ST-540 Series

NDSA Inline Fluorometers

For Research Use in Industrial Water Treatment

Description

Many companies in the water treatment industry have expressed a desire to evaluate this unique fluorescent tracer for high pressure boiler water tracing applications. The ST-540 Series are inline fluorometers designed for those desiring to conduct research and development of NDSA traced boiler or process water treatment programs. The ST-540 Series offer direct measurement of NDSA (Napthenic Disulfonic Acid CAS# 1655-29-4) utilizing LED light sources for use in boiler water and boiler feedwater measurement applications.

The ST-540 Series offers Pyxis proprietary algorithms to determine the concentrations of NDSA in a range of 0-500ppb while simultaneously measuring light loss through the optical channel to determine sensor cleanliness. The ST-540 Series offer a combination of 4-20mA as well as RS-485 Modbus output signals and is Bluetooth Enabled for wireless cleanliness diagnostics and calibration when used with MA-WB or PowerPACK Series Bluetooth Adapters and the uPyxis APP for Mobile or Desktop devices. The ST-540 Series is provided in both UPVC and 304 stainless steel for use in a cooling/process water or cooled/pressurized sample (<120°F) of boiler water or boiler feedwater. Each sensor is provided with a 1.5m bulk-head cable with 7-Pin quick adapter and 1.5m flying lead cable with 7-Pin quick adapter, enabling rapid wiring to any microprocessor controller, PLC or DCS system. The MA-WB Bluetooth adapter may be inserted between ST-540 sensor cable and flying lead cable to enable wireless access for use with the uPyxis Mobile or Desktop APPs for diagnosis and calibration.
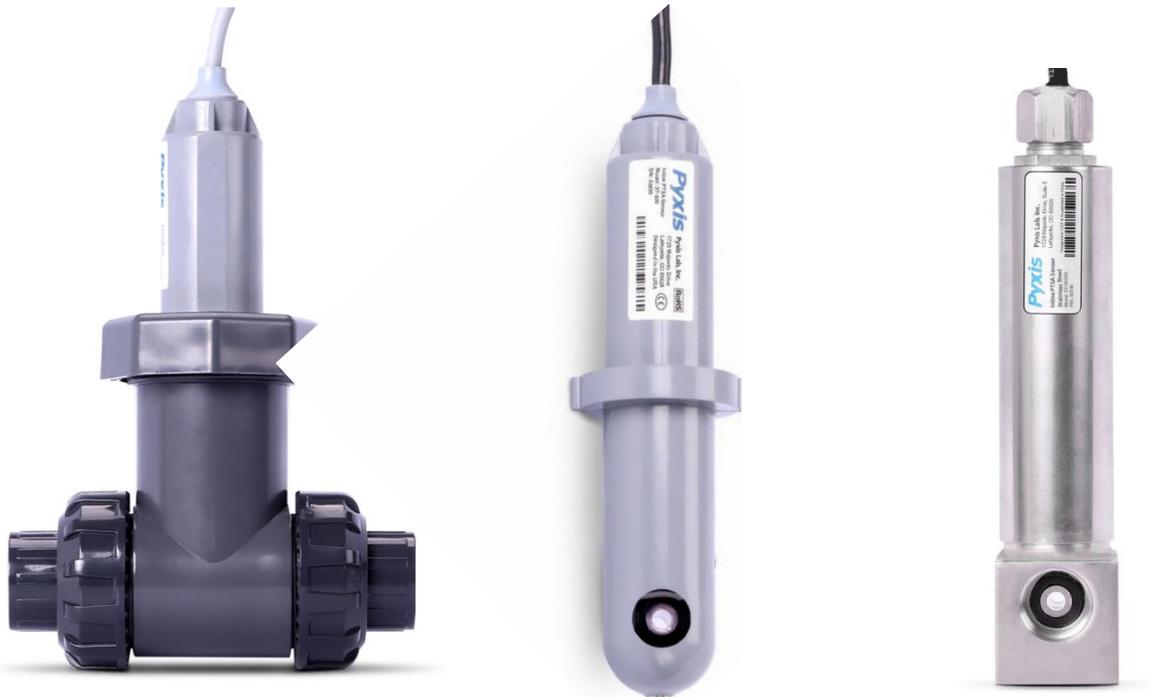

