

MAXIMUS MHXT

STAINLESS STEEL EX-PROOF THERMAL CAMERA

TYPE
4X

IP66
IP67

THERMAL

INTEGRATED CAM

FEATURES

Made of AISI 316L electropolished stainless steel

Germanium window with protection grid

Thermal cameras:

- Sensor: Uncooled microbolometer (VOx)
- Lenses: 50mm, 35mm, 25mm, 19mm, 13mm or 9mm
- Resolution 320x256 or 640x512
- Image frequency: 8.3Hz or 25Hz

2 3/4" NPT threaded holes for use of cable glands or conduit

Integrated telemetry receiver

Sunshield and heater included

IP66/IP67

OPTIONS:

Housing without camera

DESCRIPTION

These Ex-proof cameras of MAXIMUS series have been certified and designed to meet the strictest standards regarding installation in potentially explosive environments, given the presence of gas and flammable dusts.

The MAXIMUS range ensures excellent performance for monitoring critical processes in areas with risk of explosion, such as refineries, gas pipelines, oil tankers, offshore platforms, industrial processes, chemical industries, etc.

Equipped with heating, the housing has the same installation and operating temperatures, comprised between -40° C and + 60° (-40°F / +140°F).

The wiring is made easier thanks to the removable connectors on the circuit board. The housing can eventually be controlled by VMS through a video encoder with RS485 serial port.

The special grid allows an optimal viewing even with cameras with 9mm and 13mm lens.



MHXT



MHXT-MHXWBS



TECHNICAL DATA**GENERAL**

AISI 316L stainless steel construction
 Passivated and electropolished external surfaces
 Silicone O-ring seals

MECHANICAL

2 3/4" NPT holes for cable entry
 Window with protection grid
 Sunshield
 Unit weight: 16.5kg (36lb)

HOUSING'S WINDOW

Material: Germanium
 Dimensions:
 • Diameter: 56mm (2.2in)
 • Thick: 10mm (0.4in)
 External treatment: Antiscratch (Hard Carbon Coating, DLC)
 Internal treatment: Antireflection
 Spectral range: From 7.5µm up to 14µm

ELECTRICAL

Power supply/Current consumption:
 • 230Vac, 0.34A, 50/60Hz
 • 120Vac, 0.5A, 50/60Hz
 • 24Vac, 2.2A, 50/60Hz
 Power absorbed by heating (Ton 10°C±4°C (50°F±7°F), Toff 22°C±3°C (77°F±5°F)):
 • 230Vac: 60W max
 • 120Vac: 40W max
 • 24Vac: 30W max

COMMUNICATIONS

Serial interface: 1 RS-485 line, half-duplex

CAMERA

Installable cameras in versions without it:
 • Power consumption (assembly, camera and lens): 13W max
 • Cameras dimensions/Lenses that can be installed (WxHxL): 80x82x245mm (3.1x3.2x9.6in) max
 • Minimum distance between camera and housing's window: 10mm (0.4in)

ENVIRONMENT

Indoor/Outdoor
 Operating temperature/Installation temperature: from -40°C (-40°F) a +60°C (140°F)
 Operating temperature/Installation temperature (MHXT2...B-U, in 24Vac and with pre-installed camera): from -40°C (-40°F) a +54°C (129°F)

CERTIFICATIONS

ATEX (EN 60079-0: 2012, EN 60079-1: 2007, EN 60079-31: 2009):

- ⊕ II 2 G Ex d IIB T6 Gb Ta -40°C to +60°C or
- ⊕ II 2 G Ex d IIC T6 Gb Ta -20°C to +60°C or Ta -40°C to +60°C and/or
- ⊕ II 2 D Ex tb IIIC T85°C Db Ta -40°C to +60°C

IECEX (IEC 60079-0: 2011 Ed.6, IEC 60079-1: 2007-04 Ed.6, IEC 60079-31: 2008 Ed.1):

