

# NXPTZR SERIES2

NEW GENERATION OF RADIOMETRIC THERMAL PTZ CAMERAS FOR MARITIME AND INDUSTRIAL APPLICATIONS



IP66/IP67  
IP68/IP69

TYPE  
4X



- Thermal camera with radiometric functions
- Entirely made from AISI 316L electropolished stainless steel
- Maximum resistance in corrosive environments
- Junction box with integrated SFP slot to allow fiber optic connection

ONVIF® | Q S T



## MAXIMUM RESISTANCE IN THE MOST CRITICAL ENVIRONMENTS

The new generation NXPTZR SERIES2 with thermal vision has a high level of protection in preventative security applications in highly corrosive environments, such as industrial and marine offshore/onshore areas where events may need to be detected at great distances and in critical conditions such as total darkness or low visibility.

The NXPTZR SERIES2 is resistant to rust and corrosion and does not require maintenance thanks to the absolute precision of the construction process and the solid AISI 316L stainless steel construction with micro-shot and electropolished surfaces.

## CERTIFIED QUALITY

A huge number of tests of all types are carried out on products so that they comply with the strict requirements of the quality standards. The results leave no doubt about the exceptional robustness, undeniable reliability and unrivalled performance of Videotec's products.

IP66/IP67/IP68 certification guarantees complete protection against weather and water immersion. In addition, the IP69 certification means the product can be cleaned with high pressure and high temperature water.

NXPTZR SERIES2 operates at maximum efficiency between -40°C and +65°C.

The NXPTZR series products are Lloyd's Register Type Approval System Test Specification Number 1 certified and therefore can be used in Marine and Offshore applications for environmental categories ENV1, ENV2, ENV3 and ENV5 (eg. passenger ships, open-air decks, closed spaces and technical areas that may be subject to heat generated by other equipment, docking procedures).

## THERMAL CAMERA WITH RADIOMETRY FUNCTIONS

The integrated LWIR thermal camera can identify targets moving in the dark or at distance with extreme accuracy. As well as this, it has radiometric functions that allow precise temperature detection based on the image's 4 main pixels.

The device can be configured so that it independently generates a Radiometric Alarm and/or Warning via ONVIF Events on the VMS. For example, an event can be sent when: the temperature is below a settable value; the temperature is above a settable value; the temperature is between two settable values; the temperature is outside two settable values. This function is particularly useful when monitoring industrial processes.

In camera models with advanced radiometric functions, up to 5 ROIs (Regions of Interest) can be set for each preset position. The defined ROIs are scaled proportionally to the digital zoom. So, when zooming in the ROI is increased and when zooming out the ROI is decreased. PTZ ROIs are set to preset PAN and TILT positions (not zoom) so they then change in relation to the zoom. In camera models with advanced radiometric functions, thermal cameras offer three temperatures: minimum, average and maximum. Radiometric rules can be linked to exceeding one of these three temperature thresholds.

## INSTALLATION FLEXIBILITY

Compared to the previous generation, the SERIES2 range cameras have the possibility of easily connecting the PTZ using fibre optic thanks to the slot of the SFP module installed directly at the bottom of the unit and on installation of the specific accessory NXPTZSFP which provides a cable input on the product dedicated to fibre optic.

There are numerous accessories available including a washing system, and wall, parapet, corner and pole supports that mean installation is extremely flexible.

As well as this, the compact design means it can be installed in the tightest spaces, while the unit's reduced weight makes assembly simple.

## GEOMOVE FUNCTION

The new NXPTZR SERIES2 PTZ video cameras can be geo-localized on the maps to support the GeoMove features..

The GeoMove feature is very useful in perimeter surveillance systems and for port traffic control because it lets you capture any target through geographic coordinates, even in critical visibility or offshore conditions.

The GeoMove feature can typically be activated using a camera with Videotec Analytics on board, or through third-party software such as Video Management Software (VMS), which provide the geographic coordinates of a target and use them to guide the Videotec PTZ cameras to capture the target. The coordinates can also be sent in the same way using Vessel Tracking Services (VTS - navigation control services) or using radar control systems.

