

XCU3 FUSION

316L stainless-steel intelligent dual imager camera

DESCRIPTION

Rugged dual imaging camera for demanding environments. Utilizing both thermal imaging and a visible light in one single camera, its applications are endless: from perimeter surveillance, fire detection up to incident monitoring in traffic. The XCU and its accessories are double protected against corrosion; they are entirely made of powder-coated stainless-steel (316L). The housing is hermetically sealed against water and dust, which makes it ideal for harsh environments like traffic, tunnels, marine, offshore, heavy industry, and waste management.

The XCU3 may be subject to EU export control under EU 2021/821.

FEATURES

Dual imager: 10x zoom Full-HD +
Uncooled thermal imager

Compact, robust, and corrosion free

powder-coated 316L stainless steel
housing

Plug & Play

Nano glass optical window

Diamond-like-coated germanium
window

10x zoom optical camera

9, 13, 19 or 25 mm thermal camera

Water and dust tight: IP66 & IP67

Supports ONVIF Profile S



Description

The XCU3 Fusion is designed to operate in harsh and aggressive environments. Typical applications are found in the heavy industry, traffic, tunnels, waterways, waste treatment and even in the salty environment of the marine. The XCU Fusion combines a full-HD ultra-low light imager with an uncooled thermal imager for both day and night vision.

Plug & Play

Installing and commissioning IP cameras has become child's play. The XCU3 Fusion clicks into place with its versatile mounting accessories and is operational by plugging in the external connector. No need to open the unit; all connections can be prepared in advance.

Day vision

The XCU3 Fusion is fitted with a full-HD 2 Mpixel camera. Its 10x optical zoom offers an ideal coverage of the scene from almost any viewpoint. The viewing angle ranges from 54° up to 4.9°. Remote focus assist, a full set image enhancement tools and its ultra-low light performance makes this a versatile camera for a range of applications.

Night Vision

The XCU3 Fusion is also fitted with a highly sensitive uncooled microbolometer for thermal imaging. It detects temperature differences as small as 35 mK and can spot heat sources invisible to the naked eye. When the darkness obscures the vision of the optical imager, the thermal camera gives a clear overview of what is going on.

Multi-streaming and multi-casting

The XCU3 Fusion has multi-streaming capabilities for simultaneous transmission of one or more H.265 and/or H.264 streams. This guarantees interoperability with existing VMS systems. Multiple combinations of resolution and frame rate can be configured to satisfy different live viewing and recording scenarios. In addition, multi-casting is supported for complex, multi-user video networks.

Open standards

Out of the box, the XCU3 Fusion integrates with the common VMS systems. Being ONVIF Profile S compliant, the camera is supported without having a dedicated driver. When dedicated software or driver is needed the camera offers a comprehensive HTTP API. This specifically enables deployment in projects with custom requirements.

Built-in video analysis

The XCU Fusion series offers on-board analytics, such as intrusion detection and fire/hotspot detection on the thermal camera.

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Camera housing

Body material	316L stainless steel
Finishing	Powder coated (RAL9016)
Sunshield	Optional (316L powder coated, RAL9016)
Heater/Demister	Standard
Ingress protection	IP66, IP67
Corrosion Class	C5 (ISO 12944)
Impact rating casing	IK10
Solar radiation test	MIL-STD-810, method 505.4 (p.4)
Shock test (transportation)	MIL-STD-810, method 516.5
Vibration (IEC 50068-2-6)	10 Hz to 150 Hz, 0.5g, all 3 axes, 1 oct/min, 1 sweep
Max wind velocity	240 km/h (150 mph)
Operating temperature	-34 °C to +74 °C (-29 °F to 165 °F) - per Nema TS-2
- Continuous (sheltered, air temp)	-30 °C to +55 °C (-22 °F to 131 °F)
- Cold start	-30 °C (-22 °F)
Relative Humidity	5% to 100%
Dry heat test	+75 °C, 24 hours
Weight	4.0 kg (4.55 kg incl packaging)