- Ex d IIB T6 Gb Ta -40°C to +60°C or
- Ex d IIC T6 Gb Ta -20°C to +60°C or Ta -40°C to +60°C and/or
- Ex tb IIIC T85°C Db Ta -40°C to +60°C
- IP66/IP67 (EN60529:1991/A1 2001)

INMETRO (ABNT NBR IEC 60079-0:2008 + Errata 1:2011, ABNT NBR IEC 60079-1:2009 + Errata 1:2011, ABNT NBR IEC60079-31:2011):

- Ex d IIB T6 Gb -40 °C à/to +60 °C ou/or
- Ex d IIC T6 Gb -20°C à/to +60°C e/ou and/or -40°C/+60°C
- Ex tb IIIC T85°C Db -40 °C à/to +60 °C
- IP66/IP67

cULus Listed, TYPE 4X (only MHXT2...B-U versions, in 24Vac and with pre-installed camera)

UL listed for USA (only MHXT2...B-U versions, in 24Vac and with pre-installed camera):

- Class I, Zone 1, AEx d IIC T6
- Zone 21, AEx tb IIIC T85°C

UL listed for Canada (only MHXT2...B-U versions, in 24Vac and with pre-installed camera):

- Ex d IIC T6 Gb
- Class II, Groups E, F and G

EAC EX:

- Ex d IIC T6 Gb
- Ex tb IIIC T85 Db

ACCESSORIES

OCTEX3/4C	Cable gland with gasket EX 3/4" NPT, unarmoured cable IECEX-ATEX-EAC
OCTEXA3/4C	Cable gland with gasket EX 3/4" NPT, armoured cable IECEX-ATEX-EAC
OCTEXB3/4C	Barrier cable gland 3/4" NPT, unarmoured cable IECEX-ATEX-EAC
OCTEXBA3/4C	Barrier cable gland 3/4" NPT, armoured cable IECEX-ATEX-EAC
OCTEX3/4	Cable gland with gasket EX 3/4" NPT, unarmoured cable ATEX
OCTEXA3/4	Cable gland with gasket EX 3/4" NPT, armoured cable ATEX
OEXPLUG3/4	Plug EX 3/4" NPT IECEX-ATEX-EAC
USB485	USB-RS485 converter

BRACKETS AND ADAPTORS

MHXWBS	AISI 316L stainless steel wall bracket
MPXCW	AISI 316L stainless steel corner adapter module
MPXCOL	AISI 316L stainless steel pole adapter module
MHXWFWCA	AISI 316L stainless steel ball joint
NXFWBT	AISI 316L stainless steel parapet mounting bracket

MAXIMUS MHXT - CONFIGURATION OPTIONS					
	Voltage	Certification		Thermal camera	
MHXT	1 230Vac	C IIC -40°C	0 With sunshield	00 Without camera	B ATEX / IECEx / INMETRO
	2 24Vac			N0 Thermal camera 50mm, 320x256, 7.5-8.3Hz	B-U UL Listed for USA and CANADA ¹
	3 120Vac			NH Thermal camera 50mm, 320x256, 25-30Hz	
				A0 Thermal camera 35mm, 320x256, 7.5-8.3Hz	
				AH Thermal camera 35mm, 320x256, 25-30Hz	
				B0 Thermal camera 25mm, 320x256, 7.5-8.3Hz	
				BH Thermal camera 25mm, 320x256, 25-30Hz	
				V0 Thermal camera 19mm, 320x256, 7.5-8.3Hz	
				VH Thermal camera 19mm, 320x256, 25-30Hz	
				F0 Thermal camera 13mm, 320x256, 7.5-8.3Hz	
				FH Thermal camera 13mm, 320x256, 25-30Hz	
				C0 Thermal camera 9mm, 320x256, 7.5-8.3Hz	
				CH Thermal camera 9mm, 320x256, 25-30Hz	
				P0 Thermal camera 50mm, 640x512, 7.5-8.3Hz	
				PH Thermal camera 50mm, 640x512, 25-30Hz	
				D0 Thermal camera 35mm, 640x512, 7.5-8.3Hz	
				DH Thermal camera 35mm, 640x512, 25-30Hz	
				E0 Thermal camera 25mm, 640x512, 7.5-8.3Hz	
				EH Thermal camera 25mm, 640x512, 25-30Hz	
				U0 Thermal camera 19mm, 640x512, 7.5-8.3Hz	
				UH Thermal camera 19mm, 640x512, 25-30Hz	
				G0 Thermal camera 13mm, 640x512, 7.5-8.3Hz	
				GH Thermal camera 13mm, 640x512, 25-30Hz	
				H0 Thermal camera 9mm, 640x512, 7.5-8.3Hz	
				HH Thermal camera 9mm, 640x512, 25-30Hz	

