

# MAXIMUS MVXT

## HIGH-SPEC EX-PROOF THERMAL CAMERA IN A COMPACT DESIGN



### 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)

AISI 316L stainless steel construction

Shot peened and electro-polished surfaces

Analogue or IP (ONVIF S) versions

Thermal cameras:

- Sensor: Uncooled microbolometer (VOx)
- Lenses: 9mm, 13mm, 19mm, 25mm, 35mm, 50mm, 60mm
- Resolution 336x256 or 640x512
- Image frequency: 8.3Hz or 25Hz

1 alarm input and 1 relay output

4m (13ft) / 10m (33ft) preinstalled armoured multipolar cable with cable gland or, alternatively, with 4m (13ft) / 10m (33ft) cable tail

Power supply: 12-24Vdc/24Vac

### DESCRIPTION

The explosion-protected MAXIMUS MVXT thermal camera is perfect for effective video surveillance and process control in harsh settings where the presence of gases or flammable dust can create a potentially explosive environment, a reality often found in the oil and gas industries or marine and industrial sectors.

The thermal camera is able to detect a person or an object in the most difficult environmental conditions, such as total darkness or other levels of lighting, heavy smoke, rain or dust and across long distances.

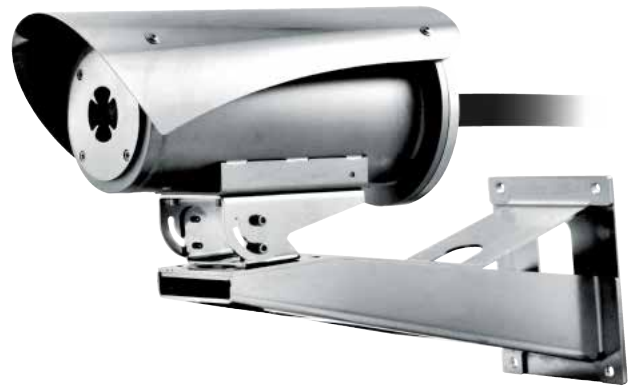
One striking advantage offered by these cameras is their extremely easy and secure “plug and play” installation, with multipolar wiring. These cameras arrive ready to use, avoiding the complex electrical connections that are typical of this type of device.

The housing is compact yet functional and is made entirely out of AISI316L stainless steel. Its resistance to corrosion is not only guaranteed, but is also enhanced by way of polishing processes.

Another important feature of the camera is the extended temperature range of -60°C to 65°C, along with a sophisticated cold start system, which allows it to operate in harsh environments as standard.

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 range of cameras meets every installation need, providing maximum performance and excellent value for money.



MVXT + NXWBS1



## TECHNICAL DATA

### GENERAL

AlSi 316L stainless steel construction  
Shot peened and electro-polished surfaces  
Silicone O-ring seals  
Configuration via OSM

### MECHANICAL

Sunshield  
Unit weight:

- 8.5kg (18.7lb) (housing with 4m multi-polar cable shield)
- 12kg / 26.5lb (housing with 10m multi-polar cable shield)

### CABLE GLANDS

Cable entry: 1 hole, 3/4", NPT  
Cable gland with gasket Ex d 3/4"NPT and 4m/10m (13ft/33ft) preinstalled multipolar armored cable or with 4m/10m (13ft/33ft) cable tail

### HOUSING'S WINDOW

Material: Germanium  
Dimensions (big grid)

- Diameter: 57mm
- Thick: 10mm (0.4in)

Dimensions (small grid)

- Diameter: 40mm (1.6in)
- Thick: 8mm

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): 94%

Medium transmittance (from 11.5µm up to 14µm): 90%

### ELECTRICAL

Supply voltage/Current consumption

- 24Vac, 2.2A, 50/60Hz
- 24Vdc, 2.2A
- 12Vdc, 3.5A

Heater (Ton 15°C±3°C (59°F±5°F), Toff 22°C±3°C (72°F±5°F))

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

Connector (only for the IP versions of the product):

- RJ45, 10BASE-T/100BASE-T

### SERIAL COMMUNICATIONS

Serial interface

- RS-485 line, half-duplex
- Cable length: 1200m max

Serial communication protocol

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

### VIDEO

IP version:

Video encoder

- Communication protocol: ONVIF, Profile S
- Device configuration: TCP/IPv4-IPV6, UDP/IPv4-IPV6, HTTP, NTP, DHCP, WS-DISCOVERY, QoS, IGMP (Multicast)
- Streaming: RTSP, RTCP, RTP/IPv4
- Video compression: H.264/AVC, MJPEG
- 2 independent video streams
- Image resolution: from Full D1 (720x576 for PAL, 720x480 for NTSC) to 352x240 in 18 steps
- Web Server

