



Aquaculture & Aquarium Testing Products



FACTORS & TEST METHODS

Table Of Contents

Individual Test Kits	3
Aquaponics & Hydroponics.....	4
Fresh & Salt Water	
Combination Outfits	5
Instrumentation.....	6-11
Sampling Equipment.....	12

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, and LQ	Hazardous Materials, Air Fees Only

Test Methods

TITRIMETRIC

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



VISUAL COLORIMETRIC

Octa-Slide 2 and LRC Comparators feature eight color standards with built-in filters that eliminate optical distortion.



ELECTRONIC METER/PROBE

Electronic methods generally use a special electrode for measuring a specific test factor.

An electrode is immersed into a sample and an amplified current or voltage is produced and translated into a digital readout. In a colorimeter, light is passed through a sample and measured by a photodetector.



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. Alkalinity is often referred to as carbonate hardness in the aquarium industry.

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.

NITRATE

Nitrate is a product of the nitrogen cycle. Ammonia is converted by bacteria to nitrite, which in turn is converted to nitrate, also by bacteria. Nitrates can build up in closed systems and are often diluted by water changes. Nitrates from fertilizer runoff in ponds and lakes can cause algae blooms that are harmful to aquatic life.

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.



INDIVIDUAL TEST KITS

Test Factor	Code	Water	Method	Range/Sensitivity	# of Tests	# of Rgts.	Ship Code (wt./lbs)	Refill Code
Alkalinity*	4491-DR-01 [†]	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]	R-4491-DR
Ammonia Nitrogen	3304-02	Fresh or Salt	Octa-Slide 2, 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]	R-3304
Carbon Dioxide*	7297-DR-01 ^{†B}	Fresh or Salt	Direct Reading Titrator	0-50 ppm CO ₂ in 1.0 ppm increments	50	2	R1 [1]	R-7297-DR
Chloride*	4503-DR-02 ^{†B}	Fresh	Direct Reading Titrator	0-200 ppm Cl in 4.0 ppm increments	50	4	R1 [1]	R-4503-DR-01
Chlorine	3312-01	Fresh	Octa-Slide 2 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]	6999A-H & 6905A-H
Copper	6616-01 ^B	Fresh or Salt	LRC Comparator 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]	6446-E
Dissolved Oxygen*	5860-01 [†]	Fresh or Salt	Direct Reading Titrator All liquid system!	0-10 ppm O ₂ in 0.2 ppm increments	50	5	R1 [2]	R-5860
Hardness*	4824-DR-LT-01	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]	R-4824-DR-LT
	4482-DR-LI-01 ^{†R}	Fresh or Salt	Direct Reading Titrator for Total Hardness	0-200 ppm as CaCO ₃ in 4.0 ppm increments	50	3	R1 [1]	R-4482-DR-LI
	3609-01	Fresh or Salt	Direct Reading Titrator for Calcium Hardness	0-200 ppm or 0-2,500 ppm	50	3	R1 [1]	R-3609
Iron	4447-01	Fresh or Salt	Octa-Slide 2 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]	R-4447
	7787-01 ^C	Fresh or Salt	LRC Comparator 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]	R-7787
Nitrate Nitrogen	3354-01	Fresh or Salt	Octa-Slide 2 All tablet system!	0, 1, 2, 4, 6, 8, 10, 15 ppm NO ₃ -N	40	2	NH [2]	R-3354
	3110-01 ^B	Fresh or Salt	Octa-Slide 2	0.25, 0.5, 1.0, 2.0, 4.0, 6.0, 8.0, 10.0 ppm NO ₃ -N	50	2	R1 [2]	R-3110
Nitrite Nitrogen	3352-01 [†]	Fresh or Salt	Octa-Slide 2	0.05, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.8 ppm NO ₂ -N	50	3	NH [2]	R-3352
Ozone	3249	Fresh or Salt	Digital colorimeter, Indigo Blue method	0-0.4 ppm O ₃ /0.04 detection limit	100	3	NH [7]	—
pH	3353-01 ^{†R}	Fresh or Salt	Octa-Slide 2	5.0, 6.0, 6.5, 7.0, 7.5, 8.0, 9.0, 10.0 pH	50	1	R1 [1]	2218-G
	2159-02	Salt	LRC Comparator	7.7, 7.8, 7.9, 8.0, 8.1, 8.2, 8.3, 8.4 pH	100	1	R1 [1]	2212-G
Phosphate	3121-02	Fresh or Salt	LRC Comparator	0.0, 0.2, 0.4, 0.6, 0.8, 1.0, 1.5, 2.0 ppm PO ₄	50	2	R1 [1]	R-3121-01
Salinity*	7459-02 ^B	Salt	Direct Reading Titrator	0-20 ppt Salinity in 0.4 ppt increments	50	2	R1 [1]	R-7459-01
Sulfide	4456-01	Fresh or Salt	LRC 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]	R-4456

* Often referred to as Carbonate Hardness in the aquarium industry. † Featured test in AQ Series of combination outfits.

