

NEPTUNE

INFINITI

# All-Weather Long-Range Gyro Stabilized PTZ Camera

The Neptune PTZ is designed for mobile and marine applications with 2-axis gyro stabilization and various EO/IR payload configurations. Numerous visible zoom lens options up to 510mm, and sensor resolutions available from Full-HD up to 8MP/4K make the Neptune a high performance day camera. When paired with up to 2000m of ZLID illumination or up to a 260mm HD cooled thermal imaging camera, the Neptune system offers remarkable nighttime surveillance performance as well. All of these sensors are integrated into a rugged IP67 weatherproof housing constructed of strengthened aluminum. The Neptune is built to withstand some of the harshest climates, making it ideal for perimeter security, homeland defense, and coastal protection.

## Key Features:

- › Long-Range Day/Night PTZ Camera System
- › 2MP, 4MP or 8MP High-Resolution CMOS Sensor
- › HD Lens with 20X, 30X, 36X, 49X or 88X Optical Zoom
- › Optical Field of View Options ranging from 75° to 1.18°
- › ZLID™ for up to 2km Night Vision in Complete Darkness
- › Thermal Imaging for Long-Range Detection up to 25km\*
- › Optional LWIR Uncooled or MWIR Cooled Thermal
- › Designed for Operation in -30°C to +60°C with IP67 Housing
- › High Resolution Pan/Tilt with 2-Axis Gyro Stabilization
- › Control via RS485/Pelco-D or Octagon Bridge/API Commands
- › Optional Integrated Optical Fog Filter

## Optional Features:

- › GPS & 4G Cellular
- › Laser Rangefinder
- › Marine Joystick
- › Slew-to-Cue via NMEA 0183
- › Military Vibration/Shock Mount
- › Wide-Angle 4K Spotter Camera



\*The Neptune's default color is white. Custom colors (such as desert sand pictured here) must be specified at time of order.

6.6mm-132  
20X 8MP

4.7mm-141  
30X 4MP

6mm-218  
36X 4MP

6mm-218  
36X 8MP

5.8mm-510  
88X 2MP

5.6mm-272  
49X 8MP

Multiple Zoom Lens Options up to 272mm

500m  
ZLID™

1km  
ZLID™

2km  
ZLID™

Optional IR Illumination up to 2km

35mm  
LWIR

26mm-75mm  
LWIR

15mm-235  
MWIR

18mm-260  
MWIRHD

Optional Thermal up to 260mm Zoom



2-Axis Gyro Stabilization



Optional LRF



Waterproof with Military Connectors



View the Neptune on our website:

# THE NEPTUNE'S Visible/NIR HD Zoom Camera



## VIS/NIR Optical Camera

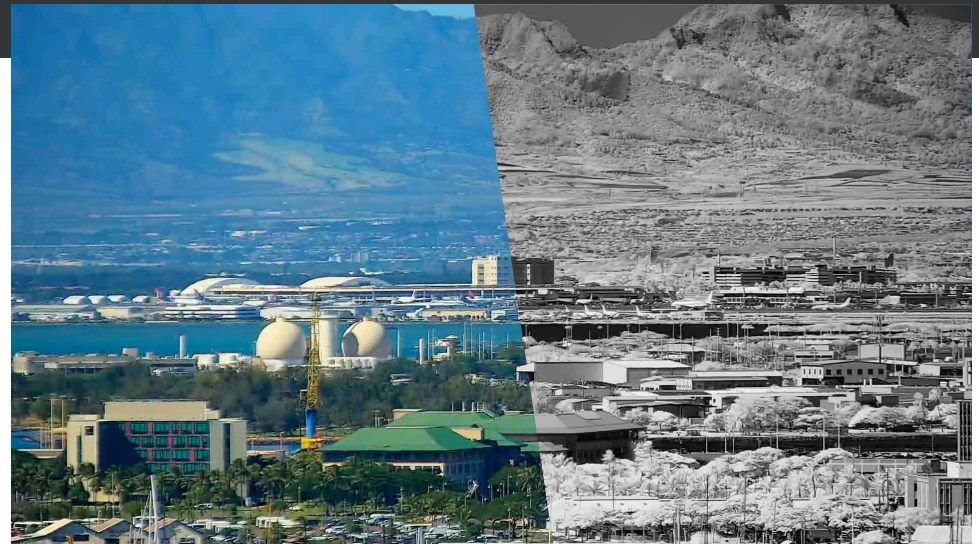
Infiniti's VIS/NIR zoom cameras utilize high-end CMOS sensors to offer excellent spectral sensitivity in the visible and near-infrared wavelengths of light to provide high-quality images optimized for long-range surveillance. They are designed to provide industry-leading performance and quality, with image resolutions ranging from 2MP (1080p HD) to 8MP (4K UHD).