### I/O INTERFACE

I/O alarm card

- Alarm inputs: 1
- Relay outputs: 1 (1A, 30Vac/60Vdc max)

Cable length: 200m (656ft) max (analog version)

### ENVIRONMENT

Indoor/Outdoor

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 10% up to 95% (no condensation)

### CERTIFICATIONS

ATEX (EN 60079-0: 2012, EN 60079-1: 2014, EN 60079-31: 2014)

IECEx (IEC 60079-0: 2011 Ed.6, IEC 60079-1: 2014-06 Ed.7, IEC 60079-31: 2013 Ed.2)

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

EAC Ex (TR CU 012/2011)

ETL listed for USA (UL 60079-0: Ed: 6, UL 60079-1:Ed:6, UL 60079-31: Ed.2), cable tail versions

ETL listed for Canada (C22.2-60079-0:2015, CSA C22.2-60079-1Ed: 2 CSA C22.2-60079-31Ed: 1), cable tail versions

TYPE 6P, TYPE 4X (UL50E)

IP69 (EN/IEC60529), housing only

IP66/IP68 (2 hours, 5m (16ft), EN/IEC60529)

## ACCESSORIES

OCTEXP3/4C	Conduit cable gland nickel-plated brass 3/4" NPT IECEx-ATEX- c CSA us - EAC Ex
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## BRACKETS AND ADAPTORS

NXWBS1	AISI 316L stainless steel wall bracket with joint
MHXWFWCA	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
MVXT2AOSA00A	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	
Resolution	320x256	320x240	320x256	320x240	320x256	320x240	320x256	320x240	320x256	320x240	320x256	320x240	320x256	320x240
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 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		< 50mK to 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 / 1049ft / 525ft)		1700m / 430m / 215m (5577ft / 1410ft / 715ft)		2000m / 510m / 255m (6561ft / 1673ft / 836ft)	
Auto (detection / recognition / identification)	880m / 220m / 108m (2887ft / 722ft / 354ft)		1340m / 340m / 170m (4396ft / 1115ft / 557ft)		1950m / 500m / 250m (6397ft / 1640ft 820/ ft)		2800m / 710m / 360m (9186ft / 2329ft / 1181ft)		3850m / 950m / 295m (12631ft / 3116ft / 967ft)		5100m / 1320m / 660m (16732ft / 4330ft / 2165ft)		6000m / 1560m / 780m (19685ft / 5118ft / 2559ft)	

**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	
Resolution	640x512	640x480	640x512	640x480	640x512	640x480	640x512	640x480	640x512	640x480	640x512	640x480	640x512	640x480
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 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		< 50mK to 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)	
Auto (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)	

MVX RANGE - ARMoured CABLE		
Certification	Marking	Environment temperature
ATEX	Ⓜ II 2 G Ex d IIC T5 Gb Ⓜ II 2 D Ex tb IIIC T100°C Db IP66/IP68	-60°C ≤ Ta ≤ +65°C
	Ⓜ II 2 G Ex d IIC T6 Gb Ⓜ II 2 D Ex tb IIIC T85°C Db IP66/IP68	-60°C ≤ Ta ≤ +55°C
IECEX	Ex d IIC T5 Gb Ex tb IIIC T100°C Db IP66/IP68	-60°C ≤ Ta ≤ +65°C
	Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP66/IP68	-60°C ≤ Ta ≤ +55°C
INMETRO	Ex d IIC T5 Gb Ex tb IIIC T100°C Db IP66/IP68	-60°C ≤ Ta ≤ +65°C
	Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP66/IP68	-60°C ≤ Ta ≤ +55°C
EAC Ex	Ex II 2G Ex d IIC T5 Gb Ex II 2D Ex tb IIIC T100°C Db IP66/IP68	-60°C ≤ Ta ≤ +65°C
	Ex II 2G Ex d IIC T6 Gb Ex II 2D Ex tb IIIC T85°C Db IP66/IP68	-60°C ≤ Ta ≤ +55°C

