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Better results— easier and faster

NEW

Oakton® Waterproof EcoTestr™ pH2+ Pocket Meter

- Large dual-line display shows pH and temperature readings simultaneously
- Easier, more intuitive interface and indicators for calibration, readiness, and battery life
- Use redesigned cap as sample cup and as a stabilizing base to stand the meter upright
- Convenient—attach a lanyard to prevent losing or dropping in the field



COMING SOON!

November
2016

OAKTON®

ISO9001:2008
CERTIFIED SUPPLIER

CE IP 67

Model	EcoTestr pH2+	
Catalog number	AL-35423-01	
Range	pH	0.0 to 14.0 pH
	Temperature	32.0 to 122.0°F (0.0 to 50.0°C)
Resolution	pH	0.1 pH
	Temperature	0.1°F (0.1°C)
Accuracy	pH	±0.1 pH
	Temperature	±0.9°F (0.5°C) + 1 LSD
Temperature compensation	Automatic	
Calibration	Up to 3 points	
Buffer recognition	USA, NIST	
Power	Four A76 1.5 V miniature alkaline batteries (included)	



Oakton® Waterproof EcoTestr™ pH 2 Pocket Meter

No more replacing electrodes

- Easy to use—simply dip and read results on the easy-to-read display
- Waterproof housing is ideal for dirty or damp conditions—even floats if dropped in water
- Transparent protective cap also holds calibration solutions

Single-junction electrode is recessed to protect against breakage. Meter offers up to three-point calibration with autobuffer recognition for quick calibrations. Automatic temperature compensation ensures accurate readings, even under changing conditions. Hold function allows you to lock a measured value.

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Model	EcoTestr pH 2
Catalog number	AL-35423-10
Range	0 to 14.0 pH
Resolution	0.1 pH
Accuracy	±0.1 pH
Temperature compensation	Automatic
Calibration	Up to 3 points
Buffer recognition	4.0, 7.0, or 10.0
Power	Four 1.5 V button cell batteries (included)
Price	

AL-09377-16 Replacement batteries, 1.5 V. Pack of 6

AL-17101-45 NIST-traceable calibration
for pH pocket meters (non-BNC)

Hach® Waterproof Non-Glass ISFET pH Testers

Get greater resolution and accuracy

- Need just one drop of sample
- No broken electrodes—virtually unbreakable sensor
- Ion-specific field effect transistor (ISFET) uses a silicon chip pH sensor
- Sensor stores dry and needs little maintenance
- Fast response time

Advanced model offers three-point calibration and auto buffer recognition. Elite model features increased pH resolution and accuracy, as well as simultaneous temperature display.

What's included: calibrating buffers, case, and batteries.



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CE IP 65

Model	Standard	Advanced	Elite
Catalog number	AL-95941-02	AL-95941-04	AL-95941-06
Range	pH	2.0 to 12.0	2.00 to 12.00
	Temperature	—	5 to 40°C
Resolution	pH	0.1	0.01
	Temperature	—	0.1°C
Accuracy	pH	±0.1	±0.02
	Temperature	—	±0.5°C
Temperature compensation	Automatic (5 to 40°C)		
Calibration	One pH point	Up to three pH points	
Buffer recognition	pH 7	pH 4, 7, and 10	pH 4, 7, and 10
Power	Two CR-2032 lithium 3 V batteries (included)		
Price			

AL-95941-52 Replacement reference electrode, KCl gel-filled

AL-17101-45 NIST-traceable calibration for pH pocket meter
(non-BNC)

Oakton® Waterproof pHTestr® 10, 20, and 30 Pocket Meters

Save money—replace electrode instead of meter

- IP67-rated housing floats in water and won't roll off table
- Resistant to most chemicals with Valox® sensor housing
- Automatic buffer recognition for calibration up to three points
- Don't let temperature interfere—automatic temperature compensation minimizes impact

Double-junction electrode sensors handle wastewater and solutions containing sulfides, heavy metals, and Tris. Electrode sensors offer a clog-resistant Kynar® PVDF junction and a recessed, glass pH bulb to protect against breakage.

pHTestr 10 offers the most economical option.

pHTestr 20 features ± 0.01 pH accuracy—suitable for most ASTM and EPA test procedures.

pHTestr 30 includes all of the features of the pHTestr 20 along with dual pH and 0.1-resolution temperature display. Temperature display units in selectable °F or °C.

What's included: protective plastic storage case, lanyard, and batteries.



Description	pHTestr 10	pHTestr 20	pHTestr 30 with temperature readout
Catalog number	AL-35634-10	AL-35634-20	AL-35634-30
Range	−1.0 to 15.0 pH	−1.00 to 15.00 pH	−1.00 to 15.00 pH
Resolution	0.1 pH	0.01 pH	0.01 pH
Accuracy	±0.1 pH	±0.01 pH	±0.01 pH
Temperature compensation	Automatic, 32 to 122°F (0 to 50°C)		
Calibration	Up to three pH points		
Buffer recognition	4.0, 7.0, 10.0 USA 4.0, 6.9, 9.2 NIST	4.01, 7.00, 10.01 USA 4.01, 6.86, 9.18 NIST	
Power	Four 1.5 V button cell batteries (included)		
Price			

Accessories

[AL-35624-38](#) Replacement pH sensor

[AL-09377-16](#) Replacement batteries, 1.5 V button cell. Pack of 6

[AL-17101-45](#) NIST-traceable calibration for pH pocket meters (non-BNC)



OAKTON®

Oakton® pHTestr® Calibration Kits

Calibration made easy—everything in one kit!

- Grab and go—stores and organizes what you need for reliable calibrations
- Perfect for field use

What's included: one pHTestr (except model 35624-70); two single-use pouches of pH 4.01, pH 7.00, pH 10.00 each, and rinse solution; one sample jar; and sturdy carrying case.

Meter included	Catalog number	Price
None	AL-35624-70	
Waterproof pHTestr 10	AL-35634-70	
Waterproof pHTestr 20	AL-35634-80	
Waterproof pHTestr 30	AL-35634-90	

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Oakton® Waterproof pHTestr® 10 BNC Meter

Customizable to your application

- Use with any pH electrode having a BNC connector
- Versatility of a handheld meter at a pocket price
- IP67 rating protects meter from water, dust, and shock while offering chemical resistance
- Meter floats—accidental drop into water will not result in lost or damaged meter
- Easy calibration along with USA and NIST auto-buffer recognition

Simply choose the electrode best suited for your application, connect the meter, calibrate, and measure. Change electrodes to suit your application without having to purchase another meter.

Hold function freezes reading on the display for easy recording. Additional features include Valox® sensor housing, self-diagnostic error messages, a battery-life indicator, and an auto-off function to maximize battery life.

What's included: protective plastic storage case, lanyard, and batteries.



REQUIRED System Components

- 1) pHTestr 10 BNC
- 2) pH electrode

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Specifications

Range: -1.00 to 15.00 pH	Calibration: up to three pH points
Resolution: 0.01 pH	Buffer recognition:
Accuracy: ±0.01 pH	USA: 4.01, 7.00, 10.01
Temperature compensation:	NIST: 4.01, 6.86, 9.18
fixed at 25°C or manual	Power: four 1.5 V button cell batteries (included)

1. Tester

Description	Catalog number	Price
pHTestr 10 BNC pocket meter	AL-35634-14	

AL-17106-20 NIST-traceable calibration with data

2. Electrodes

Body type	Range	Connection type	Catalog number	Price
Single-junction electrodes for general use				
Epoxy, sealed	0 to 12 pH	Direct connect	AL-35804-00	
Epoxy, sealed	0 to 12 pH	3-ft (1-m) cable	AL-35801-00	
Epoxy, sealed, 9-mm dia	0 to 12 pH	Direct connect	AL-35804-01	
Glass, sealed, spear tip	0 to 12 pH	3-ft (1-m) cable	AL-35804-06	
Double-junction electrodes for organics, sulfides, and heavy metals				
Epoxy, sealed	0 to 14 pH	Direct connect	AL-35804-08	
Glass, refillable	0 to 12 pH	3-ft (1-m) cable	AL-35805-04	
Epoxy, refillable flushable PTFE junction	0 to 12 pH	3-ft (1-m) cable	AL-35805-09	

Oakton® Waterproof ORPTestr® 10 and ORPTestr® 10 BNC Meters

Get quick and easy ORP readings

- Easy-to-read large, horizontal readout
- IP67-rated housing floats in water and sits flat on a hard surface
- Feature ±2 mV accuracy and a ±150 mV offset
- Additional features include a hold function, auto-off function, self-diagnostic error messages, and a three-segment battery-life indicator
- Attach a lanyard (included) for easy retrieval

ORPTestr 10 Meter features a replaceable double-junction platinum electrode—ideal for checking dirty water, heavy metals, sulfides, and organics. Valox® electrode body resists most chemicals.

ORPTestr 10 BNC Meter allows you the convenience of using any ORP electrode with a BNC connection. Order electrode separately below.



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Specifications

Range: -999 mV to 1000 mV	Calibration: ±150 mV offset adjustment
Resolution: 1 mV	Power: four 1.5 V button cell batteries (included)
Accuracy: ±2 mV	

Description	Catalog number	Price
ORPTestr 10 pocket meter	AL-35650-10	
ORPTestr 10 BNC pocket meter	AL-35650-14	

AL-35650-09 Replacement sensor for 35650-10

AL-59001-75 ORP single-junction electrode for 35650-14

AL-59001-77 ORP double-junction electrode for 35650-14

AL-05478-60 YSI® Zobell solution, 1.25 g

AL-09377-16 Replacement batteries, 1.5 V. Pack of 6

Oakton® pH Buffer Capsules

Save space—no need to carry heavy calibration buffers with you

- Use fresh calibration solution anytime and anywhere—just dissolve in 100 mL of deionized water
- Get accurate calibrations—accurate to ±0.02 pH with traceability to NIST standards
- Provides color-coded calibration solution that lasts up to three weeks
- Vial contains 10 capsules each, with a 5-year shelf life



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pH	Color	Catalog number	Price
4.00	Orange	AL-35850-12	
7.00	Green	AL-35850-14	
10.00	Blue	AL-35850-16	

Oakton® Waterproof Multiparameter Testr™ 35-Series Pocket Meters

Save time and money—like three meters in one!

- Parameters include pH, conductivity, TDS, salinity, and temperature
- Compatible with a wide range of samples with long-life pH electrode and stainless steel pin-style conductivity sensor
- Save money by replacing only the sensor module

Advanced features include up to 5 point pH calibration with NIST or USA autobuffer recognition, auto-shutoff, user-adjustable temperature coefficient, self-adjusting TDS and salinity factor, and low-battery indicator. The IP67-rated housing floats if accidentally dropped into water.

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Model		PCTestr 35	PTTestr 35	PCSTestr 35
Catalog number		AL-35425-00	AL-35425-05	AL-35425-10
Range	pH	0 to 14.0	0 to 14.0	0.00 to 14.00
	Conductivity	0 to 2000 µS/cm; 2.00 to 20.00 mS/cm	—	0.0 to 200.0, 200 to 2000 µS/cm; 2.00 to 20.00 mS/cm
	TDS	—	0 to 1000 ppm; 1.00 to 10.00 ppt	0.0 to 100.0 ppm, 100 to 1000 ppm; 1.00 to 10.00 ppt
	Salinity	—	—	0.0 to 100.0 ppm, 100 to 1000 ppm; 1.00 to 10.00 ppt
	Temperature	32 to 112°F (0 to 50.0°C)	32 to 112°F (0 to 50.0°C)	32 to 112°F (0 to 50.0°C)
Resolution	pH	0.1	0.1	0.01
	Conductivity	0.1 µS/cm; 0.01 mS/cm	—	0.1 µS, 1 µS/cm; 0.01 mS/cm
	TDS	—	1 ppm; 0.01 ppt	0.1 ppm, 1 ppm; 0.01 ppt
	Salinity	—	—	0.1 ppm, 1 ppm; 0.01 ppt; 0.01%
	Temperature	0.1°F (0.1°C)	0.1°F (0.1°C)	0.1°F (0.1°C)
Accuracy	pH	±0.1	±0.1	±0.01
	Conductivity	1% full scale	—	1% full-scale
	TDS	—	1% full-scale	1% full-scale
	Salinity	—	—	1% full-scale
	Temperature	±0.9°F (±0.5°C)	±0.9°F (±0.5°C)	±0.9°F (±0.5°C)
Temperature compensation		Automatic or manual, 32 to 122°F (0 to 50°C)		
Calibration	pH	3 to 5 pH points		
	Conductivity	1 to 3 point standard/manual calibration		
Buffer recognition		USA: 1.68, 4.01, 7.00, 10.01, 12.45; NIST: 1.68, 4.01, 6.86, 9.18, 12.45		
Power		Four 1.5 V button cell batteries (included)		
Price				

[AL-35425-50](#) Replacement pH/conductivity/TDS/salinity sensor module

[AL-09377-16](#) Replacement batteries, 1.5 V button cell. Pack of 6

[AL-17101-45](#) NIST-traceable calibration for pH pocket meters (non-BNC)

[AL-17090-30](#) NIST-traceable calibration for conductivity meters

Oakton® Waterproof pH Spear

Virtually impossible to clog

- Electrode junction is 200 times larger than standard electrodes
- Ideal for soft solids and semisolid materials like meats, cheeses, and fruit
- Easily determine pH in test tubes and other narrow containers

The unique junction design provides increased electrolyte flow, resulting in greater contact between sample and reference, ensuring fast, stable readings. The double-junction design offers enhanced performance. Additional features include a hold function, auto-off function, self-diagnostic error messages, and a three-segment battery-life indicator.



Spear tip fits into microcentrifuge tubes.

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Specifications

Range: -1.00 to 15.00 pH
Resolution: 0.01 pH
Accuracy: ±0.01 pH

Temperature compensation: fixed at 25°C or manual
Calibration: up to three pH points

Buffer recognition
USA: 4.01, 7.00, 10.01
NIST: 4.01, 6.86, 9.18
Power: four 1.5 V button cell batteries (included)

Description	Catalog number	Price
pH Spear	AL-35634-40	

[AL-35634-50](#) Replacement pH electrode

[AL-09377-16](#) Replacement batteries, 1.5 V. Pack of 6

[AL-17101-45](#) NIST-traceable calibration for pH pocket meters (non-BNC)

Cole-Parmer® pH and pH/Con Handheld Meters

Get basic measurements—affordably

- Measure pH, mV, conductivity, TDS, salinity and temperature
- No need to adjust for temperature changes—includes automatic temperature compensation
- Take hands-free measurements with protective rubber boot that features a convenient fold-out stand
- Intuitive interface and large, easy-read display
- IP57 waterproof rating



pH Meter (59200-02) reads pH and mV modes of measurement with temperature. Features three calibration points with auto-buffer recognition.

pH/Con Meter (59200-04) adds conductivity, TDS, and salinity modes with temperature readout. Features convenient auto ranging with four calibration points; up to one point per each measurement range.

What's included: pH electrode, protective rubber boot with stand, and batteries. Model 59200-04 also includes a conductivity probe, K = 1.



