



# FOOD & BEVERAGE SAFETY

**TESTING PRODUCTS**





## Colorimetric

There are two basic types of colorimetric tests:

1. Tests which determine the concentration of a substance are based on Beer's Law. Simply stated, this says that the higher the concentration of a substance, the darker the color developed in the test, so more light is absorbed by the sample.
2. pH tests use an indicator which changes color with changes in the concentration of hydrogen ions, or the acidity of the solution.

### Octa-Slide 2 Comparator

The eight color standards in the Octa-Slide 2 can be viewed at once against a precision matched color bar top-loaded next to the sample tube.

### LRC Comparator

This innovative design replaces the Axial Reader with a far more simplistic and significantly improved optical system. Simply place one reacted sample in the front and one unreacted sample behind it and let the light shine down into both tubes. Precision matched glass ampoules are in the slide bar so even the most sensitive low range colors can be matched one-on-one with extraordinary ease and confidence.

### Test Strips

Test strips are either dipped or swirled in test solutions. The resulting color reaction is compared to a color chart provided.

### Color Chart Comparator

Color charts are laminated color standards. The reacted sample is held against the panel and compared to the color standards.



Test Strips

LRC Comparator

Octa-Slide

## Electronic Methods

Electronic colorimeters measure the amount of light which travels through the reacted sample, and convert the measurement to a reading as ppm, absorbance or %T. In addition to colorimeters, LaMotte offers instruments to test pH, TDS/conductivity, dissolved oxygen, and turbidity. More information regarding the ColorQ 2x meter located on the back cover.



ColorQ 2X Colorimeter

## Titrimetric

Titrimetric tests can be used to determine the concentration of a substance in a sample solution. After the sample is treated with an indicator, a standard titrant is added until a color change indicates a completed reaction. LaMotte offers four separate types of titration methods, allowing a choice of precision and convenience.

### Direct Reading Titrator

The Direct Reading Titrator is a 1.0 mL microburet calibrated to allow direct reading of the test result. Each Titrator has a specific range, but may be refilled to test higher concentrations.

### Dropper Pipet

The drop count test uses a pipet to provide fast, reliable measurements in the field. The number of drops used to obtain a color change is multiplied by a given factor to produce the test result.



### Automatic Buret

The self-zeroing automatic buret is calibrated from 0 to 10 mL in 0.1 mL increments. It is available with a squeeze valve (pinchcock), glass stopcock, or Teflon® stopcock.

### Dropper Bottle

The dropper bottle test uses bottle tips which deliver a consistent standard drop size to add titrant to the sample. As with the drop count test, the number of drops used to complete the reaction is multiplied by a given equivalence factor to determine the concentration. Many dropper bottle tests use different sample sizes for different equivalences.



LaMotte offers a convenient, economical way to perform spot checks for several water quality factors. LaMotte test strips are a great way to monitor water without having to use reagents or field kits.



## Single Factor Test Strips

Test Factor	Code	Range [ppm]	# of Tests Per Vial	Values [ppm]
Chlorine Dioxide	2999LR	0-10	50	0, 0.25, 0.5, 1, 3, 10
Chlorine Dioxide	3002	0-500	50	0, 10, 25, 50, 100, 250, 500
Chlorine, Free, Low Range	2964-G	0-10	25	0, 0.25, 0.5, 1, 3, 5, 10
Chlorine, Total, Low Range	2963LR-G	0-10	25	0, 0.25, 0.5, 1, 3, 10
Chlorine, Free, High Range*	3031	0-800	50	0, 50, 100, 250, 500, 800
Chlorine, Total	2979	0-5	50	0, 0.5, 1, 3, 5
Hardness, Low Range	2981	0-180	50	0, 30, 60, 120, 180
pH, Wide Range	2974	4-10 (pH)	50	4, 5, 6, 7, 8, 9, 10
Peracetic Acid, Low Range	3000LR	0-50	50	0, 5, 10, 20, 30, 50
Peracetic Acid	3000	0-160	50	0, 10, 20, 50, 85, 160
Peracetic Acid, High Range	3000HR	0-1,000	50	0, 50, 100, 250, 500, 1000
Hydrogen Peroxide	2984LR	0-50	25	0, 1, 3, 10, 30, 50
Hydrogen Peroxide, High Range	2984	0-90	25	0, 15, 30, 50, 90
QAC, Dual Range	2934	0-80, 0-800	50	0, 10, 20, 40, 80; 0, 100, 200, 400, 800

\*See also chlorine test papers below.

## Multi-Factor Test Strips

Test Factor	Code	Range [ppm]	# of Tests Per Factor/Per Vial	Values [ppm]
Iron & Copper	2994	0-5 (Iron)	25	0, 0.3, 0.5, 1, 3, 5
		0-3 (Copper)	25	0, 0.3, 0.6, 1, 3
Wide Range pH & Total Chlorine	2987-G	4-10 (pH)	25	4, 5, 6, 7, 8, 9, 10
		0-50 (TCl)	25	0, 1, 5, 10, 20, 50
Nitrate & Nitrite	2996	0-50 (Nitrate)	50	0, 5, 10, 25, 50 (NO <sub>3</sub> -N)
		0-10 (Nitrite)	50	0, 0.5, 1, 5, 10 (NO <sub>2</sub> -N)

## Sanitizer Test Papers

The chlorine and iodine test papers are chemically treated paper strips. These are packaged with a color chart in a waterproof plastic vial. Codes 2951 and 2951HR are test strips. They are also packaged with a color chart in a waterproof plastic vial. The QAC strips are specifically formulated to read all types of QAC.

Test Factor	Code	Range [ppm]	# of Tests Per Vial	Values [ppm]
Chlorine	4250-BJ	10-200 ppm	200	10, 50, 100, 200
Iodine	2948-BJ	12-100 ppm	200	12, 25, 50, 100
QAC	2951	50-400 ppm	100	50, 100, 200, 400
QAC	3072-J	0-500 ppm	100	0, 100, 200, 300, 400, 500
QAC, High Range	2951HR	200-1500 ppm	50	200, 400, 600, 1000, 1500





# LaMotte Individual Test Kits

## Shipping Codes & Weights

Shipping codes and weights for shipping are included in this catalog for your convenience. The shipping code will refer to one of the following in this chart. Weight will be in pounds and enclosed in [ ].

