Guidelines to Security Fogging

HELPING YOU CHOOSE A SYSTEM THAT IS FIT FOR PURPOSE

March 2013

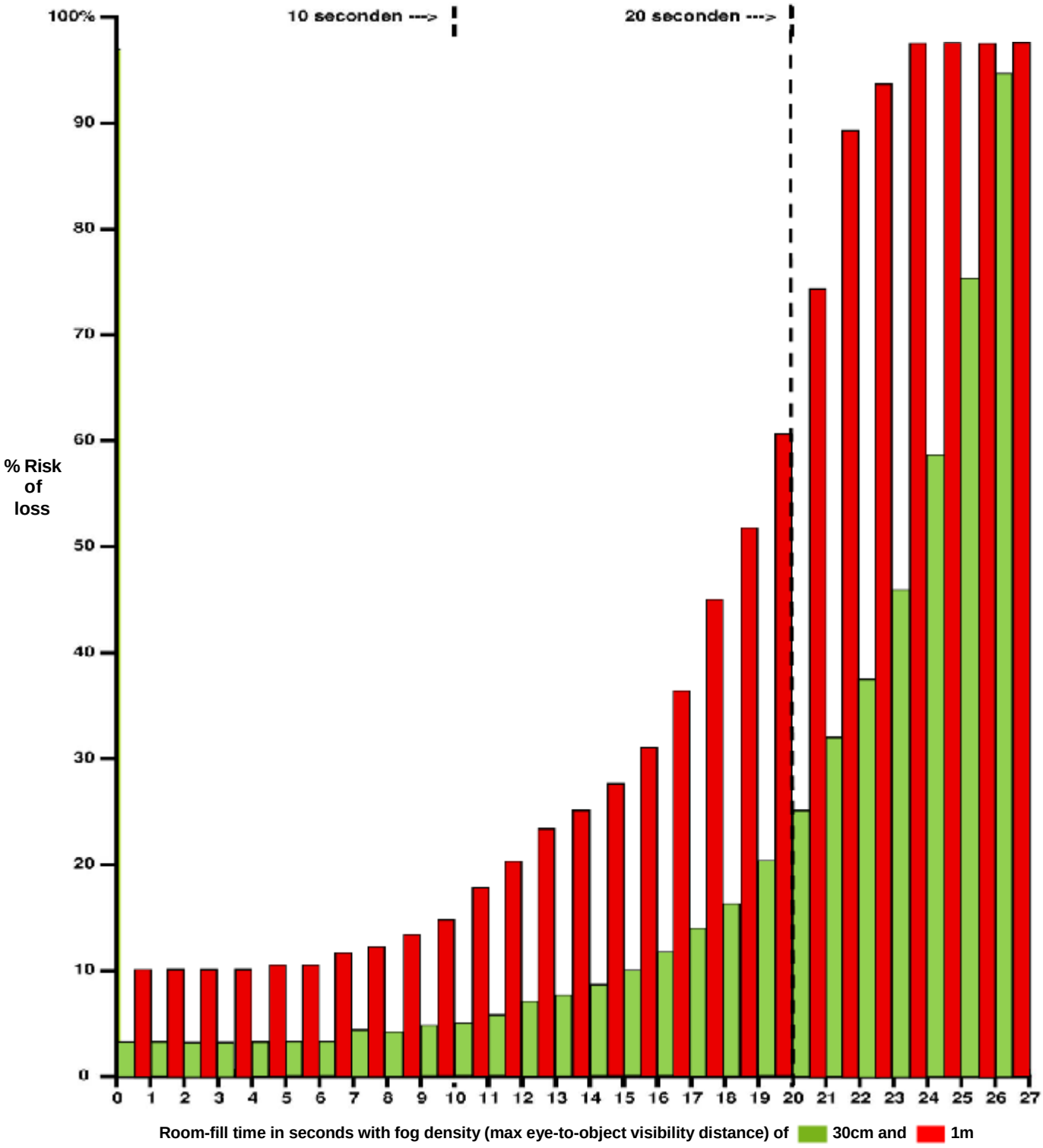
Document assembled by Bandit UK Limited from Information sourced in October 2011 e & o e

EFFECTIVENESS GUIDELINES FOR SECURITY FOG

The UK has still not implemented any form of grading for minimum performance requirements for fog to be effective in security applications. For this reason the experiences and resultant guidelines from Europe have been researched in order to provide prospective buyers with a valuable perspective on choosing the right equipment for their needs.

