Portable Turbidimeters

	EPA Compliant	*ISO Compliant*	
Premium	TN500	TN480	
Basic	TN420	TN400	

ionode
GOOD CHEMISTRY

APERA®
INSTRUMENTS
Fluid Precision since 1991

Portable Turbidimeters Compliant with ISO 7027 Method

- Infrared LED light source, compliant with ISO7027 and DIN EN 27027 Method
- Suitable for colored sample solutions such as wine and beer
- Range: 0 – 1000 NTU, auto. ranging
- TruRead™ mode (TN480 only) compensates errors by particles in solutions

*Complete Kit

Model	Name	Description	Memo
TN500	Portable turbidimeter kit	Refer to technical specs	EPA • Premium
TN420			EPA • Basic
TN480			ISO • Premium
TN400			ISO • Basic
T500-2	0 NTU standard	0.0NTU/100mL	applicable for all
T500-1	Standards kit	20/100/400/800NTU	TN500/TN420
T200-1	Standards kit	20/100/400/800NTU	TN480/TN400
T500-3	Sample cuvettes	Φ25×60 mm,6 units	applicable for all
TN500-5	Replacement lamp	/	TN500/TN420
TN500-4	Lithium battery	3.7V rechargeable	TN500/TN420
TN400-S3	Silicone oil	10mL	applicable for all

Extraordinary accuracy and convenience

Range: 0 – 1000 NTU

Achieve lab-grade accuracy wherever you are, suitable for tap water, drinking water, swimming pools, beverage making, environmental monitoring, etc.

AMCO® Polymer Standard Calibration Solutions

Approved by U.S EPA and ASTM, AMCO® high-molecular polymer turbidity standard solutions are the best alternatives to Formazin standards in terms of shelf-life, ease of use, and safety concerns.

	Formazin solutions	AMCO® polymer solutions
Toxicity	Highly toxic, PPE is necessary when handling	Non-toxic
Operation	Requires diluting, complicated operation.	No diluting needed, use directly
Shelf life	<2 NTU: 1 hour; 2 – 20 NTU: 12 – 24 hours; 20 – 400 NTU: 1 month	1 year
Storage condition	Avoid sunlight at low temperature	Avoid sunlight at room temp.
Convenience	Easy to settle, requires flipping and mixing	Very stable, can be used directly
Traceability	Non-traceable	NIST traceable

***AMCO® Standard Solution Set**

***Sample cuvettes**
(6 units come with the kit)

Portable Turbidimeter
Compliant with EPA 180.1 Method

- Tungsten filament lamp light source, compliant with U.S EPA180.1 method
- Designed for high-accuracy low-turbidity measurement
- Range: 0 – 1000 NTU, auto. ranging

Place the sample cuvette

GLP data management & USB data export

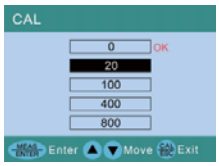
TN500 Premium

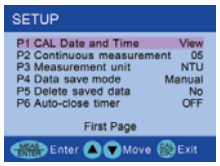
Replaceable lamp

Rechargeable lithium battery

a	b
c	d

a. Measurement mode
b. Calibration mode
c. Calibration setup
d. Settings





TN420 Basic

How do we ensure high accuracy in low-turbidity range?

(Applicable for TN500 and TN480)

TruRead™ Measurement Mode

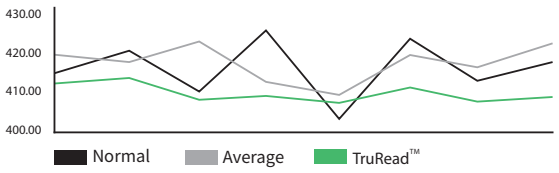
Water turbidity is a complex analytical measurement. The accuracy will be affected by many factors such as precipitation, suspension, air bubbles, stray light, instrument errors, operating techniques, cuvette contamination, and cuvette optical errors.

TruRead™ mode significantly reduces the above measurement errors.

* TruRead™ Mode (10 times)

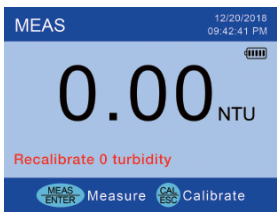
- According to different sample solutions, choose 5/10/15/20 times for continuous measurement and read the average value.
- The max and min values help you determine the reliability of measurement, whether the sample solution is sufficiently mixed, settled, or degased.
- Display or save the complete measurement interface, including MAX, MIN, average, and all measurement values.

Comparison of three measurement modes



0.0 NTU Error Reminder

If the zero point is calibrated with contaminated 0.0 NTU standard solution, the measurement will have a negative error. The instrument can automatically recognize the negative error at the zero point and remind users to re-calibrate, as shown in the right figure. If the reminder appears again after calibration, it means that the 0.0 NTU standard solution is invalid and should be replaced.



*0 NTU error reminder

				
Model	TN500 Premium	TN420 Basic	TN480 Premium	TN400 Basic
Light Source	Tungsten filament lamp, 400~600 nm		Infrared LED, 860±30 nm	
Regulatory	U.S EPA 180.1 Method		ISO7027 and DIN EN 27027 Method	
Certification	CE			
Range	0 – 1000 NTU (FNU), auto. ranging			
Resolution	0.01 NTU (0 – 19.99) / 0.1 NTU (20.0 – 99.9) / 1 NTU (100 – 1000)			
Accuracy	± 2% of reading plus stray light			
Repeatability	±1% of reading or 0.02 NTU, whichever is greater			
Calibration Standards	T500-1 AMCO solution kit / Formazin standard solution 0/20/100/400/800 NTU		T200-1 AMCO solution kit / Formazin standard solution 0/20/100/400/800 NTU	
Detector	Silicon photovoltaic			
Measurement Mode	Normal (push to read), TruRead™	Normal (push to read), Average	Normal (push to read), TruRead™	Normal (push to read), Average
0 NTU error reminder	Yes	N/A	Yes	N/A
Data storage	200 sets	N/A	200 sets	N/A
Data export	USB to PC	N/A	USB to PC	N/A
Calibration record	Date and time	N/A	Date and time	N/A
System language	English, Spanish, Chinese			
Screen	TFT Color Screen			
Sample cuvette	Φ25×60 mm, 18 mL, high borosilicate glass with lid			
Power supply	3.7V rechargeable lithium battery		AA Alkaline battery *4	
Working condition	Temperature：0 – 50°C；Humidity：0 – 90%			
Storage condition	Instrument: -40 – 60°C; Calibration solutions: 5 – 30°C			
Enclosure rating	IP67			
Warranty	2 years			
Dimension & Weight	Instrument：(90×203×80)mm / 385g; Kit：(310×295×110)mm / 1.5 kg			
Includes	Meter, calibration solution*5, sample cuvette*6, microfiber cloth, silicone oil, software flash-drive, USB cable, power adapter, manual, carrying case	Meter, calibration solution*5, sample cuvette*6, microfiber cloth, silicone oil, power adapter, charging cable, manual, carrying case	Meter, calibration solution*5, sample cuvette*6, microfiber cloth, silicone oil, software flash-drive, USB cable, manual, carrying case	Meter, calibration solution*5, sample cuvette*6, microfiber cloth, silicone oil, manual, carrying case

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