Model	pH	pH/Con
Catalog number	AL-59200-02	AL-59200-04
Range	pH	0 to 14
	mV	±1999
	Conductivity	0 to 200 mS
	TDS	0 to 100 g/L
	Salinity	0 to 100 ppt
	Temperature	32 to 212°F (0 to 100°C)
Resolution	pH	0.01
	mV	0.1
	Conductivity	0.1/1 µS; 0.01/0.1 mS
	TDS	0.1/1
	Salinity	0.1/1
	Temperature	0.1
Accuracy	pH	±0.01
	mV	±0.1%
	Conductivity	±1.0% ±1 digit
	TDS	±1.0% ±1 digit
	Salinity	±1.0% ±1 digit
	Temperature	±0.5°C ±1 digit
Temperature compensation	Automatic 0 to 80°C or manual	
Power	Three AA batteries (included)	
Price		

AL-59200-06 Replacement pH probe with temperature

AL-59200-09 Replacement conductivity probe, K = 1

AL-59200-11 Conductivity probe, K = 0.1

AL-59200-13 Conductivity probe, K = 10

AL-09376-01 Replacement batteries, AA. Pack of 4

Oakton® pH 5+ and pH 6+ Meters

Get high accuracy at low prices

- Autobuffer recognition for up to five-point calibration provides ±0.01 pH accuracy
- Take this compact unit anywhere
- Get pH and temperature readings at the push of a button
- Improve your accuracy with automatic temperature compensation (ATC) from 0 to 100°C
- Protect your unit with protective rubber boot that doubles as a stand
- Choose the pH 6+ meter to also read mV



Meter includes: ATC probe, protective rubber boot, and batteries.

Meter with probe adds: pH electrode 59001-65

Meter kit adds: "All-in-one" pH electrode, pH buffer solutions, sample bottles, rinse bottle, and carrying case.

Save time, save money!

Choose Precalibrated

Includes a data-rich, ISO 17025 certificate—no additional charge!

Precalibrated by **INNOCAL**
INNOVATIVE CALIBRATION SOLUTIONS

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Meter only

Specifications

Mode	pH	mV (pH 6+ only)	Temperature
Range	0.00 to 14.00 pH	±1000 mV or rel mV	0 to 100.0°C
Resolution	0.01 pH	1 mV	0.1°C
Accuracy	±0.01 pH	±2 mV	±0.5°C
Calibration	Up to five points: pH 1.68, 4.01, 7.00, 10.00, 12.45 (USA); pH 1.68, 4.01, 6.86, 9.18, 12.45 (NIST) pH 4.10, 6.97 (Pb)	±20 mV	Offset 0.1°C increments

Temp compensation: automatic with ATC probe, 0 to 100°C

Power: four AAA batteries (included)

Model	Description	Meter		Precalibrated	
		Cat. no.	Price	Cat. no.	Price
pH 5+	Meter only	AL-35613-50		AL-35613-51	
pH 6+		AL-35613-20		AL-35613-41	
pH 5+	Meter with probe	AL-35613-52		AL-35613-53	
pH 6+		AL-35613-22		AL-35613-42	
pH 5+	Meter kit	AL-35613-54		AL-35613-55	
pH 6+		AL-35613-24		AL-35613-44	

Accessories

AL-59001-65 Replacement pH electrode; single-junction, gel-filled. Epoxy body, BNC connector

AL-35811-71 "All-in-one" combination pH probe with built-in ATC; single-junction sealed, epoxy body, BNC connector

AL-35811-72 "All-in-one" combination pH probe with built-in ATC; double-junction sealed, epoxy body, BNC connector

AL-35613-05 Replacement ATC probe, stainless steel

AL-09376-00 Replacement batteries, AAA. Pack of 12



Oakton® Ion 6+ Meter

Get precise readings at an affordable price

- Compact and easy-to-use with preprogrammed ion calibration points
- mV mode allows you to check electrode calibration and performance
- ± 1999 mV range is compatible with virtually all ISE electrodes

Features include all push-button calibration, hold function, auto-off, and splash-resistant keypad. Read concentration in ppm and mV as well as pH and temperature in °C. The included protective rubber boot also acts as a meter stand for benchtop use.

Meter includes: ATC probe, protective rubber boot and batteries.

Meter kit adds: pH electrode, pH buffer solutions, solution bottles, rinse bottle, and carrying case.



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Specifications

Mode	Ion	mV	pH	Temperature
Range	0.01 to 1999 ppm	± 500 mV	0.00 to 14.00	0.0 to 100.0°C
Resolution	0.01 ppm (0.01 to 0.99 ppm) 0.1 ppm (1.0 to 199.9 ppm) 1 ppm (200 to 1999 ppm)	1 mV	0.01	0.1°C
Accuracy	$\pm 1\%$ of reading	± 1 mV	± 0.01	$\pm 0.5^\circ\text{C}$
Calibration	2 to 3 points: 0.1; 1; 10; 1000 ppm (minimum 2 points)	± 50 mV	Up to 5 points: 1.68, 4.01; 7.00; 10.00, 12.45 (USA) 1.68, 4.01; 6.86; 9.18, 12.45 (NIST) 4.10; 6.97 (Pb)	Offset 0.1°C increments

Temp compensation: automatic with ATC probe, 0 to 100°C

Power: four AAA batteries (included)

Model	Description	Meter		Precalibrated meter	
		Cat. no.	Price	Cat. no.	Price
Ion 6+	Meter only	AL-35613-80		AL-35613-81	
	Meter kit	AL-35613-82		AL-35613-83	

AL-27504-14 Fluoride electrode, double-junction, refillable. Epoxy body, BNC connector

AL-27502-00 Ammonia electrode, double-junction, refillable. Epoxy body, BNC connector

AL-27504-22 Nitrate electrode, double-junction, refillable. Epoxy body, BNC connector

AL-09376-00 Replacement batteries, AAA. Pack of 12

AL-17106-20 NIST-traceable calibration with data for pH meter

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For our complete line of meters, go to...

ColeParmer.ca/pHmeters

Oakton® Waterproof pH 150 Meter

Get more for your money!

- Intuitive, user-friendly icons show electrode status as pH slope
- Get quick and easy electrode attachment to a beaker or container with Grip-Clip™ holder
- Recall more data with expanded data logging for up to 150 data sets
- mV offset for calibration of ORP standards, zeroing mV value, and pH diagnostics
- Use as a benchtop meter as well—built-in stand or wall-mount option

View more simultaneously with large, three-line LCD providing pH or mV measurement with temperature and calibration % slope. Get faster calibration with auto buffer recognition which identifies the correct pH buffer. Be more accurate with up to six calibration points from USA, NIST, and DIN pH buffer sets and automatic temperature compensation (ATC).

Additional features include ready (stability) indicator, smart averaging, hold function, calibration alarm (visible), battery-life indicator, and electrode status.

Meter only includes: Grip-Clip holder and two AA batteries.

Meter with probe adds: "All-in-One" pH electrode (35808-71).

Meter kit further adds: pH buffers, storage solution, rinse solution, and hard carrying case.



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Meter only

Description	Meter only	Meter with probe	Meter kit
Model	pH 150		
Catalog number	AL-35614-32	AL-35614-30	AL-35614-90
Precalibrated cat. no.	AL-35614-34	AL-35614-33	AL-35614-91
Range	pH	–2.00 to 16.00	
	mV	±2000 mV	
	Temperature	–17.0° to 230.0° F (–10.0° to 110.0°C)	
Resolution	pH	0.01	
	mV	0.1 mV ±999.9 mV; 1 mV beyond	
	Temperature	0.1°F/C	
Accuracy	pH	±0.01	
	mV	±0.2 mV ±2 LSD or ±0.5% of reading; whichever is greater	
	Temperature	±0.9°F (±0.5°C)	
Calibration	pH	Up to 6 points: USA, NIST, DIN	
	mV	±200 mV	
	Temperature	Offset 0.1 increments	
Temperature compensation	Automatic or manual from –10 to 110°C		
Data logging	Stores up to 150 data sets		
Power	Two AA batteries (included); universal power adapter (optional)		
Price			
Precalibrated price			

AL-35808-71 Replacement "All-in-One" combination pH electrode with built-in ATC; single-junction, epoxy body, BNC connector

AL-35618-05 ATC probe. Use with any standard pH electrode for temperature compensation

AL-35614-50 Replacement Grip-Clip, holder attaches probe to side of container for hands-free measurement

AL-35614-51 Hard carrying case, for 150/450 meters

AL-35420-72 Optional power adapter, 110/220 VAC

AL-09376-01 Replacement batteries, AA. Pack of 4

AL-17106-20 NIST-traceable calibration with data for pH meter

Oakton® Waterproof pH 450 Meter

Easy-to-read measurements

- Use it in any environment with backlit display and rugged design
- Intuitive, user-friendly icons show electrode status as pH slope
- Easily attach electrode to a beaker or container with Grip-Clip™ holder
- Download and analyze up to 500 data sets with USB or RS-232 output
- Use as a benchtop meter as well—built-in stand and wall-mount option



Waterproof, IP67-rated meter is ideal for even the harshest environments. View the main measurement simultaneously with temperature and calibration data with % slope on the large, backlit LCD. Be more accurate with up to six calibration points from USA, NIST, DIN, and custom pH buffers. Automatic temperature compensation (ATC) ensures measurement accuracy even in fluctuating temperatures.

Additional features include ready (stability) indicator, smart averaging, hold function, calibration alarm (visible), battery-life indicator, and electrode status.

Meter only includes: Grip-Clip holder and two AA batteries.

Meter with probe adds: "All-in-one" pH/temperature electrode (model 35808-71).

Meter kit further adds: pH buffer solutions, storage solution, rinse solution, and hard carrying case.

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3
Meter only

Description	Meter only	Meter with probe	Meter kit
Model	pH 450		
Catalog number	AL-35618-32	AL-35618-30	AL-35618-90
Precalibrated cat. no.	AL-35618-34	AL-35618-33	AL-35618-91
Range	pH	-2.00 to 16.00	
	mV	±2000 mV	
	Ion	0.0 to 19,999	
	Temperature	-17.0 to 230.0°F (-10.0 to 110.0°C)	
Resolution	pH	0.01	
	mV	0.1 mV ±999.9 mV; 1 mV beyond	
	Ion	0.01	
	Temperature	0.1°F/°C	
Accuracy	pH	±0.01	
	mV	±0.2 mV ±2 LSD or ±0.5% of reading; whichever is greater	
	Ion	±0.5% full-scale (monovalent); ±1% full-scale (divalent)	
	Temperature	±0.9°F (±0.5°C)	
Calibration	pH	Up to 6 points: USA, NIST, DIN	
	mV	±200 mV	
	Ion	Up to 6 points	
	Temperature	Offset 0.1 increments	
Temperature compensation	Automatic or manual from -10 to 110°C		
Output	USB or RS-232		
Data logging	500 data sets		
Power	Two AA batteries (included) or optional universal power adapter (sold at right)		
Price			
Precalibrated price			

Oakton® Waterproof pH/DO 450 Meter

Eliminate maintenance time and costs

- Rugged, waterproof and dustproof with an IP67 rating for use in any environment
- No costly, tiresome membranes or solutions
- More accurate readings with barometric pressure and salinity correction
- Download and analyze data easily with USB and RS-232 output for up to 500 data sets
- Take it with you—500 hours battery life or optional universal power adapter



Get faster response, long-term stability, and minimal maintenance with optical measurement technology. Automatic temperature compensation (ATC), barometric pressure compensation, and salinity correction. Get more readings simultaneously with pH, mV, % saturation, or mg/L (ppm) shown on large, backlit LCD.

Additional features include ready (stability) indicator, smart averaging, hold function, calibration alarm, and battery-life indicator.

Meter only: batteries.

Meter kit adds: pH probe (59002-75), RDO probe (35640-51), sensor cap, calibration solutions, and hard carrying case.

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TUV **GS**

CE

IP 67

3
Meter only

Description	Meter only	Meter kit
Model	PD 450	
Catalog number	AL-35632-32	AL-35632-80
Precalibrated cat. no.	AL-35632-34	AL-35632-81
Range/Resolution	pH	–2.00 to 16.00/0.01
	mV	±2000 mV (Resolution 0.1 ±999.9 mV; 1 mV beyond)
	Dissolved oxygen	0 to 20 ppm; 0 to 200%
	Temperature	–17.0 to 230.0°F (–10.0 to 110.0°C)
Accuracy	pH	±0.01
	mV	±0.2 (>199.9 mV); ±2 mV (beyond)
	Dissolved oxygen	±2%
	Temperature	±0.5°C
Barometric pressure correction	Manual	
Salinity correction	Manual; 0 to 45	
Temperature compensation	Automatic or manual from –10 to 110°C	
Output	USB or RS-232	
Data logging	Stores up to 500 data sets	
Power	Two AA batteries (included); or optional universal power adapter	
Price		
Precalibrated price		

AL-59002-75 "All-in-One" pH electrode with built-in ATC.

Single-junction; epoxy body; BNC connector

AL-35618-05 ATC probe. Use with any standard pH electrode for temperature compensation

AL-35640-51 Replacement RDO sensor cap

AL-35640-53 Replacement RDO probe, 10-ft (3-m) cable

AL-35640-55 RDO probe, 20-ft (6-m) cable

AL-35640-57 RDO probe, 50-ft (15-m) cable

AL-35418-83 Optional adapter, 110/220 VAC

AL-35630-53 Data cable for USB connectivity

AL-35420-01 Data cable for RS-232 connectivity

AL-09376-01 Replacement batteries, AA. Pack of 4

AL-17106-20 NIST-traceable calibration with data for pH meter



Oakton® Waterproof pH/CON 450 Meter

Achieve more measurements in one meter

- Get both pH and conductivity measurements with combination pH/CON probe or separate pH and conductivity probes
- Use it in any environment with backlit display and rugged design
- Intuitive, user-friendly icons show electrode status as pH slope and all constant
- Get quick and easy electrode attachment to a beaker or container with Grip-Clip™ holder
- Download and analyze up to 500 data sets with USB or RS-232 output
- Use as a benchtop meter as well—built-in stand and wall-mount option

Ideal meter for any environment with its rugged, waterproof housing. View both the main measurement and temperature simultaneously with large, backlit LCD. Ensure the accuracy of your measurements with up to six calibration points from USA, NIST, DIN, and custom pH buffer sets. Autocal feature for conductivity has one calibration point per range. Don't worry about accuracy in fluctuating temperature—ATC ensures measurement accuracy.

Meter features include ready (stability) indicator, smart averaging, user-selectable °C/°F units, hold function, calibration alarm, battery-life indicator, and electrode status. Choose combination pH/CON probe or separate probe options.

pH/CON 450 meter with combination probe includes: combination pH/CON probe (model 35630-51), Grip-Clip holder, and two AA batteries.

pH/CON 450 meter with separate probes includes: pH electrode (model 35641-51), conductivity probe (model 35608-50, K = 1.0), Grip-Clip holder, and two AA batteries.

pH/CON 450 kits add: calibration standards and hard carrying case.



