

# Vesda



**Aspirating fire detection equipment**  
from Channel Safety Systems



# Vesda

## Aspirating fire detection equipment



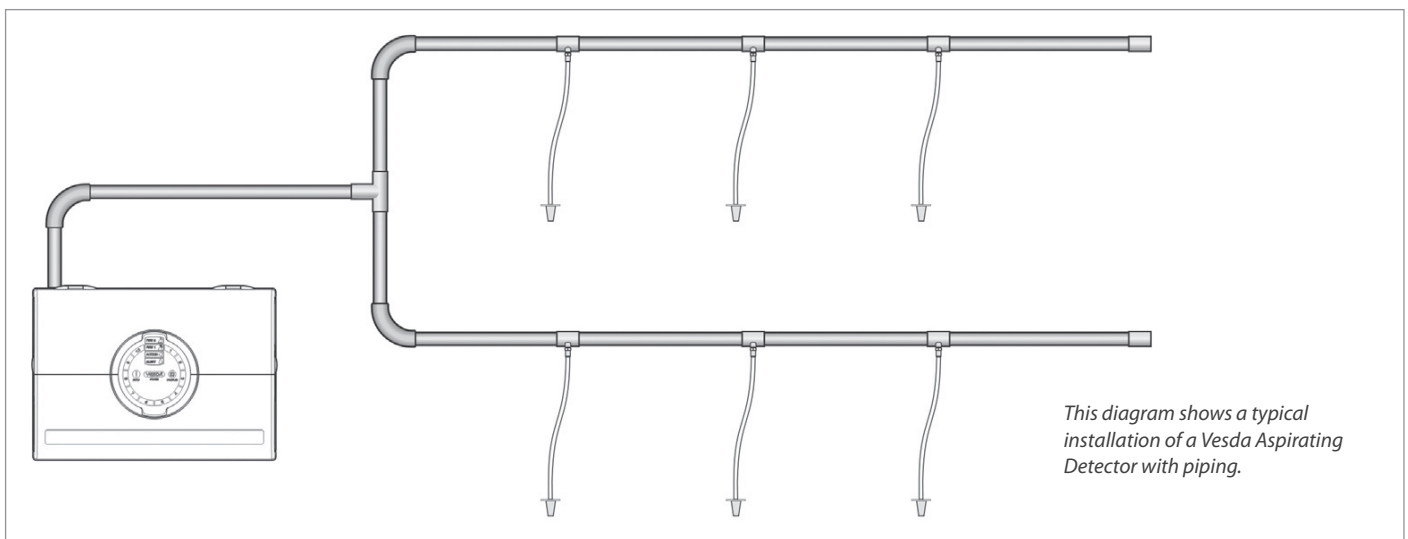
**Vesda Aspirating equipment systems can be equipped with modules to detect hazardous/combustible gases to extend their value beyond smoke detection to include gas detection and environmental monitoring.**

**Vesda is a very early warning aspirating smoke detector; with continuous air sampling, it provides the earliest possible warning of an impending fire hazard.**

### How does Vesda work?

A Vesda detector is much like a vacuum cleaner. It sucks air from the protected environment via purpose built aspirating pipe and fittings and samples the quality of air passing through the Vesda detection laser chamber.

Vesda detectors are available in a variety of models to accommodate a broad range of environments and applications. From small to very large, open spaces and from the cleanest to the dirtiest environments, Vesda provides reliable, high-sensitivity, very early warning smoke detection.



*This diagram shows a typical installation of a Vesda Aspirating Detector with piping.*

### Features

- Reliable early detection warning
- Assured performance in challenging environments
- Superior suppression actuation
- Easy & low maintenance
- Reliable detection in large open spaces
- Flexible solution in any facility type
- Wide coverage
- Action before suppression
- Provides time for orderly evacuation
- Avoids risks to precious assets
- Business continuity
- Active air sampling
- Where smoke detection is a challenge
- Tolerant of harsh environments
- Detects smoke in a varied range of conditions and applications
- Prevents nuisance alarms
- Overcomes the effects of smoke dilution
- Security and inmate safety
- Vandalism prevention
- EN 54-20 compliant

