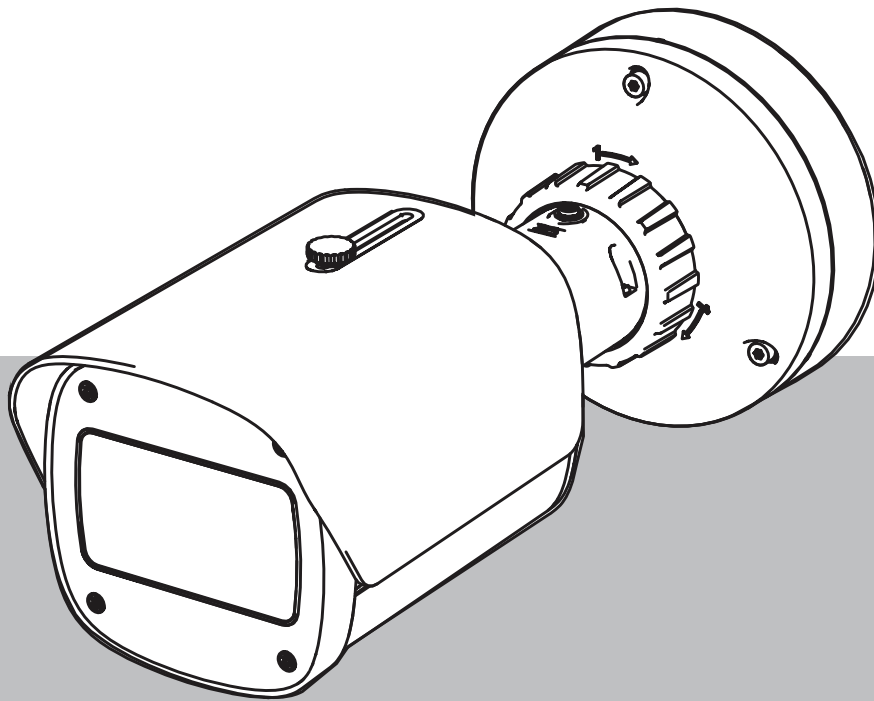




BOSCH

AVIOTEC 8000i IR

FCS-8000-VFD-I



en

Commissioning

Table of contents

1	Safety	4
1.1	<i>Safety message explanation</i>	4
1.2	<i>Safety precautions</i>	4
2	Introduction	6
3	Required test equipment	7
3.1	<i>Real smoke test equipment</i>	7
3.2	<i>Smoke and flame video test equipment</i>	7
4	Test procedure	8
4.1	<i>Smoke detection (real smoke)</i>	9
4.2	<i>Smoke detection (test video)</i>	10
4.3	<i>Flame detection (test video)</i>	11
4.4	<i>Smoke and flame detection (test video)</i>	12
5	Commissioning report	13

1 Safety

IMPORTANT: Video fire indication systems are video content analysis systems. They give indications for possible fires and are designed to supplement fire detection systems and human guards in monitoring centers in order to recognize possible dangerous situations. Video fire indication systems are confronted with a higher amount of challenges considering scenery and background compared to conventional fire detection systems. They cannot ensure that fire will be detected reliably in all scenery settings. Thus, the video fire detection system shall be seen as a support system that enhances the probability of early fire detection, with the restriction that it shall not be seen as a system that ensures fire detection in all possible image scenarios and it might detect false alarms. Conventional fire alarm systems must in no way be replaced by video-based fire alarm systems.

In addition, and for the U.S. market only, Bosch Security Systems makes no representation that the video fire indication system will prevent any personal injury or property loss by fire or otherwise; or that such product will in all cases provide adequate warning or protection. Buyer understands that a properly installed and maintained fire indication system may only reduce the risk of a fire or other events occurring without providing an alarm, but it is not insurance or a guarantee that such will not occur or that there will be no personal injury or property loss as a result.

Consequently, Bosch Security Systems shall have no liability for any personal injury, property damage or other loss based on a claim the product failed to give warning.

1.1 Safety message explanation



Caution!

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



Danger!

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



Notice!

Indicates a situation which, if not avoided, could result in damage to the equipment or environment, or data loss.