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CE

IP 67

3

Meter only

Description		Meter with combination probe	Meter with separate probes	Meter kit with combination probe	Meter kit with separate probes
Model		PC 450			
Catalog number		AL-35630-10	AL-35630-12	AL-35630-80	AL-35630-90
Precalibrated catalog number		AL-35630-11	AL-35630-13	AL-35630-81	AL-35630-91
Range	pH	-2.00 to 16.00			
	mV	±2000 mV			
	Conductivity	0 to 200 mS			
	TDS	0 to 200 ppt			
	Salinity	0 to 50 ppt			
Resolution	Temperature	-17.0 to 230.0°F (-10.0 to 110.0°C)			
	pH	0.01			
	mV	0.1 mV ±999.9 mV; 1 mV beyond			
	Conductivity	0.01 µS to 0.1 mS			
	TDS	0.01 ppm to 0.1 ppt			
Accuracy	Salinity	0.01			
	Temperature	0.1°F/°C			
	pH	±0.01			
	mV	±0.2 mV ±2 LSD or ±0.5% of reading; whichever is greater			
	Conductivity	±0.5% full-scale (monovalent); ±1% full-scale (divalent)			
Calibration	TDS	±1% full-scale			
	Salinity	±1% full-scale			
	Temperature	±0.9°F (±0.5°C)			
	pH	Up to six points: USA, NIST, DIN, PWB, or custom			
	mV	±200 mV			
Temperature compensation	Conductivity	Up to six points			
	TDS	Auto/manual; one point per range			
	Salinity	Auto/manual; one point per range			
	Temperature	±5.0° offset			
	Output	Automatic or manual from -10 to 110°C			
Data logging		Stores up to 500 data sets			
Power		Two AA batteries (included), 500 hours (without backlight); AC adapter (optional)			
Price					
Precalibrated price					

Accessories

AL-35641-51 Replacement pH electrode. Double-junction; epoxy body; BNC connector

AL-35618-05 ATC probe. Use with any standard pH electrode for temperature compensation

AL-35630-51 Replacement combination pH/CON/ATC probe

AL-35608-55 Conductivity cell, K = 0.1

AL-35608-50 Replacement conductivity cell, K = 0.1

AL-35608-51 Conductivity cell, K = 1.0

AL-35614-50 Replacement Grip-Clip holder

AL-35614-51 Hard carrying case, for 150/450 meters

AL-35630-53 Data cable for USB connectivity

AL-35420-01 Data cable for RS-232 connectivity

AL-35420-72 Optional AC adapter, 110/220 VAC

AL-09376-01 Replacement batteries, AA. Pack of 4

AL-17106-20 NIST-traceable calibration with data for pH meter

AL-17090-30 NIST-traceable calibration with data for conductivity meter

METTLER TOLEDO Seven2Go™ Pro Handheld pH/Ion Meter

No more juggling while multitasking

- Comfortable, single-handed operation frees a hand for other tasks
- Robust IP67-rated housing protects meter from harsh conditions
- Enhanced contrast screen is readable in any light condition—even bright sunlight
- Compatible with InLab® ISM sensors for quick electrode changes without recalibration

NEW

Purchase waterproof handheld meter only or choose a convenient kit with electrode that best fits your application. The InLab Expert Pro-ISM pH electrode is ideal for general applications in or out of doors, with a rugged PEEK body and double junction to protect the sensor from dirty samples. The InLab Routine Pro-ISM pH electrode is best suited to analytical laboratory applications with a glass body and ceramic junction to provide fast results with a greater degree of chemical resistance. For fluoride measurements, the perfectION™ combination ion-selective electrode features the built-in Click & Clear™ reference junction to prevent clogging and provide faster, more stable readings.

What's included: LabX direct pH software, USB cable, electrode holder, stabilizing/mounting base, wrist strap, test report, and batteries.



Specifications

Range	pH	–2 to 20
	mV	±1999
	ISE	Depends on the ISE used†
	Temperature	–5 to 130°C
Resolution	pH	0.001, 0.01, 0.1
	mV	0.1, 1
	ISE	3 or 4 digits (autorange)
	Temperature	0.1°C
Accuracy	pH	±0.002
	mV	±0.1
	ISE	±0.5%
	Temperature	±0.2°C up to 105°C, ±0.5°C above 105°C
Temperature compensation		Automatic or manual
Calibration		Up to 5 points
Buffer recognition		NIST, DIN, JIS, MERCK, MT USA, MT Europe, JG 119, Technical, custom
Data logging		2000 readings with time and date
Output		Micro-USB
Power		Four AA batteries or USB

†The perfectION Fluoride electrode (included in the Fluoride kit) has a lower limit of detection of 0.02 mg/L



Easy one-handed operation.

Description	Catalog number	Price
Seven2Go Pro pH/ion meter with standard accessories (listed above)	AL-35903-61	
Standard kit: meter, standard accessories, InLab Expert Pro pH electrode, and buffer sachet set	AL-35903-62	
Field kit: meter, standard accessories, InLab Expert Pro pH electrode, buffer sachet set, solution bottles, and carrying case	AL-35903-63	
Biotech kit: meter, standard accessories, InLab Routine Pro pH electrode, buffer sachet set, solution bottles, and carrying case	AL-35903-64	
Fluoride kit: meter, standard accessories, and perfectION fluoride electrode	AL-35903-65	

[AL-17106-20](#) NIST-traceable calibration with data for pH meters




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Thermo Scientific™ Orion™ Star™ A-Series Portable pH and pH/Ion Meters

Accuracy and reliability in a durable unit

- More information at a glance—display shows readings with temperature, electrode status, mode, calibration data, and more!
- Auto-recognition of USA, NIST, and DIN buffers for quicker calibrations
- Locks in readings with Auto-Read™ function
- Stands up to demanding needs—durable, waterproof IP67-rated housing

Star A121 pH Meter is a low-cost option that combines simplicity with accuracy—making it great for everyday pH measurements. Simple button layout and on-screen messages help with calibration and setup menu choices.

Star A221 pH and A324 pH/Ion Meters support a multi-language interface, improved stability algorithms, expanded data logging, and improved data security over the Star meters. Meters use RS-232 or USB for connectivity and include data analysis software.

Meters include: four AA batteries.

Star A121 meter kit adds: Orion Triode pH/ATC electrode 05719-14; 60 mL each of 4, 7, 10 buffers, storage solution, and cleaning solution; protective armor with electrode holder; and hard carrying case.

Star A221 and 324 meter kits add: ROSS Triode pH/ATC electrode 05718-28; 10 pouches each of 4, 7, 10 buffers and rinse solution; 457 mL of storage solution; protective armor with electrode holder; and hard carrying case.



Meter only

Model	A121 pH meter only	A121 pH meter kit	A221 pH meter only	A221 pH meter kit	A324 pH/ion meter only	A324 pH/ion meter kit
Catalog number	AL-58825-06	AL-58825-08	AL-58825-16	AL-58825-18	AL-58825-64	AL-58825-66
Range	pH	–2.00 to 16.00	–2.000 to 20.000	–2.000 to 20.000	–2.000 to 20.001	–2.000 to 20.001
	mV	±1600.0 mV; ±1999.9 rel mV	±2000.0 mV	±2000.0 mV	±2000.0 mV	±2000.0 mV
	ISE	—	—	—	0 to 19,999	0 to 19,999
	Temperature	23 to 221°F (–5 to 105°C)	23 to 221°F (–5 to 105°C)	23 to 221°F (–5 to 105°C)	23 to 221°F (–5 to 105°C)	23 to 221°F (–5 to 105°C)
Resolution	pH	0.1, 0.01	0.1, 0.01, 0.001	0.1, 0.01, 0.001	0.1, 0.01, 0.001	0.1, 0.01, 0.001
	mV	0.1	0.1	0.1	0.1	0.1
	ISE	—	—	—	3 significant digits	3 significant digits
	Temperature	0.1	0.1	0.1	0.1	0.1
Accuracy	pH	±0.01	±0.002	±0.002	±0.002	±0.002
	mV	±0.2 or 0.05% of reading	±0.2 or 0.05% of reading	±0.2 or 0.05% of reading	±0.2 or 0.05% of reading	±0.2 or 0.05% of reading
	ISE	—	—	—	±0.2 mV or 0.05% of reading	±0.2 mV or 0.05% of reading
	Temperature	±0.1	±0.1	±0.1	±0.1	±0.1
Temp. compensation	Automatic or manual		Automatic or manual		Automatic or manual	
Calibration points	Up to 3		Up to 5		Up to 5	
Buffer recognition	USA, NIST, and DIN		USA, NIST, and DIN		USA, NIST, and DIN	
Data logging	50 points		2000 points with time-and-date stamp		2000 points with time-and-date stamp	
Output	—		RS-232, USB		RS-232, USB	
Power	Four AA batteries (included) or optional AC adapter		Four AA batteries (included) or optional AC adapter		Four AA batteries (included) or optional AC adapter	
Price						

Accessories

[AL-58825-52](#) Hard carrying case

[AL-58825-53](#) Protective meter armor

[AL-58822-03](#) Universal AC power adapter

[AL-05719-14](#) Orion Triode pH/ATC electrode; refillable, epoxy body

[AL-05718-28](#) ROSS™ Triode pH/ATC electrode

[AL-55350-68](#) pH buffer kit. Includes 473 mL each of 4, 7, 10 buffers and storage solution, and 60 mL of cleaning solution

[AL-09376-01](#) Replacement batteries, AA. Pack of 4

[AL-17106-20](#) NIST-traceable calibration with data for pH meter

Thermo Scientific™ Orion™ pH Buffers

Color coded for ease of use

- Standardized against NIST-traceable pH references for superior accuracy

Available in a 475-mL (pint) bottle and portable 5 x 60-mL convenience packs. The All-in-One™ pH buffer kits include a pint each of 4, 7, and 10 buffer; either ROSS™ or standard electrode storage solution; and electrode storage bottle.



pH	5 x 60-mL bottles		1 x 475-mL bottle	
	Cat. no.	Price	Cat. no.	Price
1.68	AL-55350-26		AL-55350-28	
4.01	AL-55350-40		AL-55350-42	
5.00	—	—	AL-55350-38	
6.86	AL-55350-54		AL-55350-56	
7.00	AL-55350-44		AL-55350-46	
9.18	AL-55350-58		AL-55350-60	
10.01	AL-55350-48		AL-55350-52	
12.46	AL-55350-62		AL-55350-64	

[AL-55350-66](#) ROSS All-in-One pH buffer kit

[AL-55350-68](#) Standard All-in-One pH buffer kit

Oakton® Benchtop pH 700 and Ion 700 Meters

No more lost data—store and recall up to 100 data sets

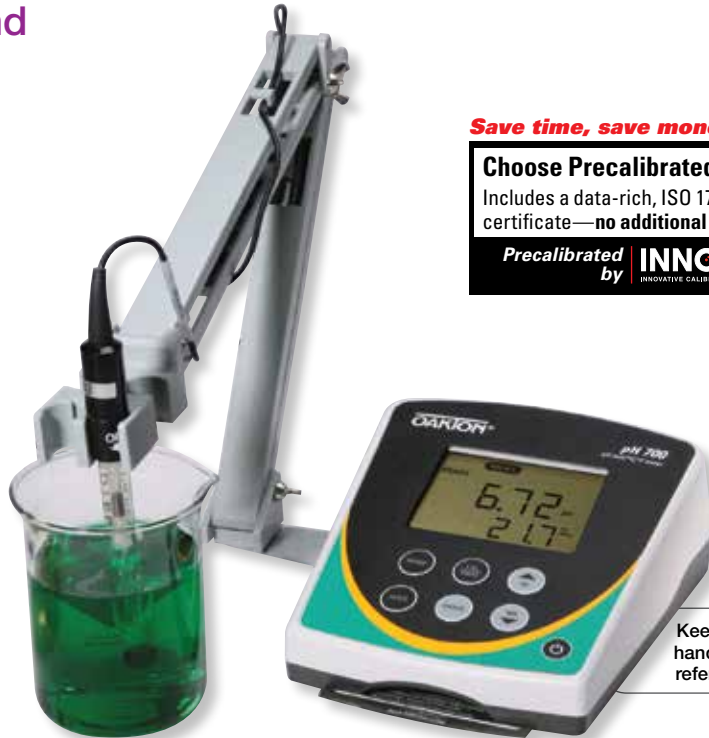
- Takes up less bench space—40% smaller than comparable models
- Super-large dual-line display is easy to read
- Simple calibrations with 5-point automatic pH buffer recognition for USA and NIST buffers
- More accurate measurements with up to 5-point calibration for ion concentration on Ion 700 model
- Versatile—use with any pH, ORP, or ISE electrodes with BNC connector

pH 700 meter measures pH, mV, relative mV, and temperature. Ion 700 meter adds ion concentration measurement and reads directly in ppm for easy use. Automatic temperature compensation (ATC) maintains reading accuracy even with fluctuating temperatures.

Meters feature Auto-Hold, selectable °F or °C measurement, and easy recall of electrode slope or offset.

Search

For our complete selection of pH/ion meters, go to...
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INNOVATIVE CALIBRATION SOLUTIONS

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3
Meter only

Specifications

Model		pH 700	Ion 700
Range	pH	-2.00 to 16.00	-2.00 to 16.00
	mV/rel mV	±2000	±2000
	ISE	—	0.01 to 2000 ppm
	Temperature	32 to 100°F (0.0 to 100.0°C)	32 to 100°F (0.0 to 100.0°C)
Resolution	pH	0.01 pH	0.01 pH
	mV/rel mV	0.1 within ±199.9 mV, 1 beyond ±199.9 mV	0.1 within ±199.9 mV, 1 beyond ±199.9 mV
	ISE	—	0.01 to 2000 ppm
	Temperature	0.1°F or °C	0.1°F or °C
Accuracy	pH	±0.01 pH	±0.01 pH
	mV/rel mV	±0.2 within ±199.9 mV, ±2 beyond 199.9 mV	±0.2 within ±199.9 mV, ±2 beyond 199.9 mV
	ISE	—	±0.5% of reading (monovalent); ±1% of reading (divalent)
	Temperature	±0.9°F (±0.5°C)	±0.9°F (±0.5°C)
Calibration	pH	Up to 5 points with autobuffer recognition	Up to 5 points with autobuffer recognition
	mV	Up to ±150 mV offset adjustment	Up to ±150 mV offset adjustment
	ISE	—	From 2 to 5 consecutive points (0.1, 1.0, 10.0, 100.0, 1000 ppm)
Temperature compensation		Automatic or manual from 32 to 100°F (0 to 100°C)	Automatic or manual from 32 to 100°F (0 to 100°C)
Buffer recognition		USA or NIST buffer sets	USA or NIST buffer sets
Data logging		100 data sets	100 data sets
Power		100/240 VAC, 50/60 Hz	100/240 VAC, 50/60 Hz

Model	Description	Meter		Precalibrated meter	
		Catalog number	Price	Catalog number	Price
pH 700	Meter only	AL-35419-00		AL-35419-01	
pH 700	Meter with "all-in-one" pH/ATC electrode	AL-35419-03		AL-35419-05	
Ion 700		AL-35419-23		AL-35419-27	
pH 700	Meter with double-junction pH electrode, ATC probe, and removable electrode holder	AL-35419-10		AL-35419-11	
Ion 700		AL-35419-20		AL-35419-24	
pH 700	Meter with removable electrode holder	AL-35419-12		AL-35419-15	
Ion 700		AL-35419-22		AL-35419-26	

AL-59001-65 Combination pH electrode; single junction, gel-filled, epoxy body

AL-59001-70 Combination pH electrode; double junction, gel-filled, epoxy body

AL-35811-71 "All-in-one" combination pH electrode; single junction, gel-filled, epoxy body

AL-35805-04 Replacement combination pH electrode; double junction, refillable, glass body

AL-35613-13 Replacement ATC probe, SS

AL-35420-54 Replacement electrode arm

AL-17106-20 NIST-traceable calibration with data for pH/ion meter

Oakton® Benchtop PC 700 and PC 2700 Meters

Get all the readings you need in one compact unit

- Economical PC 700 for basic laboratory use
- Advanced PC 2700 for research grade use with ion capability

PC 700 Meter features pH auto-buffer recognition for both USA and NIST buffer sets, automatic or manual temperature compensation, and selectable temperature units. Previous calibration points, electrode slope and offset, and conductivity/TDS cell constants are stored in memory for quick and easy retrieval. Store up to 100 data sets in the meter's memory for retrieval later.

