AVIOTEC IP starlight 8000

www.boschsecurity.com

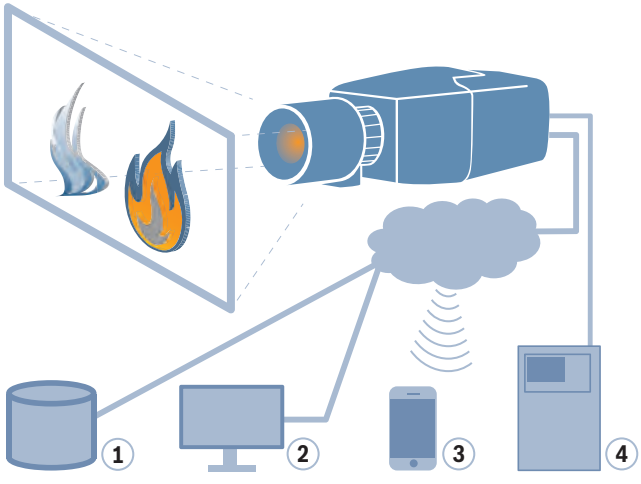
BOSCH
Invented for life

- Very fast fire and smoke detection
- Robust against false alarms
- Covers large monitoring area
- Oustanding performance under low-light conditions
- Resolution 1080p

AVIOTEC IP starlight 8000 sets new standards in visual fire detection by combining reliable smoke and flame detection with outstanding speed.

System overview

The video-based fire detection is the system of choice when reliable video motion and fire detection is needed, e.g. applications which are not subjected to construction product regulation or a supplementation to existing fire detection systems. AVIOTEC IP starlight 8000 operates as stand-alone unit and doesn't need a separate evaluation unit. Furthermore it contains all features of the Intelligent Video Analytics which allows analyzing and evaluating moving objects in parallel. Video-based fire detection and Intelligent Video Analytics operate independently from each other and are separately adjustable.
A 10/100 Base-T Fast Ethernet port on the back part of the device is available to connect the camera to Ethernet. This allows easy configuration and monitoring through network devices such as Client PCs or mobile devices. A video recording management system may be integrated optionally. Furthermore there is a relay output to transmit alarm signals, e.g. to the FPA-5000 fire alarm panel. In this case the camera acts as supervisory signal-initiating device. Alarms have to be verified by an operator in a monitoring center owing to non-existing standards. Automatic alarm-forwarding to fire services is not provided.



Pos.	Description
1	Video Recording Manager (VRM)
2	Client PC
3	Mobile Device
4	FPA-5000 Fire Alarm Panel

Functions

Fast and reliable flame and smoke detection
A unique Bosch algorithm based on physical characteristics of fires detects flames and smoke within an incredibly short time span by analyzing video sequences. The video-based fire detection works under remarkable low-light performance (down to 7 lx) and detects test fires TF1 to TF8. In case of flame or smoke detection the video broadcast has the advantage to verify the alarm, speed up the rescue chain and give insights to rescue teams.

Monitoring large areas
Insensitive to dust and humidity thanks to the optical principle, it is possible to monitor large indoor areas that push conventional systems to their limits. AVIOTEC IP starlight 8000 is the innovative solution for:

- Industry
- Transportation
- Energy & Utilities
- Warehouses

Large application range
The video-based fire detection is suitable for a range of challenging applications in harsh environments such as oil rigs or areas with a high fire hazard like paper mills. Highly versatile in application, AVIOTEC IP starlight 8000 offers the possibility to complement existing systems or to tap into new application fields.

Individually adjustable and adaptable
Verification time, sensitivity, detection size and selective masking for smoke and flame are individually configurable to adjust them to the customer needs. Flame and smoke detection can be activated or deactivated separately.

Root cause analysis
Connecting the camera to a video management system offers the possibility to find out the cause of fires. Based on video recordings, incidents can carefully be established and evaluated. This helps eliminating and preventing hazardous situations in the future.

Easy installation
Power for the camera can be supplied via a Power-over-Ethernet compliant network cable connection. With this configuration, only a single cable connection is required to view, power, and control the camera. Using PoE makes installation easier and more cost-effective, as cameras do not require a local power source.
The camera can also be supplied with power from +12 VDC power supplies. To increase system reliability, the camera can be simultaneously connected to both PoE and +12 VDC supplies. Additionally, uninterruptible power supplies (UPS) can be used to ensure continuous operation, even during a power failure.

