The Xtralis VESDA VLF-250 detector is a very early warning smoke detector designed to protect small, business-critical environments of less than 250 m² (2500 sq. ft.).

The detector works by continually drawing air into sampling 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.

Out-of-the-box operation

The VLF can be installed and commissioned out-of-the-box without the need for a special interface or software programming tools.

In operation, the unique Smoke Dial display provides the user with an instant understanding of a smoke event, even from a distance. Should a fault occur, the user simply opens the field service door and activates the Instant Fault Finder feature to determine the specific fault condition. This information can then be passed onto their fire service company, ensuring that service technicians arrive onsite fully prepared.

Ultrasonic Flow Sensing

The patent-pending Ultrasonic Flow Sensing used in the VLF provides a direct reading of the sampling pipe flow rate. The system is immune to air temperature and pressure changes and is unaffected by contamination. The VLF is the first air sampling smoke detector to use ultrasonic flow sensing.

Features

- Out-of-the-Box Installation and Commissioning
- Ultrasonic Airflow Sensing
- Laser-Based Absolute Smoke Detection
- Pre-engineered pipe network designs
- Programmable Alarm Thresholds
- Clean air barrier optics protection
- 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 m² (2500 sq. ft.) coverage*

Listings/Approvals

- UL
- ULC
- FM
- CFE
- LPCB
- VdS
- VNIIPO
- AFNOR
- ActivFire
- CE - EMC and CPD
- EN 54-20
  - Class A (12 holes / 0.12% obs/m)
  - Class B (12 holes / 0.35% obs/m)
  - Class C (12 holes / 0.80% obs/m)

Classification of any configuration is determined using ASPIRE2.

Regional approvals listings and regulatory compliance vary between Xtralis VESDA product models. Refer to www.xtralis.com for the latest product approvals matrix.
Specifications

**Input Power**
- **Voltage:** 24V DC Nominal (19-30 V DC)
- **Current @ 24 VDC:** 220 mA nominal, 295 mA in alarm

**Dimensions (W x H x D)**
- Approx. 255 mm x 185 mm x 90 mm (9 7/16 in x 7 1/8 in x 3 1/2 in)

**Weight**
- Approx. 2 kg (4.4 lbs)

**IP Rating**
- IP30

**Mounting**
- Upright, inverted or horizontal

**Operating Conditions†**
- **Ambient:** 0°C to 39°C (32°F to 103°F) *
- **Tested to:** -10°C to 55°C (14°F to 131°F) *
- **Sampled Air:** -20°C to 60°C (-4°F to 140°F) *
- **Humidity:** 5% to 95% RH, non-condensing

**Sampling Network**
- **Maximum pipe lengths:** 1 x 25 m (80 ft) (Max. 12 holes)
- **Sampling Hole Options:** Pre-Engineered Option or Maximum Pipe length in accordance with Pipe Modelling Design Tool (ASPIRE2™)

**Air Inlet Pipe**
- **Accepts both metric and American standard pipe sizes.**
- **Metric:** 25 mm (1.05 in.)
- **American Pipe:** IPS 21 mm (¾ in.)
- **Area Coverage:**
  - Upright, inverted or horizontal
  - **Up to 250 m² (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)
- **Cable Termination:** Screw Terminals 0.2-2.5 mm² (30-12 AWG)

**Interfaces**
- Shown in Terminal Block Connections diagram, to right, plus an RS232 Programming Port.
- **General Purpose Input (GPI) interface offers:**
  - Reset, Disable, Standby, Alarm set 1, Alarm set 2 and External Input functions.

**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
- **Two Alarm Threshold Settings:** Either time or GPI based

**Display**
- **4 Alarm State Indicators**
- **Smoke Level Indicator**
- **Reset, Disable and Test Controls**

**Event Log**
- Up to 18000 events, time and date stamped in separate, non-volatile, logs for:
  - Smoke Level, Flow Level, Detector Status and Faults

**AutoLearn Smoke & Flow**
- Automatically set acceptable alarm thresholds for both smoke and flow levels
- **Minimum 15 minutes, maximum 15 days (default 14 days)**
- **During AutoLearn thresholds are NOT changed from pre-set values**

**Warranty Period**
- 2 years

**Ordering Information:**
- **VLF-250-00 Xtralis VESDA VLF.** European language set. English display labels
- **VLF-250-01 Xtralis VESDA VLF.** European language set. International display labels
- **VLF-250-02 Xtralis VESDA VLF.** English + Asian language set. International display labels
- **VLF-250-04 Xtralis VESDA VLF.** English + Russian language set. International display labels
- **VLF-250-05 Xtralis VESDA VLF.** English + Eastern Euro language set. International display labels
- **VIC-010 VESDANet Interface Card, VIC-020 Multifunction Control Card (MCC)**
- **VIC-030 Multifunction Control Card (MCC) with Monitored Powered Output (MPO)**
- **VSP-005 Filter Cartridge, VSP-722 Aspirator for Xtralis VESDA VLF-250**

**Approvals Compliance**
- Please refer to the Product Guide for details regarding compliant design, installation and commissioning.

**Display:**
- The display provided to the user includes a Smoke Dial and alarm and status indicators.

When the field service access door is open, the user has access to the RESET , DISABLE , Fire Test and Instant Fault Finder functions.
When the Instant Fault Finder function is activated, the Smoke Dial converts to a fault indicator, with the dial segment numbers corresponding to the faults listed below.

**Legend of fault indicators:**
- **1 Filter**
- **2 Aspirator**
- **3 High flow**
- **4 Low flow**

**Terminal Block Connections:**

**Document Details**
- **Part:** 20293
- **Doc. no.:** 07854_11
- **Completeness, Accuracy or Reliability:**
- **Copyright:**
- **Disclaimer:**
- **Trademarks:**
- **Warranty Period:**
- **Region:**
- **Contact Information:**
Xtralis VESDA VLS

The Xtralis VESDA VLS is similar to the standard Xtralis VESDA VLP detector, but also includes a valve mechanism in the inlet manifold and software to control the airflow from the four sectors (pipes). This configuration enables a single VESDA zone to be divided into four separate sectors, for example, distinguishing between separate voids within a room.

How It Works

The VLS draws air from all sectors in use. If the smoke level reaches the Adaptive Scan Threshold, the VLS quickly scans each pipe to identify which pipe is carrying smoke. If more than one pipe is transporting smoke, the sector with the highest smoke concentration is designated as the First Alarm Sector (FAS).

Once Fast Scan is completed and the FAS identified, the VLS continues to closely monitor all four sectors (pipes) to monitor fire growth and maintain full protection of the area.

There are four alarm levels (Alert, Action, Fire 1 and Fire 2) for each sector (pipe) and the sensitivity for each alarm level can be set to ensure the optimum alarm thresholds are applied for each sector.

The VLS Display

The VLS display has a bar graph to indicate the overall smoke level, alarm threshold and fault indication. The bar graph displays the individual sector smoke levels during the scanning sequence. There is an extra LED to indicate that a First Alarm Sector (FAS) has been identified and an extra function to the Silence Button to allow for Manual Scan to be initiated.

The VLS display module can be mounted into the VLS front cover or remotely into a 19in subrack or a remote box.

Relay Options

The VLS detector can be fitted with a programmable 7 or 12 relay Termination card. Relays may be mounted in a remote box or in a 19in subrack.

VESDAnet™

The status of the detector, and all alarm, service and fault events, are transmitted to displays and external systems via VESDAnet, Xtralis VESDA’s fault tolerant communications protocol. The VESDAnet loop provides a robust bi-directional communication network between devices, even allowing continued operation during single point wiring failures. It also provides system programming from a single location and forms the basis of the modular nature of the Xtralis VESDA system.

AutoLearn™ and Referencing

The VLS has both the AutoLearn™ and Referencing software functions to ensure optimum operation in different environments and to eliminate the occurrence of nuisance alarms.

AutoLearn monitors the ambient environment and sets the most appropriate alarm thresholds (Alert, Action, Fire 1, Fire 2) during the commissioning process.

Referencing ensures external pollution to a protected environment does not interfere with the true smoke level being detected.

Features

- Individual pipe identification
- Adaptive Scan Threshold
- Wide sensitivity range
- Laser based smoke detection
- VESDAnet™ communication
- 4 alarm levels per sector
- High efficiency aspirator
- Clean air barrier optics protection
- Easy to replace air filter
- 7 or 12 programmable relays option
- AutoLearn™
- Referencing
- Event log
- Recessed mounting

Listings/Approvals

- UL
- ULC
- FM
- LPCB
- VdS
- CFE
- ActivFire
- AFNOR
- VNIIPO
- CE - EMC and CPD
- EN 54-20
  - Class A (40 holes / 0.08% obs/m)
  - Class B (40 holes / 0.23% obs/m)
  - Class C (60 holes / 0.65% obs/m)

Classification of any configuration is determined using ASPIRE2.

