

SENTRY

Rugged, Dual-Sensor PTZ System

INFINITI ELECTRO-OPTICS

The Sentry is a modular multi-sensor PTZ that can be configured with our long range visible, ZLID™, and thermal camera options. These include our 4K/8 Megapixel 10.6-1015mm 95X zoom day/night camera, thermal imaging cameras up to 700mm, and up to 4km of ZLID™ illumination.

Combining these multiple sensors allows for accurate detection, recognition, and identification of potential threats. Active deterrence measures such as LRADs, spotlights, and laser dazzlers can also be integrated to ensure threats are not just detected, but mitigated.

The Sentry's strengthened aluminum construction and rugged IP66 housings use anti-corrosive coatings, allowing it to withstand the harshest climates for dependable perimeter security, mobile/marine vessels, homeland defense, and coastal protection.

Key Features:

- › Multi-Sensor Visible and Thermal Integrated PTZ System
- › HD or UHD Progressive Scan CMOS Day/Night IP Camera
- › Long-Range Visible Zoom Options from 36X to 95X
- › Visible/NIR Field of View Options from 75° to 0.33°
- › 12µm 640×512 VOx Uncooled Thermal Imager or Optional SD or 1280×1024 HD Cooled Thermal Imager
- › Uncooled VOx Thermal Imaging Options up to 310mm
- › SD and HD Cooled Thermal Options up to 700mm
- › Up to 33km Human Detection and 55+km Vehicle Detection with Thermal (using Johnson Criteria DRI standards)*
- › Endless 360° Pan and ±90° Tilt, with pan speeds up to 60°/s
- › IP66 Military-Grade Design with Military Cable Connectors
- › Designed for Fixed, Marine or Mobile Applications



5.6mm-**272**
49X 8MP

14.8mm-**875**
59X 2MP

15mm-**800**
53X 4MP

15.5mm-**1235**
79X 2MP

15mm-**800**
53X 8MP

10.6mm-**1015**
95X 8MP

Multiple Zoom Lens Options up to 1235mm

20mm-**105**
LWIR

32mm-**155**
LWIR

34mm-**185**
LWIR

26mm-**230**
LWIR

31mm-**310**
LWIR

Uncooled Thermal Zoom up to 310mm

18mm-**260**
MWIR^{HD}

18mm-**410**
MWIR^{HD}

30mm-**430**
MWIR

36mm-**700**
MWIR^{HD}

Optional Cooled Thermal up to 700mm

1km
ZLID™

3km
ZLID™

4km
ZLID™

Optional Long-Range IR Illumination

Appearance will vary based on configuration options.



Mobile & Marine Ready



Waterproof with Military Connectors



View the Sentry on our website:

THE SENTRY'S Visible/NIR HD Zoom Camera

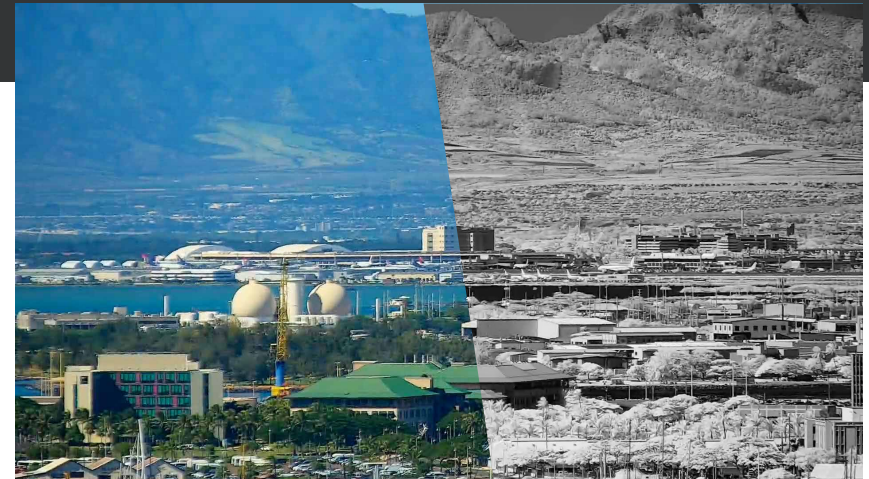
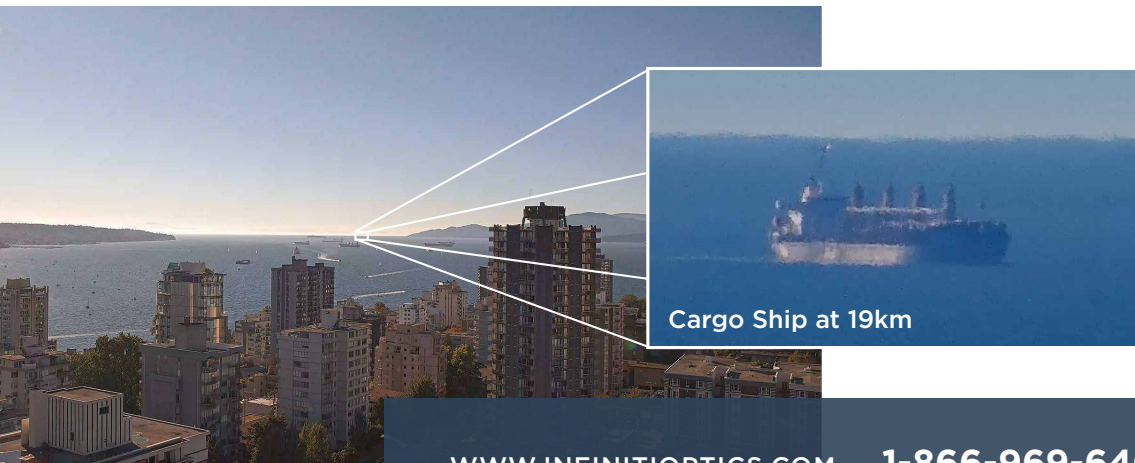


VIS/NIR Optical Camera

Infiniti's VIS/NIR zoom cameras utilize high-end CMOS sensors to offer excellent spectral sensitivity in the visible and near-infrared wavelengths of light to provide 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). Precision engineered IR-corrected continuous zoom lens options offer a range of focal lengths with up to 95X optical zoom and integrated rapid autofocus to allow for long-range surveillance of targets without operator intervention.

Wide Angle Spotters

The Sentry PTZ can also support our optional wide angle spotter cameras for both visible and thermal. By integrating a second sensor with a wide angle lens, operators can maintain wide area situational awareness while simultaneously achieving detailed surveillance of targets at extreme long ranges.



Standard Color Visible Image
(Optical Fog Filter Disabled)

NIR Image
(Optical Fog Filter Enabled)

Optical Fog Filter (NIR Only Mode)

While all of our sensors offer a nighttime NIR + visible mode for optimized sensitivity in low light, the cameras equipped with our NIR bandpass filter (also referred to as a "fog filter") allow 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 SENTRY'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 Sentry 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.

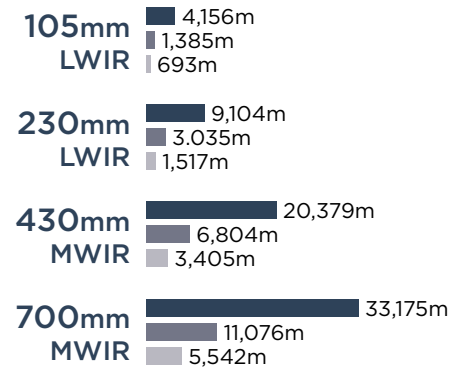
The Sentry pairs these sensors with precision-engineered continuous zoom germanium lenses such as the 9X zoom 26-230mm (16.8°-1.9° HFOV), 5X zoom 32-155mm (13.7°-2.8° HFOV) and 5X zoom 22-105mm (9.8°-4.2° HFOV) to provide both long-range and wide-angle views. These lenses have a large aperture of f/1.0-f/1.3 compared to the standard f/1.5-f/1.6 which allows up to 2.3 times more heat to reach the sensor. This results in higher sensitivity, sharper images, and longer range making it the most cost-effective long-range imaging solution.

