

# XCU 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, waste management, etc.

## FEATURES

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

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Compact, robust, and corrosion free

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powder-coated 316L stainless steel housing

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Plug & Play

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Nano glass optical window

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Water and dust tight: IP66 & IP67

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ONVIF Profile S

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## Description

The XCU 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 XCU 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.

### Integrated 10x zoom visible HD camera

The XCU 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.

### Integrated thermal camera

The XCU Fusion is also fitted with a highly sensitive uncooled microbolometer for thermal imaging. It detects temperature differences as small as 50 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 over view of what's going on.

### Multi-streaming and multi-casting

The XCU Fusion has multi-streaming capabilities for simultaneous transmission of one or more H.264 streams combined with MJPEG. 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 XCU 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 FlameGuard™ for flare monitoring or fire/hotspot detection and FenceGuard™ for intrusion detection or virtual fences. Their applications are endless.

Camera housing	
Body material	316L stainless steel
Finishing	Powder coated (RAL9016)
Sunshield	Optional (316L powder coated, RAL9016)
Heater/Demister	Standard
Ingress protection	IP66, IP67
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
Operating temp (with sunshield)	-40 °C to +75 °C (-40 °F to 167 °F) - per Nema TS-2
- Without sunshield	-40 °C to +55 °C (-40 °F to 131 °F)
- Cold start	-30°C
Relative Humidity	5% to 100%
Dry heat test	+75 °C, 24 hours
Weight	5 kg

Optical Imager	
Image sensor	1/3 Progressive scan CMOS
Effective pixels	1920(H) x 1080(V), 2.1Mp
Minimum scene illumination	0.02 lux color, 0.005 lux (b/w) f/1.8
Dynamic WDR	120dB
Shutter speed	1/25 - 1/30,000 s
Lens	4.9 to 49 mm, f/1.8 to f/3.0
Horizontal field of view	49.4° (W) to 5.3°(T)
Lens type	motorized varifocal
Features	BLC, HLC, auto/manual white balance, (3D/2D) noise reduction, defog
Exposure	Auto/Manual
Day/Night (IR-cut filter)	Auto/Manual
Focus	Auto, manual push-to-focus

Thermal imager (TxxSx)	
Imager	uncooled micro-bolometer
Pixel pitch	17 µm
Resolution	
- Txx-S6 or Txx-F6	640x512
- Txx-S3	366x256
Focal length (xx=)	7.5mm    9 mm    13 mm    19 mm    25 mm    35 mm
- Field of view 640x512 (S6)	90°x69°    69°x56°    45°x37°    32°x26°    25°x20°    18°x14°
- f-number	f/1.4    f/1.4    f/1.25    f/1.25    f/1.1    f/1.5
- Field of view 366x256 (S3)	45°x35°    35°x27°    25°x19°    17°x13°    13°x10°    9.3°x7.1°
- f-number	f/1.4    f/1.25    f/1.25    f/1.25    f/1.1    f/1.5
Spectral bandwidth	7.5 µm to 13.5 µm (LWIR)
Max frame rate	

# Specs



## Thermal imager (TxxSx)

- TxxSx version	8.3/7.5 fps
- TxxFx versions	25/30 fps
Sensitivity (NEdT)	< 50 mK @ f/1.0
Time to image	< 60 s
Digital zoom	No
Colour palette	10 selectable colour palettes with freely adjustable temperature thresholds

## Video stream

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)
Compression algorithm(s)	H.264 BP/MP/HP (H.264/MPEG-4 AVC), MJPEG

## Supported output resolutions

- Optical image	1920x1080; 1280x1024; 1280x720; 1024x768; 800x600; 720x576; 640x480; 352x288; 176x120; 720x576); 640x512, 640x480; 352x288; 336x256, 176x120
- Thermal image	Output images are up or down scaled 720x576; 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 H.264 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, 1x bitmap (BMP, GIF) in both optical and thermal image