Regional approvals listings and regulatory compliance vary between Xtralis VESDA product models. Refer to www.xtralis.com for the latest product approvals matrix.
Xtralis VESDA VLS

Specifications

Supply Voltage: 18–30 VDC

Power Consumption @ 24 VDC:

<table>
<thead>
<tr>
<th>Aspirator @ 3000 rpm</th>
<th>Aspirator @ 4200 rpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power 5.8 W</td>
<td>6.24 W</td>
</tr>
<tr>
<td>Current 240 mA</td>
<td>260 mA</td>
</tr>
</tbody>
</table>

Dimensions (WHD):
350 mm x 225 mm x 125 mm (13.8 in x 8.9 in x 4.9 in)

Weight: 4.0 kg (9 lbs) including Display and Programmer modules

Operating Conditions:
Tested to: -10°C to 55°C (14°F to 131°F)
Detector Ambient: 0°C–39°C (32°–103°F) (Recommended)
Sampled Air: -20°–60°C (-4°–140°F)
Humidity: 10%–95% RH, non-condensing

Sampling Network:
Aggregate pipe length: 200 m (650 ft)
Pipe Modelling Design Tool: ASPIRE2™
Area Coverage
Up to 2000 m² (21500 sq. ft.) depending on local codes and standards

Pipe Size:
Minimum flow per pipe IS liters/min.
External Diameter 25 mm (1 in)
Internal Diameter 65–21 mm (¼ in–¾ in)

Programmable Relays:
7 or 12 Relays option
Contacts rated 2 A @ 30 VDC
Default: 7 Relays: NO/NC contacts Alert, Action, Fire 1, Fire 2, Maintenance, Urgent Fault & Isolate
Default: 12 Relays: 10 x NO, 2 x NO/NC contacts Alert, Action, Fire 1, Fire 2, Maintenance, Urgent Fault & Isolate, First Alarm Sector 1 to 4 and Scan

IP Rating: IP30

Cable Access:
8 x 25 mm (1 in) knockouts in various positions

Cable Termination:
Screw terminals 0.2–2.5 sq mm (30–12 AWG)

Sensitivity Range:
0.005%–20% obs/m (0.0015%–6% obs/ft)

Alarm Threshold Setting Range:
Alert: 0.005%–1.990% obs/m (0.0015%–0.621% obs/ft)
Action: 0.010%–1.995% obs/m (0.003%–0.6234% obs/ft)
Fire 1: 0.015%–2.00% obs/m (0.0046%–6.25% obs/ft)
Fire 2: 0.020%–20.00% obs/m (0.0062%–6.25% obs/ft)*
*Limited to 12% obs/m (4% obs/ft) in UL mode

Software Features:
Event Log: Up to 18,000 events stored on FIFO basis.
AutoLearn: Minimum 15 minutes, maximum 15 days.
Recommended minimum period 1 day. During AutoLearn thresholds are NOT changed from pre-set values.
Referencing: Compensation for external ambient conditions.
Four Alarm Levels (per sector pipe): Alert, Action, Fire 1 & Fire 2.
Two Fault Warning Levels: Maintenance and Major fault.
Software Programmable Relays: 7 or 12.
Event reporting via VESDAnet or Event Log.
Adaptive Scan Threshold: Detector selects the appropriate scan threshold automatically.

Ordering Information:
Remote Programmer VRT-100
Recessed Mounting Kit (Optional) VSP-011
Hand-held Programmer VHH-100
19 in Sub Rack Configuration contact Xtralis

www.xtralis.com

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Continental Europe +32 56 24 19 51 UK and the Middle East +44 1442 242 330

Doc. no. 09361_14 Part: 17873
Introduction

The Xtralis VESDA VLC detector has been specifically designed to provide all the benefits of aspirating smoke detection, including very early warning, in single environment small areas and where space is a premium.

The VLC combines the well-proven Xtralis VESDA VLP detection technology with a modified aspirator design, and incorporates them into a compact enclosure with a simplified display.

Two variants and a remote display option

The VLC is available in two versions, one that interfaces via relays only (RO) and one that interfaces via relays and VESDAnet (VN).

The VN version is compatible with the remote Display Module, which allows the current status of the detector to be reported in the most convenient location. The remote Display Module has 7 remote relays to support any combination of signalling that may be demanded by the application. The VN version allows several detectors to be linked together on VESDAnet thereby allowing one to act as a reference detector for other Xtralis VESDA detectors.

Description

The VLC is made up of two parts: the main enclosure and the front cover.

The main enclosure houses all the key components of the detector. All non-serviceable items like the main processor board and detector chamber are mounted away from the general access area, protecting them during the installation and service process.

The front cover includes:

- 5 LEDs: Fire, Pre-Alarm/Alert, Fault, OK, Reset/Isolate
- Reset/Isolate Push Button (press to reset, press and hold to isolate)

Features

- Absolute smoke detection
- Wide sensitivity range
- Single pipe inlet
- Five (5) status LEDs
- Referencing
- VESDAnet communication (VN)
- Clean air barrier optics protection
- Three (3) Alarm Levels
- Three (3) Programmable Relays
- Air flow monitoring
- Optional remote display and relay capability
- Simple mounting design
- AutoLearn™

Approvals/Listings*

- UL
- ULC
- FM
- LPCB
- VdS
- CFE
- ActivFire
- AFNOR
- VNIIPO
- CE - EMC and CPD
- EN 54-20
  - Class A (30 holes / 0.05% obs/m)
  - Class B (36 holes / 0.09% obs/m)
  - Class C (40 holes / 0.165% obs/m)

Classification of any configuration is determined using ASPIRE2.

Regional approvals listings and regulatory compliance vary between Xtralis VESDA product models. Refer to www.xtralis.com for the latest product approvals matrix.

*Special versions of the products are available which carry Marine Approvals. Please refer to separate data sheet (doc. no. 11655).
How it works

Air is continually drawn through a simple pipe network to a central detector by a high efficiency aspirator. Air entering the unit passes a flow sensor before a sample is passed through a dual-stage dust filter (the majority of air is exhausted from the detector and back-vented to the protected area). The first stage removes dust and dirt from the air sample before it enters the chamber for smoke detection. The second, ultra-fine stage provides a clean air supply to be used inside the detection chamber to form clean air barriers, which protect the optical surfaces from contamination.

The detection chamber uses a stable, highly efficient laser light source and unique sensor configuration to achieve the optimum response to a wide range of smoke types. When smoke passes through the detection chamber it creates light scatter which is detected by the very sensitive sensor circuitry.

The status of the detector, all alarms, service and fault events, are monitored and logged with time and date stamps. Status reporting can be transmitted via simple relay connections or across the advanced VESDAnet communications network (VN version only).

VLC Termination Card (VN)

<table>
<thead>
<tr>
<th>Terminal A</th>
<th>Terminal B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Bias (-) (GND)</td>
<td>1 Shield</td>
</tr>
<tr>
<td>2 Reset (-)</td>
<td>2 VESDAnet-A (-)</td>
</tr>
<tr>
<td>3 Reset (+)</td>
<td>3 VESDAnet-A (+)</td>
</tr>
<tr>
<td>4 Bias (+)</td>
<td>4 Shield</td>
</tr>
<tr>
<td>5 LED (-) (GND)</td>
<td>5 VESDAnet-B (-)</td>
</tr>
<tr>
<td>6 LED (+)</td>
<td>6 VESDAnet-B (+)</td>
</tr>
<tr>
<td>7 FIRE (NO)</td>
<td>7 Power (-)</td>
</tr>
<tr>
<td>8 FIRE (C)</td>
<td>8 Power (+)</td>
</tr>
<tr>
<td>9 PRE-ALARM (NO)</td>
<td>9 Power (-)</td>
</tr>
<tr>
<td>10 PRE-ALARM (C)</td>
<td>10 Power (+)</td>
</tr>
<tr>
<td>11 FAULT (NO)</td>
<td>11</td>
</tr>
<tr>
<td>12 FAULT (C)</td>
<td>12</td>
</tr>
<tr>
<td>13 FAULT (NC)</td>
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</table>

VLC Termination Card (RO)

<table>
<thead>
<tr>
<th>Terminal A</th>
<th>Terminal B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 FIRE (NO)</td>
<td>1 Bias (-) (GND)</td>
</tr>
<tr>
<td>2 FIRE (C)</td>
<td>2 Reset (-)</td>
</tr>
<tr>
<td>3 PRE-ALARM (NO)</td>
<td>3 Reset (+)</td>
</tr>
<tr>
<td>4 PRE-ALARM (C)</td>
<td>4 Bias (+)</td>
</tr>
<tr>
<td>5 LED (-) (GND)</td>
<td>5 LED (+)</td>
</tr>
<tr>
<td>6 FAULT (NO)</td>
<td>6</td>
</tr>
<tr>
<td>7 FAULT (C)</td>
<td>7 Power (-)</td>
</tr>
<tr>
<td>8 FAULT (NC)</td>
<td>8 Power (+)</td>
</tr>
<tr>
<td>9 Power (+)</td>
<td>9</td>
</tr>
<tr>
<td>10 Power (+)</td>
<td>10</td>
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</tbody>
</table>

Ordering Information

<table>
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<tr>
<th>Product</th>
<th>Part number</th>
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<tbody>
<tr>
<td>Xtralis VESDA VLC – VESDAnet</td>
<td>VLC-505</td>
</tr>
<tr>
<td>Xtralis VESDA VLC – Relays Only</td>
<td>VLC-500</td>
</tr>
<tr>
<td>Remote Display (relays)</td>
<td>VRT-J00</td>
</tr>
<tr>
<td>Remote Display (no relays)</td>
<td>VRT-400</td>
</tr>
<tr>
<td>Remote Relays (no display)</td>
<td>VRT-500</td>
</tr>
</tbody>
</table>

