

# MAXIMUS MVXT

HIGH PERFORMANCE EX-PROOF THERMAL CAMERA



MAXIMUS MVXT + NXWBS1



## DESCRIPTION

The explosion-proof camera MAXIMUS MVXT is perfect for efficient and preventive video surveillance and control of processes in hazardous environments where the atmosphere is potentially explosive due to the presence of inflammable gases or dust, typical of the Oil&Gas, marine or industrial sectors.

IP-based cameras are also enhanced with radiometric functions that allow temperature detection based on the 4 central pixels of the image. Versions are available on request with advanced radiometry, capable of measuring the temperature of a specific object in any point of the image by defining a specific area.

MVXT takes full advantage of all the functionalities and advantages offered by the thermal camera, including the possibility of sending an alarm and enabling immediate actions for the purpose of preventing undesired accidents or intrusions in the protected areas.

One striking advantage offered by these cameras is their extremely easy and secure "plug and play" installation, with multipolar wiring. These cameras arrive ready to use, avoiding the complex electrical connections that are typical of this type of device.

The housing is compact yet functional and is made entirely out of AISI 316L stainless steel. Its resistance to corrosion is not only guaranteed, but is also enhanced by way of polishing processes.

The extensive temperature range of certification, from -60°C to +65°C, with a sophisticated cold start system, offers the possibility of working in extreme environments.

An equally noteworthy point is that the IP66/IP68 ratings guarantee the complete protection against harsh weather and submersion in up to 5 metres of water for 2 hours. Moreover, the IP69 rating allows the device to be cleaned with high pressure water jets.

The MAXIMUS MVX 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.

## CERTIFICATIONS



## MAIN FEATURES

Certifications for use in Zones 1 and 2, IIC T5 and T6 Group (Gas) and in Zones 21 and 22, IIIC T100°C and T85°C Group (Dust)

Marine Certification: Lloyd's Register Marine Type Approval

AISI 316L stainless steel construction

External shot peened and electro-polished surfaces

Analogue or IP (ONVIF Profil Q, Profile S, Profile T, ONVIF Thermal Service) versions

Thermal cameras:

- Sensor: Uncooled VOx microbolometer
- Lenses: 9mm, 13mm, 19mm, 25mm, 35mm, 50mm, 60mm
- Resolution: 336x256 or 640x512

1 alarm input and 1 relay output

4m (13ft) / 10m (32.8ft) preinstalled armoured multipolar cable with cable gland or, alternatively, with 4m (13ft) / 10m (32.8ft) cable tail (for installation with conduit, conduit sealing fitting and conduit not included)

Power supply: 12-24Vdc/24Vac

IP66/IP67/IP68/IP69

Radiometry functions available only for IP versions

## TECHNICAL DATA

### GENERAL

AISI 316L stainless steel construction  
External shot peened and electro-polished surfaces  
Silicone O-ring seals  
Configuration via OSM

### MECHANICAL

Sunshield  
Unit weight:

- 8.5kg (18.7lb) (housing with 4m (13ft) multipolar cable shield)
- 12kg (26.5lb) (housing with 10m multipolar cable shield)

### CABLE GLANDS

Cable entry: 1 hole, 3/4", NPT  
Cable gland Ex db 3/4"NPT and 4m/10m (13ft/33ft) preinstalled multipolar armored cable or with 4m/10m (13ft/33ft) cable tail (for installation with conduit, conduit sealing fitting and conduit not included)

### HOUSING'S WINDOW

Germanium window (big grid)

- Usable diameter: 57mm (2.2in)
- Thick: 10mm (0.4in)
- 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): 87.3%
- Medium transmittance (from 11.5µm up to 14µm): 67.3%

Germanium window (small grid)

- Usable diameter: 40mm (1.6in)
- Thick: 8mm (0.3in)
- 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): 87.5%
- Medium transmittance (from 11.5µm up to 14µm): 72.1%

### ELECTRICAL

Supply voltage/Current consumption (heating switched on, Ton 15°C±3°C (59°F±5°F), Toff 22°C±3°C (72°F±5°F)):

