ROW DETECTS*:

motor oils, turbine oils, vegetable oils, fuel oils, marine diesel oils, crude oils, heating oils, lube oils, hydraulic oils, gas oils, motor oils, mineral oils

Laser Diagnostic Instruments REMOTE OPTICAL WATCHER

The ROW is an autonomous non-contact sensor for the detection of oil on water. It monitors industrial sites for oil spills and leaks so you can respond quickly. Protect drinking water sources and safe-guards heavy industrial equipment from lubricant ol leaks; protect the environment.

> 24/7 OPERTION EVEN IN HARSH ENVIRONMENTS

Day or night, in arctic cold or scorching heat, the ROW helps you pinpoint the pollutters, take action, and avoid lasting damage. The sensor is available in aluminum, stainless steel or ATEX EXD

enclosures.

France, Sewer Monitoring

> Estonia, Water Treatment Plant

> > South Korea, Municipal River Monitoring

Poland, Power Plant

NON ROW

> LONG LIFE, GO OFF-GRID

* Different oils from each country have different properties. Check with LDI or send samples for testing.

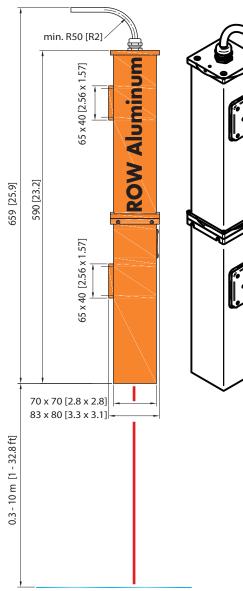
> Robust IP68 certified hermetic design and 5 year LED lifetime. Low power consumption of < 2W with option remote operation using solar panels, batterries and wireless telemetry.

> NON-CONTACT DETECTION INSTRUMENT

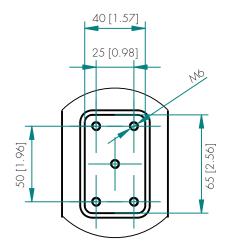
This means easier installation, no bio-fouling, and no maintenance.

> INDUSTRIAL LEADING SENSITIVITY

With almost 30 years of experience in R&D, LDI has created the ROW that uses UV LED light to excite oil's native fluorescence. The ROW's photo-optics can detect oil films down to 1 µm layer, while minimizing false alarms.



Dimensions unless otherwise stated: mm [inches]



Optical non-contact and autonomous sensor for real-time detection of oil contamination - UV fluorescence technology