MVX FAMILY - CABLE TAIL		
Certification	Marking	Environment temperature
ATEX	Ⓜ II 2 G Ex d IIC T5 Gb Ⓜ II 2 D Ex tb IIIC T100°C Db IP66/IP68	-50°C ≤ Ta ≤ +65°C
	Ⓜ II 2 G Ex d IIC T6 Gb Ⓜ II 2 D Ex tb IIIC T85°C Db IP66/IP68	-50°C ≤ Ta ≤ +55°C
IECEX	Ex d IIC T5 Gb Ex tb IIIC T100°C Db IP66/IP68	-50°C ≤ Ta ≤ +65°C
	Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP66/IP68	-50°C ≤ Ta ≤ +55°C
INMETRO	Ex d IIC T5 Gb Ex tb IIIC T100°C Db IP66/IP68	-50°C ≤ Ta ≤ +65°C
	Ex d IIC T6 Gb Ex tb IIIC T85°C Db IP66/IP68	-50°C ≤ Ta ≤ +55°C
EAC Ex	Ex II 2G Ex d IIC T5 Gb Ex II 2D Ex tb IIIC T100°C Db IP66/IP68	-50°C ≤ Ta ≤ +65°C
	Ex II 2G Ex d IIC T6 Gb Ex II 2D Ex tb IIIC T85°C Db IP66/IP68	-50°C ≤ Ta ≤ +55°C
Hazardous Location America	Class I Zone 1 AEx d IIC T5 Gb Class I Div 2 Group A, B, C & D T5 Zone 21 AEx tb IIIC T100°C Db Class II Div 2 Group E, F & G T100°C	-50°C ≤ Ta ≤ +65°C
	Class I Zone 1 AEx d IIC T6 Gb Class I Div 2 Group A, B, C & D T6 Zone 21 AEx tb IIIC T85°C Db Class II Div 2 Group E, F & G T85°C	-50°C ≤ Ta ≤ +55°C
Hazardous Location Canada	Ex d IIC T5 Gb Class I Div 2 Group A, B, C, D T5 Ex tb IIIC T100°C Db Class II Div 2 Group E, F and G T100°C	-50°C ≤ Ta ≤ +65°C
	Ex d IIC T6 Gb Class I Div 2 Group A, B, C, D T6 Ex tb IIIC T85°C Db Class II Div 2 Group E, F and G T85°C	-50°C ≤ Ta ≤ +55°C

**MAXIMUS MVXT- CONFIGURATION OPTIONS WITH CABLE GLAND WITH GASKET AND SHIELDED CABLE**

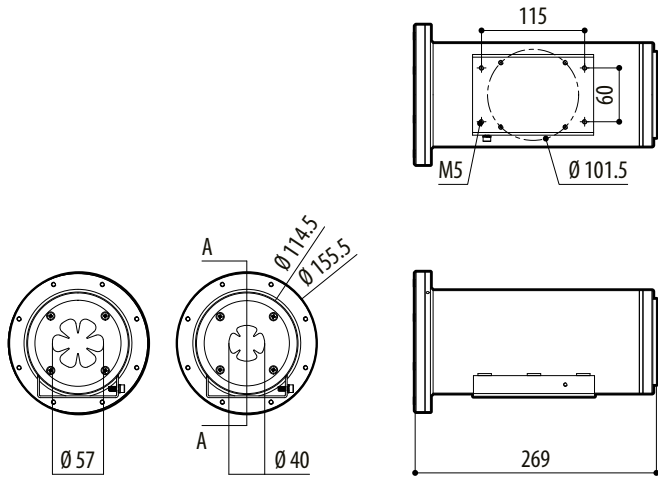
	Voltage	Thermal camera		Connections	Video Output	Models		Frequency
<b>MVXT</b>	<b>2</b> 12-24Vdc/ 24Vac	<b>Q0</b> Thermal camera 9mm, 336x256	<b>S</b>	<b>A</b> Cable gland with gasket Ex d 3/4" NPT and 4m (13ft) armored cable	<b>Z</b> IP H.264/AVC control, Protocol ONVIF Profile S	<b>00</b> T5 -60°C/+65°C	<b>A</b>	<b>H</b> 25-30Hz
		<b>M0</b> Thermal camera 13mm, 336x256		<b>B</b> Cable gland with gasket Ex d 3/4" NPT and 10m (33ft) armored cable	<b>0</b> Analog control	<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- CONFIGURATION OPTIONS WITH CABLE TAIL**

	Voltage	Thermal camera		Connections	Video Output	Models		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>Z</b> IP H.264/AVC control, Protocol ONVIF Profile S	<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 (33ft) cable tail	<b>0</b> Analog control	<b>03</b> T6 -50°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						

# TECHNICAL DRAWINGS

Sizes in millimeters.



MAXIMUS MVXT