



## **EM-500 Inline Algae Sensor** *Chlorophyll-A Sensor Platform for Algae Detection*

### **Product Description**

The EM-500 series inline fluorometer sensor (470nm excitation and 675 nm emission) measures the in-vivo Chlorophyll-a concentration of living 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.

### **Features**

- 4-20mA Analog & RS-485 Modbus Digital Outputs
- Wireless Configuration & Calibration via MA-WB Bluetooth® Adapter & the uPyxis app
- Automatic Compensation for Color (as high as 10ppm Iron) & Turbidity (as high as 150NTU)
- Short Fluidic Channel for Simple Maintenance & Easy Cleaning

## Sensor Specifications

Item	EM-500	EM-510
P/N	50501	50502
Chlorophyll-A	0.1–50ppb; ±0.2ppb	0–500ppb; ±1ppb
Power Supply	24VDC; ~1W	
Output	4–20mA Isolated, RS-485 Modbus Isolated	
Connector	IP-67 Waterproof Connector Cable; 1.5m (4.5ft)	
Operation Pressure	Up to 0.7MPa (100psi) at 40 °C (104 °F)	
Installation	ST-001 Tee; 3/4inch NPT Thread & Socket Union PROVIDED	
Storage Temperature	-20–60 °C (-4–140 °F)	
Op. Temperature	0–40 °C (32–104 °F)	
Sample Flow	0–8GPM	
Typical Service Life	2–3 Years	
Housing Material	UPVC	
Dimension (LxD)	172mm (6.8in) x 36.6mm (1.44in)	
Weight	170g (0.37lbs)	
Regulation	CE/RoHS	
Bulk Head Cable	1.5m Bulk Head 7-PIN Cable with Adapter PROVIDED	
Flying Lead Cable	1.5 Flying Lead 7-PIN Cable with Adapter PROVIDED	

## Sensor Cleaning & 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 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.

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Trend Chart Configuration

4mA= 0 ppm

Diagnosis

[1]	0	[2]	25
[3]	1500	[4]	250
[5]	1300	[6]	10
[7]	203	[8]	417
[9]	510	[10]	200
[11]	360	[12]	3799
[13]	1699	[14]	100

Diagnosis Condition

CLEANLINESS CHECK

Click below to purchase your cleaning kit

Pyxis  
Cleaning + Calibrations = Accuracy & Repeatability!  
Find all your Standards, Reagents, & Cleaning Solutions at [www.pyxis-lab.com/shop](http://www.pyxis-lab.com/shop)

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Trend Chart Configuration

[1]	1	[2]	25
[3]	1500	[4]	250
[5]	1300	[6]	10
[7]	203	[8]	417
[9]	510	[10]	200
[11]	77	[12]	3800
[13]	59	[14]	100

Diagnosis Condition

CLEANLINESS CHECK

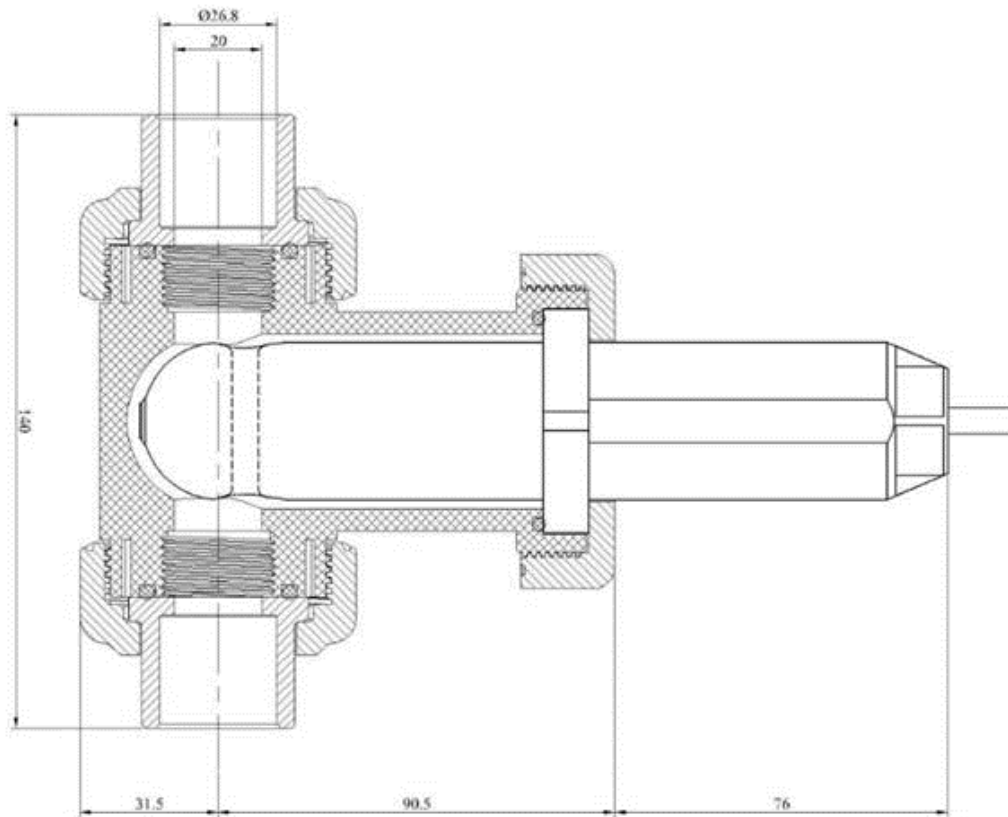
Dirty - Please clean

Probe may be fouled, please clean the probe according to the instruction manual.

Click below to purchase your cleaning kit

Pyxis  
Cleaning + Calibrations = Accuracy & Repeatability!  
Find all your Standards, Reagents, & Cleaning Solutions at [www.pyxis-lab.com/shop](http://www.pyxis-lab.com/shop)

## Sensor Dimensions (mm)



### ***Optional Accessories Information***

CHLORO-10 Calibration Standard Solution

CHLORO-20 Calibration Standard Solution

CHLORO-50 Calibration Standard Solution

EM-400 Chlorophyll-A Handheld Meter

Pyxis Lab Sensor Cleaning Kit

MA-WB 7-PIN Bluetooth® Adapter

MA-NEB USB Bluetooth® Adapter

PowerPACK-1 Single Channel Auxiliary Box with Bluetooth®

PowerPACK-4 Four Channel Auxiliary Box with Bluetooth®

ST-001 Inline Tee Assembly Spare (3/4in)

MA-C10 10' Extension Cable for 7-PIN

MA-C50 50' Extension Cable for 7-PIN

### ***Part Number***

**21066**

**21041**

**21067**

**50508**

**SER-01**

**MA-WB**

**MA-NEB**

**MA-BLE-1**

**MA-BLE-4**

**50704**

**50738**

**50705**