### Typical Applications

Vesda delivers absolute protection across a wide range of industries and applications:

- Accommodation
- Apartments
- Hotels
- Shops
- Offices (and other accommodation)
- Correctional Facilities
- Clean Rooms
- Cold Storage
- Hospitals and Health care
- Insurance
- Nuclear Facilities
- Portable Switch Rooms
- Power Generation
- Records Storage
- Transportation
- Wind Power Generation
- Warehousing



### GET INTERACTIVE

Scan the code for more information on the Vesda range

[www.channelsafety.co.uk/aspirating-equipment/](http://www.channelsafety.co.uk/aspirating-equipment/)

# Vesda Laser Plus



Image shows from top to bottom Vesda Laser Focus (F/CH/VLP-002) & (F/CH/VLP-400)



The Vesda VLP detector is the central element of the Vesda Aspirating Smoke Detection product range.

The VLP is classed as a “Very Early Warning Smoke Detector”, which means that it detects fire at the earliest possible stage and reliably measures very low to extremely high concentrations of smoke.

Using unique detection principles, the VLP has an alarm sensitivity range of 0.005%–20% obscuration/m (0.0015%–6.25% obscuration/ft).

## Features

- High sensitivity, laser based smoke detection
- Very early warning
- 4 alarm levels
- High efficiency aspirator
- Four inlet pipes
- Airflow supervisor per sampling pipe
- Clean air barrier optics protection
- Easy to replace air filter
- 7 programmable relays
- Event log
- Modular nature allows exact configuration for individual site requirements
- Recessed mounting option

## Product Dimensions

- Height 225mm
- Width 350mm
- Depth 125mm

## How It Works

Air is drawn into the unit through a network of air sampling pipes by a high efficiency aspirator, each inlet pipe has an airflow sensor that monitors airflow changes in the pipes.

Air is exhausted from the Vesda unit which may be vented back into the protected zone. Inside the unit, a sample of air is passed into the laser detection chamber.

The detection chamber uses a stable Class 1 laser light source and carefully positioned sensors to achieve the optimum response to a vast range of smoke types.

The status of the detector, and all alarm, service and fault events, are transmitted to displays and external systems via Vesda net.

## Vesda net

Vesda detectors and devices communicate across Vesda net, the Vesda fault tolerant communications protocol.

The Vesda net loop provides a robust bidirectional communication network between devices, even allowing continued operation during single point wiring failures.

It also allows for system programming from a single location and forms the basis of the modular nature of the Vesda system.

POWER CONSUMPTION @24V DC					
		Aspirator @ 3000 rpm		Aspirator @ 4200 rpm	
		Quiescent	With Alarm	Quiescent	With Alarm
Power		5.8 W	6.96 W	8.16 W	9.36 W
Current		240 mA	290 mA	340 mA	390 mA

SPECIFICATIONS	
Supply Voltage	18–30 VDC
Detector Ambient	0°C to 39°C (32° to 103°F)
Humidity	10%–95% RH, non-condensing
Temperature	0° to 85°C
Aggregate pipe length	200 m (650 ft)
Maximum Single Length	100 m (328 ft)
Minimum flow per pipe	15 litres/min
Area Coverage	Typically up to 2000 m <sup>2</sup> (21500 sq. ft.)
Pipe Size	External Diameter 25 mm (1 in) Internal Diameter 15–21 mm (9/16 in–7/8 in)
Cable Access	8 x 25 mm (1 in) knockouts in various positions
Alarm Sensitivity Range	0.005%–20% obs/m (0.0015%–6.25% obs/ft)
Alarm Threshold Setting Range, Alert	0.005%–1.990% obs/m (0.0015%–0.6218% obs/ft)
Action	0.010%–1.995% obs/m (0.0031%–0.6234% obs/ft)
Fire 1	0.015%–2.00% obs/m (0.0046%–0.625% obs/ft)
Fire 2	0.020%–20.00% obs/m (0.0062%–6.25% obs/ft)
Event Log	Up to 18,000 events stored on FIFO basis
IP Rating	IP30
Weight	4.0 Kg

PRODUCT CODE	DESCRIPTION
F/CH/VLP-002	Vesda laser plus with standard display
F/CH/VLP-400	Vesda laser plus without display

# Vesda Laser Focus

The Vesda VLF detector is designed to protect small business with critical environments of less than 250m<sup>2</sup> (2500 sq. ft.)