Shipping Code	Description
NH	Non Hazardous, No Fees
HF	Hazardous Materials, Air & Ground Fees
R1	Small Quantity Hazardous Materials, No Fees
R2, R3, & LQ	Hazardous Materials, Air Fees Only



4491-DR-01

Order Code	Test System	Range/Sensitivity	# of Tests [ # Reagents]	Prop 65	Shipping Code (Weight/Lbs)
<b>ACIDITY</b> Some cleaning processes require acidic products. To determine the strength of the acid, titrate the sample with a standard alkali.					
7182-01	HCl, H <sub>2</sub> SO <sub>4</sub> , H <sub>3</sub> PO <sub>4</sub> Dropper Bottle	1 drop = 0.1 or 1.0% (as the particular acid)	50 at 10% [2]	B	R1 [1]
<b>ALKALINITY</b> Alkalinity plays an important part in process waters used in foods and beverages. The three primary forms are hydroxyl, carbonate and bicarbonate. Titration with a standard acid to the phenolphthalein (P) endpoint determines all of the hydroxyl and ½ of the carbonate alkalinity. Titration to the total (T) alkalinity endpoint determines the other half of the carbonate and all of the bicarbonate. P alkalinity is sometimes called active alkalinity. Inactive alkalinity is calculated by the difference in the P and T determinations. The 7515 kit contains barium to eliminate carbonate and allow direct titration of OH alkalinity.					
7240-02	P & T Alkalinity Dropper Bottle	1 drop = 10, 25, or 50 ppm as CaCO <sub>3</sub>	100 at 500 ppm [3]	B	R1 [2]
4491-DR-01	Total Alkalinity Direct Reading Titrator	0-200 ppm/4ppm as CaCO <sub>3</sub>	50 at 200 ppm [2]		NH [1]
4533-DR-01	P & T Alkalinity Direct Reading Titrator	0-200 ppm/4 ppm as CaCO <sub>3</sub>	50 at 200 ppm [3]	C	NH [1]
<b>CAUSTIC</b> Caustic soda, NaOH, is used for cleaning equipment in the food, beverage and other process areas. In some cases caustic is reported as Na <sub>2</sub> O. Percent caustic concentrations are determined by titration with a standard acid. The 8225 kit uses a single reagent that combines the indicator and titrant. The 8226 is for chlorinated cleaners.					
7516-DR-02	Direct Reading Titrator	0-10%/0.2% NaOH	50 at 10% [4]		R1 [1]
8225-01	Dropper Pipet	1 drop = 0.25% NaOH, 1 drop = 0.01% Na <sub>2</sub> O	50 [1]		R2 [2]
7181-01	Dropper Bottle	1 drop = 0.1 or 1% NaOH	50 at 10% [3]		R1 [1]
8226-01	Dropper Pipet	1 drop = 0.01% NaOH	50 [3]	C	R2 [2]
<b>CHLORIDE</b> High chloride concentrations may affect the taste of foods and beverages and can increase corrosion of metal parts. An argentometric titration using silver nitrate is used to determine concentrations.					
7172-02	Dropper Bottle	1 drop = 10, 25, or 50 ppm Cl-	120 at 100 ppm [5]		R1 [2]
7459-02	Salinity Direct Reading Titrator	0-20 ppt/0.4 ppt Salinity	50 at 20 ppt [2]		NH [1]
<b>CHLORINE</b> Chlorine is a sanitizer for many applications. Several different methods are available to determine chlorine, depending on the concentration. DPD is usually used for concentrations from 0-10 ppm; the FAS-DPD test can titrate higher concentrations by adding more DPD and refilling the titrator. Test strips or papers can read as high as 800 ppm. The iodometric titration is used for higher ppm and % concentrations (see also the 1200 Colorimeter and Tracer, pp. 9 and 15).					
<b>DPD KITS</b>					
3308-01*	DPD Tablet Octa-Slide	0.2, 0.4, 0.6, 0.8, 1.0, 1.5, 2.0, 3.0 ppm Cl	50 [2]		NH [1]
3328-01	DPD Tablet Octa-Slide	1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 8.0, 10.0 ppm Cl	50 [2]		NH [1]
3624-01	Chlorine or Bromine Direct Reading Titrator	0-10 ppm/0.2 ppm Cl or Br 0-100 ppm/2 ppm Cl or Br	50 at 10 ppm [3]		NH [1]
7514-01	FAS-DPD Dropper Bottle Titration	1 drop = 0.2 or 0.5 ppm Cl	50 [3]		NH [1]

\*[NPDWR] EPA Accepted. Prop 65: C: ⚠️ **WARNING** Cancer - [www.P65Warnings.ca.gov/product](http://www.P65Warnings.ca.gov/product); B: ⚠️ **WARNING** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov/product](http://www.P65Warnings.ca.gov/product)