PC 2700 Meter meets GLP requirements—meter stamps all calibration and stored data with time/date. Nonvolatile memory stores up to 500 data sets to simplify documenting large volumes of pH, mV, ISE, conductivity, TDS, salinity, or resistivity measurements. Data is easily exported to a computer via RS-232 port. Order RS-232 and optional RS-232-to-USB adapter separately below.

Meter only includes: universal 110/240 VAC power supply and electrode stand.

Meter with probes adds: combination pH electrode 35805-04 and conductivity/temperature probe 35608-74 (PC 700) or 35412-10 (PC 2700).



Advanced features
on PC 2700 for
GLP compliance

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CE Meter only

Specifications

Conductivity cell constant: fixed at $K = 1.0 \text{ cm}^{-1}$

Conductivity-to-TDS factor: adjustable from 0.4 to 1.0

Model		PC 700	PC 2700
Range	pH	-2.00 to 16.00	-2.000 to 20.000
	mV/Rel mV	±2000	±2000.0
	ISE	—	0.001 to 19999 ppm
	Conductivity	0.0 µS to 200 mS	0.050 µS to 500.0 mS
	TDS	0.00 ppm to 100.0 ppt @ 0.5 factor (200.0 ppt @ 1.0 factor)	0.050 to 500.0 ppt
	Salinity	—	0.0 to 80.0 ppt
	Resistivity	—	2.000 Ω to 20.0 MΩ
	Temperature	32.0 to 212°F (0.0 to 100.0°C)	32.0 to 212°F (0.0 to 100.0°C)
Resolution	pH	0.01 pH	0.001, 0.01, 0.1 pH
	mV/Rel mV	0.1 within ±199.9 mV, 1 beyond ±199.9 mV	0.1 mV
	ISE	—	2 or 3 digits
	Conductivity	0.01, 0.1, 1 µS; 0.01, 0.1 mS	0.01, 0.1 µS; 0.001, 0.01, 0.1 mS
	TDS	0.01, 0.1, 1 ppm; 0.01 0.1 ppt	0.01, 0.1 ppm; 0.001, 0.01, 0.1 ppt
	Salinity	—	0.1 ppt
	Resistivity	—	0.01 mΩ, 0.001, 0.01 kΩ, 0.01, 0.1 Ω
	Temperature	0.1°F or °C	0.1°F or °C
Accuracy	pH	±0.01 pH	±0.002 pH
	mV/Rel mV	±0.2 within ±199.9 mV, ±2 beyond 199.9 mV	±0.2 mV
	ISE	—	0.5% full scale (monovalent), 1% full scale (divalent)
	Conductivity	±1% full-scale	±1% full-scale
	TDS	±1% full-scale	±1% full-scale
	Salinity	—	±1% full-scale
	Resistivity	—	±1% full-scale
	Temperature	±0.9°F (±0.5°C)	±0.5°F (±0.3°C)
Calibration	pH	Up to 5 points (USA or NIST buffer sets)	Up to 6 (USA, NIST, DIN, or custom buffer sets)
	ISE	—	Up to 8 points
	Conductivity/TDS	5 points (one point per range)	5 points (one point per range)
Temperature compensation		Automatic or manual	Automatic or manual
Data logging		100 data sets	500 data sets
Output		—	RS-232
Power		110/240 VAC universal adapter	110/240 VAC universal adapter

Model	Description	Meters		Precalibrated meters	
		Catalog number	Price	Catalog number	Price
PC 700	Meter only	AL-35413-20		AL-35413-21	
	Meter with pH and conductivity/temperature probes	AL-35413-00		AL-35413-01	
PC 2700	Meter only	AL-35414-20		AL-35414-21	
	Meter with pH and conductivity/temperature probes	AL-35414-00		AL-35414-01	

[AL-35420-01](#) RS-232 cable for 2700-series meter

[AL-35630-53](#) USB cable for 2700-series meter

[AL-17106-20](#) NIST-traceable calibration with data for pH meters

[AL-17090-30](#) NIST-traceable calibration with data for conductivity meters

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INNOVATIVE CALIBRATION SOLUTIONS

Thermo Scientific™ Orion™ Star™ A-Series Benchtop pH and pH/Ion Meters

**Don't second-guess readings—
stable readings locked in with
Auto-Read™ function**

- Star A111 basic meter is perfect for simple, accurate pH measurements
- Star A211 and A214 meters provide advanced data security and data logging

Star A111 pH Meter is a low-cost option that combines simplicity with accuracy—making it great for everyday pH measurements.

Star A211 pH and A214 pH/Ion Meters support a multilanguage interface, improved stability algorithms, expanded data logging, and better data security over the Star meter. Meters use RS-232 or USB for connectivity and include data analysis software.

Meters include: electrode arm with redesigned probe holder and universal power adapter.

Star A111 meter kit adds: Orion Triode™ pH/ATC electrode 05719-14 and 60 mL each of 4, 7, 10 buffers, storage solution, and cleaning solution.

Star A211 and 214 meter kits add: ROSS™ Triode pH/ATC electrode 05718-28; ATC probe; Star stirring probe; and 475 mL each of 4, 7, 10 buffers and storage solution.



Meter only

Model	A111 pH meter only	A111 pH meter kit	A211 pH meter only	A211 pH meter kit	A214 pH/ion meter only	A214 pH/ion meter kit
Catalog number	AL-58825-02	AL-58825-04	AL-58825-22	AL-58825-24	AL-58825-26	AL-58825-28
Parameters	pH/mV/temperature		pH/mV/temperature		pH/mV/ion/temperature	
Range	pH	–2.00 to 16.00	pH	–2.000 to 20.000	pH	–2.000 to 20.001
	mV	±1600.0 mV; ±1999.9 rel mV	mV	±2000.0 mV	mV	±2000.0 mV
	ISE	—	ISE	—	ISE	0 to 19999
Resolution	Temperature	23 to 221°F (–5 to 105°C)	Temperature	23 to 221°F (–5 to 105°C)	Temperature	23 to 221°F (–5 to 105°C)
	pH	0.1, 0.01	pH	0.1, 0.01, 0.001	pH	0.1, 0.01, 0.001
	mV	0.1	mV	0.1	mV	0.1
Accuracy	ISE	—	ISE	—	ISE	3 significant digits
	Temperature	0.1	Temperature	0.1	Temperature	0.1
	pH	±0.01	pH	±0.002	pH	±0.002
Accuracy	mV	±0.2 or 0.05% of reading	mV	±0.2 or 0.05% of reading	mV	±0.2 or 0.05% of reading
	ISE	—	ISE	—	ISE	±0.2 mV or 0.05% of reading
	Temperature	±0.1	Temperature	±0.1	Temperature	±0.1
Temperature compensation	Automatic or manual		Automatic or manual		Automatic or manual	
Calibration points	Up to 3		Up to 5		Up to 5	
Buffer recognition	USA, NIST, and DIN		USA, NIST, and DIN		USA, NIST, and DIN	
Data logging	50 points		2000 points with time/date stamp		2000 points with time/date stamp	
Output	—		RS-232, USB		RS-232, USB	
Power	100 to 240 VAC (power adapter included) or four AA batteries (not included)		100 to 240 VAC (power adapter included) or four AA batteries (not included)		100 to 240 VAC (power adapter included) or four AA batteries (not included)	
Price						

Accessories

AL-58825-50 Electrode arm

AL-58825-51 Base for electrode arm

AL-58822-03 Universal AC power adapter

AL-05719-14 Orion Triode pH/ATC electrode; refillable, epoxy body

AL-05718-28 Ross Triode pH/ATC electrode

AL-55350-68 pH buffer kit. Includes 473 mL each of 4, 7, 10 buffers and storage solution, and 60 mL of cleaning solution

AL-09376-01 Batteries, AA. Pack of 4

AL-17106-20 NIST-traceable calibration with data for pH meter

Oakton® pH Buffer Solutions

Keep your readings accurate with these quality buffers

— Standardized against NIST-traceable pH references for meters with 0.01 resolution

OAKTON®

pH	500-mL bottles			1-L bottles			4-L bottles		
	Catalog number	Price/ea	Catalog number	Price/cs of 12	Catalog number	Price/ea	Catalog number	Price/ea	Catalog number
1.68	AL-00654-01		—		—		—		—
4.01	AL-00654-00		AL-05942-21		AL-05942-22		AL-05942-24		AL-05942-25
6.86	AL-00654-03		—		—		—		—
7.00	AL-00654-04		AL-05942-41		AL-05942-42		AL-05942-44		AL-05942-45
9.18	AL-00654-07		—		—		—		—
10.00	AL-00654-08		AL-05942-61		AL-05942-62		AL-05942-64		AL-05942-65
12.45	AL-00654-12		—		—		—		—



Save by ordering larger sizes or by the case!

Oakton® pH Buffer and pH Solution Packs

Maintain accuracy and your budget

- Save money by purchasing buffer pack—includes 500 mL bottle of pH 4, 7, and 10 NIST-traceable buffers
- Keep electrodes clean and stored correctly—purchase solution pack which adds 500-mL bottles of cleaning and storage solutions



OAKTON®

Description	Qty/pk	Catalog number	Price/pk
pH buffer pack	3 bottles	AL-05942-10	
pH solution pack	5 bottles	AL-05942-15	

Oakton® pH Buffer Pouches

Keep your accuracy even on the go!

- Single-use pouch—just tear, dip, calibrate
- Standardized to NIST-traceable pH references
- Sold in pack of 20 pouches



OAKTON®

pH	Catalog number	Price/pk
4.01	AL-35653-01	
7.00	AL-35653-02	
10.00	AL-35653-03	
Rinse solution	AL-35653-00	

AL-35653-04 Buffer pouch assortment pack; contains five pouches each of pH 4, 7, and 10 buffers and rinse solution

Oakton® High-Accuracy pH Buffers

Trust your buffers—high accuracy

- For meters with 0.001 resolution
- Standardized against NIST-certified pH references

OAKTON®



pH	One 500-mL bottle		Case of 12 bottles	
	Catalog number	Price/ea	Catalog number	Price/cs
4.000	AL-05942-29		AL-05942-35	
7.000	AL-05942-49		AL-05942-55	
10.000	AL-05942-69		AL-05942-75	

Cole-Parmer® pH Buffers, NIST-Traceable Reference Materials

Feel confident about pH accuracies

- Calibrated by ISO Guide 34 and ISO 17025 accredited laboratory—includes NIST-traceable certificate supplied by manufacturer
- Easy calibrations—include instructions and temperature compensation chart



Cole-Parmer®

pH	500-mL bottles		1-L bottles		4-L bottles	
	Catalog number	Price	Catalog number	Price	Catalog number	Price
Colorless buffers						
4.01	AL-00651-00		AL-00651-30		AL-00651-70	
7.00	AL-00651-02		AL-00651-32		AL-00651-72	
10.00	AL-00651-04		AL-00651-34		AL-00651-74	
Color-coded buffers						
4.01 (red)	AL-00651-06		AL-00651-36		AL-00651-76	
7.00 (yellow)	AL-00651-08		AL-00651-38		AL-00651-78	
10.00 (blue)	AL-00651-10		AL-00651-40		AL-00651-80	

Cole-Parmer® Extended-Life pH Standard Solution Buffers

Don't waste your buffer solutions—up to 5-year shelf life

- Achieve a shelf life of up to 5 years unopened in special envelope, or 1 year after opening
- NIST-traceable calibration report from an ISO Guide 34 and ISO 17025 accredited laboratory included with each 17-oz (500-mL) bottle



pH	Catalog number	Price
4.01	AL-00651-20	
7.00	AL-00651-22	
10.00	AL-00651-24	



Cole-Parmer® pH Buffers

Eliminate cross-contamination

- Supplied with NIST-traceable calibration report stating accuracy at 25°C of ± 0.01 pH
- Choose convenient, single-use vials or 500-mL bottle



pH	Six 100-mL vials		One 500-mL bottle	
	Catalog number	Price	Catalog number	Price
4.01	AL-00655-30		AL-00655-40	
7.00	AL-00655-32		AL-00655-42	
10.01	AL-00655-34		AL-00655-44	

Oakton® Electrode Cleaning and Storage Solutions

Clean electrodes make clean measurements

- Easily remove grease, protein, and other deposits with cleaning solution
- Make electrode last longer—store in our storage solution
- Choose 500-mL bottle or case of 24 500-mL bottles



Solution type	Catalog number	Price/ea	Catalog number	Price/cs
Cleaning	AL-00653-06		AL-35655-06	
Storage	AL-00653-04		AL-35655-04	

Oakton® pH Indicator Strips

Easy-to-distinguish colors at every pH interval

- Just dip and read with color comparator chart
- Strips measure 2 3/4" (7 cm) long
- Each vial contains 100 strips



pH range	pH interval	Catalog number	Price
0 to 14	1.0	AL-35850-02	
5 to 9	0.5	AL-35850-04	
0 to 6	0.5	AL-35850-06	

Oakton® Reference Fill Solutions

Effortless refilling!

- Choose your solution: 3.8 KCl with AgCl for Ag/AgCl electrodes or 4 KCl for calomel
- Sold in packs of two 125-mL bottles



Description	Catalog number	Price/pk
3.8 KCl with AgCl	AL-05992-47	
4 KCl	AL-05992-48	

Oakton® pH Indicator Paper Roll

Easily tear even while wearing gloves

- Get quick and easy pH readings—features 1.0 pH unit interval
- Instant, accurate results with easy-to-read comparator chart
- Each roll is enough for up to 150 tests



pH range	Catalog number	Price
0 to 13	AL-35850-08	

Thermo Scientific™ Orion™ ORP Standards

No hazardous chemicals or organics

- No more mixing—stable and ready to use
- Use as relative mV standard and calibrate offset of sample
- Redox potential values are 215 mV for Ag/AgCl reference electrodes and 420 mV for standard hydrogen reference electrodes



Description/package	Catalog number	Price
One-pint (475-mL) bottle	AL-05730-55	
Five 2-oz (60-mL) bottles	AL-05730-57	

pHydrion® pH Spill Sticks

Don't get too close to samples

- Extra-long 6" (15.2 cm) sticks reduce the risk of contact with the sample
- Simple single-color match for all pH values from 0 to 13
- Includes ten pH spill sticks and color matching chart



pH range	Catalog number	Price
0 to 13	AL-59200-05	

Cole-Parmer® Epoxy-Body Combination pH and ORP Electrodes

Get fast, stable readings



- Impact resistant—epoxy-body housing for added strength
- Ideal for your general-purpose applications in the lab or field
- Compatible with most brands of pH meter

These electrodes are ideal for prolonged pH or ORP readings. Electrodes with sealed, gel-filled design require virtually no maintenance. Electrodes with PTFE reference-junction offer extended electrode life. All listed electrodes have Ag/AgCl reference cells.

