LaMotte

Aquaculture & Aquarium Testing Products Catalog

LaMotte

SINCE 1919, LaMotte's mission has been to help people solve analytical challenges by providing innovative solutions through knowledgeable technical guidance, prompt service, and quality products designed for the analysis of water and soil. Today, we produce the broadest line of portable test equipment, and continue our focus on your specific needs by offering improved products, and strong technical support.

Please visit our website at www.lamotte.com where you can see all of our product catalogs, newsletters, MSDS, new product information, technical tips and instructions.

We believe the emphasis we place on Technical Support and Customer Service helps distinguish LaMotte. Call our Technical Support staff's toll-free number for guidance on product selection or assistance with any questions regarding purchased LaMotte products.

If for any reason you are not satisfied with our products or service, you may return the product within 30 days for a full refund; please call for return authorization. We know that when you buy analysis products from us, you purchase solutions to your challenge, not simply hardware.

David H. La Motte

David LaMotte

President

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On-site photography courtesy of Donald Webster
(University of Maryland Cooperative Extension)

Factors

Proper control of water quality is an essential part of any successful aquaculture operation. Immediate test results provided by on-site water analysis equipment can confirm a healthy environment or give early warning signals for required treatment.

ALKALINITY

Composed primarily of carbonate (CO_3^{2-}) and bicarbonate (HCO_3^-), alkalinity acts as a stabilizer for pH. Alkalinity, pH and hardness affect the toxicity of many substances in the water.

AMMONIA

Ammonia, present in both ionized (NH_4^+) and un-ionized (NH_3) forms, is extremely toxic to fish in the un-ionized form. Even low levels of un-ionized ammonia may affect the fish's central nervous system, reducing its ability to obtain oxygen and lowering its resistance to disease. A product of organic waste, ammonia enters the water directly from the fish, other organic material, and uneaten food. Ammonia levels are pH dependent, and can fluctuate throughout the day.

CARBON DIOXIDE

Different species of fish have different susceptibilities to carbon dioxide toxicity. In some species, excess carbon dioxide hinders the ability of the blood to hold oxygen. Produced during respiration and consumed during photosynthesis, carbon dioxide levels fluctuate throughout the day opposite to dissolved oxygen levels. High carbon dioxide levels lower the pH, which in turn affects the ratio of un-ionized to ionized ammonia.

CHLORIDE

Chloride levels can affect fish health in two ways: as the major constituent of salinity or as a treatment to prevent nitrite toxicity. In systems with existing or chronic high nitrite levels, chloride will often be added to prevent the fish from succumbing to nitrite toxicity.

COPPER

Copper, in the form of copper sulfate, is often used in aquaculture systems as an algicide and bactericide; however high levels can be toxic to fish. High pH and alkalinity levels will complex copper, helping to reduce its toxicity.

DISSOLVED OXYGEN

The dissolved oxygen test is one of the most important in aquaculture. Dissolved oxygen levels can affect fish respiration, as well as ammonia and nitrite toxicity. Salinity and temperature are both factors that affect dissolved oxygen levels.

HARDNESS

Total hardness is defined as the concentration of calcium (Ca_2^+) and magnesium (Mg_2^+) in the water. Closely related to alkalinity and pH, sufficient hardness levels can decrease ammonia and pH toxicity. Calcium is also necessary for proper egg and fry development.

NITRITE

An intermediate product between ammonia and nitrate in the nitrification process, nitrite (NO_2^-) is extremely toxic to fish. High levels, combined with low chloride and dissolved oxygen concentrations, may result in methemoglobinemia, better known as brown blood disease.

pH

pH is a measure of acidity/basicity. The pH scale is logarithmic and runs from 0 to 14; 7.0 is considered neutral, with values greater being basic and those lower being acidic. The greatest concern with pH is how it affects the toxicity of other substances, including nitrite and ammonia.

PHOSPHATE (PHOSPHORUS)

Phosphates enter the water supply from many sources, including agricultural runoff and sewage. Phosphorus is an essential nutrient for bone formation and is a primary ingredient in fertilizers, yet excessive levels can promote an overabundance of algae.

TEMPERATURE

Water temperature controls the rate of all chemical reactions and affects fish growth, reproduction and immunity. Drastic temperature changes can be fatal to fish.

Test Methods

TITRIMETRIC

DIRECT READING TITRATORS
are 1.0mL microburets calibrated for direct readout in concentration; no counting of drops or calculations.

COLORIMETRIC

AXIAL READERS
intensify faint color reactions, designed for use with Axial Reading Octet Comparators.

ELECTRONIC COLORIMETERS
help eliminate visual inconsistencies. Photodetector measures light passing through sample and results are translated to digital readout in ppm.

OCTA-SLIDE COMPARATORS
feature an all-plastic comparator system with a slide-through bar viewer. Provides a one-on-one color matching system.

