

FilterTrak 660™ sc LASER NEPHELOMETER

Applications

- Drinking Water
- Power



The Verification Quick Check is a dry method that verifies calibration to below 0.1 NTU (100 mNTU).



EPA-approved method, ultra low-range turbidity measurement.

The Hach FilterTrak 660 sc Laser Nephelometer uses USEPA-approved Hach Method #10133 to monitor turbidity, with sub-micron sensitivity to detect particles smaller than 0.1 μm .

Lowest Limit of Detection in the Market

The Hach FilterTrak 660 sc Laser Nephelometer has the ability to detect a 0.3 mNTU or 0.0003 NTU change in turbidity, providing operators with confidence in their turbidity measurement.

Using advanced laser optics and signal processing, the instrument detects increased concentrations of submicron-sized particles that are a precursor to larger particles. This allows for early filter deterioration detection that meets or exceeds that of particle counters—all with the day-to-day convenience, simplicity, and reliability of a Hach turbidimeter. Operators can detect impending filter breakthrough, delineate filter ripening, and maximize effective filter run time.

Meets All USEPA Filter Monitoring Requirements

The FilterTrak sensor uses U.S. Environmental Protection Agency (USEPA) approved Hach FilterTrak Method #10133, the method specified in the USEPA LT2 draft guidance manual for compliance monitoring of membrane filters. The sensor meets all regulatory requirements for individual filter and combined effluent monitoring.

Monitor, Optimize, and Report

USEPA method compliance means that treatment plants with conventional or membrane filtration can monitor and optimize, as well as report, using this single technology.

Compatible with Hach Multi-Sensor, Multi-Parameter Digital Controllers

The FilterTrak sensor can be used with any of Hach's sc Digital Controllers. Each sc controller accepts from two to eight sensors. Multiple controllers can be networked to accommodate many more sensors and parameters, reducing the cost per measuring point. Just plug in any Hach "plug and play" digital sensor and it's ready to use without software configuration. "Plug and play" connectivity means there's no complicated wiring or set up. The FilterTrak 660 sc Laser Nephelometer controller system now can manage 18 different digital sensors.