Figure 1 – ST-540A (UPVC) and ST-540SS (304-SS) Inline NDSA Fluorometers

Specifications

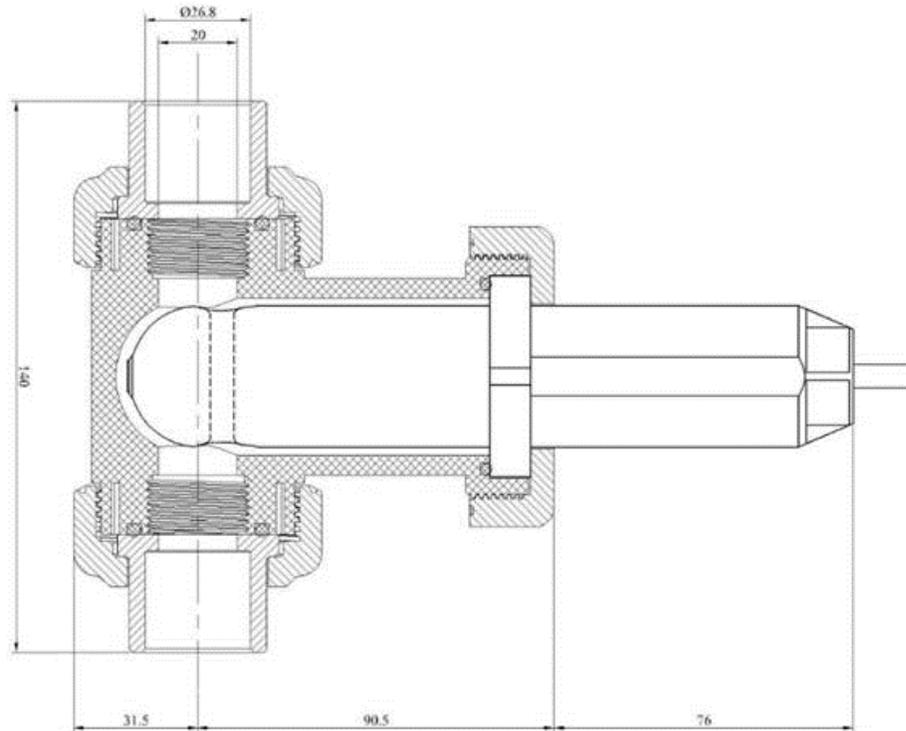| Item	ST-540SS	ST-540SS-N	ST-540A
P/N	50667	50694	50621
Fluorescein Output Scale *4-20mA Default*	0-500ppb	0-20ppb	0-500ppb
4-20mA SPAN *Adjustable via uPyxis*	20mA SPAN Value May Be Adjusted to a lower value if desired via uPyxis APP		
NDSA Resolution	+/- 1.0 ppb	+/- 0.1 ppb	+/- 1.0 ppb
Calibration	Two Point Calibration Against DI Water + NDSA Standard Solution		
Power Supply	12-36VDC, Power Consumption – 1W		
Outputs	Isolated 4 – 20 mA Analog Outputs & Isolated RS-485 Digital Output -7Pin		
Installation	¾" FNPT Threaded Ports		ST-001 Inline Tee Assembly (¾")
Weight	2.5lbs (1,148g)		0.37lbs (170g)
Operational Pressure	290 psi (20 Bar)		100 psi (6.9 Bar)
Operating Temperature	4 °C – 49 °C (40 – 120 °F)		
Storage Temperature	-20 °C – 60 °C (-4 – 140 °F)		
Material	304 Stainless Steel		UPVC
Rating	IP67, Fully Dustproof & Waterproof		
Regulation	CE Marked + RoHS		
Dimension (L x W x H)	Length 6.8 inch (172.7 mm), body diameter 1.44 Inch (36.6 mm)		
Cable Length	1.5meter terminated w/IP67 adapter + 1.5meter flying lead w/IP67 adapters		