Individual Water Test Kits

Test Factor	Code	Water	Method	Range/Sensitivity‡	# of Tests	# of Rgts.	Ship Code (wt./lbs)
Alkalinity*	4491-DR†	Fresh or Salt	Direct Reading Titrator for Total (T) Alkalinity	0–200 ppm as $CaCO_3$ in 4.0 ppm increments	50	2	NH(1)
Ammonia Nitrogen	7418-02	Fresh or Salt	Octet Comparator with Axial Reader, Nessler Method	0.02, 0.04, 0.08, 0.14, 0.2, 0.4, 0.6, 1.0 ppm NH_3-N	50	2	R1(1)
	3304	Salt	Octa-Slide, Salicylate Method	0.0, 0.05, 0.1, 0.25, 0.5, 1.0, 1.5, 2.0 ppm NH_3-N	50	3	R2(1)
	3351-01†	Fresh or Salt	Octa-Slide, Nessler Method	0.2, 0.4, 0.6, 0.8, 1.0, 1.5, 2.0, 3.0 ppm NH_3-N	50	2	R1(1)
	3315	Fresh or Salt	Octa-Slide, Nessler Method	1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0 ppm NH_3-N	50	2	R11)
Carbon Dioxide	7297-DR†	Fresh or Salt	Direct Reading Titrator	0–50 ppm CO_2 in 1.0 ppm increments	50	2	R1(1)
Chloride	4503-DR-01†	Fresh	Direct Reading Titrator	0–200 ppm Cl in 4.0 ppm increments	50	4	R1(1)
Chlorine	3312	Fresh	Octa-Slide for Free & Total Chlorine	0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.8, 1.0, ppm Cl_2	50	2	NH(1)
Copper	6616	Fresh or Salt	Octet Comparator with Axial Reader for Total Copper	0.0, 0.05, 0.1, 0.15, 0.2, 0.3, 0.4, 0.5 ppm Cu	50	1	NH(1)
Dissolved Oxygen	5860†	Fresh or Salt	Direct Reading Titrator *All liquid system!*	0–10 ppm O_2 in 0.2 ppm increments	50	5	R1(2)
Hardness*	4824-DR-LT	Fresh or Salt	Direct Reading Titrator for Total, Calcium, & Magnesium Hardness	0–200 ppm as $CaCO_3$ in 4.0 ppm increments	50	5	R1(1)
	4482-DR-LI†	Fresh or Salt	Direct Reading Titrator for Total Hardness	0–200 ppm as $CaCO_3$ in 4.0 ppm increments	50	3	R1(1)
	3609	Fresh or Salt	Direct Reading Titrator for Calcium Hardness	0–200 ppm or 0–2,500 ppm	50	3	R1(1)

*Often referred to as Carbonate Hardness in the aquarium industry.
†Featured test in AQ Series of combination outfits, see pages 5-6.
‡Direct Reading Titrators have a specific range, but may be refilled to test higher concentrations.
Ship Codes: (NH) Non-Hazardous Material - No Fees • (R1) Small Qty. Hazardous Material - No Fees (R2 & R3) Hazardous Material - Air Fees Only • (HF) Hazardous Material - Air & Ground Fees
Shipping weight is in pounds and enclosed in parentheses.

LaMotte Company • P.O. Box 329 • Chestertown • Maryland • 21620
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Individual Water Test Kits

Test Factor	Code	Water	Method	Range/Sensitivity‡	# of Tests	# of Rgts.	Ship Code (wt./lbs)
Iron	3318	Fresh or Salt	Octa-Slide for Total Iron	0.5, 1.0, 2.0, 3.0, 4.0, 6.0, 8.0, 10.0 ppm Fe	90	2	R1(1)
	7787	Fresh or Salt	Octet Comparator with Axial Reader for Total Iron	0.05, 0.1, 0.2, 0.3, 0.4, 0.6, 0.8, 1.0 ppm Fe	30	2	R1(1)
Nitrate Nitrogen	3354	Fresh or Salt	Octa-Slide *All tablet system!*	0, 1, 2, 4, 6, 8, 10, 15 ppm NO_3^-N	40	2	NH(2)
	3319†	Fresh or Salt	Octa-Slide	0.25, 0.5, 1.0, 2.0, 4.0, 6.0, 8.0, 10.0 ppm NO_3-N	50	2	R1(2)
Nitrite Nitrogen	3352†	Fresh or Salt	Octa-Slide	0.05, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.8 ppm NO_2^--N	50	3	NH(2)
Ozone	3678-01	Fresh or Salt	Single test digital colorimeter, Indigo Blue method	0–0.4 ppm O_3/0.04 detection limit	100	3	NH(7)
pH	3353†	Fresh or Salt	Octa-Slide	5.0, 6.0, 6.5, 7.0, 7.5, 8.0, 9.0, 10.0 pH	50	1	R1(1)
	2159-01	Salt	Octet Comparator	7.7, 7.8, 7.9, 8.0, 8.1, 8.2, 8.3, 8.4 pH	100	1	R1(1)
Phosphate	3121-01	Fresh or Salt	Octet Comparator with Axial Reader	0.0, 0.2, 0.4, 0.6, 0.8, 1.0, 1.5, 2.0 ppm PO_4	50	2	R1(1)
Salinity	7459-01	Salt	Direct Reading Titrator	0-20 ppt Salinity in 0.4 ppt increments	50	2	R1(1)
Sulfide	3322	Fresh or Salt	Octet Comparator for Total Sulfide	0.2, 0.5, 1.0, 2.0, 5.0, 10.0, 15.0, 20.0 ppm $S^=$	50	3	R1(1)

†Featured test in AQ Series of combination outfits, see pages 5-6.
‡Direct Reading Titrators have a specific range, but may be refilled to test higher concentrations.
Ship Codes: (NH) Non-Hazardous Material - No Fees • (R1) Small Qty. Hazardous Material - No Fees (R2 & R3) Hazardous Material - Air Fees Only • (HF) Hazardous Material - Air & Ground Fees
Shipping weight is in pounds and enclosed in parentheses.

Fresh & Salt Water Combination Outfits

Model AQ-2 — Fresh Water

ORDER CODE 3633-03 • Shipping code R3(16)

A complete outfit for pond fish culture—ideal for fresh water analysis. Nine critical test factors can be efficiently and accurately determined on-site. Designed with field analysis as a priority; all reagents, components and accessories are arranged for convenience. Lid label instructions are convenient for quick reference, while a booklet provides detailed instructions. Unit is supplied complete with labware, accessories, sampling bottle, and reagents for 50 tests of each factor.