## Continuous Zoom Lens Options

The Neptune's precision engineered IR-corrected continuous zoom lens options offer a range of focal lengths from 20X up to 88X optical zoom and integrated rapid autofocus to allow for long-range surveillance of targets without operator intervention or wide angle situational awareness.

*Neptune shown here with optional vibration mount.*



**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; it is available on many of our visible camera modules.



# THE NEPTUNE'S ZLID™ & Thermal Technologies



ZLID Image



Thermal Image

## 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 ranges, a laser is needed. 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 Neptune can also be customized with white light or military grade 940nm "stealth" ZLID illumination that eliminates the red glow typically present with IR illumination, for covert surveillance and reconnaissance.

## See Further with Thermal

An optional thermal imager lets you see further than any other night vision technology. Thermal imaging uses heat to see objects, and since humans, animals, and vehicles are hot in contrast to most backgrounds, they become much easier to spot in a scene. Thermal images are also unaffected by bright light and have the ability to see through atmospheric obstructions such as smoke, dust, and light fog. This makes it an ideal technology for many applications, including surveillance and security, search and rescue, fire, marine and land navigation, wide area situational assessment and much more.

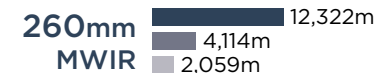
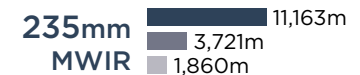
### 12µm VOx Thermal Imager

The Neptune's LWIR sensor options use a cutting-edge 12µm VOx uncooled sensor, giving the camera a narrower field of view without changing the lens. The smaller 12µm pixel pitch achieves a 40% further range than 17µm sensors or 200% further range than older 25µm sensors. The no-maintenance VOx design is self healing and resistant to solar damage.

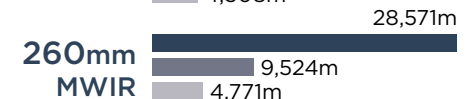
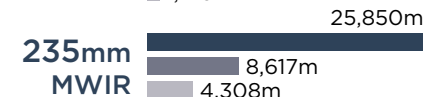
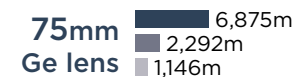
### 260mm HD Cooled Thermal

The Neptune's longest range thermal option is a 10µm X-Hot HD cooled thermal imager with a 18-260mm 14X zoom lens. The smaller 10µm pixel pitch boasts 50% further range than 15µm sensors, making the 260mm lens equivalent to a 390mm lens with detection distances of up to 28km and a 39°-2.8° Horizontal FOV.