Specifications

- **Supply voltage:** 18 to 30 VDC
- **Power consumption:** 5.4 W quiescent, 5.9 W with alarm
- **Current consumption:** 225 mA quiescent, 245 mA with alarm
- **Fuse rating:** 1.6 A
- **Dimensions (WHD):** 225 mm x 225 mm x 85 mm (8 7/8" x 8 7/8" x 3 3/8")
- **Weight:** 1.6 kg (4.2 lbs.)
- **Operating conditions:**
  - Ambient: 0°C to 35°C (32°F to 95°F) *
  - Tested: -10°C to 55°C (14°F to 131°F) *
  - Sampled Air: -20°C to 60°C (-4°F to 140°F) *
- **Humidity:** 10% to 95% RH, non-condensing
- **Sampling network:** Maximum area of Coverage 800 sq.m (8000 sq.ft)
- **Maximum pipe lengths:** 1 x 80 m, 2 x 50 m
- **Computer design tool:** ASPIRE2™
- **Pipe:**
  - Internal Diameter 15 mm–21 mm (‘Ys”–’7/8")
  - External Diameter 25 mm (1")
- **Relays:**
  - 3 Relays rated 2 A @ 30 VDC
  - Fire (NO)
  - Pre-Alarm (NO)
  - Alert/Fault (Maintenance & Isolate) (NC/NO)
- **IP rating:** IP30
- **Cable access:** 4 x 25 mm (1") cable entries
- **Cable termination:** Screw Terminal blocks 0.2–2.5 sq mm (30–12 AWG)
- **Alarm sensitivity range:** 0.005% to 20% obs/m (0.0015% to 6.25% obs/ft)
- **Threshold setting range:**
  - Alert: 0.005%–1.990% obs/m (0.0015%–0.6218% obs/ft)
  - Pre-Alarm: 0.010%–1.995% obs/m (0.0031%–0.6234% obs/ft)
  - Fire: 0.015%–20.00% obs/m (0.0046%–6.25% obs/ft)*
- **Software features:**
  - Event log: Up to 12,000 events stored in FIFO format
  - Smoke level, user actions, alarms and faults with time and date stamp
  - AutoLearn: Minimum 15 minutes, maximum 15 days
  - Recommended minimum 14 days
  - During AutoLearn thresholds are NOT changed from pre-set values.
- **Configurable general input (24 VDC):**
  - Standby, Mains OK or Reset/Isolate

Approvals Compliance

Please refer to the Product Guide for details regarding compliant design, installation and commissioning.

* Product approved by UL from 0°C to 38°C (32°F to 100°F)
The Xtralis VESDA VLP detector is the central element of the Xtralis VESDA ASD product range. Using unique detection principles, the VLP has an alarm sensitivity range of 0.005%–20% obscuration/m (0.0015%–6.25% obscuration/ft). 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.

How It Works
Air is drawn into the VLP 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 VLP and may be vented back into the protected zone.

Inside the VLP, a sample of air is passed into the laser detection chamber. Ultra-fine air filtration provides very clean air to protect the optical surfaces inside the detector from contamination.

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 VESDAnet.

VESDAnet™
Xtralis VESDA detectors and devices communicate across VESDAnet, the Xtralis VESDA fault-tolerant communications protocol. The VESDAnet loop provides a robust bi-directional 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 Xtralis VESDA system.

AutoLearn™
The VLP technology employs unique software tools to ensure optimum operation in many differing environments. AutoLearn monitors the ambient environment and sets the most appropriate alarm thresholds (Alert, Action, Fire1, Fire2) during the commissioning process to allow the earliest possible warning of a potential fire situation with reduced nuisance alarms.

Referencing
Environments that employ air handling systems may be affected by pollution external to the controlled environment when “fresh air make up” is added. Referencing by the VLP ensures that external pollution does not interfere with the true smoke level being detected in the protected environment. The system can safely compensate for this transient state and allow continued operation free from such nuisance alarms.

Features
- Wide sensitivity range
- Laser based smoke detection
- 4 configurable 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
- VESDAnet™
- AutoLearn™
- Referencing
- Event log
- Modular design
- Recessed mounting option

Listings/Approvals
- UL
- ULC
- FM
- LPCB
- VdS
- CFE
- ActivFire
- AFNOR
- VNIIPO
- CE - EMC and CPD
- EN 54-20
  - Class A (30 holes / 0.05% obs/m)
  - Class B (60 holes / 0.06% obs/m)
  - Class C (100 holes / 0.08% obs/m)

Classification of any configuration is determined using ASPIRE2.

Regional approvals listings and regulatory compliance vary between Xtralis VESDA product models. Refer to www.xtralis.com for the latest product approvals matrix.
Specifications

Supply Voltage: 18–30 VDC

Power Consumption @ 24 VDC:

<table>
<thead>
<tr>
<th>Aspirator</th>
<th>Quiescent</th>
<th>With Alarm</th>
</tr>
</thead>
<tbody>
<tr>
<td>3000 rpm</td>
<td>5.8 W</td>
<td>6.96 W</td>
</tr>
<tr>
<td>4200 rpm</td>
<td>8.16 W</td>
<td>9.36 W</td>
</tr>
</tbody>
</table>

Dimensions (WxHxD):

350 mm x 225 mm x 125 mm (13.8 in x 8.9 in x 4.9 in)

Weight:

4.0 kg (9 lbs) including Display and Programmer modules

IP Rating: IP30

Operating Conditions:

Tested to: -10°C–55°C (14°–131°F)
Detector Ambient: 0°C–39°C (32°–103°F) (Recommended)
Sampled Air: -20°–60°C (-4°–140°F)
Humidity: 10%–95% RH, non-condensing

Please consult your Xtralis office for operation outside these parameters or where sampled air is continually above 0.05% obs/m (0.015% obs/ft) under normal operating conditions.

Sampling Network:

Aggregate pipe length: 200 m (650 ft)
Maximum Single Length: 100 m (325 ft)
Pipe Modelling Design Tool: ASPIRE2™

Pipe Size:

External Diameter 25 mm (1 in)
Internal Diameter 15–21 mm (9/16 in–7/8 in)

Programmable Relays:

7 Relays, Contacts rated 2 A @ 30 VDC NO/NC

Contacts

Cable Access:

8 x 25 mm (1 in) knockouts in various positions

Cable Termination:

Screw terminals 0.2–2.5 sq mm (30–12 AWG)

Alarm Sensitivity 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%–2.000% obs/m (0.0046%–0.625% obs/ft)
Fire 2: 0.020%–20.00% obs/m (0.0062%–6.25% obs/ft)*

*Limited to 12% obs/m (4% obs/ft) in UL mode

Event Log:

Up to 18,000 events stored on FIFO basis.

AutoLearn:

Minimum 15 minutes, maximum 15 days. Recommended minimum period 1 day. During AutoLearn thresholds are NOT changed from pre-set values.

Software Features:

Referencing: Compensation for external ambient conditions.
Two Fault Warning Levels: Maintenance and Major fault.
Software Programmable Relays: 7.
Event reporting via VESDAnet or Event Log.

Approvals Compliance

Please refer to the Product Guide for details regarding compliant design, installation and commissioning.

Ordering Information

Xtralis VESDA VLP
VLP-0XX XX (see below)

Detector Configurations

<table>
<thead>
<tr>
<th>VLP-0XX XX</th>
<th>0=Blank Plate</th>
<th>1=Programmer</th>
<th>2=Display</th>
<th>4=Scanner Display</th>
<th>0=Standard Detector Orientation</th>
<th>1=Inverted Detector Orientation</th>
<th>0=Standard Product</th>
<th>1=Custom (consult factory)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote Programmer</td>
<td>VRT-100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recessed Mounting Kit (Optional)</td>
<td>VSP-011</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hand-held Programmer</td>
<td>VHH-100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 in Sub Rack Configuration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>contact Xtralis</td>
</tr>
</tbody>
</table>

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Continental Europe +41 55 285 99 99 UK and the Middle East +44 1442 242 330

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The Xtralis VESDA VLF-500 detector is a very early warning smoke detector designed to protect small, business-critical environments of less than 500 m² (5000 sq. ft.)

The detector works by continually drawing air into sampling 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.

**Out-of-the-box operation**

The VLF can be installed and commissioned out-of-the-box without the need for a special interface or software programming tools.

In operation, the unique Smoke Dial display provides the user with an instant understanding of a smoke event, even from a distance. Should a fault occur, the user simply opens the field service door and activates the Instant Fault Finder feature to determine the specific fault condition. This information can then be passed onto their fire service company, ensuring that service technicians arrive onsite fully prepared.

**Ultrasonic Flow Sensing**

The patent-pending Ultrasonic Flow Sensing used in the VLF provides a direct reading of the sampling pipe flow rate. The system is immune to air temperature and pressure changes and is unaffected by contamination. The VLF is the first air sampling smoke detector to use ultrasonic flow sensing.

**Features**

- Out-of-the-Box Installation and Commissioning
- Ultrasonic Airflow Sensing
- Laser-Based Absolute Smoke Detection
- Pre-engineered pipe network designs
- Programmable Alarm Thresholds
- Clean air barrier optics protection
- 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 500 m² (5000 sq. ft.) coverage*

**Listings/Approvals**

- UL
- ULC
- FM
- CFE
- LPCB
- VdS
- VNIIPO
- AFNOR
- ActivFire
- CE - EMC and CPD
- EN 54-20
  - Class A (30 holes / 0.05% obs/m)
  - Class B (30 holes / 0.15% obs/m)
  - Class C (30 holes / 0.32% obs/m)

Classification of any configuration is determined using ASPIRE2.