Optical Imager

Image sensor	1/2.86 Progressive scan CMOS
Frame rate	1 to 25/30 fps
Effective pixels	1920(H) x 1080(V), 2.1Mp
Minimum scene illumination	0.02 lux color, 0.005 lux (b/w) F/1.6
Dynamic WDR	120dB
Shutter speed	1/25 - 1/30,000 s
Lens	10x zoom, 5.1 to 51 mm, F/1.6 to F/1.8
Horizontal field of view	54° (W) to 4.9°(T)
Lens type	motorized zoom
Features	BLC, HLC, auto/manual white balance, noise reduction, defog
Digital image stabilizer	Yes
Exposure	Auto/Manual/Shutter priority/Iris priority
Day/Night (IR-cut filter)	Auto/Manual
Focus	Auto/Manual/Push-to-focus

Thermal imager (Txxyz)

- xx = Focal Length	05; 09; 13; 25;			
- y = Max frame rate	S= 8.3 fps; F= 30 fps			
- zz = Resolution	3X= 284x288; 6X= 640x512			
Imager type	T09y3X	T13y3X	T19y6X	T25y3X
- Focal length	9.1 mm	13 mm	19 mm	25 mm
- Pixel size	17µm	17µm	17µm	17µm
- Field of view	39.5°x30.1°	28.2°x21.3°	19.5°x14.7°	14.9°x11.2°
- Min. focus distance	1.5 m	3 m	6 m	10 m

Specs



Thermal imager (Txxyzz)

- f-number	f/1.0	f/1.0	f/1.0	f/1.1
Imager type	T09y6X	T13y6X	T19y6X	T25y6X
- Focal length	9.1 mm	13 mm	19 mm	25 mm
- Pixel size	12µm	12µm	12µm	12µm
- Resolution	640x512	640x512	640x512	640x512
- Field of view	48.0°x38.4°	32.9°x26.6°	22.9°x18.4°	17.4°x14.0°
- Min. focus distance	2 m	5 m	10 m	16 m
- f-number	f/1.0	f/1.0	f/1.0	f/1.0
Imager	uncooled micro-bolometer (VOx)			
Spectral bandwidth	7.5 µm to 13.5 µm (LWIR)			
Sensitivity (NEdT)	< 35 mK @ f/1.0			
Time to image	< 60 s			
Digital zoom	No			
Color palette	7 color palettes; 1 isotherm palette with adjustable temp. levels			
Radiometric	yes (Isotherm color palette)			

Video stream

Number of streams	2x per sensor
Compression algorithm(s)	AVC/H.264 (MP), HEVC/H.265
Number of streams	2x streams for optical image and 2x streams for thermal image
Aspect ratio	16:9, 16:10, 5:4, 4:3 (cropped, no scaling, one setting for both sensors)

Supported output resolutions

- Optical image	920x1080; 1280x1024; 1280x720; 720x576; 704x576; 640x480; 480x576, 352x576; 704x288; 352x288; 320x240, 176x144
- Thermal image	Output images are up or down scaled 720x576 (D1); 704x480; 704x240; 640x512, 352x288; 336x256, 176x120
- Combined optical/thermal	Side-by-side, Thermal Picture-In-Picture in Optical image
Compression bit rate control	Variable bit rate (VBR)
Output bit rate (per stream)	Up to 6Mb/s
Number of video output streams	Up to 20 (RTSP) per input
Total output data rate (max)	50Mb/s
Video overlay	3x Text lines in both optical and thermal image

Analytics (on thermal only)

PID	Intrusion detection. Free form zones or detection lines
- Detection line	Touch, Cross (directional sensitive), Cross
- Detection zone	Touch
Hotspot detection	in two zones
- Measuring range	-20°C to 150°C
- Accuracy (at 5 m)	+/- 3°C (below 100 °C); +/- 3% (over 100°C)
Event time	0 to 10 s
Event output	generic ONVIF, SPI

