VESDA ASPIRE – aspirating smoke detection made easy

The performance of an aspirating smoke detection system is dependent on the design of the pipe network used to transport air back to the smoke detector.

VESDA ASPIRE is a Windows®-based application that aids the specification and design of pipe networks for VESDA 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.

ASPIRE is the latest generation of the ASPIRE application, used by VESDA system designers and installers around the world for over 15 years.

Fast pipe network design

Using the Pipe Design Wizard, you can quickly transcribe your pipe network design into ASPIRE. A single click adds pipe fittings such as a pipe, elbow or sampling point and drag to reorder your fittings as you tweak the design to suit. ASPIRE allows full flexibility in placement of any network components. For example, extra elbows can be introduced to direct the pipe around a ceiling beam.

Once the layout is established, you enter your performance criteria for the pipe network e.g. EN54-20 Class B (or set transport time, sensitivity etc. directly). Using the AutoBalance function, ASPIRE will automatically calculate sampling hole sizes (to suit the drill bit sizes you specify). Alternatively, you can manually set the hole sizes and review the predicted system performance.

One of the great time-saving features of ASPIRE is the ability to save environmental design parameters for particular applications. For example, certain applications require specific transport time and sampling hole pressures or certain environments have specific conditions such as low temperatures. These parameters can be saved and used in later projects.

3D View

The improved 3D View now updates as the pipe network is built and allows the network to be edited. Fittings can be directly added or removed from the 3D view and their properties such as their directions can be changed. The 3D view is synchronised with the table allowing intuitive, direct selection of elements whether fittings or whole pipes and sections. Moreover, the 3D view can be manipulated (rotate, zoom and pan) using the mouse.

Easier file handling

ASPIRE allows multiple instances of ASPIRE running concurrently. With the drag and drop feature, detectors, individual pipes, branches, etc, can be copied and shared between ASPIRE instances, thus saving design time. The user can now open files by dragging them from Explorer and dropping them onto ASPIRE.

Simple handover for installation

The Installation Data Pack (IDP) is a series of reports that describes the pipe network, detailing the locations of the fittings, their settings and the expected system performance. Data and diagrams from the IDP can be printed (in colour) or copied and pasted into other programs, e.g. Microsoft® Excel® for further calculations or Microsoft® Word® for client reports.

ASPIRE allows notes to be made on any element of the pipe design to convey design reasoning to the installer. Notes are stored in the project file and are shown on the IDP printout. For example: an overall description of a project, project milestone dates, installation considerations or file/drawing references. This is very useful when handing the installation over to a contractor.

Need to vary the performance for different areas of a building?

The Group function in ASPIRE allows you to set different performance criteria for different areas of a building. For example, your design may need to cover a computer room and a manufacturing area. The computer room requires high sensitivity due to the high airflows, while the manufacturing area may only require enhanced sensitivity to accommodate background levels associated with manufacturing processes.

ASPIRE includes a safety factor when setting a detector's sensitivity to match a standard EN 54-20 class* allowing the design to be robust against minor variations in the system implementation.
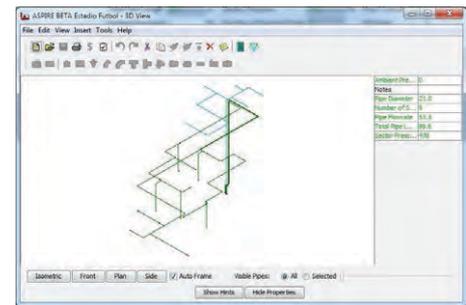

Features

- Ensures optimum design of VESDA aspirating smoke detection pipe networks, including VESDA ECO gas detection and environmental monitoring
- Accurately models pipe network designs to environmental performance criteria
- User-friendly interface that allows easy manipulation and handling of design in terms of adding branches, drop pipes, bends, etc
- Live display of total pipe length and number of sampling holes. Highlights exceeded limits
- Speeds the design process by automating adjustment of hole sizes
- Unique building constraints can be easily accommodated
- Allows different detector performance requirements within one building
- Interactive 3D view to aid design
- Multilevel "undo" and "redo" along with autosave to aid the designer
- Improved usability and presentation including standard keyboard shortcuts
- Custom design elements can be documented to guide the installation team
- Inclusion of special fittings (valves, water traps, socket unions and refrigerated sampling points) to achieve an accurate BOM
- Exhaust included in flow calculations
- Professional reports and materials lists can be generated to add to client submissions
- Supports both metric and imperial measurement systems
- Compatible with other Windows®– based applications
- Set multiple detector alarm thresholds within a detector
- Sampling Point Sensitivity tab to confirm EN 54-20* compliance
- Introduction of safety factor when setting the detector's sensitivity to achieve an EN54-20 class

