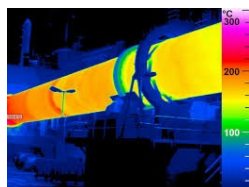


DATASHEET

EXCMA910X Thermal Cam

Explosion proof Thermal camera made of aluminium Anticorodal

- Made of AISI 316L stainless steel ATEX Thermal Camera for hazardous areas
- Certifications EX d for use in Zone 1 and 2, Group IIC (gas) and Ex tb Zone 21 and 22 (dust)
- Video surveillance applications:
Series 300, 600, 300IP, 600IP
- Radiometric (thermographic) applications:
Series 320, 640, 320IP, 640IP
- **ONVIF®** certification
- Weatherproof rating **IP66/67/68**
- Possibility to wall or ceiling mounting by apposite brackets
- Easy installation and maintenance



Explosion proof Thermal camera made of AISI 316L stainless steel

The **EXCMA910X Thermal Cam series** are cylindrical explosion proof outdoor-ready Thermal cameras, made of AISI 316L stainless steel with electropolishing treatment. Thermal cameras provide an ideal solution, as compared to visible-light cameras, for detecting people and objects in low light or bad weather conditions. They create images based on the heat emitted by any object, vehicle or people. Thermal imaging is not affected by light conditions such as shadows, back lighting, darkness and even camouflaged objects, providing images that allows the operators to detect and act during suspicious activities, 24 hours per day and 7 days per week.

This solution ensures an high corrosion resistance and is particularly indicated for installations in marine, industrial and chemical environments, where there is a potentially explosive atmosphere.

This outdoor-ready IP camera can be equipped with a full range of solutions: sealing ring for unarmoured cable, sealing ring for steel wire armoured (SWA) cable, barrier gland for unarmoured cable and barrier gland for steel wire armoured (SWA) cable.

DATASHEET

TECHNICAL DATA

GENERAL

- Made of AISI 316L stainless steel
- electropolishing treatment for excellent resistance to extreme environments
- stainless steel bolts and screws
- cable gland for for unarmoured cable.
- wide range of accessories
- supplied with instruction manual
- according to RoHS compliance

ELECTRICAL

- heater: 230V-110V, 24V, 12V
consumption max. 80W
t on +15°C t off +22°C (+/- 3°C)

ACCESSORIES

- RD910/A** strengthened heater 110/240Vac
RD910/B strengthened heater 24/12Vac-dc
TP910 anti-tamper switch set
VI910 built-in blower set
PNPT cable glands set composed by no.2x ¾"NPT
cable glands for for unarmoured cable.

RELATED PRODUCTS

- SP/C** stainless steel AISI 316L pole adaptor
SA/C stainless steel AISI 316L corner adaptor
STS910 ceiling adaptor (available only with ST910 wall bracket)
PT910 parapet bracket with joint

CERTIFICATIONS

ATEX



- | | |
|---------------------------|------------------|
| II 2G Ex db IIC T6 Gb | Ta-40°C to +60°C |
| II 2D Ex tb IIIC T85°C Db | Ta-40°C to +60°C |



- | | |
|----------------------------|------------------|
| II 2G Ex db IIC T5 Gb | Ta-40°C to +75°C |
| II 2D Ex tb IIIC T100°C Db | Ta-40°C to +75°C |

IECEx



- | | |
|---------------------|------------------|
| Ex db IIC T6 Gb | Ta-40°C to +60°C |
| Ex tb IIIC T85°C Db | Ta-40°C to +60°C |



- | | |
|----------------------|------------------|
| Ex db IIC T5 Gb | Ta-40°C to +75°C |
| Ex tb IIIC T100°C Db | Ta-40°C to +75°C |

MECHANICAL

- weatherproof rating: IP66/67/68
- indoor/outdoor installations
- operating temperature with heater: from -20°C to +60°C or from -40°C to +60°C (strengthened heater)
- weight : 15 Kg.

REFERENCE NORMS:

- **ATEX DIRECTIVE 2014/34/EU** of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres
- **EN 60079-0:2012 / IEC 60079-0:2011 + IS1:2013** : Explosive atmospheres - Part 0: Equipment - General requirements + A11:2013 **EN / IEC 60079-1:2014** : Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures 'd'
- **EN / IEC 60079-31:2014** : Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure 't'

DATASHEET

The **EXCMA910X Thermal Cam** series can be divided into 2 main categories:

- VIDEO SURVEILLANCE
- RADIOMETRIC (thermographic)

Each category has respectively 2 *analog* models and 2 *IP* models

Application	Model	Resolution	Format
VIDEO SURVEILLANCE	EXCMA910X Thermal 300	384x288	Analog
	EXCMA910X Thermal 600	640x480	Analog
	EXCMA910X Thermal 300 IP	384x288	IP
	EXCMA910X Thermal 600 IP	640x480	IP
RADIOMETRIC (thermographic)	EXCMA910X Thermal 320	384x288	Analog
	EXCMA910X Thermal 640	640x480	Analog
	EXCMA910X Thermal 320 IP	384x288	IP
	EXCMA910X Thermal 640 IP	640x480	IP

EXCMA910X Thermal Cam series are supplied with “Athermalized” lens with different FOV. The big advantage of the “Athermalized” lens is that the focus remains unchanged even after a long period of use or in case of big variations of temperature during the day.