Cooled Mid-Wave Infrared (MWIR)

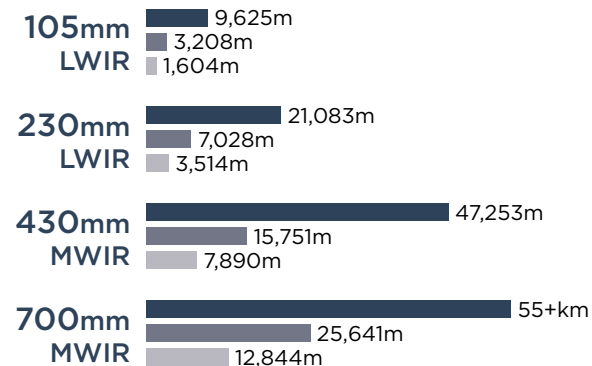
The Sentry also offers both SD and HD cooled thermal sensor options which utilize a 10µm X-Hot sensor which provides 50% longer range and is up to 400% higher resolution than traditional 15µm sensors. This means a 400mm lens on our X-Hot sensor is equivalent to a 600mm lens on a traditional 15µm sensor, allowing it to provide a narrower angle for more detail at long distances. MWIR sensors use integrated cyro-coolers to cool the sensors down to -196°C (InSb) and -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.

The X-Hot sensor can be paired with our various zoom lenses with long-range capabilities from 235mm to 700mm. This makes the Sentry capable of a vehicle detection rating of over 55km for vehicles, and 33km 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 Camera Options

		8M-95X	8M-53X	79X	4M-53X	59X	8M-49X	8M-36X	4M-49X
Simulated FOV @ 1km									
Pixels Per Meter @ 1km		508ppm	400ppm	329ppm	274ppm	214ppm	136ppm	109ppm	93ppm
DORI	D: 25ppm	20,300m Detection	16,000m Detection	13,173m Detection	10,944m Detection	8,550m Detection	5,440m Detection	4,360m Detection	3,721m Detection
	O: 62ppm	8,815m Observation	6,452m Observation	5,312m Observation	4,413m Observation	3,447m Observation	2,194m Observation	1,758m Observation	1,500m Observation
	R: 125ppm	4,060m Recognition	3,200m Recognition	2,635m Recognition	2,189m Recognition	1,710m Recognition	1,088m Recognition	872m Recognition	744m Recognition
	I: 250ppm	2,030m Identification	1,600m Identification	1,317m Identification	1,094m Identification	855m Identification	563m Identification	436m Identification	372m Identification
Output Resolution		8MP/4K @ 30fps (3840x2160)	8MP/4K @ 30fps (3840x2160)	2MP/1080p @ 60fps (1920x1080)	4MP @ 30fps (2688x1520)	2MP/1080p @ 30fps (1920x1080)	4K @ 30fps (3840x2160)	8MP/4K @ 30fps (3840x2160)	4MP @ 60fps (2688x1520)
Image Sensor		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	4.1 Megapixel 1/1.7" W CMOS	8.4 Megapixel 1/1.8" W CMOS	8.4 Megapixel 1/1.8" W CMOS	4.1 Megapixel 1/1.7" W CMOS
Lens*	Focal Length	10.6-1015mm	15-800mm	15.5-1235mm	15-800mm	14.8-875mm	5.6-272mm f/1.4-4.5	6-218mm	5.6-272mm f/1.4-4.5
	Optical Zoom	95X Optical Zoom + 16X Digital	53X Optical Zoom + 16X Digital	79X Optical Zoom + 16X Digital	53X Optical Zoom + 16X Digital	59X Optical Zoom + 16X Digital	49X Optical Zoom + 16X Digital	36X Optical Zoom + 16X Digital	49X Optical Zoom + 16X Digital
	Angle of View	42°-0.43° Horizontal	28°-0.55° Horizontal	27°-0.33° Horizontal	29°-0.56° Horizontal	30°-0.51° Horizontal	75°-1.62° Horizontal	65.2°-2° Horizontal	76°-1.66° Horizontal
	Focus	Auto / Manual	Auto / Manual	Auto / Manual	Auto / Manual	Auto / Manual	Auto / Manual	Auto/Manual	Auto/Manual
Minimum Illumination		Color: 0.1 Lux, B&W: 0.01 Lux @ f/2.1	Color: 0.1 Lux, B&W: 0.01 Lux @ f/1.5	Color: 0.05 Lux, B&W: 0.005 Lux @ f/2.1	Color: 0.05 Lux, B&W: 0.005 Lux @ f/2.8	Color: 0.05 Lux, B&W: 0.005 Lux @ f/2.8	Color: 0.05 Lux, B&W: 0.005 Lux @ f/1.4	Color: 0.1 Lux, B&W: 0.01 Lux @ f/1.5	Color: 0.005 Lux, B&W: 0.0005 Lux @ f/1.4
Optical Fog Filter (NIR)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Heatwave Mitigation		Yes	Yes	Yes	Yes	Yes	No	No	No
NDAA Compliant		No	Yes	Optional	No	Optional	Yes	Yes	No
Video Network	Compression	H.265/H.264/MJPEG							
	Protocol	ONVIF, HTTP, RTSP, RTP, TCP, UDP							
Image Stabilization		Electronic Image Stabilization (EIS)			Optical Stabilization (optional) & EIS		Electronic Image Stabilization (EIS)		
Image Enhancements		White Balance, WDR, 2D/3D DNR, BLC, HLC, Digital Defog							
Edge Storage		Supports MicroSD Card up to 256GB							