# LaMotte Individual Test Kits



Order Code	Test System	Range/Sensitivity	# of Tests [ # Reagents]	Prop 65	Shipping Code (Weight/Lbs)
<b>IODOMETRIC KITS</b>					
4497-01	Dropper Pipet	1 drop = 10 ppm Cl	50 at 200 ppm [3]	C	R2 [1]
4497-DR-01	Direct Reading Titrator	0-200 ppm/4 ppm Cl	50 at 200 ppm [3]	C	R2 [1]
4501-01	Dropper Pipet	1 drop = 1 ppm Cl	50 [3]	C	R2 [1]
7105-03	Direct Reading Titrator	0-10%/0.2% Cl	50 at 10% [3]		R1 [2]
7894-01	Dropper Pipet	1 drop = 0.005%, 0.05%, or 0.5% Cl	50 at 0.1, 1.0, or 10% [3]		R1 [1]
<b>CHLORINE DIOXIDE</b> Chlorine dioxide is used in sanitizing food and beverage equipment and in some drinking water applications. There are 2 ranges of test strips available. Chlorite up to 1,000 ppm and chlorine up to 2 ppm will not interfere with the strip determinations. The field kit and meter use the DPD method. Glycine is added in this method to eliminate chlorine interference. (see also the DC-1500 colorimeter, p. 9 and test strips, p. 3)					
2999LR	Test Strip	0, 0.25, 0.50, 1.0, 3.0, 10 ppm	50		NH [1]
3002	Test Strip	0, 10, 25, 50, 100, 250, 500 ppm	50		NH [1]
<b>DETERGENTS</b> Detergents are surfactants that are used in cleaners to break up dirt and grease. Anionic detergents (ABS) are tested using a modification of the methylene blue method.					
4507-02	Dropper Pipet	1 drop = 1.0 ppm Detergent	60 at 5.0 ppm [3]	B	R1 [2]
<b>HARDNESS</b> Calcium and magnesium are the primary components of hardness. They interfere with soap/suds formation and can leave undesirable deposits on surfaces. EDTA titration of hardness is the commonly used method.					
7171-02	Total Hardness Dropper Bottle	1 drop = 10, 25, or 50 ppm CaCO <sub>3</sub>	100 [3]	R	R1 [1]
7246-02	Total Hardness Dropper Bottle	1 drop = 2, 5, or 10 ppm CaCO <sub>3</sub>	100 [3]	R	R1 [1]
4824-LT-02	Calcium, Magnesium, Total Hardness Tablet indicator Dropper Bottle	1 drop = 10 ppm or 1 gpg CaCO <sub>3</sub>	50 at 200 ppm or 20 gpg [5]		R1 [1]
<b>HYDROGEN PEROXIDE</b> Various concentrations of hydrogen peroxide are used as oxidizers and bleaching agents in water systems. Iodometric titration is used for ppm and % determinations.					
7138-DB-01	Iodometric Dropper Bottle	1 drop = 5 ppm H <sub>2</sub> O <sub>2</sub>	50 [4]		HF [2]
7150-01	Iodometric Dropper Bottle	1 drop = 0.5% H <sub>2</sub> O <sub>2</sub>	50 [4]		HF [2]
2984	Test Strips	0, 15, 30, 50, 90 ppm	25 [1]		NH [1]
2984LR	Test Strips	0, 1, 3, 10, 30, 50 ppm	50 [1]		NH [1]
<b>IODINE</b> Iodine is a sanitizer used in food/beverage and warewash processes. Health Departments usually require a concentration of 12.5-25 ppm for warewash. As with many other oxidizers, iodine may be titrated with a standard thiosulfate solution.					
2948-BJ	Test Papers	12, 25, 50, 100 ppm I <sub>2</sub>	200		NH [1]
7253-DR-01	Direct Reading Titrator	0-50 ppm/1 ppm I <sub>2</sub>	50 at 50 ppm [3]	C	R1 [1]
7253-01	Dropper Pipet	1 drop = 2.5 ppm I <sub>2</sub>	100 at 25 ppm [3]	C	R1 [1]

\*[NPDWR] EPA Accepted. Prop 65: C: **WARNING** Cancer - [www.P65Warnings.ca.gov/product](http://www.P65Warnings.ca.gov/product); R: **WARNING** Reproductive Harm - [www.P65Warnings.ca.gov/product](http://www.P65Warnings.ca.gov/product);  
B: **WARNING** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov/product](http://www.P65Warnings.ca.gov/product)

See next page for more Individual Test Kits...

# LaMotte Individual Test Kits

Order Code	Test System	Range/Sensitivity	# of Tests [# Reagents]	Prop 65	Shipping Code [Weight/Lbs]
<b>IRON</b> Iron is present in many natural waters and can impart a foul taste in beverages. The bipyridal method is used for analysis of total iron. A modification of this test can distinguish ferrous and ferric iron. [See p. 9 for the colorimeter version.]					
4447-01	Total Iron Octa-Slide	0.5, 1.0, 2.0, 3.0, 4.0, 6.0, 8.0, 10.0 ppm Fe	90 [2]		R1 [1]
3347-01	Ferrous/Ferric Iron Octa-Slide	0.5, 1.0, 2.0, 3.0, 4.0, 6.0, 8.0, 10.0 ppm Fe	100 [3]	C	R1 [1]
<b>NITRATE</b> Nitrate can be present in natural waters. The EPA limit on nitrate is 10 ppm as -N, 44 ppm as -NO <sub>3</sub> . The method employs zinc to reduce the nitrate to nitrite, which is then reacted to form a pink color.					
3354-01	Zinc Reduction Octa-Slide	0, 1, 2, 4, 6, 8, 10, 15 ppm NO <sub>3</sub> <sup>-</sup> -N	50 [2]		NH [2]
2996	Test Strips	0, 5, 10, 25, 50 ppm NO <sub>3</sub> <sup>-</sup> 0, 0.5, 1, 5, 10 ppm NO <sub>2</sub> <sup>-</sup> -N	50 [1]		NH [1]
<b>OZONE</b> Ozone is a strong oxidizer used in some food/beverage operations. DPD can be used to test solutions that contain only ozone. However, if chlorine is also present, the indigo trisulfonate colorimeter must be used.					
3249 DC1500-OZ	Indigo Trisulfonate Colorimeter	0-0.4 ppm/0.04 ppm O <sub>3</sub>	100 [3]		NH [7]
<b>PERACETIC ACID/HYDROGEN PEROXIDE</b> This chemical combination is used to sanitize where the use of other sanitizers is not appropriate. The titration kit uses a ceric titration of the peroxide followed by an iodometric titration of the peracetic acid. One may also test the peracetic acid only. The kit allows the use of 3 samples sizes to give a 1 drop = 6, 15 or 300 ppm peracetic acid equivalence. There are also 2 test strips available.					
7191-02	Dropper Bottle	1 drop = 50 ppm Peroxide 1 drop = 6, 15 or 300 ppm Peracetic Acid	50 [5]		R1 [2]
3000	Test Strips	0, 10, 20, 40, 60, 85, 160 ppm	50		NH [1]
3000LR	Test Strips	0, 5, 10, 20, 30, 50 ppm	50		NH [1]
3000HR	Test Strips	0, 50, 100, 250, 500, 1000	50		NH [1]
<b>pH</b> One of the most common analyses, pH must be controlled and monitored because it plays an essential role in almost all chemical and biological processes. Field kits using pH indicators and pH test strips are below. See pp. 11-12 for pH meters.					
2109-01	Bromthymol Blue	6.0-7.4 pH			NH [1]
2110-01	Phenol Red	6.8-8.2 pH			NH [1]
2111-01	Cresol Red	7.2-8.6 pH			NH [1]
2112-01	Thymol Blue	8.0-9.4 pH			NH [1]
5858-01	Precision Wide Range	3.0-6.5 pH, 7.0-10.5 pH		B	R1 [1]
<b>pH TEST PAPERS</b>					
2912	Test Papers	3.0-10.0 pH/1 pH	200 Strips		NH [1]
2953	Test Papers	4.5-7.5 pH/0.5 pH	1 Roll		NH [1]
2954	Test Papers	0-13 pH/1 pH	1 Roll		NH [1]
2956	Test Papers	1-11 pH/1 pH	1 Roll		NH [1]
3-2950	pH Indicator Sticks	0-14/1 pH	100 Strips		NH [1]
2974	pH Wide Range	4-10 pH/1 pH	50 Strips		NH [1]
<b>POLYQUAT</b> Polyquats are used as biocides to clean contact surfaces. A polyelectrolytic titration is used to determine the concentration.					
7056-01	Dropper Bottle	1 drop = 1 ppm Polyquat	100+ [5]	B	R1 [1]
<b>QUATERNARY AMMONIUM COMPOUNDS</b> These biocides are also referred to as Quats or QAC. They are used to clean food processing implements and contact surfaces. Test papers or a tetraphenylboron titration may be used for high concentrations. A variable equivalence titration may be used for all concentrations.					
7057-01	Polyelectrolytic Dropper Bottle	1 drop = 2, 5, or 10 ppm Alkyl dimethyl benzyl ammonium chloride	100+ [5]	B	R1 [2]
3043-DR-01	BPB Direct Reading Titrator	0-500 ppm/10 ppm Alkyl dimethyl benzyl ammonium chloride	50 at 500 ppm [2]		NH [1]
3042-01	BPB Direct Reading Titrator	0-1,000 ppm/20 ppm 0-5,000 ppm/100 ppm with dilution	50 at 1,000 ppm [2]		NH [1]
2951	Test Papers	50, 100, 200, 400 ppm	100		NH [1]
2951HR	Test Papers	200, 400, 600, 1000, 1500 ppm	50		NH [1]
2934	Test Strips	LR: 0, 10, 20, 40, 180 HR: 0, 100, 200, 400, 800	50		NH [1]