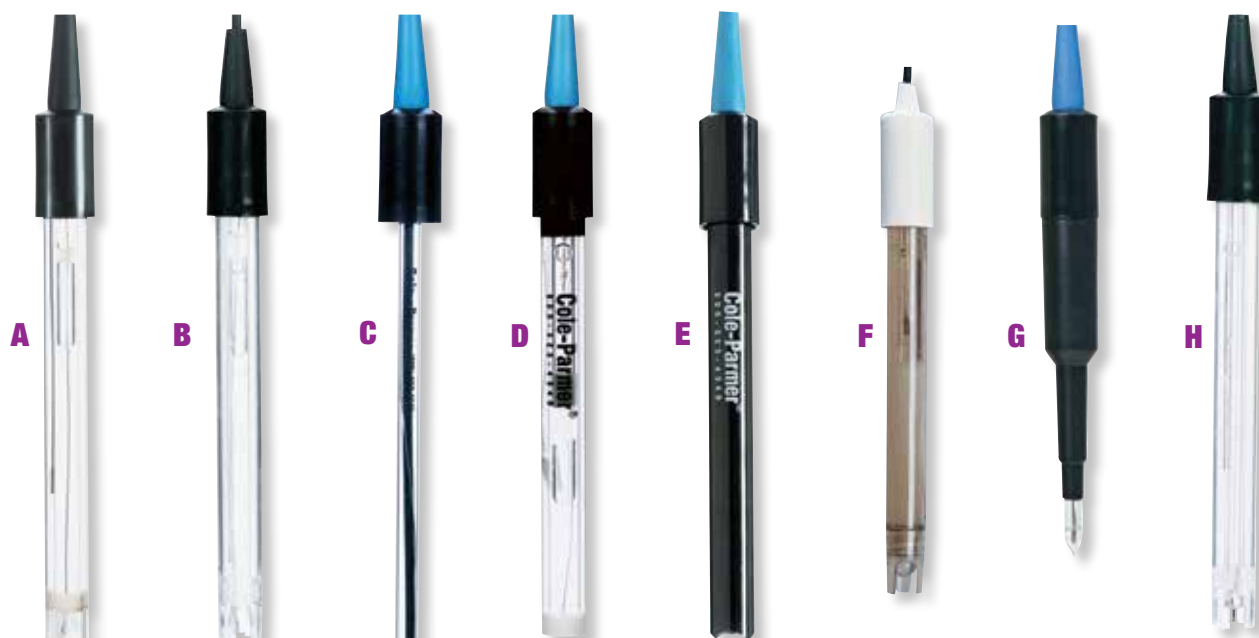
What's included: 3.3-ft (1-m) cable with BNC connector.

See How to...



Maintain it!

ColeParmer.ca/pHmaintain



Key	Description	Reference junction	Type	Maximum temperature	Length x dia (mm)	Catalog number	Price
General-purpose pH electrodes							
A	General purpose	Single	Sealed	176°F (80°C)	127 x 12	AL-59001-65	
	For dirty samples	Double				AL-59001-70	
B	General purpose, refillable	Single	Refillable†	176°F (80°C)	148 x 12	AL-05992-30	
	For dirty samples, refillable	Double				AL-05991-12	
C	Extra-long neck for test tube sampling	Single	Sealed	176°F (80°C)	220 x 6	AL-05990-45	
D	Flat tip for surface or low-volume sampling	Single	Sealed	176°F (80°C)	127 x 12	AL-05990-65	
PTFE reference-junction pH electrodes (clog resistant)							
E	General purpose	Single	Sealed	212°F (100°C)	110 x 12	AL-05992-00	
	For dirty samples	Double				AL-05992-02	
Special-purpose pH electrodes							
F	Coiled-cable for dirty samples	Double	Sealed	176°F (80°C)	140 x 12	AL-05993-28	
G	Spear-tip for dirty samples				110 x 10	AL-59002-24	
ORP electrodes							
A	General purpose	Single	Sealed	176°F (80°C)	127 x 12	AL-59001-75	
	For dirty samples	Double				AL-59001-77	
H	General purpose, refillable	Single	Refillable††	176°F (80°C)	155 x 12	AL-05990-55	

†Use fill solution 05992-48

††Use fill solution 05992-47

[AL-05992-48](#) Reference fill solution, 4 M KCl. Two 125-mL bottles

[AL-05992-47](#) Reference fill solution, 3.8 M KCl with AgCl. Two 125-mL bottles

[AL-05983-25](#) Adapter, BNC to US standard plug meter

Oakton® Flexible Electrode Holder

Keep electrodes in position

- Holds up to four standard size electrodes and one ATC probe.
- Weighted base pivots 360° for added convenience

Description	Catalog number	Price
Electrode holder	AL-35617-50	



Cole-Parmer® Glass-Body Combination pH and ORP Electrodes

Faster response and increased stability across 0 to 14 pH range

- More durable—dome bulb for better protection from breakage
- Withstand higher temperatures and chemical attack
- Get more stability in low-ionic strength solutions
- Resistant to Na⁺ ion interferences
- Compatible with most brands of pH meters

Available as refillable or sealed design for single, double, and annular Ag/AgCl junctions. Single-junction is ideal for clean samples; double junction is compatible with sulfates, Tris, and proteins; and annular junction is ideal for dirty samples.

What's included: 3.3-ft (1-m) cable and BNC connector.



Cole-Parmer®

Key	Description	Reference junction	Type	Maximum temperature	Length x dia (mm)	Catalog number	Price
General-purpose pH electrodes							
A	General-purpose, laboratory	Single	Refillable	212°F (100°C)	154 x 12	AL-05991-22	
	General-purpose for TRIS, sulfates, proteins	Double			154 x 12	AL-59001-34	
B	Rugged, low maintenance	Single	Sealed	212°F (100°C)	123 x 9.5	AL-05991-81	
	Rugged for TRIS, sulfates, proteins	Double			124 x 9.5	AL-59001-36	
C	General-purpose, thin neck	Single	Refillable†	212°F (100°C)	154 x 8	AL-05991-42	
D	Long neck for small test tubes				210 x 6	AL-05991-61	
E	Long neck for large test tubes				210 x 8	AL-05991-51	
F	Extra-long neck for flasks and bottles				326 x 8	AL-05990-40	
Special-purpose pH electrodes							
G	High temperature, KNO ₃ gel	Double	Sealed	248°F (120°C)	130 x 12	AL-05998-30	
H	Spear tip for piercing semisolids and foods	Single	Sealed	212°F (100°C)	159 x 8	AL-05998-20	
I	Soil electrode, eliminates “suspension effect”	Annular	Refillable†	212°F (100°C)	145 x 12	AL-05992-62	
J	Flat-tip for surface or low volume sampling	Double	Refillable†	212°F (100°C)	130 x 12	AL-05991-44	
ORP electrodes							
A	General purpose	Single	Sealed	212°F (100°C)	110 x 12	AL-05991-08	
	For dirty samples	Double				AL-05991-18	

†Use fill solution 05992-47.

Accessories

[AL-05992-47](#) Reference fill solution for refillable electrodes, 3.8 M KCl with AgCl. Two 125-mL bottles

[AL-05983-25](#) Adapter, BNC to US standard plug meter

Cole-Parmer® High-Performance Combination pH Electrodes

Get high-accuracy pH electrodes for every application

- Be more accurate with these 5-point calibration pH electrodes
- Achieve superior reproducibility and stability in aqueous samples

Cole-Parmer high-performance electrodes are available in a full range of materials, junctions, and sizes to suit your application requirements.

What's included: 3.3-ft (1-m) cable with a BNC connector.



Questions?

Trust our **expert** Application Specialists to help you find the right product.

Bob, 7 years of experience

Call: 800-363-5900 E-mail: info@coleparmer.ca



ISO 9001:2008
CERTIFIED SUPPLIER

Key	Description	Body	Reference junction	Type	Maximum temperature	Length x dia (mm)	Catalog number	Price
Combination pH electrodes								
A	General-purpose laboratory	Glass	Single	Refillable	230°F (110°C)	110 x 12	AL-55510-06	
B	Thin neck for tubes	Glass	Single	Refillable	230°F (110°C)	110 x 6	AL-55510-08	
C	General-purpose laboratory	Epoxy	Single	Refillable	176°F (80°C)	110 x 12	AL-55510-16	
D	Flat tip for surface or low volume	Epoxy	Double	Refillable	176°F (80°C)	110 x 12	AL-55510-18	
E	General-purpose laboratory	Epoxy	Single	Sealed	176°F (80°C)	110 x 12	AL-55510-20	
F	Thin neck for small vessels	Epoxy	Single	Sealed	176°F (80°C)	110 x 6	AL-55510-22	
G	For paper pulp testing	Epoxy	Double	Sealed	176°F (80°C)	110 x 12	AL-55510-24	
Fast-response combination pH electrodes								
H	General-purpose laboratory	Glass	Double	Refillable	230°F (110°C)	110 x 12	AL-55510-26	
I	Thin neck for tubes	Glass	Double	Refillable	230°F (110°C)	110 x 6	AL-55510-28	
J	Rugged bulb	Epoxy	Double	Sealed	176°F (80°C)	110 x 12	AL-55510-30	
Rugged combination pH electrodes								
K	Rugged bulb	Glass	Single	Refillable	176°F (80°C)	110 x 12	AL-55510-36	
	Rugged bulb	Glass	Double	Refillable	230°F (110°C)	110 x 12	AL-55510-38	

Accessories

[AL-05992-47](#) Reference fill solution for single-junction refillable electrodes, 3.8 M KCl with AgCl. Two 125-mL bottles

[AL-05992-48](#) Reference fill solution for double-junction refillable electrodes, 4 M KCl. Two 125-mL bottles

Thermo Scientific™ Orion™ ROSS™ and ROSS Ultra™ pH Electrodes

Don't worry about drift—drift is less than 0.002 pH per day

- Get fast, accurate, and stable pH readings
- Ideal for food, pharmaceuticals, or biological samples

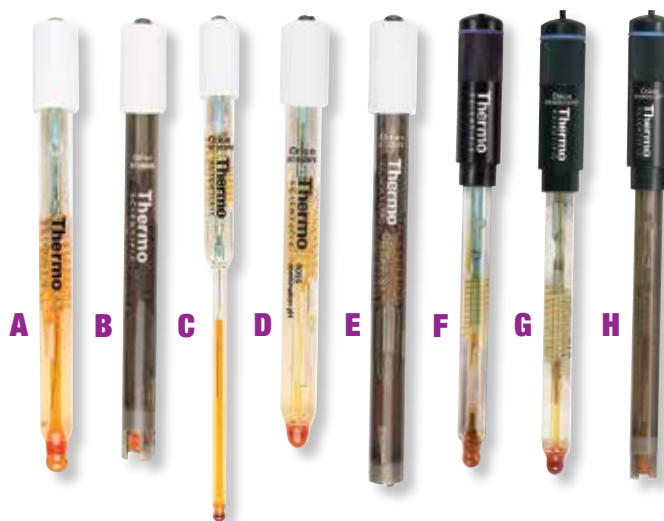
These pH electrodes offer a great mercury-free alternative to calomel electrodes—excellent for use in Tris buffer. The double-junction design protects the inner reference solution and prolongs the life of the electrode. Readings stabilize to 0.01 pH in less than 30 seconds—even with a 50°C temperature change. Electrodes read pH from 0 to 14. Maximum temperature is 212°F (100°C).

ROSS pH Electrodes utilize a platinum wire with 3 M KCl to prevent sample contamination with silver and mercury ions. All ROSS pH electrodes have BNC connector.

What's included: 3.3-ft (1-m) cable and BNC connector, and 60 mL of 3 M KCl filling solution.

ROSS Ultra pH Electrodes use a nonmetallic reference system featuring instantaneous liquid-liquid equilibration for contamination-free sampling, greater stability, and more accurate results. Maintains 0.01 pH precision over long periods of time. Backed by 2-year replacement warranty.

What's included: 3.3-ft (1-m) cable and the exclusive Star™ Series waterproof BNC connector (compatible with any pH meter that accepts BNC input), and 60 mL of 3 M KCl filling solution.



ISO9001:2008
CERTIFIED SUPPLIER



Applications	Description	Length x dia (mm)	ROSS pH electrodes			ROSS Ultra pH electrodes		
			Key	Catalog number	Price	Key	Catalog number	Price
General-purpose, Tris buffers, nonaqueous solutions, and DI water	Glass body	120 x 12	A	AL-05718-02		F	AL-05718-70	
For rugged general-purpose use, Tris buffers, nonaqueous solutions, and DI water	Epoxy body	120 x 12	B	AL-05718-07		G	AL-05718-77	
Small sample size or samples in small-diameter vessels	Glass body	165 (total); 95 x 6	C	AL-05718-16		—	—	—
Rugged general-purpose and field use, nonaqueous solutions, and DI water	Glass body with rugged bulb	120 x 12	D	AL-05718-27		H	AL-05718-73	
Soft, moist surfaces of solids or semisolids such as agar plates	Epoxy body, flat surface	120 x 12	E	AL-05718-32		—	—	—

Accessories

AL-05730-52 Filling solution for all ROSS and ROSS Ultra electrodes, 3 M KCl. Case of five 60-mL bottles

AL-05730-60 ROSS pH electrode storage solution, 475-mL bottle

Thermo Scientific™ PerpHect™ ROSS™ pH Microelectrode

Easily measure small samples with ROSS precision

- Utilizes ROSS sensor technology for optimal temperature response and stability
- Fits into very small vessels—sensing tip diameter is only 3 mm for samples as small as 15 µL
- No breaking—PTFE sleeve protects electrode

This refillable microelectrode features Orion's renowned ROSS technology for fast, accurate, and stable pH readings. Response time is 0.01 pH units in 30 seconds while drift is less than 0.002 pH units per day. Double-junction system makes this microelectrode compatible with Tris buffers and samples containing proteins and enzymes. Non-mercury electrode is a great alternative to calomel-based microelectrodes.

What's included: 3.3-ft (1-m) cable, BNC connector, and 50 mL of filling solution.

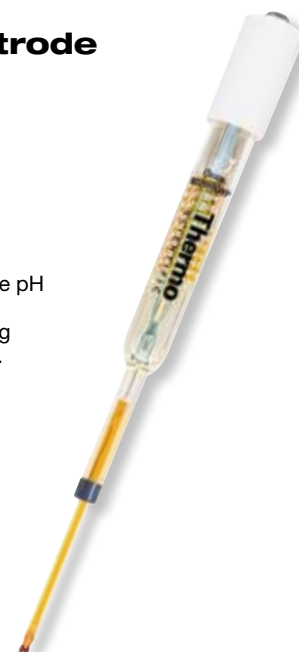
ISO9001:2008
CERTIFIED SUPPLIER

Applications	Description	pH range	Temperature range	Length x dia (mm)	Catalog number	Price
Microtubes, microwell plates, small volumes	ROSS pH microelectrode	0 to 14	32 to 212°F (0 to 100°C)	155 x 3	AL-05718-21	

Accessories

AL-05730-52 Filling solution for all ROSS electrodes, 3 M KCl. Case of five 60-mL bottles

AL-05730-60 ROSS pH storage solution. One 475-mL bottle



Cole-Parmer® Combination Ion-Selective Electrodes and Solutions

Save money and frustration—
cost effective and easy to use

– Easily fit into small spaces—no additional reference electrode is needed

Electrodes are double-junction combination ion-selective electrodes and are convenient to use in places where two electrodes won't fit. Use with a meter that has a resolution of 0.1 mV for the most accurate results; a meter with direct readings in ppm is preferred. For monitoring ions not listed below or for more electrode application information, call our Application Specialists.

