

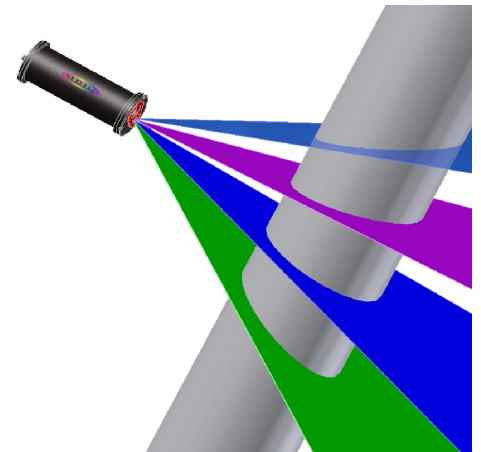
Laser Leak Detection System - LDS3



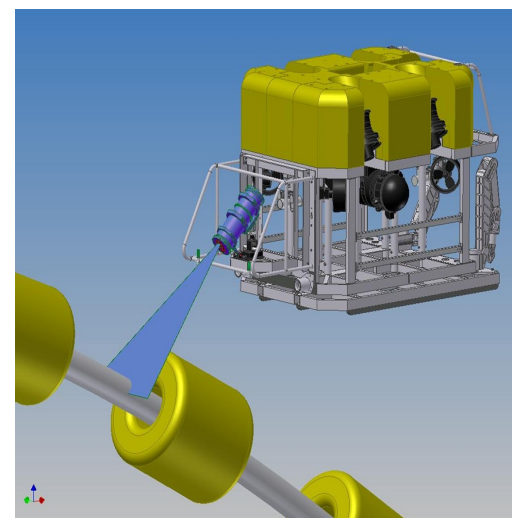
Features:

- **High sensitivity real time leak detection.**
- **Remote leak detection up to 20m from target.**
- **Multi-wavelength options providing enhanced leak detection.**
- **New compact light weight design.**
- **Suitable for any ROV including eyeball ROVs.**
- **Supplied with pan and tilt stage for wide scanning.**
- **Built-in alarm function to warn the ROV pilot when a leak is present.**
- **Fully integrated diagnostic systems.**

The latest laser leak detection system LDS3 is a more compact unit designed to be readily used with eyeball ROVs. The unit now provides users with multiple wavelength options which allow enhanced detection of a wider range of hydraulic fluids, leak detection dyes and tracers. The new LDS3 system builds on the original highly successful technologies of the LDS1 and LDS2 systems, whilst providing greatly improved performance in a unit in which the weight and power consumption have been dramatically reduced. These features combine to make the LDS3 the industry leading subsea leak detection system.



The new LDS3 provides rapid high sensitivity leak detection in a compact robust unit which is classified as an eye safe class 1 laser. The system contains a number of in-built health and safety features and has a depth rating of 3000m. The system is able to detect very small leaks (part per million levels) in real time at distances of up to 20m, depending on water quality. At shorter distances, the system is capable of detecting minute leaks in the parts per billion (ppb) range. The system is supplied with a pan and a tilt stage for wide scanning and is supplied with easy to use data logging and display software. The software allows automatic leak level alarms to be set. The system is designed to be used for subsea leak detection applications such as pipelines, risers and subsea completion systems. The LDS series of leak detection systems have been successfully used in a wide range of subsea inspections carried out by companies including; Subsea7, BP, Shell, EXXON Mobil CNR and many others major oil companies.





Benefits

- Industry leading effective leak detection.
- High-speed underwater inspection.
- Leak detection capability in murky water.
- Proven technology in a range of oil and gas industry subsea applications.

Technical Specification

Parameters	LDS3-UV	LDS3-Violet	LDS3-Blue	LDS3-Green
Leak Type	Hydrocarbon and Clear dye	Hydrocarbon, Hydraulic Fluid	Fluorescein , and non fluorescent dyes such as warm water etc	Rhodamine based dyes such as RX-9022, Fluorodye P
Operating distance	Max 20m Depending on water quality	Max 20m Depending on water quality	Max 20m Depending on water quality	Max 20m Depending on water quality
Detection sensitivity	<50 part per billion (Clear dye)	<1 part per million (hydrocarbon)	< 1 part per billion (Fluorescein)	< 10 part per billion (Rhodamine)
Pod Dimension	140mm (D) x 320 mm(L)	140mm (D) x 320 mm(L)	140mm (D) x 320 mm(L)	140mm (D) x 320 mm(L)
Weight	In air: 10kg, In water:5 kg	In air: 10kg, In water:5 kg	In air: 10kg, In water:5 kg	In air: 10kg, In water:5 kg
Power Consumption	50W DC 24V (Optional 90-260V AC 50/60 HZ)	50W DC 24V (Optional 90-260V AC 50/60 HZ)	50W DC 24V (Optional 90-260V AC 50/60 HZ)	50W DC 24V (Optional 90-260V AC 50/60 HZ)
Laser specification	Wavelength: 355 nm uv Power/Mode: Max 150mW / pulsed	Wavelength: 405 nm, violet Power/Mode: Max 200mW / Continuous	Wavelength: 488nm, Blue Power/Mode: Max 500mW / Continuous	Wavelength: 532nm, green Power/Mode: Max 600mW / Continuous
Projected laser line thickness / width	10mm thickness by 1m length at a distance of 3m (other beam dimension are optional)	10mm thickness by 1m length at a distance of 3m (other beam dimension are optional)	10mm thickness by 1m length at a distance of 3m (other beam dimension are optional)	10mm thickness by 1m length at a distance of 3m (other beam dimension are optional)
Pan and Tilt	Tilt: 45° above and 60° below the horizontal Rotation: 360°	Tilt: 45° above and 60° below the horizontal Rotation: 360°	Tilt: 45° above and 60° below the horizontal Rotation: 360°	Tilt: 45° above and 60° below the horizontal Rotation: 360°
Shock Resistance	4g peak	4g peak	4g peak	4g peak
Operating Temp.	0°C - 40°C	0°C - 40°C	0°C - 40°C	0°C - 40°C
Depth rating	3000m (other depths are optional)	3000m (other depths are optional)	3000m (other depths are optional)	3000m (other depths are optional)
Health & Safety	The system is classified as class 1 laser (eye safe) but contains Max class IV laser. It is built with four safety interlocks.	The system is classified as class 1 laser (eye safe) but contains Max class 3B laser. It is built with four safety interlocks.	The system is classified as class 1 laser (eye safe) but contains Max class IV laser. It is built with four safety interlocks.	The system is classified as class 1 laser (eye safe) but contains class IV laser. It is built with four safety interlocks.
Optical Windows	The system incorporates high quality sapphire glass windows with high scratch resistance, for both excitation and optical collection	The system incorporates high quality sapphire glass windows with high scratch resistance, for both excitation and optical collection	The system incorporates high quality sapphire glass windows with high scratch resistance, for both excitation and optical collection	The system incorporates high quality sapphire glass windows with high scratch resistance, for both excitation and optical collection