Octa-Slide Comparator Tests	Range
Ammonia Nitrogen:	0.2, 0.4, 0.6, 0.8, 1.0, 1.5, 2.0, 3.0 ppm NH_3-N
Nitrite Nitrogen:	0.05, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.8 ppm NO_2^--N
pH:	5.0, 6.0, 6.5, 7.0, 7.5, 8.0, 9.0, 10.0 pH

Direct Reading Titrator Tests‡	Range	Sensitivity
Alkalinity (Total):	0–200 ppm as $CaCO_3$	4.0 ppm
Carbon Dioxide:	0–50 ppm CO_2	1.0 ppm
Chloride:	0–200 ppm Cl	4.0 ppm
Dissolved Oxygen:	0–10 ppm O_2	0.2 ppm
Hardness (Total):	0–200 ppm as $CaCO_3$	4.0 ppm

Temperature	Range	Sensitivity
Armored Thermometer:	–5° to 45°C	0.5°C

Model AQ-3 — Fresh Water

ORDER CODE 3634-03 • Shipping Code R3(13)

Designed for growers and technicians monitoring pH, Dissolved Oxygen, and Temperature with instrumentation. The Model AQ-3 offers the same convenient packaging, but without the chemical tests for pH, Dissolved Oxygen, or the thermometer.

Octa-Slide Comparator Tests	Range
Ammonia Nitrogen:	0.2, 0.4, 0.6, 0.8, 1.0, 1.5, 2.0, 3.0 ppm NH_3-N
Nitrite Nitrogen:	0.05, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.8 ppm NO_2^--N
pH:	5.0, 6.0, 6.5, 7.0, 7.5, 8.0, 9.0, 10.0 pH

Direct Reading Titrator Tests‡	Range	Sensitivity
Alkalinity (Total):	0–200 ppm as $CaCO_3$	4.0 ppm
Carbon Dioxide:	0–50 ppm CO_2	1.0 ppm
Chloride:	0–200 ppm Cl	4.0 ppm
Dissolved Oxygen:	0–10 ppm O_2	0.2 ppm
Hardness (Total):	0–200 ppm as $CaCO_3$	4.0 ppm

Temperature	Range	Sensitivity
Armored Thermometer:	–5° to 45°C	0.5°C

‡ Direct reading titrators have a specific range, but may be refilled to test higher concentrations.

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Model AQ-4 — Salt Water

ORDER CODE 3635-03 • Shipping code R2(16)

This equipment monitors the nine parameters most critical for the salt water aquaculturist. Reagents, labware, and accessories are mounted for convenient test selection and portability. Lid label instructions are convenient for quick reference, while a booklet provides detailed instructions. Unit is complete with labware, accessories, sampling bottles, and reagents for 50 tests of each factor.

Octa-Slide Comparator Tests	Range
Ammonia Nitrogen:	0.0, 0.05, 0.1, 0.25, 0.5, 1.0, 1.5, 2.0 ppm NO_3^-N
Nitrate Nitrogen:	0.25, 0.5, 1.0, 2.0, 4.0, 6.0, 8.0, 10.0 ppm NO_3^-N
Nitrite Nitrogen:	0.05, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.8 ppm NO_2^-N
pH:	5.0, 6.0, 6.5, 7.0, 7.5, 8.0, 9.0, 10.0 pH

Direct Reading Titrator Tests‡	Range	Sensitivity
Alkalinity (Total):	0–200 ppm as CaCO3	4.0 ppm
Carbon Dioxide:	0–50 ppm CO2	1.0 ppm
Dissolved Oxygen:	0–10 ppm O_2	0.2 ppm
Salinity:	0–20 ppt Salinity	0.4 ppt

Temperature	Range	Sensitivity
Armored Thermometer:	–5° to 45°C	0.5°C

‡ Direct reading titrators have a specific range, but may be refilled to test higher concentrations.

Model AQ-5 — Salt Water

ORDER CODE 3636-03 • Shipping code R1(13)

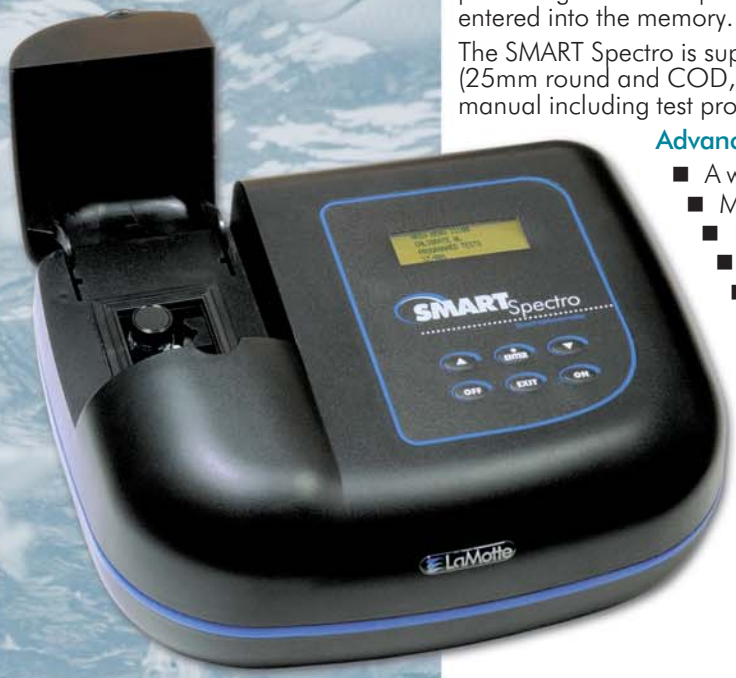
Designed for growers supplementing their water quality monitoring with instrumentation, in the same convenient packaging as the AQ-4. Same factors as AQ-4, but without tests for Dissolved Oxygen, Salinity, pH, and Temperature.

SMART Spectro® Spectrophotometer

Order Code 2000 • Shipping Code NH(17)
Carrying Case • Order Code 2000-CS
Battery Pack with Holder (rechargeable) • Order Code 2000-BP

A portable spectrophotometer that is easier to use and more accurate than anything in its price range. Over 60 pre-programmed tests included, and 25 user calibrations can be entered into the memory. The user can also customize sequences for frequently run tests.