- 24Vac ±10%, 2.2A, 50/60Hz
- 24Vdc ±5%, 2.2A
- 12Vdc ±5%, 3.5A

Armoured cable:

- external diameter = 20.00 ± 0.50mm (0.79±0.20in)
- diameter under armature = 15.20mm (0.60in)
- colour: Black RAL9005

Armoured cable composition:

- 3 x 2.5mm<sup>2</sup>
- 7 x 0.34mm<sup>2</sup>
- 4 x 2 x 0.22mm<sup>2</sup> (IP-based version, cat. 5E)
- 1 x coax 75ohm RG179 (analog version)

Cable tail composition:

- 3 x 2.5mm<sup>2</sup>, rated external diameter = 8.7mm (0.34in)
- 7 x 0.34mm<sup>2</sup>, rated external diameter = 6.4mm (0.25in)
- 4 x 2 x 0.21mm<sup>2</sup>, (IP-based version, cat. 5E), rated external diameter = 6.7mm (0.26in)
- 1 x coax 75ohm RG59 (analog version), rated external diameter = 4.9mm (0.19in)

### NETWORK

Only for the IP versions of the product:

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

Connector: RJ45

Cable length: 100m max

### CYBERSECURITY

Only for the IP versions of the product:

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

### SERIAL COMMUNICATIONS

Only for product analogue versions:

Serial interface

- RS-485 line, half-duplex
- Cable length: 1200m max
- Addressable units: 255 (configuration via OSM)

Serial communication protocol

- PANASONIC 850: 9600baud, 19200baud
- PELCO D: 2400baud, 9600baud
- MACRO: 9600baud, 38400baud

## VIDEO

Only for the IP versions of the product:

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, JPEG, MPEG4
- 3 independent video streams
- Image resolution: from 320x180pixel up to 720x480pixel in 4 steps
- Selectable frame rate from 1 to 30 images per second (fps)
- Web Server
- 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 (1A, 30Vac/60Vdc max)

Cable length: 200m (656ft) max

## ENVIRONMENT

For indoors and outdoors installation

Operating temperature:

- Cold start from -40°C (-40°F) up to +65°C (149°F)
- Running from -50°C (-58°F) up to +65°C (149°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)

RoHS (CE): EN50581

Outdoor installation (CE): EN60950-22, ICE60950-22

IP protection degree (EN/IEC60529): IP66, IP67, IP68 (2 hours, 5m (16ft)), IP69

Vibration test: EN50130-5, EN60068-2-6

UL certification (UL60950-1, CAN/CSA C22.2 No. 60950-1-07): cULus Listed

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

Level of protection Type (UL50E): 4X, 6P

RCM (Australian and New Zealand Regulatory Compliance Mark)

## CERTIFICATIONS - EXPLOSION-PROOF APPLICATIONS

ATEX (EN 60079-0+A11, EN 60079-1, EN 60079-31)

IECEx (IEC 60079-0, IEC 60079-1, IEC 60079-31)

EAC EX (TR CU 012/2011)

INMETRO (ABNT NBR IEC 60079-0 + Errata 1, ABNT NBR IEC 60079-1 + Errata 1, ABNT NBR IEC 60079-31)

ETL listed for USA (UL 60079-0, UL 60079-1, UL 60079-31), cable tail versions

ETL listed for Canada (CAN/CSA-C22.2 NO. 60079-0, CAN/CSA-C22.2 NO. 60079-1, CAN/CSA-C22.2 NO. 60079-31), cable tail versions

For further details on certifications and markings, consult the relevant table.

