

# HM-500 Series

## Inline Oil in Water UV Fluorometric Sensors

### HM-500 Series Description

The Pyxis HM-500 series inline fluorometer sensors measure the concentration of oil in water read as ppm Marine Crude-Offshore Oil. The sensors utilize an LED sourced UV-fluorescence methodology at 365nm wavelength and 410/470nm excitation. Pyxis HM-500 series sensors are uniquely designed with extra photo-electric components that also monitor the color and turbidity of the sample water. This proprietary feature enables the HM-500 series to automatically compensate for color and turbidity in the water sample eliminating interferences commonly associated with real-world waters, up to 150NTU. The Pyxis HM-500 series inline sensors have a short fluidic channel and can be easily cleaned. The fluidic and optical arrangement of the HM-500 series are designed to overcome shortcomings associated with other fluorometers that have a distal sensor surface or a long, narrow fluidic cell. Traditional inline fluorometers are susceptible to color/turbidity interference and fouling and can also be very difficult to clean. These unique features provide HM-500 series with a level of accuracy far greater than conventional inline oil in water sensors and enable users to conduct wireless inline sensor cleanliness diagnostics as a predictive measure via the **uPyxis** APP for mobile and desktop devices.



HM-500 & HM-500SS Series Oil  
In Water Sensors

### Key Features

- HM-500 Series provided with ST-001 inline tee assembly  $\frac{3}{4}$ " FNPT/CPVC
- HM-500SS Series offers 304-Stainless Steel  $\frac{3}{4}$ " FNPT for Harsh Applications
- Submersion Adapter Kit (MA-102S) Available for CPVC submersed applications
- Unique design with extra photo-electric components
- Automatically compensates for color and turbidity contamination
- Flexible/Advanced Communication 4-20mA Output and RS-485 Output
- Connectible to any conventional microprocessor controller, PLC or DCS
- Bluetooth Enabled when used with MA-WB or POWERPack Series Adapters
- Bluetooth Wireless Interface via **uPyxis** APP on all Mobile & Desktop devices
- uPyxis APP allows for sensor cleanliness diagnosis, calibration & configuration
- uPyxis APP allows users to write calibration to sensor for variety of oils as ppm
- Lower cost and higher accuracy vs conventional UV fluorometers for oil in water



ST-001 Inline Tee for CPVC  
Installations

### Typical Applications

- Heat exchanger leakage detection
- Oil tank leakage detection
- Intake water monitoring (UF & RO Feedwater)
- ReInjection water monitoring
- Industrial wastewater monitoring
- Marine discharge monitoring
- Plant runoff / storm water monitoring

### Specifications

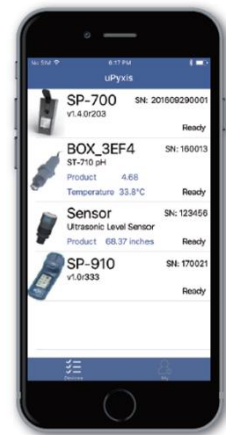
Item	Specification					
Product Range	<b>HM-500</b>	<b>HM-500SS</b>	<b>HM-510</b>	<b>HM-510SS</b>	<b>HM-520</b>	<b>HM-520SS</b>
Part Number	52101	52114	52102	52125	52106	52126
Material	CPVC	304-SS	CPVC	304-SS	CPVC	304-SS
Sample Pressure	100psi (7 Bar)	290psi (21 Bar)	100psi (7 Bar)	290psi (21 Bar)	100psi (7 Bar)	290psi (21 Bar)
Dimension (LxD)	6.8" x 1.4"	8.5" x 2.2"	6.8" x 1.4"	8.5" x 2.2"	6.8" x 1.4"	8.5" x 2.2"
Weight	0.37lb	2.5lb	0.37lb	2.5lb	0.37lb	2.5lb
Range	10 ppm <i>As Marine-Offshore Oil</i>		1000 ppm <i>As Marine-Offshore Oil</i>		100 ppm <i>As Marine-Offshore Oil</i>	
LOD	0.1 ppm		0.5 ppm		0.5 ppm	
Reproducibility	0.1 ppm or ≤3%					
Operational Principal	UV-Fluorescence					
Fluorescence Emm	365 nm LED					
Fluorescence Exc	410/470 nm					
Power Supply	24 (±2) VDC, 65 mA					
Signal Output	4-20 mA and RS-485 Modbus RTU					
Storage Temperature	-7 °C – 60 °C (20 – 140 °F)					
Operational Temperature	4 °C – 40 °C (40 – 104 °F)					
Protection Grade	IP67, Fully Dustproof & Waterproof					
Regulation	CE					
Cable Length	5 feet with IP67 adapter 24" flying lead with IP67 adapter					

