

## Turbidimeters, Hach TL23 series



Turbidity measurement to ISO and EPA standards, in the laboratory and in the field. Turbidity is an easily obtainable, meaningful parameter and is firmly established in water analysis, quality assurance and process control. The TL23 series turbidimeters combine practical design with standard compliant measurement technology and are available in four different models: two models with tungsten lamp at 460 nm, and two models with LED light source at 860 nm. These meters offer a wide range of turbidity applications and improved functionality to simplify testing. Features include: a colour touch screen, a USB port for data transfer, self-diagnostics for quality assurance, and single point calibration for measurements under 40 NTU/FNU.



TM/55020

The TL23 Series laboratory turbidimeters blend trusted technology and improved features to simplify testing in the most demanding industrial and wastewater applications.

Common features:

- A repeatability of  $\pm 1\%$  of reading or 0.01 NTU, whichever is greater (under reference conditions)
- 2 USB-A ports for USB flash drive, external printer, keyboard and barcode scanner
- 2000 Total logs, includes reading log, verification log and calibration log
- Accepts round cells 95 x 25mm (3.74 x 1 inch) borosilicate glass with rubber-lined screw caps\*
- Sample requirement: 20ml minimum in the 25mm cell, 0 to 70°C (32 to 158°F)
- CE, KC and RCM certified

\*Note: Smaller sample cells (less than 25mm) can be used with a cell adapter.

### Technical Specifications

Model	TL2300	TL2350	TL2310	TL2360
Air purge	Dry Nitrogen or instrument grade air (ANSI MC 11.1.1975) 0.05L/s at 69kPa (10psig): 138 kPa (20 psig) max For 1/8 inch tubing			
Hose barb connection	For 1/8 inch tubing			
Data logging	2000 total logs, includes reading, verification and calibration logs			
Display	17.8mm colour touch screen			
Interface	2 x USB-A ports for flash drive, external printer, keyboard and barcode scanner			
Light source	Tungsten filament lamp		LED at 860 $\pm$ 30nm	
Measurement method	Nephelometric			
<b>Measuring range:</b>				
NTU (Ratio on)	0 - 4000	0 - 10000	0 - 1000	0 - 10000
	NTU/FNU	auto decimal	NTU/FNU	auto decimal
NTU (Ratio off)	0 - 40	0 - 40	---	0 - 40
EBC (Ratio on)	0 - 980	0 - 2450	---	0 - 2450
		auto decimal		auto decimal
EBC (Ratio off)	0 - 98	0 - 98	---	0 - 98
Absorbance (auto range)	---	0 - 1.0	0 - 1.0	0 - 2.00
Transmittance (%)	---	1.0 - 100	1.0 - 100	1.0 - 100
Degree (mg/L)	---	1 - 100	1 - 100	0 - 100
Operating temperature	0-40°C			
Power requirements	100-240V ac, 50/60Hz, 3.4A			
Reading modes	Manual (TL2360 only) Single, continuous, Rapidly Settling Turbidity, signal averaging on or off, ratio on or off			
Regulatory	Meets EPA Method 180.1		Meets ISO 7027, DIN EN 27027, DIN 38404 and NFT 9033	
Repeatability	$\pm 1\%$ of reading or 0.01 NTU whichever is greater (under reference conditions)			
Response time	Signal averaging off: 6.8 seconds/Signal averaging on: 14 seconds (when 10 measurements are used to calculate the average)			
Sample cell compatibility	Round cells 95 x 25mm (3.74 x 1 inch) borosilicate glass with rubber-lined screw cap **			
Sample requirements	25mm sample cell, 20ml minimum, 0 to 70°C (32 to 158°F)			
Stabilisation time	Ratio on: 30 minutes after start-up, Ratio off: 60 minutes after start-up		Immediately	
Units	NTU and EBC	NTU, EBC, Abs, %T	FNU and NTU	NTU, EBC, Abs, %T
Dimensions (HxWxD)/Weight	153 x 395 x 305mm/3Kg			

\*\* Note: Smaller sample cells (Less than 25mm) can be used with a cell adapter.

Cat. No.	Code	Description
TM/55020	LPV444 99 00210	Turbidimeter model TL2300 EPA, 0 - 4000 NTU with Tungsten lamp
TM/55022	LPV444 99 00310	Turbidimeter model TL2350 EPA, 0 - 10000 NTU with Tungsten lamp
TM/55024	LPV444 99 00120	Turbidimeter model TL2310 ISO 0 - 1000 NTU with LED
TM/55026	LPV444 99 00320	Turbidimeter model TL2360 ISO 0 - 10000 NTU with LED
<b>Accessories</b>		
TM/55016	2084900	Sample cells