* Note: Direct Reading Titrators have a specific range, but may be refilled to test higher concentrations.

Prop 65: C: ⚠ WARNING Cancer - www.P65Warnings.ca.gov/product; R: ⚠ WARNING Reproductive Harm - www.P65Warnings.ca.gov/product;

B: ⚠ WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

New Insta-Test[®] Analytic Test Strips for Natural Waters

Ideal for routine monitoring of lakes, streams, ponds, aquaria, and ornamental fish ponds. Strips may be immersed directly into body of water or tank. No test tubes or sampling containers required. Suitable for fresh or salt water analysis. 25 strips per vial.

Strip	Range	Code
5-Way	Nitrate 0, 20, 40, 80, 160, 200 ppm	3038-G
	Nitrite 0, 0.5, 1.0, 3.0, 5.0, 10.0 ppm	
	pH 6.0, 6.5, 7.0, 7.5, 8.0, 8.5, 9.0	
	Alkalinity 0, 40, 80, 120, 180 ppm	
	Hardness 0, 30, 60, 120, 180 ppm	
Ammonia	0, 0.5, 1.0, 3.0, 6.0 ppm	3023-G
Phosphate	0, 100, 200, 300, 500, 1000, 2500 ppb	3021-G-ENV



AQUAPONICS & HYDROPONICS

Aquaponics Test Kit • Fresh • Brackish • Salt Water

Order Code 3637* • Ship Code LQ [9] | Reagent Refill Package Order Code R-3637* • Ship Code LQ [4]

Aquaponics is growing rapidly as a hobby and as an industry as the farm-to-table trend continues to spread. Designed for small to mid-size systems, this test kit monitors basic water quality for both the aquaculture and hydroponics segments of your system. A detailed, diagrammed instruction manual is provided along with a quick reference lid instruction. Reagents, labware, and accessories are mounted in a foam-lined carrying case. Kit is complete with labware, accessories, and reagents to perform approximately 50 repetitions per test factor. Test chemistries and comparators are compatible with fresh, brackish or salt water systems.



Octa-Slide 2 Comparator	Method	Range/Sensitivity
Ammonia	Salicylate Method	0.0, 0.05, 0.1, 0.25, 0.5, 1.0, 1.5, 2.0 ppm $\text{NH}_3\text{-N}$
Nitrite	Diazotization/Coupling	0.05, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.8 ppm $\text{NO}_2\text{-N}$
Nitrate	Zinc Reduction	0.25, 0.5, 1.0, 2.0, 4.0, 6.0, 8.0, 10.0 ppm $\text{NO}_3\text{-N}$
pH	Wide Range Indicator	5.0, 6.0, 6.5, 7.0, 7.5, 8.0, 9.0, 10.0 pH
Iron, Ferrous & Ferric	Bipyridyl Indicator	0.5, 1.0, 2.0, 3.0, 4.0, 6.0, 8.0, 10.0 ppm Fe
Direct Reading Titrator	Method	Range/Sensitivity
Alkalinity	Acid/Base Titration	0-200 ppm as CaCO_3 , in 4.0 ppm increments
Dissolved Oxygen	Modified Winkler Titration	0-10 ppm, in 0.2 ppm

* Prop 65: ⚠ WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

Hydroponics Test Kit

Order Code 3561-01* • Shipping Code HF [7] | Reagent Refill Package Order Code R-3561* • Shipping Code HF [3]

Maintain proper nutrient balances and achieve optimum growing conditions in soil-less cultures. Kit comes with enough reagents for 50 repetitions per test factor, complete labware and helpful *Plant Nutrition Studies* handbook.