Regional approvals listings and regulatory compliance vary between Xtralis VESDA product models. Refer to www.xtralis.com for the latest product approvals matrix.
Xtralis VESDA VLF

Specifications

Input Power
Voltage: 24V DC Nominal (18-30 V DC)
Current @ 24 VDC: 410 mA nominal, 490 mA in alarm

Dimensions (W x H x D)
255 mm x 185 mm x 90 mm (9\textquoteleft\textquoteright in x 7\textquoteleft\textquoteright in x 3\textquoteleft\textquoteright in)

Weight
Approx. 2 kg (4.4 lbs)

IP Rating
IP30

Mounting
Upright, inverted or horizontal

Operating Conditions\†
Ambient:
0°C to 39°C (32°F to 103°F)
Tested to:
-10°C to 55°C (14°F to 131°F)
Sampled Air:
-20°C to 60°C (32°F to 104°F)
Humidity:
5% to 95% RH, non-condensing

Sampling Network
Maximum pipe lengths:
1 x 50 m (150 ft) (Max. 24 holes)
2 x 30 m (90 ft) per branch (Max. 12 holes per branch)
Sampling Hole Options:
Pre-Engineered Option or Maximum Pipe length in accordance with Pipe Modelling Design Tool (ASPIRE2™)

Air Inlet Pipe
Accepts both metric and American standard pipe sizes.
Metric: 25 mm American Pipe: IPS \frac{3}{4} in.

Area Coverage
Up to 500 m² (5000 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 (\frac{1}{4} in). cable entries (1 rear entry, 2 top entry)

Cable Termination
Screw Terminals 0.2-2.5 mm² (30-12 AWG)

Interfaces
Shown in Terminal Block Connections diagram, to right, plus an RS232 Programming Port.
General Purpose Input (GPI) interface offers: Reset, Disable, Standby, Alarm set 1, Alarm set 2 and External Input functions.

Alarm Threshold Setting Range
Alert, Action, Fire 1, Fire 2
0.025 - 2.00% obs/m (0.008 - 6.25% obs/ft)
Individual Alarm Delays
0 – 60 seconds
Two Alarm Threshold Settings
Either time or GPI based

Display
- 4 Alarm State Indicators
- 3 Display
- 2 GPI
- 1 GPI
- 8 Power Return 0 VDC
- 9 Power In 24 VDC
- 10 Power Return 0 VDC
- 11 Power Out 24 VDC
- 12 NC
- 13 Common
- 14 NO
- 15 NC
- 16 Common
- 17 NO
- 18 NC
- 19 Common
- 20 NO

Warranty Period
2 years

Ordering Information:
VLF-500-00 Xtralis VESDA VLF. English + EU language set. European display labels
VLF-500-01 Xtralis VESDA VLF. English + Eastern Euro language set. International display labels
VLF-500-02 Xtralis VESDA VLF. English + Asian language set. International display labels
VLF-500-04 Xtralis VESDA VLF. English + Russian language set. International display labels
VLF-500-05 Xtralis VESDA VLF. English + Eastern Euro language set. International display labels
VIC-010 VESDAnet Interface Card
VIC-020 Multifunction Control Card (MCC)
VIC-030 Multifunction Control Card (MCC) with Monitored Powered Output (MPO)
VSP-005 Filter Cartridge, VSP-715 Aspirator for VLF-500

Approvals Compliance
Please refer to the Product Guide for details regarding compliant design, installation and commissioning.

Display
The display provided to the user includes a Smoke alarm and status indicators.

When the field service access door is open, the user has access to the RESET , DISABLE , Fire Test , AutoLearn and Instant Fault Finder functions.
When the Instant Fault Finder function is activated, the Smoke Dial converts to a fault indicator, with the dial segment numbers corresponding to the faults listed below.

Legend of fault indicators
1 Filter 6 External Device/PSU
2 Aspirator 7 Interface card
3 High flow 8 Field wiring
4 Low flow 9 AutoLearn Fail
5 n/a 10 Detector failure

Terminal Block Connections

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*Depending upon local codes and standards. †Operation outside these parameters will reduce detector life.

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Part: 20206
The World's No. 1 Brand of Aspirating Smoke Detector
When business continuity is paramount

*Is uptime a key business goal? Is service provision critical?*

VESDA by Xtralis very early warning smoke detectors provide the earliest warning of a potential fire that buys time to investigate, intervene and potentially avoid business disruption in addition to the damage, downtime and cost of a suppression release. Such early warning is critical for:

- Telecommunications facilities
- Financial data centers
- Clean rooms
- Server rooms
- Utilities
- Power generation facilities

When smoke is difficult to detect

*Is high airflow diluting smoke, preventing it from reaching the ceiling so it can be detected? Is the smoke being trapped in ducts, pockets or voids? Is smoke stratifying into a mushroom cloud below a high ceiling, making it difficult to detect?*

VESDA sampling points can be placed at the return air grill or in equipment cabinets to detect smoke as it is carried by the air. In large, open spaces, sampling points for VESDA detectors can be placed where smoke goes — often some distance below ceiling level. Suitable for:

- Server rooms
- Telecommunications facilities
- Atriums
- Theaters
- Clean rooms
- Warehouses
- Indoor stadiums
- Convention centers

When maintenance access is difficult

*Is the area to be protected inaccessible? Does maintenance on current fire protection systems cause disruptions and inconvenience your business?*

VESDA detectors can be mounted in accessible locations to enable easy maintenance. Only the sampling pipe network is placed in the inaccessible area. Ideal for:

- Ceiling voids and sub-floor spaces
- Elevator shafts
- Production areas
- Prisons and detention facilities
- Ducts

---

7 Reasons for VESDA
When unobtrusive detection is required

Is it important to preserve the internal design/decoration of the building? Is vandalism a problem with the current smoke detection system?

A VESDA system can be installed with tiny capillary sampling tubes, which are barely discernible to the human eye. The detectors can be placed in a cupboard or utility area. Great for:

- Modern offices
- Cathedrals
- Art galleries and museums

- Heritage buildings
- Prisons and detention centers
- Prestigious residences

When evacuation is a challenge

Will the building be open to the general public? Will it house people who need extra help during an evacuation? Is evacuation difficult due to crowds or limited exits? What is the business impact of an evacuation?

The very early warning that a VESDA system provides allows the maximum time for evacuation. This is critical for:

- Shopping centers
- Stadiums
- Heritage buildings

- Hospitals
- Underground tunnels
- Facilities for children and the elderly

When environmental conditions are difficult

Is poor air quality or are extreme temperatures present in the area to be protected?

VESDA detectors feature dual-stage filtration to ensure they continue to function reliably in dirty environments. The detectors can be installed elsewhere, with only the sampling pipes in the extreme environment. The sampled air can be filtered, warmed or cooled before reaching the detector. Ideal for:

- Power stations
- Public transport
- Paper and saw mills
- Cold stores

- Mines
- Automotive operations
- Manufacturing facilities
- Hazardous areas (Factory Mutual Class 1 Div 2)

When suppression systems are present

Is suppression release costly and disruptive?

The very early warning provided by a VESDA system allows early intervention to prevent suppression releases. The multiple warning levels of a VESDA system can be used to trigger different responses at different stages of a fire — from controlling air conditioning to initiating a suppression release. Applicable for:

- Communications hubs
- Command stations

- Server rooms
- Switch rooms
VESDA by Xtralis Aspirating Smoke Detection (ASD)

The World's No. 1 ASD Brand

VESDA by Xtralis very early warning smoke detection solutions provide the earliest possible warning of an impending fire hazard. VESDA buys time to investigate an alarm and initiate an appropriate response to prevent injury, property damage or business disruption. And because VESDA has the industry's widest sensitivity range and multi-level warnings, even minute levels of smoke can be detected before a fire has time to escalate.

As the No. 1 ASD brand specified by fire professionals around the world, VESDA is synonymous with reliable, high-performance fire detection.

How VESDA Works

VESDA works by continuously drawing air into a distributed pipe network via a high-efficiency aspirator. The air sample then passes through a dual-stage filter. The first stage removes dust and dirt from the air sample before it enters the laser detection chamber. The second, ultra-fine stage provides an additional clean-air supply to keep the detector’s optical surfaces free from contamination, ensuring stable calibration and long detector life as well as minimizing nuisance alarms.

From the filter, the air sample goes through the calibrated detection chamber where it is exposed to a laser light source. When smoke is present, light is scattered within the detection chamber and is instantly identified by the highly sensitive receiver system. The signal is then processed and presented via a bar-graph display, alarm threshold indicators and/or graphic display. VESDA detectors are able to communicate this information to a fire alarm control panel, a software management system, or a building management system via relays or a High Level Interface (HLI).
VESDA by Xtralis

Product Range

VESDA VFT
The VESDA VFT is a unique and versatile high-sensitivity ASD that is able to pinpoint the source of incipient smoke to speed response, enhance investigation, and minimize business disruption and downtime. This advanced detector provides intelligent addressability to identify up to 15 protected areas via microbore aspirating tubes.