The SMART Spectro is supplied with 6 sample tubes (25mm round), 2 sample cell holders (25mm round and COD, 10 mm cuvettes), AC adapter, battery charger, instruction manual including test procedures, and quick start guides.



Advanced features:

- A wider wavelength range
- Menu-driven display
- Pre-programmed tests & 25 user tests
- Automatic wavelength selection
- Unique optical design system using a 1200 lines/mm grating
- Greater accuracy, higher resolution

Menu Driven Display

Tests and functions are selected from scrolling menus for ultimate simplicity. Results are displayed as %T, absorbance, and concentration.

Pre-Programmed Tests, User Tests, & Automatic Wavelength Selection

Over 70 pre-programmed tests. Up to 25 calibrations for additional tests can be entered into the memory. The user can also customize sequences for frequently run tests. The meter automatically goes to the required wavelength.

Specifications:

Wavelength Range:	350-1000 nm
Wavelength Accuracy:	±2 nm
Wavelength Resolution:	1 nm
Wavelength Bandwidth:	5 nm (max)
Photometric Range:	0-125%T, -0.1-2.5A
Photometric Accuracy:	±0.005A
Photometric Noise:	<0.001A at 0A, <0.002A at 2A
Photometric Drift:	±0.002A/hr @500 nm
Photometric Stray Light:	<0.5 %T
Dispersive Device:	Grating - based system
Optical Mount:	Modified Ebert
Grating:	1200 grooves/mm ruled grating
Light Source:	Quartz halogen
Sample Chambers:	25 mm round cell, 10 mm square cuvette UDV, COD, flow-through (optional)
Optical Mount:	Modified Ebert, 1200 grooves/mm ruled grating
Detector:	Silicon photodiode
Temperature Range:	0-40°C
Modes:	Conc., %T, ABS
Bulb Life:	1000 hours minimum
Pre-Programmed Tests:	Yes
Wavelength Selection:	Automatic
User Tests:	Yes, up to 25 can be entered and edited
Datalogging:	Yes, RS-232
Diagnostics:	Yes
Power:	110/220 volt or battery pack (rechargeable)
Weight:	4.65 kgs (10.3 lbs)
Size:	35 cm x 28 cm x 17 cm

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SMART2 Colorimeter®

Order Code 1919 • Shipping Code NH(4)
Small Field Carrying Case • Order Code 1919-GCS150
Large Carrying Case • Order Code 1919-GCS440
COD Adapter • Order Code 5-0087
UDV Adapter • Order Code 5-0086

Does it all! The user-friendly SMART2 Colorimeter is the direct reading colorimeter for complete on-site water analyses. Over 70 pre-programmed tests can be run on this compact instrument 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. This enables the analyst to select a wavelength and read a reacted sample. The microprocessor, which selects the wavelength, also allows the user to load up to 10 tests for analyzing custom reagent systems. Comes with 4 sample tubes, AC adapter, and instruction manual.

Specifications:

Light Source:	LED/filter setup at 430nm, 520nm, 570nm, 630nm
Detector:	Photodiode
Display:	122 x 32 LCD, 16 x 4 line graphics display
Range:	0-125%T
Resolution:	1% FS
Accuracy:	2% FS
CE Mark:	Yes
Sample Cell:	25 mm round cell, 10 mm square cuvette, 16mm COD tubes
Power:	9V or AC adapter
Battery Life:	500 tests
Datalogging:	RS-232, time and date stamped
Calibration:	Factory set
Keypad:	6-button membrane switch
Size:	15 x 8 x 5.5 cm (6 x 3.25 x 2.5 inches)
Weight:	11 ounces

For information on a COD Heater Block call our Technical Service Department at 1-800-344-3100

SMARTLink 2 Program & Interface Cable

Order Code 1912-3 or 1912-CD • Shipping Code NH(1)

Interface the SMART Spectro Spectrophotometer and SMART2 Colorimeter with a Windows based personal computer. The program can be used to download data stored in the dataloggers of the SMART Spectro and the SMART2 Colorimeter. The program allows the user to identify, organize, view, manipulate and store data as a database on a PC. Data can also be copied and pasted or exported to other applications as an ASCII tab delimited text file.