## 100% MADE IN VIDEOTEC

SERIES2 offers an integrated certified all-in-one professional solution. Since everything from mechanics to electronics, positioning and networking, software and firmware are all proudly developed end-to-end by Videotec's internal teams, as is the case for all the company's products, these PTZs come with the Videotec guarantee of being reliable, cyber-safe, future-proof and easily integrated with third-party products.

At the heart of Videotec's product development is the concept of cyber-sustainability. To help customers protect their video surveillance systems and keep them secure, Videotec provides constant updates, training and support throughout the lifecycle of its products, regardless of how old the device is or whether it is still for sale.

Thanks to digitally signed firmware, password-restricted access, access control, centralised management of certificates and compliance with ONVIF Security Service specifications, Videotec guarantees that all its IP products will have the highest level of security during data transfer and device access.

In the SERIES2, Videotec has expanded the list of compatible software, but has not changed the tested and proven software functions and protocols already found in the NXPTZ series.

## TECHNICAL DATA

### GENERAL

AISI 316L stainless steel construction

External surfaces micro-shot peened and electro-polished

Dynamic positioning control system

Maximum number of presets: 250

Radiometric analysis:

- on the 4 central pixels, if the thermal camera has radiometric functions
- definition of a specific area, if the thermal camera has advanced radiometric functions

Radiometric alarm activation: If the temperature is over the threshold set, under the threshold set, between two thresholds set or outside the two thresholds set.

Actions on alarm: Activation of digital output, preset tour recall, home position recall, preset position recall and http get request.

### MECHANICAL

Zero backlash

Pre-wired multipolar cable (3m (9.8ft), different lengths are available on request)

Horizontal rotation: 360°, continuous rotation

Vertical rotation: from -90° up to +90°

Horizontal speed (variable): from 0.1°/s up to 100°/s

Tilt speed (variable): from 0.1°/s up to 100°/s

Accuracy of preset positions: 0.02°

Unit weight: 22kg (44lb)

### HOUSING'S WINDOW

Germanium window (9mm, 13mm, 19mm, 25mm, 35mm lenses)

- Thick: 1.5mm (0.06in)
- External treatment: antiscratch (Hard Carbon Coating - DLC), antireflection
- Internal treatment: antireflection
- Spectral range: from 7.5µm up to 14µm
- Medium transmittance (from 7.5µm up to 11.5µm): 91.2%
- Medium transmittance (from 11.5µm up to 14µm): 80.9%

Germanium window (50mm lens)

- Thick: 2mm (0.08in)
- External treatment: antiscratch (Hard Carbon Coating - DLC), antireflection
- Internal treatment: antireflection
- Spectral range: from 7.5µm up to 14µm
- Medium transmittance (from 7.5µm up to 11.5µm): 90%
- Medium transmittance (from 11.5µm up to 14µm): 77%

### ELECTRICAL

Supply voltage/Current consumption:

- 230Vac ±10%, 0.5A max, 50/60Hz
- 120Vac ±10%, 1A max, 50/60Hz
- 24Vac ±10%, 5A max, 50/60Hz

Power consumption:

- 120W max
- 30W, P&T static, heating switched off

### NETWORK

RJ45 port

- Ethernet connection: 10BASE-T/100BASE-T

Slot SFP (SMALL FORM FACTOR PLUGGABLE)

- Ethernet connection: 100BASE-FX
- Supply voltage: 3.3V
- Standard: MSA compliant

The SFP module (not supplied by VIDEOTEC) must meet the following requirements:

- Laser: Class 1, complies with EN60825-1
- Certification: UL/IEC 60950-1 or UL/IEC 62368-1

### CYBERSECURITY

Digitally signed firmware

Password restricted access (HTTP digest)