Octa-Slide 2 Comparator	Method	Range/Sensitivity
pH	Wide Range Indicator	4.5, 5.0, 5.5, 6.0, 6.5, 7.0, 7.5, 8.0, pH
Nitrate Nitrogen	Cadmium Reduction	0.25, 0.5, 1.0, 2.0, 4.0, 6.0, 8.0, 10.0 ppm
Phosphorus	Ascorbic Acid	5, 6, 9, 12, 15, 18, 24, 30 ppm
Potassium	Turbidity Reading Tube	5, 8, 10, 20, 30, 40, 60 ppm

* Prop 65: ⚠ WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product



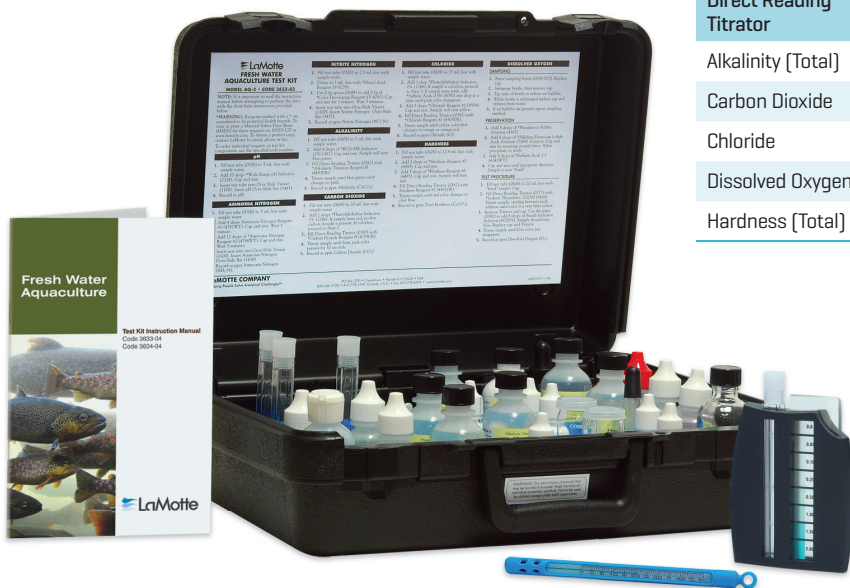
Code 3561-01

FRESH & SALT WATER COMBINATION OUTFITS

Model AQ-2 · Fresh Water

Order Code 3633-05* · Shipping Code R3 [16] | Reagent Refill Order Code R-3633-05*

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.



Code 3633-05

Direct Reading Titrator	Method	Range	Sensitivity
Alkalinity [Total]	Acid/Base Titration	0–200 ppm as CaCO_3	4.0 ppm
Carbon Dioxide	Titration	0–50 ppm CO_2	1.0 ppm
Chloride	Titration	0–200 ppm Cl	4.0 ppm
Dissolved Oxygen	Modified Winkler Titration	0–10 ppm O_2	0.2 ppm
Hardness [Total]	Titration	0–200 ppm as CaCO_3	4.0 ppm

Octa-Slide 2 Comparator	Method	Range/Sensitivity
Ammonia Nitrogen	Salicylate Method	00.0, 0.05, 0.1, 0.25, 0.5, 1.0, 1.5, 2.0 ppm $\text{NH}_3\text{-N}$
Nitrite Nitrogen	Diazotization/Coupling	0.05, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.8 ppm $\text{NO}_2\text{-N}$
pH	Wide Range Indicator	5.0, 6.0, 6.5, 7.0, 7.5, 8.0, 9.0, 10.0 pH

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

* Prop 65: **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

Model AQ-4 · Salt Water

Order Code 3635-05* · Shipping Code R3 [16] | Reagent Refill Order Code R-3635-04*

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 available 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.

Direct Reading Titrator	Method	Range	Sensitivity
Alkalinity [Total]	Acid/Base Titration	0–200 ppm as CaCO_3	4.0 ppm
Carbon Dioxide	Titration	0–50 ppm CO_2	1.0 ppm
Dissolved Oxygen	Modified Winkler Titration	0–10 ppm O_2	0.2 ppm
Salinity	Titration	0–20 ppt Salinity	0.4 ppt

Octa-Slide 2 Comparator	Method	Range/Sensitivity
Ammonia Nitrogen	Salicylate Method	0.0, 0.05, 0.1, 0.25, 0.5, 1.0, 1.5, 2.0 ppm $\text{NH}_3\text{-N}$
Nitrate Nitrogen	Cadmium Reduction	0.25, 0.5, 1.0, 2.0, 4.0, 6.0, 8.0, 10.0 ppm $\text{NO}_3\text{-N}$
Nitrite Nitrogen	Diazotization/Coupling	0.05, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.8 ppm $\text{NO}_2\text{-N}$
pH	Wide Range Indicator	5.0, 6.0, 6.5, 7.0, 7.5, 8.0, 9.0, 10.0 pH

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



Code 3635-05

* Prop 65: **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

INSTRUMENTATION WATERLINK® SPIN TOUCH® FF

6-Wavelength
Colorimeter

Bluetooth

Touchscreen

Portable

Pre-Measured,
Sample-Injected,
Reagent Disks

Up to
8 tests in
2 minutes!



