

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 305mm 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 35km*
- › 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

20mm-
105

LWIR

15mm-
235

MWIR

18mm-
230

MWIRHD

16mm-
305

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

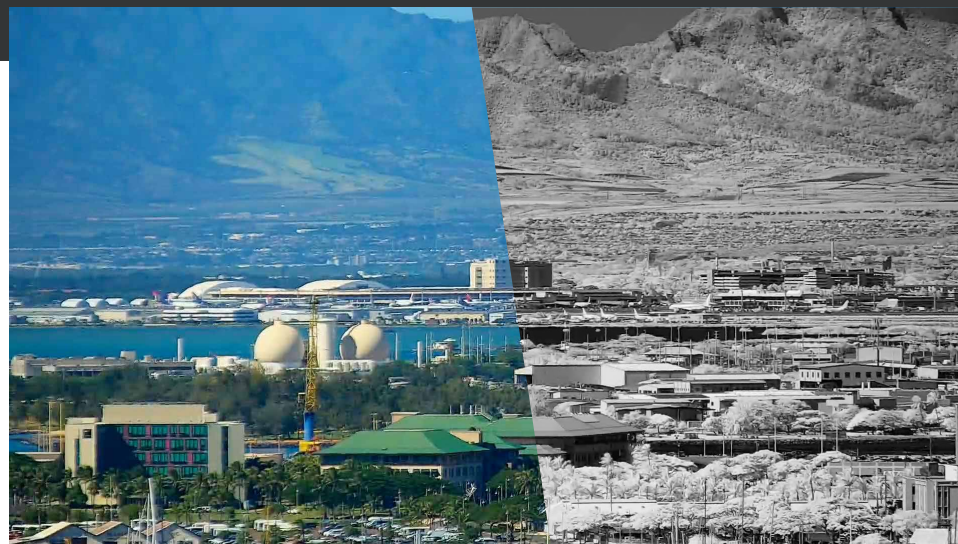
Infiniti's VIS/NIR zoom cameras utilize high-end CMOS sensors to offer excellent spectral sensitivity in the visible and near-infrared wavelengths of light to provide high-quality images optimized for long-range surveillance. They are designed to provide industry-leading performance and quality, with 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.

10μm HD Cooled Thermal

The Neptune's HD cooled thermal options use a 10μm X-Hot HD cooled thermal imager with a 18-230mm or 16-305mm zoom lens. The smaller 10μm pixel pitch boasts 50% further range than 15μm sensors, making the 305mm lens equivalent to a 455mm lens with detection distances of up to 35km*.

Human DRI:

75mm LWIR
■ 2,965m
■ 988m
■ 494m

105mm LWIR
■ 4,150m
■ 1,383m
■ 692m

305mm MWIR
■ 14,467m
■ 4,822m
■ 2,411m

Vehicle DRI:

75mm LWIR
■ 7,187m
■ 2,396m
■ 1,198m

105mm LWIR
■ 10,062m
■ 3,354m
■ 1,677m

305mm MWIR
■ 35,075m
■ 11,692m
■ 5,846m

■ **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

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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 (3840×2160)	2MP/1080p @ 30fps (1920×1080)	8MP/4K @ 30fps (3840×2160)	4MP @ 30fps (2688×1520)	4MP @ 60fps (2688×1520)	4MP @ 30fps (2688×1520)	8MP/4K @ 30fps (3840×2160)	2MP/1080p @ 60fps (1920×1080)
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

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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		640×512 pixels (384×288 or 1280×1024 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	640×512	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		
	1280×1024	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*		751m	250m	125m	988m	329m	165m	1.3 km	461m	231m	2.1 km	725m	362m	2.9 km	988m	494m	2.9 km	988m	494m	4.15 km	1.38 km	692 m
Vehicle DRI Ratings*		1.8 km	607m	303m	2.4 km	799m	399m	3.3 km	1.1 km	559m	5.2 km	1.7 km	878m	7.1 km	2.4 km	1.2 km	7.1 km	2.4 km	1.2 km	10.0 km	3.35 km	1.67 km
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 (-120CTZ)			25-180mm (-180CTZ)			15-235mm (-235CTZ)			18-230mm (-230CTZ-HD)			16-305mm (-305CTZ-HD)		
Image Sensor	High Sensitivity Cooled X-Hot Detector, 30Hz												High Sensitivity Cooled InSb or X-Hot Detector, 30Hz		
Resolution	640×480 or 640×512 pixels												1280×1024 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			18-230mm f/4.0 Motorized Zoom			16-305mm f/4.0 Motorized Zoom		
Focus	Motorized Autofocus			Motorized Autofocus			Motorized Autofocus			Motorized Autofocus			Motorized Autofocus		
Field of View	24.1-3.06° Horizontal FOV			14.6-2.04° Horizontal FOV			24.1-1.56° Horizontal FOV			39.1-3.19° Horizontal FOV			43.6-2.4° Horizontal FOV		
Pixels Per Meter @ 1km	12ppm			18ppm			23.5ppm			23ppm			30ppm		
Human DRI Ratings*	5.7 km	1.9 km	949 m	8.5 km	2.8 km	1.4 km	11.1 km	3.7 km	1.8 km	10.9 km	3.6 km	1.8 km	14.4 km	4.8 km	2.4 km
Vehicle DRI Ratings*	13.8 km	4.6 km	2.3 km	20.7 km	6.9 km	3.4 km	27.0 km	9.0 km	4.5 km	26.4 km	8.8 km	4.4 km	35.0 km	11.7 km	5.8 km
Special Features	Digital Image Contrast Enhancement (DICE)									DICE, Thermally Compensated Optics (TCO)					
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) / 30,000 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