SMART Reagent Systems

Test Name	Test Method (# of reagents)	Spectro Range	Smart 2 Range	# of Tests	Order Code#	Ship Code
Alkalinity UDV	Unit Dose Vial (1)	0-200	0-200	50	4318-H	NH
Aluminum	Eriochrome Cyanine R (4)	0.00-0.30	0.00-0.30	50	3641-SC	NH
Ammonia Nitrogen (Fresh Water)	Salicylate (3)	0.00-1.00	0.00-1.00	25	3659-01-SC	R2
Ammonia Nitrogen (Salt Water)	Salicylate (3)	0.00-1.00	0.00-1.00	25	3659-01-SC	R2
Ammonia Nitrogen HR	Nesslerization (2)	0.00-4.00	0.00-4.00	50	3642-SC	R1
Biquinide	Colorimetric	0-70	0-70	50	4044	Call
Boron	Azomethine-H	0.00-0.80	0.00-0.80	50	4868	Call
Bromine LR	DPD Tablets (2)	0.00-9.00	0.00-9.00	100	3643-SC	NH
Bromine UDV	Unit Dose Vial DPD (1)	0.0-22.0	0.0-22.0	50	4311-H	NH
Cadmium	PAN (4)	0.00-1.00	0.0-1.00	50	4017	R1
Calcium & Magnesium (Total) Hardness UDV	Unit Dose Vial (1)	10-500	0-400	50	4309-H	NH
Carbohydrazide	Iron Reduction (3)	0.000-0.900	0.000-0.900	100	4857	R1
Chloride TesTab	Test Tab (1)	0.0-30.0	0.0-30.0	50	3693-SC	NH
Chlorine	DPD Tablets (3)	0.00-4.00	0.00-4.00	100	3643-SC	NH
Chlorine - Free UDV	Unit Dose Vial (1)	0.00-10.00	0.00-10.00	50	4311-H	NH
Chlorine - Liquid DPD	DPD (3)	0.00-4.00	0.00-4.00	144	4859	R1
Chlorine - Total UDV	Unit Dose Vial (1)	0.00-10.00	0.00-10.00	50	4312-H	NH
Chlorine Dioxide	DPD tablet/Glycine (2)	0.00-7.00	0.00-8.00	50	3644-SC	NH
Chromium (Hexavalent)	Diphenylcarbohydrazide (1)	0.00-1.00	0.00-1.00	100	3645-SC	HA
Chromium (Total, Hex & Trivalent)	Diphenylcarbohydrazide (5)	0.00-1.00	0.00-1.00	100	3698-SC	HF
Chromium TesTab	TestTab	0.00-1.00	0.00-1.00	50	3697-SC	NH
Cobalt	PAN (3)	0.00-2.00	0.00-2.00	50	4851	HF
†COD LR with Mercury	Digestion (1)	0-150	5-150	25	0075-SC	R1
†COD LR without Mercury	Digestion (1)	0-150	5-150	25	0072-SC	R1
†COD SR with Mercury	Digestion (1)	0-1500	0-1500	25	0076-SC	R1
†COD SR without Mercury	Digestion (1)	0-1500	0-1500	25	0073-SC	R1
†COD HR with Mercury	Digestion (1)	0-1500	0-1500	25	0077-SC	R1
†COD HR without Mercury	Digestion (1)	0-15,000	0-15,000	25	0074-SC	R1
Color	Platinum Cobalt (0)	0-1000	0-1000	∞	NA	NH
Copper BCA - LR	Bicinchoninic Acid (1)	0.00-3.50	0.00-3.50	50	3640-SC	NH
Copper - Cuprizone	Cuprizone (2)	0.00-2.00	0.00-2.00	50	4023	R1
Copper DDC	Diethyldithiocarbamate (1)	0.00-6.00	0.00-6.00	100	3646-SC	NH
Copper UDV	Unit Dose Vial, Bicinchoninic acid (1)	0.0-4.0	0.0-4.0	50	4314-H	NH
Cyanide	Pyridine-Barbituric Acid (5)	0.00-0.50	0.00-0.35	50	3660-SC	R1
Cyanuric Acid	Melamine (1)	5-200	5-200	50	3661-SC	NH
Cyanuric Acid UDV	Unit Dose Vial, Melamine (1)	0-150	5-150	50	4313-H	NH
DEHA	Iron Reduction (3)	0.000-0.700	0.000-0.700	100	4857	R1
Dissolved Oxygen (DO)	Winkler Colorimetric (3)	0.0-12.0	0.0-11.0	200	3688-SC	R1
Erythorbic Acid	Iron Reduction (3)	0.00-3.00	0.00-3.00	100	4857	R1
Fluoride	SPADNS (2)	0.00-2.00	0.00-2.00	50	3647-01-SC	R1
Hydrazine	P-dimethylaminobenzaldehyde (2)	0.00-0.75	0.00-1.00	50	3656-SC	R2
Hydrogen Peroxide LR	DPD (2)	0.00-1.50	0.00-1.50	100	3662-SC	NH
Hydrogen Peroxide HR	DPD (2)	0-60	0-60	50	4045	Call
Hydrogen Peroxide Shock	DPD (2)	0-225	0-225	100	4045	Call
Hydroquinone	Iron Reduction (3)	0.00-1.80	0.00-2.00	100	4857	R1
Iodine	DPD Tablets (2)	0.00-14.00	0.00-14.00	100	3643-SC	NH
Iron - Bipyridyl	Bipyridyl (2)	0.00-6.00	0.00-6.00	50	3648-SC	R1
Iron UDV	Unit Dose Vial Bipyridyl (1)	0.00-10.00	0.00-10.00	50	4315-H	NH
Iron - Phenanthroline	1,10 Phenanthroline (2)	0.00-4.50	0.00-5.00	50	3668-SC	R1
Lead	PAR (5)	0.00-5.00	0.00-5.00	50	4031	R1
Manganese LR	PAN (3)	0.00-0.70	0.00-0.70	50	3658-SC	HF
Manganese HR	Periodate (2)	0.0-15.0	0.0-15.0	50	3669-SC	R1
Mercury	TMK (3)	0.00-1.50	0.00-1.50	50	4861	HF
Methylethylketoxime	Iron Reduction (3)	0.00-3.00	0.00-3.00	100	4857	R1

†COD Heater Block required. Call for additional information.

Ship Codes: (NH) Non-Hazardous Material - No Fees • (R1) Small Qty. Hazardous Material - No Fees (R2 & R3) Hazardous Material - Air Fees Only • (HF) Hazardous Material - Air & Ground Fees

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SMART Reagent Systems (continued)