Economy Epoxy Electrodes have a durable epoxy body and are well-suited for portable field applications. Outer reference chamber is silver-free and resists contamination. These electrodes are refillable.

Laboratory Glass Electrodes are double-junction in design, with a glass body that provides high-quality measurements for your laboratory applications. Improved glass seal enhances performance and reliability. Sealed inner junctions and refillable outer junctions accommodate special reference fill solutions—ideal for low-concentration measurements.

What's included: a 15-mL bottle of reference solution, a reference filling pipette, and a 3.3-ft (1-m) cable and BNC connector. Solid-state electrodes also have twelve polishing strips.

“Fast and stable.”



Cole-Parmer®

Ion-selective electrode	Type	Concentration range	Temperature/ pH range†	Interferences‡	Economy epoxy electrodes		Laboratory glass electrodes	
					Cat. no.	Price	Cat. no.	Price
Ammonia (NH ₃)	See page 21 for ordering information							
Ammonium (NH ₄ ⁺)	PVC membrane	5 x 10 ⁻⁶ to 1.0 M (0.1 to 18,000 ppm)	0 to 50°C/ 4 to 10	K ⁺	AL-27504-00		AL-27502-03	
Bromide (Br ⁻)	Solid-state	5 x 10 ⁻⁶ to 1.0 M (0.4 to 79,900 ppm)	0 to 80°C/ 2 to 14	S ⁻² , I ⁻ , CN ⁻ ; high Cl ⁻ and NH ₃ levels	AL-27504-02		AL-27502-05	
Cadmium (Cd ⁺²)	Solid-state	10 ⁻⁷ to 10 ⁻¹ M (0.01 to 11,200 ppm)	0 to 80°C/ 2 to 12	Ag ⁺ , Hg ⁺² , Cu ⁺² ; high Pb ⁺² and Fe ⁺² levels	AL-27504-04		AL-27502-07	
Calcium (Ca ⁺²)	PVC membrane	5 x 10 ⁻⁶ to 1.0 M (0.2 to 40,000 ppm)	0 to 50°C/ 3 to 10	Pb ⁺² , Hg ⁺² , Cu ⁺² , Ni ⁺² , Fe ⁺² , Mg ⁺² , Zn ⁺² , Ba ⁺² , K ⁺ , K ⁺ , Na ⁺	AL-27504-06		AL-27502-09	
Chloride (Cl ⁻)	Solid-state	5 x 10 ⁻⁵ to 1.0 M (1.8 to 35,500 ppm)	0 to 80°C/ 2 to 12	S ⁻² , I ⁻ , CN ⁻ , Br ⁻ , OH ⁻ , NH ₃ , S ₂ O ₃ ⁻²	AL-27504-08		AL-27502-13	
Copper (Cu ⁺²)	Solid-state	10 ⁻⁸ to 10 ⁻¹ M (0.0006 to 6350 ppm)	0 to 80°C/ 2 to 12	Ag ⁺ , Hg ⁺² , high Cl ⁻ , Br ⁻ Fe ⁺² , and Cd ⁺² levels	AL-27504-10		AL-27502-15	
Cyanide (CN ⁻)	Solid-state	5 x 10 ⁻⁶ to 10 ⁻² M (0.1 to 260 ppm)	0 to 80°C/ 11 to 13	S ⁻² , I ⁻ , Br ⁻ , Cl ⁻	AL-27504-12		AL-27502-17	
Fluoride (F ⁻)	Solid-state	10 ⁻⁶ to saturated (0.02 to saturated)	0 to 80°C/ 5 to 8	OH ⁻	AL-27504-14		AL-27502-19	
Iodide (I ⁻)	Solid-state	5 x 10 ⁻⁸ to 1.0 M (0.006 to 127,000 ppm)	0 to 80°C/ 0 to 14	S ⁻² , CN ⁻ , Br ⁻ , Cl ⁻ NH ₃ , S ₂ O ₃ ⁻²	AL-27504-18		AL-27502-23	
Lead (Pb ⁺²)	Solid-state	10 ⁻⁶ to 10 ⁻¹ M (0.2 to 20,700 ppm)	0 to 80°C/ 3 to 8	Ag ⁺² , Hg ⁺² , Cu ⁺² , high Cd ⁺² and Fe ⁺² levels	AL-27504-20		AL-27502-25	
Nitrate (NO ₃ ⁻)	PVC membrane	7 x 10 ⁻⁶ to 1.0 M (0.5 to 62,000 ppm)	0 to 50°C/ 2.5 to 11	ClO ₄ ⁻ , I ⁻ , CN ⁻ , BF ₄ ⁻	AL-27504-22		AL-27502-31	
Perchlorate (ClO ₄ ⁻)	PVC membrane	7 x 10 ⁻⁶ to 1.0 M (0.7 to 98,000 ppm)	0 to 50°C/ 2.5 to 11	NO ₃ ⁻ , NO ₂ ⁻ , CN ⁻ , ClO ₃ ⁻ , I ⁻	AL-27504-24		AL-27502-35	
Potassium (K ⁺)	PVC membrane	10 ⁻⁶ to 1.0 M (0.04 to 39,000 ppm)	0 to 50°C/ 2 to 12	Cs ⁺ , NH ₄ ⁺ , Tl ⁺ , H ⁺ , Ag ⁺ , Li ⁺ , Na ⁺ , Tris ⁺	AL-27504-26		AL-27502-39	
Silver/Sulfide (Ag ⁺ /S ⁻²)	Solid-state	10 ⁻⁷ to 1.0 M (Ag ⁺ , S ⁻²) (0.01 to 107,900 ppm Ag ⁺ ; 0.003 to 32,100 ppm S ⁻²)	0 to 80°C/ 2 to 12	Hg ⁺²	AL-27504-28		AL-27502-41	
Sodium (Na ⁺)	Glass membrane	10 ⁻⁶ M to saturated (0.02 ppm to saturated)	0 to 80°C/ 5 to 12	H ⁺ , K ⁺ , Li ⁺ , Ag ⁺ , NH ₄ ⁺ , Rb ⁺ , Cs ⁺ , Tl ⁺	AL-27504-30		AL-27502-43	
Surfactant (X ⁻ /X ⁻)	PVC membrane	10 ⁻⁵ to 5 x 10 ⁻² M (1.0 to 12,000 ppm)	2 to 12	Similar types of surfactants	AL-27504-32		AL-27502-45	
Water hardness (Ca ⁺² /Mg ⁺²)	PVC membrane	10 ⁻⁵ to 1.0 M (0.4 to 40,000 ppm as Ca ⁺²)	0 to 50°C/ 5 to 10	Cu ⁺² , Zn ⁺² , Ni ⁺² , Fe ⁺²	AL-27504-34		AL-27502-49	

†Optimal pH range for direct measurement.

‡These ions are listed in order of decreasing concentrations of interference.

Solution Kits sold separately below include all of the solutions needed for accurate measurements. Each kit includes one reference filling pipette, one 60-mL bottle of reference fill solution, one 475-mL bottle of 1000 ppm standard solution, and one 475-mL bottle of ionic strength adjustor (except models 27502-69 and 27502-91, which come in a one-gallon bottle).

Replacement ionic strength adjustors come in 475-mL bottles (except model 27503-58, which comes in a one-gallon bottle).



Solution kit 27502-63 and ISA bottle 27503-51

Cole-Parmer® Ammonia Ion-Selective Electrodes

Combines reference electrode and half-cell

- Fast and accurate readings in less than 30 seconds
- Save money with easily changeable membranes
- Measure concentrations to 17,000 ppm

Single-junction ammonia electrodes feature durable, epoxy bodies. The electrode with loose membranes is for users who prefer that style of installation. The electrode with pre-membraned caps makes electrode membrane replacement easier. Use electrodes with almost any existing meter.

What's included: 3.3-ft (1-m) cable and BNC connector, 15 mL of electrolyte, replacement membrane, and filling pipette. Order standards, ionic strength adjustors, and fill solution separately below.



“Excellent performance.”



Type	Concentration range	Temp/ pH range†	Interferences	Catalog number	Price
Electrode with loose membranes					
Gas sensing	5 x 10 ⁻⁷ to 1.0 M (0.01 to 17,000 ppm)	0 to 50°C/ above 11	Volatile amines	AL-27502-00	
Electrode with pre-membraned cap					
Gas sensing	5 x 10 ⁻⁷ to 1.0 M (0.01 to 17,000 ppm)	0 to 50°C/ above 11	Volatile amines	AL-27512-00	

†Optimal pH range for direct measurement

Accessories

- [AL-27503-00](#) Ammonia standard, 0.1 M NH₄Cl, 475-mL bottle
- [AL-27503-93](#) Ammonia standard, 1000 ppm ammonia as nitrogen, 475-mL bottle
- [AL-27503-94](#) Ammonia standard, 100 ppm ammonia as nitrogen, 475-mL bottle
- [AL-05730-51](#) Ionic strength adjustor, NaOH and EDTA, 475-mL bottle
- [AL-27503-71](#) Ammonia fill solution, 0.1 M NH₄Cl, 125-mL bottle
- [AL-27503-95](#) Replacement membranes. Ten membrane tapes, one O-ring, and tweezers
- [AL-27512-95](#) Replacement membrane caps for 27512-00. Pack of 3

Ion	Standards and fill solution kits			Replacement ionic strength adjustors†		
	Catalog number	Formulations for fill/standard solutions	Price	Catalog number	Solution formulation	Price
NH ₃	See adjacent ad for ordering information					
NH ₄ ⁺	AL-27502-53	0.1 M NaCl/ 1000 ppm as N		AL-27503-53	5 M NaCl	
Br ⁻	AL-27502-55	1 M KNO ₃ / 1000 ppm as Br ⁻		AL-27503-51	5 M NaNO ₃	
Cd ⁺	AL-27502-57	1 M KNO ₃ †		AL-27503-51	5 M NaNO ₃	
Ca ²⁺	AL-27502-59	4 M KCl/ 1000 ppm as Ca ²⁺		AL-27503-52	4 M KCl	
Cl ⁻	AL-27502-63	1 M KNO ₃ / 1000 ppm as Cl ⁻		AL-27503-51	5 M NaNO ₃	
Cu ²⁺	AL-27502-65	1 M KNO ₃ / 1000 ppm as Cu ²⁺		AL-27503-51	5 M NaNO ₃	
CN ⁻	—	—	—	—	—	—
F ⁻	AL-27502-69	4 M KCl/ 1000 ppm as F ⁻		AL-27503-58	TISAB I	
I ⁻	AL-27502-73	1 M KNO ₃ / 1000 ppm as I ⁻		AL-27503-51	5 M NaNO ₃	
Pb ²⁺	—	—	—	AL-27503-56	5 M NaClO ₄	
NO ₃ ⁻	AL-27502-79	0.1 M (NH ₄) ₂ SO ₄ / 1000 ppm as NO ₃ ⁻		AL-27503-60	2 M (NH ₄) ₂ SO ₄	
ClO ₄ ⁻	AL-27502-85	0.1 M (NH ₄) ₂ SO ₄ / 1000 ppm as ClO ₄ ⁻		AL-27503-60	2 M (NH ₄) ₂ SO ₄	
K ⁺	AL-27502-89	0.1 M NaCl/ 1000 ppm as K ⁺		AL-27503-53	5 M NaCl	
Ag ⁺ / S ⁻²	AL-27502-91	1 M KNO ₃ / 1000 ppm as Ag ⁺		AL-27503-51	5 M NaNO ₃	
Na ⁺	AL-27502-93	0.1 M NH ₄ Cl/ 1000 ppm as Na ⁺		AL-27503-54	4 M NH ₄ Cl with 4 M NH ₄ OH	
X ⁺ /X ⁻	AL-27502-95	4 M KCl/ 0.05 M Hyamine® and 0.01 M SLS††		—	—	—
Ca ²⁺ / Mg ²⁺	AL-27502-99	4 M KCl/ 1000 ppm as Ca ²⁺		AL-27503-52	4 M KCl	

†A 475-mL bottle of ionic strength adjustor is supplied with kit.

‡Customer-formulated standard solution required. ††None required.

Thermo Scientific™ Orion™ ROSS™ Triode™ pH Electrodes

Be more accurate with automatic
temperature compensation (ATC)

- Best temperature response of any pH electrode available
- Built-in temperature for use with Thermo Scientific Orion meters
- No waiting—stable readings to 0.01 pH in less than 30 seconds

Measure both pH and temperature in one convenient 12-mm electrode. Mercury-free, double-junction reference is compatible with samples containing Tris, sulfides, and proteins. Glass-body electrode is available as a refillable junction. Epoxy-body electrodes are available in long-lasting refillable and low-maintenance sealed (gel-filled) options.

What's included: 3.3-ft (1-m) cable, BNC pH connector, and either a MiniDIN ATC connector for use with Orion Star Series™ pH meters or an 8-pin DIN ATC connector for use with Orion A+™ pH meters.

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Key	Description	ATC connector	Catalog number	Price
A	Glass body, refillable	MiniDIN for Star Series pH meters	AL-05718-28	
B	Epoxy body, refillable	MiniDIN for Star Series pH meters	AL-05718-34	
C	Epoxy body, gel-filled	MiniDIN for Star Series pH meters	AL-05718-44	
		8-pin DIN for older A+ meters	AL-05718-46	

Accessories

[AL-05730-52](#) Filling solution for all ROSS and ROSS Ultra electrodes,
3 M KCl. Case of five 60-mL bottles



Thermo Scientific™ Sure-Flow™ pH Electrodes

No more clogging

- Get the most stable, drift-free measurements with free-flowing liquid junction
- Simple cleaning—just press cap to flush junction, release cap to take more measurements

Both styles of combination pH electrodes have a nonclogging, easy-to-clean Sure-Flow junction—ideal for viscous and dirty samples. Electrodes read pH from 0 to 14. Maximum temperature is 212°F (100°C).

Choose **Orion™ Sure-Flow electrodes** for high accuracy, even in viscous and dirty samples. Choose **ROSS™ Sure-Flow electrodes** for speed, accuracy, and stability even in rapidly changing and challenging environments.

What's included: 3.3-ft (1-m) cable with BNC connector and 50 mL of KCl filling solution.

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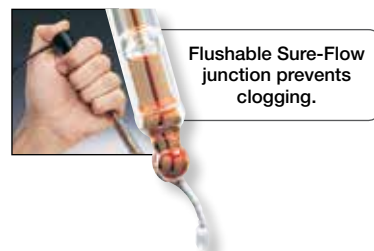
Key	Description	Reference type	Length x dia (mm)	Catalog number	Price
A	Orion, glass body	Ag/AgCl	120 x 12	AL-05718-55	
B	Orion, epoxy body			AL-05718-57	
C	ROSS, glass body	ROSS	120 x 12	AL-05718-51	
D	ROSS, epoxy body			AL-05718-53	

Accessories

[AL-05730-42](#) Reference fill solution for Orion SureFlow electrodes;
4 M KCl with AgCl. Five 60-mL bottles

[AL-05730-52](#) Reference fill solution for ROSS SureFlow electrodes;
3 M KCl. Five 60-mL bottles

[AL-05730-60](#) ROSS pH storage solution. One 475-mL bottle



Flushable Sure-Flow
junction prevents
clogging.