* European Standard 54 – Fire Detection and Fire Alarm Systems
– Part 20: Aspirating Smoke Detectors

VESDA®
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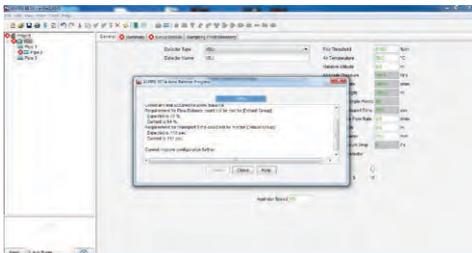## 4 simple steps to an optimized pipe network design
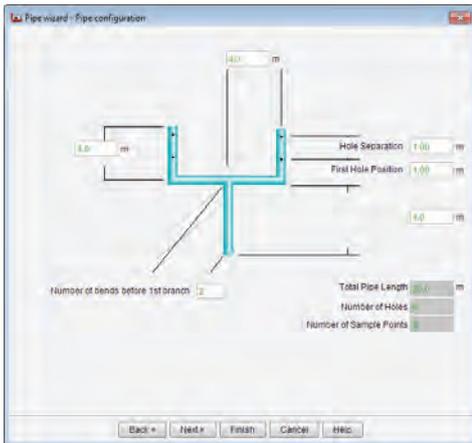
Step 1

Use the **Pipe Design Wizard** to quickly create a pipe network that is appropriate for the building or area.
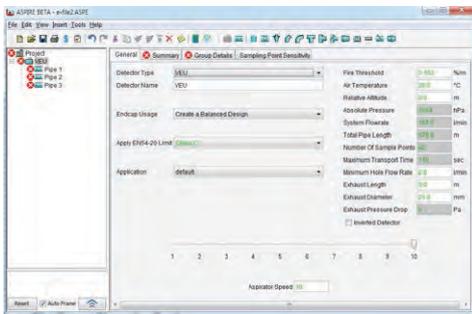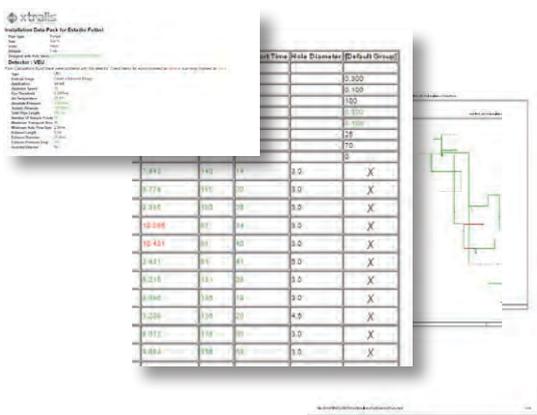

Step 2

Enter the **performance criteria** you wish to achieve e.g. Class C.

Step 3

Use the **AutoBalance** function to automatically adjust the sampling hole sizes to achieve the required performance. Color-coding is used to provide feedback on the performance of the design.

Step 4

Generate the **Bill of Materials** to assist quoting and ordering for the job. Generate the **Installation Data Pack (IDP)** to aid the correct installation of the pipe network.

Specifications

Computer OS requirements

- Windows 7
- Windows 8, or
- Windows 10
- 3D Graphics acceleration required

Calculations available

- Sampling hole diameters: Calculated diameter for each sampling hole to ensure consistent sensitivity throughout the pipe network
- Transport time for the pipe network: The time taken for a sample to travel from the furthest point on the pipe to the detector
- Transport time for every hole
- Pressure at each hole
- Flow rate at each hole (in L/min and % relative to the total flow)
- Sensitivity at each hole (% obscuration per meter)
- Flow balance (indicates the similarity of flow into each hole)
- The aggregate sensitivity of a group of holes
- EN 54-20 Class (A, B or C) - Europe only

VESDA detectors supported

- VESDA-E VEU
- VESDA-E VEP
- VESDA VLF
- VESDA VLC
- VESDA VLS
- VESDA VLP
- VESDA VLI

Parameters

- Elevation above sea level and ambient pressure can be nominated for design calculations
- Unlimited number of detectors in a project
- Pipe diameter and length
- Capillary diameter and length

Report options

Installation Data Pack (IDP): This includes 3D schematics, plan and elevation drawings with all the pipe lengths, fittings and required drill bits for the installer to be able to successfully install the project.

Bill of Materials (BOM): This lists the components required to install the project, the detectors and pipes needed. The bill of materials includes the relevant part numbers to order from your local Xtralis office or representative.

Ordering information

ASPIRE is available for download from www.xtralis.com.

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