Firstly we refer to the Security Effectiveness Chart below. This was compiled by a major, national Dutch Insurance Company using information & test data gathered over a 10 year period from burgled sites where security fog was installed yet losses in excess of €30,000 (£25,000+) were still being experienced

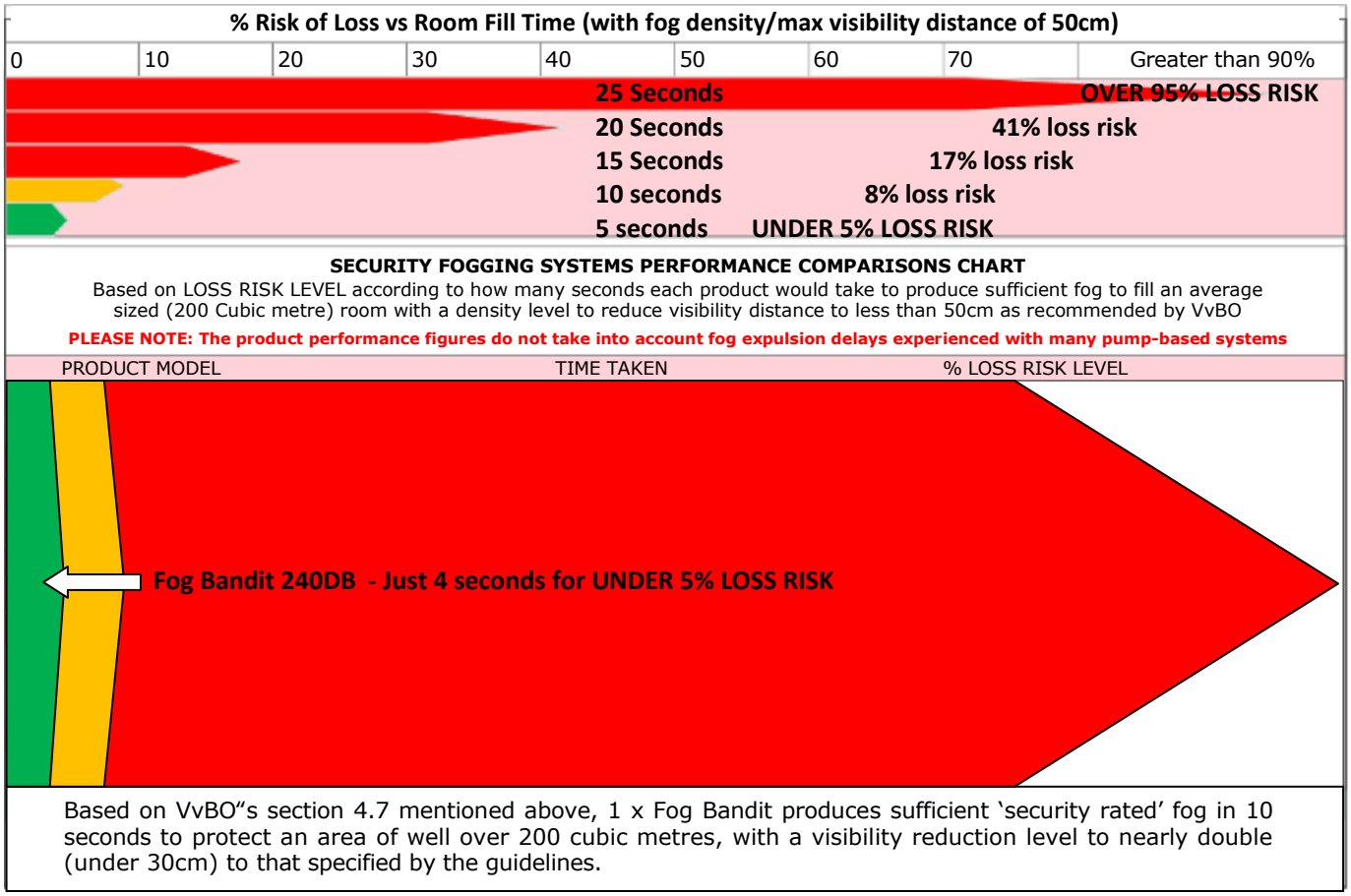
SECURITY FOG EFFECTIVENESS CHART



With information made evident from the chart it is understandable why guidelines were published by the Dutch „VvBO" (Association of Security Companies – www.vvbo.nl) in 2001. The document '*Installatievoorschriften Mistgeneratoren'* (Installation Instructions for Fog Generators), produced in collaboration with the Dutch Board of Police Commissioners, outlines the basic performance requirements needed for fog generators to be effective in protecting assets from theft.