Warning!

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

1.2 Safety precautions



Danger!

Toxic gas

Protect yourself against toxic gas. Wear personal protective equipment.

**Danger!**

Toxic gas

Avoid the inhalation of toxic products or smoke. Stay away from the test area unless otherwise instructed.

**Warning!**

Fire hazard

Only use the specified test equipment.

**Warning!**

Personal injury and property damage

Follow all safety information and user documentation including test equipment documents and safety instructions to avoid personal injuries and property damage.

2 Introduction

Copyright

The manufacturer retains the complete copyright to the whole documentation and assumes no liability for damage or malfunction arising through failure to comply with this document. This document is aimed at readers with know-how and experience in planning and installing EN 54-compliant fire alarm systems who have additional fire and smoke testing knowledge. It contains information about commissioning the video-based fire detection by smoke and flame tests.

Smoke and flame tests can either be performed with real smoke and real fire or smoke and flame videos displayed on a monitor. We strongly recommend to test the smoke detection with real smoke and the flame detection only with a test video. Flame tests with real fire are dangerous and require a significant security effort.

3 Required test equipment

The illumination is measured using a luxmeter in the application at a height of 1 meter with the sensor pointing vertically upwards.

The following material is needed during the tests and is defined for one camera.

The quantity of test equipment items depends on the amount of test objects. Adjust the quantity accordingly.

3.1 Real smoke test equipment

	Characteristics
Smoke cartridge	Approx. 9 m ³ , 1 minute, white (e.g. Björnax Pure-AX 9, white)
Ignition	Electrical ignition suitable for Björnax Pure-AX 9 or stick lighter
Smoke cartridge container	E.g. a fireproof metal bucket, 10 l, height 30 cm

3.2 Smoke and flame video test equipment

The test monitor or tablet must fulfill the following minimum requirements:

	Characteristics
Resolution	1600 x 900 pixels
Brightness	300 cd/m ²
Contrast ratio	1000:1

It is recommended to use a monitor hood in very bright surroundings to avoid reflections on the monitor screen and to improve the visibility of the test video.

4 Test procedure

Preparation of the test scene

Ensure that the camera is properly installed. For functional testing, existing fire alarm systems and detectors must be switched to revision mode. This also applies to fire alarm systems in which the customer might have integrated the camera directly to the fire panel.

- Identify an appropriate and clearly visible place in the detection area of the camera.
- Remove combustible material from the test area.
- Make sure that only authorized persons have access to the test area.
- The playback device and the camera must be mounted stable and may not vary during the test.
- In bright environmental conditions use a monitor hood.
- Make sure no scattering light falls to the screen.
- Place the monitor at a position in the room where flame and/or smoke video is clearly visible on the camera live image. The flame and/or smoke displayed on the monitor should have a size of at least 5 to 10% of the camera image.

Settings in the camera menu

See operation manual for detailed description.

- Remove all masks in the detection settings, or test in an area of the image where no mask is applied.
- Activate flame and smoke detector settings and select size and verification times that are required for the scene.
- Start the lens wizard and focus on the screen, if necessary.
- If there is flickering in the camera video image, activate **ALC mode** 50 Hz or 60 Hz. Choose an option that reduces the flickering best.
- Patterns in the camera image can lead to image interferences caused by the Moiré effect. A Moiré pattern is the result of two superimposed patterns visible on the screen. In this case, adjust the lens settings accordingly, until the Moiré effects disappear.