TECHNICAL SPECIFICATIONS

ACODEL \bigcirc 2311A (Aluminum)SENSITIVITY> 1 µm (micron) oil filmDIL DETECTION:Medium (diesel, lubricants etc) & heavy (crude, bunker fuels etc) oilsRANGEup to 10 m [33 fi] from surfaceDPERATION EMPERATURE 30° C to $+60^{\circ}$ C [22° F to 140° F]SINCLOSURESIP68, hermetically sealed, weather proof Anadised Aluminum, powder coating, purged (Ar)DIMENSIONS L x W x H) $590 \times 83 \times 80 \text{ mm } [23.2 \times 3.3 \times 3.1 \text{ in]}$ device dimensions Comes with mounting plates for installationDOWER SOMERS L x W x H) $12 - 24 \text{ VDC } (10V \cdot 30V)$ as standard Optional: $110/220 \text{ VAC}, 60/50 \text{ Hz AC/DC adapter,}$ solar/battery optionsDOWER SOMER USAGE $2 \text{ Watt } (DC)$ IGHT SOURCEPulsed UV LEDLED LIFETIME5 years typical, thereafter, LED replacementSOUTPUTS[Relay contacts, RS-485 (modLus), 4-20 mA] as standard adapters available, contact Sales Engineer for additional informationVISER SOUTPUTSROW Configurator software for setup & adjustment ROW Manager software for network visualizationSER SERTIFICATIONS $C \subseteq EN 1000-6-2, 61000-6-3, 61326-1, 61000-4-2, $			
DIL DETECTION* Medium (diesel, lubricants etc) & heavy (crude, bunker fuels etc) oils DIL DETECTION* Medium (diesel, lubricants etc) & heavy (crude, bunker fuels etc) oils DANGE up to 10 m [33 ft] from surface DPPERATION -30°C to +60°C [22°F to 140°F] ENCLOSURES IP68, hermetically sealed, weather proof Anadised Aluminum, powder coating, purged (Ar) DMENSIONS 590 x 83 x 80 mm [23.2 x 3.3 x 3.1 in] device dimensions Comes with mounting plates for installation VEIGHT 1.8 kg [3.97 lbs] POWER 12 - 24 VDC (10V - 30V) as standard Optiond: 110/220 VAC, 60/50 Hz AC/DC adapter, solar/battery options POWER USAGE < 2 Watt (DC) IGHT SOURCE Pulsed UV LED ED LIFETIME 5 years typical, thereafter, LED replacement POUTPUTS [Relay contacts, RS-485 (modbus), 4-20 mA] as standard Wireless Radio Link Wireless Radio Link Wir,Fi GSM Custom Solutions: Optional adapters available, contact Sales Engineer for additional information INFERFACE ROW Configurator software for setup & adjustment ROW Manager software for network visualization SERTIFICATIONS C E EN 61000-6-2, 61000-6-3, 61326-1, 61000-4-2, 61000-4-2, 61000-4-2, 61000-4-2, 61000-4-2, 6100	MODEL	O-2311A (Aluminum)	
etc) oils etc) oils up to 10 m [33 ft] from surface OPERATION -30°C to +60°C [-22°F to 140°F] INCLOSURES IP68, hermetically sealed, weather proof Anodised Aluminum, powder coating, purged (Ar) DIMENSIONS L × W × H) S90 x 83 x 80 mm [23.2 x 3.3 x 3.1 in] device dimensions Comes with mounting plates for installation VEIGHT 1.8 kg [3.97 lbs] POWER 12 - 24 VDC (10V - 30V) as standard Optional: 110/220 VAC, 60/50 Hz AC/DC adapter, solar/battery options POWER USAGE < 2 Watt (DC) IGHT SOURCE Pulsed UV LED ED LIFETIME 5 years typical, thereafter, LED replacement Custom Solutions: Optional adapters available, contact Sales FLEMETRY Adio alarm Wireless Radio Link Wi-Fi GSM USER NTERFACE ROW Configurator software for setup & adjustment ROW Manager software for network visualization C € EN 61000-6-2, 61000-6-3, 61326-1, 61000-4-2, 61000-4-5, 61000-4-6, 61010-1 US EPA: EPA/530/UST-90/009	ENSITIVITY	> 1 µm (micron) oil film	