Interestingly section 4.7 (translated) of the document states : ***Where a Fog generator is installed to prevent an intruder from entering an area where assets are stored, the recommendation as to the correct amount of fog to be used, is that amount which fills the entire room in no more than 10 seconds with a fog density level which reduces visibility to no more than 50 cm.***

Using risk figures from the Security Fog Effectiveness Chart and the VvBO guidelines above, the following product chart has been compiled:



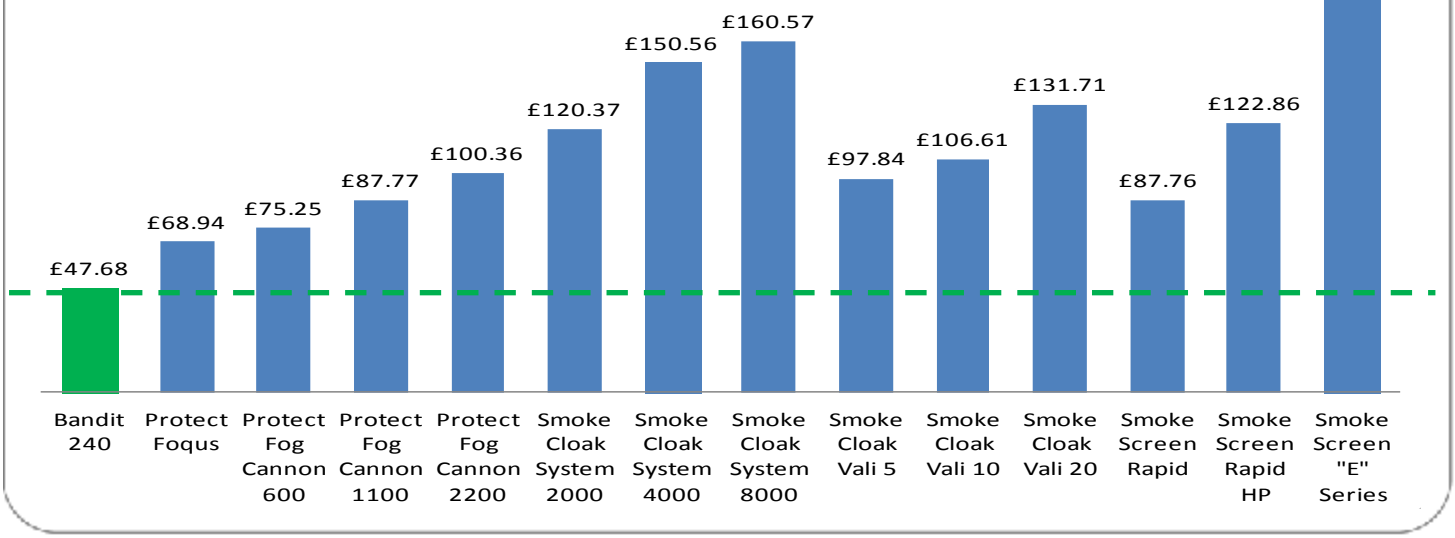
Based on VvBO"s section 4.7 mentioned above, 1 x Fog Bandit produces sufficient 'security rated' fog in 10 seconds to protect an area of well over 200 cubic metres, with a visibility reduction level to nearly double (under 30cm) to that specified by the guidelines.

POWER EFFICIENCY

Another consideration is how efficient and therefore environmentally friendly each system is in terms of power consumption. Below is a chart which shows the annual electricity cost in „stand-by" mode for each system.

Total typical annual power costs JUST on STANDBY

Based on April 2012 average supply cost of £0.1429 per KWh. All info obtained in the public domain – E & e.o.