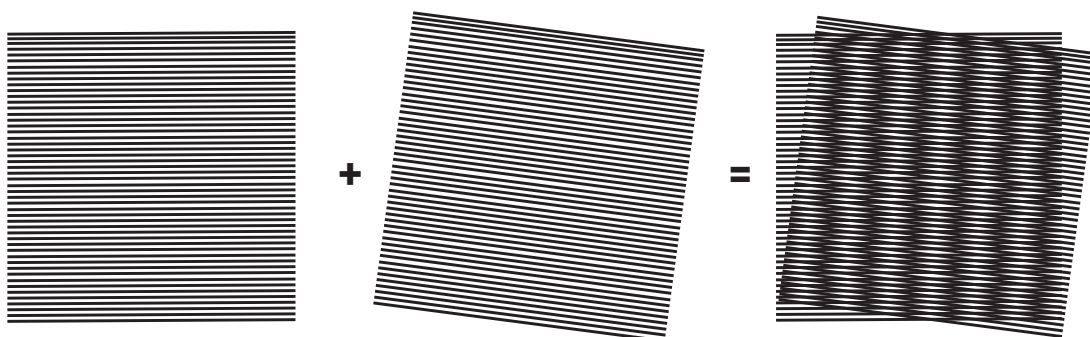


Figure 4.1: Moiré effect caused by two superimposed patterns (example)

After the tests

- Restart the camera (reset automask storage)
- Remove the screen and adjust the camera to the surveillance scene again
- Start the lens wizard and focus on the scene, if necessary.
- Select the appropriate **ALC mode**.

4.1 Smoke detection (real smoke)

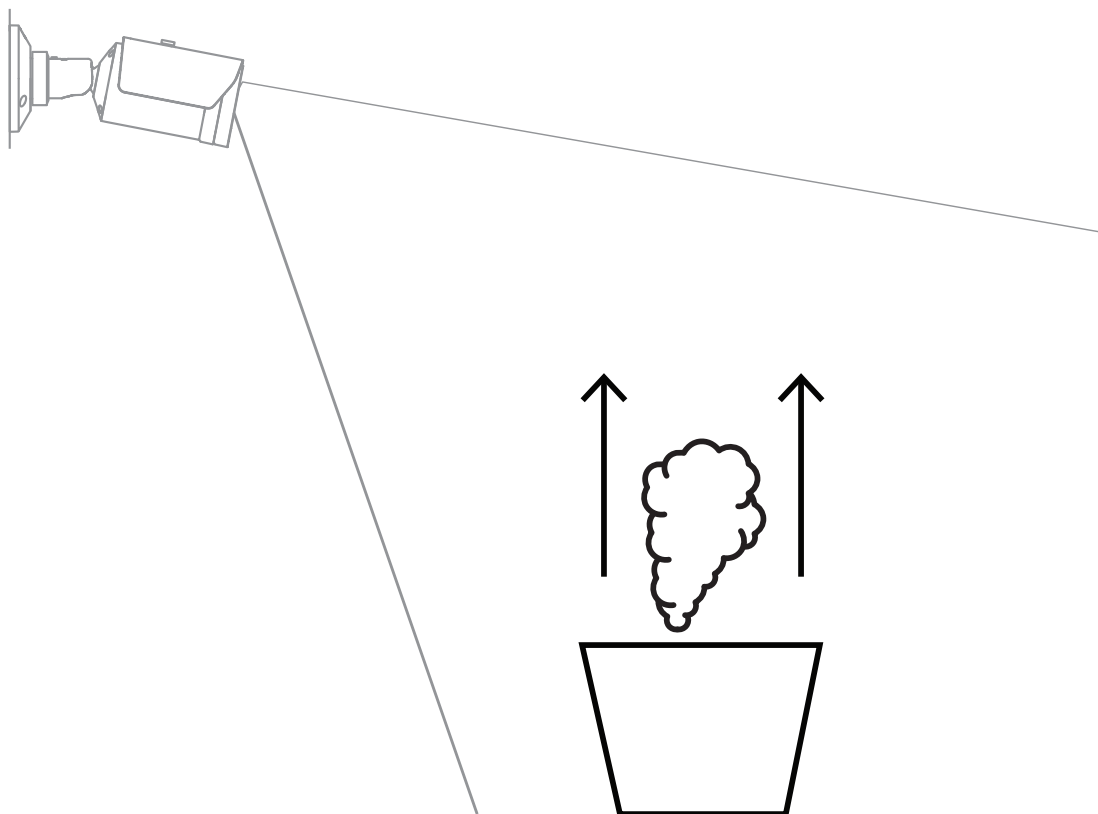


Figure 4.2: Test setup (smoke detection, real smoke generated by smoke cartridges)

1. Put the fireproof metal bucket on solid and fireproof ground.
 2. Position two smoke cartridges **upright** into the metal bucket.
 3. Ignite the smoke cartridges with a stick lighter or via electric smoke cartridge ignition.
- ⇒ The smoke detector should trigger the alarm within 60 s, depending on the verification time used.

