



# VESDA®

## Aspirating Smoke Detection

### Warehouses

Protect warehouse contents from smoke, fire & water damage. Enjoy low installation costs and cost-of-ownership.

Protect:

Mezzanine and General  
Storage Areas

High-Bay Racking

Automated Pick Areas

Loading Bays

The logo for xtralis, featuring a stylized diamond shape composed of two overlapping triangles, one red and one yellow, followed by the word "xtralis" in a bold, black, sans-serif font.

# The challenge of protecting warehouses from fire.

## What will you tell your customers?

*“A huge warehouse fire destroyed more than 100 artworks from Charles Saatchi’s famous collection.”...*

Whilst dramatic warehouse fires make the news, there are many hundreds of smaller fires that occur in warehouses around the world each year, each with potentially devastating consequences.

The damage bill from a warehouse fire is not limited to lost goods or buildings. Environmental damage to the local area, the cost of business interruption and the negative impact of press coverage following a spectacular blaze may also have severe business implications.

Telling your customers that their goods have gone up in smoke or that you can’t supply them for several months could mean the end of your business.

## No flammable materials? Have a closer look

Even if your warehouse does not contain flammable goods the risk is still large. Packing materials such as plastic wrapping, cardboard, wooden crates and pallets are common in warehouses. Add possible ignition sources such as:

- shrink wrap equipment
- fork lifts
- unauthorised smoking
- computers
- heaters and hot surfaces
- electrical equipment
- incompatible materials stored close together

and it’s easy to see why warehouse fires are common.

A plastics warehouse burnt to the ground in Wilton, UK, resulting in US\$14 million in stock loss. The probable cause? A fluorescent light fitting failed and dripped molten acrylic onto storage.<sup>1</sup>

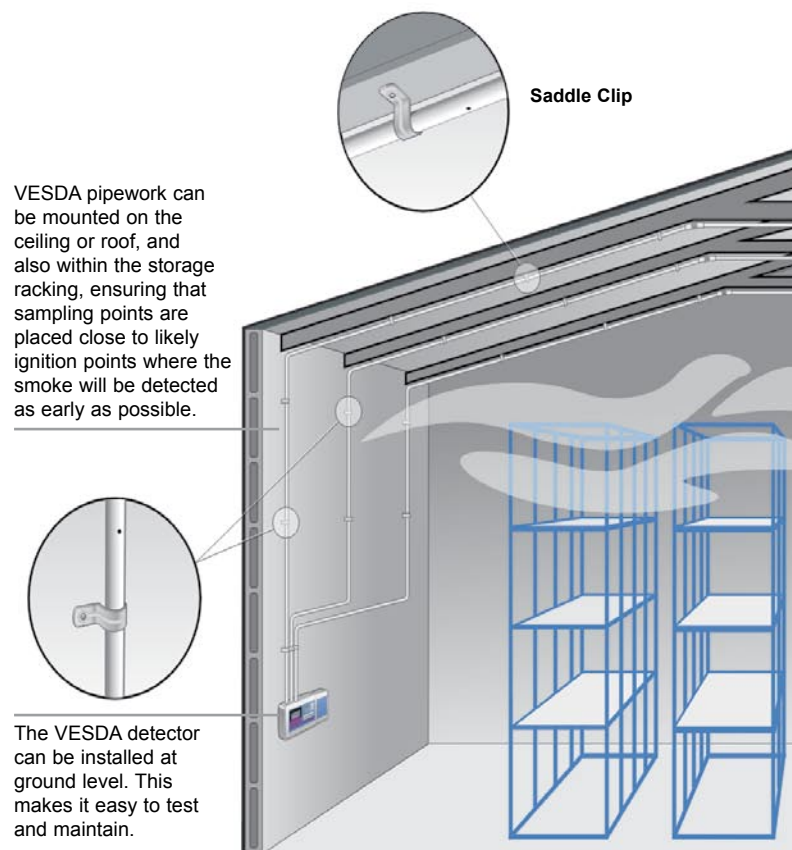
## “But we have a sprinkler system”

Sprinklers are designed to protect buildings and lives, not livelihoods. A fire has to be quite large to activate a sprinkler system and the resultant water damage may be as bad as the damage caused by smoke and fire. Take a look around your warehouse and think about the consequences of the goods getting wet and/or smoke damaged. How much would you have to throw out?