Test Name	Test Method (# of reagents)	Spectro Range	Smart 2 Range	# of Tests	Order Code#	Ship Code
Molybdenum HR	Thioglycolate (3)	0.0-15.0	0.0-50.0	50	3699-02-SC	R1
Nickel	Dimethylglyoxime (6)	0.00-8.00	0.00-8.00	50	3663-SC	HF
Nitrate Nitrogen LR	Cadmium Reduction (2)	0.00-3.00	0.00-3.00	20	3649-SC	R1
Nitrate TesTabs	Zinc Reduction (1)	0.0-60.0	0.0-60.0	50	3689-SC	NH
Nitrite Nitrogen LR	Diazotization (2)	0.00-0.80	0.00-0.80	20	3650-SC	NH
Nitrite TesTabs	Diazotization (1)	0.00-1.25	0.00-1.25	50	3886-H	NH
†Nitrogen, Total*	Chromotropic Acid/Digestion (6)	0-25 mg/L	0-25 mg/L	25	4026	R1
Ozone LR	Indigo Trisulfonate (3)	0.00-0.40	0.00-0.40	100	3651-SC	NH
Ozone HR	Indigo Trisulfonate (3)	0.00-2.50	0.00-2.50	20	3651-SC	NH
pH CPR (Chlorphenol Red)	Chlorophenyl Red (1)	pH 5.0-7.0	pH 5.0-6.8	100	3700-SC	NH
pH PR (Phenol Red)	Phenol Red (1)	pH 6.6-8.4	pH 6.6-8.4	100	3700-SC	NH
pH TB (Thymol Blue)	Thymol Blue (1)	pH 8.0-9.5	pH 8.0-9.6	100	3700-SC	NH
Phenol	Aminoantipyrine (3)	0.00-6.00	0.00-6.00	50	3652-SC	NH
Phosphate LR	Ascorbic Acid Reduction (2)	0.00-3.00	0.00-3.00	50	3653-SC	R2
Phosphate HR	Vanodomolybdovanadate Acid (1)	0.0-70.0	0.0-70.0	50	3655-SC	HF
†Phosphorus, Total - LR*	Ascorbic Acid/Digestion (5)	0.00-3.50 mg/L	0.00-3.50 mg/L	25	4024	R1
†Phosphorus, Total - HR*	Molybdovanadate/Digestion (5)	0.0-100.0 mg/L	0.0-100.0 mg/L	25	4025	R1
Potassium	Tetraphenylboron (2)	0.0-10.0	0.0-10.0	100	3639-SC	R1
Silica LR	Heteropoly Blue (4)	0.0-2.5	0.0-4.0	100	3664-SC	R1
Silica HR	Silicomolybdate	0-50	0-75	50	3687-SC	R1
Sulfate HR	Barium Chloride (1)	6-100	0-100	100	3665-SC	R1
Sulfide LR	Methylene Blue (3)	0.00-1.00	0.00-1.50	50	3654-01-SC	R1
Surfactants	Bromthymol Blue (3)	0.5-8.0	0-8.0	100	4876	HFA
Tannin	Tungsto-Molybdophosphoric Acid (2)	0.0-10.0	0.0-10.0	50	3666-SC	R1
Turbidity	Absorptimetric	0-400 FTU	0-400 FTU	∞	NA	NH
Zinc LR	Zincon (6)	0.00-3.00	0.00-3.00	50	3667-SC	HF

Model SCL-08 Aquaculture Lab

ORDER CODE 1983-01 • Shipping code HF(34)

The Model SCL-08 Aquaculture Lab provides precise results which reflect actual water quality conditions on-site. The battery-powered SMART2® Colorimeter instantly analyzes color reactions within test samples and provides readings directly in ppm (parts per million). See page 9 for colorimeter information. No visual color comparison is required. Simplified procedures are utilized for each test. Titration tests performed with LaMotte's Direct Reading Titrator provide results directly in ppm.

Model SCL-09 Lab without pH Meter

ORDER CODE 1984 • Shipping code HF(34)

SMART® Colorimeter Tests	Range*	Sensitivity	# of Tests
Ammonia	0–5.0 ppm	0.05 ppm	50
Copper	0–5.0 ppm	0.03 ppm	100
Nitrate Nitrogen	0–3.0 ppm	0.02 ppm	20
Nitrite Nitrogen	0–0.7 ppm	0.01 ppm	20
Phosphate	0–3.0 ppm	0.01 ppm	50

Direct Reading Titrator Tests	Range*	Sensitivity	# of Tests
Alkalinity	0–200 ppm	4.0 ppm	50
Carbon Dioxide	0–50 ppm	1.0 ppm	50
Chloride/Salinity	0–200 ppm	4.0 ppm	50
Dissolved Oxygen	0–10 ppm	0.2 ppm	50
Hardness (Total, Ca, Mg)	0–200 ppm	4.0 ppm	50

pH Meter	Range*	Sensitivity	# of Tests
Model pH5	pH 0–14	0.01 pH	—

*Range may be extended by dilution. †COD Heater Block required. Call for additional information.

pHPLUS Direct

pHPLUS Direct • Order Code 1936
pH Probe, Gel-filled • Order Code 1904
Temperature Probe • Order Code 1909
Adapter, 110V • Order Code 1726-110
Adapter, 220V • Order Code 1726-220

Laboratory precision in a water-resistant design! Read pH, mV, temperature and concentration with accuracy–ISE's read concentration in ppm. Easy-to-use in any test mode, the pHPLUS Direct hold 20 test results.

1 BNC, Temp probe, power, ref.	
9V alkaline or line for 110 or 220V	

Please contact our Tech Service Department for information on ISEs at 1-800-344-3100.

pH	
Range:	0.00-14.00
Resolution:	0.01
Slope:	80 to 120%
Accuracy:	±0.01
Calibration:	3 point manual or auto.
Electrode:	Epoxy, Ag/AgCl

Temperature	
Range:	-5.0 to 100.0°C
Resolution:	0.1°C
Accuracy:	±1°C

Concentration	
Range:	0.0000 to 19999
Resolution:	±1 LSD
Accuracy:	±0.5% or ±1 LSD

mV	
Range:	±1999.9
Accuracy:	±0.1 mV
Resolution:	0.1 mV

LaMotte 5 Series Meters

An outstanding line of instruments for measuring pH, Conductivity, and TDS. These hand-held meters incorporate advanced microprocessor technology with attractive, compact design, resulting in a hi-tech performance and a user-friendly operation, at an affordable price. Now includes rubber boot with pop-up stand!