## CERTIFICATIONS - MARINE APPLICATIONS

Lloyd's Register Marine Type Approval certification (only if used with the 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

MBX1MAA	Explosion-proof communication box in stainless steel, IN 230Vac, with EMC filter for marine certification
MBX2MAA	Explosion-proof communication box in stainless steel, IN 24Vac, with EMC filter for marine certification
MBX3MAA	Explosion-proof communication box in stainless steel, IN 120Vac, with EMC filter for marine certification
MBA1SSA	Explosion-proof communication box in aluminium, IN 230Vac
MBA2SSA	Explosion-proof communication box in aluminium, IN 24Vac
MBA3SSA	Explosion-proof communication box in aluminium, IN 120Vac
OCTEXP3/4C	Conduit cable gland nickel-plated brass 3/4" NPT IECEx-ATEX - c CSA us - EAC Ex (operating temperature: from -60°C (-76°F) up to +80°C (+176°F))
FM1010	EMC filter for Marine certification

## BRACKETS AND ADAPTORS

NXWBS1	AISI 316L stainless steel wall bracket with joint
MHXFWCA	AISI 316L stainless steel ball joint
NXFWBT	AISI 316L stainless steel parapet mounting bracket
NXCOL	AISI 316L stainless steel pole adapter module
NXCW	AISI 316L stainless steel corner adapter module

## PACKAGE

Model Number	Weight	Dimensions (WxHxL)	Master carton
MVXT2H0SAZ00B	12.5kg (28lb)	60x30x60cm (24x12x24in)	-

**THERMAL CAMERAS (RESOLUTION 336X256)**

	Lens 9mm		Lens 13mm		Lens 19mm		Lens 25mm		Lens 35mm		Lens 50mm		Lens 60mm	
	PAL	NTSC	PAL	NTSC	PAL	NTSC	PAL	NTSC	PAL	NTSC	PAL	NTSC	PAL	NTSC
Image Sensor	Uncooled VOx microbolometer		Uncooled VOx microbolometer		Uncooled VOx microbolometer		Uncooled VOx microbolometer		Uncooled VOx microbolometer		Uncooled VOx microbolometer		Uncooled VOx microbolometer	
Interpolated resolution	720x576	720x480	720x576	720x480	720x576	720x480	720x576	720x480	720x576	720x480	720x576	720x480	720x576	720x480
Pixel dimensions	17µm		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		from 7.5µm to 13.5µm	
Internal shutter (only for sensor compensation)	Video stop < 1sec.		Video stop < 1sec.		Video stop < 1sec.		Video stop < 1sec.		Video stop < 1sec.		Video stop < 1sec.		Video stop < 1sec.	
Digital Detail Enhancement (DDE)	√		√		√		√		√		√		√	
Digital Zoom	2x, 4x		2x, 4x		2x, 4x		2x, 4x		2x, 4x		2x, 4x		2x, 4x	
Image updating frequency	8.3fps	7.5fps	8.3fps	7.5fps	8.3fps	7.5fps	8.3fps	7.5fps	8.3fps	7.5fps	8.3fps	7.5fps	8.3fps	7.5fps
Image updating high frequency	25fps	30fps	25fps	30fps	25fps	30fps	25fps	30fps	25fps	30fps	25fps	30fps	25fps	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)		-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)		-40°C ÷ +550°C (-40°F ÷ +1022°F)	
Horizontal field of view	35°		25°		17°		13°		9,3°		6,5°		5,5°	
Vertical field of view	27°		19°		13°		10°		7,1°		5°		4,2°	
F-number	F/1.25		F/1.25		F/1.25		F/1.1		F/1.2		F/1.2		F/1.25	
Thermal sensitivity (NEΔT)	< 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		< 50mK at f/1.0	
Person (detection / recognition / identification)	285m / 71m / 36m (935ft / 233ft / 118ft)		440m / 112m / 56m (1443ft / 2368ft / 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)		2000m / 510m / 255m (6561ft / 1673ft / 836ft)	
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)		6000m / 1560m / 780m (19685ft / 5118ft / 2559ft)	