WaterLink® Spin Touch® FF

Order Code 3587 · Shipping Code NH [11]

The innovative **WaterLink® Spin Touch® FF** photometer does all your water testing for you. Each reagent disk contains the precise amount of reagent needed to run a complete series of tests. Just fill one unique Spin reagent disk with less than 3 mL of water and all your vital tests are done automatically—in just 2 minutes!

Reliable Results

- Virtually Eliminates User-Error
- Pre-Measured Reagents
- Exact Reaction Time and Auto-Blanking
- Meter Calibration Check System
- 6-Wavelength Photometer

Super Fast & Simple

- 2 Minutes for up to 8 Complete Tests Using One Disk
- Fill Disk and Insert > Tap “Start Test” > Read Results

Data Logging

- Stores Test Dates, Times, Results, and Location
- Download via USB to PC

Stand-Alone or Cloud-Connection

- Touchscreen Operation
- Connect to WaterLink Solutions via Bluetooth®

Rugged and Portable

- Innovative Water-Resistant Housing
- Internal, Rechargeable Batteries

Specifications:

Instrument Type:	Centrifugal Fluidics Photometer
6 Wavelengths:	390 nm, 428 nm, 470 nm, 525 nm, 568 nm, 635 nm
Display:	Color Capacitive Touchscreen, 3.5", 320 X 240 pixel resolution
Languages:	English, French, Spanish, German, Italian, Portuguese, Dutch, Swedish, Turkish, Chinese
Batteries:	Lithium Ion, Rechargeable [Full Charge in 10-12 hours], 150 tests per charge
Communication:	Bluetooth, USB-C
Calibration:	Factory Set, Field Calibration via Internet Connection
Date Storage:	Last 250 Test Results with Date, Time, Location
Water Resistance:	Rubber Co-molded Base, Rubber USB Port Plug, Gasketed Display & Hinge
Size & Weight:	8.5 L x 4.9 W x 4.1 H in; 1.74 lb; 22.6 L x 12.7 W x 11.4 H cm; 0.79 kg
Operation:	Single On/Off/Reset Button with Indicator Light, Touchscreen
Firmware	Internet updateable [New Test, New Test Calibrations, etc.], requires a USB connection to a Windows® PC
Printer	Optional Bluetooth® Printer [Code 5-0067]; 384 dots per line at 8 dots/mm resolution
Certification	CE

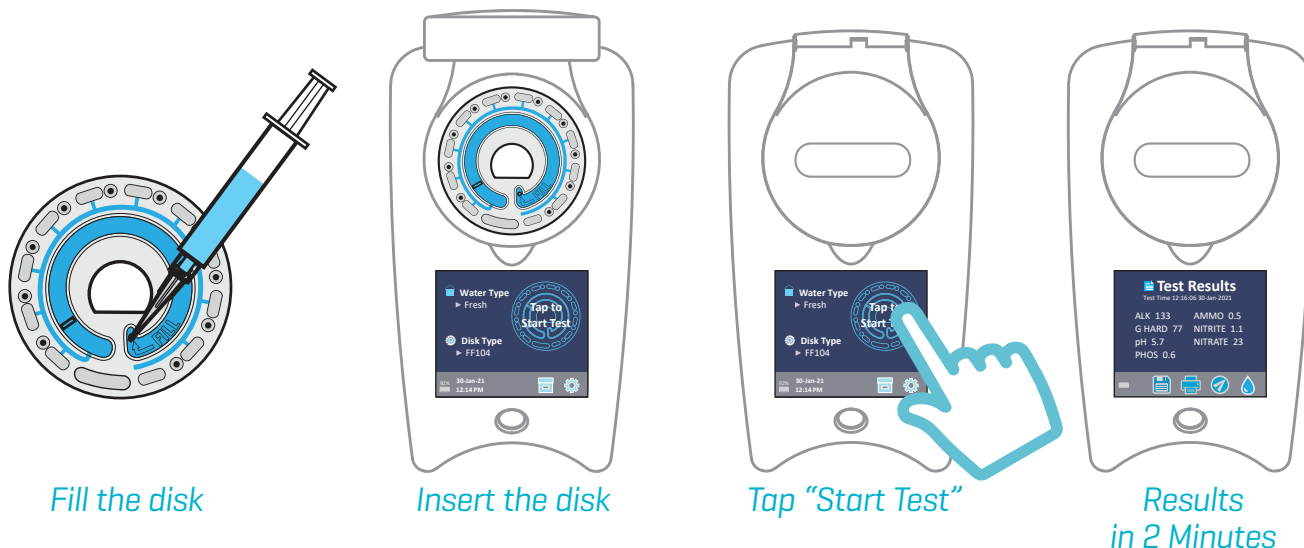
Bluetooth® is a registered trademark of Bluetooth® SIG, Inc.