### 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](http://www.infinitioptics.com/dri)

# Visible Camera Options

		8M-49X	88X	8M-36X	4M-49X	4M-36X	4M-30X	8M-20X	36X
Simulated FOV @ 1km									
Pixels Per Meter @ 1km		136ppm	128ppm	109ppm	93ppm	75ppm	72ppm	66ppm	58ppm
DORI	D: 25ppm	5,440m Detection	5,100m Detection	4,360m Detection	3,721m Detection	2,982m Detection	2,873m Detection	2,640m Detection	2,325m Detection
	O: 62ppm	2,194m Observation	2,056m Observation	1,758m Observation	1,500m Observation	1,202m Observation	1,158m Observation	1,065m Observation	938m Observation
	R: 125ppm	1,088m Recognition	1,020m Recognition	872m Recognition	744m Recognition	596m Recognition	575m Recognition	528m Recognition	465m Recognition
	I: 250ppm	544m Identification	510m Identification	436m Identification	372m Identification	298m Identification	287m Identification	264m Identification	233m Identification
Output Resolution		4K @ 30fps (3840x2160)	2MP/1080p @ 30fps (1920x1080)	8MP/4K @ 30fps (3840x2160)	4MP @ 30fps (2688x1520)	4MP @ 60fps (2688x1520)	4MP @ 30fps (2688x1520)	8MP/4K @ 30fps (3840x2160)	2MP/1080p @ 60fps (1920x1080)
Image Sensor		8.4 Megapixel 1/1.8" 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	4.5 Megapixel 1/1.7" W CMOS	4.1 Megapixel 1/2.9" CMOS	8.4 Megapixel 1/1.8" W CMOS	2.1 Megapixel 1/2" W CMOS
Lens*	Focal Length	5.6-272mm	5.8-510mm	6-218mm	5.6-272mm	6-218mm	4.7-141mm	6.6-132mm	6-218mm
	Optical Zoom	49X Optical Zoom + 16X Digital	88X Optical Zoom + 16X Digital	36X Optical Zoom + 16X Digital	49X Optical Zoom + 16X Digital	36X Optical Zoom + 16X Digital	30X Optical Zoom + 16X Digital	20X Optical Zoom + 16X Digital	36X Optical Zoom + 16X Digital
	Angle of View	75°-1.62° Horizontal	65°-0.86° Horizontal	65.2°-2° Horizontal	76.3°-1.7° Horizontal	66.4°-2.1° Horizontal	67.9°-2.14° Horizontal	62.5°-3.3° Horizontal	61.9°-1.89° Horizontal
	Focus	Auto / Manual	Auto / Manual	Auto/Manual	Auto / Manual	Auto/Manual	Auto/Manual	Auto/Manual/ Semi-Auto	Auto/Manual
Minimum Illumination		Color: 0.05 Lux, B&W: 0.005 Lux @ f/1.4	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	Color: 0.005 Lux, B&W: 0.0005 Lux @ f/1.5	Color: 0.005 Lux, B&W: 0.0005 Lux @ f/1.5	Color: 0.005 Lux @ f/1.5; B&W: 0.01 Lux @ f/1.5	Color: 0.001 Lux, B&W: 0.0001 Lux @ f/1.5
Optical Fog Filter (NIR)		Yes	Yes	Yes	Yes	Yes	No	No	Yes
Heatwave Mitigation		No	Yes	No	No	No	No	Optional	No
NDAA Compliant		Yes	Optional	Yes	No	Yes	Yes	Yes	Optional
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, 2D/3D DNR, BLC, HLC, Digital Defog							
Dynamic Range		WDR	WDR	WDR	100dB WDR	WDR	WDR	WDR	100dB WDR
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

	150m IR	150m White	500m ZLID		750m ZLID		1000m ZLID		1500m ZLID		2000m ZLID	
Illumination Distance	150m	150m	500m		750m		1000m		1500m		2000m	
Wavelength	808nm	White Light	850nm	940nm	808nm	940nm	808nm	940nm	808nm	940nm	808nm	940nm
NOHD	0m (eye safe at any distance)		8.5m	6.9m	13m	9.6m	50m	36.6m	56.4m	45.2m	69m	51m