“Athermalized” lens are widely used in security and surveillance applications because the focus adjustment is not necessary and the depth of field is very deep if compared to standard Germanium lenses.

The following table shows the FOV of our thermal cameras for video surveillance and of the radiometric ones, with the different focal lengths of the “Athermalized” lenses.

“Athermalized” lens	300/300IP 320/320IP		600/600IP 640/640IP	
Focal Length	HFOV (°)	VFOV (°)	Focal Length	HFOV (°)
8mm f0.8	44.4°	34.0°	8mm f0.8	44.4°
12mm f1.0	30.4°	23.0°	12mm f1.0	30.4°
20mm f1.0	18.5°	14.0°	20mm f1.0	18.5°
35mm f1.0	10.7°	8.0°	35mm f1.0	10.7°

DATASHEET

Video surveillance models	300 series	600 series
Resolution (sensor pixels)	384x288	640x480
Output	CVBS analog video (BNC)/HDMI	
Optical lens	8, 12, 20, 35mm "Athermalized" lenses	
Focus and zoom control	No need of PCB drivers for adjusting focus and zoom, the thermal camera will adjust them autonomously	
Applications	Security and surveillance	

Radiometric models	320-320IP series	640-640IP series
Resolution (pixels)	384x288	640x480
Spectral response	8-14μm	
Output	Compressed video data (H.264 / MPEG4 / MJPEG) and temperature alarm data (including the position of the ROI, the position of the spot inside the ROI and the temperature of the spot).	
Optical lens	8, 12, 20, 35mm "Athermalized" lenses	
Measurement accuracy in lab condition	± 2 ° C o ± 2% of reading (The thermal camera with normal temperature detection mode is more accurate than that with high temperature detection mode)	
Detection mode (Thermal core)	Medical: +20°C ~ +50°C Normal: -20°C ~ +120°C High temperature: 0°C ~ +500°C	
Thermal sensitivity (NETD) of the sensor	<40mK @f1.0, 30Hz, 300K	<50mK @f1.0, 30Hz, 300K

All the radiometric models of the **EXCMA910X Thermal Cam** series features the latest versions of the thermal image sensors, that are: QVGA Gen2 and VGA Gen2. These sensors have an excellent *NETD* value (amount of infrared radiation required to produce an output signal equal to the systems own noise).

By increasing the performance, the **EXCMA910X Thermal Cam** cameras provides more detailed features as regards alert settings and ROI (regions of interest) settings that were previously available only in the thermal sensor

The **EXCMA910X Thermal Cam** are completely managed by the thermal imaging analyzer on PC. Users who want to develop their own thermal imaging analyzer or include their thermal cameras into their own software will be provided with a Windows SDK, C++ code.

DATASHEET

Radiometric IP thermal cameras

(IP thermal cameras that detect the temperature of up to 10 ROI)

EXCMA910X Thermal Cam are particularly indicated for the following applications:

- Fire prevention (detection) in large areas: wildfire, waste management, biomass storage areas, etc.
- Preventive maintenance in industrial plants
- Intrusion detection (people, animals) in large areas
- Fire/intrusion detection in port basins

EXCMA910X Thermal Cam IP are cameras that transmit video data and temperature alarm data simultaneously. These thermal network cameras have the same thermal core as EXCMA910X THERMAL CAM320 or EXCMA910X THERMAL CAM640 and have the following measurement ranges: medical detection mode (from +20°C to +50°C), normal detection mode (up to +120°C) and high temperature detection mode (up to +500°C).

The models EXCMA910X THERMAL CAM320-IP and EXCMA910X THERMAL CAM640-IP are unique among thermal cameras: they transmit compressed video data and temperature alarm data that includes, as well: ROI position data, the position data of the spots that have generated a temperature alarm inside the ROI and the max. / min. / average temperature of each ROI, all simultaneously through IP network.

On the web browser of EXCMA910X THERMAL CAM320-IP and EXCMA910X THERMAL CAM640-IP cameras the user can set: up to 10 rectangular ROIs, the alarm temperature for each ROI (min., max or average temperature) and isothermal colour.

