

# X-One-DS / X-One-DP

Deep UV Fluorescence Oil in Water Analyser  
Side-Stream or Inline, for Hazardous Areas



Ultrasonics



Deep UV Fluorescence

The Advanced Sensors X-One is the next generation of our incredibly successful EX range of analysers for Oil in Water measurement.

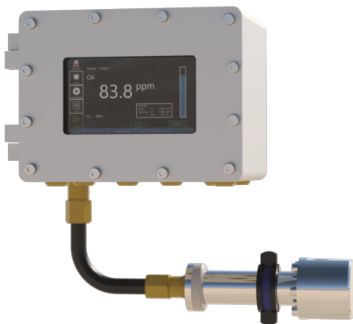
The X-One-DS and X-One-DP are Oil in Water analysers that use Deep UV Fluorescence to provide continuous accurate measurements of total Oil, PAH and other hydrocarbon parameters in water. The analyser detects a wide range of oils types from light refined oils through to heavy crude oils.

Reliable real-time data enables operators to record accurate discharge measurements, react to process changes and improve process efficiency thus enabling cost reductions. The analysers comprise a central controller connected to a measurement module. The measurement module is available in side stream and inline configurations for placement in a process by-pass loop (X-One-DS) or directly in a process pipe (X-One-DP) respectively. The X-One additionally facilitates interconnection of 3<sup>rd</sup> party sensors to the controller via Modbus and 4-20mA inputs.

## Application Examples

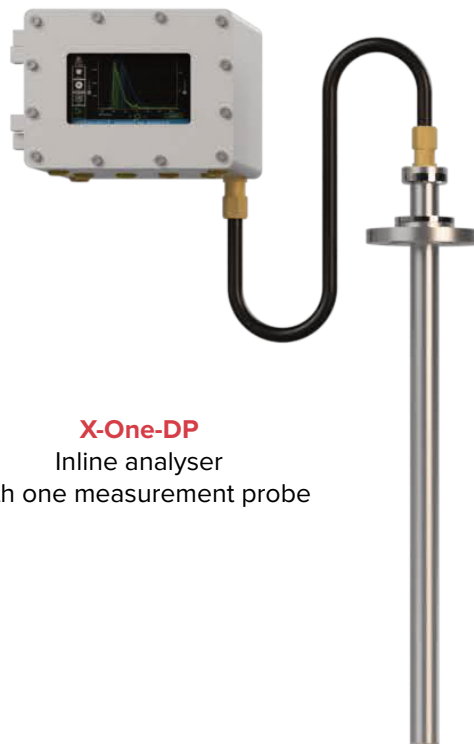
Applications include Oil in Water measurement in discharge management, process improvement, cooling water, waste-water treatment and oil leak detection. Please follow up with ASL to determine the optimum configuration for your specific application.

The analyser is available in 2 model configurations.



### X-One-DS

Side-Stream analyser  
with one measurement cell



### X-One-DP

Inline analyser  
with one measurement probe

# X-One-DS / X-One-DP

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## BENEFITS

- Compact, lightweight design
- Low cost of ownership
- Measure and report PAH and other hydrocarbon parameters as well as total Oil
- Deep UV fluorescence measures everything that standard UV fluorescence does, as well as lighter oils and condensates
- Independent controller acts as a hub for 3<sup>rd</sup> party and for future Advanced Sensors measurement devices
- No user required maintenance, Artificial Intelligence (AI) Enhanced Ultrasonic Cleaning removes fouling build up
- Consistent accurate performance
- No sample conditioning system required
- Long-life UV LED
- Same sample used for analyser and lab measurement for better accuracy
- Remote control of the analyser
- Analyser outputs accessible remotely via HART, Modbus, Ethernet and 4-20mA

## FEATURES

- AI Enhanced Ultrasonic Cleaning
- Deep UV Fluorescence
- Remote management and diagnostics
- Easy to install
- Ability to connect 3<sup>rd</sup> party devices to the controller via Modbus and 4-20mA
- Database storage of all data
- Export historical data via .PDFs and .CSV files
- Optional integrated laboratory sample point



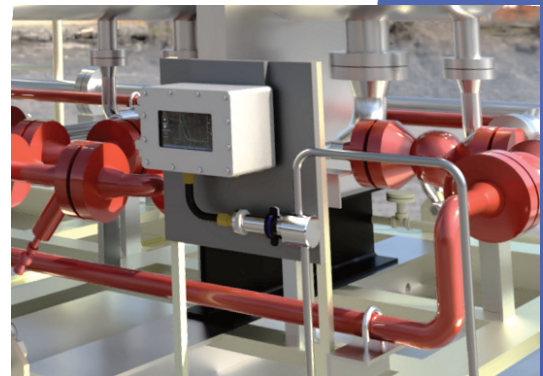
### Additional for Probe/Inline







- Hot insertion/extraction

For pressures in the range 3-5 bar<sub>g</sub> a low pressure extraction tool is recommended. For pressures above 5 bar<sub>g</sub> a high pressure extraction tool is required