DPERATION EMPERATURE -30°C to +60°C [-22°F to 140°F] INCLOSURES IP68, hermetically sealed, weather proof Anodised Aluminum, powder coating, purged (Ar) DIMENSIONS 590 x 83 x 80 mm [23.2 x 3.3 x 3.1 in] device dimensions Comes with mounting plates for installation VEIGHT 1.8 kg [3.97 lbs] POWER 12 - 24 VDC (10V - 30V) as standard Optional: 110/220 VAC, 60/50 Hz AC/DC adapter, solar/battery options POWER USAGE < 2 Watt (DC) IGHT SOURCE Pulsed UV LED ED LIFETIME 5 years typical, thereafter, LED replacement POUTPUTS [Relay contacts, RS-485 (modbus), 4-20 mA] as standard PUTPUTS [Relay contacts, RS-485 (modbus), 4-20 mA] as standard ELEMETRY Audio alarm Wireless Radio Link Wi-Fi Custom Solutions: Optional adapters available, contact Sales Engineer for additional information JSER INTERFACE ROW Configurator software for setup & adjustment ROW Manager software for network visualization C C EN 61000-6-2, 61000-6-3, 61326-1, 61000-4-2, 61000-4-5, 61000-4-5, 61000-4-8, 61010-1 US EPA: EPA/530/UST-90/009	DIL DETECTION*		
-30°C to +60°C [22°F to 140°F] ENCLOSURES IP68, hermetically sealed, weather proof Anodised Aluminum, powder coating, purged (Ar) DIMENSIONS L × W × H) 590 x 83 x 80 mm [23.2 x 3.3 x 3.1 in] device dimensions Comes with mounting plates for installation VEIGHT 1.8 kg [3.97 lbs] POWER OPTIONS 12 - 24 VDC (10V - 30V) as standard Optional: 110/220 VAC, 60/50 Hz AC/DC adapter, solar/battery options POWER USAGE < 2 Watt (DC) IGHT SOURCE Pulsed UV LED ED LIFETIME 5 years typical, thereafter, LED replacement POUTPUTS [Relay contacts, RS-485 (modbus), 4-20 mA] as standard PUTPUTS [Relay contacts, RS-485 (modbus), 4-20 mA] as standard PUTIONS Optional calarm Wireless Radio Link Wi-Fi GSM Custom Solutions: Optional adapters available, contact Sales Engineer for additional information JSER NTERFACE ROW Configurator software for setup & adjustment ROW Manager software for network visualization C C E EN 61000-6-2, 61000-6-3, 61326-1, 61000-4-2, 61000-4-5, 61000-4-6, 61000-4-8, 61010-1 US EPA: EPA/530/UST-90/009	RANGE	up to 10 m [33 ft] from surface	
Anodised Aluminum, powder coating, purged (Ar) DIMENSIONS L × W × H) 590 x 83 x 80 mm [23.2 x 3.3 x 3.1 in] device dimensions Comes with mounting plates for installation VEIGHT 1.8 kg [3.97 lbs] POWER DPTIONS Input) 12 - 24 VDC (10V - 30V) as standard Optional: 110/220 VAC, 60/50 Hz AC/DC adapter, solar/battery options POWER USAGE < 2 Watt (DC) IGHT SOURCE Pulsed UV LED ED LIFETIME 5 years typical, thereafter, LED replacement POUTPUTS [Relay contacts, RS-485 (modbus), 4-20 mA] as standard PUIPUTS [Relay contacts, RS-485 (modbus), 4-20 mA] as standard PUIPUTS [Relay contacts, RS-485 (modbus), 4-20 mA] as standard PUIPUTS [Relay contacts, RS-485 (modbus), 4-20 mA] as standard PUIPUTS [Relay contacts, RS-485 (modbus), 4-20 mA] as standard PUIPUTS [Relay contacts, RS-485 (modbus), 4-20 mA] as standard PUIPUTS [Relay contacts, RS-485 (modbus), 4-20 mA] as standard PUIPUTS [Relay contacts, RS-485 (modbus), 4-20 mA] as standard PUIPUTS [Relay contacts, RS-485 (modbus), 4-20 mA] as standard PUIPUTS [Relay contacts, RS-485 (modbus), 4-20 mA] as standard PUIPUTS [Relay contacts, RS-485 (modbus), 4-20 mA] as standard SER [RoW		-30°C to +60°C [-22°F to 140°F]	
L × W × H) Comes with mounting plates for installation VEIGHT 1.8 kg [3.97 lbs] POWER 12 – 24 VDC (10V - 30V) as standard Optional: 110/220 VAC, 60/50 Hz AC/DC adapter, solar/battery options 2 Watt (DC) POWER USAGE < 2 Watt (DC) IGHT SOURCE Pulsed UV LED ED LIFETIME 5 years typical, thereafter, LED replacement POUTPUTS [Relay contacts, RS-485 (modbus), 4-20 mA] as standard POTIONS RS-232 Ethernet/LAN Audio alarm Wireless Radio Link WirFi GSM Custom Solutions: Optional adapters available, contact Sales Engineer for additional information VIFI GSM VSER ROW Configurator software for setup & adjustment ROW Manager software for network visualization CC € EN 61000-6-2, 61000-6-3, 61326-1, 61000-4-2, 61000-4-5, 61000-4-5, 61000-4-8, 61010-1 US EPA: EPA/530/UST-90/009 US EPA: EPA/530/UST-90/009	NCLOSURES		