If the temperature of any spot inside the ROI exceeds or drops below the set up alarm threshold, the thermal camera transmits the temperature alarm data, together with the compressed video, to the VMS that is connected to the thermal camera.

The alarm data includes: ROI position data, isotherm video (where all the spots that have generated the alarm are expressed with the preset color) and temperature data of each ROI (max. / min. / average temperature).

In addition to the alarm data and the relevant activities to the VMS of the PC, the relating camera generates an alarm to the relais.

The web browser of EXCMA910X THERMAL CAM320-IP or EXCMA910X THERMAL CAM640-IP displays the picture in this way:



After setting the ROI area, the temperature of each ROI and the isothermal color, the setting values are transmitted to the relevant camera.

The size and the number of ROIs can be set up on the web browser of EXCMA910X THERMAL CAM320-IP or EXCMA910X THERMAL CAM640-IP:

- 1) The maximum number of rectangular ROIs is 10.
- 2) Each ROI does not have maximum size limitations.

DATASHEET

Model	TRH300, TRH600
Video	
Sensor	LWIR a-Si Uncooled Microbolometer 17µm
Resolution (pixels)	384x288, 640x480
Thermal sensitivity of the sensor (NETD)	<50mK @ f1.0 30Hz 300K
Spectral response	8-14 µm
Video output	PAL CVBS 1.0v Pk-Pk, 75Ω/HDMI
Optical lenses	
Focus	From 4,8mm to 70mm, fixed focus or autofocus lens, according to the needs
Focus & Zoom control	Motorized focus and motorized zoom, by selecting "Focus +/-" or "Zoom In/out"
Operations	
Camera characters	On/Off 20 characters, 5 lines
Integrated motion detection	On/Off (3 rectangular areas)
Frame rate	25/50Hz
Brightness	Manual setting: 0~100
Gain	Manual setting: 0~100
Auto NUC (non-uniformity correction)	Off/Auto/Time/ Time+Auto
Digital zoom	2x / 4x
Color variations (palette)	GREY, IRON, RAIN_V1, RAINBOW, HALF GREY, YELLOW, MIDGREY, FIRE, BLUE RED (tot.:9 colors)
Heat threshold	0~100
Image sharpening	On/Off (edge sharpness only)
Digital noise filter (DNS)	SSNR (2D), Noise filter (On/off)
Image rotation	Flip: On/Off, Mirror: On/Off
Intelligent video analytics	Motion detection
Alarm events	Motion detection
Temperature alarm events	Not available
OSD control	Pelco D Protocol, RS-485
Function	Tracker: Hot-cold, center indicator
Max. User Access	Max 10 users access (TBD)

DATASHEET

Environmental		
Operating temperature	From -20°C to +60°C (-40°C to +60°C with reinforced heater)	
Storage temperature/humidity	From -20°C to +70°C	
Electrical		
Power supply	230-110Vac, 24Vac-dc or 12Vdc	
Consumption	80W Max.	
Mechanical		
Material	AISI 316L stainless steel	
Dimensions	Ø180mm x 484mm length	
Weight	15Kg	15Kg