\*(NPDWR) EPA Accepted. Prop 65: C:  **WARNING** Cancer - [www.P65Warnings.ca.gov/product](http://www.P65Warnings.ca.gov/product); B:  **WARNING** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov/product](http://www.P65Warnings.ca.gov/product)



## Coliform Screening Kit

Order Code 4-3616

The 4-3616 is an easy-to-use, disposable 5-tube method to indicate the presence of Total Coliform Bacteria in a water supply. The water sample is placed in test vials containing the special coliform indicating tablets and stored at room temperature for a predetermined time period. After the required storage period, the vials are examined to determine the presence of coliform bacteria.



**POSITIVE TEST**      **NEGATIVE TEST**



## Total Coliform & *E. coli* Bacteria Test Kit

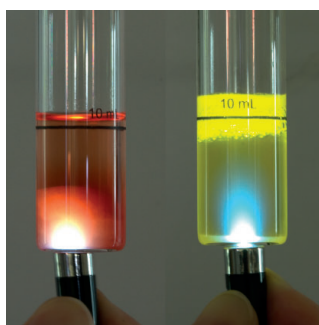
Order Code 4-3616-UV

A simple **5-tube** method to indicate the presence or absence of Total Coliform & *E. coli* Bacteria in drinking water. *E. coli* produces fluorescent compound.

- Presumptive test for Total Coliform & *E. coli* Bacteria
- NO incubation equipment required
- Results in 44-48 hours at room temperature (70° - 85°F) or 24-hours at 110°F
- UV light source included (365 nm)
- Portable, no accessory labware required
- Ideal test for well water and coliform breakthrough in distribution systems
- Independent laboratory tested [results available upon request]



Order Code	Test System	Range/Sensitivity	# of Tests [# of Reagents]	Shipping Code [Wgt./lbs]
4-3616	Tableted nutrient based	Presence/Absence	1 [1]	NH [1]
4-3616-UV	Tableted nutrient based	Presence/Absence	1 [1]	NH [1]



**UV**  
LIGHT SOURCE  
INCLUDED!

LaMotte offers a number of instruments to test process water, wastewater and sanitizers. A brief summary of these is below. For more information on these and other instruments, please visit [www.lamotte.com](http://www.lamotte.com).

## Model 1500 Series

Order Code 3240 (tablet)

Order Code 3240-LI (liquid)

The 1500 Series of single test, direct reading colorimeters incorporates design advances that enhance reliability, improve accuracy, and simplify the calibration process, all in a portable, hand-held package.

Meters are available for ammonia nitrogen, chlorine, chlorine dioxide, copper, fluoride, iron, molybdenum, ozone, phosphate and sulfate.

### Specifications

Instrument Type:	Single wavelength, direct-reading colorimeter
Readout:	3½ digit LCD
Wavelength Accuracy:	±2%FS
Detector:	Silicon Photodiode with integrated interface filter
Sample Chamber:	Accepts 25mm diameter flat-bottom, screwcap tubes [6 included]
Light Source:	LED
Interface:	USB port
Power:	Lithium ion rechargeable battery
Size [LxWxH]:	17 x 16 x 9 cm, 6.9 x 3.25 x 2.5 inches



### HINGED LIGHT COVER

Flip-top lid over sample chamber prevents any stray light, especially in the field, and avoids misplacing separate light caps.

### EUROPEAN CE MARK

The DC1500 has been independently tested and has earned the European CE Mark of compliance for electromagnetic compatibility and safety.

### IP67 WATERPROOF DESIGN

Designed with excessive exposure to moisture in mind, the DC1500 colorimeter delivers trouble-free performance.

### EPA COMPLIANT

Uses proper wavelength and DPD test method to meet EPA design specifications for NPDWR and NPDES chlorine monitoring programs [EPA 330.5 and Standard Method 4500].

### A GREAT VALUE!

Complete, economical package! The DC1500 Chlorine Colorimeter Kit includes tablets for 100 tests or liquid reagents for 140 tests, six sample vials, and a sturdy carrying case.

### FIELD & LAB USE

USB cable and wall adapter included; car charger optional.

### RECHARGEABLE BATTERY

Lithium ion rechargeable battery. No need to buy batteries again.

### 0-4 PPM CHLORINE

No need to select a low or high range. The DC1500 covers the entire critical chlorine range of 0-4 ppm with an MDL of 0.03 ppm.

### USB INTERFACE

An USB port is provided to interface with a datalogger or computer. Optional cable available.