NOTE Specifications are subject to change without notice.
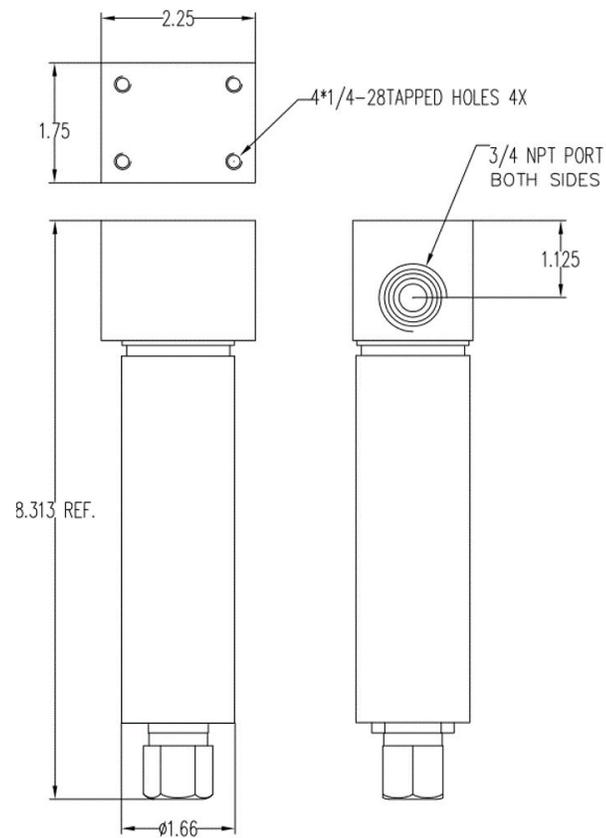
Optional Accessories Information   P/N

ST-001 Inline Tee Assembly Spare *(3/4" FNPT Inline Tee Assembly)*	50704
NDSA-10 *(NDSA Calibration Standard 10ppb / 500mL)*	NDSA-100
NDSA-100 *(NDSA Calibration Standard 100ppb / 500mL)*	NDSA-100
Pyxis Probe Cleaning Kit *(Includes Sensor Cleaner 500mL + Accessories)*	SER-01
MA-WB Bluetooth Adapter *(Pyxis Bluetooth Adapter for 7Pin Pyxis Sensors)*	MA-WB
MA-NEB Bluetooth/USB Adapter *(Enables Bluetooth for Desktop and uPyxis APP)*	MA-NEB
Power*PACK-1 (Single Chanel Auxiliary Power Supply w/Bluetooth For Pyxis Sensors)*	MA-BLE-1
Power*PACK-4 (Four Chanel Auxiliary Power Supply w/Bluetooth For Pyxis Sensors)*	MA-BLE-4
SP-395N Handheld NDSA Analyzer *(NDSA 0-100ppb)*	50226
MA-C10 *(10' Extension Cable for 7Pin Pyxis Sensors)*	50738

ST-540A and Inline Tee Assembly Diagram (mm)

ST-540SS Diagram (in)

Cleaning and Calibration

Pyxis Lab recommends cleaning and calibrating the ST-540 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-540 Series sensors contain internal hardware and algorithms that enable sensor cleanliness diagnostics. When powered by and connected to the MA-WB (7Pin) or PowerPACK Series Bluetooth Adapter options, the ST-540 Series sensors 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 NDSA 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. NDSA-100)*. Contact service@pyxis-lab.com for support.

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

▶ YouTube   https://www.youtube.com/channel/UC8RqYgnwL-Vzu2TRzraqrUw

Calibration and diagnostics made easy with the **uPyxis** APP