Additional Specifications

Optional LRF	LRF4	LRF7	LRF20	LRF21	LRF25	LRF30
Extended Range	4.2km	7.1km	20km	21km	25km	30km
Range to NATO Vehicle*	3.5km	6km	8km	10km	12km	18km
Range to Human*	2km	3.8km	4km	5km	6km	9km
Wavelength	1530nm (±5)					
Precision**	0.1-1.5m		0.2-2.5m			

Some options may not be available depending on configuration. *Range performance is dependent on distance and target reflectivity. Calculated using NATO Vehicle size of 2.3×2.3m, Human size of 0.5×1.8m, with target visibility 25km, maximum measuring time, target reflectivity 30%, detection probability 90%. Depending on received signal level. Up to three (3) targets: First, Second and Third. See our LRF brochure for more information **LRF accuracy is based on ideal conditions. See our LRF brochure for more information.

Pan/Tilt Mechanical

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

Physical

Construction	High Strength Aluminum Alloy
Weight	17-23kg (37-51bs), depending on configuration
Wiper	Optional (must be specified in initial order)

Environmental

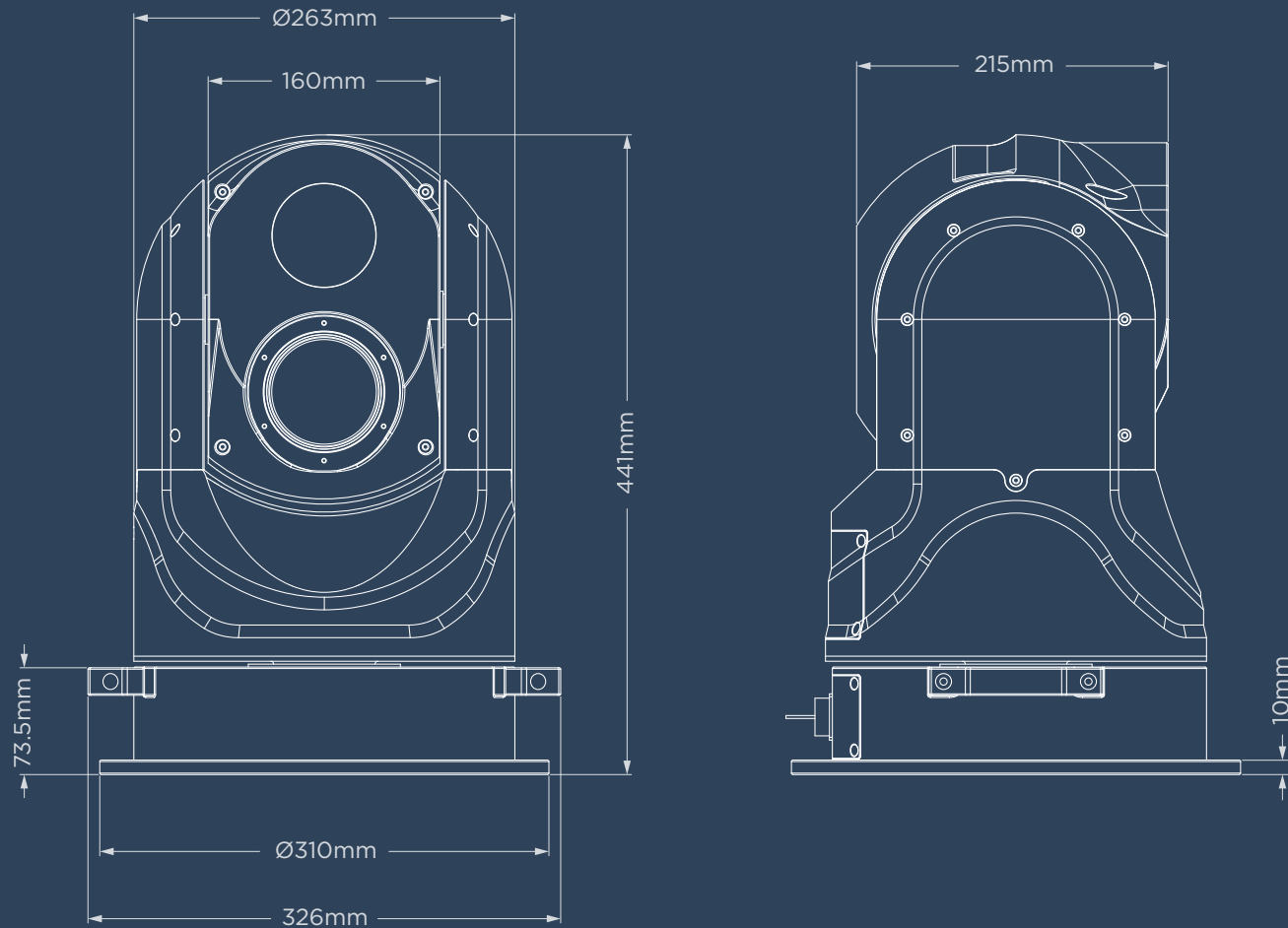
Operational Temperature	-30°C to +60°C, <90% Relative Humidity
Environmental	IP67 Weatherproof Housing

Electrical

Input Voltage	48VDC (24VDC optional)
Power Consumption	< 100W (will change depending on configuration)

Brochure specifications subject to change.

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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).

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