*Only for product analogue versions.*

**THERMAL CAMERAS (RESOLUTION 640X512)**

	Lens 9mm		Lens 13mm		Lens 19mm		Lens 25mm		Lens 35mm		Lens 50mm		Lens 60mm	
	PAL	NTSC	PAL	NTSC	PAL	NTSC	PAL	NTSC	PAL	NTSC	PAL	NTSC	PAL	NTSC
Image Sensor	Uncooled VOx microbolometer		Uncooled VOx microbolometer		Uncooled VOx microbolometer		Uncooled VOx microbolometer		Uncooled VOx microbolometer		Uncooled VOx microbolometer		Uncooled VOx microbolometer	
Interpolated resolution	720x576	720x480	720x576	720x480	720x576	720x480	720x576	720x480	720x576	720x480	720x576	720x480	720x576	720x480
Pixel dimensions	17µm		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		from 7.5µm to 13.5µm	
Internal shutter (only for sensor compensation)	Video stop < 1sec.		Video stop < 1sec.		Video stop < 1sec.		Video stop < 1sec.		Video stop < 1sec.		Video stop < 1sec.		Video stop < 1sec.	
Digital Detail Enhancement (DDE)	√		√		√		√		√		√		√	
Digital Zoom	2x, 4x, 8x		2x, 4x, 8x		2x, 4x, 8x		2x, 4x, 8x		2x, 4x, 8x		2x, 4x, 8x		2x, 4x, 8x	
Image updating frequency	8.3fps	7.5fps	8.3fps	7.5fps	8.3fps	7.5fps	8.3fps	7.5fps	8.3fps	7.5fps	8.3fps	7.5fps	8.3fps	7.5fps
Image updating high frequency	25fps	30fps	25fps	30fps	25fps	30fps	25fps	30fps	25fps	30fps	25fps	30fps	25fps	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)		-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)		-40°C ÷ +550°C (-40°F ÷ +1022°F)	
Horizontal field of view	69°		45°		32°		25°		18°		12.4°		10.4°	
Vertical field of view	56°		37°		26°		20°		14°		9.9°		8.3°	
F-number	F/1.4		F/1.25		F/1.25		F/1.1		F/1.2		F/1.2		F/1.25	
Thermal sensitivity (NEΔT)	< 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		< 50mK 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)		1750m / 450m / 225m (5741ft / 1476ft / 738ft)	
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)		4500m / 1240m / 640m (14764ft / 4068ft / 2100ft)	

*Only for product analogue versions.*

THERMAL CAMERAS (RESOLUTION 336X256)							
	Lens 9mm	Lens 13mm	Lens 19mm	Lens 25mm	Lens 35mm	Lens 50mm	Lens 60mm
Image Sensor	Uncooled VOx microbolometer	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	720x480
Pixel dimensions	17µm	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	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	Video stop < 1s
Digital Detail Enhancement (DDE)	√	√	√	√	√	√	√
Digital Zoom	2x, 4x	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	7.5fps
Image updating high frequency	30fps	30fps	30fps	30fps	30fps	30fps	30fps
Scene range (High Gain)	-40°C ÷ +160°C (-40°F ÷ +320°F) (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F) (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F) (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F) (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F) (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F) (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F) (-40°F ÷ +320°F)
Scene range (Low Gain)	-40°C ÷ +550°C (-40°F ÷ +1022°F) (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F) (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F) (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F) (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F) (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F) (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F) (-40°F ÷ +1022°F)
Horizontal field of view	35°	25°	17°	13°	9,3°	6,5°	5,5°
Vertical field of view	27°	19°	13°	10°	7,1°	5°	4,2°
F-number	F/1.25	F/1.25	F/1.25	F/1.1	F/1.2	F/1.2	F/1.25
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	< 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	< 30mK at f/1.0
Person (detection / recognition / identification)	285m / 71m / 36m (935ft / 233ft / 118ft)	440m / 112m / 56m (1443ft / 2368ft / 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)	2000m / 510m / 255m (6561ft / 1673ft / 836ft)
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)	6000m / 1560m / 780m (19685ft / 5118ft / 2559ft)

Only for the IP versions of the product.

Radiometric analysis does not affect camera performance.