## Analytics

FenceGuard	Intrusion detection. Free form zones or detection lines
- Detection line	Touch, Cross (directional sensitive), Cross
- Detection zone	Touch, Enter, Inside, Exit
FlameGuard	Hotspot detection in two zones or Flare-on, Flare-off and Flare-too-large monitoring
- Measuring range	-40°C to 550°C
- Accuracy	+/- 20 °C (T 100 °C)
- Accuracy (xxxR1 option)	+/- 5 °C (T 100 °C); +/- 2 °C Typical
Event time	0 to 10 s
Event output	generic ONVIF, SPI

## Electrical

Supply voltage	IEEE802.3at type II (PoE+) or 24 Vac 50/60 Hz or 24 Vdc (Galvanic isolated)
Power consumption	12 W heater off; 21 W heater on
Power connector	3-pin 7/8" Conec
Network connector	Conec RJ45
PoE+ wiring recommendation	Wiring resistance = 50V

## Network

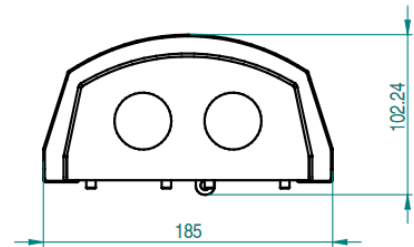
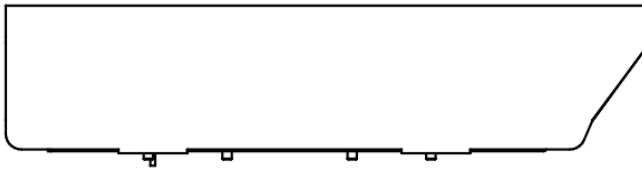
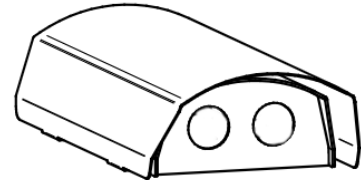
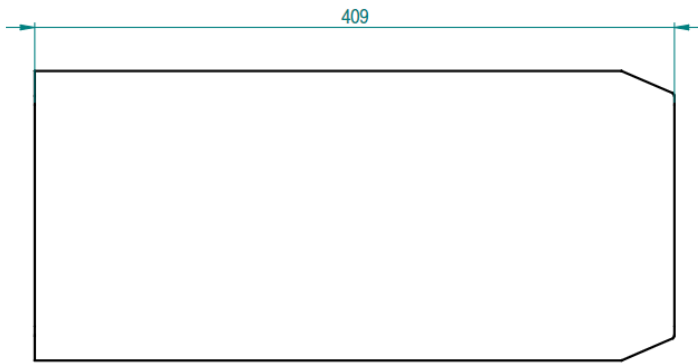
Network	
Interface(s)	100 Mb Ethernet, auto negotiating, MDI/MDX
Protocols	IPv4, TCP/IP, UDP, RTP, RTSP, HTTP, HTTPS, ICMP, FTP, SMTP, DHCP, UPnP, IGMP, SNMP, QoS, ONVIF, TLS1.2, NTCIP-1205
Password levels	User and Administrator
Supported browsers	Internet Explorer (9.0+), Chrome, Firefox, Safari
User accounts	20