Be Right™

Specifications*

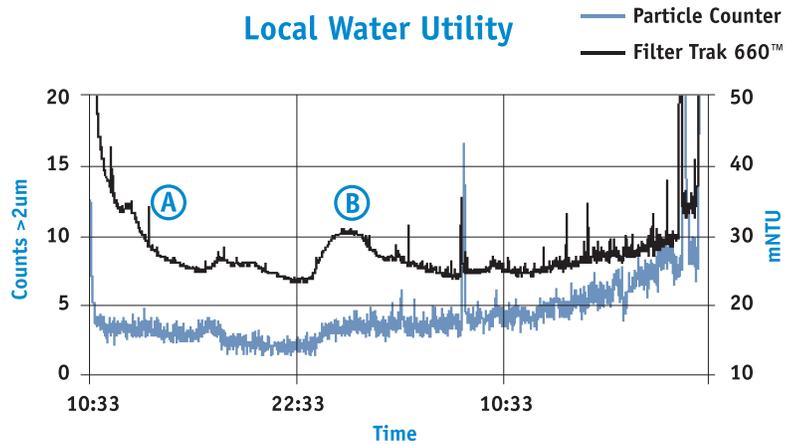
USEPA Method	Designed to comply with USEPA approved method 10133 for regulatory compliance reporting	Sample Flow Rate	100 to 750 mL/min (1.6 to 11.9 gal/hour)
Method of Detection	Nephelometric light scatter at 90 degrees relative to incident monochromatic light beam at 660 nm	Operating Temperature	0 to 40°C (32 to 104°F)
Light Source	Class 1 laser product; with embedded 10 mW, 660 nm, Class 3B laser source (complies with 21 CFR 1040.10 and 1040.11. FDA Laser Accession No. 9911570)	Operating Humidity	5 to 99% non-condensing
Range	0.000 to 5000 milli-Nephelometric Turbidity Units (mNTU) (0 to 5.0 NTU) <i>Note: 1000 mNTU = 1.000 NTU</i>	Sample Temperature	0 to 50°C (32 to 122°F)
Accuracy	(Defined according to ISO 15839) From 0 to 1000 mNTU: ±3% of reading or ±5 mNTU, whichever is greater. From 1000 to 5000 mNTU: ±2% of reading.	Storage Temperature	-20 to 60°C (-4 to 140°F)
Displayed Resolution	0.001 mNTU up to 9.999 mNTU; 0.01 mNTU from 10.00 to 99.99 mNTU; 0.1 mNTU from 100.0 to 999.9 mNTU; 1 mNTU from 1000 to 5000 mNTU	Signal Average Time	User selectable from 0, 6, 30, 60, 90 seconds; default 90 seconds
Repeatability	(Defined according to ISO 15839) Better than ±1.0% of reading at 24 mNTU; ±1.0% of reading at 800 mNTU; and ±1.0% of reading at 5000 mNTU as RSD (or as coefficient of variation)	Power Requirements	10.8 to 13.5 Vdc, 1.5 VA
Lowest Expected Reading	5 mNTU using deionized, reverse osmosis water, based on statistical averages from three instruments	Sensor Cabling	Sensor to controller: 2 m (6.6 ft.) Optional extension cables available in 7.6, 15.2, or 30.5 m (25, 50, or 100 ft.). Maximum total length: 100 m (328 ft.)
Limit of Detection (LOD)	(Defined according to ISO 15839) Less than 0.3 mNTU	Fittings	Sample Inlet: 1/4-inch NPT female, 1/4-inch compression fitting (provided) Drain: 1/2-inch NPT female, 1/2-inch hose barb (provided), clear drain tubing is recommended
Measurement Frequency	One reading per second	Mounting	Wall and floor stand
Verification of Calibration Method	StablCal, stabilized formazin	Dimensions	Nephelometer body and cap 25.4 x 30.5 x 40.6 cm (10 x 12 x 16 in.)
		Shipping Weight	Approximately 7.7 kg (16.9 lbs.)
		Certifications	Safety: Listed by ETL to UL 61010A-1: Certified by ETL to CSA C22.2 No. 1010.1: CE certified by Hach Company to EN 61010-1 Immunity: CE certified by Hach Company to EN61326 (industrial levels) Emissions: Class A: EN 61326, CISPR 11, FCC Part 15, Canadian Interference-Causing Equipment Regulation ICES-003

*Subject to change without notice.

Superior Filter Management

The sensitivity of the FilterTrak 660 sc Laser Nephelometer improves filter management throughout the filter run. The graph shows simultaneous measurements from a FilterTrak nephelometer and a particle counter in a water plant. During the ripening process (A), the FilterTrak nephelometer provided a more revealing profile of actual filter performance. It also recorded a filter event (B) that the particle counter was unable to detect.