MODEL	pH 5 (pH)	pH 5 (Temp.)	CON 5 (Cond.)	TDS 5 (TDS)	CON 5 & TDS 5 (Temp.)
Order Code:	without case 5-0034 with case 5-0035 3 lbs.		w/out case 5-0038 w/case 5-0039	w/out case 5-0036 w/case 5-0037	3 lbs.
Range:	0.00-14.00 pH	0.0-100.0°C	0.0 to 199.9 µS 200 to 1999 µS 2.00 to 19.99 mS	0.0 to 99.9 ppm 100 to 999 ppm 1.00 to 9.99 ppt	0.0 to 100.0°C
Resolution:	0.01 pH	0.1°C	0.1 µS, 1µS, 0.01mS	0.1 ppm, 1 ppm, 0.01 ppt	0.01°C
Accuracy:	±0.01 pH	±0.5°C	±2% full scale	±2% full scale	±0.5°C
Calibration:	Up to 3 Buffer Values (pH 4.01, 7.00, 10.0)	Offset 0.1°C increments	1 to 3 points (push button; 1 point per range)		Offset 0.1°C increments
Temperature Compensation:	Automatic Temperature Compensation (ATC)		Automatic Temperature Compensation (ATC) fixed 2% per °C factor		
Power:	4 AAA alkaline batteries (supplied) >70 hours continuous use		4 AAA alkaline batteries (supplied) >60 hours continuous use		
Display:	Single Custom LCD		Single Custom LCD		
Auto shut-off:	After 17 minutes		After 17 minutes		
Operating Temperature:	32 to 122°F; 0 to 50°C		32 to 122°F; 0 to 50°C		

Standardized pH Buffer Solutions

For use in calibration of pH meters. Available in 100 mL (-J) and 500 mL (-L) sizes.

pH Value	Code
4.00	2866
7.00	2881
10.00	2896

LaMotte Company • P.O. Box 329 • Chestertown • Maryland • 21620
t: 800-344-3100 • 410-778-3100 • f: 410-778-6394 • www.lamotte.com

New! Waterproof Tracer

Ideal for almost any water analysis application. The WATERPROOF Tracer can be intermittently submerged to a depth of 3 feet. The waterproof feature makes cleanup easy since the whole unit can be rinsed. Replacement electrodes help reduce long term costs. pH, ORP, and Chlorine probes are interchangeable! Unit identifies which probe is in use and retains calibrations.

Model	pH Tracer	ORP Tracer	Chlorine Tracer	Cond/TDS/ Salinity Tracer
Order Code:	1741	1742	1740	1749
Range:	0.00-14.00 pH	–999 to 999mV	0.00-9.99 ppm TCl	0-199.9 µS, 0-999 ppm, 0-9.99 ppt
Resolution:	0.01 pH	1 mV	0.01 ppm	1.0 µ, 1ppm, 0.01 ppt
Accuracy:	±0.01 pH	±4 mV	±10% 00 reading from 0.05-5.0 ppm	±2 Fs
Temperature:	23° to 194°F (–5 to 90°C)	—	23° to 194°F (–5 to 90°C)	32° to 140°F (0 to 65°C)
Power:	Four SR-44 Batteries			
Special Features:	Auto Shutoff after 10 minutes, Low BAT indicator, Digital and Analog Display, Hold 15 tagged readings			
Special Functions:	Calibration Function to 4.0, 7.0, and 10.0	Self Calibration		Calibration Function, ATC
Replacement Electrode:	1733	1734	1732	1765

Digital Turbidity Meter

MODEL 2020* • ORDER CODE 1799 (120v/60Hz) • Shipping code NH(7)
MODEL 2020* • ORDER CODE 1799-EX2 (220v/50Hz) • Shipping code NH(7)

Reads Nephelometric Turbidity Units (NTUs) to an accuracy of ±2% over full range, 0–1100 NTU. Each unit comes supplied with four optically-selected sample vials and AMCO™ 1.0 NTU and 10.0 NTU standards. The unit runs on an alkaline battery. AC adapter included. All supplied in a rugged carrying case.

Specifications:

Instrument Type:	Nephelometric turbidity; calibrated in NTU's
Range:	0–1100 NTU
Readout:	0.01 on 0-1.99 range, 0.1 on 11-109.9 range, 1 on 110-1100 range
Response Time:	5 seconds
Accuracy:	±2% of reading below 100 NTU, or ±3% above 100 NTU
Display:	3½ a digit LCD, Battery and Lamp status
Light Source:	Tungsten filament lamp
Sample Chamber:	Accepts 25 mm diameter flat-bottom, screw capped sample tubes
Power:	Battery Operation: 9V alkaline Line Operation: 120v/50Hz or 220/60Hz, 100 mA, with included adapter
Size:	8.5 x 16.2 x 6.7 in. (3⅜ x 6⅜ x 2⅝ cm)

*EPA Accepted for NPDES

Hydrometer

Order Code 3-0011 • Shipping Code NH(1)

Precision specific gravity hydrometer for salinity measurement. Glass with scale graduated in divisions of 0.0005 from 1.000° to 1.070° Specific Gravity. Each unit checked against NIST certified standard. Includes table to convert reading to salinity in parts per thousand (ppt). Length 13 in. (330 mm), scale length 5 (140 mm).

Use with Hydrometer Jar (Code 3-0024) and Armored Thermometer (Code 1066).

Hydrometer Jar

Order Code 3-0024 • Shipping Code NH(1)

Precision molded clear plastic (PMP) 500 mL cylinder with broad base for extra stability and easy-to-read, molded 1 mL graduations. Clear, durable polymethyl-pentene cylinder is never slippery, even when wet.