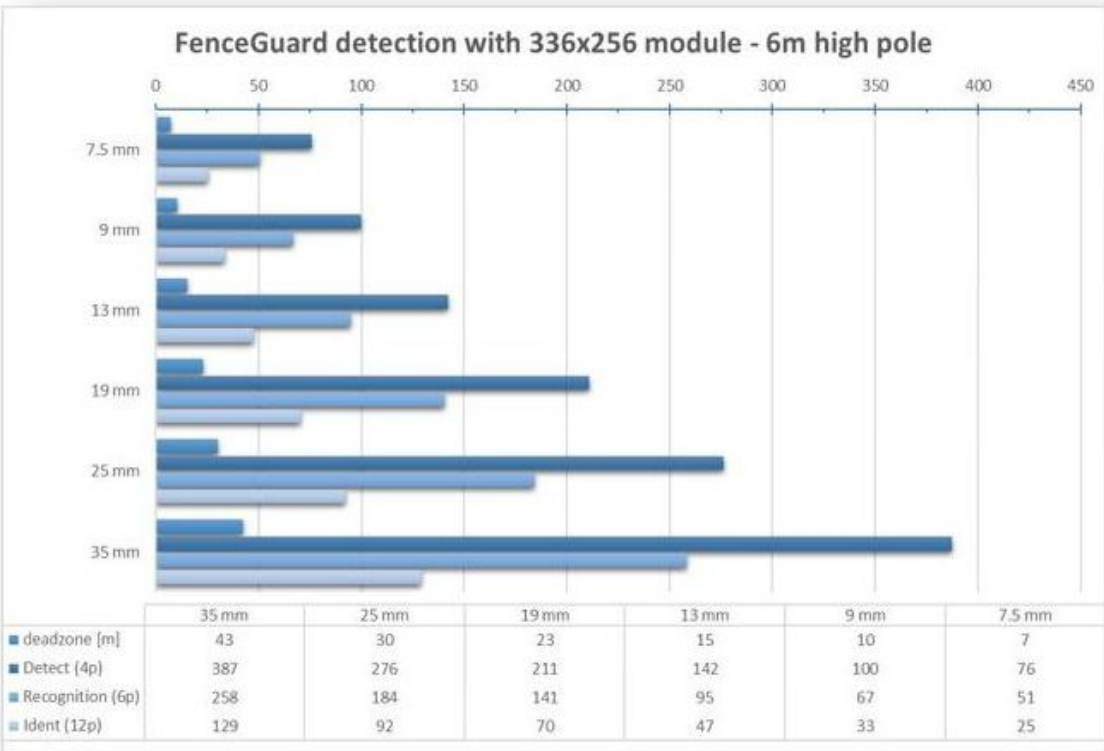
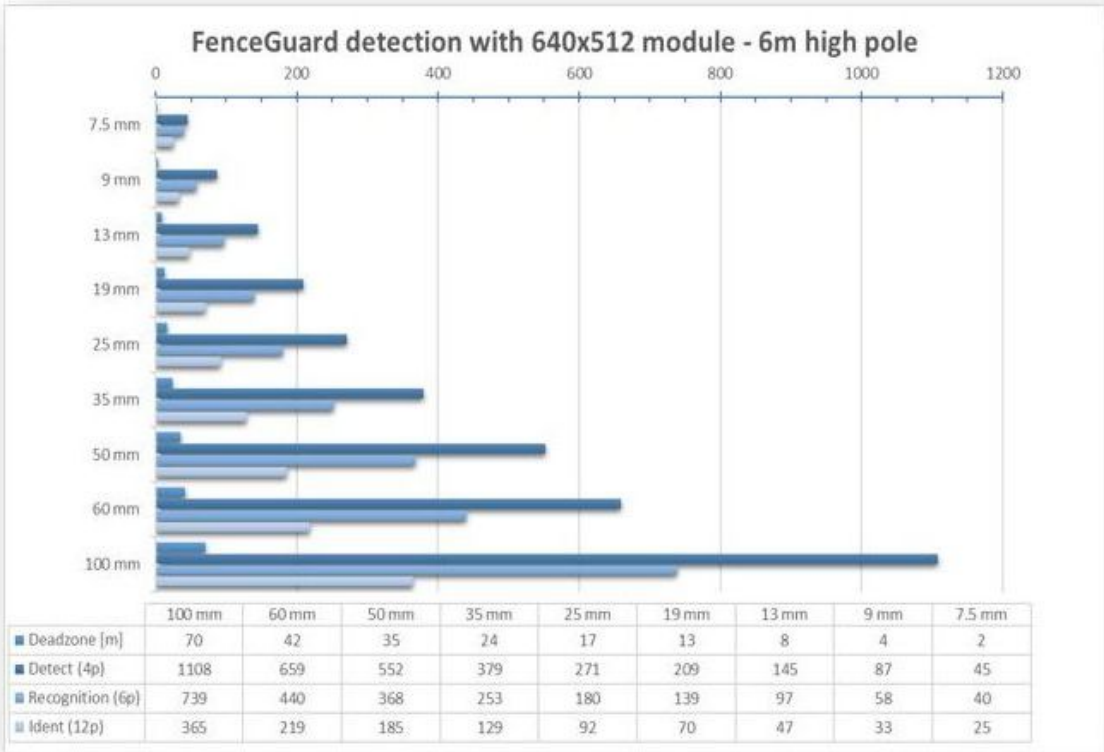
Ordering information	
XCU-F T75S3	XCU Fusion 316L dual imager; 2Mp 10x zoom + 366 45° 8.3fps
XCU-F T09S3	XCU Fusion 316L dual imager; 2Mp 10x zoom + 366 35° 8.3fps
XCU-F T13S3	XCU Fusion 316L dual imager; 2Mp 10x zoom + 366 25° 8.3fps
XCU-F T19S3	XCU Fusion 316L dual imager; 2Mp 10x zoom + 366 17° 8.3fps
XCU-F T25S3	XCU Fusion 316L dual imager; 2Mp 10x zoom + 366 13° 8.3fps
XCU-F T35S3	XCU Fusion 316L dual imager; 2Mp 10x zoom + 366 9° 8.3fps
XCU-F T75S6	XCU Fusion 316L dual imager; 2Mp 10x zoom + 640 90° 8.3fps
XCU-F T09S6	XCU Fusion 316L dual imager; 2Mp 10x zoom + 640 69° 8.3fps
XCU-F T13S6	XCU Fusion 316L dual imager; 2Mp 10x zoom + 640 45° 8.3fps
XCU-F T19S6	XCU Fusion 316L dual imager; 2Mp 10x zoom + 640 32° 8.3fps
XCU-F T25S6	XCU Fusion 316L dual imager; 2Mp 10x zoom + 640 25° 8.3fps
XCU-F T35S6	XCU Fusion 316L dual imager; 2Mp 10x zoom + 640 18° 8.3fps
XCU-F T75F6	XCU Fusion 316L dual imager; 2Mp 10x zoom + 640 90° 30fps
XCU-F T09F6	XCU Fusion 316L dual imager; 2Mp 10x zoom + 640 69° 30fps
XCU-F T13F6	XCU Fusion 316L dual imager; 2Mp 10x zoom + 640 45° 30fps
XCU-F T19F6	XCU Fusion 316L dual imager; 2Mp 10x zoom + 640 32° 30fps
XCU-F T25F6	XCU Fusion 316L dual imager; 2Mp 10x zoom + 640 25° 30fps
XCU-F T35F6	XCU Fusion 316L dual imager; 2Mp 10x zoom + 640 18° 30fps
	Add -R1 (e.g., XCU-F T09F6R1) for improved accuracy