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

LED & ZLID™ Illumination Options

	500m IR LED	750m ZLID		1km ZLID		1.5km ZLID		2km ZLID		3km ZLID		4km ZLID	
Illumination Distance	500m	750m		1000m		1500m		2000m		3000m		4000m	
Wavelength	808nm	808nm	940nm	808nm	940nm	808nm	940nm	808nm	940nm	808nm	940nm	808nm	940nm
NOHD	0m (eye safe)	13m	9.6m	50m	36.6m	56.4m	45.2m	69m	51m	238m	175m	266m	196m

Thermal Camera Options

Uncooled Thermal Camera Options

	20-105mm (-105TIZ)	25-130mm (-130TIZ)	32-155mm (-155TIZ)	34-185mm (-185CTZ)	26-230mm (-230TIZ)	31-310mm (-310TIZ)												
Image Sensor	Uncooled Vanadium Oxide (VOx) Microbolometer, 30Hz																	
Resolution	640x512/640x480 pixels (1280x1024 optional)					640x512/640x480 pixels												
Pixel Pitch	12µm (Over 200% further range than 25µm sensors, 40% further range than 17µm sensors)																	
Lens (Motorized Zoom)	20-105mm f/1.2	25-130mm f/0.8-f/1.2	32-155mm f/1.2	34-185mm f/1.2	26-230mm f/1.3	31-310mm f/1.3												
Focus	Motorized Autofocus																	
Field of View	21.7°-4.19° Horizontal FOV	17.5-3.38° Horizontal FOV	13.7°-2.8° Horizontal FOV	12.9-2.38° Horizontal FOV	14.1-1.42° Horizontal FOV	39.1°-1.8° Horizontal FOV												
Pixels Per Meter @ 1km	8.8ppm	10.8ppm	12.9ppm	15.4ppm	19.2ppm	25.8ppm												
Human DRI Ratings*	4.1 km	1.3 km	693m	5.1 km	1.7 km	858m	6.1 km	2.0 km	1.0 km	7.3 km	2.4 km	1.2 km	9.0 km	3.0 km	1.5 km	12 km	4.0 km	2.0 km
Vehicle DRI Ratings*	9.6 km	3.2 km	1.6 km	11.9 km	3.9 km	1.9 km	14.1 km	4.7 km	2.3 km	16.9 km	5.6 km	2.8 km	21.0 km	7.0 km	3.5 km	28 km	9.4 km	4.7 km
Image Optimizations	DICE, BPR, NUC, & AGC user configurable via API																	
Digital Zoom	2X & 4X dynamic zoom/pan with range switching																	
Spectral Range	LWIR (7,000-14,000nm)																	
Thermal Sensitivity	50mK																	
Cooler Lifetime	No cooler required																	
Image Display Modes	White Hot, other color palettes available upon request																	

