

# TU5 SERIES TURBIDIMETERS

## Applications

- Drinking Water
- Power
- Beverage
- Pharmaceutical



## The next standard in the evolution of turbidity

Only the new TU5 Series Lab & Process Turbidimeters with 360° x 90° Detection™ deliver unprecedented confidence that a change in your reading is a change in your water.

### Groundbreaking 360° x 90° Detection™ Technology

The TU5 Series employs a patented optical design that sees more of your sample than any other turbidimeter, delivering the best low level precision and sensitivity while minimizing variability from test to test.

### Matching lab and online results

For the first time you will be able to remove the uncertainty of which measurement to trust, thanks to identical 360° x 90° Detection™ Technology in both instruments.

### Everything about turbidity – faster

The TU5 Series dramatically reduces the time needed to get a turbidity measurement you can rely on, with 98% less online sample surface area to clean, sealed vials for calibration, and the elimination of the need for indexing and silicone oil in the lab. Not to mention, a smaller online sample volume means you will detect events almost immediately.

### No surprises

Prognosys™ monitors your TU5 Series online instrument, proactively alerting you to maintenance needs before your measurement becomes questionable. And a Hach Service Agreement protects your investment and helps ensure that you stay in compliance and on budget.



Be Right™

## Technical Data\*

### TU5200

<b>Light Source</b>	Class 2 laser product, with embedded 650 nm (EPA) or 850 nm (ISO), max. 1.0 mW Class 2 laser source (complies with IEC/EN 60825-1 and to 21 CFR 1040.10 in accordance with Laser Notice No. 50)
<b>Range</b>	EPA: 0 to 700 NTU / FNU / TE/F / FTU 0 to 100 mg/L 0 to 175 EBC ISO: 0 to 1000 NTU / FNU / TE/F / FTU 0 to 100 mg/L 0 to 250 EBC
<b>Accuracy</b>	±2 % of reading plus 0.01 NTU from 0 to 40 NTU;  ±10 % of reading from 40 to 1000 NTU based on Formazin primary standard (at 25 °C)
<b>Resolution</b>	0.0001 NTU / FNU / TE/F / FTU / EBC / mg/L
<b>Repeatability</b>	<40 NTU: Better than 1% of reading or ±0.002 NTU on Formazin at 25 °C (77 °F), whichever is greater  >40 NTU: Better than 3.5% of reading on Formazin at 25 °C (77 °F)
<b>Stray Light</b>	<10 mNTU
<b>Units</b>	NTU, FNU, TE/F, FTU, EBC; mg/L if calibrated with Degrees calibration curve
<b>Operating Temperature Range</b>	10 to 40 °C (50 to 104 °F)
<b>Operating Humidity</b>	80% at 30 °C (non condensing)
<b>Sample Temperature</b>	4 to 70 °C (39 to 158 °F)
<b>Storage Conditions</b>	-30 to 60 °C (-22 to 140 °F)
<b>Power Requirements (Voltage)</b>	100 - 240 VAC
<b>Power Requirements (Hz)</b>	50/60 Hz
<b>Certifications</b>	CE compliant US FDA accession number: 1420493-000 EPA version, 1420492-000 ISO version Complies with IEC/EN 60825-1 and to 21 CFR 1040.10 in accordance with Laser Notice No. 50 Australian RCM Marking
<b>Dimensions (H x W x D)</b>	195 mm x 409 mm x 278 mm
<b>Weight</b>	5.29 lbs. (2.4 kg)
<b>Warranty</b>	1 year