Analytics (on thermal only)

Electrical

Supply voltage	IEEE802.3at type II (PoE+); AC 24 V (+/- 4V), 50/60 Hz; DC 24 V (+/- 4V) (Galvanic isolated)
Power consumption	15 W max
Power connector	3-pin 7/8" Conec
Network connector	Conec RJ45
PoE+ wiring recommendation	Wiring resistance = 50V

Network

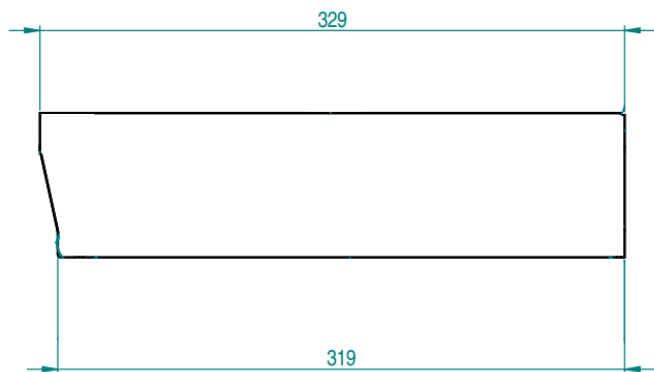
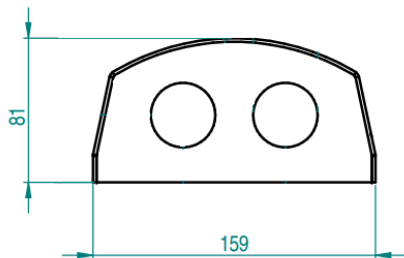
Interface(s)	100/1000 Mb Ethernet, auto negotiating, MDI/MDX
- 2SM models	GBE Singlemode SFP: "SFP SM 1310 20km 1Gb", dual LC (1310nm, 20km, 1GBE)
- 2MM models	GBE Multimode SFP: "SFP MM 1310 2km 1000Mb", dual LC (1310, 2km, 1GBE)
Protocols	IPv4, TCP/IP, UDP, RTP, RTSP, RTCP, NTP, HTTP, HTTPS, ICMP, FTP, SMTP, DHCP, UPnP, IEEE 802.1x (EAP-MD5 or EAP TLS), IGMP, SNMP, QoS, ONVIF, TLS1.2, TLS1.3
Password levels	Viewer, Operator and Administrator
Supported browsers	Edge, Chrome, Firefox, Safari
User accounts	20

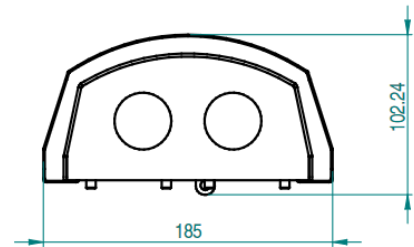
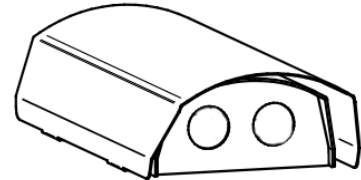
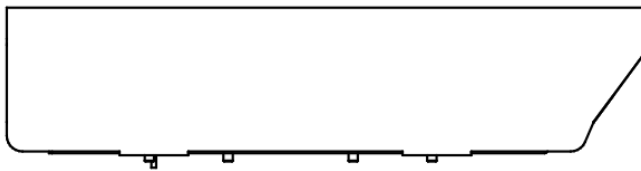
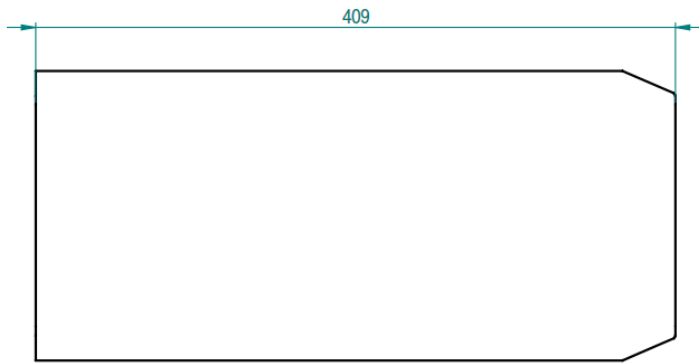
Ordering information

