LT-SOLID-CAL Series
Solid State Turbidity Calibration Kits

Product Description

Pyxis Lab has developed reusable solid-state turbidity calibration kits for rapid calibration of the Pyxis LT-73X Series inline ultra-low turbidity sensors.   The LT-73X Series ultra-low turbidity sensors are factory calibrated with certified Formazin liquid calibration standards. The LT-SOLID-CAL calibration kit provides a rapid precision calibration check and offers a convenient, alternative method to establish traceability to a certified Formazin standard.

To calibrate a LT-73X series inline sensor using Formazin, a large quantity of calibration solution must be added to the FR-100 flow reservoir.   Perhaps, the most challenging aspect of calibrating an inline sensor is that zero-NTU water is extremely difficult to be prepared outside of a laboratory environment and may be very easily contaminated by particulate or air bubbles. The Pyxis solid-state calibration kits provide a consistent and reproducible method to calibrate Pyxis inline LT-73X series turbidity sensors, overcoming the challenges associated with the liquid standard calibration.

LT-SOLID-CAL

LT-SOLID-CAL Solid State Kit Use Method

The sensor should be removed from process flow, cleaned gently with a soft towel, inserted into the appropriate LT-SOLID-CAL adapter and wirelessly calibrated via the uPyxis Mobile or Desktop APP.   Please refer to LT-73X Series Operation Manual for details.

Turbidity Calibration Principals & Considerations using LT-SOLID-CAL

The standard turbidity values of the solid-state adapters are established in our laboratory by matching with their corresponding certified liquid Formazin standards prior to shipment. If the Pyxis LT-73X sensor is purchased with the solid-state calibration kit, the solid calibration kit can be paired with that sensor and turbidity values of the adapters are traceable to the Formazin standards used for that pairing. At the customer's request during the time of purchase of multiple Pyxis LT-73X sensors Pyxis can pair one LT-SOLID-CAL kit for multiple sensors and generate a cross reference chart of precise and traceable turbidity values for each solid-state adapter with each sensor.

The precision, resolution and the low detection limit are not affected by the calibration method, regardless of using the solid-state or liquid Formazin. The calibration only affects the turbidity sensor accuracy. The nature of turbidity measurement makes an absolute turbidity value not easily obtainable for any sensor manufacturer although proper standards and methods are followed. For example, turbidity values greater than 1.0 NTU measured on real-world samples with different sensors, even from a single manufacturer, could differ significantly. For ultra-low turbidity (less than 0.3 NTU) measurement using the same methods (ISO7027 or EPA 180.1), it is likely that the values from different sensors can agree within 0.05 NTU. As such, the user should choose a calibration method and remain with the same calibration method for consistency. The use of the solid-state calibration is ideal for this situation. For regulatory reporting, especially for ultra-low level of turbidity measurement, it is recommended that the solid-state calibration traceability to the Formazin standards as specified by the regulatory authority be established.

Field Method of Establishing Traceability of LT-SOLID-CAL Using Certified Formazin Liquid Standard

For application where the user has purchased the Pyxis LT-SOLID-CAL kit separately (not with the Pyxis sensor) and they desire precise accuracy with 'traceability' the user can first calibrate the sensor with using certified Formazin standards with the Pyxis **L-CAL** (Portable Liquid Formazin Calibration Kit Sold Separately P/N – 53247) and then measure and record the equivalent turbidity values of the LT-SOLID-CAL solid-state adapters for future calibrations. For applications that do not require precision accuracy the user can simply calibrate the sensor to the original default values marked on the LT-SOLID-CAL solid-state adapters.

*Calibrate the sensor with certified Formazin and the **L-CAL** Kit*　　*Measure & Record Turbidity Reading of each **LT-SOLID-CAL** Adapter for future Calibrations*

LT-SOLID-CAL Specifications

Item	LT-SOLID-CAL 736	LT-SOLID-CAL 736B	LT-SOLID-CAL 737	LT-SOLID-CAL 737B	LT-SOLID-CAL 739	LT-SOLID-CAL 739B
P/N	53229	53239	53227	53237	53228	53238
Sensor Calibrated	LT-736	LT-736B	LT-737	LT-737B	LT-739	LT-739B
# Adapters Included	4		3		3	
Sensor Specific	White Light	InfraRed	White Light	InfraRed	White Light	InfraRed
Turbidities Included (NTU)	0.10 ± 0.05 NTU 8.0 ± 0.8 NTU 25.0 ± 2.5 NTU 600 ± 60 NTU		0.10 ± 0.05 NTU 1.5 ± 0.15 NTU 4.0 ± 0.4 NTU		0.10 ± 0.05 NTU 8.0± 0.8 NTU 25.0 ± 2.5 NTU	

Optional Accessories Information | P/N

L-CAL Kit *(Portable Liquid Formazin Calibration Kit for LT-73X Series Sensors)*	53247
Pyxis Turbidity Calibration Std – 2.0 NTU *(4,000mL)*	57010-2L
Pyxis Turbidity Calibration Std – 5.0 NTU *(4,000mL)*	57010-5L
Pyxis Turbidity Calibration Std – 10.0 NTU *(4,000mL)*	57010-10L
Pyxis Turbidity Calibration Std – 15.0 NTU *(4,000mL)*	57010-15L
Pyxis Turbidity Calibration Std – 30.0 NTU *(4,000mL)*	57010-30L
Pyxis Turbidity Calibration Std – 500 NTU *(4,000mL)*	57010-500L