The Complete Lab Includes: Photometer, Instruction Manual, Quick-Start Instructions, 3 Syringes, Meter Check Disk, Disk Cover, Sample Bottle, USB Cable with AC Adapter, Carrying Case. [Disks sold separately]

INSTRUMENTATION WATERLINK® SPIN TOUCH® FF

So Simple! So Fast!



Reagent Disks

Disks come individually packaged in foil pouches in boxed packs of 50.

FF Fresh Water Reagent Disks

Order Code 4351-H • Box of 50

Test Parameter	Display Abbreviation	Range	Accuracy	Method Detection Limit
Alkalinity	ALK	0-250 ppm	± 15%	15 ppm
Ammonia NH ₃	AMMO	0-3.0 ppm	< 2.0 ppm: ± 0.2 ppm > 2.0 ppm: ± 0.4 ppm	0.2 ppm
Hardness	G HARD	0-500 ppm	± 15%	20 ppm
Nitrate NO ₃	NITRATE	0-300 ppm	± 30%	5 ppm
Nitrite NO ₂	NITRITE	0-2.0 ppm	± 0.2 ppm	0.1 ppm
pH	pH	4.5-10.0 pH	± 0.2	NA
Phosphate PO ₄	PHOS	0-2.0 ppm	± 0.2 ppm	0.2 ppm

FF Salt Water Reagent Disks

Order Code 4352-H • Box of 50

Test Parameter	Display Abbreviation	Range	Accuracy	Method Detection Limit
Alkalinity	ALK	0-300 ppm	± 15%	15 ppm
Ammonia NH ₃	AMMO	0-3.0 ppm	< 1.0 ppm: ± 0.2 ppm; > 1.0 ppm: ± 0.4 ppm	0.2 ppm
Calcium	Ca	200-800 ppm	± 15%	NA
Magnesium	Mg	500-2200 ppm	± 15%	NA
Nitrate NO ₃	NITRATE	0-60 ppm	± 25%	5 ppm
Nitrite NO ₂	NITRITE	0-2.0 ppm	± 0.2 ppm	0.1 ppm
pH	pH	6.5-10.0 pH	± 0.2	NA
Phosphate PO ₄	PHOS	0-2.0 ppm	± 0.2 ppm	0.2 ppm

Spin Touch® FF disks are available for sale in North America only.
Disk Patent No. 8,734,734; FCI Patent No. 8,987,000; TCI Patent No. 8,993,337;
FCI EU Patent No. EP2784503 A1

WaterLink
Solutions™ PRO

Optional Software

- Cloud-based and Free
- Instantly capture date, time, test results, and location for each pond or tank
- View in real time water quality test results of each pond or tank
- Monitoring Dashboard* provides alerts and complete water quality history of each pond or tank
- Powerful, customizable treatment engine
- Download free iOS or Android WaterLink® Solutions App for your mobile device
- Sign up for your WaterLink Solutions account at www.softwarecenter.lamotte.com

*Monitoring Dashboard at nominal monthly charge



INSTRUMENTATION

SMART3 COLORIMETER & REAGENT SYSTEMS

SMART3 Colorimeter®

Order Code 1910 • Shipping Code NH [4]

The user-friendly waterproof SMART3 Colorimeter is the direct reading colorimeter for complete on-site water analyses. Over 60 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 25 tests for analyzing custom reagent systems. Features seven user-selected languages. Comes with four sample tubes, USB wall/computer adapter, and instruction manual. See www.lamotte.com for additional reagent systems.