**THERMAL CAMERAS (RESOLUTION 640X512)**

	Lens 9mm	Lens 13mm	Lens 19mm	Lens 25mm	Lens 35mm	Lens 50mm	Lens 60mm
Image Sensor	Uncooled VOx microbolometer	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	720x480
Pixel dimensions	17µm	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	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	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	2x, 4x, 8x
Image updating frequency	7.5fps	7.5fps	7.5fps	7.5fps	7.5fps	7.5fps	7.5fps
Image updating high frequency	30fps	30fps	30fps	30fps	30fps	30fps	30fps
Scene range (High Gain)	-40°C ÷ +160°C (-40°F ÷ +320°F) (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F) (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F) (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F) (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F) (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F) (-40°F ÷ +320°F)	-40°C ÷ +160°C (-40°F ÷ +320°F) (-40°F ÷ +320°F)
Scene range (Low Gain)	-40°C ÷ +550°C (-40°F ÷ +1022°F) (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F) (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F) (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F) (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F) (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F) (-40°F ÷ +1022°F)	-40°C ÷ +550°C (-40°F ÷ +1022°F) (-40°F ÷ +1022°F)
Horizontal field of view	69°	45°	32°	25°	18°	12.4°	10.4°
Vertical field of view	56°	37°	26°	20°	14°	9.9°	8.3°
F-number	F/1.4	F/1.25	F/1.25	F/1.1	F/1.2	F/1.2	F/1.25
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	< 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	< 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)	1750m / 450m / 225m (5741ft / 1476ft / 738ft)
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)	4500m / 1240m / 640m (14764ft / 4068ft / 2100ft)

Only for the IP versions of the product.

Radiometric analysis does not affect camera performance.

**MAXIMUS MVX RANGE - CERTIFICATIONS AND MARKINGS (VERSIONS WITH ARMoured CABLE)**

Certification	Marking	Ambient temperature
ATEX	Ⓜ II 2 G Ex db IICT5 Gb Ⓜ II 2 D Ex tb IIIC T100°C Db IP66/IP68	-60°C ≤ Ta ≤ +65°C
	Ⓜ II 2 G Ex db IICT6 Gb Ⓜ II 2 D Ex tb IIIC T85°C Db IP66/IP68	-60°C ≤ Ta ≤ +55°C
IECEX	Ex db IICT5 Gb Ex tb IIIC T100°C Db IP66/IP68	-60°C ≤ Ta ≤ +65°C
	Ex db IICT6 Gb Ex tb IIIC T85°C Db IP66/IP68	-60°C ≤ Ta ≤ +55°C
INMETRO	Ex db IICT5 Gb Ex tb IIIC T100°C Db IP66/IP68	-60°C ≤ Ta ≤ +65°C
	Ex db IICT6 Gb Ex tb IIIC T85°C Db IP66/IP68	-60°C ≤ Ta ≤ +55°C
EAC Ex	1Ex d IICT5 Gb X Ex tb IIIC T100°C Db X	-60°C ≤ Ta ≤ +65°C
	1Ex d IICT6 Gb X Ex tb IIIC T85°C Db X	-60°C ≤ Ta ≤ +55°C

**MAXIMUS MVX RANGE - CERTIFICATIONS AND MARKINGS (CABLE TAIL VERSIONS, FOR INSTALLATION WITH CONDUIT)**

Certification	Marking	Ambient temperature
ATEX	Ⓜ II 2 G Ex db IICT5 Gb Ⓜ II 2 D Ex tb IIIC T100°C Db IP66/IP68	-50°C ≤ Ta ≤ +65°C
	Ⓜ II 2 G Ex db IICT6 Gb Ⓜ II 2 D Ex tb IIIC T85°C Db IP66/IP68	-50°C ≤ Ta ≤ +55°C
IECEX	Ex db IICT5 Gb Ex tb IIIC T100°C Db IP66/IP68	-50°C ≤ Ta ≤ +65°C
	Ex db IICT6 Gb Ex tb IIIC T85°C Db IP66/IP68	-50°C ≤ Ta ≤ +55°C
INMETRO	Ex db IICT5 Gb Ex tb IIIC T100°C Db IP66/IP68	-50°C ≤ Ta ≤ +65°C
	Ex db IICT6 Gb Ex tb IIIC T85°C Db IP66/IP68	-50°C ≤ Ta ≤ +55°C
EAC Ex	1Ex d IICT5 Gb X Ex tb IIIC T100°C Db X	-50°C ≤ Ta ≤ +65°C
	1Ex d IICT6 Gb X Ex tb IIIC T85°C Db X	-50°C ≤ Ta ≤ +55°C
Hazardous Location America	Class I Zone 1 AEx db IICT5 Gb Zone 21 AEx tb IIIC T100°C Db Class I Div 2 Group A, B, C & D T5 Class II Div 2 Group F & G T100°C	-50°C ≤ Ta ≤ +65°C
	Class I Zone 1 AEx db IICT6 Gb Zone 21 AEx tb IIIC T85°C Db Class I Div 2 Group A, B, C & D T6 Class II Div 2 Group F & G T85°C	-50°C ≤ Ta ≤ +55°C
Hazardous Location Canada	Ex db IICT5 Gb Ex tb IIIC T100°C Db Class I Div 2 Group A, B, C & D T5 Class II Div 2 Group F & G T100°C	-50°C ≤ Ta ≤ +65°C
	Ex db IICT6 Gb Ex tb IIIC T85°C Db Class I Div 2 Group A, B, C & D T6 Class II Div 2 Group F & G T85°C	-50°C ≤ Ta ≤ +55°C