Support of various user access levels

Control of accesses IEEE 802.1X

HTTPS cryptography using TLS1.0, TLS1.1, TLS1.2 and TLS1.3

Centralised certificate management

Complies with ONVIF Security Service specifications

### VIDEO

Video encoder

- Communication protocol: ONVIF, Profile Q, Profile S and Profile T, ONVIF Thermal Service
- Device configuration: TCP/IPv4-IPv6, UDP/IPv4-IPv6, HTTP, HTTPS, NTP, DHCP, WSDISCOVERY, DSCP, IGMP (Multicast), SOAP, DNS
- Streaming: RTSP, RTCP, RTP/IPv4-IPv6, HTTP, Multicast
- Video compression: H.264/AVC, MJPEG, MPEG4, snapshot JPEG
- 3 independent video streams
- Image resolution: from 160x120pixel up to 720x480pixel in 5 steps
- Selectable frame rate from 1 to 30 images per second (fps)
- Web Server
- Directional OSD (maximum 4 settable areas)
- Motion Detection
- QoS: Differentiated DSCPs for streaming and device management
- SNMP and NTCIP protocols

## I/O INTERFACE

I/O alarm board:

- Alarm inputs: 1
- Relay outputs: 1+1 (1 relay reserved for washer pump and one configurable, 1A, 30Vac/60Vdc max)

Input for remote reset: 1

## CAMERAS

Please refer to the relevant table.

## ENVIRONMENT

For indoors and outdoors installation

Operating temperature

- Continuous working: from -40°C (-40°F) up to +65°C (149°F)
- Temperature test complies with NEMA-TS 2-2003 (R2008) par. 2.1.5.1, test profile fig. 2-1 (from -34°C (-29.2°F) to +74°C (165.2°F))
- De-icing function intervention (cold start): from -40°C (-40°F) up to -10°C (14°F)

Relative humidity: from 5% up to 95%

## CERTIFICATIONS

Electrical safety (CE): EN60950-1, IEC60950-1, EN62368-1, IEC62368-1

Electromagnetic compatibility (CE): EN61000-6-4, EN61000-3-2, EN61000-3-3, EN50130-4, EN55032 (Class A)

Outdoor installation (CE): EN60950-22, IEC60950-22

IP protection degree (EN/IEC60529): IP66, IP67, IP68, IP69

UL certification (UL60950-1, CAN/CSA C22.2 No. 60950-1-07, UL62368-1, CAN/CSA C22.2 No. 62368-1-14): cULus Listed (only for 24Vac version)

Electromagnetic compatibility (North America): FCC part 15 (Class A), ICES-003 (Class A)

Level of protection Type (UL50E): 4X (only for 24Vac version)

EAC certification

RoHS (CE): EN IEC 63000

Waste Electrical and Electronic Equipment (WEEE), Directive 2012/19/EU

NDAA-compliant

## CERTIFICATIONS - MARINE APPLICATIONS

Lloyd's Register Marine Type Approval certification (the 24Vac and 120Vac versions require a filter accessory FM1010):

- Test Specification Number 1 (ENV1, ENV2, ENV3, ENV5)