Specifications:

Light Source:	LED/filter setup at 430 nm, 520 nm, 570 nm, 630 nm
Detector:	Photodiode
Display:	160 x 100 Backlight LCD, 20 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:	USB computer/wall adapter or lithium ion rechargeable battery
Battery Life:	Charge Life: Approx. 380 tests with backlight on to 1000 tests with backlight off. [Signal averaging disabled]. Approx. 500 charges.
Datalogging:	Up to 500 data points; USB transfer, time and date stamped
Calibration:	Factory set-user adjustable
Keypad:	6-button mechanical
Size:	7.5 x 3.5 x 2.5 inches
Weight:	15 ounces

Optional Accessories

- Small Field Carrying Case • Order Code 1910-GCS150 • NH [7]
- Large Carrying Case • Order Code 1910-GCS440 • NH [9]
- Car Charger • Order Code 5-0132 • NH [1]
- COD Heater Bloc, 120V, 12-Tube Capacity • Order Code 5-0102 • NH [15]
- COD Heater Bloc, 230V, 12-Tube Capacity • Order Code 5-0102-EX2 • NH [15]

Replacement Parts

- USB Cable • Order Code 1720 • NH [1]
- USB Wall Adapter • Order Code 1721 • NH [1]
- COD/UDV Adapter • Order Code 1724 • NH [1]

SMART3 Colorimeter® Reagent Systems

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
Ammonia Nitrogen LR [Fresh & Salt Water]	Salicylate [3]	0.05-1.00/0.10-1.00	25	3659-01-SC	R2/R
Ammonia Nitrogen HR	Nesslerization [2]	0.05-4.00	50	3642-SC	R1/R
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
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

* Requires COD Heater Block Code 5-0087 (sold separately)

† Prop 65: C: ⚠ WARNING Cancer - www.P65Warnings.ca.gov/product; R: ⚠ WARNING Reproductive Harm - www.P65Warnings.ca.gov/product; B: ⚠ WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

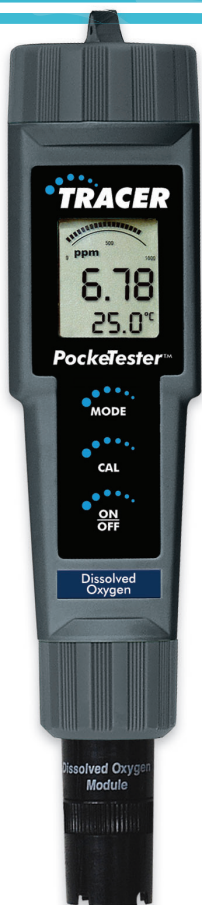
INSTRUMENTATION

SMART3 COLORIMETER REAGENT SYSTEMS

Test Factor	Test Method [# of reagents]	Range ppm	# of Tests	Order Code	Ship Code/ Prop 65†
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
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
Dissolved Oxygen [DO]	Winkler Colorimetric [3]	0.6-11.0	200	3688-SC	R1
Fluoride	SPADNS [2]	0.1-2.0	50	3647-02-SC	R1
Hardness, Total	Tablet, Colorimetric [1]	10-400	50	3671-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
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
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
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
Phosphate LR	Ascorbic Acid Reduction [2]	0.05-3.00	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
Sulfide LR	Methylene Blue [3]	0.06-1.50	50	3654-02-SC	R1
Tannin	Tungsto-Molybdophosphoric Acid [2]	0.1-10.0	50	3666-01-SC	R1
Turbidity	Absorptimetric [0]	3-400 FTU	∞	NA	NH

* Requires COD Heater Block & COD Adapter Code 5-0087 (sold separately)

† Prop 65: C: ⚠ WARNING Cancer - www.P65Warnings.ca.gov/product; R: ⚠ WARNING Reproductive Harm - www.P65Warnings.ca.gov/product; B: ⚠ WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product



Dissolved Oxygen [DO] TRACER

Dissolved Oxygen Tracer, Order Code 1761 • Shipping Code NH [1]
DO Sensor Module, Order Code 1762 • Shipping Code NH [1]