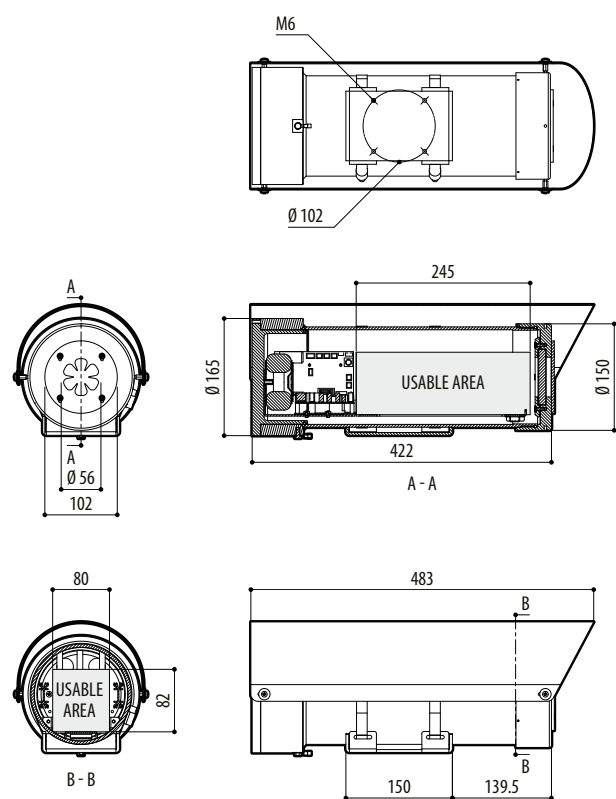
¹ MHXT2...B-U, only versions in 24Vac and with pre-installed camera. Operating temperature -40°C / + 54°C (-40°F / 122°F)

3/4" NPT CABLE GLAND SELECTION LAYOUT							
Zone, Gas	Cable gland type	Certification	Operating temperature	Cable	Cable glands part code	Diameter of the external cable	Under armor cable diameter
IIC, Zone 1 or Zone 2 IIB or IIA, Zone 1	Barrier	IECEX/ATEX/EAC	From -60°C (140°F) a +80°C (+176°F)	Not armored	OCTEXB3/4C	From 13mm (0.5in) a 20.2mm (0.8in)	—
				Armored	OCTEXBA3/4C	From 16.9mm (0.7in) a 26mm (1in)	—
IIB or IIA, Zone 2	With gasket	IECEX/ATEX/EAC	From -60°C (140°F) a +100°C (212°F)	Not armored	OCTEX3/4C	From 13mm (0.5in) a 20.2mm (0.8in)	—
				Armored	OCTEXA3/4C	From 16.9mm (0.7in) a 26mm (1in)	From 11.1mm (0.4in) a 19.7mm (0.8in)
		ATEX	From -20°C (-4°F) a +80°C (+176°F)	Not armored	OCTEX3/4	From 14mm (0.6in) a 17mm (0.7in)	—
				Armored	OCTEXA3/4	From 18mm (0.7in) thick glass a 23mm (0.9in)	From 14mm (0.6in) a 17mm (0.7in)

For a correct installation of the MHX/MHXT housing, cable entries and field wiring must be suitable for an operating temperature of at least +30°C above ambient.