**MAXIMUS MVXT (ANALOG VERSION) - CONFIGURATION OPTIONS WITH CABLE GLAND AND SHIELDED CABLE**

	Voltage	Thermal camera		Connections	Video Output	Model		Frequency
<b>MVXT</b>	<b>2</b> 12-24Vdc/ 24Vac	<b>Q0</b> Thermal camera 9mm, 336x256	<b>S</b>	<b>A</b> Cable gland Ex d 3/4" NPT and 4m (13ft) armored cable	<b>0</b> Analog control	<b>00</b> T5 -60°C/+65°C	<b>A</b>	<b>H</b> 25-30Hz
		<b>M0</b> Thermal camera 13mm, 336x256		<b>B</b> Cable gland Ex d 3/4" NPT and 10m (32.8ft) armored cable		<b>02</b> T6 -60°C/+55°C		<b>-</b> 7.5-8.3Hz
		<b>Z0</b> Thermal camera 19mm, 336x256						
		<b>L0</b> Thermal camera 25mm, 336x256						
		<b>I0</b> Thermal camera 35mm, 336x256						
		<b>J0</b> Thermal camera 50mm, 336x256						
		<b>P0</b> Thermal camera 60mm, 336x256						
		<b>H0</b> Thermal camera 9mm, 640x512						
		<b>G0</b> Thermal camera 13mm, 640x512						
		<b>U0</b> Thermal camera 19mm, 640x512						
		<b>E0</b> Thermal camera 25mm, 640x512						
		<b>D0</b> Thermal camera 35mm, 640x512						
		<b>W0</b> Thermal camera 50mm, 640x512						
		<b>K0</b> Thermal camera 60mm, 640x512						

**MAXIMUS MVXT (ANALOG VERSION) - CONFIGURATION OPTIONS WITH CABLE TAIL (FOR INSTALLATION WITH CONDUIT, CONDUIT SEALING FITTING AND CONDUIT NOT INCLUDED)**

	Voltage	Thermal camera		Connections	Video Output	Model		Frequency
<b>MVXT</b>	<b>2</b> 12-24Vdc/ 24Vac	<b>Q0</b> Thermal camera 9mm, 336x256	<b>S</b>	<b>F</b> 4m (13ft) cable tail	<b>0</b> Analog control	<b>01</b> T5 -50°C/+65°C	<b>A</b>	<b>H</b> 25-30Hz
		<b>M0</b> Thermal camera 13mm, 336x256		<b>G</b> 10m (32.8ft) cable tail		<b>03</b> T6 -50°C/+55°C		- 7.5-8.3Hz
		<b>Z0</b> Thermal camera 19mm, 336x256						
		<b>L0</b> Thermal camera 25mm, 336x256						
		<b>I0</b> Thermal camera 35mm, 336x256						
		<b>J0</b> Thermal camera 50mm, 336x256						
		<b>P0</b> Thermal camera 60mm, 336x256						
		<b>H0</b> Thermal camera 9mm, 640x512						
		<b>G0</b> Thermal camera 13mm, 640x512						
		<b>U0</b> Thermal camera 19mm, 640x512						
		<b>E0</b> Thermal camera 25mm, 640x512						
		<b>D0</b> Thermal camera 35mm, 640x512						
		<b>W0</b> Thermal camera 50mm, 640x512						
		<b>K0</b> Thermal camera 60mm, 640x512						