For trouble-free network cabling, the camera supports Auto-MDIX which allows the use of straight or cross-over cables.

Certifications and approvals

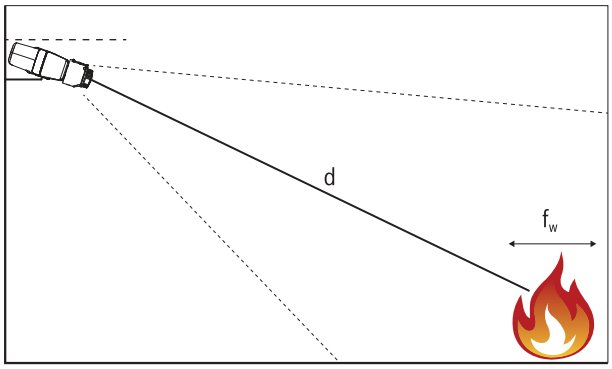
Standards	
Emission	EN 55022 Class B (2010), +AC (2011) FCC: 47 CFR 15, class B (2012-10-1)
Immunity	EN 50130-4 (PoE, +12 VDC)* (2011) EN 50121-4 (2006), +AC: (2008)
Alarm	EN 50130-5 Class II (2011)
Safety	EN 60950-1 UL 60950-1 (2nd edition) CAN/CSA-C 22.2 No. 60950-1
Vibration	Camera with 500 g (1.1 lb) lens as per IEC 60068-2-6 (5 m/s^2, operational)
HD	SMPTE 296M-2001 (Resolution: 1280x720) SMPTE 274M-2008 (Resolution: 1920x1080)
Color representation	ITU-R BT.709
ONVIF conformance	EN 50132-5-2; IEC 62676-2-3

* Chapters 7 and 8 (mains voltage supply requirement) are not applicable to the camera. However, if the system in which this camera is used needs to comply with this standard, then any power supplies used must comply with this standard.

Region	Certification	
Europe	CE	FCS-8000-VFD-B

Installation/configuration notes

Disclaimer
Video Fire indication systems are video content analysis systems. They give indications for fires and are designed to supplement fire detection systems and human guards in monitoring centers.
Video Fire indication systems are confronted with a higher amount of challenges considering scenery and background compared to conventional fire detection systems. It cannot be granted that fire is detected in all scenery settings. Thus the video fire detection system shall be seen as a system that enhances the probability of early fire detection, with the restriction that it might detect false alarms. It shall not be seen as a system that ensures fire detection in all possible image scenarios.
The camera must be mounted according to the following graphic:



d	Distance to fire
f_w	Flame width

The maximum distance to fire depends on f_w and the lens settings.
The tables below demonstrate exemplarily the maximum distances to a fire depending on fire size and opening angle of the camera lens:

Maximum distance to fire in m (Flame detection)

	Opening angle [°]		
	100	60	45
Fire width [m]			
0.3	12.6	19.2	25.1
0.5	21.0	32.0	41.9
1	42.1	64.1	83.9
2	84.3	128.3	167.8

Maximum distance to fire in m (Smoke detection)

	Opening angle [°]		
	100	60	45
Smoke width [m]			
0.3	8.4	12.8	16.7
0.5	14.1	21.4	27.9
1	28.1	42.8	55.7
2	56.2	85.6	111.4

Parts included

Quantity	Component
1	AVIOTEC IP starlight 8000
1	Varifocal SR Megapixel Lens (LVF-5005C-S4109 | F.01U. 297.770)
1	TC9208 bracket (TC9208 | F.01U.143.919)

Technical specifications

Algorithm Overview		
	Flame	**Smoke**
Min. Detection Size (% of picture width)	1.6	2.3
Rising Speed (% of picture height /s)	-	0.7 – 4.2

Audio streaming	
Standard	G.711, 8 kHz sampling rate L16, 16 kHz sampling rate AAC-LC, 48 kbps at 16 kHz sampling rate AAC-LC, 80 kbps at 16 kHz sampling rate
Signal-to-Noise Ratio	>50 dB
Audio Streaming	Full-duplex / half duplex