THERMAL CAMERAS AVAILABLE (RESOLUTION 320X256)												
	Lens 50mm		Lens 35mm		Lens 25mm		Lens 19mm		Lens 13mm		Lens 9mm	
	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	
Resolution	320x256	320x240	320x256	320x240	320x256	320x240	320x256	320x240	320x256	320x240	320x256	320x240
Pixel dimensions	25µm		25µm		25µm		25µm		25µm		25µm	
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 < 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	
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
Image updating high frequency	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)	
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	9°		13°		18°		24°		34°		48°	
Vertical field of view	7°		10°		14°		18°		26°		37°	
F-number	F/1.2		F/1.2		F/1.1		F/1.25		F/1.25		F/1.25	
Thermal sensitivity (NEΔT)	< 50mK to f/1.0		< 50mK to f/1.0		< 50mK to f/1.0		< 50mK to f/1.0		< 50mK to f/1.0		< 50mK to f/1.0	
Person (detection / recognition / identification)	1125m / 290m / 145m (3691ft / 951ft / 476ft)		800m / 200m / 105m (2625 / 656 / 345ft)		590m / 148m / 75m (1935 / 486 / 246ft)		450m / 112m / 56m (1476ft / 367ft / 184ft)		300m / 74m / 37m (984ft / 243ft / 121ft)		205m / 52m / 26m (673ft / 171ft / 85ft)	
Auto (detection / recognition / identification)	3100m / 810m / 415m (10171ft / 2657ft / 1361ft)		2250m / 590m / 290m (7382ft / 1936ft / 951ft)		1650m / 430m / 215m (5413ft / 1411ft / 705ft)		1280m / 330m / 165m (4199ft / 1083ft / 541ft)		840m / 215m / 108m (2756 / 705 / 354ft)		590m / 150m / 74m (1936 / 492 / 242ft)	

THERMAL CAMERAS AVAILABLE (RESOLUTION 640X512)												
	Lens 50mm		Lens 35mm		Lens 25mm		Lens 19mm		Lens 13mm		Lens 9mm	
	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	
Resolution	640x512	640x480	640x512	640x480	640x512	640x480	640x512	640x480	640x512	640x480	640x512	640x480
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 < 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	
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
Image updating high frequency	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)	
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	12.4°		18°		25°		32°		45°		69°	
Vertical field of view	9.9°		14°		20°		26°		37°		56°	
F-number	F/1.2		F/1.2		F/1.1		F/1.25		F/1.25		F/1.4	
Thermal sensitivity (NEΔT)	< 50mK to f/1.0		< 50mK to f/1.0		< 50mK to f/1.0		< 50mK to f/1.0		< 50mK to f/1.0		< 50mK to f/1.0	
Person (detection / recognition / identification)	1500m / 380m / 190m (4921ft / 1247ft / 623ft)		1140m / 280m / 142m (3740ft / 919ft / 466ft)		820m / 210m / 104m (2690 / 689 / 341ft)		570m / 144m / 72m (1870 / 472 / 236ft)		390m / 95m / 47m (1280ft / 312ft / 154ft)		250m / 63m / 31m (820ft / 207ft / 102ft)	
Auto (detection / recognition / identification)	3900m / 1060m / 540m (12795ft / 3478ft / 1772)		3000m / 800m / 200m (9843ft / 2625ft / 656ft)		2200m / 580m / 290m (7218ft / 1903ft / 951ft)		1550m / 400m / 200m (5085ft / 1312ft / 656ft)		1080m / 275m / 140m (3543ft / 902ft / 459ft)		720m / 175m / 88m (2362 / 574 / 289ft)	

TECHNICAL DRAWINGS*Sizes in millimeters.*

MAXIMUS MHXT