Salinity Refractometer

Order Code 5-0020 • Shipping Code NH(2)

Handheld salinity refractometer with dual specific gravity and part per thousand (0/00) scale. Range 1.000-1.070 specific gravity and 0-100 0/00 salinity. Resolution 0.0001 and 1.0 0/00 respectively. Large, magnified scale provides a sharp contrast for easier reading. Unit features ATC (Automatic Temperature Compensation) over the range of 10 - 30°C. Rubber grip insulates the unit against hand heat for the most accurate results. Hooded eyepiece houses and protects the focusable lens and prevents stray light from entering the eyepiece during use. Non-roll stand protects against damage to the unit when set down in between readings. Calibration ring is used to zero or calibrate the unit, simplifying the procedure. Unit comes with black nylon zip case, transfer pipet, and screwdriver.

Specifications:

Scales:	Specific Gravity 1.000 to 1.070 Parts per thousand (0/00) 0 to 100
Resolution:	S. G. to .001 ppt (0/00) to 1 ppt
Temp. Comp.:	Automatic between 10° and 30°C

Plankton Net

Order Code 1063 • Shipping code NH(2)
15" x 5" mouth, (38 x 13 cm) diameter

Order Code 0023 • Shipping code NH(4)
38" x 12" mouth (97 x 31 cm) diameter

A cone-shaped net of 10 mesh/153 micron nylon cloth. Minute plankton are collected and can be observed in the clear 50 mL conical graduated tube at the end of the net. Two tubes are provided. The net mouth is braced by a sturdy brass ring and harness.

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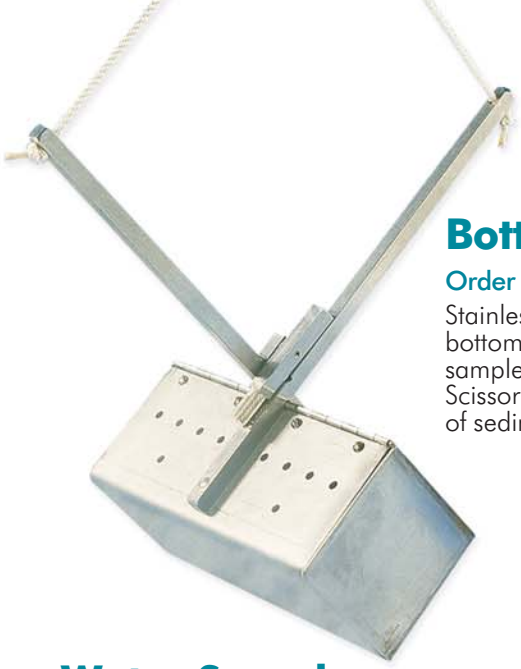


Bottom Sampling Dredge

Order Code 1097 • Shipping Code NH(5)

Stainless steel sampler designed for use on soft bottoms (sand or silt). A simple trigger holds the sampler open while lowering to cover uniform area. Scissor design closes sampler, retrieving a volume of sediment to the surface.

Water Sampler

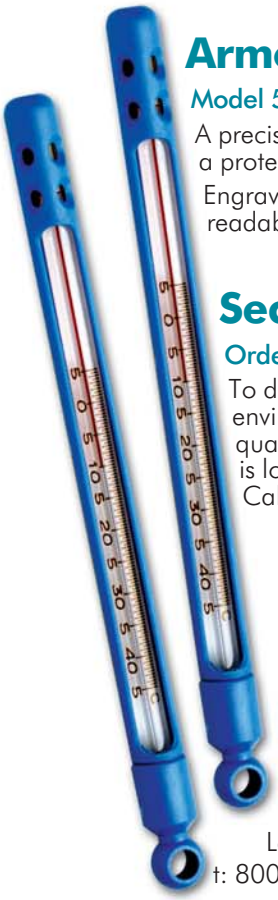
Model JT-1 • Order Code 1077 Shipping Code NH(9)

A one-liter sampler of clear acrylic with a built-in outlet for removal of the water sample. A brass messenger is sent down a 20 meter calibrated nylon line to trigger a release mechanism sealing the sample chamber. The seal is made with two heavy rubber plungers. A lead collar surrounds the sampler to eliminate Drift.

Sounding Lead & Calibrated Line

Order Code 1064-G Shipping Code NH(4)

This heavy nylon line is marked from 0–20 meters and has a spring clip for easy attachment to a Secchi Disk, plankton net or a lead weight. A 2 lb. (0.9Kg) lead weight is provided. The nylon line wraps conveniently around an ethafoam block which also acts as a float to prevent accidental loss.



Armored Thermometer

Model 545 • Order Code 1066 Shipping Code NH(1)

A precision thermometer furnished in a protective plastic jacket with window opening.

Engraved graduations on white tubing center increases readability which covers the range of –5° to 45°C in 0.5° increments.

Secchi Disk

Order Code 0171• Shipping Code NH(3)

To determine water turbidity in the aquatic environment. A weighted black and white quadrant plastic disk (20 cm diameter) is lowered into the water until it disappears. Calibrated line is sold separately.

CATALOGS

Soil Testing Products
Order Code 1652
Field and laboratory test equipment for measurement of soil nutrients and soil pH. For agricultural soils, gardens, and hydroculture.

Water Quality Testing Products
Order Code 1653
A complete guide to instruments, apparatus, kits, and reagents. This catalog features the best available test equipment for testing a variety of waters. LaMotte individual and combination kits, and instrumentation are featured.

Environmental Science Products
Order Code 1590
"Hands-on" test equipment for air, soil, and water chemistry students in elementary, secondary, vocational, outdoor, and college science programs.

Water Conditioning Testing Products
Order Code 1650
Softener sales demonstration outfits and other specialized test equipment for the point-of-use water treatment industry.

Pool & Spa Water Testing Products
Order Code 1634
A complete line of test kits, combination outfits, and meters for pool service professionals, public pool or spa operators, and private pool or spa owners.

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