The detector works by continually drawing air into sample holes in a pipe network. The air is filtered and passed into a detection chamber where light scattering technology detects the presence of very small amounts of smoke.

Detector status information is communicated on the detector display and via relays or optional interface cards.

## Features

- Ultrasonic Airflow Sensing
- Laser-Based Absolute Smoke Detection
- Pre-engineered pipe network designs
- Programmable Alarm Thresholds
- Dual Stage Air Filtration
- Instant Recognition Display
- Instant Fault Finder™
- AutoLearn™ Smoke
- AutoLearn™ Flow
- Field Service Access Door
- Multiple Event Logging in separate logs
- Event log – up to 18000 events
- Offline/online configuration capability
- Up to 250 m<sup>2</sup> (2500 sq. ft.) coverage

## Product Dimensions

- Height 123mm
- Width 256mm
- Depth 92mm

## Listings & Approvals

- UL 268 listed
- UL 268A Duct listed
- FM approved
- FM approved for Hazardous Locations, Class I, Div. 2

## How It Works

Air is drawn into the unit through a network of air sampling pipes by a high efficiency aspirator, each inlet pipe has an airflow sensor that monitors airflow changes in the pipes.

Air is exhausted from the Vesda unit which may be vented back into the protected zone. Inside the unit, a sample of air is passed into the laser detection chamber.

The detection chamber uses a stable Class 1 laser light source and carefully positioned sensors to achieve the optimum response to a vast range of smoke types.

The status of the detector, and all alarm, service and fault events, are transmitted to displays and external systems via Vesda net.

## Vesda net

Vesda detectors and devices communicate across Vesda net, the Vesda fault tolerant communications protocol.

The Vesda net loop provides a robust bidirectional communication network between devices, even allowing continued operation during single point wiring failures. It also allows for system programming from a single location and forms the basis of the modular nature of the Vesda system.



Image shows Vesda Laser Focus (F/CH/VLF-250)

SPECIFICATIONS	
Supply Voltage	18–30 VDC
Detector Ambient	0°C to 39°C (32° to 103°F)
Humidity	5%–95% RH, non-condensing
Current @ 24V DC	220 mA nominal, 295 mA in alarm
Maximum pipe lengths	1 x 25 m (80 ft) (Max. 12 holes)
Area Coverage	Up to 250 m <sup>2</sup> (2500 sq. ft.) depending on local codes and standards
Relay Outputs	3 changeover relays (Fire 1, Action, Fault), Contacts rated 2A @ 30 VDC (max). NO/NC Contacts
Cable Access	3 x 25 mm (1.05 in.) cable entries (1 rear entry, 2 top entry)
Alarm Threshold Setting Range	Alert, Action 0.025 - 2.00% obs/m (0.008 - 0.625% obs/ft) Fire 1, Fire 2 0.025 - 20.00% obs/m (0.008 - 6.25% obs/ft)
Individual Alarm Delays	0 – 60 seconds
Event Log	Up to 18,000 events stored on FIFO basis
IP Rating	IP30
Weight	2 Kg

PRODUCT CODE	DESCRIPTION
F/CH/VLF-250	Vesda laser focus detector max 50m pipe or 2 x 30m ('T' layout) 12 holes + PSU needed

# Vesda Accessories



The Vesda range of Pipes and Fittings have been specially developed to provide fully matched components for the optimal performance of your whole Vesda aspirating system.

They are also manufactured to comply with the requirements of BS5391 Part 1, EN 61386-1 and the new EN54 Part 20 guaranteeing you quality.

The pipes are a metric standard of 25mm external diameter with suitable adapters available for imperial to metric conversions and are designed for use with any make of low pressure aspirating type smoke detection system.

Unlike some metal pipes, Vesda ABS pipework is very light in weight. This makes it easy to handle in high and difficult places where systems are often installed.

The standard Vesda pipe and fittings are supplied in red to identify their service as fire.