Electromagnetic compatibility: EN60945

Salty fog resistance: EN60068-2-52

Tested at 70°C (158°F) for 16 hours in compliance with EN60068-2-2

## ACCESSORIES

COMB100A	Communication box in polycarbonate, IN from 220Vac up to 230Vac, OUT 24Vac
COMB200A	Communication box in polycarbonate, IN 24Vac, OUT 24Vac
COMB300A	Communication box in polycarbonate, IN from 120Vac up to 127Vac, OUT 24Vac
FM1010	EMC filter for Marine certification
NXPTZSFP	Adaptor for connection of fiber optics
WASPTOV5L5M00	Water tank 5l (1.3gal), pump with delivery up to 5m (16ft), IN 230Vac-24Vac-120Vac
WASPTOV23L5M00	Water tank 23l (6gal), pump with delivery up to 5m (16ft), IN 230Vac-24Vac-120Vac
WASPTOV23L11M00	Water tank 23l (6gal), pump with delivery up to 11m (36ft) with water floating, IN 230Vac-24Vac-120Vac
WASPT1V23L30M00	Water tank 23l (6gal), pump with delivery up to 30m (98ft) with water floating, IN 230Vac
WASPT3V23L30M00	Water tank 23l (6gal), pump with delivery up to 30m (98ft) with water floating, IN 120Vac
WASN1V10L20M00	Tank 10l (2.6gal) with integrated manual pump, controlled by solenoid valve, IN 230Vac, delivery head up to 30m (98ft), with 20m (66ft) antistatic water delivery pipe
WASN2V10L20M00	Tank 10l (2.6gal) with integrated manual pump, controlled by solenoid valve, IN 24Vac, delivery head up to 30m (98ft), with 20m (66ft) antistatic water delivery pipe
WASN3V10L20M00	Tank 10l (2.6gal) with integrated manual pump, controlled by solenoid valve, IN 120Vac, delivery head up to 30m (98ft), with 20m (66ft) antistatic water delivery pipe
CMSN2200	Unarmoured black cable, available by the metre (minimum order 10m (32.8ft)): 2 Ethernet cables, 3 power supply wires, 2 coaxial video cable, 15 wires for alarms, relays and telemetry
CMSB2200	Unarmoured blue cable, available by the metre (minimum order 10m (32.8ft)): 2 Ethernet cables, 3 power supply wires, 2 coaxial video cable, 15 wires for alarms, relays and telemetry
CMAN1200	Armoured black cable, available by the metre (minimum order 10m (32.8ft)): 1 Ethernet cable, 3 power supply wires, 1 coaxial video cable, 7 wires for alarms, relays and telemetry

For further details on cable codes please refer to the relevant datasheet.

## BRACKETS AND ADAPTORS

NXPTZWB	AISI 316L stainless steel wall bracket
NXPTZTW	AISI 316L stainless steel parapet or ceiling mounting bracket
NXPTZCOL	AISI 316L stainless steel pole adapter module
NXPTZCW	AISI 316L stainless steel corner adapter module

## PACKAGE

Model Number	Weight	Dimensions (WxHxL)	Master carton
NXPTZR	26.5kg (58lb)	54x31x49cm (21x12x19in)	-

THERMAL CAMERAS (RESOLUTION 336X256)						
	Lens 9mm	Lens 13mm	Lens 19mm	Lens 25mm	Lens 35mm	Lens 50mm
Image Sensor	Uncooled VOx microbolometer	Uncooled VOx microbolometer	Uncooled VOx microbolometer	Uncooled VOx microbolometer	Uncooled VOx microbolometer	Uncooled VOx microbolometer
Interpolated resolution	720x480	720x480	720x480	720x480	720x480	720x480
Pixel dimensions	17µm	17µm	17µm	17µm	17µm	17µm
Spectral response - long wave infrared (LWIR)	from 7.5µm to 13.5µm	from 7.5µm to 13.5µm	from 7.5µm to 13.5µm	from 7.5µm to 13.5µm	from 7.5µm to 13.5µm	from 7.5µm to 13.5µm
Internal shutter (only for sensor compensation)	Video stop < 1s	Video stop < 1s	Video stop < 1s	Video stop < 1s	Video stop < 1s	Video stop < 1s
Digital Detail Enhancement (DDE)	√	√	√	√	√	√
Digital Zoom	2x, 4x	2x, 4x	2x, 4x	2x, 4x	2x, 4x	2x, 4x
Image updating frequency	7.5fps	7.5fps	7.5fps	7.5fps	7.5fps	7.5fps
Image updating high frequency	30fps	30fps	30fps	30fps	30fps	30fps
Scene range (High Gain)	-40°C ÷ +160°C (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F)
Scene range (Low Gain)	-40°C ÷ +550°C (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F)
Horizontal field of view (HFOV)	35°	25°	17°	13°	9.3°	6.5°
Vertical field of view (VFOV)	27°	19°	13°	10°	7.1°	5°
F-number	F/1.25	F/1.25	F/1.25	F/1.1	F/1.2	F/1.2
Thermal sensitivity (NETD), Thermal camera with radiometric functions	< 50mK at f/1.0	< 50mK at f/1.0	< 50mK at f/1.0	< 50mK at f/1.0	< 50mK at f/1.0	< 50mK at f/1.0
Thermal sensitivity (NETD), Thermal camera with advanced radiometric functions	< 30mK at f/1.0	< 30mK at f/1.0	< 30mK at f/1.0	< 30mK at f/1.0	< 30mK at f/1.0	< 30mK at f/1.0
Person (detection / recognition / identification)	285m / 71m / 36m (935ft / 233ft / 118ft)	440m / 112m / 56m (1443ft / 236ft / 183ft)	640m / 160m / 80m (2099ft / 524ft / 262ft)	930m / 230m / 116m (3051ft / 754ft / 380ft)	1280m / 320m / 160m (4199ft / 1050ft / 525ft)	1700m / 430m / 215m (5577ft / 1410ft / 715ft)
Car (detection / recognition / identification)	880m / 220m / 108m (2887ft / 722ft / 354ft)	1340m / 340m / 170m (4396ft / 1115ft / 557ft)	1950m / 500m / 250m (6397ft / 1640ft / 820ft)	2800m / 710m / 360m (9186ft / 2329ft / 1181ft)	3850m / 950m / 295m (12631ft / 3116ft / 967ft)	5100m / 1320m / 660m (16732ft / 4330ft / 2165ft)

