

# VESDA®

## The Next Generation of VESDA Aspirating Smoke Detection Technology



 **xtralis®**

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## VESDA-E Aspirating Smoke Detection (ASD)

### VESDA-E – The next generation of VESDA aspirating smoke detectors

Since pioneering Aspirating Smoke Detection (ASD) technology nearly 30 years ago, VESDA has been recognized as the best in the world, protecting personnel, irreplaceable assets and mission critical infrastructure in the world's most iconic locations.

#### VESDA-E is the next-generation of VESDA, featuring multiple innovative capabilities that dramatically improve the VESDA experience:

- VESDA Smoke+, offers increased sensitivity – up to 15 times greater than VESDA VLP, at least three times better dust rejection, up to twice the longevity while maintaining consistent sensitivity over time and up to 8% less power consumption per unit area
- VESDA Flex, future proof expandability and programming for maximum flexibility using, StaX Hardware expansion modules that easily bolt onto the VESDA-E detector to add additional capabilities, and Xtralis Software Analytics applications (Xapps) that can be purchased, downloaded, configured & managed remotely over the internet
- VESDA Analytics provides unique particle type characterisation capabilities for targeted detection and efficient response. Analytics currently available includes DieselTrace™, WireTrace™ and DustTrace™
- VESDA Verify, provides situational awareness to improve response time, efficiency and effectiveness through pin-point addressability for up to 120 locations
- VESDA Connect, provides extensive connectivity options including Ethernet, WiFi, USB, VESDAnet and relays, to reduce installation, commissioning, monitoring and maintenance costs
- VESDA TCO, reduces the Total Cost of Ownership (TCO) through Capex value, Opex savings, Plug'n'Play installation, design-less pipe networks, vast monitoring options and backwards compatibility. With VESDA-E you can reduce TCO by up to 15%

**VESDA-E is the most advanced, reliable, and flexible ASD system ever produced.**

### How VESDA-E VEU/VEP works

Air is continually drawn from the protected area through the air sampling pipe network and into the detector by a high efficiency aspirator. The air sampling pipe network can contain up to four pipes.

The air from each sampling pipe passes through a flow sensor and then a sample of the air is drawn into the Flair detection chamber via the sampling module, after first passing through the filter.

An additional filter provides clean air to protect the optical surfaces inside the detection chamber from contamination.

The Flair™ detection chamber uses the equivalent of 330,000 sensors and sophisticated algorithms for smoke detection and particle type characterisation. If the detected smoke is higher than the set alarm thresholds it is reported as an Alert, Action, Fire1 or Fire2 alarm condition. Air is exhausted from the detector and may be vented back into the protected zone. Alarms can be signaled via Relays and VESDAnet. Ethernet and WiFi can be used for configuration and secondary monitoring, and a USB interface is provided for initial setup. A series of LEDs display Alarm, Trouble, Disable and detector power on status. A button allows the user to Reset or Disable the detector. In addition, an optional 3.5" LCD display shows the detector status, including smoke level and a smoke level bar graph, alarm thresholds, trouble status, % airflow level, normalization status and filter life used.

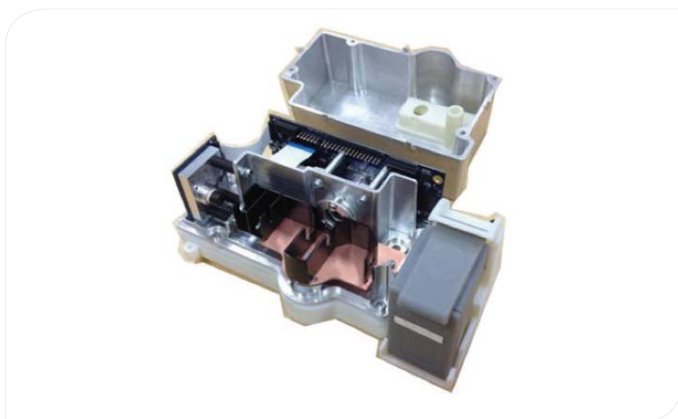




## The Six Reasons for **VESDA-E**

### 1 **VESDA Smoke+**

VESDA Smoke+ capitalizes on the patented Flair Detection Technology centered in the VESDA-E detection chamber used in VEU and VEP. The Flair Detection Technology offers increased sensitivity – up to 15 times greater than VESDA VLP, at least three times better dust rejection, up to twice the longevity while maintaining consistent sensitivity over time.



