zoom)	28°-0.55° Horizontal	27.0°-0.33° Horizontal (0.08° with 4X Digital Zoom)	29.4°-0.56° Horizontal (0.14° with 4X Digital Zoom)
	Focus	Auto / Manual	Auto / Manual	Auto / Manual	Auto / Manual	Auto / Manual
Minimum Illumination		Color: 0.006 Lux @ f/1.2; B&W: 0.0006 Lux @ f/1.2	Color: 0.1 Lux @ f/2.1; B&W: 0.01 Lux @ f/2.1	Color: 0.1 Lux, B&W: 0.01 Lux @ f/1.5	Color: 0.05 Lux @ f/2.1; B&W: 0.005 Lux @ f/2.1	Color: 0.05 Lux @ f/2.8; B&W: 0.005 Lux @ f/2.8
Optical Fog Filter (NIR)		Yes	Yes	Yes	Yes	Yes
Heatwave Mitigation		No	Yes	Yes	Yes	Yes
NDAA Compliant		Yes	No	Yes	Optional	No
Video Network	Compression	H.265/H.264/MJPEG				
	Protocol	ONVIF, HTTP, RTSP, RTP, TCP, UDP				
Image Stabilization		Electronic Image Stabilization (EIS)				
Image Enhancements		Auto White Balance, 120dB WDR, 3D DNR, BLC	White Balance, 100dB WDR, 2D/3D DNR, BLC, HLC, Digital Defog			
Edge Storage		Supports MicroSD Card up to 256GB				

*Lens measurements and angle of view are accurate to ±10% due to back focus distances, sensor sizes, lens manufacturing, etc.

ZLID™ Illumination Options

	500m IR LED	1km ZLID		1.5km ZLID		2km ZLID		3km ZLID		4km ZLID		5km ZLID	6km ZLID
Illumination Distance	500m	1000m		1500m		2000m		3000m		4000m		5000m	6000m
Wavelength	808nm	808nm	940nm	808nm	940nm	808nm	940nm	808nm	808nm	940nm	808nm	808nm	808nm
NOHD	0m (eye safe)	50m	36.6m	56.4m	45.2m	226m	166m	238m	266m	555m	376m	752m	

Thermal Camera Options

SD Thermal Camera Options

	31-310mm (-310TIZ)	30-415mm (-415TIZ)	38-875mm (-875CTZ)	46-1100mm (-1100CTZ)	85-1400mm (-1400CTZ)										
Image Sensor	Uncooled VOx Microbolometer, 30Hz			High Sensitivity Cooled InSb or MCT, 30Hz											
Resolution	640x512 pixels (384x288 optional)			640x480 pixels (NTSC) / 640x512 pixels (PAL)											
Pixel Pitch	12µm (40% further range than 17µm sensors)			15µm											
Lens	31-310mm f/1.3 Motorized Zoom	30-415mm f/1.5 Motorized Zoom	38-875mm f/5.5 Motorized Zoom	46-1100mm f/5.5 Motorized Zoom	85-1400mm f/5.5 Motorized Zoom										
Focus	Motorized Autofocus	Motorized Autofocus	Motorized Autofocus	Motorized Autofocus	Motorized Autofocus										
Field of View	14.1°-1.42° Horizontal FOV	14.6°-1.06° Horizontal FOV	14°-0.63° Horizontal FOV	11.9°-0.5° Horizontal FOV	6.4°-0.39° Horizontal FOV										
Pixels Per Meter @ 1km	26ppm	35ppm	58ppm	73ppm	93ppm										
Human DRI Ratings*	12.2 km	4.0 km	2.0 km	16.3 km	5.4 km	2.7 km	27.6 km	9.2 km	4.6 km	34.7 km	11.6 km	5.8 km	44.2 km	14.7 km	7.3 km
Vehicle DRI Ratings*	28.3 km	9.4 km	4.7 km	38.0 km	12.6 km	6.3 km	55+ km	21.3 km	10.7 km	55+ km	26.8 km	13.4 km	55+ km	34.1 km	17.1 km
Image Optimizations	DICE, BPR, NUC, & AGC user configurable via SDK, GUI														
Digital Zoom	2X & 4X dynamic zoom/pan with range switching														
Spectral Range	LWIR (7,000-14,000nm)			MWIR (3,000-5,000nm)											
Thermal Sensitivity	50mK			20-25mK											
Cooler Lifetime	No cooler required			10,000 Hour Rated MTBF (20,000 hours optional)											
Image Display Modes	White Hot, other color palettes available upon request														