Radiometric analysis does not affect camera performance.

THERMAL CAMERAS (RESOLUTION 640X512)						
	Lens 9mm	Lens 13mm	Lens 19mm	Lens 25mm	Lens 35mm	Lens 50mm
Image Sensor	Uncooled VOx microbolometer	Uncooled VOx microbolometer	Uncooled VOx microbolometer	Uncooled VOx microbolometer	Uncooled VOx microbolometer	Uncooled VOx microbolometer
Interpolated resolution	720x480	720x480	720x480	720x480	720x480	720x480
Pixel dimensions	17µm	17µm	17µm	17µm	17µm	17µm
Spectral response - long wave infrared (LWIR)	from 7.5µm to 13.5µm	from 7.5µm to 13.5µm	from 7.5µm to 13.5µm	from 7.5µm to 13.5µm	from 7.5µm to 13.5µm	from 7.5µm to 13.5µm
Internal shutter (only for sensor compensation)	Video stop < 1s	Video stop < 1s	Video stop < 1s	Video stop < 1s	Video stop < 1s	Video stop < 1s
Digital Detail Enhancement (DDE)	√	√	√	√	√	√
Digital Zoom	2x, 4x, 8x	2x, 4x, 8x	2x, 4x, 8x	2x, 4x, 8x	2x, 4x, 8x	2x, 4x, 8x
Image updating frequency	7.5fps	7.5fps	7.5fps	7.5fps	7.5fps	7.5fps
Image updating high frequency	30fps	30fps	30fps	30fps	30fps	30fps
Scene range (High Gain)	-40°C ÷ +160°C (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F)
Scene range (Low Gain)	-40°C ÷ +550°C (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F)
Horizontal field of view (HFOV)	69°	45°	32°	25°	18°	12.4°
Vertical field of view (VFOV)	56°	37°	26°	20°	14°	9.9°
F-number	F/1.4	F/1.25	F/1.25	F/1.1	F/1.2	F/1.2
Thermal sensitivity (NETD), Thermal camera with radiometric functions	< 50mK at f/1.0	< 50mK at f/1.0	< 50mK at f/1.0	< 50mK at f/1.0	< 50mK at f/1.0	< 50mK at f/1.0
Thermal sensitivity (NETD), Thermal camera with advanced radiometric functions	< 30mK at f/1.0	< 30mK at f/1.0	< 30mK at f/1.0	< 30mK at f/1.0	< 30mK at f/1.0	< 30mK at f/1.0
Person (detection / recognition / identification)	250m / 63m / 31m (820ft / 207ft / 102ft)	390m / 95m / 47m (1280ft / 312ft / 154ft)	570m / 144m / 72m (1870 / 472 / 236ft)	820m / 210m / 104m (2690ft / 689ft / 341ft)	1140m / 280m / 142m (3740ft / 919ft / 466ft)	1500m / 380m / 190m (4921ft / 1247ft / 623ft)
Car (detection / recognition / identification)	720m / 175m / 88m (2362 / 574 / 289ft)	1080m / 275m / 140m (3543ft / 902ft / 459ft)	1550m / 400m / 200m (5085ft / 1312ft / 656ft)	2200m / 580m / 290m (7218ft / 1903ft / 951ft)	3000m / 800m / 200m (9843ft / 2625ft / 656ft)	3900m / 1060m / 540m (12795ft / 3478ft / 1772)

