

OceanTools

D9 DyeTector®

Diver held leak, dye and cement detection

The **D9 DyeTector** is a state of the art diver held subsea leak and cement dye detector developed by **OceanTools** based on many years of experience detecting subsea dyes.



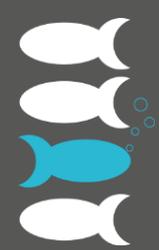
Overview

The diver held **D9 DyeTector** may be used to detect leaks from subsea infrastructure such as manifolds, wellheads or pipelines if a suitable dye has been added to the infrastructure fluids, or during casing cementing operations to detect cement returns.

High intensity LED light is focused through lenses and filters to create a concentrated beam that is tuned to a specific wavelength to cause maximum molecular agitation and fluorescence of the dye. A sophisticated optical multiplier employs light amplification technology to detect even the smallest amounts of fluorescence from the agitated dye molecules. Advanced detection electronics convert the measurements to digital data, displayed directly on the rear of the unit.

The powerful **DyeTector** technology is capable of detecting single photons of light. It can detect down to single digit parts per billion of dye dissolved in water and is approximately one hundred times more sensitive than the human eye. This makes it ideal for detecting the very smallest of leaks or traces of dye dosed cement.

Advanced ambient light suppression technology allows the **DyeTector** to be used in high levels of background light.



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Operation

The diver held **D9 DyeTector** is a self-contained unit featuring ruggedised single switch operation, a built-in 2.2" detection display and a depth rating in excess of 250m.

The unit is ideally balanced with centre of gravity at the front face of its ergonomic handle. It can be powered using an external portable battery pack via a tidy cable that exits from the end of the handle near the operator's wrist without impeding safe operation.

Detection Dyes

As well as offering the **DyeTector**, OceanTools can supply dyes that have been specifically developed by our friends at Subsea Chemistry Ltd to precisely match the characteristics of the **DyeTector**. In short, there is no system more capable of detecting dye subsea, nor is there a more detectable dye.

Versions of the **DyeTector** are designed to excite and detect several types of dye in addition to **C-Dye 530** (Rhodamine) and **C-Dye 370** (Ultraviolet) including:

- Rhodamine dyes such as B275, RX9022, Pelagic 100 Pink
- Fluorescein dyes such as HW443, HW540P, Oceanic Yellow LTF
- Ultraviolet dyes such as RX9026E, Pelagic 100, Champion Cleardye, Castrol HT2

Please contact OceanTools for advice on other dyes that may be detected by the **DyeTector**.

Key Features

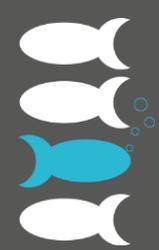
- Self contained diver held system
- Rhodamine, Fluorescein or Ultraviolet dye detection
- Focused beam and filtered high intensity LEDs
- Light amplification and photon detection technology
- 250m+ standard depth rating



Related Products

D7 DyeTector systems (pictured above) are ROV mounted leak and dye detection units with up to 6000m depth rating and simple and intuitive software that displays detection data at the surface.

D8 DyeTector dual channel systems have been developed with two sets of optical components to detect Rhodamine and Ultraviolet dyes using a single compact ROV mounted device.



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Applications

The **DyeTector** may be used to detect leaks from subsea infrastructure such as manifolds, wellheads or pipelines if a suitable dye has been added to the infrastructure fluids. Pipeline or flow line pressure testing can be monitored by the **DyeTector** if dye impregnated fluids are used.

The **DyeTector** may also be used during casing cementing operations to detect cement returns. A tracer dye is added to either the seawater spacer or to the cement itself. Unlike pH meters which rely upon the cement passing over them, a **DyeTector** can detect cement from a distance of several metres depending on the dye concentration.

Specifications

| | D9-R | D9-F | D9-U |
|------------------------------|-------------------------------|-------------|-------------|
| Target dye | Rhodamine | Fluorescein | Ultraviolet |
| Excitation wavelength | 520–530nm | 450–460nm | 360–370nm |
| Detection wavelength | 570–590nm | 510–520nm | 410–450nm |
| Detection range | Up to 10m | | |
| Input voltage | 18–36VDC | | |
| Maximum current | 0.7A @ 24VDC | | |
| Depth rating | 250m+ | | |
| Housing materials | Anodised Aluminium and Delrin | | |
| Window material | Acrylic | | |
| Display | 2.2" TFT LCD (qVGA) | | |
| Body length | 180mm | | |
| Body diameter | 97mm | | |
| Overall height (incl handle) | 280mm | | |
| Weight in air | 2.2kg | | |
| Weight in water | 1.1kg | | |

Product datasheets, GA drawings, case studies and other supporting documents are available to download from data.oceantools.co.uk

All specifications are subject to change without notice. E&OE.

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