Cooled Thermal Camera Options

	15-235mm (-235CTZ)	30-430mm (-430CTZ)	36-700mm (-700CTZ)	18-260mm HD (-260CTZ-HD)	18-410mm HD (-410CTZ-HD)	36-700mm HD (-700CTZ-HD)												
Image Sensor	High-Sensitivity Cooled X-Hot Detector, 30Hz			High Sensitivity Cooled InSb or X-Hot Sensor, 30Hz														
Resolution	640x480 or 640x512 pixels			1280x1024 pixels														
Pixel Pitch	10µm (50% further range than 15µm sensors)			10µm (50% further range than 15µm sensors)														
Lens (Motorized Zoom)	15-235mm f/3.6	30-430mm f/3.6	36-700mm f/3.6	18-260mm f/4.0	18-410mm f/4.0	36-700mm f/4.0												
Focus	Motorized Autofocus																	
Field of View	24.1-1.56° Horizontal FOV	12.2-0.85° Horizontal FOV	10.2-0.52° Horizontal FOV	39.1-2.82° Horizontal FOV	39.1°-1.8° Horizontal FOV	39.1-1.79° Horizontal FOV												
Pixels Per Meter @ 1km	23.5ppm	43ppm	70ppm	26ppm	41ppm	70ppm												
Human DRI Ratings*	11.1 km	3.7 km	1.8 km	20.3 km	6.8 km	3.4 km	33.1 km	11.0 km	5.5 km	12.3 km	4.1 km	2.0 km	19.4 km	6.4 km	3.2 km	33.1 km	11.0 km	5.5 km
Vehicle DRI Ratings*	25.8 km	8.6 km	4.3 km	47.2 km	15.7 km	7.8 km	55+ km	25.6 km	12.8 km	28.5 km	9.5 km	4.7 km	45.0 km	15.0 km	7.5 km	55+ km	25.6 km	12.8 km
Digital Zoom	4X Digital Zoom (16X optional)																	
Spectral Range	3,000-5,000nm (MWIR)																	
Thermal Sensitivity	20-25mK																	
Cooler Lifetime (@23°C)	20,000 Hour Rated MTBF (InSb) / 25,000 Hour Rated MTBF (X-Hot)																	

* **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

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Other Specifications



Pan/Tilt Mechanical

Pan Angle & Speed	Endless 360° Continuous Rotation, 0.1° to 60°/s (speeds may differ depending on configuration)
Tilt Angle & Speed	-45° to +45° ($\pm 90^\circ$ with pedestal), 0.1° to 30°/s (speeds may differ depending on configuration)
Proportional Pan/Tilt	Auto adjusts pan/tilt speed based on zoom level

Physical

Construction	High Strength Aluminum Alloy
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Environmental

Operational Temperature	-20°C to +60°C (-40°C optional), <90% Relative Humidity
Environmental	IP66 Weatherproof Housing

Electrical

Input Voltage	48VDC (24V optional)
Power Consumption	40W to 350W, depending on configuration and heater

Optional Features: LRF (Laser Rangefinder), Wide-Angle 4K Spotter Camera, Reflective Paint or Customized Paint Finish, Joystick (Pelco-D or IP 3-axis joysticks), Solar Power, Wireless Analog or IP Radios P2P or mesh

Brochure specifications subject to change.



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Additional Images