Environmental	
Operating Temperature	-20°C to +50°C (-4°F to 122°F)
Storage Temperature	-30°C to +70°C (-22°F to +158°F)
Operating Humidity	20% to 93% RH
Storage Humidity	up to 98% RH

Input/output	
Analog video out	SMB connector, CVBS (PAL/NTSC), 1 Vpp, 75 Ohm
Audio line in	1 Vrms max, 18 kOhm typical,
Audio line out	0.85 Vrms at 1.5 kOhm typical,
Audio connectors	3.5 mm mono jack
Alarm input	2 inputs
Alarm input activation	+5 VDC nominal; +40 VDC max. (DC-coupled with 50 kOhm pull-up resistor to +3.3 VDC) (< 0.5 V is low; > 1.4 V is high)
Alarm output	1 output
Alarm output voltage	30 VAC or +40 VDC max. Maximum 0.5 A continuous, 10VA (resistive load only)
Ethernet	RJ45
Data port	RS-232/422/485

Local storage	
Internal RAM	10 s pre-alarm recording
Memory card slot	Supports up to 32 GB microSDHC / 2 TB microSDXC card. (An SD card of Class 6 or higher is recommended for HD recording)
Recording	Continuous recording, ring recording. alarm/ events/schedule recording

Mechanical	
Dimensions (W x H x L)	78 x 66 x140 mm (3.07 x 2.6 x 5.52 inch) without lens
Weight	855 g (1.88 lb) without lens
Color	RAL 9006 Metallic Titanium
Tripod Mount	Bottom and top 1/4-inch 20 UNC

Network	
Protocols	IPv4, IPv6, UDP, TCP, HTTP, HTTPS, RTP/ RTCP, IGMP V2/V3, ICMP, ICMPv6, RTSP, FTP, Telnet, ARP, DHCP, APIPA (Auto-IP, link local address), NTP (SNTP), SNMP (V1, MIB-II), 802.1x, DNS, DNSv6, DDNS (DynDNS.org, selfHOST.de, no-ip.com), SMTP, iSCSI, UPnP (SSDP), DiffServ (QoS), LLDP, SOAP, Dropbox, CHAP, digest authentication
Encryption	TLS 1.0, SSL, DES, 3DES
Ethernet	10/100 Base-T, auto-sensing, half/full duplex
Connectivity	ONVIF Profile S , Auto-MDIX

Optical	
Lens mount	CS mount (C-mount with adapter ring)
Lens connector	Standard 4-pin DC-iris connector
Focus control	Motorized back-focus adjustment
Iris control	Automatic iris control

Power	
Power Supply	12 VDC; Power-over-Ethernet 48 VDC nominal
Current Consumption	750 mA (12 VDC); 200 mA (PoE 48 VDC)
Power Consumption	9 W
PoE	IEEE 802.3af (802.3at Type 1) Class 3

Sensor	
Type	1/1.8” CMOS
Total sensor pixels	6.1 MP

Software	
Unit Configuration	Via web browser or Configuration Manager
Firmware update	Remotely programmable
Software viewer	Web browser, Bosch Video Client, or third party software

Video resolution	
1080p HD	1920 X 1080
720p HD	1280 x 720
Upright 9:16 (cropped)	400 x 720
D1 4:3 (cropped)	704 x 480
480p SD	Encoding: 704 x 480; Displayed: 854 x 480
432p SD	768 x 432
288p SD	512 x 288
240p SD	Encoding: 352 x 240; Displayed: 432 x 240
144p SD	256 x 144

Video streaming	
Video compression	H.264 (MP); M-JPEG
Streaming	Multiple configurable streams in H.264 and M-JPEG, configurable frame rate and bandwidth. Regions of Interest (ROI)
Overall IP Delay	Min. 120 ms, Max. 340 ms
GOP structure	IP, IBP, IBBP
Encoding interval	1 to 30 [25] fps
Encoder regions	Up to 8 areas with encoder quality settings per area

LVF-5005C-S4109	
Maximum sensor format	1/1.8-inch
Optical resolution	5 Megapixels
Focal length	4.1 – 9 mm
Iris range	F1.6 to F8
Min object distance	0.3 m (1 ft)
Back focus distance (values in air)	12.72 mm (wide), 19.94 mm (tele)
Weight	130 g (0.29 lb)
Dimensions	Ø 62.9 mm (excluding focus and zoom knobs) x 66.6 mm (excluding flange)