The Smoke+ capability focuses on improving key aspects related to smoke detection including:

#### 1. **Detection Performance**

- Vastly better sensitivity
- Faster response time

#### 2. **Detection Reliability**

- Operating temperature stability
- Minimizing nuisance alarms

#### 3. **Consistent Performance Over Time**

- During long term exposure to dust

#### 4. **Efficiency of Operation**

- Power Consumption per unit area

### 2 **VESDA Flex**

VESDA Flex provides future-proof expandability and programming for maximum flexibility using:

- StaX Hardware expansion modules integrate with the VESDA-E detector to provide additional capabilities including integrated Power Supply, Auto Pipe Clean, and ECO gas detection
- Xtralis Software Analytics applications (Xapps) that can be purchased, downloaded, configured & managed remotely over the internet



### 3 **VESDA Analytics**

VESDA Analytics improve the effectiveness of smoke detection by providing supplementary probabilistic information for targeted detection and efficient response. Analytics notification is integrated into Xtralis VSM4 and iVESDA platforms for local and remote response. VESDA-E Analytics examples include DieselTrace™, WireTrace™ and DustTrace™.





## 4 VESDA Verify

VESDA Verify provides situational awareness to improve response time, efficiency and effectiveness through pin-point addressability for up to 120 locations. VESDA-E VEA provides reliable early warning with minimum nuisance alarms, centralised maintenance with built-in blow back capability, and full system integrity check. Refer to the Xtralis website for full VESDA-E VEA details.



## 5 VESDA Connect

VESDA Connect provides flexible networking and programming capabilities that reduce installation, commissioning, monitoring and maintenance costs through extensive connectivity options and remote diagnostics tools including Ethernet, WiFi, USB, VESDAnet and Relays.



## 6 VESDA TCO

VESDA TCO provides a lifetime of value, reliability and protection.

VESDA-E improves CapEx value through higher sensitivity and longer pipe runs resulting in greater coverage area. It also reduces OpEx costs due to accessible maintenance, field replaceable components and the Auto pipe cleaning StaX. Plug and play features improve the installation experience and reduce its cost via:

- Auto commissioning capability
- Firmware upgrade using only a USB key
- Instant monitoring via Wi-Fi
- Mounting template
- Mounting bracket
- Ample wiring space
- Design-less pipe networks for simple designs

VESDA-E can also provide vast monitoring options including:

- VSM4
- Remotes
- VESDAnet
- iVESDA

For current VESDA users, VESDA-E offers full backward compatibility with the VESDA product line – with VESDA-E you can reduce Total Cost of Ownership by up to 15%





## VESDA-E Product Range

### Detectors

#### VESDA-E VEU

The VESDA-E VEU is the premium detector in the VESDA-E Range. It provides ultra-wide alarm sensitivity range from 0.001% - 20.0% obs/m (0.0003 to 6.25% obs/ft) and up to 80 Class A holes; extending detector coverage by at least 40% in high airflow environments. VEU also provides 400 m (1,312 ft) and 800 m (2,625 ft) of linear and branched pipe networks respectively, increasing coverage by up to 80% in high ceiling applications while allowing for convenient detector mounting for ease of access and maintenance. VEU has area coverage of up to 6,500 m<sup>2</sup> (69,965 sq. ft)\*. VEU standard features include StaX and Analytics support together with Ethernet, WiFi, USB and VESDAnet capabilities.



VEU-A00



VEU-A10



VEP-A00-P



VEP-A10-P



VEP-A00-1P

#### VESDA-E VEP

The VESDA-E VEP series of aspirating smoke detectors extend the reach of the VESDA-E platform to a wide range of applications. VEP sensitivity range is from 0.005-20%/m (0.0016-6.25%/ft) and provides up to 40 Class A holes. VEP is equipped with a powerful aspirator that provides a total of 130 m (427 ft) in the one pipe model and 560 m (1,837 ft) in the four pipe model. VEP also provides StaX and Analytics support together with Ethernet, WiFi, USB and VESDAnet capabilities.

#### VESDA-E VEA\*\*

VESDA-E VEA is the first addressable aspirating smoke detector (ASD) for standard addressable detection applications with non-intrusive servicing and interruption free operation and significantly lower maintenance time. VEA provides pinpoint addressability by using a network of microbore tubes connected to sampling points located in the protected area. VEA provides superior detection with inbuilt filters and self cleaning, allowing assured detection with minimum false alarms. The VEA base detector supports up to 40 sampling points which can be expanded to 120 using VEA Expansion StaX modules. True supervision of tube network and sampling points allows centralized automated test and maintenance to provide end to end system integrity monitoring, reducing maintenance time by up to 90% while lowering TCO by up to 60%. Refer to the Xtralis website for full VESDA-E VEA details.