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

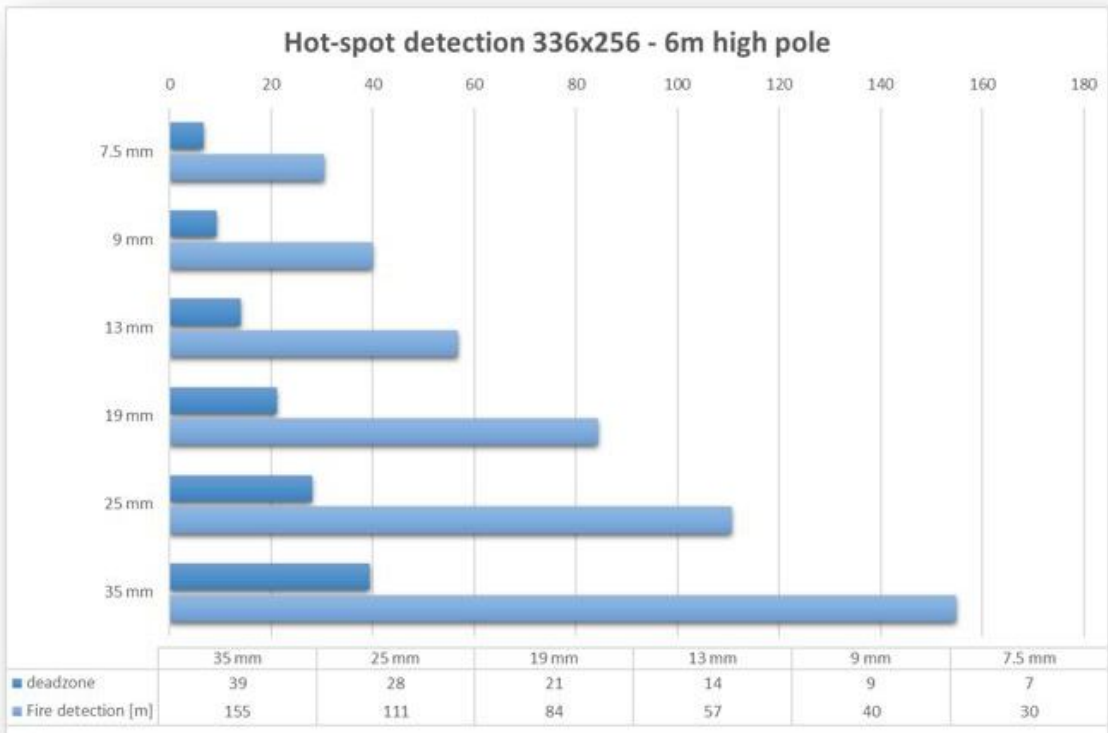
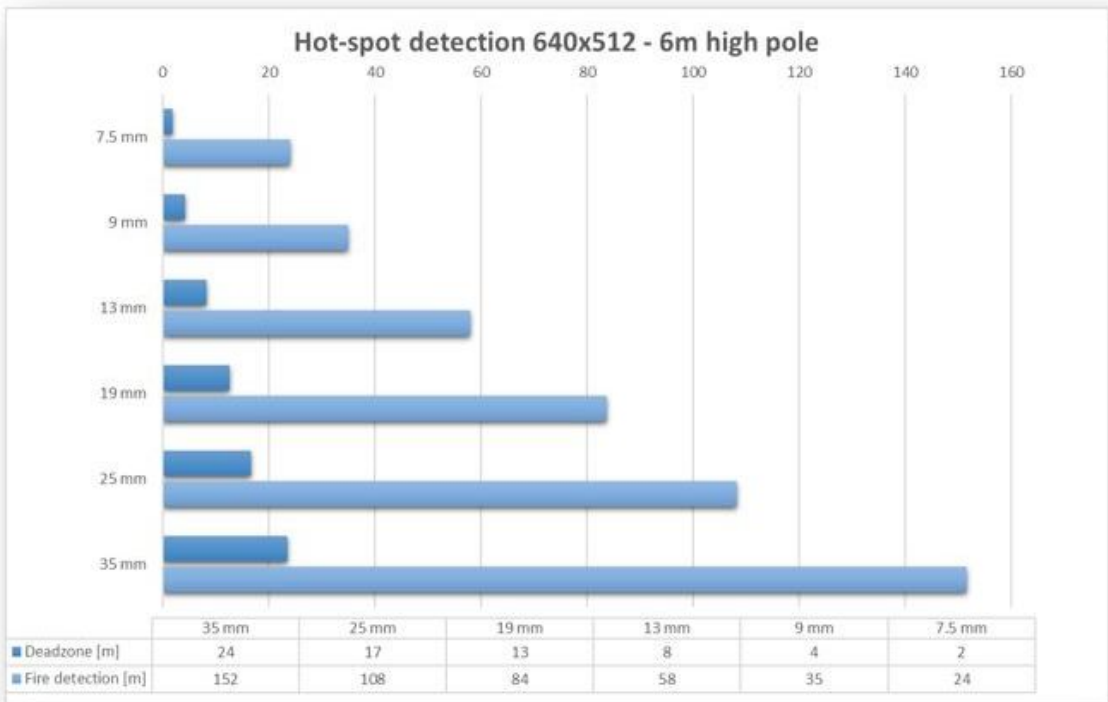
Cable connectors	
XCUCNC-PWR01	XCU IP67 power connector straight, cable part (included)
XCUCNC-RJ45	XCU IP67 Ethernet connector straight, cable part (included)