### Additional for Cell/Side-Stream

- Optional automatic compensation for oil droplet size variation
- Optional flexibility of measurement cell location



Measurement Performance	
Measurement principle	Deep UV Fluorescence
Cleaning principle	AI Enhanced Ultrasonics (automatic)
Range Oil	0-100,000 ppm <sup>Ⓐ</sup>
Range PAH	0-3,000 ppb
Repeatability	±1% of measurement range <sup>Ⓢ</sup>
Accuracy	±1% of measurement range <sup>Ⓢ</sup>
Measurement frequency	1 Second intervals, continuous results <sup>Ⓣ</sup>
Operating Conditions	
Process temperature	Up to 200°C
Operating pressure	Up to 104 bar <sub>a</sub>
Design pressure	Up to 312 bar <sub>a</sub>
Process velocity with Probe	Nominal 10 m/s <sup>Ⓒ</sup>
Process flow on Cell	Up to 25 l/m <sup>Ⓒ</sup>
Ambient Conditions	
Ambient temperature for operation	-20°C to +60°C
Utilities	
Power supply	100 to 240 VAC
Power frequency	50 or 60 Hz
Power consumption	25W normal, 150W peak
Certification	
Ingress protection	IP rated for both IP66 and IP68
Enclosure classification	NEMA 4X
USA + Canada Controller	 Class 1 Div 1 Groups C,D, T6 Ta=-20°C to +60°C
USA + Canada for Cell	 Class 1 Div 1 Groups C,D, T5 Ta =-20°C to +60°C Max. Liquid Temperature -100oC Or Class 1 Div 1 Groups C,D, T3 Ta =-20°C to +60°C Max. Liquid Temperature -200oC
USA + Canada for Probe	 Class 1 Div 2 Groups C,D, T5 Ta =-20°C to +60°C Max. Liquid Temperature -100oC Or Class 1 Div 2 Groups C,D, T3 Ta =-20°C to +60°C Max. Liquid Temperature -200oC
IECEX Controller	 II 2 G Ex db IIB T6 Gb Ta = -20C to +60°C
IECEX Cell or Probe	 II 2G Ex db IIB T5 Gb Ta = -20°C to +60°C Max. Liquid temperature 100°C or II 2G Ex db IIB T3 Gb Ta = -20°C to +60°C Max. liquid temperature 200°C
Brazil	Inmetro
UK	UKCA
CE compliant	
Weight & Dimensions	
Weight	Controller 24 Kg Measurement Probe 6 Kg Measurement Cell 3.5Kg
Dimensions	Controller L 280 mm x H 200 mm x D 195 mm Measurement Probe Up to 1m Length with 38mm Diameter Longer probe lengths on request Measurement Cell L 225 mm Diameter 76.5mm (Max)

Communications	
2 x 4-20 mA Output	Can be configured as passive or active at the factory Configurable measurement reporting
1 x 4-20 mA Input	Readings from external measurement device displayed at the controller interface
Up to 4 x Digital Inputs Up to 3 x Digital Outputs (Dry contacts)	Start/Stop cycle control Configurable as alarm contacts
Remote access	Windows Remote Desktop
Internal data storage	>10 years
User passwords	3 level password protection
Optional Communications	
HART	Hart version 7
Modbus RTU output	Modbus tables provided on request
Modbus RTU input	Enables connection of an external measurement device ✱
Extended ethernet	2 wire connection, capable of up to 1.3km
Additional Information	
Cable entries	8 x M20
Wetted components	Stainless Steel 316L, 25 Cr Duplex, 22 Cr Duplex, Hastelloy C-276, Monel 400, Inconel 625, Incoloy 825 and other options available on request
Controller material	Stainless Steel 316L
Conduit length	Up to 30m
Analyser Stand	Optional
Additional Information Cell	
Process connection	½" NPT Connection (additional optional connections available e.g. flanged connections)
Optional ultrasonic homogenisation	Facilitated via an optional flow valve
Additional Information Probe	
Hot insertion/extraction	Up to 104 bar <sub>g</sub>
Flange fitting	2" ASME RF 150#, 300#, 600# (various other flange ratings and sizes available upon request)

⌚ Dependent on sample matrix & instrument configuration. User may select any desired measurement from 0-10 ppm, 0-100 ppm [...] up to 100,000 ppm

⊕ Under ideal conditions, with a homogenised sample.

Note: Lab calibration with potable water and following ASL standards preparation method can achieve accuracy and repeatability of +/-1% of calibrated range.

⌚ Option to extend the interval via software

⌚ For Higher flow rates contact Advanced Sensors

✱ Contact ASL for assistance with device integration

## Contact Us

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