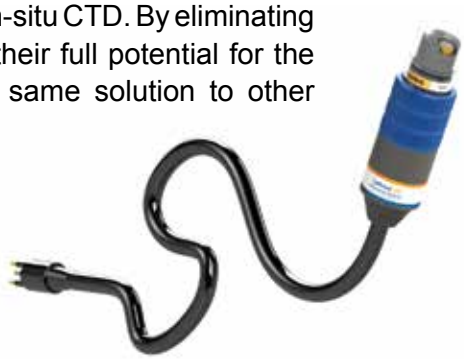
In-Situ with UV Biofouling

Two Years and Counting

Got fouling?

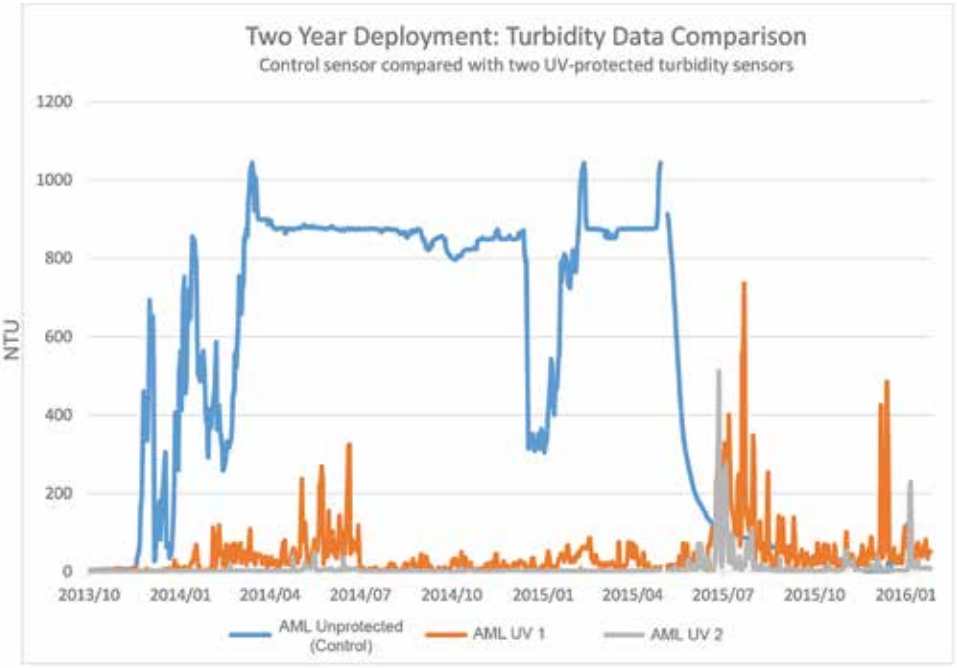
Install UV•Xchange on a Metrec•X or Smart•X for a high performance in-situ CTD. By eliminating biofouling-induced drift, UV•Xchange allows sensors to perform to their full potential for the duration of long-term, in-situ deployments. Cabled UV brings the same solution to other subsea equipment, such as:

- sensors
- ADCPs
- camera lenses
- lights
- hydrophones
- sonar heads



More Benefits

- Scope. Incidental protection has occurred up to 47 cm away and at a wide diameter.
- Non-contact and non-toxic. Will not affect the sensitive sensor surfaces of environmental parameters.
- Reduced maintenance saves time and expense.
- Silence. Instruments equipped with pumps and wipers produce acoustic noise that can be picked up by hydrophones.



Maximum Versatility

The modularity of UV•Xchange and Cabled UV enables unrivaled adaptability to prevent biofouling on a variety of surfaces and devices. With LEDs that can rotate 360° and be stacked and flipped over to reverse the angle, the UV light can be directed in almost any direction.

The Data Speaks for Itself

AML CTDs originally deployed in October of 2013 at Ocean Networks Canada's Folger Pinnacle site continue to operate today without maintenance. With UV•Xchange, long term monitoring can produce data such as in the graph above. The timelines of ocean observation and environmental monitoring deployments previously limited to weeks or months due to fouling can now be set in years.

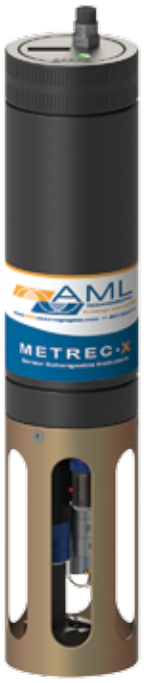
Clean sensor faces after nine months in-situ. (Photo courtesy of Adrian Round, Director of Observatory Operations, Ocean Networks Canada)

sound velocity / pressure / conductivity - temperature / turbidity / biofouling control

Environmental Monitoring

with UV Biofouling Control

Whether deploying for a couple days or a couple years, real-time, multi-parameter **Metrec•X** is the optimal sonde for environmental monitoring. If only a few parameters are required, the smaller **Smart•X** is ideal.



Metrec•X **Smart•X**

Instruments

	Onboard Sensors [a]	Remote Sensors	UV Power Requirement (Ah/day) [b]
SMART•X	2	0	0.624
METREC•X	4	4	1.70
METREC•XL	7	4	2.34

[a] Maximum, in addition to UV•Xchange
[b] Typical power required for UV•Xchange (at 12V)

Sensors

Parameter	Mfr. [a]	Onboard [b]	Remote [c]	Range	Accuracy
Conductivity-Temperature	**AML Xchange™**	x		CND: 0-90 mS/cm	CND: ±0.01 mS/cm TMP: -±0.005 °C
Pressure		x		up to 500 dBar	0.05 %FS
Temperature		x		-2 to 32 °C	±0.005 °C
				-5 to 45 °C	
Turbidity		x		0-3000 NTU	±2 % of reading or 0.2 NTU [e]
Phycoerythrin (BGA)	**Turner Cyclops-7**	x	x	0 to 750 ppb	Linearity: 0.99R^2
Chlorophyll A (Blue Excitation)		x	x	0 to 500 µg/L [d]	
CDOM/FDOM		x	x	0-1250 ppb [d]	
Fluorescein		x	x	0-500 ppb [d]	
Rhodamine		x	x	0-1,000 ppb [d]	
Crude Oil		x	x	>10000 ppb [d]	
Refined Fuels		x	x	>100 ppm [d]	
pH	**Idronaut**	x	x	0 to 14	±0.01
Dissolved Oxygen	**Aanderaa 4531A Optode**		x	0-800 µm	<8 µm or 5%
PAR	**Li-Cor**		x	10000 µmol/sm^2	±5 % in air

Other ranges are available; please contact us. All specifications subject to change without notice.
[a] AML Xchange™ sensors and Aanderaa 4531A Optode are digital. Other sensors output analog voltage which must be converted to engineering units.
[b] Can be installed on end cap.
[c] Can be mounted on instrument body.
[d] Dynamic range. Contact us for details.
[e] Whichever is greater

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