



# MicroTOL ONLINE TURBIDIMETER

Leading edge Microelectronic Technology combined with 30 years of optical measurement expertise has allowed HF Scientific to become the leader in regulatory reporting turbidimeters. The HF MicroTOL On-line Turbidimeter has been specifically designed to meet regulations of the EPA and ISO 7027. Features include fast and easy calibration,

verification in seconds, low maintenance, fail safe design which ensures your instrument is always reading accurately, bubble rejection system, optional autoclean ultrasonic cleaning system, and a data acquisition software system that allows logging and data storage for multiple turbidimeters.

## STANDARD FEATURES:

- **Fast and Easy Calibration:**  
Verification in seconds while a complete primary calibration can be completed in less than 5 minutes. \*(see figure 2)
- **Low Volume Sample Chamber:**  
Low volume sample chamber (30ml) reduces calibration costs and provides quick response times.
- **Low Maintenance Fail Safe Design:**  
Simple Modular Design. Easy to Use & Service.
- **Bubble Rejection System:**  
Eliminates Bubbles without delaying the response time.
- **Affordable:**  
Modular microprocessor based technology ensures high quality at the industry's lowest price.

## OPTIONAL FEATURES:

- **Autoclean:**  
Ultrasonic cleaning allows for the first EPA Accepted Automatic Cleaning OnLine Turbidimeter
- **ONLINE Software:**  
Allows logging, comparisons, graphs and data acquisition for up to 256 online turbidimeters into a PC.
- **RS-485 with Modbus:**  
Digitally connect with high speed Modbus communications
- **Remote Display:**  
Allows remote monitoring up to 500 feet away.

## SPECIFICATIONS

Range:	0 - 1000 NTU
Measurement Principle	Nephelometry (90)
Accuracy:	2% of reading or $\pm 0.020$ Below 40 NTU 5% of reading or $\pm 0.020$ Above 40 NTU
Resolution:	0.0001 Selectable
Response Time:	1 to 20 seconds - 0 to 1000 NTU
Standard Outputs:	4-20 ma Galvanic Isolated or RS-485
RS-485 Protocols:	Modbus, HF Simplebus, HF Online Interface
User Alarms:	2 User selectable high/low Alarms
Light Source:	White Light or Infrared (850nm)
Operating Temperature:	0° - 50°C (32° to 122°F)
Flow Rate:	.026 - .26 gpm (100ml/min - 1000ml/min)
Enclosure:	Nema 4X, IP66
Display:	Multiline Custom LCD (Backlight Option)
Certifications:	USEPA, ISO7027, CE Approved ETL Listed to UL 3111-1 and ETL Certified to CSA 22.2 No. 1010-1-92

## ORDERING INFORMATION

CATALOG NO.	DESCRIPTION
20023	MicroTOL 1, White Light (WL), 0-1000 NTU, 90-250 VAC
20024	MicroTOL 1, Infrared Light (IR), 0-1000 NTU, 90-250 VAC
20053	MicroTOL 2, WL, 0-1000 NTU, Backlight Display, RS-485/Modbus Protocol *Figure 2
20054	MicroTOL 2, IR, 0-1000 NTU, Backlight Display, RS-485/Modbus Protocol
20055	MicroTOL 3, WL, 0-100 NTU, Ultrasonic Auto Clean, Backlight Display, RS-485/Modbus
20056	MicroTOL 3, IR, 0-100 NTU, Ultrasonic Auto Clean, Backlight Display, RS-485/Modbus
20063	MicroTOL 4, WL, 0-1000 NTU, Ultrasonic Auto Clean, Backlight Display, RS-485/Modbus
20064	MicroTOL 4, IR, 0-1000 NTU, Ultrasonic Auto Clean, Backlight Display, RS-485/Modbus

All units delivered fully calibrated and include 4-20ma, desiccant, spare measuring cuvette w/ light shield, power supply and manual

## ACCESSORIES

19783	HF ONLINE Windows™ Software for data collection & reporting
19609	Remote Display for an additional digital readout.
19953	PRIME Primary Calibration Kit, Low Range, 0.02 & 10 & 100 NTU for TOL 3.
19957	PRIME Primary Calibration Kit, Full Range, 0.02, 10, & 1000 NTU
21555R	Desiccant Tray-Refill
19778	Flow Regulator (recommended for pressurized systems)



**UltraSonic Cleaning System**

Keeps the optical chamber clean in finished or raw water applications.

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