

# EM-500 Series

## Chlorophyll-a Inline Sensor

*For Industrial Cooling & Process Water Applications*



### Product Description

The Pyxis EM-500 inline fluorometer sensor (470nm excitation and 675 nm emission) measures the in-vivo Chlorophyll-a concentration of live algae cells present in water. Chlorophyll-a is the primary photosynthetic pigment of algae and fluoresces when exposed to specific wavelength. Chlorophyll-a measurement can be used to assess living algal biomass of the bulk water in numerous industrial and process related applications. The fluidic and optical arrangement of the EM-500 sensor is designed to overcome many shortcomings associated with other inline fluorometers by compensating for both color (as high as 10ppm as iron) and turbidity (as high as 150NTU) present in the sample water. The EM-500 sensor can be connected to any device that accepts an isolated or non-isolated 4-20mA input or RS-485 Modbus. The EM-500 sensor has a short fluidic channel that can be easily cleaned as referenced in the sensor cleaning & maintenance section of the Pyxis Operation Manual and diagnosed for cleanliness using the uPyxis Mobile or Desktop app.

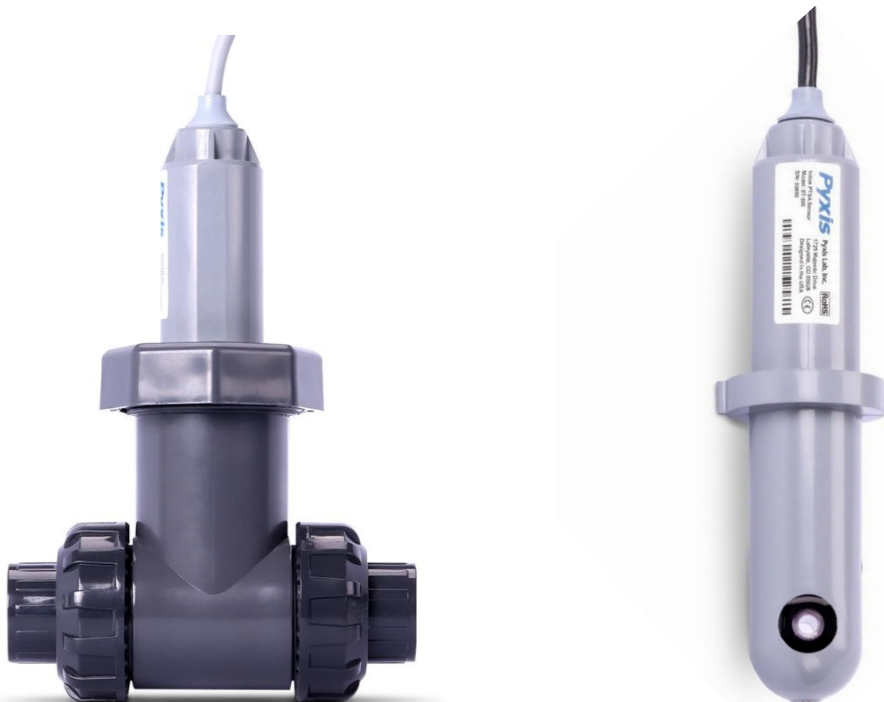


Figure 1 - EM-500 Inline Chlorophyll-a Sensor

## Specifications

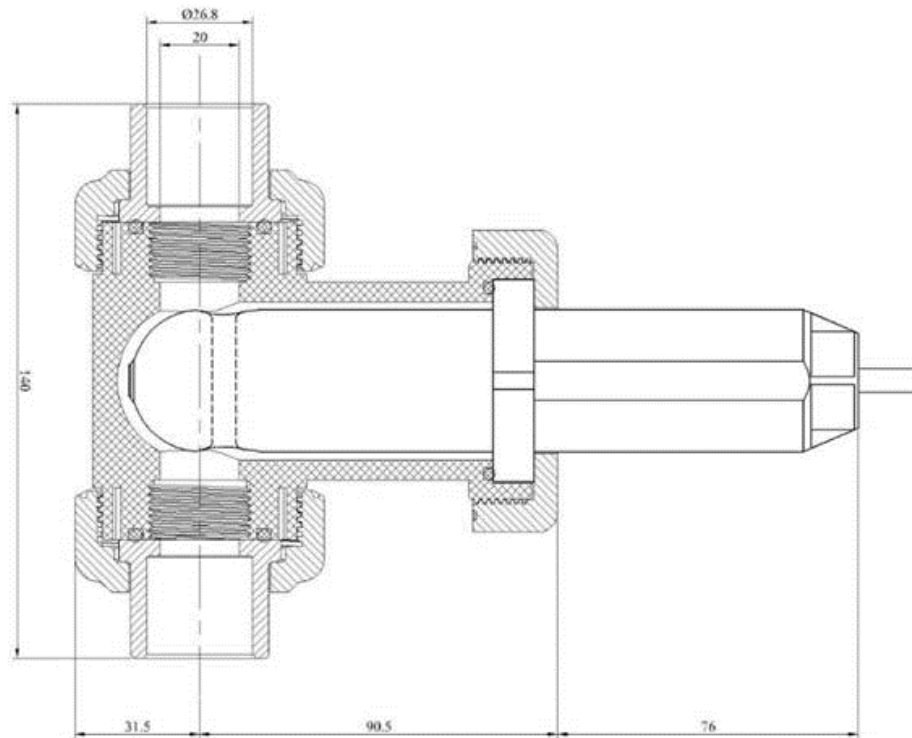
Item	EM-500
Part #	50501
Chlorophyll-a	0-50 ppb, $\pm 0.2$ ppb precision
Power Supply	24 VDC, $\sim 1$ W
Output	4~20 mA isolated, RS-485 isolated
Connector	IP67 water-proof connector/cable 1.5 m (4.5 ft)
Operation Pressure	Up to 0.7 MPa (100 PSI) at 40°C (104 °F)
Installation	ST-001 Tee, 3/4-inch NPT thread & socket union provided
Storage temperature	-20 °C ~ 60 °C (-4~140 °F)
Operational temperature	0° C ~ 40 °C (32~104 °F)
Sample Water Flow	0 to 8 GPM
Typical Service Life	2-3 years
Housing material	UPVC
Dimension (L x D)	172 mm (6.8 in) L x 36.6 mm (1.44 in) D
Weight	170 g (0.37 lbs)
Regulation	CE / RoHS
Bulk-Head Cable	1.5m Bulkhead 7-pin Cable w/Adapter Provided
Flying Lead Cable	1.5m Flying Lead 7-pin Cable w/Adapter Provided

### Optional Accessories Information

### P/N

CHLORO-2-0 ( <i>Chlorophyll-a Calibration Standard 20ppb / 500mL</i> )	21041