### Turbidity and Color Compensation & Wireless Sensor Cleanliness Diagnostics:

Traditional inline oil in water fluorometers are susceptible to color and turbidity interference from the sample water, leading to significant inaccuracy when used in challenging applications. Pyxis HM-500's proprietary optical design and sophisticated compensation algorithms deliver precise compensation for waters containing up to 150 NTU turbidity and 10ppm iron. This breakthrough technology ensures on demand cleaning & maintenance, precise calibration and superior accuracy versus traditional inline fluorometers.

uPyxis Mobile & Desktop APPS for Wireless Setup, Diagnostics & Calibration

The uPyxis APP manages all Pyxis portable meter and inline sensors on mobile and desktop devices, including Apple iPhones and Samsung Android smartphones. When connected to the Pyxis HM-500 series inline oil in water sensor, the uPyxis APP enables users to conduct a wireless probe cleanliness diagnostics check. This unique feature conducts an internal assessment of the sensor cleanliness condition within 5-seconds allowing the user to determine if the probe is need of cleaning prior to calibration. Once cleaned, the user can proceed to conducting a wireless 2 -point calibration of the HM-500 series sensor via the uPyxis APP all from the touch of their smart device. The uPyxis direct diagnosis and calibration of the sensor itself eliminates unnecessary time wasted with calibrating the probe through the receiving controller and ensures the highest degree of accuracy. When connected in RS-485 modbus format, Pyxis Lab can provide the user with Cleanliness Diagnostics register data enabling users to utilize this unique sensor function within their own controller.



**\*Note\*** The uPyxis Mobile APP is evolving rapidly and users can find the latest version at no cost on Apple iStore or Google Play. The uPyxis Desktop APP may be downloaded at <https://pyxis-lab.com/support-2/> For wireless access to all Pyxis devices via uPyxis, users will require the inline Bluetooth Adapter (P/N: MA-WB) or POWERPack Series Auxiliary Box. Details can be found in the Order Information section of this Data Sheet.

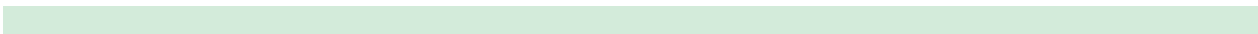
Pyxis Oil-In-Water Secondary Standard for Easy Calibration

Pyxis Lab has developed **OIW-500**, a 500ppm synthetic Oil-In-Water Secondary Solution (as Marine-Offshore Oil) as a more stable and easier method of recurring HM-500 series sensor calibration. This low cost and highly stable standard may be used as an alternative to preparing an actual oil in water standard for sensor calibration.

Item	OIW-500 Secondary Standard Solution <i>For use with HM-500 Series Sensors</i>
Product	OIW-LR
Part Number	21058
Range*	500ppm <i>As Marine-Offshore Oil</i>
Shelf Life	6 months
Container	16 oz/500mL Nalgene Amber Narrow Mouth Sample Bottle
Volume (net)	510 +/- 10mL
Weight (net)	510g +/- 10g



\* For use in calibrating Pyxis sensors at values lower than Range these calibration standards may be diluted with Deionized Water.



**Order Information**

	<b>P/N</b>
HM-500 Oil In Water Sensor (0-10 ppm / 4-20mA & RS-485 / CPVC)	52101
HM-510 Oil In Water Sensor (0-1,000 ppm / 4-20mA & RS-485 / CPVC)	52102
HM-520 Oil In Water Sensor (0-100 ppm / 4-20mA & RS-485 / CPVC)	52106
HM-500SS Oil In Water Sensor (0-10 ppm / 4-20mA & RS-485 / 304SS)	52114
HM-510SS Oil In Water Sensor (0-1,000 ppm / 4-20mA & RS-485 / 304SS)	52125
HM-520SS Oil In Water Sensor (0-100 ppm / 4-20mA & RS-485 / 304SS)	52126

**Optional Accessories Information**

	<b>P/N</b>
HM-900 Handheld Oil In Water Analyzer	52201
MA-WB Bluetooth/WiFi Adapter (Enables Wireless Calibration w/uPyxis APP)	MA-WB
PowerPACK-1 (Single Chanel Auxiliary Power Supply w/Bluetooth For ST/LT Series Sensors)	MA-BLE-1
PowerPACK-4 (Four Chanel Auxiliary Power Supply w/Bluetooth For ST/LT Series Sensors)	MA-BLE-4
Pyxis OIW-500 (HM-500 Series Oil In Water Secondary Standard Solution – 500ppm / 500mL)	21038
MA-C10 (10' Extension Cable for ST/LT Series Sensors)	50738
MA-C25 (25' Extension Cable for ST/LT Series Sensors)	50740
MA-C50 (50' Extension Cable for ST/LT Series Sensors)	50705
MA-C100 (100' Extension Cable for ST/LT Series Sensors)	50706
MA-CIP-1 (ByPass Clean-In-Place Panel for HM Series Cleaning in CPVC)	MA-CIP-1