## Why do warehouses need a different approach to smoke detection?

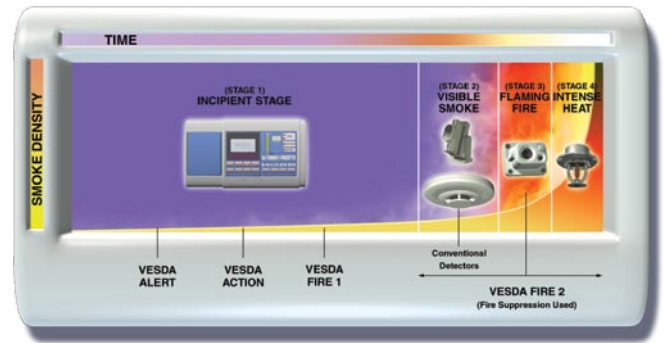
Smoke is difficult to detect in a warehouse for the following reasons:

- Warehouses contain large volumes of air. Smoke is easily diluted in such large spaces, making it difficult to detect.
- Warehouses have multiple doors—which are often left open. Drafts through open doors dilute smoke even more.
- Warehouses often have high ceilings. Smoke stratifies into layers below ceiling level, only reaching smoke detectors on the ceiling when the fire has enough thermal energy to force smoke upwards.
- Storage racks in a warehouse can trap smoke. A smouldering fire can go undetected for hours because the smoke doesn’t make it to the ceiling until the fire is quite large.



## Which fire protection systems are used in warehouses?

| System                | Comments   |
|-----------------------|--|
| Sprinklers            | Often mandated by fire codes. Sprinklers are designed to protect the building, not the contents of a building.   |
| Linear heat detectors | Often installed to activate sprinklers when intense heat is present. These detectors won't detect a fire at its earliest stage.  |
| Beam detectors        | Building movement or stock blocking the beam can trigger a false alarm. They are not sensitive enough to detect a fire at its earliest stage.  |
| Spot detectors        | The traditional round, white detector that is installed on the ceiling. Not good at detecting smoke in rooms with large volumes or high airflow as the smoke may never make it to the detector. Difficult to maintain as each detector has to be tested & maintained at ceiling level. |

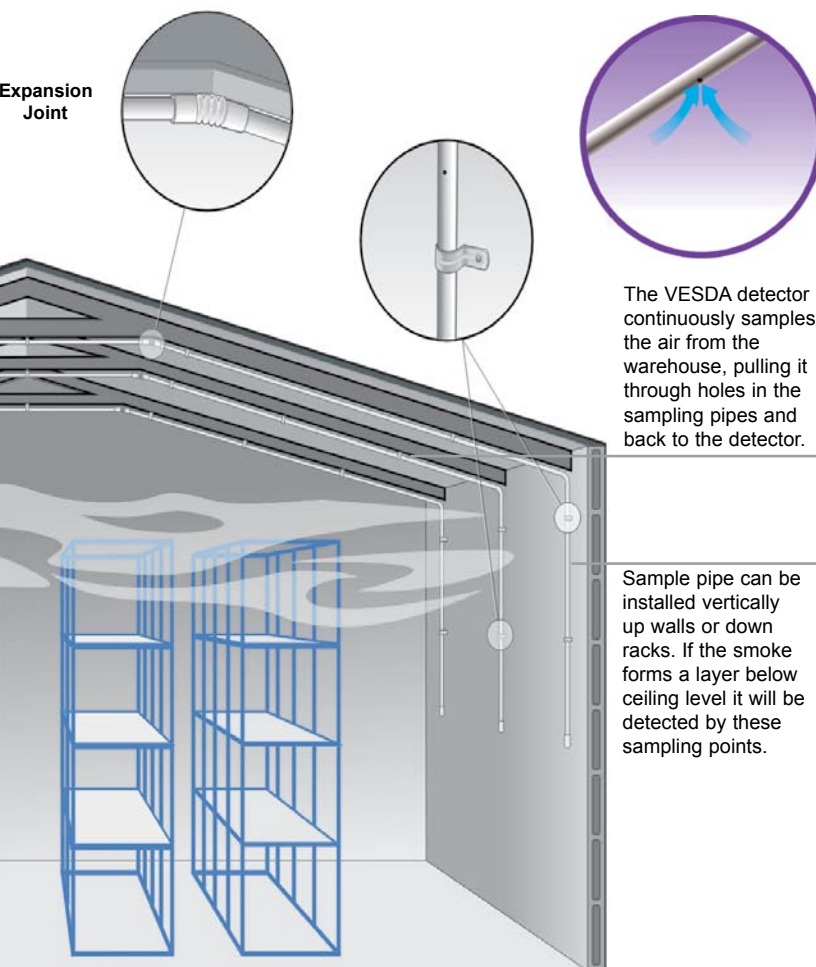


### Fire Growth Curve

The progression of fire growth over time. A VESDA detector can reliably detect a warehouse fire at the incipient stage and avoid the incidence of damage and loss. The detector can be configured to generate multiple alarms during the earliest stage of a fire.