### DISPLAY

Large graphical liquid crystal display

## Options:

- USB Cable [Order Code 1720-01]
- Wall Adapter [Order Code 1721]
- Replacement Tubes [6] [Order Code 0290-6]





## Model 1500 · Single Test Colorimeter Labs

Test Factor	Order Code	Model	Range (ppm)	Detection Limit	Test Method (# of reagents)	Prop 65	# of Tests	Ship Codes
Ammonia Nitrogen	3241	DC1500-NH	0-5.0	0.05	Nessler [2]	R	60	R1
Chlorine (Free & Total)	3240	DC1500-CL	0-4.0	0.05	DPD Tablets [2]		100	NH
Chlorine (Free & Total)	3240-LI	DC1500-CL-LI	0-4.0	0.05	DPD Liquid [3]		140	R1
Chlorine Dioxide	3244	DC1500-CLO	0-7.0	0.05	DPD with Glycine Solution [2]		100	NH
Copper	3245	DC1500-CO	0-6.0	0.03	Diethyldithiocarbamate [1]		100	NH
Fluoride	3243	DC1500-FL	0-2.0	0.028	Alizarin-Zirconyl [2]		100	LQ
Iron	3248	DC1500-FE	0-4.0	0.25	1,10 Phenanthroline [2]		100	R1
Molybdenum	3246	DC1500-MO	0-30	0.5	Thioglycolate [3]		50	R3
Ozone	3249	DC1500-OZ	0-0.4	0.04	Indigo Blue [3]		100	NH
Phosphate	3242	DC1500-PLR	0-3.0	0.07	Ascorbic Acid [2]		100	R2
Sulfate	3247	DC1500-SU	0-100	1.0	Barium Chloride [1]		100	R1

Prop 65: R: ⚠️ **WARNING** Reproductive Harm - [www.P65Warnings.ca.gov/product](http://www.P65Warnings.ca.gov/product)

## Tablet Chlorine DPD Reagents

Tablet [50 Pack]	Order Code	Ship Code
Chlorine DPD #1 Instrument	6903A-H	NH
Chlorine DPD #3 Instrument	6197A-H	NH
Chlorine DPD #4 Instrument	6906A-H	NH
Tablet [100 Pack]	Order Code	Ship Code
Chlorine DPD #1 Instrument	6903A-J	NH
Chlorine DPD #3 Instrument	6197A-J	NH
Chlorine DPD #4 Instrument	6906A-J	NH
Tablet [1000 Pack]	Order Code	Ship Code
Chlorine DPD #1 Instrument	6903A-M	NH
Chlorine DPD #3 Instrument	6197A-M	NH
Chlorine DPD #4 Instrument	6906A-M	NH



## Liquid Chlorine DPD Reagents

30 mL [1 Oz.]	Order Code	Ship Code
DPD 1A	P-6740-G	NH
DPD 1B	P-6741-G	R1
DPD 3	P-6743-G	NH
60 mL [2 Oz.]	Order Code	Ship Code
DPD 1A	P-6740-H	NH
DPD 1B	P-6741-H	R2
DPD 3	P-6743-H	NH



## SMART<sup>®</sup>3 Colorimeter

### Order Code 1910

The user-friendly SMART3 Colorimeter is the direct reading colorimeter for complete on-site water analyses. All pre-programmed tests can be run on these compact instruments and each test features automatic wavelength selection. The entire multi-LED optical system is embedded in the light chamber and optimized for LaMotte test reagent systems. The analyst can simply select the test and put in the sample with reagent. The microprocessor, which selects the wavelength, also allows the user to load up to 25 tests for analyzing custom reagent systems.

The SMART3 Colorimeter is supplied with 6 sample tubes, AC adapter, and instruction manual including test procedures.

### Advanced Features: [\[Go to www.lamotte.com for Specifications\]](http://www.lamotte.com)

- IP67 Waterproof
- Simple, menu-driven operation
- Automatic wavelength selection
- Seven user selected languages



### Accessories/Replacement Items:

- Smartcheck Performance Check Standards [Order Code 4148]
- Replacement Sample Chamber Cup [Order Code 3-0038]
- COD/UDV adapter [Order Code 1724]
- 6 Sample Tubes [Order Code 0290-6]
- USB Cable [Order Code 1720]
- USB Power Plug [Order Code 1721]
- Car Charger [Order Code 5-0132]
- Small Case [Order Code 1910-GCS150]
- Large Case [Order Code 1910-GCS440]

### SMART3 Reagent Systems

New tests are being developed for the SMART3. Please contact our Technical Service Department for information regarding additions of new tests.




Test Factor	Test Method (# of reagents)	Range ppm	# of Tests	Order Code	Ship Code	Prop 65†
Alkalinity	Tablet, Colorimetric [1]	10-250	50	3670-SC	NH	
Aluminum	Eriochrome Cyanine R [4]	0.01-0.30	50	3641-01-SC	NH	R
Ammonia Nitrogen LR [Fresh & Salt Water]	Salicylate [3]	0.05-1.00/0.10-1.00	25	3659-02-SC	R2	R
Ammonia Nitrogen HR	Nesslerization [2]	0.05-4.00	50	3642-SC	R1	R
Barium	Barium Chloride [1]	5-200	50	3638-SC	NH	R
Biquinide	Colorimetric [1]	2-70	50	4044	NH	
Boron	Azomethine-H [2]	0.05-0.80	50	4868-01	NH	
Bromine	Liquid, DPD [3]	0.00 - 3.00	144	4859	R1	
Bromine	DPD Tablets [3]	0.10-9.00	100	3643-SC	NH	
Cadmium	PAN [4]	0.02-1.00	50	4017-01	R1	R
Carbohydrazide	Iron Reduction [3]	0.04-0.90	100	4857	R1	
Chloride	Tablet, Argentometric [1]	0.4-30.0	50	3693-SC	NH	
Chlorine [Free & Total]	DPD Tablets [3]	0.03-4.00	100	3643-SC	NH	
Chlorine	Liquid, DPD [3]	0.03-4.00	144	4859	R1	
Chlorine Dioxide	DPD tablet/Glycine [2]	0.06-8.00	100	3644-SC	NH	
Chromium [Hexavalent]	Diphenylcarbohydrazide [1]	0.01-1.00	100	3645-SC	HA	
Chromium [Total, Hex & Trivalent]	Diphenylcarbohydrazide [5]	0.01-1.00	100	3698-SC	HF	
Cobalt	PAN [3]	0.04-2.00	50	4851-01	HF	R
COD LR with Mercury*	Digestion [1]	5-150 mg/L	25	0075-SC	R1	
COD LR without Mercury*	Digestion [1]	5-150 mg/L	25	0072-SC	R1	
COD SR with Mercury*	Digestion [1]	50-1,500 mg/L	25	0076-SC	R1	
COD SR without Mercury*	Digestion [1]	50-1,500 mg/L	25	0073-SC	R1	
COD HR with Mercury*	Digestion [1]	500-15,000 mg/L	25	0077-SC	R1	
COD HR without Mercury*	Digestion [1]	500-15,000 mg/L	25	0074-SC	R1	R