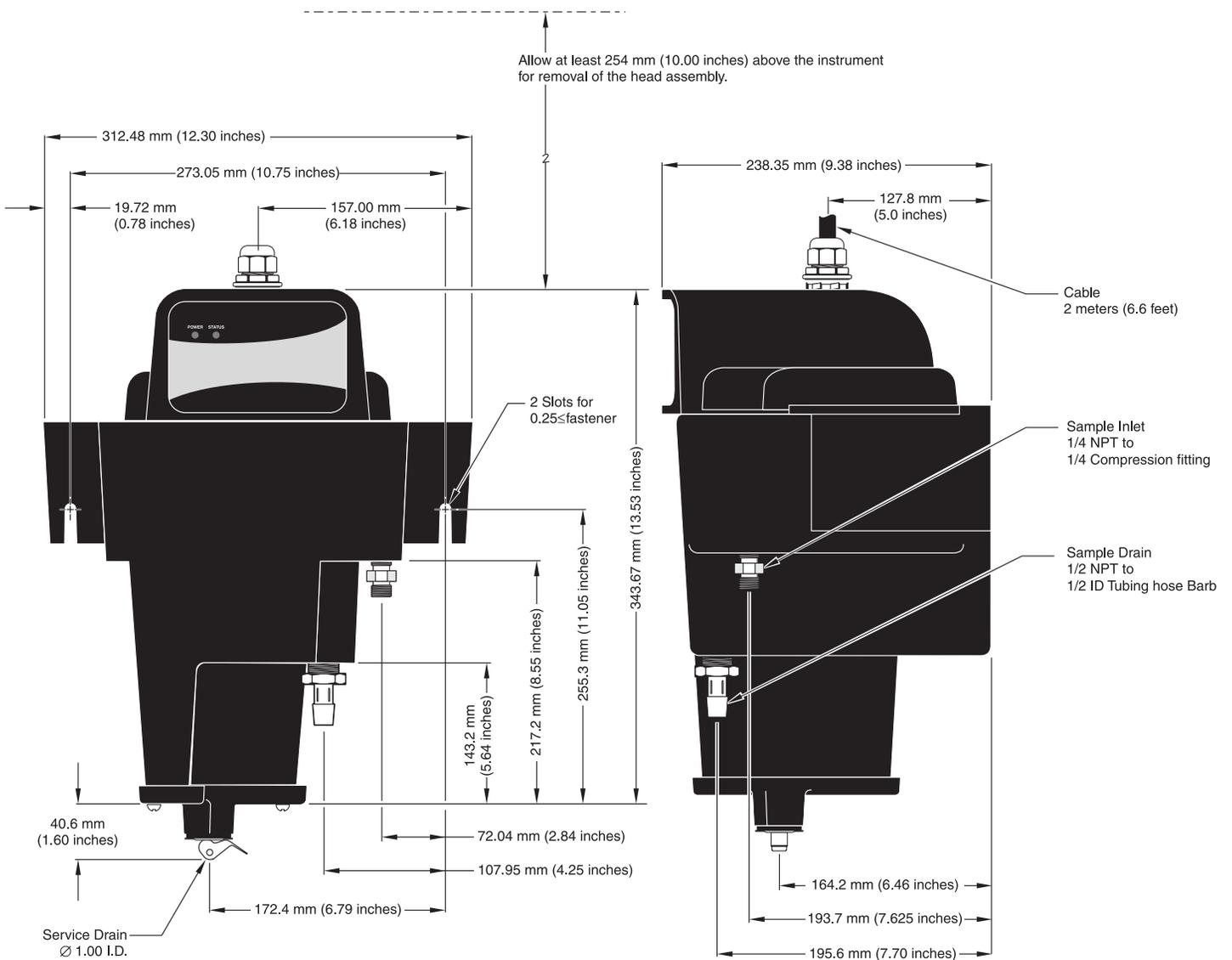
Local Water Utility



The FilterTrak 660 sc is more sensitive than a particle counter with the convenience of a turbidimeter.

Dimensions

The FilterTrak 660 sc Laser Nephelometer includes two slots designed for 1/4-inch fasteners for wall mounting. A 1/4-inch NPT compression fitting is provided for the inlet connection, and a 1/2-inch hose barb is provided for the drain connection. The nephelometer can also be mounted on a floor stand.



Ordering Information

Laser Nephelometer Systems

System with Digital Communication

- 2977000** Sensor assembly with sc200 controller 2-channel
2977100 Sensor assembly with sc200 controller 24 Vdc
2978300 Sensor assembly with sc200 controller 1-channel
2978400 Sensor assembly with sc200 controller 24 Vdc, 1-channel

Network Add-on Sensor

- 6016000** Sensor assembly only

Accessories

- 9218200** SD card reader (USB) for connection to PC
9218100 4 GB SD card

Sensor Extension Cables

To be used only between sensor and sc200 controller.

- 5796000** 7.6 m (25 ft.)
5796100 15.2 m (50 ft.)
5796200 30.5 m (100 ft.)

Standard cable length 10 m (33 ft.) Maximum total length 100 m (328 ft.)

Calibration Materials

- 5236400** Calibration Kit, 1 L; includes calibration body and funnel
2788453 StablCal® Calibration Standard, certified, 800 mNTU, 1 L

Wet Verification Standards

- 2723353** StablCal® Verification Standard, certified, 100 mNTU, 1 L
2697953 StablCal® Verification Standard, certified, 300 mNTU, 1 L
2698053 StablCal® Verification Standard, certified, 500 mNTU, 1 L
2877553 StablCal® Verification Standard, certified, 5000 mNTU, 1 L

Dry Verification Standard

- 6735500** Verification Quick Check, secondary standard

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Hach Company reserves the right to alter specifications to equipment at any time.



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