EM-400 Handheld Chlorophyll-a Fluorometer ( <i>0-50ppb</i> )	50508
Pyxis Probe Cleaning Kit ( <i>Contains Accessories and Probe Cleaner / 500mL</i> )	SER-01
MA-WB Bluetooth Adapter ( <i>Pyxis Bluetooth Adapter for 7Pin Pyxis Sensors</i> )	MA-WB
MA-NEB Bluetooth/USB Adapter ( <i>Enables Bluetooth for Desktop and uPyxis APP</i> )	MA-NEB
PowerPACK-1 ( <i>Single Chanel Auxiliary Power Supply w/Bluetooth For Pyxis Sensors</i> )	MA-BLE-1
PowerPACK-4 ( <i>Four Chanel Auxiliary Power Supply w/Bluetooth For Pyxis Sensors</i> )	MA-BLE-4
ST-001 Inline Tee Assembly Spare ( <i>3/4" FNPT Inline Tee Pyxis Probes</i> )	50704
MA-C10 ( <i>10' Extension Cable for 7Pin Pyxis Sensors</i> )	50738
MA-C50 ( <i>50' Extension Cable for 7Pin Pyxis Sensors</i> )	50705

## EM-500 and Inline Tee Assembly Diagram (mm)



## Cleaning and Calibration

Pyxis Lab recommends cleaning and calibrating the EM-500 inline sensors at a minimum frequency of once per month. For clean water applications this period may be increased. For heavily contaminated applications, diagnosis, cleaning and calibration may be considered more frequently. The EM-500 sensor contains internal hardware and algorithms that enable compensation of color and turbidity as well as sensor cleanliness diagnostics. When powered by and connected to the MA-WB (7Pin) or PowerPACK Series Bluetooth Adapter options, the EM-500 sensor can both be wirelessly accessed via Bluetooth from any mobile or desktop device using the **uPyxis APP**. The APP features a live graphical display of the sensors value outputs for Chlorophyll-a as well as a sensor cleanliness check and calibration function. The cleanliness check can be conducted rapidly to determine if a cleaning is required prior to sensor calibration. Once the sensor is properly cleaned it can be re-diagnosed to confirm the cleaning was effective and then calibrated with its Pyxis Calibration Standard (*ie. CHLORO-20*). Contact [service@pyxis-lab.com](mailto:service@pyxis-lab.com) for support.

Instructional videos on this and other Pyxis devices can be found at



<https://www.youtube.com/channel/UC8RqYgnwL-Vzu2TRzraqrUw>

