The 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
- VNIPo
- 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 VESDA product models. Refer to www.xtralis.com for the latest product approvals matrix.
**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)**
- 256 mm x 183 mm x 92 mm (10 1/8", in x 7 1/2", 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 50 m (150 ft) (Max. 24 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**
- 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 (1" 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.

**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
- Fault and Disabled Indicators
- Smoke Level Indicator
- Instant Fault Finder
- Relay, Disable and Test Controls
- Smoke and Flow AutoLearn 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-500-00 VESDA VLF. European language set. English display labels
- VLF-500-01 VESDA VLF. European language set. International display labels
- VLF-500-02 VESDA VLF. English + Asian language set. International display labels
- VLF-500-04 VESDA VLF. English + Russian language set. International display labels
- VLF-500-05 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 VESDA VLF-500

**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 , 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
- 2 Aspirator
- 3 High flow
- 4 Low flow
- 5 n/a
- 6 External Device/PSU
- 7 Interface card
- 8 Field wiring
- 9 AutoLearn Fail
- 10 Detector failure

**Terminal Block Connections**

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

---

*Product UL listed for use from 0°C to 38°C (32°F to 104°F)*

---

**Xtralis** and the “Xtralis” logo are registered trademarks of Xtralis and/or its subsidiaries. All other brand names mentioned herein are for identification purposes only and may be trademarks of their respective holder(s). Your use of this document does not constitute or create a license or any other right to use the name and/or trademark and/or label.

This document is subject to copyright owned by Xtralis. You agree not to copy, communicate to the public, adapt, distribute, transfer, sell, modify or publish any contents of this document without the express prior written consent of Xtralis.

The contents of this document are provided on an “as is” basis. No representation or warranty (either express or implied) is made as to the completeness, accuracy or reliability of the contents of this document. The manufacturer reserves the right to change designs or specifications without obligation and without further notice. Except as otherwise provided, all warranties, express or implied, including without limitation any implied warranties of merchantability and fitness for a particular purpose are expressly excluded.

UK and Europe +44 1442 242 330 D-A-CH +49 431 23284 1 The Americas +1 781 740 2223
Middle East +971 4 341 9070 Asia +86 21 5240 0077 Australia and New Zealand +61 3 9936 7000

**VLF-500**

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