VESDA VLP (LaserPLUS™)
The VESDA VLP is the most popular detector in the VESDA by Xtralis product range. Like all VESDA ASDs, it detects fire at the earliest possible stage and reliably measures very low to extremely high concentrations of smoke. It has the world’s widest sensitivity range of 0.005 to 20% obs/m (0.0015 to 6% obs/ft). VESDA VLP supports four configurable alarms (Alert, Action, Fire 1 and Fire 2) and protects areas up to 2,000 square meters (20,000 square feet).

VESDA VLS (LaserSCANNER™)
The VESDA VLS locates the origin of smoke by identifying the first sector (pipe) with the highest level of smoke and then continues to sample air from all sectors to monitor fire growth. The VESDA VLS also provides four alarm levels for each individual pipe (Alert, Action, Fire 1 and Fire 2) and provides individual pipe addressability and settings. It protects areas up to 2,000 square meters (20,000 square feet).

VESDA VLC (LaserCOMPACT™)
The VESDA VLC offers cost-effective protection of single environments and small areas. It offers the same wide sensitivity range as the VESDA VLP and VESDA VLS — 0.005 to 20% obs/m (0.0015 to 6% obs/ft). The VESDA VLC supports three configurable alarm levels (Alert, Pre-Alarm and Fire) and comes in two versions. One version interfaces via relays only (RO) and the other across either relays or VESDAnet (VN). In addition, an explosion-proof version of the VN VLC is available for the protection of hazardous areas.

VESDA VLF (LaserFOCUS™)
The VESDA VLF delivers the most advanced and cost-effective aspirating smoke detection technology for small environments. The VESDA VLF-250 model protects areas up to 250 square meters (2,500 square feet), and the VESDA VLF-500 model covers up to 500 square meters (5,000 square feet). In addition to the features found in all Xtralis Laser products, VESDA VLF provides a new range of features and built-in intelligence for quick installation, commissioning and servicing.

VESDA VLT (LaserTEKNIC™)
The VESDA VLT enables Original Equipment Manufacturers to offer the benefits of VESDA by Xtralis very early warning smoke detection in their products with little development investment.

Remote Displays and Programmers
The VESDA display module monitors and reports the status of a detector, providing visual representation of smoke levels along with all alarm and fault conditions. For monitoring convenience, multiple displays can be associated with a single detector.

The menu-driven VESDA Programmer allows the user to conveniently configure, commission and maintain the VESDA system, as well as program each individual detector. Only one programmer is needed to support the entire network.

Display and programmer modules can be mounted in a detector unit separately (connected via VESDAnet), in a single remote mounting box, or in a 19-inch sub rack.
VESDAnet™
VESDAnet is a comprehensive, fault-tolerant, “closed,” two-wire communications loop that links VESDA detectors, displays, programmers and remote units on a daisy-chained loop. VESDAnet enables a number of units to be programmed together from one or more locations and automatically detects communication failures.

It also easily interfaces with systems external to the network, such as intelligent fire alarm panels and building management systems.

VESDA Pipe
A key element in the performance of a VESDA by Xtralis 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, ensuring a quality system is installed every time.

Some pipes and fittings are not available in certain countries. Please check with an Xtralis office before you order.

Software

VSM™
The VSM software package allows the user to monitor, configure and control a VESDA by Xtralis system from a central location via a VESDAnet communication loop or directly to VESDA detectors. Real-time and historical events for a single detector or multiple networks of detectors can be collected over a local- or wide-area network. The data then can be processed and presented in either report or graphical format — even graphically on site floor plans.

VSC™
The VSC software package can be used to configure, install, commission and maintain the standard range of VESDA ASDs. The software provides high-level programming flexibility through its on-line and off-line configuration capabilities. Rapid diagnostic abilities, concurrent configuration views, compare/merge functionality, and simultaneous smoke-trend graphing of multiple detectors are additional features designed to simplify operation and installation setup.

VESDA ASPIRE2™
VESDA ASPIRE2 is the latest version of VESDA sampling pipe network design and modeling software. It aids in the design and evaluation process for basic to very complex pipe-network layouts. Key features, such as design wizards, 3-D isometric views, an automated design verification process, and a new AutoBalance capability, ensure that a tailored pipe layout is easily achieved. The Installation Data Pack (IDP) generates a series of reports with the parameters, required materials and expected system performance so installation and commissioning engineers receive this information clearly.

Both VSC and ASPIRE2 are compatible with all detectors in the VESDA product line.
<table>
<thead>
<tr>
<th>Features</th>
<th>VFT-15</th>
<th>VLS</th>
<th>VLP</th>
<th>VLC (VN)</th>
<th>VLC (Relays Only)</th>
<th>VLF 250/500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worldwide Approvals</td>
<td>Vds, UL, FM, CSFM</td>
<td>LPC, VdS, AFNOR, UL, ULC, UL268A (in-duct application), FM, NY-MEA, CSFM, ActivFire, CFE.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Hazardous Area Approval (FM Class 1, Div 2, Groups A, B, C, D)</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sensitivity Range</td>
<td>0.001 to 20% obs/m (0.0003 to 6.0% obs/ft)</td>
<td>0.005 to 20% obs/m (0.0015 to 6% obs/ft)</td>
<td></td>
<td></td>
<td>0.025 to 20% obs/m (0.008 to 6.4% obs/ft)</td>
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<tr>
<td>Two-stage Filter</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Area Coverage (Maximum)</td>
<td>1,500 m² (15,000 ft²) (across 15 sectors)</td>
<td>2,000 m² (20,000 ft²) (across 4 sectors)</td>
<td>2,000 m² (20,000 ft²)</td>
<td>800 m² (8,000 ft²)</td>
<td>800 m² (8,000 ft²)</td>
<td>250/500 m² (2,500/5,000 ft²)</td>
</tr>
<tr>
<td>Multiple Pipe Addressability</td>
<td>Up to 15</td>
<td>Up to 4</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Total Number of Alarm Thresholds</td>
<td>120 (Day/Night)</td>
<td>32 (Day/Night)</td>
<td>8 (Day/Night)</td>
<td>3</td>
<td>3</td>
<td>8 (Day/Night)</td>
</tr>
<tr>
<td>Relay Outputs</td>
<td>5 (Expands to 21)</td>
<td>7 or 12 relays</td>
<td>7</td>
<td>3</td>
<td>3</td>
<td>3 (Expands to 6)</td>
</tr>
<tr>
<td>On-board Memory (Max. Events)</td>
<td>Up to 20,000</td>
<td>18,000</td>
<td>18,000</td>
<td>12,000</td>
<td>12,000</td>
<td>18,000</td>
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<tr>
<td>Flow Sensor Circuit (one per pipe inlet)</td>
<td>1 + 1 in chamber</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<tr>
<td>AutoLearn™ (automatically adjusts system to environment)</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Supported by ASPIRE2™ Pipe Network Design Software</td>
<td>Yes (transport times only) Predefined networks</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Maximum No. of Holes</td>
<td>15</td>
<td>60</td>
<td>100</td>
<td>40</td>
<td>40</td>
<td>12/24</td>
</tr>
<tr>
<td>Bar Graph/Indicator LED</td>
<td>Yes</td>
<td>Local or Remote (20-segment bargraph display)</td>
<td>Local or Remote (20-segment bargraph display)</td>
<td>Local (5 on-board LEDs, remote 20-segment bargraph display)</td>
<td>Local (5 on-board LEDs)</td>
<td>Programmed via RS232 direct connection to PC using VSC</td>
</tr>
<tr>
<td>Programming Tools</td>
<td>On-board programmer and PC software (VSC/VSM4)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Programmed via RS232 direct connection to PC using VSC</td>
<td></td>
</tr>
</tbody>
</table>

**VESDAnet**

- Max. No. of Devices/Detectors per Loop: N/A
- Max. Distance between Devices: N/A
- Computer-based Management via VSM: Yes
- Remote Relay Modules: Yes
- Compatible Remote Bar-graph Displays: Yes

**Max. Distance between Devices (with VN Card):**
- N/A
- 1,300 m (4,000 ft)
- 1,300 m (4,000 ft)
- 1,300 m (4,000 ft)
- N/A
- 1,300 m (4,000 ft)

**Remote Relay Modules**
- 7-relay version: N/A
- 12-relay version: (Part No.) VRT-501, VRT-900
- VRT-500 N/A

**Compatible Remote Bar-graph Displays**
- Display, 7-relays: N/A
- Display, 12-relays: N/A
- Display, no relays: N/A

The full range of VESDA by Xtralis ASDs are EN 54-20 tested and approved.
About Us

Xtralis is a leading global provider of powerful, early warning fire detection and security solutions that prevent disasters by giving users time to respond before life, critical infrastructure or business continuity is compromised. We protect more than 40,000 customer sites in 100 countries, including billions in assets belonging to the world’s top governments and businesses. Our solutions include VESDA® by Xtralis – very early warning fire detection, ICAM® by Xtralis – flexible fire and environmental monitoring, ADPRO® by Xtralis – outdoor and enterprise security, and ASIM® by Xtralis – traffic detection.

Xtralis is the leader in very early warning fire detection and invented the VESDA aspirating smoke detector (ASD), the world's No. 1 ASD brand. Customers worldwide rely on VESDA by Xtralis when business continuity is imperative, environments are challenging, and time is required to ensure safe and orderly evacuation.