Enter the results in the commissioning report.

4.2 Smoke detection (test video)

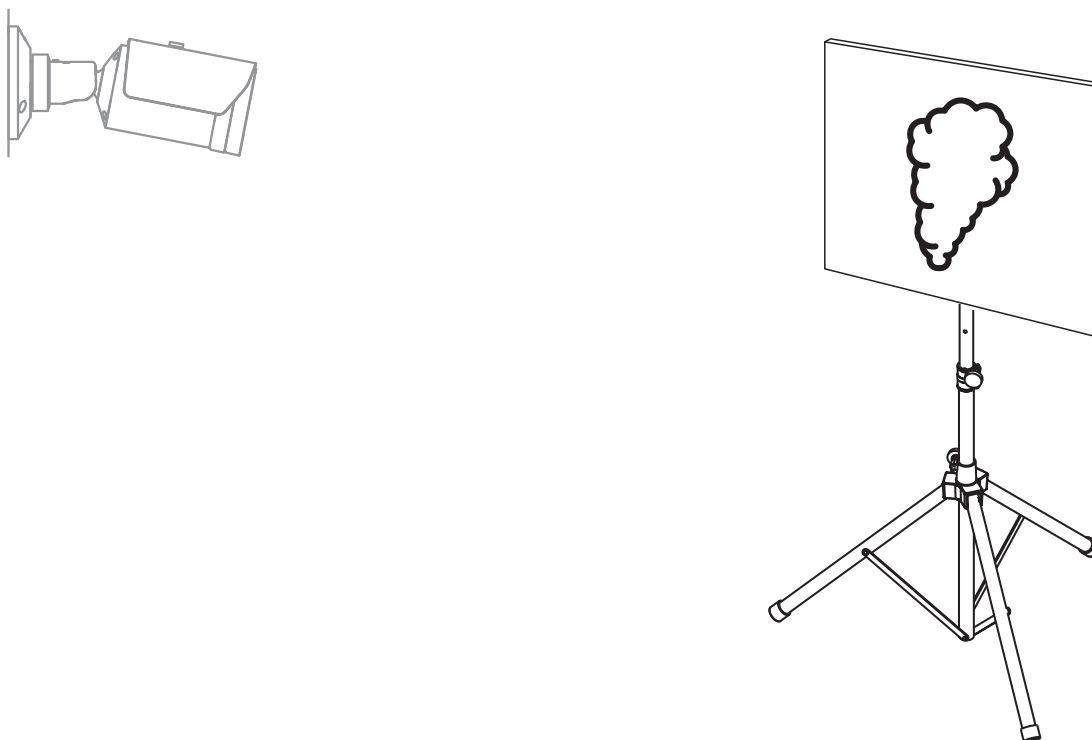


Figure 4.3: Test setup (smoke detection, test video)

1. Place a playback device (computer monitor or a tablet computer) in the detection area in front of the camera.
 2. Align the monitor to the test camera.
 3. Play the video for smoke detection.
- ⇒ A smoke alarm shall be triggered within the set smoke verification time plus 15 s. A connected video client shall show a rectangular box around the smoke region.

Enter the results in the commissioning report.

