



# Marine Vessels

Cruise Ships

Cargo Vessels

Naval Ships

Leisure Boats

Ferries

Submarines

**VESDA**<sup>®</sup>  
by  **xtralis**<sup>™</sup>

82% of marine vessel fires originate in engine rooms and 57% of fires are caused by electrical malfunction<sup>1</sup>

The impact of fire on a marine vessel goes beyond financial loss incurred from damaged equipment. Loss of life, consequential losses and downtime can lead to negative publicity, lost business and possibly bankruptcy.

## Consequences of smoke and fire

Smoke or fire on a marine vessel may:

- Endanger the lives of passengers and staff.
- Cause enormous damage to equipment including smoke contamination within electrical equipment.
- Delay passenger or commercial services.
- Lead to service penalties for breaking contracted service agreements.
- Lead to negative publicity which will affect sales and profits.

*In 2001 the M/S Nordic Empress experienced a fire in its engine room. The accumulation of costs associated with repair of damaged equipment, accommodating travellers, dry docking, two weeks of lost operational time and associated compensation costs totalled USD\$8.8 million.<sup>2</sup>*

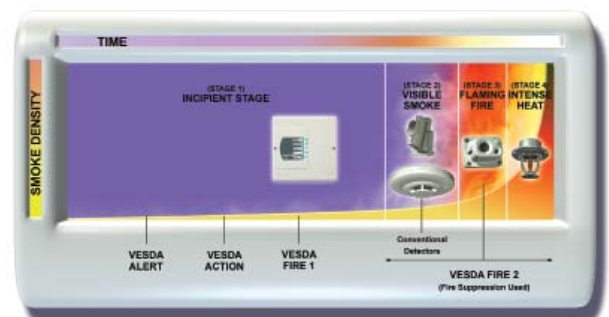
## Risks and Challenges

Some of the common causes of marine vessel fires are electrical malfunctions, leaking fuels, oil lube sprayed on hot engine parts, arson and welding fires. The challenges of fire detection in marine vessels are that:

- Traditional detectors become contaminated resulting in false alarms and/or reduced sensitivity.
- The normally smoky environments of engine rooms mask the detection of slow-growth fires.
- Humidity and high airflows in engine rooms dilute smoke and make detection difficult.
- Slow growth fires originating from within electrical equipment, mechanical systems or other confined spaces are difficult to identify and cause damage.
- High airflows will dilute smoke but also fuel fire sources.

## How do you overcome these risks and challenges?

Use an Air-sampling Smoke Detector (ASD) that provides flexibility in sampling hole location, multiple configurable pre-alarms and a wide sensitivity range for a performance based design approach to fire protection.



A VESDA smoke detector can be configured to detect a fire at the earliest stage. The multiple alarm levels can be configured to initiate an appropriate response at all stages of a fire.

## Why use a VESDA ASD system?

VESDA detectors buy time. Time to respond to a fire threat, minimizing damage and business downtime. The key advantages they offer are:

- Superior performance in harsh environments and a high resistance to contamination through the use of our clean air barrier technology that protects the detection chamber.
- Early detection can be achieved by locating sampling holes where smoke may travel or in areas where smoke may originate, for example, in or near equipment cabinets and critical equipment.
- Multiple configurable settings to provide, for example, very early warning for investigation, and subsequent warnings to initiate a fire response plan, evacuation and suppression.
- A wide dynamic sensitivity range of .005% obs/m for very early warning detection in critical applications up to 20% obs/m for situations where smoke is difficult to detect.
- A range of different reporting and monitoring options.

<sup>1</sup>The Causal Analysis of 143 fires on U.S. Flagged, U.S. Coast Guard inspected passenger vessels less than 100 gross tons from January 1992 to 05 December 2000.

<sup>2</sup>Data courtesy of Royal Caribbean International

## 7 reasons to consider installing a VESDA system:



### When business continuity is paramount

Fires in Bridge and Communications Rooms are often caused by electronic equipment. Detection is inhibited by dilution due to high airflow from cooling systems. VESDA sampling pipe can be located near the source of fire for early detection.



### When maintenance access is difficult

Accessing engine rooms can be dangerous and difficult. VESDA sampling pipe can be placed where smoke will originate or travel and the detector can be positioned for easy maintenance.



### When suppression systems are present

Suppression should be a last resort - only to be used if a fire cannot be controlled. A VESDA system buys time. Time to minimize damage to expensive stock and equipment. A VESDA system can also be used to reliably actuate suppression release.



### When unobtrusive detection is required

In areas where it's important to preserve the internal design/ decoration, a VESDA detector can be concealed in a utility cupboard and the only visible parts will be tiny capillary sampling tubes, barely discernable to the human eye.



### When environmental conditions are difficult

Smoke can be very difficult to detect in refrigerated storage because of the very low temperatures, but damage to stock can be extremely expensive. Use a VESDA detector which has a very wide sensitivity range and performs extremely well in low temperatures.



### When evacuation is a challenge

A VESDA system can provide very early warning of smoke so there is time to investigate, control the fire and if necessary, carry out a controlled and orderly evacuation, minimizing panic and danger to occupants of a busy cruise ship or other passenger marine vessel.



### When smoke is difficult to detect

In areas of high airflow or where smoke may become diluted, use a VESDA air sampling smoke detector to set to the most optimum sensitivity, and place sampling holes near the likely sources of fire.

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

## VESDA detectors approved for marine applications

A range of VESDA detectors have been approved by Lloyds Register\* and Bureau Veritas\*\*. The VESDA VLC - Marine has been tested and certified to provide all the benefits of ASD, 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.

\* Bureau Veritas - approved for use in bridge and 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 related is CEA 4022:1999.



## Global Approvals for the VESDA product range



## Need more information?

Contact our nearest office or visit our website at [www.xtralis.com](http://www.xtralis.com).

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

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