### TU5300 sc / TU5400 sc

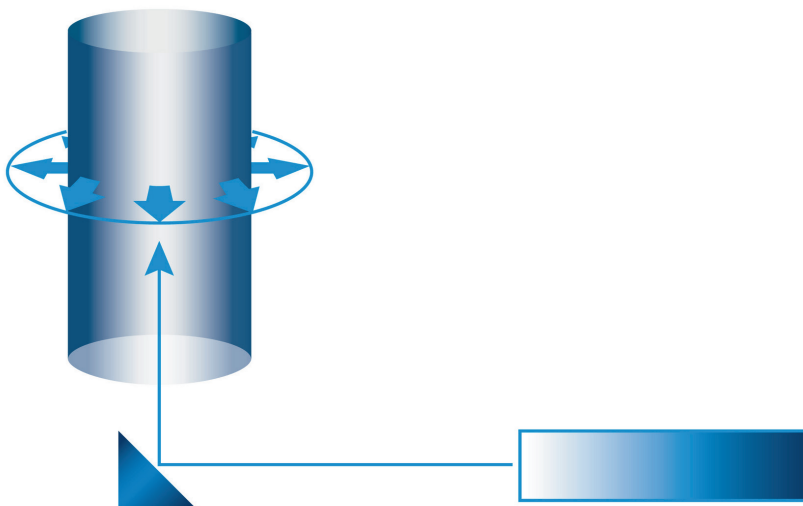
<b>Light Source</b>	Class 2 laser product, with embedded 650 nm (EPA) or 850 nm (ISO), max. 1.0 mW Class 2 laser source (complies with IEC/EN 60825-1 and to 21 CFR 1040.10 in accordance with Laser Notice No. 50)
<b>Range</b>	EPA: 0 to 700 NTU / FNU / TE/F / FTU 0 to 175 EBC ISO: 0 to 1000 NTU / FNU / TE/F / FTU 0 to 250 EBC
<b>Accuracy</b>	±2% of reading plus 0.01 NTU from 0 to 40 NTU  ±10% of reading from 40 to 1000 NTU based on Formazin primary standard
<b>Resolution</b>	0.0001 NTU / FNU / TE/F / FTU / EBC
<b>Repeatability</b>	TU5300 sc: Better than 1% of reading or ±0.002 NTU on Formazin at 25 °C (77 °F), whichever is greater  TU5400 sc: Better than 1% of reading or ±0.0006 NTU on Formazin at 25 °C (77 °F), whichever is greater
<b>Stray Light</b>	<10 mNTU
<b>Units</b>	NTU, FNU, TE/F, FTU, EBC
<b>Signal Average Time</b>	5 to 90 seconds (default: 30 seconds)
<b>Response Time</b>	T90<30 seconds at 100 mL/min
<b>Sample Temperature</b>	2 to 60 °C (35 to 140 °F)
<b>Sample Pressure</b>	6 bar (87 psi) maximum, compared to air at sample temperature range from 2 to 40 °C (35.6 to 104 °F)
<b>Sample Flow Rate</b>	100 to 1000 mL/min; optimal flow rate: 200 to 500 mL/min
<b>Operating Temperature Range</b>	0 to 50 °C (32 to 122 °F)
<b>Operating Humidity</b>	Relative humidity: 5 to 95% at different temperatures, non-condensing
<b>Storage Conditions</b>	-40 to 60 °C (-40 to 140 °F)
<b>Certifications</b>	CE compliant US FDA accession number: 1420493-000 EPA version, 1420492-000 ISO version Complies with IEC/EN 60825-1 and to 21 CFR 1040.10 in accordance with Laser Notice No. 50 Australian RCM Marking
<b>Dimensions (H x W x D)</b>	249 mm x 268 mm x 190 mm
<b>Weight</b>	5.95 lbs. (2.7 kg) (11 lbs. (5.0 kg) with all accessories)
<b>Warranty</b>	1 year

\*Subject to change without notice.

## Principle of Operation

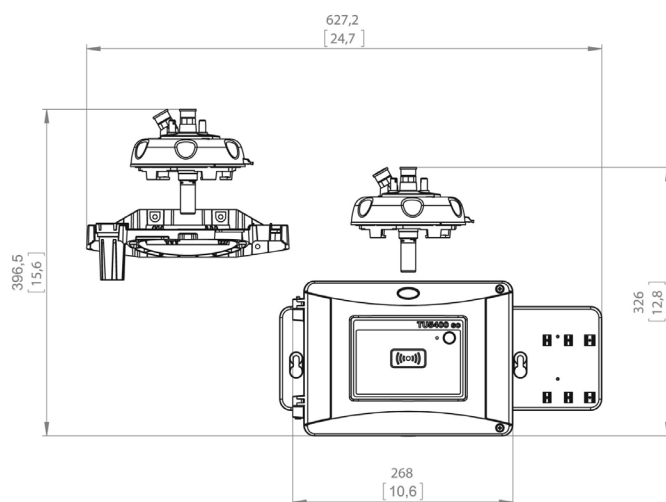
The TU5 Series turbidimeters measure turbidity by directing a laser into a sample to scatter off suspended particles. The light that is scattered at a 90° angle from the incident beam is reflected through a conical mirror in a 360° ring around the sample before it is captured by a detector.

The amount of light scattered is proportional to the turbidity of the sample. If the turbidity of the sample is negligible, little light will be scattered and detected by the photocell and the turbidity reading will be low. High turbidity, on the other hand, will cause a high level of light scattering and result in a high reading.