HD Thermal Camera Options

	18-410mm HD (-410CTZ-HD)	36-700mm HD (-700CTZ-HD)	55-1015mm HD (-1015CTZ-HD)	92-1200mm HD (-1200CTZ-HD)								
Image Sensor	High Sensitivity Cooled X-Hot Sensor, 30Hz											
Resolution	1280x1024 pixels											
Pixel Pitch	10µm (50% further range than 15µm sensors)											
Lens	18-410mm f/4.0 Motorized Zoom	36-700mm f/4.0 Motorized Zoom	55-1015mm f/4.0 Motorized Zoom	92-1200mm f/4.0 Motorized Zoom								
Focus	Motorized Autofocus	Motorized Autofocus	Motorized Autofocus	Motorized Autofocus								
Field of View	39.1°-1.8° Horizontal FOV	20.2°-1.05° Horizontal FOV	13.3°-0.72° Horizontal FOV	7.96°-0.61° Horizontal FOV								
Pixels Per Meter @ 1km	41ppm	70ppm	102ppm	120ppm								
Human DRI Ratings*	19.4 km	6.4 km	3.2 km	33.1 km	11.0 km	5.5 km	48.1 km	16.0 km	8.0 km	55 km	18.9 km	9.5 km
Vehicle DRI Ratings*	45.0 km	15.0 km	7.5 km	55+ km	25.6 km	12.8 km	55+ km	37.1 km	18.6 km	55+ km	43.9 km	22 km
Image Optimizations	Digital Image Contrast Enhancement (DICE)											
Digital Zoom	4X Digital Zoom (16X optional)											
Spectral Range	3,000-5,000nm (MWIR)											
Thermal Sensitivity	20-25mK											
Cooler Lifetime	20,000+ Hour Rated MTBF											

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

Other Specifications

LRF (optional)

LRF Type	750µJ InGaAs APD Erbium-Glass Pulsed Laser	
Accuracy	50-250mm	
Range	38km Rated (16.5km on 2.3m×2.3m NATO Target)	
Fusion Board	3-Axis MEMS Gyroscope, Accelerometer and DMC (for Geo-Location)	
Pan/Tilt Mechanical	with 1400mm Thermal System	with Smaller Thermal System
Drive System	Elliptical Synchronous Drive, Low to Zero Backlash	
Pan Angle	Endless 360°	Endless 360°
Pan Speed	0.001°/s - 40°/s (0.001-100°/s optional, speeds may differ depending on configuration/gyro)	0.001°/s - 60°/s (speeds may differ depending on configuration/gyro)
Tilt Angle	+45° to -45° (up to +90° to -90° optional)	+65° to -65° (+90° to -90° optional)
Tilt Speed	0.001°/s - 40°/s (0.001-100°/s optional, speeds may differ depending on configuration/gyro)	0.001°/s - 60°/s (speeds may differ depending on configuration/gyro)
Proportional Pan/Tilt	Auto adjusts pan/tilt speed based on zoom level	
Accuracy	0.02°	
Encoder Resolution	0.00036° Magnetic Encoder absolute positioning	
Gyro Stabilization	0.15° (with balanced payload, higher precision optional, precision may be lower at high pan/tilt speeds)	

Physical

Construction	High Strength Aluminum Alloy with Anti-Corrosion Finish
Payload Capacity	50kg

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, IP66/67

Electrical

Input Voltage	36-70VDC, 48VDC preferred; 220VAC Adapter Included
Power Consumption	500W Max (Before cooling options)

Optional Features: Wiper and Washer for Visible, LRF (Laser Rangefinder), Wide-Angle 4K Spotter Camera, Wide-Angle Thermal Spotter Camera, Military GPS, Reflective Paint or Customized Paint Finish, Joystick (Pelco-D or IP 3-axis joysticks), Wireless Analog or IP Radios P2P or mesh

Brochure specifications subject to change.

VEGA

Additional Images



WWW.INFINITIOPTICS.COM

1-866-969-6463

INFO@INFINITIOPTICS.COM