

## ST-525SS-T Series

### Removable Stainless Steel Fluorescein Sensor

For Industrial Boiler & Process Water Applications

#### Product Description

The Pyxis ST-525SS-T series of sensors are a new 304-stainless steel design allowing insertion and removal of the sensor into the Pyxis ST-001 (CPVC) or ST-007 (Stainless Steel) inline tee assemblies. These sensors use temperature-tolerant and humidity-resistant optical filters that can be operated under a wide range of ambient conditions without the need of humidity and temperature regulation. With this design the performance of the ST-525SS-T series can remain stable and consistent for an extended period time.

The Pyxis ST-525SS-T series sensor measures the concentration of fluorescein in water, commonly used as a fluorescent tracer in water treatment applications. This sensor platform is offered in 304-stainless steel body ideally suited for applications of monitoring boiler feedwater or boiler blowdown after being properly cooled to near the ambient temperature. The new design allows for easy sensor removal from the Pyxis inline tee assemblies for sensor diagnostics, cleaning, and calibration without the need for tools. The new sensor design is suited for application pressures as high as 300psi however water sample temperatures must be pre-cooled to at or below 120 °F.

The ST-525SS-T series is offered in 8-pin cable format and should be used with the Pyxis MA-CR Bluetooth/USB adapter for those desiring to use the uPyxis 2.0 Mobile or Desktop App. The 4–20mA current output from the sensor may be connected to any controller that accepts an isolated or non-isolated 4–20mA input. The ST-525SS-T series sensor is a smart device. In addition to measuring fluorescence, the ST-525SS-T series sensor has extra photo-electric components that monitor the color and turbidity of the sample water. This extra feature allows automatic color and turbidity compensation to eliminate interference commonly experienced in real-world applications as well as cleanliness diagnostic data.

The ST-525SS-T series of sensor are offered in two detection range formats. For standard applications such as boiler feedwater, the 0-60ppb range of sensor is recommended. For high range applications such as boiler blowdown, the 0-500ppb sensor labeled as HR is recommended. Both format ranges are easy to calibrate using the uPyxis® 2.0 Mobile or Desktop App. Pyxis Lab calibration standard solutions containing Fluorescein in the range of 10 to 60 ppb for standard range sensors or 250-500ppb for high range sensors can be used for the calibration of the ST-525SS-T series. The calibration standard may also be the water sample itself if the Fluorescein concentration of the sample is measured and validated by a calibrated offline fluorometer. This allows the ST-525SS-T series sensor to be calibrated online without being removed from the system. The uPyxis® 2.0 App also provides diagnostic information about the ST-525SS-T series sensor such as: sensor fouling, color or turbidity over range, failure modes, etc. This diagnostic information can also be available via Modbus RTU. For proper calibration, the ST-525SS-T series sensor should be diagnosed for cleanliness via the uPyxis 2.0 APP, then cleaned using the Pyxis Probe Cleaning Kit (SER-01). Once cleaned, sensor cleanliness should be confirmed via the uPyxis 2.0 APP diagnostics function, then the user may proceed to sensor zero and slope calibration.