**MAXIMUS MVXT (IP VERSION) - CONFIGURATION OPTIONS WITH CABLE GLAND AND SHIELDED CABLE**

	Voltage	Thermal camera	Radiometry		Connections	Video Output	Model		Thermal camera frequency
<b>MVXT</b>	<b>2</b> 12-24Vdc/ 24Vac	<b>Q</b> Thermal camera 9mm, 336x256	<b>O</b> Thermal camera with radiometric functions	<b>S</b>	<b>A</b> Cable gland Ex d 3/4" NPT and 4m (13ft) armored cable	<b>Z</b> IP-based control	<b>00</b> T5 -60°C/+65°C	<b>B</b>	<b>-</b> 7.5Hz
		<b>M</b> Thermal camera 13mm, 336x256	<b>R</b> Thermal camera with advanced radiometric functions		<b>B</b> Cable gland Ex d 3/4" NPT and 10m (32.8ft) armored cable		<b>02</b> T6 -60°C/+55°C		<b>H</b> 30Hz
		<b>Z</b> Thermal camera 19mm, 336x256							
		<b>L</b> Thermal camera 25mm, 336x256							
		<b>I</b> Thermal camera 35mm, 336x256							
		<b>J</b> Thermal camera 50mm, 336x256							
		<b>P</b> Thermal camera 60mm, 336x256							
		<b>H</b> Thermal camera 9mm, 640x512							
		<b>G</b> Thermal camera 13mm, 640x512							
		<b>U</b> Thermal camera 19mm, 640x512							
		<b>E</b> Thermal camera 25mm, 640x512							
		<b>D</b> Thermal camera 35mm, 640x512							
		<b>W</b> Thermal camera 50mm, 640x512							
		<b>K</b> Thermal camera 60mm, 640x512							

**MAXIMUS MVXT (IP VERSION) - CONFIGURATION OPTIONS WITH CABLE TAIL (FOR INSTALLATION WITH CONDUIT, CONDUIT SEALING FITTING AND CONDUIT NOT INCLUDED)**

	Voltage	Thermal camera	Radiometry		Connections	Video Output	Model		Thermal camera frequency
<b>MVXT</b>	<b>2</b> 12-24Vdc/ 24Vac	<b>Q</b> Thermal camera 9mm, 336x256	<b>O</b> Thermal camera with radiometric functions	<b>S</b>	<b>F</b> 4m (13ft) cable tail	<b>Z</b> IP-based control	<b>01</b> T5 -50°C/+65°C	<b>B</b>	<b>-</b> 7.5Hz
		<b>M</b> Thermal camera 13mm, 336x256	<b>R</b> Thermal camera with advanced radiometric functions		<b>G</b> 10m (32.8ft) cable tail		<b>03</b> T6 -50°C/+55°C		<b>H</b> 30Hz
		<b>Z</b> Thermal camera 19mm, 336x256							
		<b>L</b> Thermal camera 25mm, 336x256							
		<b>I</b> Thermal camera 35mm, 336x256							
		<b>J</b> Thermal camera 50mm, 336x256							
		<b>P</b> Thermal camera 60mm, 336x256							
		<b>H</b> Thermal camera 9mm, 640x512							
		<b>G</b> Thermal camera 13mm, 640x512							
		<b>U</b> Thermal camera 19mm, 640x512							
		<b>E</b> Thermal camera 25mm, 640x512							
		<b>D</b> Thermal camera 35mm, 640x512							
		<b>W</b> Thermal camera 50mm, 640x512							
		<b>K</b> Thermal camera 60mm, 640x512							

# TECHNICAL DRAWINGS

The indicated measurements are expressed in millimetres.