- Oxygen level displayed as % Saturation from 0 to 200.0% or Concentration from 0 to 20.00 ppm [mg/L]
- Adjustable Altitude Compensation (0-20,000 ft. in 1,000 ft. increments)
- Adjustable Salinity Compensation from 0 to 50 ppt
- Memory stores up to 25 data sets with DO and Temperature reading
- Self-calibration on power up; Data Hold, Auto power off, Low battery indicator
- Optional 3 ft [1m] or 16 ft. [5m] extension cable
- Complete with DO electrode, protective sensor cap, spare membrane cap, electrolyte, four 1.5V SR44W batteries, and 48" [1.2m] neckstrap

Description	Range	Resolution	Accuracy
DO [sat. mode]	0 to 200.0%	0.1%	±2% FS
DO [conc. mode]	0 to 20.00 ppm [mg/L]	0.01 ppm [mg/L]	0.4 ppm [mg/L]
Temperature	32 to 122°F [0 to 50°C]	0.1°F/°C	±1.8°F [1°C]
Dimensions	1.4 x 6.9 x 1.6" [36 x 176 x 41mm]		

Optional Accessories

Description	Order Code	Ship Code
DO Membrane Kit [6 screw-on membranes and solution]	1761M	NH [1]
Weighted Stand w/Sample Cups [5]	1746	NH [1]
Sample Cups w/caps [24]	1745	NH [1]
DO Extension Cable [1 meter]	1763	NH [1]
DO Extension Cable [5 meters]	1764	NH[1]

pH TRACER

Order Code 1741 • Shipping Code NH [1]

- Read pH from 0.00-14.00 pH to 0.01 pH resolution
- Supplied with 4, 7, 10 pH buffer tablets
- Automatic self calibration to 1, 2, or 3 points
- Extra bold display includes analog bar graph feature
- Memory can store up to 15 readings
- Chlorine and pH modes also display sample temperature
- Unit identifies which probe is in use and retains calibrations
- Automatic shut-off and Low Battery indicator; uses four LR-44 batteries
- Optional total chlorine probe makes unit a true ISE. TCI tablets required

Optional Accessories

Description	Order Code
pH Probe; Range: 0-14.00/±0.01 pH	1733
ORP probe; Range: ±999mV/±4mV	1734
Cl2 probe; Range: 0-10.00/±10% of reading	1732
Optional weighted stand & 5 sample cups	1746
TCI tablets, 100 pack	7044A-J
Sample cups, 24 pack	1745



SAL/EC/TDS Tracer

Order Code 1749 · Shipping Code NH [1]

This Tracer PockeTester™ offers direct reading of Conductivity, Total Dissolved Solids, and Salinity with one electrode. Simply press the MODE key to select any factor.

pH/TDS/SALT Tracer

Order Code 1766 · Shipping Code NH [1]

This Tracer PockeTester™ offers direct reading of pH, Conductivity, Total Dissolved Solids, and Salinity with one electrode.

Model	EC/TDS/Salinity Tracer			pH/TDS/SALT Tracer		
	Range	Resolution	Accuracy	Range	Resolution	Accuracy
Order Code	1749			1766		
Conductivity	0 to 199.9 μ S, 200 to 1999 μ S, 2.00 to 19.99 mS	0.1 μ S/cm, 1 μ S/cm, 0.01 mS/cm	$\pm 2\%$	0 to 199.9 μ S, 200 to 1999 μ S, 2.00 to 19.99 mS	0.1 μ S	$\pm 1\%$
TDS	0 to 99.9 ppm (mg/L), 100 to 999 ppm (mg/L), 1.00 to 9.99 ppt (g/L)	0.1 ppm (mg/L), 1 ppm (mg/L), 0.01 ppt (g/L)	$\pm 2\%$	0 to 99.9 ppm (mg/L), 100 to 999 ppm (mg/L), 1.00 to 9.99 ppt	0.1 ppm (mg/L)	$\pm 2\%$
Salinity	0 to 99.9 ppm, 100 to 999 ppm, 1.00 to 9.99 ppt	0.1 ppm, 1 ppm, 0.01 ppt	$\pm 2\%$	0 to 99.9 ppm (mg/L), 100 to 999 ppm (mg/L), 1.00 to 9.99 ppt	0.1 ppm (mg/L)	$\pm 2\%$
pH	—	—	—	0.00 to 14.11 pH	0.04 pH	± 0.01 pH
Temperature	$\pm 1^\circ\text{C}$ [1.8°F]			32° to 149°F [0 to 65°C]	0.1°F/°C	$\pm 1.8^\circ\text{F}/^\circ\text{C}$
Power	Four 3V CR-2032 Batteries			Four 3V CR-2032 Batteries		
Special Features	Auto Shutoff after 10 minutes, Low BAT indicator, Digital and Analog Display, Hold 15 tagged readings			Auto Shutoff after 10 minutes, Low BAT indicator, Digital and Analog Display, Hold 25 tagged readings		
Special Functions	Calibration Function, ATC			Self Calibration		
Replacement Electrode	1765			1755		



2020i Portable Turbidity Meter

Order Code 1974-I · Shipping Code NH [6]

New RATIOMETRIC design in one of the most innovative, **WATERPROOF**, handheld meters available on the market! Perfect for field and laboratory applications, this compact and easy-to-use instrument is an exceptional value. Includes standards, tubes and carrying case.