Key requirements for a Security Fogging System installation

As well as the fog system complying with and installed to EN50131-8 regulations, the following requirements are considered essential for an effective, reliable system:

1. PERFORMANCE OF THE SYSTEM

To ensure minimal losses are incurred in the event of a burglary/robbery attempt, a room fill (whole room for burglary – asset area for robbery) time of a maximum of 10* seconds is recommended with a fog density (eye to object visibility distance) level of a maximum of 50cm

*The 10 seconds is the total time taken from when a raider/intruder is detected and an activation signal is sent to the Fog system (via detector or PA button) to when the desired room-fill result is achieved. In robbery situations as close to instant fog ejection as possible is essential to maximise deterrent effect and minimise operator anxiety.

IMPORTANT NOTE:

1. Some fogging systems are susceptible to a few seconds delay before fog starts ejecting

2. Some fogging systems have unusually high power consumption on standby. Therefore, to reduce high running costs, these systems adopt a 'dormant mode' whereby power to the heat exchanger is removed when the alarm system is switched off. Please note that it may take up to 30+ minutes for the heat exchanger to re-heat once the alarm is set and the fogging system will not be capable of producing fog during the reheat time.

3. If a fogging system has a 'dormant mode' option, please ensure this is not activated when panic activations are required. In such situations the system must remain in 'standby' mode at all times but please be aware that considerable power costs will be incurred.

2. SYSTEM FAULT REPORTING

It is essential that the fog system reports malfunctions which may cause the system to become in operable such as:

- Fog fluid level low
- Power problem/failure (mains or battery)
- System has been isolated (typically by alarm engineer to avoid accidental fog activation)
- Or any other malfunction which may cause the fog system to become inoperable

Whether the fog system is connected to a monitored Intruder Alarm System or stand alone, it is essential that such malfunctions are reported in a manner that is immediately evident to the owner/staff/occupants of the site. An audible warning method is highly recommended.

3. REGULAR SERVICE & MAINTENANCE

Service & Maintenance must be conducted as per the manufacturers requirements and records maintained accordingly.

FOG BANDIT

The World leader in Security Fogging

SOME KEY POINTS ON THE BANDIT 240DB SECURITY FOGGING SYSTEM

1. Fully manufactured in Belgium, the reliability is proven with a 5 Year „Peace of Mind“ Warranty as standard and will outlast any competitive product.

2. Fog Bandit's hermitically sealed, patented and pressurised HY3 fog cartridge provides upto 25 activations with no engineer call –out after an activation

3. Fog Bandit is the only fogging system used by the likes of G4S, Loomis, Bank Machine, Post Office, HSBC, Argos, Jessops and many other retail multiples including Jewellers and Luxury Goods Stores and other specialist sectors. The same Fog Bandit unit is deployed across all client sectors without compromise.

4. Fog Bandit is the first and only fogging system in Europe to be independently tested and verified to fully comply with the new BS EN50131-8 European Standard which was approved and implemented in 2009 and will be fully enforced from June 2012

5. For full system monitoring, the Fog Bandit's patented on-board electronics perform 24/7 system diagnostics including the monitoring of tamper, mains power supply, back-up battery condition and fog fluid levels to instantly and reliably provide any system status changes.

6. A Built-in patented self cleaning cycle ensures clog-free operation at all times. Since the inception of Bandit UK in 2004 not a single Fog Bandit "activation failure" or self-generated „false activation" has been reported.

7. The Fog Bandit is the most environmentally friendly "green" fogging system on the market by far and only consumes 40W/hour (the equivalent of a 40W light bulb). For this reason it does not require a 'dormant' mode. Please see separate Comparison Chart in the Bandit Information Pack.

8. Fog Bandit fog is the only security fogging system to add a harmless menthol (peppermint) fragrance to the fog so the Emergency Services and any bystanders can quickly differentiate between security fog and smoke from a fire

9. Speed - Fog Bandit rapidly ejects a curtain of dense fog (projecting 6 metres within the first 2 seconds alone) directed towards likely break-in points to instantly deter intruders and minimise opportunity for asset theft and associated burglary damage. Fog Bandit can activate between 3 and 25 times (depending on the size of the room it is protecting) before an exchange refill cartridge is required. A single Fog Bandit can protect a room size between 50 to 500 cubic metres (more units can be added for larger areas).

10. Minimal engineer call-outs - after an activation the Fog Bandit resets itself automatically therefore an engineer call-out is not required. Also, the Bandit's hermetically sealed fog cartridge ensures a lifespan of 4 years before a low cost refilled exchange is required.