VEA-040-A00



VEA-040-A10

#### VESDA-E VLQ

The VESDA VLQ detector is a cost-effective ASD solution that meets the unique needs of numerous small area applications of up to 100 m<sup>2</sup> (1,070 sq. ft). Examples of these include Telco landline remote offices, base station controllers, remote base stations, small server room and many other small important rooms. VLQ combines the benefits of very early warning with simplified and flexible ASD offering at the lowest total cost of ownership possible.



#### StaX\*\*

##### Automated Pipe Cleaning

The Automated Pipe Cleaning StaX improves performance and minimizes maintenance costs in dusty environments. During pipe cleaning, it forces an air pressure wave to travel out along the pipe network. This changes the pressure within the pipe to be above atmospheric pressure so that air flows out of the pipe carrying built-up dust and lint with it.



##### Power Supply Unit (PSU)

The PSU StaX is an integrated power supply providing operating power including battery backup for VESDA-E detectors. It provides 24 volt operating power as well as a battery charger function that supervises and maintains the standby batteries.



##### ECO Gas Detection

ECO StaX provides integrated gas detection using the same ASD pipe network which is also used for smoke detection.

The ECO StaX contains four standard ECO detectors with the necessary manifolds to hold them in place. Up to three ECO StaX can be used with one 4-pipe VESDA-E detector.



The wiring terminal blocks are external to the ECO detectors providing easy field wiring. The ECO StaX is powered by an external 24V power supply and current consumption can be found in VESDA ECO literature.

\* System design and regulatory requirements may restrict the monitoring area to a lesser amount

\*\* Please contact your local regional office for availability.



## Analytics



### DieselTrace<sup>™</sup> Analytics

**DieselTrace<sup>™</sup>** provides targeted detection of diesel engine exhaust particles that are abnormally present. Detection of such particles allows for actionable response to prevent contamination in **food storage facilities** or **clean manufacturing facilities** when diesel particles are detected.

It also can be used to activate ventilation in **loading bays, warehouses, parking garages, bus depots** and **road tunnels** when diesel particle threshold is exceeded.

Diesel exhaust is a carcinogen\* and employers are increasingly aware of their duty to provide and maintain safe working environments for their employees. DieselTrace can play an important role in environmental monitoring and control of diesel particulate. Diesel Particulate Matter (DPM) is also of concern to industrial hygienists in applications such as mining where diesel operated equipment is extensively used.



### WireTrace<sup>™</sup> Analytics

**WireTrace<sup>™</sup>** provides targeted detection of particles from slowly overheating PVC insulated wires.

Detection of such particles directs investigation to the primary source (i.e. electrical wires and/or cables) resulting in a faster response for asset protection and business continuity. **WireTrace** can be used to monitor high density cable areas such as **cable trays, electrical ducts** and **cable tunnels**.



### DustTrace<sup>™</sup> Analytics

**DustTrace<sup>™</sup>** provides targeted detection of dust which is present in the sampled air.

Detection of dust would trigger actionable response to prevent contamination in **food manufacturing** and **storage facilities**. It also can be used to activate or shutdown fresh air make-up to save energy and prevent contamination in **telco and data center** facilities.

\* Group 1 as per IARC & Directive nr. 67/548/CEE)

\*\* Please contact your local regional office for availability.

## Connectivity

### VESDA Ethernet

Enables connectivity with Xtralis VSC and VSM4 as well as providing an embedded webserver and E-mail alerts.



### VESDA Wi-Fi

Enables connectivity with hand-held iOS and Android devices for unprecedented ease of maintenance and monitoring.



### VESDA USB\*\*

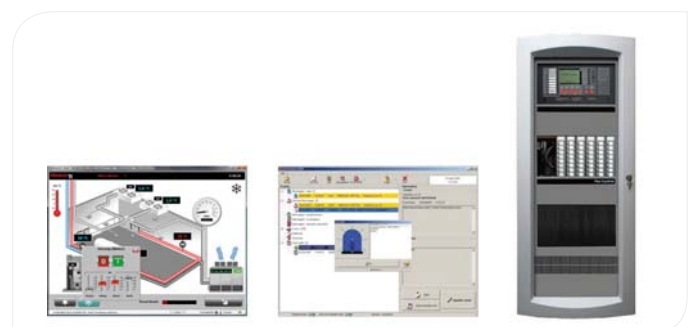
The USB port allows direct connection to a PC for configuration and maintenance. Being host-mode, it also allows firmware upgrade by inserting a USB key and pushing the relevant button on the detector. VESDA USB will also allow upload of configuration and extracting event logs.