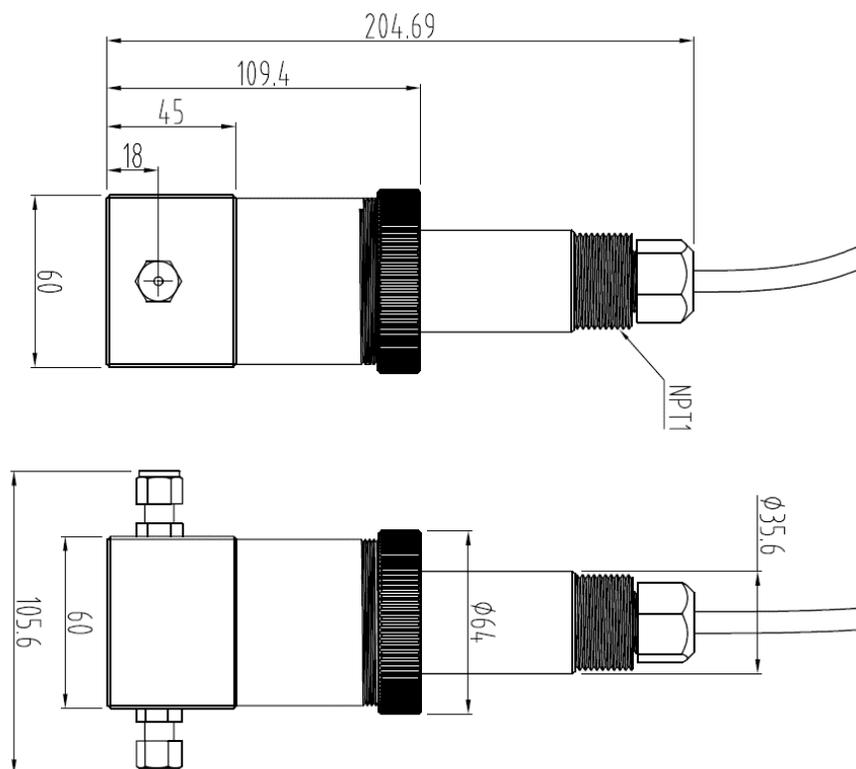


**Contact Us at [order@pyxis-lab.com](mailto:order@pyxis-lab.com) to Learn More...**

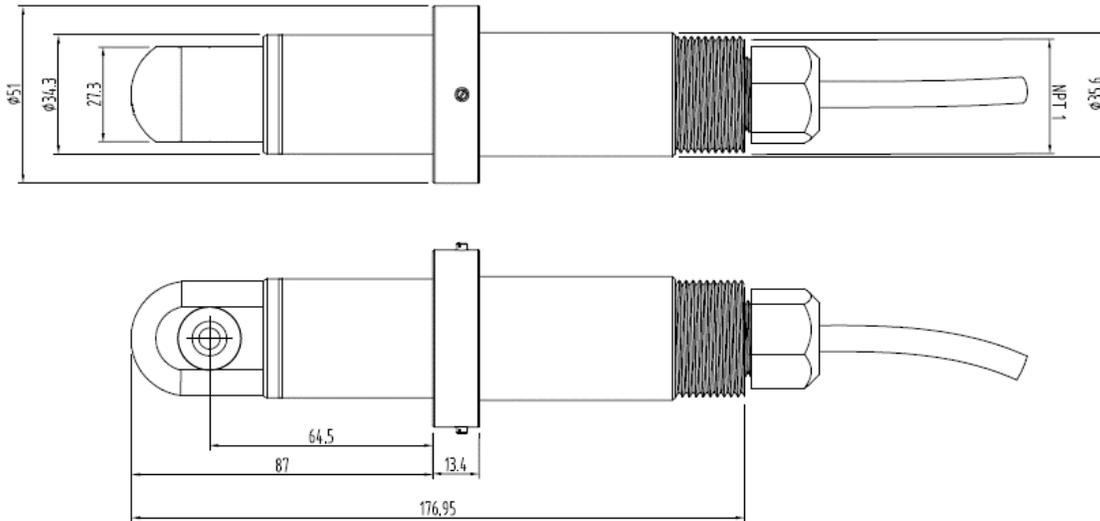
## Sensor Specifications

Item	ST-525SS-T	ST-525SS-HR-T
P/N	56553	53447
Fluorescein Range	0–60ppb (Default Range)	0–500ppb
Fluorescein Resolution	±0.2ppb	±1.0ppb
4-20mA SPAN	20mA SPAN value may be adjusted to less than the max range via uPyxis® app	
Calibration	Two-Point Calibration against DI water and Fluorescein calibration standard solutions	
Power Supply	22–26VDC, Power Consumption ~ 1W	
Outputs	Isolated 4-20mA analog outputs; Isolated RS-485 Modbus digital output (8-Pin)	
Installation	ST-007 Stainless Steel Tee 1/4in OD Compression; ST-001 CPVC Tee 3/4in FNPT (SOLD SEPARATELY)	
Weight	1.1lbs (500g)	
Operation Pressure	290psi (20Bar) with ST-007; 100psi (6.9Bar) with ST-001	
Operation Temp.	4–49 °C (40–120 °F)	
Storage Temp.	-20–60 °C (-4–140 °F)	
Material	304 Stainless Steel	
Rating	IP67, Fully Dustproof & Water	
Regulation	CE/RoHS/UKCA	
Dimensions (LxD)	6.9in (177mm) L, 1.34in (34mm) D	
Cable Length	1.5m 8-Pin Bulkhead with Adapter + 1.5m 8-Pin Flying Lead with Adapter	

## ST-525SS-T and ST-007 Tee System Dimensions



## ST-525SS-T Sensor Dimensions



## Sensor Cleaning & Calibration

Pyxis Lab recommends cleaning and calibrating the ST-525SS-T Series 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 ST-525SS-T Series sensor contains internal hardware and algorithms that enable sensor cleanliness diagnostics. When powered by and connected to the MA-CR (8Pin) or PowerPACK Series Bluetooth® Adapter options, the ST-525SS-T Series 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 Fluorescein 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 appropriate Pyxis Calibration Standard based on the sensor range of measurement. (ie. FLUO-50 / FLUO-250).

Contact [service@pyxis-lab.com](mailto:service@pyxis-lab.com) for support.



uPyxis app interface showing a trend chart and a diagnosis table.

Trend Chart  
4mA= 0

Configuration  
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)

uPyxis app interface showing a diagnosis condition and a cleanliness check button.

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  
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## ***Optional Accessories Information***

## ***Part Number***

ST-007 Inline Stainless Steel Tee Assembly	50700-A51
ST-001 Inline CPVC Tee Assembly	50704
FLUO-20 Calibration Standard	FLUO-20
FLUO-50 Calibration Standard	FLUO-50
FLUO-250 Calibration Standard	FLUO-250
Pyxis Sensor Cleaning Kit	SER-01
MA-CR Bluetooth® Adapter	MA-CR
SP-380 PTSA + Fluorescein Handheld Meter	50208
MA-C10 10' Extension Cable	50738
MA-C50 50' Extension Cable	50705