Oakton® Waterproof EcoTestr™ TDS and EC Pocket Meters

Stop replacing sensors

- Price allows you to just replace meter
- Rugged, chemical-resistant stainless steel sensors
- Easy push-button electronic single-point calibration
- Read measurements easily—ergonomic display for easy viewing at a glance
- Waterproof, floating meter—ideal for damp or dirty conditions
- Save money—ideal for education or field use

Choose from four models depending on your parameter. TDS models include a self-adjusting TDS factor from 0.40 to 1.0.

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IP 67

Description	EcoTestr TDS Low	EcoTestr TDS High	EcoTestr EC Low	EcoTestr EC High
Catalog number	AL-35462-10	AL-35462-15	AL-35462-30	AL-35462-35
Range	Conductivity 0 to 1990 µS	Conductivity 0 to 10.0 ppt	Conductivity 0 to 1990 µS	Conductivity 0 to 19.90 mS
Resolution	Conductivity 10 ppm	Conductivity 0.1 ppt	Conductivity 10 µS	Conductivity 0.1 mS
Accuracy	Conductivity ±1% FS	Conductivity ±2% FS	Conductivity ±1% FS	Conductivity ±2% FS
Temperature compensation	Automatic, 0 to 50°C, 2% per °C			
Calibration	One-point digital calibration			
Power	Four 1.5 V batteries (included), >200 hours life			
Price				

AL-09377-16 Replacement batteries, 1.5 V button cell. Pack of 6

Oakton® Waterproof EcoTestr™ Salt Pocket Meter

Just dip and read

- Low cost with long-life sensor
- IP67-rated waterproof housing that floats if dropped in water
- Precalibrated against NaCl standards
- Keep it with you—built-in clip for pocket or belt hanging

Features include single-button digital calibration, auto-shutoff, and display hold function.

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IP 67

Description	EcoTestr Salt
Catalog number	AL-35462-50
Range	0 to 10.0 ppt
Resolution	0.1 ppt
Accuracy	±1% FS
Temperature compensation	Automatic, 0 to 50°C, 2% per °C
Calibration	One-point digital calibration
Power	Four 1.5 V batteries (included), >200 hours
Price	

AL-09377-16 Replacement batteries. Pack of 6

Better results— easier and faster

COMING SOON!

November
2016

NEW

Oakton® Waterproof EcoTestr™ Conductivity Pocket Meter

- Conductivity, TDS, and salinity now combined into one meter
- Large dual-line display shows parameter and temperature readings simultaneously
- Easier, more intuitive interface and indicators for battery life, readiness, and calibration
- Use redesigned cap as sample cup and as a stabilizing base to stand the meter upright
- Convenient—attach a lanyard to prevent losing or dropping in the field

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IP 67

Description	EcoTestr (CTS) Con/TDS/Salinity
Catalog number	AL-35462-11
Range	Conductivity 0.00 to 20.00 mS/cm
	TDS 0.00 to 20.00 ppt (with TDS factor 1.0)
	Salinity 0.0 to 10.0 ppt
	Temperature 32.0 to 122.0°F (0.0 to 50.0°C)
Resolution	Conductivity 10 µS, 0.1 mS
	TDS 10 ppm, 0.1 ppt
	Salinity 0.1 ppt
	Temperature 0.1°F (0.1°C)
Accuracy	Conductivity ±2% full-scale ±1 LSD
	TDS ±2% full-scale ±1 LSD
	Salinity ±2% full-scale ±1 LSD
	Temperature ±0.9°F (0.5°C) + 1 LSD
Temperature compensation	Automatic
Calibration	Single point
Power	Four A76 1.5 V miniature alkaline batteries (included)

Oakton® Dual-Range Waterproof TDSTestr® 11 and ECTestr® 11 Meters

Get longer life with replaceable sensor

- Don't worry about losing your meter—floats if dropped in water and included lanyard keeps it close
- Get more out of your meter—dual range measurements for a wider application range
- Easy calibration—up to one point per range
- Stands up to whatever you throw at it—Valox® housing and stainless steel electrodes for good chemical compatibility



Replaceable sensor

OAKTON®

ISO9001:2008 CERTIFIED SUPPLIER CE IP 67

Description	TDSTestr 11 Dual Range	ECTestr 11 Dual Range
Catalog number	AL-35662-10	AL-35662-30
Range	Conductivity 0 to 2000 ppm; 0 to 10.0 ppt Temperature 32 to 122°F (0 to 50°C)	Conductivity 0 to 2000 µS; 0 to 20.00 mS Temperature 32 to 122°F (0 to 50°C)
Resolution	Conductivity 10 ppm; 0.10 ppt Temperature 0.1°F (0.1°C)	Conductivity 10 µS; 0.10 mS Temperature 0.1°F (0.1°C)
Accuracy	Conductivity ±1% full scale Temperature ±0.9°F (±0.5°C)	Conductivity ±1% full scale Temperature ±0.9°F (±0.5°C)
Temperature compensation	Automatic, 0 to 50°C; 2% per °C	Automatic, 0 to 50°C; 2% per °C
Calibration	One or two points	One or two points
Power	Four 1.5 V batteries (included), approx. 150 hours use	
Price		

AL-35661-17 Replacement sensor for above pin-style testers



Oakton® Waterproof SaltTestr® 11 Pocket Meter

Never be without a meter

- Get easy spot checks of salt-based samples
- IP67-rated waterproof housing—even floats!
- Precalibrated against NaCl standards for immediate use

Push-button calibration provides easy and precise field calibration. Hold function freezes measurement for viewing and recording.



OAKTON®

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Description	SaltTestr 11
Catalog number	AL-35662-52
Range	Salinity 0.0 to 10.00 ppt (g/L) Temperature 32 to 122°F (0 to 50°C)
Resolution	Salinity 0.01 ppt Temperature 0.01°F (0.1°C)
Accuracy	Salinity ±1% full-scale, 0.00 to 7.00 ppt; ±3% full-scale over 7.00 ppt Temperature ±0.9°F (0.5°C)
Temperature compensation	Automatic
Power	Four 1.5 V batteries (included)
Price	

Accessories

AL-35661-17 Replacement sensor

AL-00653-89 Oakton calibration solution; 8974 µS (4487 ppm NaCl), 500 mL

AL-09377-16 Replacement batteries. Pack of 6

Oakton® Multirange Waterproof Cup-Style TDSTestr® 11+ and ECTestr® 11+ Meters

Be more versatile in sampling

- Operates as either a cup-style or dip-style tester for greater flexibility
- Selectable measuring range
- Won't sink—waterproof, dustproof housings float
- Easy operation—push-button calibration, Hold function, and error messages
- Save money—replaceable sensor reduces costs

Description	TDSTestr 11+ Multirange	ECTestr 11+ Multirange
Catalog number	AL-35662-15	AL-35662-35
Range	Conductivity 0 to 200.0, 0 to 2000 ppm; 0 to 10.00 ppt Temperature 32 to 122°F (0 to 50°C)	Conductivity 0 to 200.0, 0 to 2000 µS/cm; 0 to 20.00 mS/cm Temperature 32 to 122°F (0 to 50°C)
Resolution	Conductivity 0.1, 1 ppm; 0.01 ppt Temperature 0.1°F (0.1°C)	Conductivity 0.1, 1 µS/cm; 0.01 mS/cm Temperature 0.1°F (0.1°C)
Accuracy	Conductivity ±1% full scale Temperature ±0.9°F (±0.5°C)	Conductivity ±1% full scale Temperature ±0.9°F (±0.5°C)
Temperature compensation	Automatic, 0 to 50°C; 2% per °C	
Calibration	Push-button calibration, one to three points	
Power	Four 1.5 V batteries (included), approximately 150 hours continuous use	
Price		

AL-35661-08 Replacement sensor for cup-style testers

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Oakton® CON 6+ and TDS 6+ Meter Kits

Easy, push-button calibration

- High accuracy at an affordable price, $\pm 1\%$ across full scale
- Five auto-ranging measurement modes—up to 200.0 mS (200.0 ppt)
- Get more accurate calibration for all five ranges
- Get temperature readings at the touch of a button

Additional features include a convenient Hold function and auto-off function that shuts meter off after 20 minutes of nonuse. Programming functions allow customization of meter for temperature compensation, temperature coefficient, normalization, cell constant, and conductivity-to-TDS conversion factor (TDS 6+) for better accuracy in varying applications.

What's included:

protective rubber boot with stand, conductivity/TDS/temperature probe (K = 1.0), calibration solutions, sample bottles, rinse bottle, hard plastic carrying case, and four AAA batteries.



Rubber boot protects meter and doubles as a convenient stand

Save time, save money!

Choose Precalibrated
Includes a data-rich, ISO 17025 certificate—**no additional charge!**

Precalibrated by **INNOCAL**
INNOVATIVE CALIBRATION SOLUTIONS

OAKTON®

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CE

Meter only

Description	CON 6+ kit	Precalibrated CON 6+ kit	TDS 6+ kit	Precalibrated TDS 6+ kit
Catalog number	AL-35604-04	AL-35604-05	AL-35604-24	AL-35604-25
Range	Conductivity	0 to 20.00, 0 to 200.0, 0 to 2000 μ S; 0 to 20.00, 0 to 200.0 mS	—	—
	TDS	—	0 to 10.00, 10 to 100.0, 100 to 1000 ppm; 1.00 to 10.00, 10.0 to 100.0, up to 200.0 ppt [†]	—
	Temperature	–10.0 to 110.0°C	–10.0 to 110.0°C	—
Accuracy	Conductivity	$\pm 1\%$ full-scale	—	—
	Temperature	$\pm 0.5^\circ\text{C}$	$\pm 0.5^\circ\text{C}$	—
Temp. compensation	Automatic or manual from 0.0 to 50.0°C			
Cell constant (K)	Selectable, 0.1, 1, and 10			
Conductivity-to-TDS conversion factor	—			
Calibration points	5 maximum, one per range			
Power	Four AAA batteries (included)			
Price				

[†]With K = 10 probe

Accessories

- AL-35606-53** Conductivity probe, K = 0.1
- AL-35606-55** Replacement conductivity probe, K = 1.0
- AL-35606-57** Conductivity probe, K = 10
- AL-09376-00** Replacement batteries, AAA. Pk of 12
- AL-17090-30** NIST-traceable calibration with data for conductivity meters

Cole-Parmer® C100 Conductivity/TDS/Salinity Meter

Achieve basic, accurate readings affordably

- Convenient autoranging of conductivity with temperature measurements
- Four conductivity measurement ranges between 0 and 200 mS
- IP57 waterproof rating
- Protective rubber boot with convenient fold-out stand

Easily measure conductivity, TDS, and salinity mode with temperature readout. Calibrate meter up to four points; one point for each of the four measurement ranges. Automatic or manual temperature compensation.

What's included: conductivity cell (K = 1.0), protective rubber boot with stand, and batteries.



Cole-Parmer®

CE **IP 57**

Model		C100
Catalog number		AL-59200-08
Range	Conductivity	0 to 200 mS
	TDS	0 to 100 g/L
	Salinity	0 to 100 ppt
	Temperature	32 to 212°F (0 to 100°C)
Resolution	Conductivity	0.1/1 µS; 0.01/0.1 mS
	TDS	0.1/1
	Salinity	0.1/1
	Temperature	0.1
Accuracy	Conductivity	±1.0% ±1 digit
	TDS	±1.0% ±1 digit
	Salinity	±1.0% ±1 digit
	Temperature	±0.5°C ±1 digit
Temperature compensation		Automatic 0 to 80°C or manual
Power		Three AA batteries (included)
Price		

Accessories

- AL-59200-09** Replacement conductivity probe, K = 1
- AL-59200-11** Conductivity probe, K = 0.1
- AL-59200-13** Conductivity probe, K = 10
- AL-09376-01** Replacement batteries, AA. Pack of 4
- AL-17090-30** NIST-traceable calibration with data for conductivity meters

Find even more online! Go to ColeParmer.ca to search more than 100,000 products.

Oakton® Waterproof CON 150 Meter

Get more for your money

- Best value for an IP67-rated waterproof meter
- Know the status of your probe—intuitive, user-friendly icon displays cell constant
- Get quick and easy electrode attachment to a beaker or container with Grip-Clip™ holder
- Recall more data with expanded data logging for up to 150 data sets
- Use as a benchtop meter—built-in stand and wall-mount option
- Versatile power supply—battery or AC

Rugged, waterproof housing is ideal for use in any environment. View more data simultaneously with large, three-line LCD providing conductivity or TDS measurement with temperature. Get faster calibration with auto-ranging and auto-cal functions for one calibration point per measurement range. Select a probe with a 0.1, 1.0, or 10 cell constant and automatic temperature compensation (ATC).

Meter features include adjustable conductivity-to-TDS factor, selectable temperature coefficient, ready (stability) indicator, smart averaging, hold function, calibration alarm (visible), battery life indicator, and probe status.

Meter includes: conductivity cell (K = 1.0), Grip-Clip holder, and two AA batteries.

Kit adds: two calibration standards and hard carrying case.



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TUV GS

CE

IP 67

Meter only

Description		CON 150 meter with probe	CON 150 meter kit
Catalog number		AL-35607-32	AL-35607-90
Precalibrated cat. no.		AL-35607-34	AL-35607-91
Range	Conductivity	0 to 200 mS	
	TDS	0 to 200 ppt	
	Temperature	-17.0 to 230.0°F (-10.0 to 110.0°C)	
Resolution	Conductivity	0.01 µS to 0.1 mS	
	TDS	0.01 ppm to 0.1 ppt	
	Temperature	0.1°F/°C	
Accuracy	Conductivity	±1% full-scale	
	TDS	±1% full-scale	
	Temperature	±0.9°F (±0.5°C)	
Calibration	Conductivity	Auto/manual; 1 point/range	
	TDS	Auto/manual; 1 point/range	
	Temperature	Offset 0.1 increments	
Temperature compensation		Automatic or manual from -10 to 110°C	
Conductivity-to-TDS factor		0.4 to 1.0	
Data logging		Stores up to 150 data sets	
Power		Two AA batteries (included); universal power adapter (optional)	
Price			
Precalibrated price			

[AL-35608-55](#) Conductivity cell, K = 0.1

[AL-35608-50](#) Replacement conductivity cell, K = 1.0

[AL-35608-51](#) Conductivity cell, K = 10

[AL-35614-50](#) Replacement Grip-Clip holder easily attaches probe to side of container for hands-free measurement

[AL-35614-51](#) Hard carrying case

[AL-35420-72](#) Optional power adapter, 110/220 VAC

[AL-09376-01](#) Replacement batteries, AA. Pack of 4

[AL-17090-30](#) NIST-traceable calibration with data for conductivity meter

MYRON L Analog Conductivity, Resistivity, TDS, and Multiparameter Meters

No maintenance required

- Maintenance-free, built-in electrodes do not require replatinizing
- Don't worry about fluctuations in temperature with automatic temperature compensation

Analyze your samples on-site with these portable meters. Optional conductivity range extender expands range by a factor of 10. Minimum sample volume is 25 mL.