### VESDAnet & Relays

Connect up to 200 VESDA-E devices on a single loop. Each VESDA-E detector provides up to 7 relays.

- VESDAnet provides primary reporting, centralized configuration, control, maintenance and monitoring
- Relays allow connection to Fire Alarm Control Panels (FACP) and Building Management Systems (BMS) and other security systems



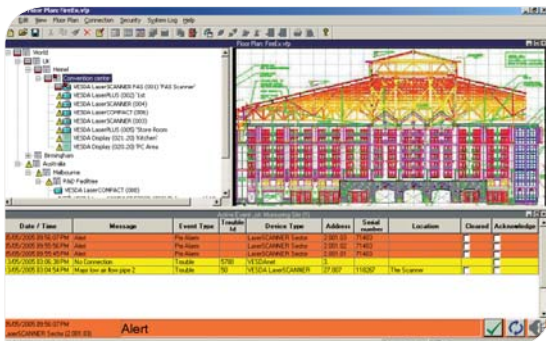
# VESDA<sup>®</sup>



## VESDA-E Software

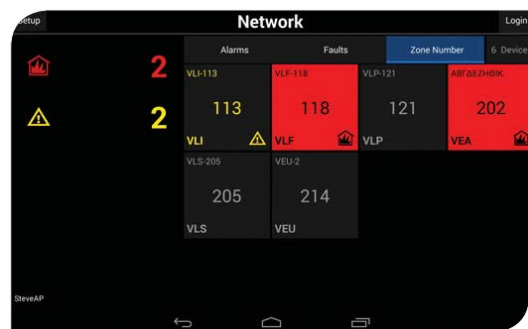
### VSM

A software package that allows the user to monitor, configure and control a VESDA system from a central location via a VESDAnet communication loop, Ethernet or WiFi.



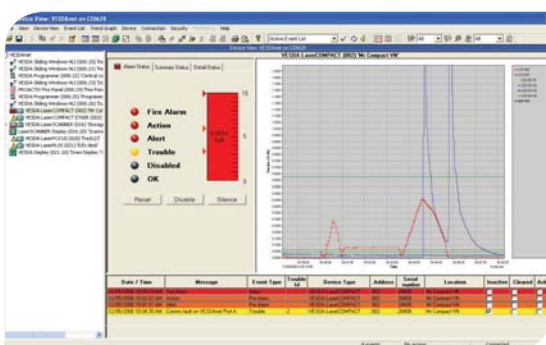
### iVESDA

VESDA is a downloadable application that can be installed on Android and iOS handheld devices to monitor and maintain VESDA-E systems with unprecedented ease. iVESDA is also compatible with existing VESDA detectors residing on the same VESDAnet as VESDA-E. iVESDA provides detailed alarm, fault and other status information such as smoke trends, airflow, filter life, as well as viewing of important configuration parameters such as pipes in use and smoke alarm thresholds.



### VSC

A software package that can be used to configure, install, commission and maintain the entire range of VESDA ASDs. The software provides high-level programming flexibility through its on-line and off-line configuration capabilities.



## VESDA Accessories

### VESDA Pipe

A key element in the performance of a VESDA ASD system is the network of sampling pipes that actively transports air from a protected area to the detector. Xtralis offers an extensive range of pipe and fittings to suit all application needs.



### ASPIRE

A Windows<sup>®</sup>-based application that aids the specification and design of pipe networks for VESDA-E air sampling smoke detectors. It provides the designer with tools to speed the design process and ensure optimum network performance and installation quality. ASPIRE also makes implementation of the design easy. With automatic generation of lists of all the components required for the project and an Installation Data Pack, the installer will have all the information they need at their fingertips.