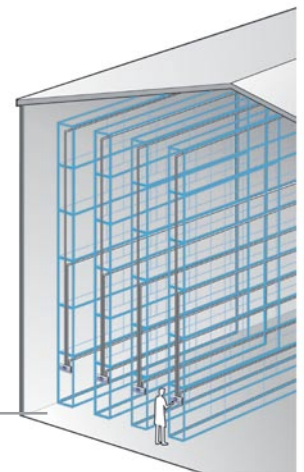
## Why is a VESDA aspirating smoke detection system different?

A VESDA smoke detector uses a network of sampling pipes to continuously draw air samples from the protected area back to a detector.



Sample pipe can be installed vertically up walls or down racks. If the smoke forms a layer below ceiling level it will be detected by these sampling points.

Sample pipe installed in racks will ensure the earliest possible warning of a fire that starts there.



The highly sensitive, laser-based detector then measures the amount of smoke in the air. The measured smoke levels are compared to the 4 alarm thresholds set by the user. These alarm thresholds allow a staged response to any threat.

For example, if the first threshold is reached an investigation can be commenced, whereas the third level can automatically call the fire brigade.

The key benefits a VESDA system has in a warehouse are:

**Easy maintenance.** The VESDA detector can be installed at ground level instead of on the ceiling

**Coverage.** One detector can cover up to 2000 m<sup>2</sup>

**Easy interfacing.** A VESDA system can interface with an existing fire panel and response system.

Xtralis' global network of offices and representatives means that help is soon at hand



## Why use a VESDA system?

When selecting an aspirating smoke detection system for a warehouse, consider:

| Look for  | Why?   | What VESDA offers  |
|---|--|--|
| The best sensitivity                                  | To get the earliest possible warning of a fire   | VESDA can alarm at 0.005 % (obs/m)   |
| A wide sensitivity range                              | So that detection levels can be set to suit the environment, avoiding false alarms   | VESDA detectors have a sensitivity range of 0.005 - 20% obs/m  |
| A redundant peer-to-peer communications network       | To give you flexibility in positioning and programming detectors and display modules   | The VESDAnet communication network allows you complete installation flexibility                      |
| Nuisance alarm rejection                              | For reliable performance in the presence of dust and other nuisance alarm sources  | VESDA detectors have a filtration system to remove particulate matter that could cause false alarms. |
| Multiple programmable alarm thresholds                | So that the response can be appropriate for the stage of the fire, from 'Investigate' at the first alarm through to 'Start the sprinklers' at the fourth alarm level | VESDA has 4 programmable alarm levels, allowing a response appropriate for the threat.               |
| Event log and reporting                               | A forensic tool for investigating faults, alarms, user actions and smoke trends  | Each VESDA detector has an event log that stores the last 18000 events                               |
| A wide product range                                  | You can choose the product that is right for the area size you wish to protect.  | VESDA has the widest product range on the market   |
| Absolute calibration                                  | Ensures repeatable and reliable detection of very slow growth incipient fires  | VESDA is the only aspirating smoke detector with Absolute calibration                                |
| An accredited global distribution and support network | So you get the right technical advice when you need it   | All distributors of VESDA products are factory-accredited  |

## Some of the warehouses that are protected by VESDA

### Food

Bega Foods, TESCO,  
Anheuser Busch

### Chemical

Jotun Paint  
Shell Chemical

### Transport/Logistics

Qantas, Kerry Logistics

### Automotive

Toyota, GE Aircraft Engines  
Lockheed, MAZDA, Michelin Tyres

### Storage/Records management

Kent Removals & Storage  
Iron Mountain

### Furniture

IKEA, Rooms to Go

### Retail

Boots Contract Manufacturing,  
Amazon.com, Yates

## Approvals



CCCF

## Need more information?

Call the Xtralis office closest to you, as listed below. Visit [www.xtralis.com/logistics](http://www.xtralis.com/logistics) to access information about our solutions for Warehouses and other logistics facilities.

[www.xtralis.com](http://www.xtralis.com)

The Americas +1 781 740 2223 Asia +852 2297 2438 Australia and New Zealand +61 3 9936 7000  
Continental Europe +41 55 285 99 99 UK and the Middle East +44 1442 242 330



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.

This document includes registered and unregistered trademarks. All trademarks displayed are the trademarks of their respective owners. Your use of this document does not constitute or create a licence or any other right to use the name and/or trademark and/or label.

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 contents of this document without the express prior written consent of Xtralis.

Document 11597 Version 02