XCU3-F-T09S3X	XCU3 Fusion 316L dual imager, 2MP 10x zoom, 384x288, 40°, 8.3fps
XCU3-F-T13S3X	XCU3 Fusion 316L dual imager, 2MP 10x zoom, 384x288, 28°, 8.3fps
XCU3-F-T19S3X	XCU3 Fusion 316L dual imager, 2MP 10x zoom, 384x288, 19°, 8.3fps
XCU3-F-T25S3X	XCU3 Fusion 316L dual imager, 2MP 10x zoom, 384x288, 15°, 8.3fps
XCU3-F-T09F3X	XCU3 Fusion 316L dual imager, 2MP 10x zoom, 384x288, 40°, 30fps
XCU3-F-T13F3X	XCU3 Fusion 316L dual imager, 2MP 10x zoom, 384x288, 28°, 30fps
XCU3-F-T19F3X	XCU3 Fusion 316L dual imager, 2MP 10x zoom, 384x288, 19°, 30fps
XCU3-F-T25F3X	XCU3 Fusion 316L dual imager, 2MP 10x zoom, 384x288, 15°, 30fps
XCU3-F-T09S6X	XCU3 Fusion 316L dual imager, 2MP 10x zoom, 640x512, 48°, 8.3fps
XCU3-F-T13S6X	XCU3 Fusion 316L dual imager, 2MP 10x zoom, 640x512, 33°, 8.3fps
XCU3-F-T19S6X	XCU3 Fusion 316L dual imager, 2MP 10x zoom, 640x512, 23°, 8.3fps
XCU3-F-T25S6X	XCU3 Fusion 316L dual imager, 2MP 10x zoom, 640x512, 17°, 8.3fps
XCU3-F-T09F6X	XCU3 Fusion 316L dual imager, 2MP 10x zoom, 640x512, 48°, 30fps
XCU3-F-T13F6X	XCU3 Fusion 316L dual imager, 2MP 10x zoom, 640x512, 33°, 30fps
XCU3-F-T19F6X	XCU3 Fusion 316L dual imager, 2MP 10x zoom, 640x512, 23°, 30fps
XCU3-F-T25F6X	XCU3 Fusion 316L dual imager, 2MP 10x zoom, 640x512, 17°, 30fps
For direct Fiber out	Add -2SM for dual single mode or -2MM for dual multimode (OM1 or OM2)
Cable connectors	included