Features

- Advanced calibration algorithms
- Easy menu driven operation and large LCD display
- 500 point data log



Mode	Nephelometric	Ratiometric	Attenuation
Unit of Measure	NTU, FNU, ASBC, EBC	NTU, FNU, ASBC, EBC	NTU, FAU, ASBC, EBC
Range	0-100 NTU/FNU; 0-1,750 ASBC; 0-25 EBC	0-1,000 NTRU/FNURU; 0-17,500 ASBC; 0-250 EBC	0-2,000 AU/FAU; 0-70,000 ASBC; 0-1,000 EBC
Resolution	0-10.99 NTU/FNU: 0.01; 11.0-100.0 NTU/FNU: 0.1	0-10.99 NTRU/FNURU: 0.01; 11.0-109.9 NTRU/FNURU: 0.1; 110-1000 NTRU/FNURU: 1	0-2000 AU/FAU: 1
Accuracy	0-2.5 NTU/FNU: ± 0.05 ; 2.5-100 NTU/FNU: $\pm 2\%$	0-2.5 NTRU/FNURU: ± 0.05 ; 2.5-100 NTRU/FNURU: $\pm 2\%$; 100-1000 NTRU/FNURU: $\pm 3\%$	0-2000 AU/FAU: ± 10 AU/FAU or 6%, whichever is greater
Detection Limit	0.05 NTU/FNU	0.05 NTRU/FNURU	10 AU/FAU
Reproducibility	0.02 NTU/FNU or 1%	0.02 NTRU/FNURU or 1%	1%
Range Selection	Automatic		
Light Source	IR LED 860 nm ± 10 nm, spectral bandwidth with 50 nm		
Detector	Photodiode, centered at 90° and 180°		
Signal Averaging	Disabled, 2, 5, 10		
Power	USB computer cable, wall adapter or Lithium ion rechargeable battery		
Data Logging	500 points		
Auto Shut-Off	Disabled, 5, 10, 30 seconds		
Languages	English, French, Spanish, Japanese, Italian, Portuguese, Chinese		
Response Time	<2 Seconds		
Display	6-line LCD with backlit display		
Size	7.5 x 3.5 x 2.5 inches; 19.05 x 8.84 x 6.35 cm		
Weight	13 ounces		

SAMPLING EQUIPMENT

Visit our website www.lamotte.com for our complete selection of water sampling equipment.



Code 1087

Horizontal Water Sampler

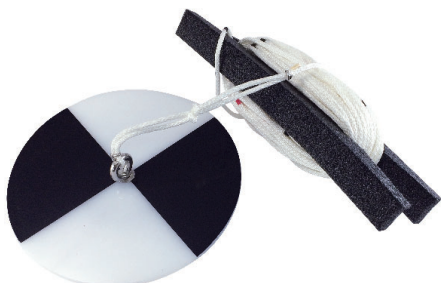
Order Code 1087 • Shipping Code NH [5]

Collect water samples quickly and easily! This newly designed horizontal water sampler allows water to be sampled at specific depths. A 20 meter calibrated line, marked at one meter intervals, is included. The clear polycarbonate tube allows a visual inspection of the sample prior to dispensing and holds approximately 1,200 mL of sample. Send the weighted messenger down the line to trip the closing mechanism at the desired depth. Open one chamber end cap to dispense sample.

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.



Secchi Disk

Order Code 0171-CL
Shipping Code NH [7]

Order Code 0171 [Disk Only]
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 marked every half meter up to 20 meters. Braided line.



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.



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.

 **LaMotte®**
Water Testing Leader Since 1919

LaMotte Company • 802 Washington Avenue • Chestertown • Maryland • 21620 • USA
t: 800-344-3100 • +1 410-778-3100 • f: 410-778-6394 • www.lamotte.com