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Optional: 110/220 VAC, 60/50 Hz AC/DC adapter, solar/battery options POWER USAGE < 2 Watt (DC) IGHT SOURCE Pulsed UV LED ED LIFETIME 5 years typical, thereafter, LED replacement DUTPUTS [Relay contacts, RS-485 (modbus), 4-20 mA] as standard PUISE Ethernet/LAN Audio alarm Custom Solutions: Optional adapters available, contact Sales Engineer for additional information information VIFI GSM VSER ROW Configurator software for setup & adjustment ROW Manager software for network visualization C € EN 61000-6-2, 61000-6-3, 61326-1, 61000-4-2, 61000-4-5, 61000-4-5, 61000-4-8, 61010-1 US EPA: EPA/530/UST-90/009	VEIGHT	1.8 kg [3.97 lbs]	
IGHT SOURCE Pulsed UV LED ED LIFETIME 5 years typical, thereafter, LED replacement DUTPUTS [Relay contacts, RS-485 (modbus), 4-20 mA] as standard ELEMETRY RS-232 Ethernet/LAN Audio alarm Wireless Radio Link Wi-Fi GSM Custom Solutions: Optional adapters available, contact Sales Engineer for additional information JSER NTERFACE ROW Configurator software for setup & adjustment ROW Manager software for network visualization CERTIFICATIONS C € EN 61000-6-2, 61000-6-3, 61326-1, 61000-4-2, 61000-4-5, 61000-4-6, 61000-4-8, 61010-1 US EPA: EPA/530/UST-90/009	OPTIONS	Optional: 110/220 VAC, 60/50 Hz AC/DC adapter,	
LED LIFETIME 5 years typical, thereafter, LED replacement DUTPUTS [Relay contacts, RS-485 (modbus), 4-20 mA] as standard RELEMETRY RS-232 ELEMETRY Audio alarm Vireless Radio Link Wireless Radio Link Wi-Fi GSM JSER ROW Configurator software for setup & adjustment ROW Manager software for network visualization CERTIFICATIONS C € EN 61000-6-2, 61000-6-3, 61326-1, 61000-4-2, 61000-4-5, 61000-4-5, 61000-4-8, 61010-1	OWER USAGE	< 2 Watt (DC)	
DUTPUTS [Relay contacts, RS-485 (modbus), 4-20 mA] as standard PELEMETRY DPTIONS RS-232 Ethernet/LAN Audio alarm Wireless Radio Link Wi-Fi GSM Custom Solutions: Optional adapters available, contact Sales Engineer for additional information JSER NTERFACE ROW Configurator software for setup & adjustment ROW Manager software for network visualization CERTIFICATIONS C E N 61000-6-2, 61000-6-3, 61326-1, 61000-4-2, 61000-4-5, 61000-4-6, 61000-4-8, 61010-1 US EPA: EPA/530/UST-90/009	IGHT SOURCE	Pulsed UV LED	
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Ethernet/LAN adapters available, contact Sales Audio alarm Wireless Radio Link Wireless Radio Link information Vi-Fi GSM JSER ROW Configurator software for setup & adjustment ROW Manager software for network visualization CERTIFICATIONS C € EN 61000-6-2, 61000-6-3, 61326-1, 61000-4-2, 61000-4-5, 61000-4-8, 61010-1 US EPA: EPA/530/UST-90/009	OUTPUTS	[Relay contacts, RS-485 (modbus), 4-20 mA] as standard	
NTERFACE ROW Manager software for network visualization CERTIFICATIONS C € EN 61000-6-2, 61000-6-3, 61326-1, 61000-4-2, 61000-4-5, 61000-4-5, 61000-4-8, 61010-1 US EPA: EPA/530/UST-90/009		Ethernet/LAN Audio alarm Wireless Radio Link Wi-Fi	adapters available, contact Sales Engineer for additional
CERTIFICATIONS 61000-4-5, 61000-4-6, 61000-4-8, 61010-1 US EPA: EPA/530/UST-90/009			
	ERTIFICATIONS	61000-4-5, 61000-4-6, 61000-4-8, 61010-1 US EPA: EPA/530/UST-90/009	
VARRANTY 2-years factory warranty as standard, supported worldwide	VARRANTY	2-years factory warranty as standard, supported worldwide	

* Different oils from each country have different properties. Check with LDI or send samples for testing.

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