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 of environments, VESDA provides reliable, high-sensitivity, very early smoke detection.
Introduction

The LaserCOMPACT detector has been tested and certified to provide all the benefits of aspirating smoke detection, including very early warning, in Marine Environments. This has been achieved through additional testing to ensure the ongoing performance of the product in challenging marine applications.

The Marine products have been approved by Bureau Veritas* and Lloyd’s Register**. They are rated IP30 so, where applicable, it is recommended that the detector is housed in an IP66 enclosure.

As with the standard LaserCOMPACT, the Marine version combines the well-proven LaserPLUS detection technology, dual-stage air filtration technology and a modified aspirator design, and incorporates them into a compact enclosure with a simplified display.

Two variants and a remote display option

The Marine version of the LaserCOMPACT is available in two versions, one that interfaces via relays only (RO) and one that interfaces via relays and VESDAnet (VN).

The VN version is compatible with the marine version of the remote Display Module, which allows the current status of the detector to be reported in the most convenient location (such as the bridge).

The remote Display Module has 7 remote relays to support any combination of signalling that may be demanded by the application. The VN version allows several detectors to be linked together on VESDAnet thereby allowing one to act as a reference detector for other VESDA detectors.

Description

The LaserCOMPACT is made up of two parts: the main enclosure and the front cover. The main enclosure houses all the key components of the detector. All non-serviceable items like the main processor board and detector chamber are mounted away from the general access area, protecting them during the installation and service process.

The front cover includes:

- 5 LEDs: Fire, Pre-Alarm/Alert, Fault, OK, Reset/Isolate
- Reset/Isolate Push Button (press to reset, press and hold to isolate)

---

** Bureau Veritas
Approved for use in Bridge & Deck zones as defined in the BV Rules for the Classification of Steel Ships.

** Lloyd’s Register
Applications defined as Marine, offshore and industrial use in environmental categories ENV1, ENV2 and ENV3 as described in Lloyd’s Register Test Specification No. 1:2002. The specified standard to which the type approval relates is CEA 4022:1999.
VESDA® LaserCOMPACT – Marine

How it works

Air is continually drawn through a simple pipe network to a central detector by a high efficiency aspirator. Air entering the unit passes a flow sensor before a sample is passed through a dual-stage dust filter (the majority of air is exhausted from the detector and where required back vented to the protected area). The first stage removes dust and dirt from the air sample before it enters the chamber for smoke detection. The second ultra fine stage provides a clean air supply to be used inside the detection chamber to form clean air barriers, which protect the optical surfaces from contamination.

The detection chamber uses a stable, highly efficient laser light source and unique sensor configuration to achieve the optimum response to a wide range of smoke types. When smoke passes through the detection chamber it creates light scatter which is detected by the very sensitive sensor circuitry.

The status of the detector, all alarms, service and fault events, are monitored and logged with time and date stamps. Status reporting can be transmitted via simple relay connections or across the advanced VESDAnet communications network (VN version only).

### Specifications

**Supply voltage:**
- 18 to 30VDC

**Power consumption:**
- 5.4W quiescent, 5.9W with alarm

**Current consumption:**
- 225mA quiescent, 245mA with alarm

**Fuse rating:**
- 1.6A

**Dimensions (WHD):**
- 225mm x 225mm x 85mm (8 7/8” x 8 7/8” x 3 3/8”)

**Weight:**
- 1.9kg (4.2lbs.)

**Operating conditions:**
- Tested to -25°C to 70°C (-13°F to 158°F)
- Detector Ambient 5°C to 70°C (41°F to 158°F) (recommended)
- Sampled Air -20°C to 60°C (-4°F to 140°F)
- Humidity 10 to 95% RH, non-condensing
- Approved for use in bridge and deck zones, and ENV3 environments
- Exposure to corrosive atmosphere may invalidate warranty

**Sampling network:**
- Maximum area of Coverage 800sq.m (8000sq.ft)

**Maximum pipe lengths:**
- 1 x 80m, 2 x 50m

**Computer design tool:**
- ASPIRE2™

**Pipe:**
- Internal Diameter 15–21mm (9/16”–7/8”)
- External Diameter 25mm (1”)

**Relays:**
- 3 Relays rated 2A @ 30VDC
- Pre-Alarm (NO)
- Alert/Fault (Maintenance & Isolate) (NC/NO)
- Configurable as latching or non-latching

**IP rating:**
- IP30

**Cable access:**
- 4 x 25mm (1”) cable entries

**Cable termination:**
- Screw Terminal blocks 0.2-2.5sq mm (30-12 AWG)

**Sensitivity range:**
- 0.005 to 20% obs/m (0.0015 to 6.25% obs/ft)

**Threshold setting range:**
- Alert: 0.005–1.990% obs/m (0.0015–6.25% obs/ft)
- Pre-Alarm: 0.010–1.995% obs/m (0.0031–6.218% obs/ft)
- Fire: 0.015–20.00% obs/m (0.0031–6.25% obs/ft)

**Software features:**
- Event log: Up to 12,000 events stored on FIFO Smoke level, alarms and faults with time and date stamp
- AutoLearn: Minimum 15 minutes, maximum 15 days.
- Recommended minimum 14 days.
- During AutoLearn thresholds are NOT changed from pre-set values.

**Ordering Information**

**Product**
- VESDA LaserCOMPACT – Marine VN
- VESDA LaserCOMPACT – Marine RO
- Remote Display – LaserCOMPACT Marine

**Part number**
- Part: 30129
- VLC-50000-MRN
- VLC-50500-MRN
- VRT-J0000-MRN
- VRT-J0000-MRN
- VRT-J0000-MRN
- VRT-J0000-MRN

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This document is subject to copyright owned by Xtralis AG (“Xtralis”). You agree not to copy, communicate to the public, adapt, distribute, transfer, sell, modify or publish any content of this document without the express prior written consent of Xtralis.
Introduction
The Xtralis In-Line Filter provides Xtralis customers the ability to address a wide array of harsh environments with high levels of air-borne contaminants in a simple and cost-effective manner.

Description
Unlike other in-line filtration solutions available on the market today, the Xtralis In-Line Filter provides superior performance in terms of improving detector longevity and reducing maintenance frequency. Having tapered inlet and outlet means the Xtralis In-Line Filter is easily fitted in line with the sampling pipe without the need for any additional pipe fittings hence reducing the cost of installation. Filter elements can be easily replaced without having to remove the filter from the pipe network hence simplifying maintenance.

Its elegant design blends in seamlessly into the installation where up to four can be installed side-by-side on Xtralis multi-pipe installations.

How it works
The arrows on the Xtralis In-Line Filter cover indicate the direction of airflow aiding ease of correct mounting. As the airflow enters the filter housing it impinges on the filter elements which are positioned at a certain angle within the filter housing. This arrangement maximizes the filter element surface area subjected to the airflow hence promoting a longer filter life.

Features
- Suitable for all Xtralis Aspirating Smoke Detectors
- Improved detector longevity in applications with high levels of air-borne contamination
- Reduces maintenance intervals, thus reducing total cost of ownership
- Requires no additional pipe fittings thus reducing cost of installation
- Improved aesthetics
- Vertical or horizontal mounting
- Compatible with metric (25mm OD) and imperial (1” OD) pipes eliminating the need for pipe adaptors
Xtralis In-Line Filter

**Ordering Information**

- VSP-850-G: Xtralis In-Line Filter (Grey)
- VSP-850-R: Xtralis In-Line Filter (Red)
- VSP-855-4: Xtralis In-Line Filter Elements 4 pack
- VSP-855-20: Xtralis In-Line Filter Elements 20 pack

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**Dimensions**

- VSP-850-G
- VSP-850-R

---

1 Special Request
Accommodation

Protecting life safety, service continuity and high value assets such as:

Exclusive Residences
Apartments, Hotels, Shops & Offices
The shortcomings of conventional systems are **obvious**

**Challenges faced...**

**Aesthetics**
Many exclusive homes, luxury apartments and executive office interiors have their aesthetics compromised by the presence of conventional point (spot) smoke detectors. Architects are looking for alternatives which can provide discreet or invisible detection.

**Access**
Maintenance of conventional smoke detectors in large housing estates and serviced accommodation is often difficult and expensive where access to the detector is regulated and complicated by privacy concerns.

**Assured Performance**
Risk of tampering or misuse is a challenge for conventional smoke detectors. If burnt toast or cigarette smoking causes tenants to restrict air flow to a detector, how would you know?

**Vandalism and Nuisance Alarms**
Where conventional detectors are placed in public spaces they are obvious and recognizable. They get vandalized and are subject to mischief causing nuisance alarms, both at great cost to service continuity and maintenance budgets.

**Asset Protection**
Loss of precious possessions from smoke and fire damage can be enormous and difficult to prevent without early warning detection. Water released by any sprinklers might control a fire for the benefit of a building structure but would most likely destroy occupier assets. Costs and delays for clean up of smoke and water damage can be massive.

**Life Safety and Environmental Quality**
Reducing the risk of injury and loss of life from smoke inhalation requires a dependable system that provides local annunciation and remote indication to first responders. Improving the quality of the air within the occupied environment requires more sophisticated sampling technologies than are commonly available.
Xtralis VESDA Solutions...

**Aesthetics**
The Xtralis VESDA family of Air-sampling Smoke Detectors (ASD) sample smoke through piping that can be easily installed and concealed. In properties with ornate ceilings the microbore sampling pipe or discreet sampling points can be installed without either damaging or disfiguring the building structure.