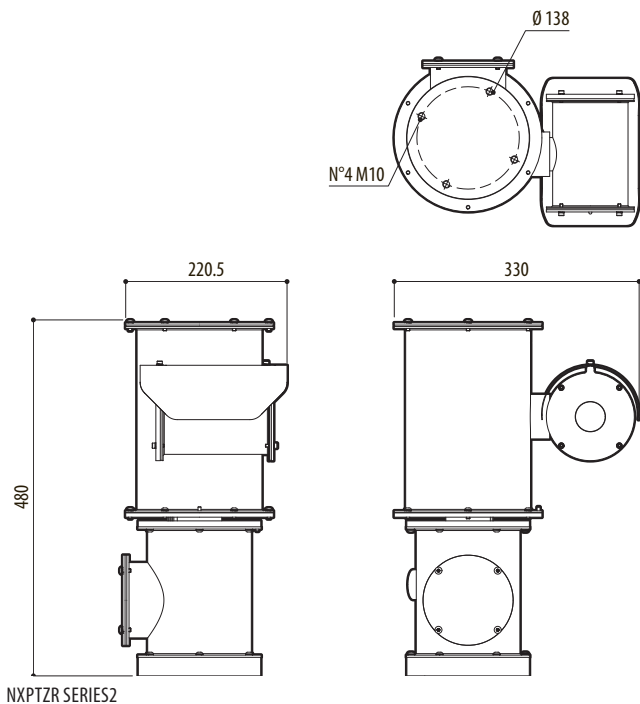
Radiometric analysis does not affect camera performance.

**NXPTZR SERIES2 - CONFIGURATION OPTIONS**

	Voltage	Thermal Camera	Options		Revision	Frequency
<b>NXPTZR</b>	<b>1</b> 230Vac	<b>Y</b> 6.5° HFOV, Thermal camera 50mm (1.97in), 336x256	<b>O</b> Thermal camera with radiometric functions	<b>OZ00</b>	<b>C</b> Complies with ONVIF, Profile Q, Profile S and Profile T	- 7.5Hz
	<b>2</b> 24Vac	<b>A</b> 9.3° HFOV, Thermal camera 35mm, 336x256	<b>R</b> Thermal camera with advanced radiometric functions		<b>J</b> Complies with ONVIF, Profile S and Profile T	<b>H</b> 30Hz
	<b>3</b> 120Vac	<b>B</b> 13° HFOV, Thermal camera 25mm, 336x256				
		<b>V</b> 17° HFOV, Thermal camera 19mm, 336x256				
		<b>F</b> 25° HFOV, Thermal camera 13mm, 336x256				
		<b>C</b> 35° HFOV, Thermal camera 9mm, 336x256				
		<b>W</b> 12.4° HFOV, Thermal camera 50mm (1.97in), 640x512				
		<b>D</b> 18° HFOV, Thermal camera 35mm, 640x512				
		<b>E</b> 25° HFOV, Thermal camera 25mm, 640x512				
		<b>U</b> 32° HFOV, Thermal camera 19mm, 640x512				
		<b>G</b> 45° HFOV, Thermal camera 13mm, 640x512				
		<b>H</b> 69° HFOV, Thermal camera 9mm, 640x512				

**TECHNICAL DRAWINGS**

The indicated measurements are expressed in millimetres.



NXPTZR SERIES2