4.3 Flame detection (test video)

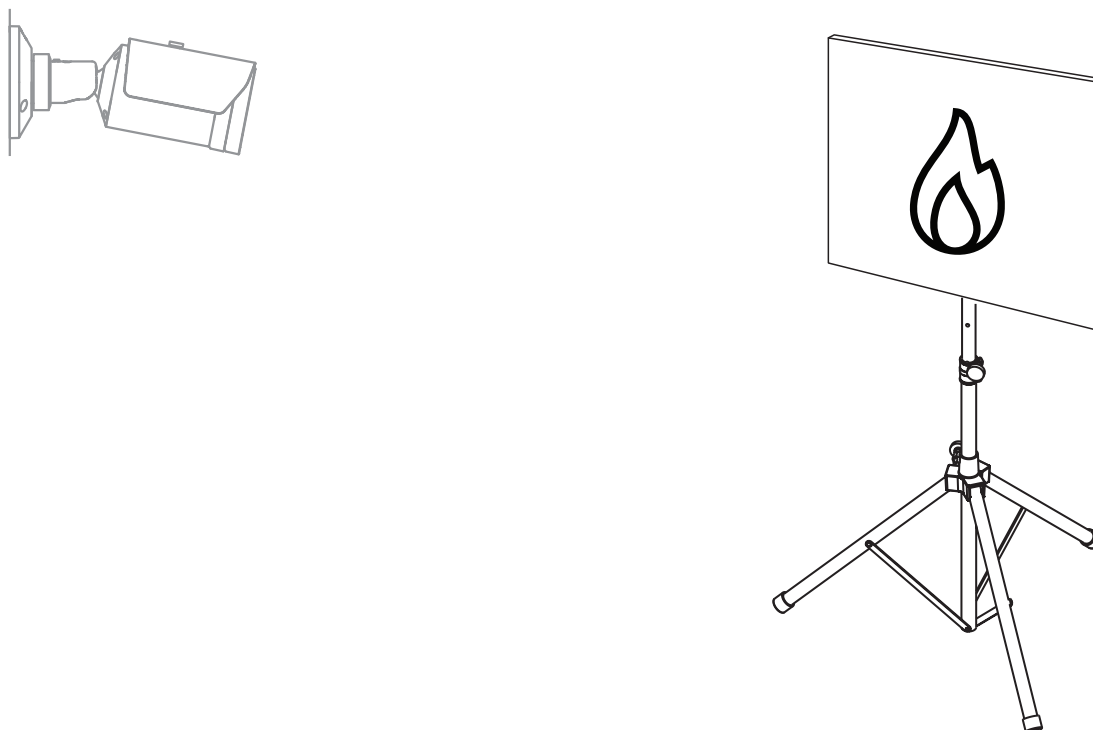


Figure 4.4: Test setup (flame detection, test video)

1. Place a playback device (computer monitor or a tablet computer) in the detection area in front of the camera.
 2. Align the monitor to the test camera.
 3. Play the video for flame detection.
- ⇒ A flame alarm shall be triggered within the set flame verification time plus 15 s. A connected video client shall show a rectangular box around the flame region.

Enter the results in the commissioning report.