All that can be seen of this high-tech smoke and gas detection system is an unobtrusive capillary tube or fitting painted to match the decor (as shown) or a low profile stainless steel sampling point.

**Access**
Air-sampling smoke detectors can be located outside of the protected space, allowing convenient servicing of the system without necessarily requiring access or interruption.

**Assured Performance**
Xtralis VESDA ASD detectors actively draw air samples to a central detector for analysis and constantly monitor the airflow to ensure reliable sampling. Any tampering with the pipe network or restriction on the airflow raises a fault that can be indicated locally to occupants or centrally to maintenance staff.

**Vandalism and Nuisance Alarms**
Xtralis VESDA detectors provide multiple levels of alarm to provide time to respond to an event with the appropriate level of urgency and the minimum disruption. Very early warning alarms can alert facility management staff or occupiers to respond before brigade or emergency services are involved. Rugged vandalism-proof sampling points are available for high-traffic and high-risk public spaces.

**Asset Protection**
The very high sensitivity of Xtralis VESDA detectors (typically 1000 times more sensitive than conventional detectors) can provide time for investigation of the earliest signs of incipient fire, before smoke is even visible. Risks of flaming fire and large volumes of smoke can often be completely avoided and actuation of suppression systems avoided. Should suppression be required, Xtralis VESDA solutions provide the most reliable detection of high levels of smoke.

**Life Safety and Environmental Quality**
The very early warning capabilities of Xtralis VESDA detectors allows monitoring for very low levels of smoke often seen in smoldering fires and below levels known to be toxic or unhealthy. In addition, these unique systems can provide monitoring for harmful gases to more completely monitor the quality of the occupied environment.
Xtralis VESDA is the #1 brand specified by fire prevention professionals around the world

Why use a Xtralis VESDA system?

When selecting an aspirating smoke detection system for an exclusive residence, apartment or office, consider:

<table>
<thead>
<tr>
<th>Look for</th>
<th>Why?</th>
<th>What Xtralis VESDA offers</th>
</tr>
</thead>
<tbody>
<tr>
<td>The highest sensitivity</td>
<td>To achieve the earliest possible warning of a fire.</td>
<td>Xtralis VESDA can detect smoke at 0.005% obscuration per metre.</td>
</tr>
<tr>
<td>A wide sensitivity range</td>
<td>So that detection levels can be set to suit the environment, avoiding false alarms, and allowing appropriate responses throughout the life-cycle of a fire.</td>
<td>Xtralis VESDA detectors have a sensitivity range of 0.005%–20% obscuration/m.</td>
</tr>
<tr>
<td>A redundant peer-to-peer communications network</td>
<td>To give you flexibility in positioning and programming detectors and display modules.</td>
<td>The Xtralis VESDAnet communications network allows you complete installation flexibility.</td>
</tr>
<tr>
<td>Multiple programmable alarm thresholds</td>
<td>So that the response can be appropriate for the stage of the fire, from ‘Investigate’ at the first alarm through to ‘Activate smoke exhaust system’ or ‘Release suppression’ at the fourth alarm level.</td>
<td>Xtralis VESDA has 4 programmable alarm levels.</td>
</tr>
<tr>
<td>Event log and reporting</td>
<td>A forensic tool for investigating faults, alarms, user actions and smoke trends</td>
<td>Each Xtralis VESDA detector has an event log that stores the last 18000 events.</td>
</tr>
<tr>
<td>A wide product range</td>
<td>So that there’s a product to suit any size area that you want to protect… from a large open hotel atrium to within the confines of a single room apartment.</td>
<td>Xtralis VESDA has the widest product range on the market.</td>
</tr>
<tr>
<td>Protected optics and absolute calibration</td>
<td>Ensures repeatable and reliable detection of very slow growth incipient fires and long life without need for drift compensation or relative scaling.</td>
<td>Xtralis VESDA detectors feature a clean-air barrier to keep all optics free of contamination for a long service life without calibration.</td>
</tr>
<tr>
<td>Broad range of integration options</td>
<td>Choice of fire systems and partners.</td>
<td>Open interfaces, flexible integration options and a strong partner network.</td>
</tr>
<tr>
<td>Monitoring and control of smoke detectors from a Central Monitoring Station or Emergency Control Room</td>
<td>Allows response to be controlled and monitored from a central point by trained operators.</td>
<td>Using Xtralis VESDA System Management (VSM4) software, every Xtralis VESDA detector can be controlled and monitored remotely.</td>
</tr>
<tr>
<td>An accredited global distribution and support network supported by strong applications engineering experience</td>
<td>So you get the right technical advice when you need it.</td>
<td>All distributors of Xtralis VESDA products are factory-accredited.</td>
</tr>
</tbody>
</table>

Approvals

Need more information?

Contact your local Xtralis office or visit us on the web at www.xtralis.com/vesda to access information about the Xtralis VESDA smoke detector product range.

www.xtralis.com

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Reduce costs in meeting new elevator fire safety standards

**Elevator Alternate Floor Recall**

ASME A17.1, Safety Code for Elevators and Escalators and NFPA 72 now require alternate floor elevator recall, which may require you to upgrade both your elevator and fire systems. Multiple circuits between the elevator controller and the fire system are required to achieve alternate recall:

- Initiating devices activate the first circuit on the designated level for egress.
- Other elevator lobby detectors activate the second circuit.
- Devices in the elevator machine room and hoistway activate the third circuit.

A fire alarm signal from a detector on any of these circuits must recall the elevator nonstop to the designated level unless the signal comes from that level. Should that occur, the car must return to the “alternate” level.

**The Challenges**

Previously, elevator recall was required only to the primary landing floor in the event that any elevator lobby smoke detector reported an alarm. Most fire and elevator control systems provide minimum compliance, and no simple upgrade to meet the new code is possible.

- Many elevator controllers are not equipped for alternate floor recall.
- Fire control panels may only provide smoke detection for a single zone with a single relay output to the elevator control panel for the entire vertical lobby smoke detector loop.
- Fire control panels may not support additional detector inputs and may now also be obsolete.

Previous options for satisfying code requirements for pre-1996 systems include:

1. Replacement of the elevator controller
2. Replacement of the majority of the fire system
   a. Fire panel replaced with addressable type and compliant with current fire codes
   b. All initiation devices replaced with addressable type to ensure system interoperation
   c. Addition of more circuits and relays to the elevator control room to facilitate alternate recall
These options result in invasive construction including new conduit, wire, termination boxes to support all new detectors, and upgraded ancillary equipment on the new panel or loop. Affected buildings often have hard ceilings and wall coverings that are difficult to match, so aesthetics may be compromised by the need for surface-mounted conduits.

The Practical Solution

Xtralis now offers a solution to compliance with the new codes. The Xtralis VESDA VFT-15 is a unique high-sensitivity air-sampling smoke detector (ASD) that is able to pinpoint the source of an incipient smoke incident to speed response, enhance investigation and minimize business disruption and downtime.

Why Xtralis VESDA VFT-15?

• Reduced cost
• Faster installation
• Improved aesthetics in elevator lobby
• Resistant to vandalism and tampering in open areas
• Avoids FACP upgrade or replacement
• Elevator recall independent of fire control panel operation and future panel upgrades
• Enhanced fire detection performance in critical areas

The Advantages of Xtralis VESDA

Xtralis VESDA air-sampling smoke detectors provide early and reliable fire detection in areas with:

• Aesthetic requirements and challenging smoke dilution (e.g., atria)
• A history of vandalism and tampering (e.g., unsecured public areas)
• Environmental issues such as low/high temperatures, dust and high background levels (e.g., car parks, elevator pits)
• Expensive maintenance (e.g., hoistways)
• Sprinklers prone to tampering, forcing elevator shut-down, building evacuations and lost revenues
• An opportunity for integration of indoor air quality and energy systems to obtain LEED or Energy Star compliance for the entire building

Contact your local Xtralis VESDA distributor for more information about the Xtralis VESDA VFT-15.
Xtralis VESDA VFT-15 detectors are multi-channel microbore air-sampling systems with an alarm sensitivity range from 0.001% to 20% obscuration/m (0.0003% to 6.10% obscuration/ft). These detectors are classified as Very Early Warning Smoke Detectors and can reliably detect fire at an early stage, and low to high concentrations of smoke. As a multi-channel system, the VFT detector is able to divide a protected space into sampling sectors, enabling the localization of a fire for faster incident response.

The detectors are configurable for a variety of environments, providing ideal fire detection solutions for cabinets, Electronic Data Processing (EDP) rooms, prisons, historic houses, custody suites, museums and art galleries.

**How it works**

The VFT detector draws a combined air sample from a network of microbore flexible tubing from all sectors in the protected area, then filters and analyzes the sample in a laser detection chamber. When smoke particles are detected and the smoke level reaches a TRACE alarm threshold, the system will sequentially scan the sectors via the rotary valve to identify the sector, or sectors, with the smoke condition. Alarm states (Alert, Action, Fire 1 and Fire 2) are shown on the display and communicated to a host fire alarm control panel.

**Product Features**

**Programming and Configuration**

Four independent alarm levels are available for each channel. The smoke thresholds and delays for each of these alarms can be individually programmed per sector. VFT detectors provide a simple and comprehensive display that includes an LED array to show the measured smoke level for the currently selected microbore, and an on-board programmer for local configuration.