# Thermal Camera Options

## Uncooled Thermal Camera Options

	19mm Fixed	25mm Fixed	35mm Fixed	55mm Fixed	75mm Fixed	26-75mm Zoom	20-105mm Zoom														
Image Sensor	Uncooled Vanadium Oxide (VOx) Microbolometer, 30Hz or 9Hz upon request																				
Resolution	640x512 pixels (384x288 or 1280x1024 pixels optional)																				
Pixel Pitch	12µm (Over 200% further range than 25µm sensors, 40% further range than 17µm sensors)																				
Lens	19mm	25mm	35mm	55mm	75mm	26-75mm Zoom	20-105mm f/1.6														
Focus	Athermalized	Athermalized	Athermalized	Motorized Focus	Motorized Focus	Motorized Autofocus	Motorized Autofocus														
Field of View	640x512	22.9° Horizontal FOV	17.5° Horizontal FOV	12.5° Horizontal FOV	8.0° Horizontal FOV	5.9° Horizontal FOV	16.8°-5.9° Horizontal FOV	21.7-4.19° Horizontal FOV													
	1280x1024	44° Horizontal FOV	34.2° Horizontal FOV	24.8° Horizontal FOV	15.9° Horizontal FOV	11.7° Horizontal FOV	32.9-11.7° Horizontal FOV	42.0-8.37° Horizontal FOV													
Human DRI Ratings*	752m	251m	125m	990m	330m	165m	1.3km	462m	231m	2.6km	871m	435m	2.9km	990m	495m	2.9km	990m	495m	4.1km	1.38km	693m
Vehicle DRI Ratings*	1.7km	581m	290m	2.3km	764m	382m	3.2km	1.0km	535m	6.0km	2.0km	1.0km	6.8km	2.3km	1.1km	6.8km	2.3km	1.1km	9.6km	3.2km	1.6km
Image Optimizations	DICE (Dynamic Image Contrast Enhancement), BPR, NUC, & AGC user configurable via SDK, GUI																				
Digital Zoom	2X & 4X dynamic zoom/pan with range switching																				
Spectral Range	7,000-14,000nm (LWIR)																				
Thermal Sensitivity	20-30mK																				
Cooler Lifetime	No Cooler (maintenance free)																				
Image Display Modes	White Hot, other color palettes available upon request																				

## Cooled Thermal Camera Options

	15-120mm Zoom (-120CTZ)	25-180mm Zoom (-180CTZ)	15-235mm Zoom (-235CTZ)	18-260mm Zoom (-260CTZ-HD)								
Image Sensor	High Sensitivity Cooled X-Hot or MCT Sensor, 30Hz											
Resolution	640x480 or 640x512 pixels			1280x1024 pixels								
Pixel Pitch	10µm (50% further range than 15µm sensors)											
Lens	15-120mm f/3.6 Motorized Zoom	25-180mm f/3.6 Motorized Zoom	15-235mm f/3.6 Motorized Zoom	18-260mm f/4.0 Motorized Zoom								
Focus	Motorized Autofocus											
Field of View	24.1-3.06° Horizontal FOV	14.6-2.04° Horizontal FOV	24.1-1.56° Horizontal FOV	39.1-2.82° Horizontal FOV								
Pixels Per Meter @ 1km	12ppm	18ppm	23.5ppm	26ppm								
Human DRI Ratings*	5.7km	1.9km	950m	8.5km	2.8km	1.4km	11.1km	3.7km	1.8km	12.3km	4.1km	2.0km
Vehicle DRI Ratings*	13.2km	4.4km	2.2km	19.8km	6.6km	3.3km	25.8km	8.6km	4.3km	28.6km	9.5km	4.77km
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 (@23°C)	35,000 Hour Rated MTBF			20,000+ Hour Rated MTBF								