4.4 Smoke and flame detection (test video)

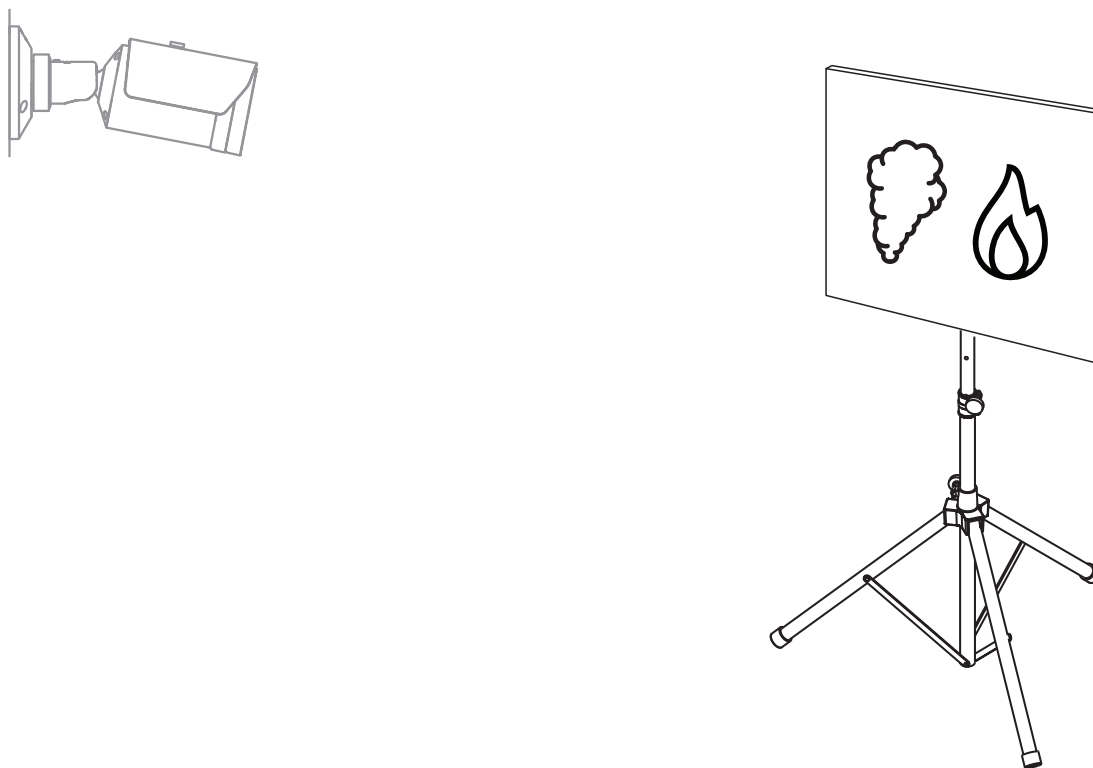


Figure 4.5: Test setup (smoke and flame detection, test video)

1. Place a playback device (computer monitor or a tablet) in the detection area in front of the camera.
 2. Align the monitor to the test camera.
 3. Play the video for smoke and flame detection.
- ⇒ A smoke alarm shall be triggered within the set smoke verification time plus 15 s. A flame alarm shall be triggered within the set flame verification time plus 15 s. A connected video client shall show a rectangular box around the smoke region and one around the flame region.

Enter the results in the commissioning report.

5 Commissioning report

Camera installation and configuration protocol

General	
Camera name (Configuration -> General -> Identification)	
Firmware version (Configuration -> Service -> System Overview)	
Date/Time setting (Configuration -> General -> Date/Time)	<input checked="" type="radio"/> Synchronized
Mounting height	
Field of view (Please add a screenshot)	
Screenshot location (e.g. network folder)	

Lens settings		
Lens opening angle		
ALC mode (Configuration -> Camera -> Installer Menu -> ALC mode)		
Focus Position (Configuration -> Camera -> Installer Menu -> Open... -> Focus position)	Day mode	Night mode
Focus Indicator	Day mode	Night mode

(Configuration -> Camera -> Installer Menu -> Open... -> Focus indicator)	
Optical lens	Position: Opening angle:

Network settings	
IP address (Configuration -> Network -> Network Access)	
Connection	
IP connection tested	<input type="radio"/> Yes <input type="radio"/> No
Relay connected to	
Alarm Relay tested	<input type="radio"/> Yes <input type="radio"/> No
Alarm Relay Idle state	<input type="radio"/> CLOSED <input type="radio"/> OPEN
Trouble Relay tested	<input type="radio"/> Yes <input type="radio"/> No
Trouble Relay Idle state	<input type="radio"/> CLOSED <input type="radio"/> OPEN

VFD Settings Fire	
Flame detection (Configuration -> Alarm -> Fire detection)	<input type="radio"/> On <input type="radio"/> Off
Sensitivity	<input type="radio"/> low <input type="radio"/> mid <input type="radio"/> high
Verification time [s]	
Smoke detection (Configuration -> Alarm -> Fire detection)	<input type="radio"/> On <input type="radio"/> Off
Sensitivity	<input type="radio"/> low <input type="radio"/> mid <input type="radio"/> high
Verification time [s]	
Masks (smoke, flame, smoke time region, flame time region) (Please add a screenshot)	<input type="radio"/> Yes <input type="radio"/> No

Privacy Masks (Please add a screenshot)	<input type="radio"/> Yes <input type="radio"/> No