RS232, RS485 and TCP/IP communication interfaces are available to connect to Xtralis Configuration and Fire System Management software packages: Xtralis VSC and Xtralis VSM4. RS485 interfaces also allow connections to programming devices and remote displays, and the TCP/IP Ethernet interface can provide access to an email messaging service.

**Inputs and Outputs**

VFT detectors support a number of additional modules. These provide the detector with programmable output relay interfaces and 4 to 20 mA analog outputs. A Remote Display panel can also be connected at a distance of up to 1 km away from the main VFT detector.

**Features**

- 15 pipe air sampling
- 0.001% to 20% obscuration/m
  (0.0003% to 6.10% obscuration/ft)
- 4 Alarms - Alert, Action, Fire 1, Fire 2
- 15 x 50 m (15 x 164 ft) microbore sampling pipe
- Enhanced 0.7 bar rotary vane vacuum pump
- Ethernet TCP/IP
- RS232 and RS485 Modbus
- 5 relay outputs and expandable
- Optional relay module and 4 to 20 mA analog output modules
- Area coverage of up to 1500 m² (16 150 ft²)
- Event Log

**Listings/Approvals**

- UL
- FM
- VdS
- CE - EMC, LVD and CPD
- EN54-20
  - Class A: 0.1% obs/m (0.03% obs/ft)
  - Class B: 0.1% obs/m (0.03% obs/ft)
  - Class C: 1.0% obs/m (0.3% obs/ft)

VFT-15 detectors have one sampling hole per microbore tube.

Regional approvals listings and regulatory compliance vary between Xtralis VESDA models.
VFT-15 Specifications

Supply Voltage:
Nominal 24 VDC

Supply Current at 24 VDC:

<table>
<thead>
<tr>
<th>Quiescent Scanning</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>31.2 W</td>
</tr>
<tr>
<td>Current</td>
<td>1.30 A</td>
</tr>
</tbody>
</table>

Aspirator:
0.7 bar rotary vane vacuum pump

Dimensions (WHD):
490 mm x 355 mm x 200 mm
(19.3 in. x 14.0 in. x 7.9 in.)

Operating Conditions:
- Tested to:
  - -10 to 55 °C (14 to 131 °F)
  - Recommended Detector Ambient:
    - 0 to 39 °C (32 to 103 °F)
  - Sampled Air:
    - -20 to 60 °C (4 to 140 °F)
  - Humidity:
    - 10 to 95% RH (non-condensing)

Please consult your Xtralis office for operation outside these parameters or where sampled air is continually above 0.05% obs/m (0.015% obs/ft) under normal operating conditions.

Microbore Size:
Outer Diameter: 6 mm (0.24 in.)
Inner Diameter: 4 mm (0.16 in.)

Alarm Sensitivity Range:
0.001 to 20 % obs/m (0.0003 to 6.10 % obs/ft)

Alarm Settings:
Alarm levels: Alert, Action, Fire 1 and Fire 2
Individually programmable for each level

IP Rating:
IP30

Filtration:
Cartridge dust particle filter

Flow Monitoring:
Differential pressure sensor

Relay Outputs:
4 alarm relays, 1 fault relay
Rated 2 A @ 30 VDC NO/NC Contacts

Communication:
Modbus over RS232, RS485 and TCP/IP

Event Log:
Up to 20,000 events stored

Notes:
1. The VFT-15-C is not available in all regions. Please consult your nearest Xtralis office before placing an order.
2. Please contact your nearest Xtralis office for approvals status.

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Doc. no. 16317_05 Part no. 29323
The Xtralis VESDA VLX-100 (Ex d) has been specifically designed to provide very early warning smoke detection capability within hazardous area locations that may contain flammable gases. The Ex d satisfies the need of those end users who implement risk based fire-engineering practices and recognize the value of their critical assets.

The Ex d detector is approved Ex d IIB T6. The Ex d approval confirms that the enclosure can withstand an internal explosion and prevent the transmission of the explosion to the surrounding explosive atmosphere.

Gas Group IIB includes but is not limited to ammonia, propane and methanol. The T6 classification allows use of the Ex d in hazardous areas classified T1 through to T6.

**Description**

The detector is housed in an Flameproof enclosure. The air inlet and exhaust ports provide Ex d protection through the use of Flame Arrestors.

The detector is supplied with the full compliment of Xtralis VESDA features including multiple alarm levels, AutoLearn, Referencing and comprehensive event logging.

The detector is supplied with VESDAnet, the fault tolerant communications protocol, as standard. VESDAnet supports reporting and remote control/diagnostics of the detector from a non-hazardous area allowing easier periodic maintenance reviews without the need to open the Ex d enclosure cover.

With VESDAnet, the standard remote module options are available. Remote displays can be used for immediate status reviews displaying alarm levels, smoke levels, common faults and also the ability to remotely reset and isolate the detector. Remote relays provide extensive and flexible relay reporting.

With access via VESDAnet, standard Xtralis PC Software permits remote access to detector settings and extensive event logs. VESDAnet access allows remote diagnostics and modifications including smoke trends, alarm thresholds, air-flow trends and detector configuration. The General Purpose Input function can be configured to automatically isolate the detector or put it in standby mode when particular conditions apply.

The Ex d has hinged internal access to ease the maintenance process and the enclosure has 4 x M25 holes for Ex d approved cable glands.

**How It Works**

The air samples collected in a protected area are transported by the pipe network to the Ex d detector. The air sample is passed through an inline deflagration flame arrestor as it enters the explosion proof enclosure.

The air sample is passed through the First Stage of a two stage filter, removing dust and dirt from the sampled air. A small percentage of this air flows to the detector chamber for smoke detection. The Second Stage Filter further filters the air sample to produce ultra clean air. The ultra clean air is used to protect the optical integrity of the surfaces in the detection chamber.

The detection chamber is absolutely calibrated and uses a stable highly efficient laser light source and unique sensor configuration to achieve the optimum response to a wide range of smoke types. When smoke passes through the detection chamber it creates light scattering which is detected by the very sensitive sensor circuitry.

The exhaust air from the detector passes through a Flame Arrestor before being returned to the protected area maintaining the Ex d integrity of the unit.

**Features**

- Europe: I13 G EEx d IIB T6 approved
- Australia: Ex d IIB T6 certified
- Ex d approved Flame Arrestors to protect Inlet & exhaust Ports
- Absolute smoke detection
- Wide Alarm Threshold Sensitivity range
- VESDAnet connectivity
- AutoLearn™ connectivity
- Referencing
- Three alarm levels
- Programmable Relays
- Airflow monitoring
- Remote display and relay capability
- Simple mounting design
- Hinged door
Specifications

Supply Voltage: 18 to 30 V dc (nominally 24 V dc)
Power Consumption: 8.0 watts quiescent, 8.6 watts alarm
Current Consumption: 335 mA nominal, 360 mA in alarm @ 24 Vdc
Fuse Rating: 1.6A
Enclosure Rating: Ex d IIB T6
Enclosure Dimensions (WHD): 490 mm x 358 mm x 208 mm (19½ in x 14½ in x 8½ in)
Enclosure Weight: 44 Kg (approx. 97 lbs.)

Operating Conditions:
Detector Ambient: -10° C to 39° C (14° to 103° F)
Sampled Air: -20° to 60° C (-4° to 140° F)
Humidity: 10-95% RH, non-condensing

Sampling Network:
Single pipe length 50 m (164 ft) max.
Twin (branched) pipe length 30 m (98 ft) max per branch
Max. 10 Sampling Holes inc End Cap
Min. 2 Sampling Holes inc End Cap in all cases
Pipe ID:
Internal Diameter: 15-21 mm (9/16” – 7/8”)  
External Diameter: 25 mm (1”)  
Sampling pipe gland: - 2 x 25 mm (1in)

IP Rating: IP66
Mounting: 4 external lugs with holes centered at 318 x 452 mm accepting 10mm bolts

Cable Access:
4 x M25 holes for Ex d-approved cable glands (not supplied).
Unit shipped with Ex d blanking plugs only.

Cable Termination:
Screw terminal blocks 0.2-2.5 mm², (30-12 AWG)

Alarm Threshold Setting Range:
Alert: 0.005 - 1.990% obs/m (0.0015 - 0.6218% obs/ft)
Pre-Alarm: 0.010 - 1.995% obs/m (0.0031 - 0.6234% obs/ft)
Fire: 0.015 - 20.00% obs/m (0.0046 - 6.25% obs/ft)*
*Limited to 4% obs/ft for UL

Software Features:
Event Log: Up to 12,000 events stored on FIFO Smoke level, alarms and faults with time and date stamp
AutoLearn: Minimum 15 minutes, maximum 14 days
During AutoLearn thresholds are NOT changed from pre-set values.

Standards & Approvals:
Europe  
Australia  
ITS03ATEX11273  
AUS Ex 03.3854X  
II 3 G, Ex d IIB T6  
Ex d IIB T6 IP 66

Ordering Information:
Xtralis VESDA VLX-100 (Ex d)  
VLX-100
Optional Devices:
Remote Xtralis VESDA VLC Display and Relays  
Remote VESDAnet Socket  
Remote LCD Programmer  
Xtralis VSM4 Software  
Xtralis VSC Software  
Spare Parts:
Flame Arrestor  
Xtralis VESDA VLC Ex d VN Detector

To confirm the suitability of the Xtralis VESDA Ex d for your application please refer to the Xtralis Regional Office closest to you

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