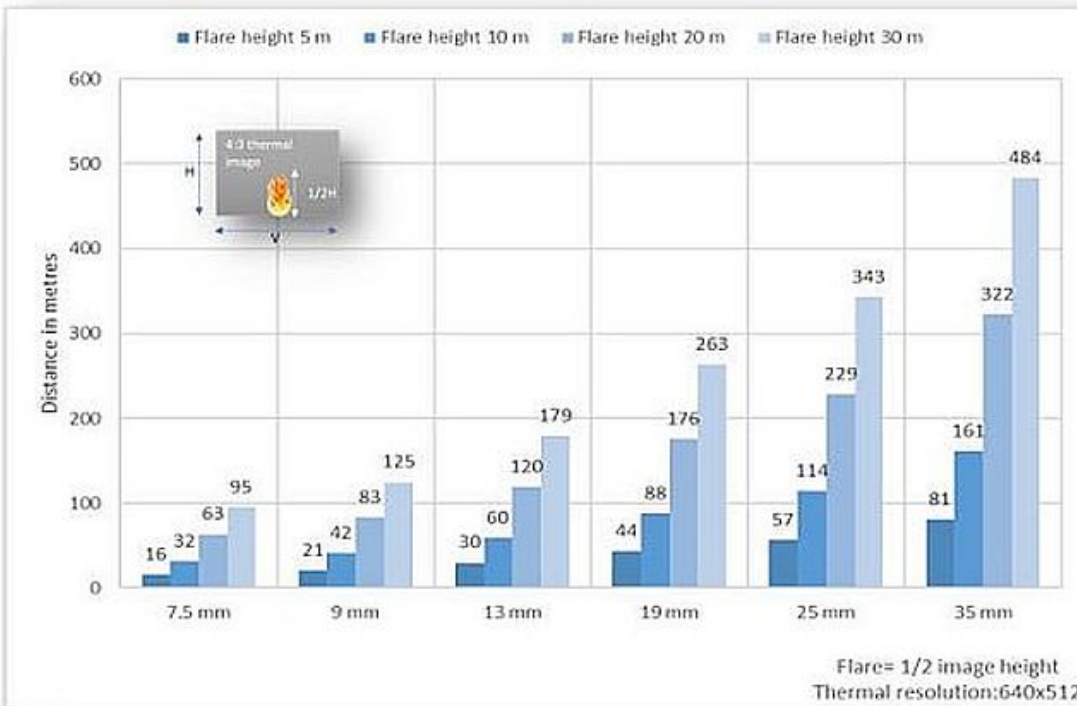
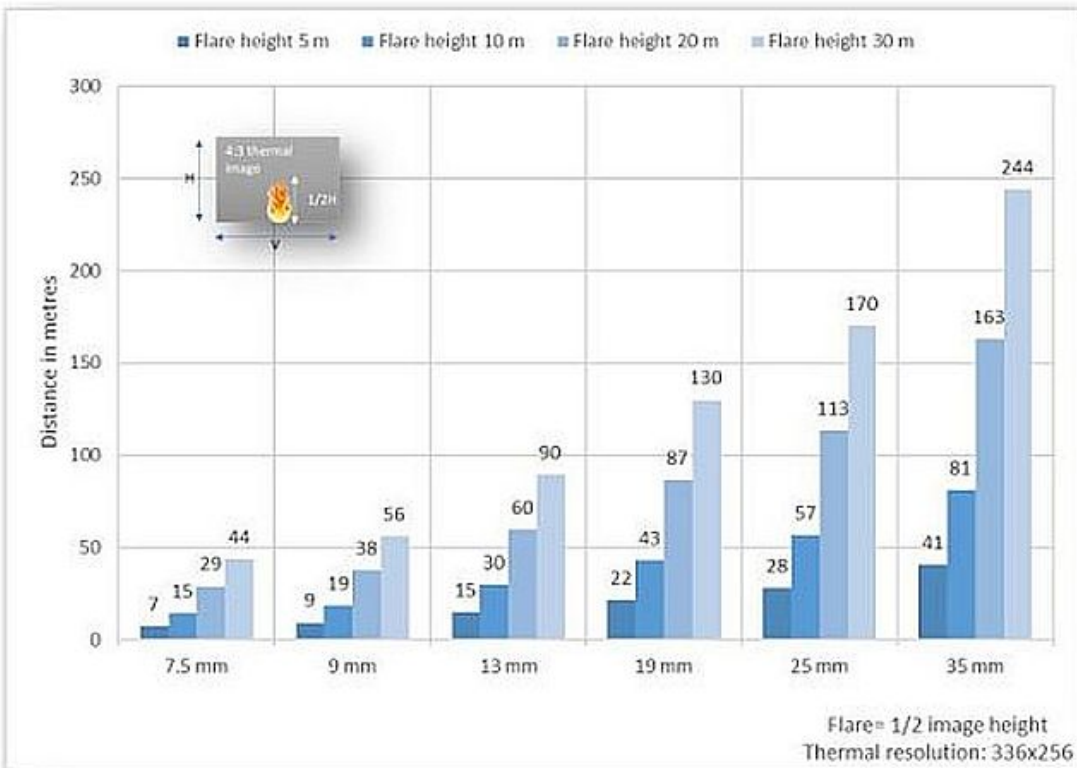
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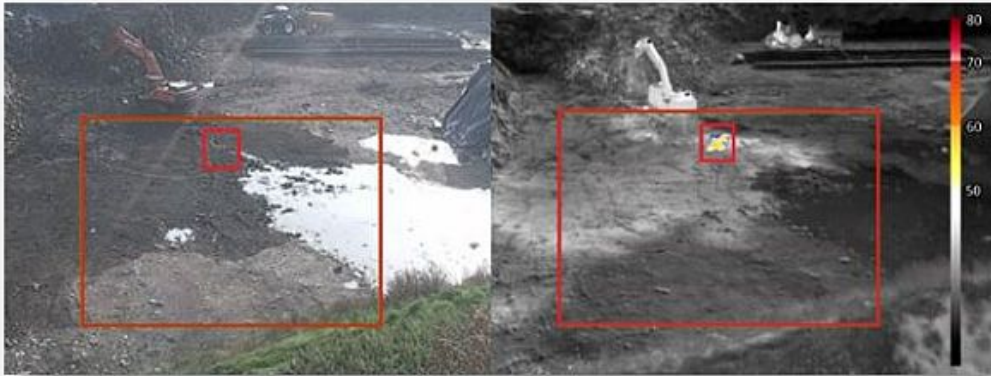












*FlameGuard: Hotspot detection at a waste management site*



*Flame Guard: Fire detection in a machine room*



*FenceGuard: Perimeter intrusion detection*



*Fire detection, hot-spot and flare monitoring*