LVF-5005C-S4109	
Lens mount	CS
Angle of view (HxV) 4:3	100° x 74° Wide 45° x 33° Tele
Angle of view (HxV) 1/3-inch sensor 16:9	73 x 41° Wide 33 x 19° Tele
Angle of view (HxV) 1/2.7-inch sensor 16:9	80 x 4° Wide 37 x 21° Tele
Angle of view (HxV) 1/1.8-inch sensor 16:9	101 x 56° Wide 46 x 26° Tele
Iris control	4-pin, DC control
Focus ctrl	manual
Zoom ctrl	manual
IR corrected	yes
Environmental	
- Operating Temperature	-10°C to+50°C (+14°F to +122°F)
- Storage Temperature	-40°C to +70°C (-40°F to + 158°F)
- Operating Humidity	Up to 93% non-condensing
- Certification	CE

Ordering information

AVIOTEC IP starlight 8000
Fast and secure identification of smoke and flames by video-based fire detection.
Order number **FCS-8000-VFD-B**

Accessories

UHI-OG-0 Indoor Housing
Indoor camera housing
Order number **UHI-OG-0**

UHI-OGS-0 Indoor Housing with Sunshield
Indoor camera housing; sunshield
Order number **UHI-OGS-0**

UHO PoE Outdoor Camera Housing
Outdoor camera housing with PoE input. IP67; cable gland
Order number **UHO-POE-10**

UHO-HBGS-11 Outdoor Housing
Outdoor housing for (24 VAC / 12 VDC) camera.
24 VAC power supply; blower; feed-through cabling
Order number **UHO-HBGS-11**

UHO-HBGS-51 Outdoor Housing
Outdoor housing for (230 VAC / 12 VDC) camera.
230 VAC power supply; blower; feed-through cabling
Order number **UHO-HBGS-51**

UHO-HBGS-61 Outdoor Housing
Outdoor housing for (120 VAC / 12 VDC) camera.
120 VAC (60 Hz) power supply; blower; feed-through cabling
Order number **UHO-HBGS-61**

HAC-TAMP01 Tamper Switch
Tamper switch kit for HSG and UHI/UHO series enclosures
Order number **HAC-TAMP01**

LTC 9215/00 Mount
Wall mount for camera housing, cable feed-through, 30 cm (12 in.)
Order number **LTC9215/00**

LTC 9215/00S Mount
Wall mount for camera housing, cable feed-through, 18 cm (7 in.)
Order number **LTC9215/00S**

LTC 9219/01 Feed-through J-Mount
J-mount for camera housing, 40 cm (15-inch), 9 kg (20 lb) max load
Order number **LTC 9219/01**

Represented by:

North America:
Bosch Security Systems, Inc.
130 Perinton Parkway
Fairport, New York, 14450, USA
Phone: +1 800 289 0096
Fax: +1 585 223 9180
security.sales@us.bosch.com
www.boschsecurity.us

Europe, Middle East, Africa:
Bosch Security Systems B.V.
P.O. Box 80002
5617 BA Eindhoven, The Netherlands
Phone: + 31 40 2577 284
Fax: +31 40 2577 330
emea.securitysystems@bosch.com
www.boschsecurity.com

Asia-Pacific:
Robert Bosch (SEA) Pte Ltd, Security Systems
11 Bishan Street 21
Singapore 573943
Phone: +65 6571 2808
Fax: +65 6571 2699
apr.securitysystems@bosch.com
www.boschsecurity.asia

China:
Bosch (Shanghai) Security Systems Ltd.
203 Building, No. 333 Fuquan Road North IBP
Changning District, Shanghai
200335 China
Phone +86 21 22181111
Fax: +86 21 22182398
www.boschsecurity.com.cn

Latin America and Caribbean:
Robert Bosch Ltda Security Systems Division
Via Anhanguera, Km 98
CEP 13065-900
Campinas, Sao Paulo, Brazil
Phone: +55 19 2103 2860
Fax: +55 19 2103 2862
latam.boschsecurity@bosch.com
www.boschsecurity.com

18757245579 | en, V7, 24. Jun 2016