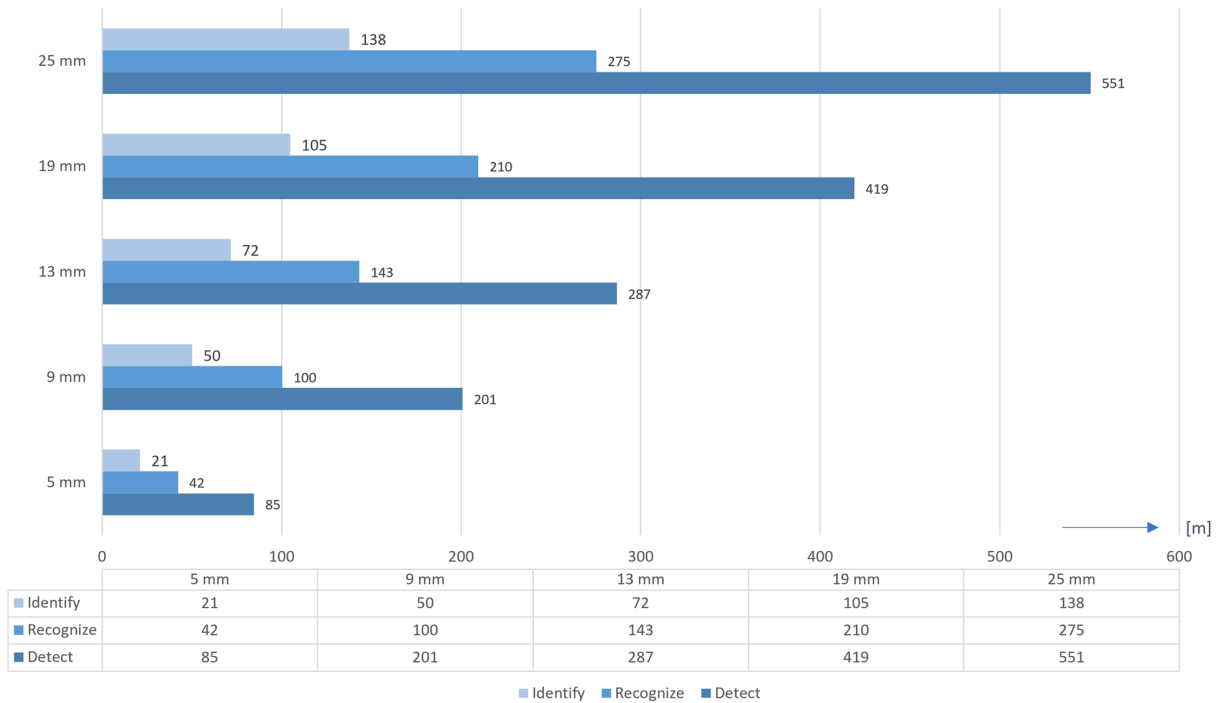
Mounting accessories

XCUWM01	XCU 316L Wall/Pole mount with swivel, RAL9016
XCUCM01	XCU 316L Rugged ceiling mount, RAL9016
XCUSS01	XCU Fusion 316L sunshield, RAL9016