11. To verify its "fastest and highest density security fog" credentials, Fog Bandit provide validated manufacturer specifications for both speed and density of fog production i.e. 28 cub. mt. per second with eye to object visibility (density) maximum of 30cm and leaving no "Residue". Acknowledged by Insurance stakeholders, the first 10 seconds of an intruder triggering a fog activation will determine the level risk of property loss or damage.

Please visit ***www.bandituk.co.uk*** as our website remains the best place for all information relating to the Fog Bandit including live activation footage and existing client case studies.

BANDIT 240DB v3

- **Easily programmed by means of dipswitches**
- **Automatic or Panic activation options**
- **'Easy read' error LED for rapid identification of status changes**
- **Full battery back up**
- **5 year warranty**

Secured by Design

SBD

Official Police Security Initiative

SPECIFICATIONS

Descriptions:

- Dimensions: 270 mm wide x 365 mm high x 255 mm deep.
- Weight: 28 kg.
- Max. Mains supply failure: Fog generator +2 hours and electronics +24 hours.
- Reaction time: 0.1 second between alarm signal and fog ejection.
- Fog ejection image: /R60, 60° (standard) , or
  /R0, straight ahead

Fog generator:

- Fog ejection capacity: 28 m³ filling of space / second with 25 cm eye↔ object.
- Fog ejection pressure: 16 BAR (1.6 Mpa).
- Maximum fog ejection period: 18 seconds.
- Warm-up time: 50 minutes from cold condition.
- Max./min. Environmental temp.: maximum 50°C and minimum 0°C.
- Maximum heat loss: 40 W/hour
- Nominal ejected droplet size: section 0,0004 mm (full aerosol)
- Protection index: IP21 - IK08
- Environmental class: Class II

ACS | c-store ready

Electrical:

- Min./max mains power supply: 208 to 240 VAC
- Frequency: 50 to 60 Hz.
- Nominal 12 V low voltage: 13.1 V DC from 0 tot max. 1 A of load.
- Max peak current at 230 VAC: 3.5 A.
- Average power consumption: 40 W/hour.
- Capacity heating element: 750 W.
- Inputs: all inputs are insulated by an opto-coupler.
- Outputs: all outputs are relais outputs
- Current back-up: 12 V / 1.9 - 2.4 Ah (sealed lead/acid battery)
- Value glass fuses: F1 = 4 AT F2 = 500 mAT
  F3 = 6.3 AT F4 = 1.25 AT
- Tension/freq./disp.: 12VDC / 500 mA / Supply
- Max. outgoing ondulation supply: Primary 220VAC / Secundary 17 VAC

Standards:

- Complies with European CE and EMC Standards.
- Complies with International Standard: IEC 839-1-3
- Approved by the Belgian Ministry of Internal Affairs
- Complies with the British Standard: BS 7939 : 1999
- Complies with the Dutch Standard of the NCP: ITA11201-M and REQ
- Complies with the French Standard of the CNPP: test report n° AI 040006
  approval n° 2004-0001
- Complies with the Danish Standard of the F&P: class 2, AIA 212
  F&P registration n°: 10.212-00418
- Complies with the 'offendicula' report of the Italian legislation.
- Complies with the new European regulations within the EN50131-8
  CNPP approval n°2010-0032

FOG BANDIT NEW 5 YEAR WARRANTY

HY3 Fog Fluid Cartridge

The HY3 pack is a reusable, refillable cartridge which:

- **Is clean filled and hermetically sealed to provide a 4 year life span**
- **Gives up to 25 activations per cartridge (depending on room size0**
- **Has no pump thus ensuring instant activation & outstandingly reliable performance**
- **Has an Automatic low-fluid reporting system**

***HY-3* pack:**

- HY-3 fluid contents:	1.4 litre.
- Nominal working pressure:	16 BAR (1.6 Mpa)
- Construction material:	rvs 304L and aluminium AlMgS1.
- Built-in electronics:	digital temperature sensor and analogue/digital E²prom memory level.
	Tamper switch and control LED.
	integrated propellant-expulsion security
	direct working 12 V NC valve
- Weight:	6 kg

& BANDIT Control Box

The Control Box Service & Maintenance aid provides simple button operation of the following:

- **Inhibit fog ejection during Bandit and alarm system checks**
- **Inhibit tamper signal to avoid audible tamper warnings from alarm system when HY3 refill being exchanged**
- **1 second test fire for staff training and 'visual' system tests**
- **Failure warning test signal**
- **LED readout of fog-fluid level**

BANDIT UK