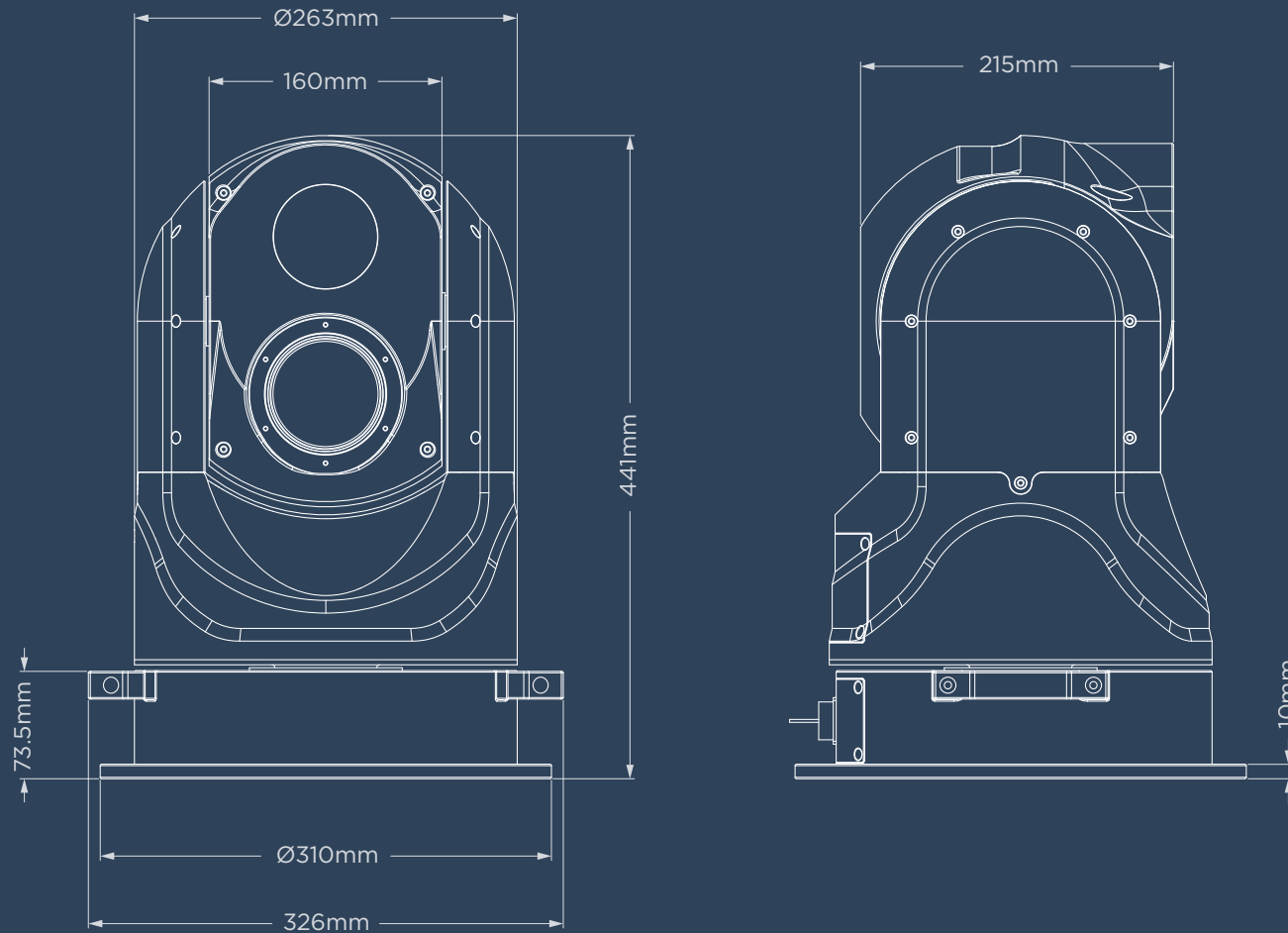
\* **D R I** DRI detection ratings are based on industry-wide standards (Johnson's Criteria) that can be misleading if not properly understood. For more information, please see our whitepaper about understanding DRI measurements at: [www.infinitioptics.com/dri](http://www.infinitioptics.com/dri)

# Additional Specifications

Optional LRF (Laser Rangefinder)**	LRF4	LRF7	LRF20	LRF21	LRF25	LRF30
Extended Range	4.2km	7.1km	20km	21km	25km	30km
Range to NATO Vehicle (2.3 × 2.3m)**	3.5km	6km	8km	10km	12km	18km
Precision**	0.1-1.5m		0.2-2.5m			
<b>Pan/Tilt Mechanical</b>						
Pan Angle & Speed	Endless 360° Continuous Rotation, 00.1°/s to 97°/s, 0.01° minimum increment					
Tilt Angle & Speed	-30° to +90°, 0.1°/s to 80°/s, 0.01° minimum increment					
Proportional Pan/Tilt	Auto adjusts pan/tilt speed based on zoom level					
Gyro Stabilization	2-axis, <0.2° RMS					
<b>Physical</b>						
Construction	High Strength Aluminum Alloy					
Weight	17-23kg (37-51bs), depending on configuration					
Wiper	Optional (must be specified in initial order)					
<b>Environmental</b>						
Operational Temperature	-30°C to +60°C, <90% Relative Humidity					
Environmental	IP67 Weatherproof Housing					
<b>Electrical</b>						
Input Voltage	48VDC (24VDC optional)					
Power Consumption	< 100W (will change depending on configuration)					

Brochure specifications subject to change. \*\*See our full LRF brochure for more information.

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**Dimensions**



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# Additional Images



*Examples of Neptune orders with custom RAL paint color and optional wiper (both must be specified at time of order).*

[WWW.INFINITIOPTICS.COM](http://WWW.INFINITIOPTICS.COM)

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