Test Factor	Test Method [# of reagents]	Range ppm	# of Tests	Order Code	Ship Code	Prop 65†
Color	Platinum Cobalt [0]	20-1,000 Cu	∞	NA	NH	
Copper BCA - LR	Bicinchoninic Acid [1]	0.04-3.50	50	3640-SC	NH	
Copper	Cuprizone [2]	0.03-2.00	50	4023	R1	
Copper DDC	Diethyldithiocarbamate [1]	0.10-6.00	100	3646-SC	NH	B
Cyanide	Pyridine-Barbituric Acid [5]	0.03-0.35	50	3660-01-SC	R1	
Cyanuric Acid	Melamine [1]	10-200	40	3661-01-SC	NH	
Cyanuric Acid	Tablet, Melamine [1]	10-110	50	3673-SC	NH	
DEHA	Iron Reduction [3]	0.01-0.70	100	4857	R1	
Dissolved Oxygen [DO]	Winkler Colorimetric [3]	0.6-11.0	200	3688-SC	R1	
Erythorbic Acid	Iron Reduction [3]	0.02-3.00	100	4857	R1	
Fluoride	SPADNS [2]	0.1-2.0	50	3647-02-SC	R1	
Hardness, Total	Tablet, Colorimetric [1]	10-400	50	3671-SC	NH	
Hydrazine	p-dimethylaminobenzaldehyde [2]	0.01-0.75	50	3656-01-SC	NH	
Hydrogen Peroxide LR	DPD [2]	0.02-1.50	100	3662-SC	NH	
Hydrogen Peroxide HR	DPD [2]	1-60	100	4045-01	NH	
Hydrogen Peroxide Shock	DPD [2]	10-225	100	4045-01	R2	
Hydroquinone	Iron Reduction [3]	0.01-2.00	100	4857	R1	
Iodine	DPD Tablets [2]	0.2-14.0	100	3643-SC	NH	
Iron	Bipyridyl [2]	0.10-6.00	50	3648-SC	R1	
Iron, Total, Ferrous, Ferric	1,10 Phenanthroline [2]	0.1-5.0	50	3668-SC	R1	
Lead	PAR [5]	0.1-5.0	50	4031-01	R1	C
Manganese LR	PAN [3]	0.01-0.70	50	3658-01-SC	HF	R
Manganese HR	Periodate [2]	0.3-15.0	50	3669-SC	R1	
Methylethylketoxime	Iron Reduction [3]	0.01-3.00	100	4857	R1	
Molybdenum HR	Thioglycolate [3]	0.6-50.0	50	3699-03-SC	R1	
Nickel	Dimethylglyoxime [6]	0.15-8.00	50	3663-01-SC	HF	R
Nitrate Nitrogen LR	Cadmium Reduction [2]	0.10-3.00	20	3649-01-SC	R1	B
Nitrate	Tablet, Zinc Reduction [1]	5-60	50	3689-SC	NH	
Nitrite Nitrogen LR	Diazotization [2]	0.02-0.80	20	3650-SC	NH	
Nitrogen, Total*	Chromotropic Acid/ Digestion [6]	3-25 mg/L	25	4026-02	R1	
Oxygen Scavengers	Iron Reduction	various	100	4857	R1	
Ozone	DPD [4]	0.03-3.00	100	4881-01	NH	
Ozone LR	Indigo Trisulfonate [3]	0.01-0.40	100	3651-SC	NH	
Ozone HR	Indigo Trisulfonate [3]	0.05-2.50	20	3651-SC	NH	
pH CPR	Chlorophenyl Red [1]	pH 5.0-6.8	100	3700-01-SC	NH	
pH PR	Liquid, Phenol Red [1]	pH 6.6-8.4	100	3700-01-SC	NH	
pH TB	Thymol Blue [1]	pH 8.0-9.5	100	3700-01-SC	NH	
pH	Tablet, Phenol Red [1]	pH 6.6-8.4	50	3672-SC	NH	
Phenol	Aminoantipyrine [3]	0.05-6.00	50	3652-01-SC	NH	
Phosphate LR	Ascorbic Acid Reduction [2]	0.05-3.00	50	3653-SC	R2	C
Phosphate HR	Vanodomolybdovanadate Acid [1]	0.5-70.0	50	3655-SC	R1	
Phosphorus, ppb	Ascorbic Acid/Digestion [5]	50-3000	50	3653-SC	R2	C
Phosphorus, Total - LR*	Ascorbic Acid/Digestion [5]	0.50-3.50 mg/L	25	4024-01	R1	
Phosphorus, Total - HR*	Molybdovanadate/ Digestion [5]	5-100mg/L	25	4025-01	R1	
Potassium	Tetraphenylboron [2]	0.8-10.0	100	3639-SC	R1	
Silica LR	Heteropoly Blue [4]	0.05-4.00	100	3664-SC	R1	
Silica HR	Silicomolybdate [3]	1-75	50	3687-SC	R1	
Sulfate HR	Barium Chloride [1]	3-100	100	3665-SC	R1	
Sulfide LR	Methylene Blue [3]	0.06-1.50	50	3654-02-SC	R1	
Surfactants	Bromthymol Blue [3]	0.5-8.0	100	4876-01	HF	B
Tannin	Tungsto-Molybdophosphoric Acid [2]	0.1-10.0	50	3666-01-SC	R1	
Turbidity	Absorptimetric [0]	3-400 FTU	∞	NA	NH	
Urea	Urease/Salicylate [4]	0.4-6.0	50	3674-SC	LQ	
Zinc LR	Zincon [6]	0.05-3.00	50	3667-01-SC	HF	B

Ship Codes: NH - Non Hazardous, No Fees; HF - Hazardous Materials, Air & Ground Fees; R1 - Small Quantity Hazardous Materials, No Fees; R2, R3, & LQ - Hazardous Materials, Air Fees Only

\* Requires COD Adapter Code 5-0087 and Heater Block. \*\* UV lamp 31041-1; UV lamp power source 31041-2; UV safety goggles 31041. † As ppm except as otherwise indicated.