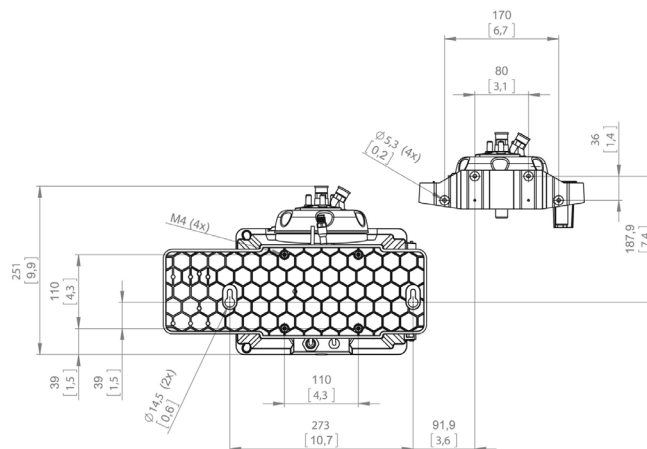


## Dimensions

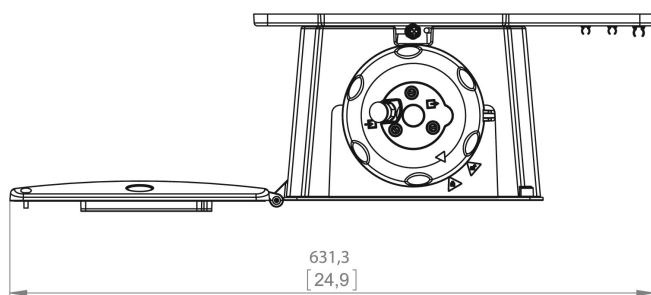
*TU5300 sc and TU5400 sc front view*



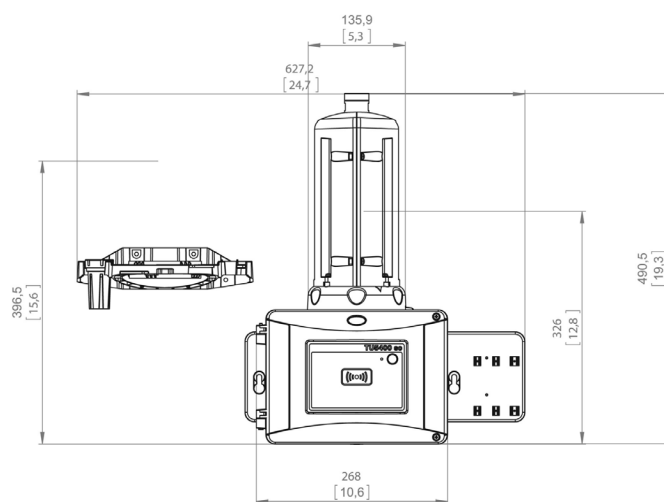
*TU5300 sc and TU5400 sc rear view*



*TU5300 sc and TU5400 sc top view*



*TU5300 sc and TU5400 sc with automatic cleaning module*



## Order Information

### TU5200 Benchtop Laser Turbidimeters

- LPV442.99.01012** TU5200 Benchtop Laser Turbidimeter with System Check, EPA Version
- LPV442.99.03012** TU5200 Benchtop Laser Turbidimeter with System Check and RFID, EPA Version

### TU5300 sc/TU5400 sc Online Laser Turbidimeters

- LXV445.99.10112** TU5300 sc Low Range Laser Turbidimeter, EPA Version
- LXV445.99.10212** TU5400 sc Ultra-High Precision Low Range Laser Turbidimeter, EPA Version
- LXV445.99.53112** TU5300sc with Flow Sensor, Automatic Cleaning, RFID, and System Check, EPA Version
- LXV445.99.53212** TU5400 sc with Flow Sensor, Automatic Cleaning, RFID, and System Check, EPA Version

*Please note: Other turbidimeter configurations are available and RFID may not be available in all areas. Please contact your local Hach representative.*

### Calibration and Verification

- LZY835** Stabcal® Calibration Set with RFID
- LZY898** Stabcal® Calibration Set without RFID
- LZY901** Glass Rod Secondary Turbidity Standard <0.1 NTU/FNU
- LZY834** Replacement Vial for TU5300 sc and TU5400 sc
- LZY946** Sample Vials for TU5200

### TU5 Series Accessories

- LQV159.99.00002** Automatic Cleaning Module for TU5300 sc and TU5400 sc
- LQV160.99.00002** Flow Sensor for TU5300 sc and TU5400 sc
- LZY876** Desiccant Cartridge for TU5300 sc and TU5400 sc
- LZY907.97.00002** Maintenance Kit for TU5300 sc and TU5400 sc
- LQV157.99.40002** SIP10 Sipper Unit for TU5200
- LZY903** Manual Vial Wiper for TU5200, TU5300 sc, and TU5400 sc

### Service Options

#### Start-Up:

Instrument start-up, Basic instrument training to help you learn how to use your instrument from the first day you use it.

#### Service Agreement:

Hach offers a wide range of agreements for bench or field service to help you maximize your measurement reliability and instrument uptime.

*Contact us to learn about what Hach Service option is right for you.*



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*In the interest of improving and updating its equipment, Hach Company reserves the right to alter specifications to equipment at any time.*