PRODUCT CODE	DESCRIPTION
F/CH/PIP-001/1M	1 x 3m length of pipe
F/CH/PIP-001/20	20 x 3m length of pipe
F/CH/PIP-002	25mm jointing socket x 10 pack
F/CH/PIP-003	25mm socket union-screw tight-unit (comes in pack x 10)
F/CH/PIP-005	90° bend x 10 pack
F/CH/PIP-006	45° bend 25mm x 10 pack
F/CH/PIP-007	End cap 25mm x 10 pack
F/CH/PIP-008	T piece 25mm x 10 pack
F/CH/PIP-009	Pipe clip x 20 pack
F/CH/PIP-012	Solvent cement
F/CH/PIP-014	Pipe cutters
F/CH/PIP-015	Flush sample point – head only
F/CH/PIP-016	Trunk adaptor
F/CH/PIP-059-001	Flush sample point assembly
F/CH/PIP-059-007	Conical sampling point
F/CH/PIP-221-035	10mm capillary pipe x 30m
F/CH/PIP-222-059	Discrete end cap
F/CH/VSP-005	Filter for all Vesda detectors

# PSU's & Batteries

The Vesda Power Supply is capable of providing operating power, including battery backup, for the entire line. The Vesda Power Supply has been designed to power a single unit to multiple units depending on application needs. It provides 24 volt operating power to the Vesda system as well as a battery charger function that supervises and maintains the standby batteries.

The VPS-220 and VPS-215 models are LPCB approved and CE marked to the EN54-4 so are particularly suitable for use in territories where these approvals are required. It may also be suitable in territories where ISO 7240-4 is required.

## Features

- Available in two sizes: VPS-220, 0.5 A / 7 Ah and VPS-215, 0.5 A / 14 Ah
- Temperature compensated charging to maximize battery life
- Designed to blend in with Vesda detectors
- Knockouts designed to line up with Vesda units
- External LED indication on 220
- Internal LED indication on 215
- Relay outputs for connection to the general-purpose input
- 110 / 230 Vac field selectable



SPECIFICATIONS	F/CH/VPS-220	F/CH/VPS-215
<b>Input</b>	230 Vac (+10% / -15%) @ 0.6 A factory default setting 110 Vac (+10% / -15%) @ 1.2 A field selectable option	
<b>Output Voltage</b>	18 - 29 V DC	
<b>Output Current</b>		
<b>Minimum</b>	0 A (EN 54-4 1 min.)	
<b>Continuous</b>	0.5 A (EN 54-4 1 max. a)	
<b>Short Duration</b>	1.9 A (EN 54-4 1 max b)	
<b>Temperature</b>	-5 to +40°C ambient	
<b>Humidity</b>	10-95% RH non-condensing	
<b>IP Rating</b>	IP30	
<b>Maximum Battery Resistance</b>	0.6 Ω	
<b>Fault Relay</b>	Change-over NO-COM-NC 2 A @ 30 Vdc	
<b>Finish</b>	Powder coated semi gloss	
<b>Colour</b>	Light grey - RAL9018	
<b>Maximum Battery Current</b>	2 A	1.6 A
<b>Indications</b>	OK - green LED Fault - yellow LED Internal and External	OK - green LED Fault - yellow LED Internal only
<b>Weight</b>	3.6 kg (without batteries) 14.2 kg (with max batteries)	2.95 kg (without batteries) 8.25 kg (with max batteries)

## Product Dimensions (F/CH/VPS-215)

- Height - 225mm
- Width - 350mm
- Depth - 105.2mm

## Product Dimensions (F/CH/VPS-220)

- Height - 225mm
- Width - 285mm
- Depth - 115.2mm

PRODUCT CODE	DESCRIPTION
F/CH/VPS-215	1.5A PSU – Vesda – requires CH24/7 battery
F/CH/VPS-220	2A PSU – Vesda – max size batteries CH24/12
F/CH24/12	12Ah 24V battery
F/CH24/7	7Ah 24V battery

**Vesda aspirating equipment is a sophisticated and complex system. If you are unsure of which products you require for your Vesda system, please contact our Technical team on 0845 884 7000**