Features	VEU	VEP-1	VEP-4	VLQ	VEA
Worldwide Approvals	UL, ULC, FM, ActiveFire, VdS, CPR	UL, ULC, FM, ActiveFire, VdS, CE, EN	UL, ULC, FM, ActiveFire, VdS, CE, EN	UL, ULC, ActiveFire, CE, LPCB, VNIPO	UL, ULC, CSFM
Hazardous Area Approval FM Class 1, Div 2, Groups A, B, C, D)	Pending	No	Pending	N/A	N/A
Min Fire 1 Threshold	0.001% obs/m (0.0003% obs/ft)	0.01% obs/m (0.0031% obs/ft)	0.01% obs/m (0.0031% obs/ft)	0.15% obs/m (0.046% obs/ft)	Sampling hole sensitivity 1.63% obs/m (0.5% obs/ft)
Detection Range	0.001 - 20.0% obs/m (0.0003 - 6.25% obs/ft)	0.005 - 20% obs/m (0.0016% - 6.25% obs/ft)	0.005 - 20% obs/m (0.0016% - 6.25% obs/ft)	0.005% - 3.0% obs/m (0.0016% - 0.937 obs/ft)	0.020 - 16% obs/m (0.0063 - 5.0% obs/ft)
No. of Inlets	4 pipes	1 pipe	4 pipes	1 pipe	40 to 120 micro-bore tubes
Two Stage Filtration	Yes	Yes	Yes	Yes	Yes
Area Coverage	6,500 m <sup>2</sup> (69,965 sq. ft)*	1,000 m <sup>2</sup> (10,760 sq. ft)	2,000 m <sup>2</sup> (21,520 sq. ft)	100 m <sup>2</sup> (1,070 sq. ft)	2,000 m <sup>2</sup> (21,520 sq. ft) across 40 - 120 sampling holes
Pipe Length (Linear)	400 m (1,312 ft)	100 m (328 ft)	280 m (919 ft)	12 m (39 ft)	40 x 100 m (130 x 328 ft)
Pipe Length (Branched)	800 m (2,625 ft)	130 m (427 ft)	560 m (1,837 ft)	18 m (59 ft)	N/A
Addressability	No	No	No	No	Up to 120 sampling holes
Total Number of Alarm Thresholds	4 (Day/Night)	4 (Day/Night)	4 (Day/Night)	2 (Day/Night)	4 (Day/Night)
Relay Outputs	7	7	7	3	7 (expandable up to 127)
On-board Memory (Max. Events)	20,000	20,000	20,000	1,000	20,000
Flow Sensing Per Inlet	Yes	Yes	Yes	RTD	Yes
IP Rating	IP40	IP40	IP40	IP30	IP40
AutoLearn™ (Smoke/Flow)	AutoLearn Smoke™ AutoLearn Flow™	AutoLearn Smoke™ AutoLearn Flow™	AutoLearn Smoke™ AutoLearn Flow™	No	NA
EN54-20 Max. no of Holes (Class A / B / C)	80 / 80 / 100	30 / 40 / 45	40 / 80 / 100	4 / 4 / 4	40 up to 120
Bar Graph/Indicator LED	LEDs or 3.5" Color Touch Screen	LEDs	LEDs or 3.5" Color Touch Screen	2 x 7 segment display and LEDs	LEDs or 3.5" Color Touch Screen
Programming Tools - On-board - Programming module - Handheld Programmer - PC Software (VSC, VSM)	USB/Ethernet/WiFi connection to PC using VSC/VSM4	USB/Ethernet/WiFi connection to PC using VSC/VSM4	USB/Ethernet/WiFi connection to PC using VSC/VSM4	USB connection to PC using QSC	USB/Ethernet/WiFi connection to PC using VSC/VSM4
StaX Expandability**	Auto Pipe Clean StaX PSU StaX	PSU StaX	Auto Pipe Clean StaX PSU StaX	No	VEA-20 Expansion StaX VEA-40 Expansion StaX VEA 40-Relay Local StaX
Analytics	Yes	Yes	Yes	No	No

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\*\* Please contact your local regional office for availability

## ADPRO SmokeTrace

SmokeTrace is a video analytic running on the ADPRO XOa Remotely Managed Multi-service Gateway (RMG), designed to provide a visual smoke verification. The system analyses the images from strategically-placed cameras or a PTZ (Pan-Tilt-Zoom) camera to remotely confirm the presence of smoke.

SmokeTrace provides a reliable live visual confirmation of smoke developing from a fire to reduce nuisance alarms and prevent unnecessary fire brigade call outs, which is an additional and voluntary extension to the Xtralis ASD capabilities.



### About Xtralis

Xtralis® is the leading global provider of converged solutions for the early detection and remote visual verification of fire, gas and perimeter threats.

Our technologies prevent disasters by giving users time to respond before life, critical infrastructure or business continuity is compromised. We protect high-value and irreplaceable assets belonging to the world's top governments and businesses. Our brands include the VESDA-E – the next generation of aspirating smoke detection technology; VESDA® – the world's No. 1 very early warning aspirating smoke detection (ASD) systems; ICAM™ for flexible ASD; ECO™ – Gas detection & environmental monitoring modules for VESDA & ICAM systems; OSID™ – easy to use smoke detection for open areas; ADPRO® – passive infrared sensors, perimeter, multisite, video analytics and enterprise security; HeiTel™ – digital video remote monitoring; and, ASIM® – intelligent traffic detection. To learn more, please visit us at [www.xtralis.com](http://www.xtralis.com).

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