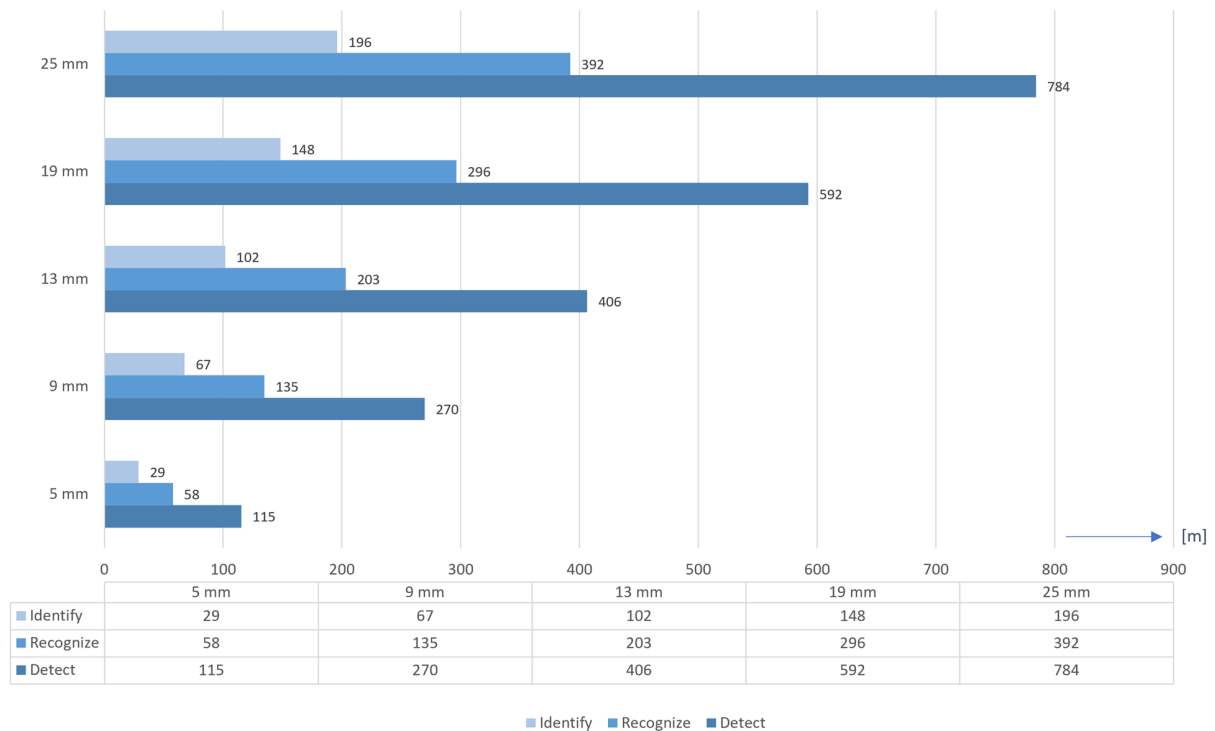




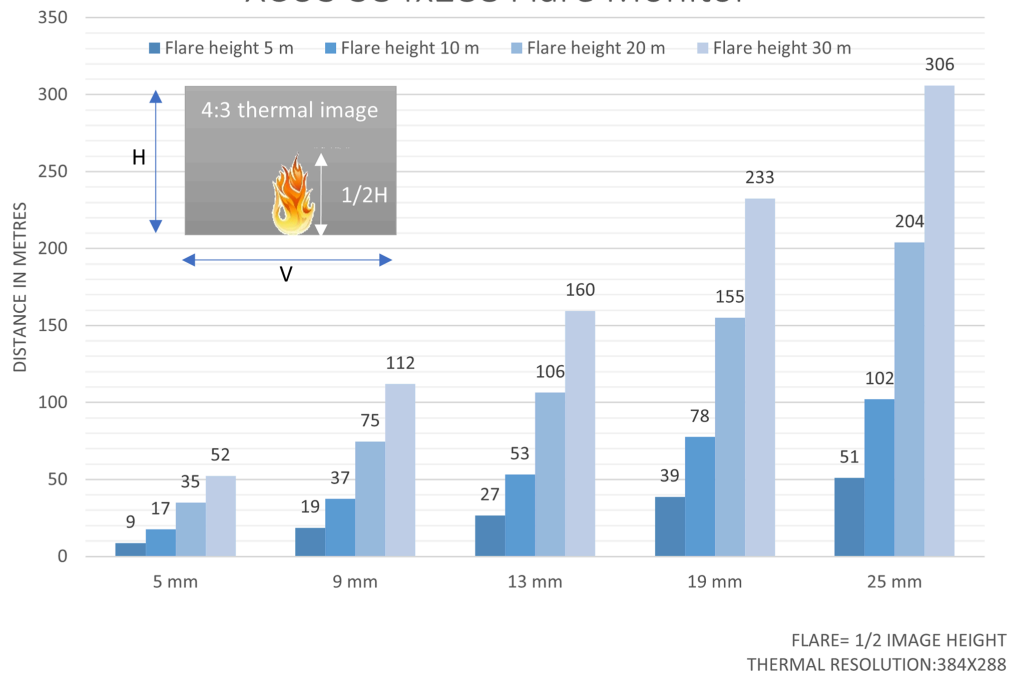
XCU3 384x288: Human Detect (2.7 p/m), Recognize (5.5 p/m), and Identify (10.7 p/m)