DATASHEET

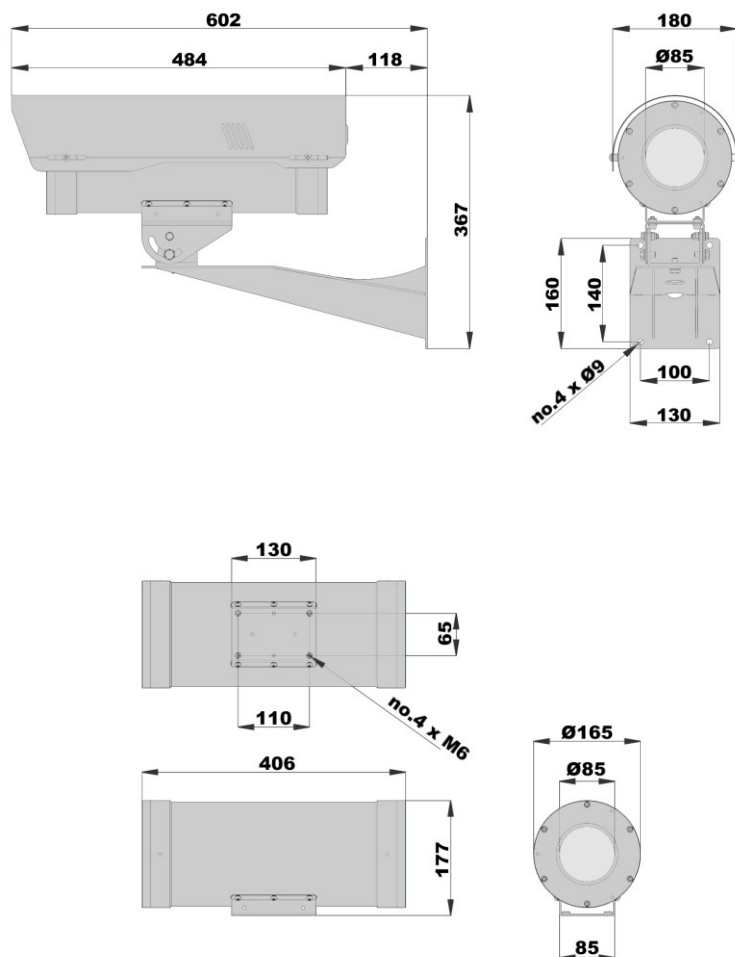
Model	300-IP, 600-IP		320, 640 320-IP, 640-IP
Video			
Sensor	FPA Uncooled Microbolometer, Pixel size 17µm		
Resolution (pixels)	384x288, 640x480	384x288, 640x480	
Thermal sensitivity of the sensor (NETD)	<50mK @ f1.0 30Hz 300K		
Spectral response	8-14 µm		
Video output	CVBS 1.0v Pk-Pk, 75Ω		
Optical lenses			
Focus	From 4,8mm to 70mm, fixed focus or autofocus lens, according to the needs		
Focus & Zoom control	Motorized focus and motorized zoom, by selecting "Focus +/-" or "Zoom In/out"		
Operations			
Camera characters	On/Off 20 characters, 5 lines		
Integrated motion detection	On/Off (3 rectangular areas)		
Frame rate	25/50Hz		
Brightness	Manual setting: 0~100		
Gain	Manual setting: 0~100		
Auto NUC (non-uniformity correction)	Off/Auto/Time/ Time+Auto		
Digital zoom	1x / 2x / 3x / 4x		
Color variations (palette)	RED HOT/IRON/ RAINBOW/AMBER/BLACK HOT/WHITE HOT (tot.:11 colors)		
Heat threshold	0~100		
Image sharpening	On/Off (edge sharpness only)		
Digital noise filter (DNS)	SSNR (2D), Noise filter (On/off)		
Image rotation	Flip: On/Off, Mirror: On/Off		
Intelligent video analytics	Motion detection		
Alarm events	Motion detection	Temperature alarm / Motion detection	
Temperature alarm events	Not available	Up to 10 regions of interest (ROI), temperature setting for each region: max, min or medium	
Network			
Ethernet	RJ-45 (10/100Base-T)		
Video Compression Format	H.264 (MPEG4 part 10/AVC): Main/Baseline/High Motion JPEG		

DATASHEET

Resolution (pixels)	720x576, 640x480, 384x288, 720x480, 320x240	
Frame Rate	(H.264) max 30fps in all resolutions, (MJPEG) max 15fps @640x480	
Smart Codec	Manual Mode (area based: 4ea,TBD)	
Video Quality adjustments	H.264: Compression level, Management of Target Bitrate level, MJPEG: quality adjustments	
Bitrate control modes	CBR o VBR, Motion JPEG: VBR (Bitrate range 128K~1M)	
Streaming	Multiple Streaming (upto 3 profiles), Max. Profiles:4, Fixed profiles (default):2	
IP	IPv4, IPv6	
Protocols	TCP/IP, UDP/IP, RTP(UDP),RTP(TCP), RTCP, RTSP, NTP, http, HTTPS, SSL, HDCP, PPPoE, FTP, ICMP, IGMP, ARP, DNS, DDNS, SMTP	
Security	IP Address Filtering User Access Log HTTPS(SSL) Login Authentication, Digest Login Authentication, 802.1x Authentication	
Streaming methods	Unicast/Multicast	
Max. User Access	Max 10 users access (TBD)	
Application Programming Interface	Onvif Profile S Ver 2.4	
Webpage Language	English, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Swedish, Dutch, Portuguese, Turkish, Polish, Czech, Hungarian, Greek.	
Web Viewer	Supported OS: Windows XP/VISTA/7/8/8.1/10 Supported Browser: Microsoft Intenet Explorer (Ver. 9~11)	
Central management Software	SSM ver 1.0	
Environmental		
Operating temperature	From -20°C to +60°C (-40°C to +60°C with reinforced heater)	
Storage temperature/humidity	From -20°C to +70°C	
Electrical		
Power supply	230-110Vac, 24Vac-dc or 12Vdc, PoE (IEEE802.3at Class3)	
Consumption	80W Max. (30W with PoE version)	
Mechanical		
Material	AISI 316L stainless steel	
Dimensions	Ø180mm x 484mm length	
Weight	15Kg	15Kg

DATASHEET

TECNICAL DRAWINGS



the values are in millimeters