VFD Settings Fire#1	
Flame detection (Configuration -> Alarm -> Fire detection)	<input type="radio"/> On <input type="radio"/> Off
Sensitivity	<input type="radio"/> low <input type="radio"/> mid <input type="radio"/> high
Verification time [s]	
Smoke detection (Configuration -> Alarm -> Fire detection)	<input type="radio"/> On <input type="radio"/> Off
Sensitivity	<input type="radio"/> low <input type="radio"/> mid <input type="radio"/> high
Verification time [s]	
Masks (smoke, flame, smoke time region, flame time region) (Please add a screenshot)	<input type="radio"/> Yes <input type="radio"/> No

Privacy Masks (Please add a screenshot)	<input type="radio"/> Yes <input type="radio"/> No

VFD Settings Fire#2	
Flame detection (Configuration -> Alarm -> Fire detection)	<input type="radio"/> On <input type="radio"/> Off
Sensitivity	<input type="radio"/> low <input type="radio"/> mid <input type="radio"/> high
Verification time [s]	
Smoke detection (Configuration -> Alarm -> Fire detection)	<input type="radio"/> On <input type="radio"/> Off
Sensitivity	<input type="radio"/> low <input type="radio"/> mid <input type="radio"/> high
Verification time [s]	
Masks (smoke, flame, smoke time region, flame time region) (Please add a screenshot)	<input type="radio"/> Yes <input type="radio"/> No

<p>Privacy Masks (Please add a screenshot)</p>	<p><input type="radio"/> Yes <input type="radio"/> No</p>

Used fire profile	<input type="radio"/> Fire <input type="radio"/> Fire#1 <input type="radio"/> Fire#2
--------------------------	--

Scheduler used	<input type="radio"/> Yes <input type="radio"/> No
Scheduling plan	(please add a screenshot of the scheduler configuration in Configuration manager)

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Event triggered used	<input type="radio"/> Yes <input type="radio"/> No
Trigger	
Profile used if trigger active	
Profile used if trigger inactive	
Delay	

Tamper detection settings	
Scene too bright threshold	
Scene too dark threshold	
Reference image set (Please add screenshot)	<input type="radio"/> Yes <input type="radio"/> No
Trigger delay	
Sensitivity	

Further configuration (e.g. recording, DynDNS, VCA configuration, Alarm Inputs ...):

Installation conditions / application

Scene illumination	
Check the minimum illuminance is ≥ 1 lx	<input type="radio"/> Yes <input type="radio"/> No Min. Illuminance: lx
Check if illumination in B/W mode with IR-illuminators is sufficient	<input type="radio"/> Yes <input type="radio"/> No
Check if Day/Night setting is correct (Color, Monochrome or Auto)	<input type="radio"/> Yes <input type="radio"/> No
Check the scene illumination for neon tubes LEDs and adjust the ALC mode (flickering)	<input checked="" type="radio"/> Checked ALC mode set to:
Check the illuminance in the picture.	<input checked="" type="radio"/> Checked Darkest spot: lx Brightest spot: lx
Check camera field of view for backlights. Minimize backlights.	<input type="radio"/> No backlights <input checked="" type="radio"/> Number of backlights in the field of view: Please make smoke tests close to backlights.
24/7 illumination	<input type="radio"/> Yes <input type="radio"/> No

Field of view	
Application fully covered as discussed with the customer	<input type="radio"/> Yes <input type="radio"/> No
Minimum and maximum distances calculated and documented for the customer	<input type="radio"/> Yes <input type="radio"/> No

Obstructions in the picture taken into account	<input type="radio"/> Yes <input type="radio"/> No
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Smoke test results (smoke cartridges)

Day/Night	Color	Monochrome
Distance to smoke cartridge		
Illumination		
Smoke cartridge(s)		
Smoke detected	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No
Field of view (Please add a screenshot)		

Smoke test results (test video)

Day/Night	Color	Monochrome
Distance to monitor		
Illumination		
Smoke detected	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No
Field of view (Please add a screenshot)		

Flame test results (test video)

Day/Night	Color	Monochrome
Distance to monitor		
Illumination		
Flame detected	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No
Field of view (Please add a screenshot)		

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Smoke/flame test results (test video)

Day/Night	Color	Monochrome
Distance to monitor		
Illumination		
Smoke detected	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No
Flame detected	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No
Field of view (Please add a screenshot)		

Place:	Issuer:
Date:	Signature:

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