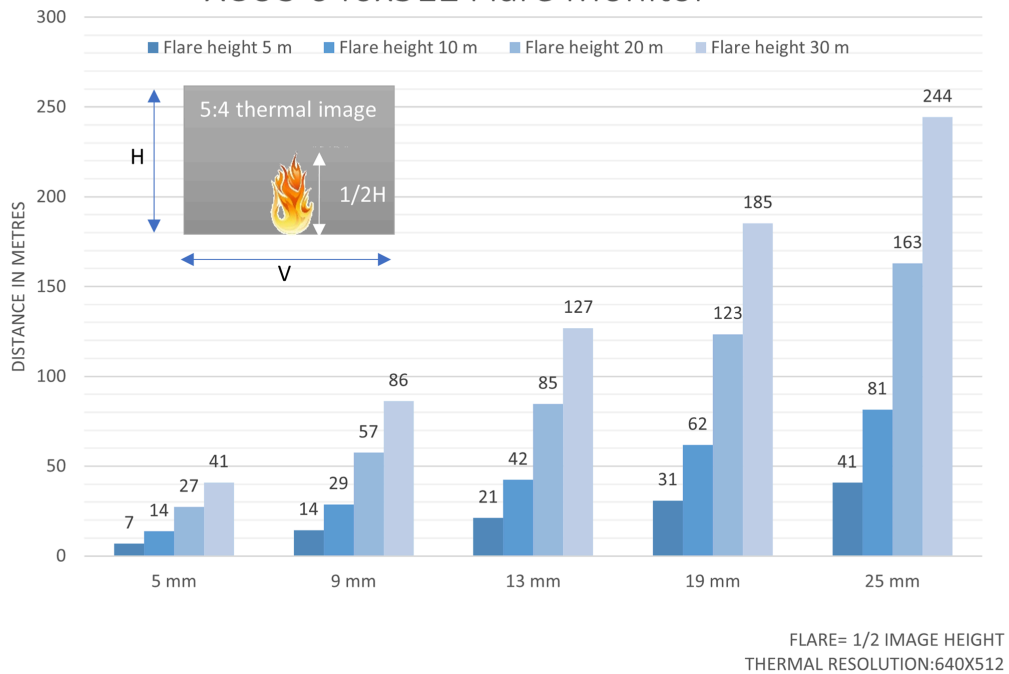
XCU3 640x512: Human Detect (2.7p/m), Recognize (5.5 p/m), and Identify (10.7p/m)

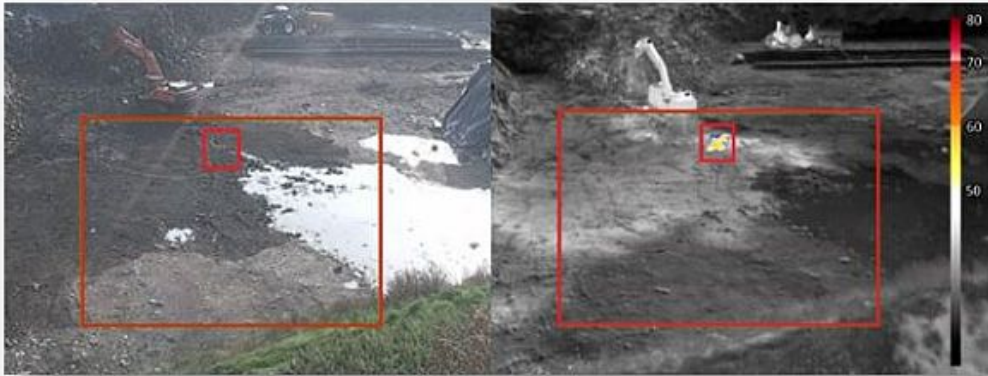


XCU3 384x288 Flare Monitor



XCU3 640x512 Flare Monitor





FlameGuard: Hotspot detection at a waste management site



Flame Guard: Fire detection in a machine room



FenceGuard: Perimeter intrusion detection



Fire detection, hot-spot and flare monitoring