Prop 65: C:  **WARNING** Cancer - [www.P65Warnings.ca.gov/product](http://www.P65Warnings.ca.gov/product); R:  **WARNING** Reproductive Harm - [www.P65Warnings.ca.gov/product](http://www.P65Warnings.ca.gov/product); B:  **WARNING** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov/product](http://www.P65Warnings.ca.gov/product)



**IP67**  
WATERPROOF

**EPA**  
**180.1**

**ISO**  
**7027**

**2**  
YEAR  
WARRANTY



## 2020t/i Ratio Turbidity Meters

Order Code [2020t] 1974-T • Ship Code NH [6]

Order Code [2020i] 1974-I • Ship Code NH [6]

New Ratiometric design in one of the most innovative, waterproof, handheld meters available on the market. The Multi-detector optical configuration assures long-term stability and minimizes stray light and color interference. The new ratiometric design allows for easy and accurate testing. The nephelometric mode measures 0-40 NTU/FNU, ratiometric mode 40-1000 NTRU/FNRU and 1000-2000 AU. Now pinpoint the reange of interest with better, more reliable results. Ideally suited for low-level drinking water applications, mid-range industrial applications, and high-range environmental applications.

### Advanced Features:

- Lithium Ion rechargeable battery
- USB port
- 7 languages
- Backlit display
- EPA and ISO versions

### Specifications

Mode	Ratiometric	Nephelometric	Attenuation
Unit of Measure <b>2020t</b> :	NTRU, NTU, ASBC, EBC	NTU, ASBC, EBC	AU, NTU, ASBC, EBC
Unit of Measure <b>2020i</b> :	FNRU, NTU, ASBC, EBC	FNU, NTU, ASBC, EBC	FAU, NTU, ASBC, EBC
Range:	0-1,000 NTRU/FNRU, 0-17,500 ASBC 0-250 EBC	0-100 NTU/FNU 0-1,750 ASBC 0-25 EBC	0-2,000 AU/FAU 0-70,000 ASBC 0-1,000 EBC
Resolution:	0-10.99 NTRU/FNRU: 0.01 11.0-109.9 NTRU/FNRU: 0.1 110-1000 NTRU/FNRU: 1	0-10.99 NTU/FNU: 0.01 11.0-100.0 NTU/FNU: 0.1	0-2000 AU/FAU: 1
Accuracy:	0-2.5 NTRU/FNRU: ±0.05 2.5-100 NTRU/FNRU: ±2% 100-1000 NTRU/FNRU: ±3%	0-2.5 NTU/FNU: ±0.05 2.5-100 NTU/FNU: ±2%	0-2000 AU/FAU: ±10 AU/FAU or 6%, whichever is greater
Detection Limit:	0.05 NTRU/FNRU	0.05 NTU/FNU	10 AU/FAU
Reproducibility:	0.02 NTRU/FNRU or 1%	0.02 NTU/FNU or 1%	1%
Range Selection:	Automatic		
Light Source:	2020t: Tungsten lamp 2300 °C ±50 °C 2020i: IR LED 860 nm ±10 nm, spectral bandwidth with 50 nm		
Detector:	2020t: Photodiode, centered at 90° and 180°, maximum peak 400-600 nm 2020t/i: Photodiode, centered at 90° and 180°		





## Digestion Tubes for Total Nitrogen and Total Phosphorus

LaMotte offers low and high Total Phosphorus and a Total Nitrogen test that are reacted in a heater block and are then tested using a colorimeter or spectrophotometer.

All kits ship as R1 [Small Quantity Hazardous Material - No Fee].

Code	Description	Range	# of Tests
4024-01	Low Total Phosphorus	0-3.5 mg/L	25
4025-01	High Total Phosphorus	0-100 mg/L	25
4026-02	Total Nitrogen	0-25 mg/L	25

## COD Multi-Range Reagent Systems

LaMotte-manufactured Chemical Oxygen Demand reagent systems used with our COD PLUS Colorimeter, SMART 2 Colorimeter or SMART Spectro Spectrophotometer are an easy and precise way to measure critical COD levels. Measure low, medium or high levels of COD using your choice of mercury (US EPA approved method) or non-mercury reagent systems. Each package contains 25 ready to use vials. All kits ship as R1 [Small Quantity. Hazardous Material - No Fee].

### Mercury-Free Systems

Code	Range
0072-SC	0-150 ppm
0073-SC	0-1500 ppm
0074-SC	0-15,000 ppm

### Mercury Based Systems

Code	Range
0075-SC	0-150 ppm (EPA approved)
0076-SC	0-1500 ppm (EPA approved)
0077-SC	0-15,000 ppm



## COD Heater Block

**Order Code 5-0102 [120V], 12-Tube Capacity**

**Order Code 5-0102-EX2 [230V], 12-Tube Capacity**

This COD heater block features digital microprocessor control, programmable time and temperature settings, and a dual LED display to monitor both temperature and timer. Perfect for COD, Total Phosphorus, and Total Nitrogen testing PLUS other tests requiring digestion.

Specifications	
Temperature:	30-200°C
Timer:	0-999 minutes
Vial Capacity:	12 (16 mm tubes)
Stability:	±0.1°C @ 100°C
Weight:	3.6 kg
Dimensions	310 x 250 x 80 mm [LxWxH]
CE Mark:	Yes
Oven Temp Cutoff:	212°C

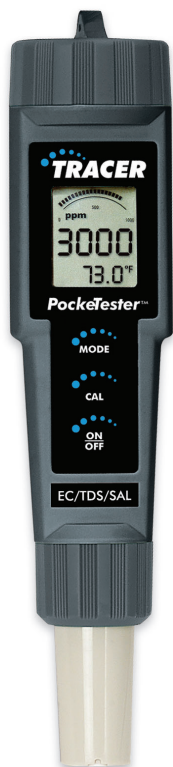


## “Min-Max” Memory Thermometer

Order Code 5-0095

- Range: 14 to 392°F or -10 to 200°C
- °F or °C selectable scale
- Recalls minimum and maximum temperature

Specifications	
Code:	5-0095
Range:	-10 to 200°F, 14 to 392°C
Resolution:	0.1°F to 199.9°, 1°C above 200°
Accuracy:	±1.8°F / ±1.0°C
Calibration:	Factory calibrated; fine adjustment through keypad
Operating Temp.:	32 to 122°F; 0 to 50°C
Special Functions:	On/Off or Auto-Off after 8.5 min.; HOLD; °F or °C scale selectable; factory calibration maintained when batteries are replaced
Power & Battery Life:	LR-44 button cell; 2 yr life
Dimensions:	4.3 x 0.14 x 1.8 inches [109 x 4 x 46 mm]
Weight:	3 oz



## TDS/Salt/Conductivity/Temp Tracer

Order Code 1749

- Easy to use
- 2% accuracy for EC, TDS, and Salt modules
- Automatic temperature compensation
- Self calibration
- Memory can store up to 25 readings; auto-power off after 10 minutes of no button presses
- Automatic shut-off and low battery indicator; uses four 3V CR-2032 button batteries

Specifications	
Conductivity:	0 to 199.9 $\mu$ S, 200 to 1999 $\mu$ S, 2.00 to 19.99 mS
TDS:	0 to 9,999 ppm
Salinity:	0 to 9,999 ppm
Temperature	32°F to 149°F [0 to 65°C]
Accuracy:	EC, TDS, Salt: $\pm$ 2% FS; Temperature: $\pm$ 1°C [1.8°F]

### Options:

- EC/TDS/SAL Replacement Electrode\* [Order Code 1765]
- Sample Cup w/cap [Order Code 1745-1]
- Conductivity Standard, 84  $\mu$ S, 30 mL [Order Code 6312-G]
- Conductivity Standard, 1413  $\mu$ S, 30 mL [Order Code 6354]
- Conductivity Standard, 12,880  $\mu$ S, 30 mL [Order Code 6317-G]





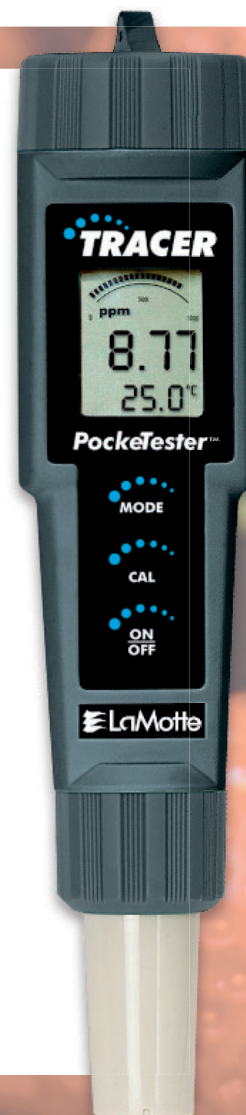
The world's first pocket-sized ISE meter for measuring Total Chlorine. Ideal for use in colored or turbid solutions. Use it to test pH and ORP with interchangeable flat surface sensors (optional).

## Total Chlorine TRACER

### Order Code 1740

- Read Total Chlorine from 0.00-10 ppm
- Readings are not affected by sample color or turbidity
- Automatic self calibration
- Extra bold display includes an analog bar graph feature
- Memory can store up to 15 readings
- Chlorine mode also displays sample temperature
- Unit identifies which probe is in use and retains calibrations
- Automatic shut-off and Low Battery indicator; uses four 3V CR-2032 batteries
- Includes 100 reagent tablets at almost half the price of similar Chlorine ISE reagents
- Follows EPA protocol for ISE methods

**EPA Approved  
(NPDES Monitoring)**



## pH TRACER

### Order Code 1741

- Provided with 4, 7, and 10 pH buffer tablets
- Rugged flat surface electrode is ideal for food analysis and will alert user when it is time to "RENEW"
- A "CAL" indicator shows when to recalibrate and user can select a 1, 2, or 3 point calibration
- Includes Automatic Temperature Compensation and displays temperature while showing pH result

#### Specifications

Range:	0.00 to 14.00 pH
Temp:	23° to 194°F [-5° to 90°C]
Resolution:	0.01 pH
Accuracy:	±0.01 pH

## ORP TRACER

### Order Code 1742

- High resolution to 1 mV
- Automatic self calibration

#### Specifications

Range:	-999 to 999 mV
Resolution:	1 mV
Accuracy:	±4 mV

## Options

### Additional Probes

- pH Sensor · 0-14.00/±0.01 pH · Order Code 1733
- ORP Sensor · -999 to 999mV/±4mV · Order Code 1734
- Cl<sub>2</sub> Sensor · 0-10.00/±10% of reading · Order Code 1732

### Chlorine Test Tablets

#### Order Code 7044A-J

Specially formulated just for the TRACER, these deliver a precise amount of iodide for a 20 mL sample. Available in packages of 100.



# LaMotte Temperature Meters



## Buffer Tablets

Add one tablet to 20 mL of Deionized Water to produce buffers. Available in 50 and 100 tablet packs. In foil strips of 10 tablets each.

pH Value	Code [50 pk]
4.00	3983-A-H
7.00	3984-A-H
10.00	3985-A-H
pH Value	Code [100 pk]
4.00	3983-A-J
7.00	3984-A-J
10.00	3985-A-J



## Standardized pH Buffer Solutions

For use in calibration of pH meters. Ordering information for all buffers is listed.

pH Value	Size	Code
4.01	120 mL	2866-J
4.01	500 mL	2866-L
6.86	500 mL	2808-L
7.00	120 mL	2881-J
7.00	500 mL	2881-L
9.18	500 mL	2809-L
10.00	120 mL	2896-J
10.00	500 mL	2896-L



## Color-Coded pH Buffer Solutions

Minute amount of color permits immediate visual distinction of different buffer values.

pH Value	Color	Size	Code
4.01	Red	500 mL	3771-L
7.00	Yellow	500 mL	3772-L
10.00	Blue	500 mL	3773-L



802 Washington Ave • Chestertown • Maryland • 21620 • USA  
t: 800-344-3100 • 410-778-3100 • f: 410-778-6394 • [www.lamotte.com](http://www.lamotte.com)