CE

Meter only



Description		Conductivity meters			Conductivity/resistivity meter		Total dissolved solid meters		pH/conductivity meter
Catalog number		AL-01489-10	AL-01489-20	AL-01489-35	AL-01489-30		AL-01489-15	AL-01489-25	AL-01489-62
Range	Conductivity	0 to 5000 µS	0 to 50 µS, 0 to 500 µS, 0 to 5000 µS	0 to 10 µS, 0 to 100 µS, 0 to 1000 µS, 0 to 10,000 µS	0 to 0.5 µS, 0 to 5 µS, 0 to 50 µS, 0 to 500 µS, 0 to 5000 µS		—	—	0 to 10,000 µS
	Resistivity	—	—	—	2 to 30 MΩ		—	—	—
	TDS	—	—	—	—		0 to 5000 ppm	0 to 50 ppm, 0 to 500 ppm, 0 to 5000 ppm	—
	pH	—	—	—	—		—	—	2.0 to 12.0 pH
Temperature compensation		Automatic from 50 to 160°F (10 to 71°C)	Automatic from 50 to 160°F (10 to 71°C)	Automatic from 50 to 160°F (10 to 71°C)	Automatic from 32 to 120°F (0 to 49°C)		Automatic from 50 to 160°F (10 to 71°C)	Automatic from 50 to 160°F (10 to 71°C)	Automatic from 50 to 160°F (10 to 71°C)
Power		One 9 V battery (included)			Two 9 V batteries (included)		One 9 V battery (included)		Two 9 V batteries (included)
Price									

Accessories

[AL-01489-50](#) Range extender increases conductivity range by 10x (for example, 0 to 50,000 µS for model 01489-10)

[AL-01489-48](#) Hard carrying case

[AL-01489-51](#) Calibration kit for model 01489-62

[AL-01489-63](#) Replacement pH sensor for model 01489-62

Oakton® Waterproof CON 450 Meter

Easy to read in any environment

- Use it in any environment with backlit display and rugged design
- Know the status of your probe—intuitive, user-friendly icon displays cell constant
- Get quick and easy electrode attachment to a beaker or container with Grip-Clip™ holder
- Download and analyze up to 500 data sets with USB or RS-232 output
- Use as a benchtop meter as well—built-in stand and wall-mount option
- Versatile power supply—battery or AC

Waterproof, IP67-rated meter is ideal for even the harshest environments. View the main measurement simultaneously with temperature on backlit display. Get faster calibration with auto-cal function, which permits one calibration point per measurement range. Select a probe with a 0.1, 1.0, or 10 cell constant and automatic temperature compensation (ATC). Get more accuracy even in fluctuating temperatures with ATC.

Meter features include adjustable conductivity-to-TDS factor, selectable temperature coefficient, ready (stability) indicator, smart averaging, user-selectable °F/°C units, hold function, calibration alarm, battery life-indicator, and electrode status.

Meter includes: conductivity cell (model 35608-50, K = 1.0), Grip-Clip holder, and batteries.

Kit adds: calibration standards and hard carrying case.

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CE

IP 67

Meter only

Description		CON 450 meter with probe	CON 450 meter kit
Catalog number		AL-35608-32	AL-35608-80
Precalibrated catalog number		AL-35608-34	AL-35608-81
Range	Conductivity	0 to 200 mS	
	TDS	0 to 200 ppt	
	Salinity	0 to 50 ppt	
	Temperature	-17.0 to 230.0°F (-10.0 to 110.0°C)	
Resolution	Conductivity	0.01 µS to 0.1 mS	
	TDS	0.01 ppm to 0.1 ppt	
	Salinity	0.01	
	Temperature	0.1°F/°C	
Accuracy	Conductivity	±1% full-scale	
	TDS	±1% full-scale	
	Salinity	±1% full-scale	
	Temperature	±0.9°F (±0.5°C)	
Calibration	Conductivity	Auto/manual; 1 point/range	
	TDS	Auto/manual; 1 point/range	
	Salinity	Auto/manual; 1 point/range	
	Temperature	±5.0° offset	
Temperature compensation		Automatic or manual from -10 to 110°C	
Data logging		Stores up to 500 data sets	
Output		USB or RS-232	
Power		Two AA batteries (included); 500 hours (without backlight); AC adapter (optional)	
Price			
Precalibrated price			

Accessories

[AL-35608-55](#) Conductivity cell, K = 0.1

[AL-35608-50](#) Replacement conductivity cell, K = 1.0

[AL-35608-51](#) Conductivity cell, K = 10

[AL-35614-50](#) Replacement Grip-Clip electrode holder

[AL-35614-51](#) Hard carrying case

[AL-35630-53](#) Data cable for USB connectivity

[AL-35420-01](#) Data cable for RS-232 connectivity

[AL-35420-72](#) Optional AC adapter, 110/220 VAC

[AL-09376-01](#) Replacement batteries, AA. Pack of 4



Easy one-button data logging



Built-in meter stand for steady benchtop use.



Convenient kit saves you money!

Thermo Scientific™ Orion™ Star™ A-Series CON and pH/CON Meters

No need to toggle screens

- More data on one screen: temperature, electrode status, mode, calibration, and more
- Know when reading is complete with Auto-Read™ function
- Perfect for field testing—feature a durable, waterproof IP67-rated housing

Star A122 Conductivity Meter is ideal for everyday conductivity, TDS, and temperature measurements. **Star A222 Conductivity and A325 pH/Conductivity Meters** support a multilanguage interface, improved stability algorithms, extended data logging, and improved data security over the Star meters. Meters use RS-232 or USB for connectivity and include data analysis software. GLP-related features include extensive data sets with time-and-date stamp and electrode verification. Meet all US Pharmacopeia (USP) requirements.



Meters include: four AA batteries.

Meter kits include: conductivity cell, 1413 µS conductivity standard (five 60-mL bottles), rinse solution (10 pouches), protective armor with electrode holder, and hard carrying case. **Star A325 kit also includes:** ROSS™ Triode pH/ATC electrode, pH buffers (4, 7, 10) and storage solution (10 pouches).



Description	A122 CON meter	A222 CON meter	A325 pH/CON meter	
Meter catalog number	AL-19704-45	AL-19704-16	AL-58825-68	
Meter kit catalog number	AL-19704-47	AL-19704-18	AL-58825-70	
Range	pH	—	—2.000 to 20.000	
	mV	—	±2000.0 mV	
	Conductivity	0.1 µS to 200 mS	0.01 µS to 3000 mS	
	TDS	1 to 19,999 ppm	0 to 200 ppt	
	Salinity	—	0.01 to 80.0 ppt NaCl	
	Resistivity	—	2 Ω to 100 MΩ	
Temperature	23 to 221°F (–5 to 105°C)			
Resolution	pH	—	—	0.1, 0.01, 0.001
	mV	—	—	0.1
	Conductivity	0.01 µS	0.001 µS	
	TDS	4 significant digits	4 significant digits	
	Salinity	—	0.01	
	Resistivity	—	2 Ω	
	Temperature	0.1	0.1	
	Accuracy	pH	—	—
mV		—	—	±0.2 or 0.05% of reading
Conductivity		±0.5% of reading ± 1 digit		
TDS		±0.5% of reading ± 1 digit		
Salinity		—	±0.1	
Resistivity		—	0.5% of reading ± 1 digit	
Temperature		±0.1	±0.1	
Temperature compensation	Automatic or manual			
Calibration points	1	Up to 5		
Data logging	50 sets	2000 sets with time-and-date stamp		
Output	—	RS-232, USB		
Power	Four AA batteries (included) or optional AC adapter			
Meter price				
Meter kit price				

[AL-58825-52](#) Hard carrying case

[AL-58825-53](#) Protective meter armor with electrode holder

[AL-58822-03](#) Universal AC power adapter

[AL-19704-70](#) Orion DuraProbe conductivity probe, K = 0.475

[AL-05718-34](#) ROSS Triode pH/ATC electrode

[AL-55350-68](#) pH buffer kit. Includes 473 mL each of 4, 7, 10 buffers and storage solution, and 60 mL of cleaning solution

MYRON L 4PII and 6Psi Waterproof Multiparameter Meters

Don't lose your data

- Store and recall up to 100 measurements with time/date stamp in nonvolatile memory
- Waterproof housing is submersible to 3 ft (0.9 m)
- Get accurate readings to 9999 µS/ppm
- Just add sample, push button, and read—it's that easy
- Automatic ranging function
- Download and analyze data via bluDock™ accessory

Factory-calibrated meters have conductivity-to-TDS conversion curves for NaCl, 442, and KCl standards stored in memory. You can also calibrate using your own calibration values. Automatic temperature compensation with adjustable temperature coefficients up to 9.99%/°C provides accurate and precise measurements.



Description	4PII	6Psi
Catalog number	AL-19401-12	AL-19401-22
Range	Conductivity	0 to 9.99, 10 to 99.99, 100 to 999.9, 1000 to 9999 µS; 10.00 to 200 mS (autoranging)
	TDS	0 to 9.99, 10 to 99.99, 100 to 999.9, 1000 to 9999 ppm; 10.00 to 200 ppt
	Resistivity	10 to 100, 100 to 1000 kΩ; 1 to 30 MΩ
	pH	—
	ORP	—
	Chlorine	—
	Temperature	32 to 160°F (0 to 71°C)
Resolution	Conductivity	0.01, 0.1, 1 µS; 0.01 mS
	TDS	0.01, 0.1, 1 ppm; 0.01 ppt
	Resistivity	0.01, 0.1 kΩ; 0.01 MΩ
	pH	—
	ORP	—
	Chlorine	—
	Temperature	0.1°F (0.1°C)
Accuracy	Conductivity	±1% of reading
	TDS	±1% of reading
	Resistivity	±1% of reading
	pH	—
	ORP	—
	Chlorine	—
	Temperature	±0.2°F (±0.1°C)
Temperature compensation	Automatic from 0 to 71°C; adjustable from 0 to 9.99% per °C	
Power/battery life	One 9 V battery (included)/>100 hours (5000 readings)	
Price		

[AL-19401-32](#) bluDock accessory package. Includes bluDock, software, and dongle

[AL-19401-50](#) Replacement pH/ORP sensor, for 6Psi meter, model 19401-22

[AL-19401-60](#) Soft protective case, blue nylon with belt clip

[AL-19401-70](#) Hard protective case, contains calibration solutions

[AL-17090-30](#) NIST-traceable calibration for conductivity meters

Oakton® Benchtop CON 700 and 2700 Meters

Don't waste your valuable bench space

- Space-saving design takes up less bench space
- No more squinting—large display allows for reading across the room
- Get the best resolution—autoranging feature reads 0 to 200.0 mS across five ranges
- More accurate—adjustable temperature coefficient, selectable cell constant, and automatic temperature compensation
- Store up to 500 readings for later retrieval

Oakton CON 2700 meter has advanced features for GLP-compliant readings—all calibration and stored data are stamped with time/date. Advanced setup options let you customize the meter to your needs. Informative display shows measurements together with temperature, electrode status, calibration points, time, and date all at once! Programmable functions include data logging intervals, limit alarms, and password protection. Data is easily exported to a computer via RS-232 port (order cable and adapter separately below).

What's included: conductivity/temperature probe 35608-74 (CON 700) or 35412-10 (CON 2700), electrode stand, and universal 100/240 VAC power supply.

Save time, save money!

Choose Precalibrated

Includes a data-rich, ISO 17025 certificate—**no additional charge!**

Precalibrated by **INNOCAL®**
INNOVATIVE CALIBRATION SOLUTIONS

Features water-resistant keypad and pull-out reference guide.



OAKTON®

ISO9001:2008
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CE

Meter only

Description	CON 700 meter	Precalibrated CON 700 meter	CON 2700 meter	Precalibrated CON 2700 meter
Catalog number	AL-35411-00	AL-35411-01	AL-35412-00	AL-35412-01
Range	Conductivity	0.0 to 20.00, 0 to 200.0, 0 to 2000 µS; 0 to 20.00, 0 to 200.0 mS	0.0 to 20.00, 0 to 200.0, 0 to 2000 µS; 0 to 20.00, 0 to 500.0 mS	
	TDS	0.00 to 100.0 ppt	0.050 to 500.0 ppt	
	Salinity	—	0.0 to 80.0 ppt	
	Resistivity	—	2.000 Ω to 20.0 MΩ	
	Temperature	32.0 to 212°F (0.0 to 100.0°C)	32.0 to 212°F (0.0 to 100.0°C)	
Resolution	Conductivity	0.01, 0.1, 1 µS; 0.01, 0.1 mS	0.01, 0.1 µS; 0.001, 0.01, 0.1 mS	
	TDS	0.01, 0.1, 1 ppm; 0.01, 0.1 ppt	0.01, 0.1 ppm; 0.001, 0.01, 0.1 ppt	
	Salinity	—	0.01, 0.1 ppt; 0.001, 0.01, 0.1 ppt	
	Resistivity	—	0.01 MΩ, 0.001, 0.01 kΩ, 0.01, 0.1 Ω	
	Temperature	0.1°F or °C	0.1°F or °C	
Accuracy	Conductivity	±1% full-scale	±1% full-scale	
	TDS	±1% full-scale	±1% full-scale	
	Salinity	—	±1% full-scale	
	Resistivity	—	±1% full-scale	
	Temperature	±0.9°F (±0.5°C)	±0.5°F (±0.3°C)	
Temperature compensation	Automatic or manual, adjustable from 0.0 to 10% per °F/°C		Automatic or manual, adjustable from 0.0 to 10% per °F/°C	
Cell constant (K)	Select from K = 0.1, 1.0, or 10		0.010 to 10.000	
Conductivity-to-TDS factor	Adjustable from 0.4 to 1.0		Adjustable from 0.4 to 1.0	
Data logging	100 data sets		500 data sets	
Output	—		RS-232	
Power	100/240 VAC with universal adapter (included)		100/240 VAC with universal adapter (included)	
Price				

Teky's Tips



2-cell vs 4-cell conductivity probes

Most conductivity meters use either 2-cell or 4-cell conductivity probes. 2-cell probes feature electrode surfaces made of platinum, titanium, gold-plated nickel, or graphite, and are good for general applications. 4-cell electrodes use a reference voltage to compensate for any polarization or fouling of the electrode plates. The reference voltage ensures measurements indicate actual conductivity independent of electrode condition, resulting in higher accuracy.

Conductivity Probes

Cell constant (K)	Body/electrode	Catalog number	Price
2-cell conductivity probes for CON 700 or CON 2700 meters			
0.1	Epoxy/platinum	AL-35608-72	
1.0	Ultem®/stainless steel	AL-35608-74	
1.0	Glass/platinum	AL-35608-76	
10	Epoxy/platinum	AL-35608-78	
4-cell conductivity probes for CON 2700 meter only			
0.1	Epoxy/platinum	AL-35608-90	
1.0	Epoxy/graphite	AL-35412-10	
1.0	Glass/platinum	AL-35608-92	
10	Epoxy/platinum	AL-35608-94	

Accessories

AL-35420-01 RS-232 cable

for 2700 series meters

AL-35630-53 USB cable

for 2700 series meters

AL-17090-30 NIST-traceable calibration
with data for conductivity meters

Thermo Scientific™ Orion™ Star™ A-Series Benchtop Conductivity and pH/CON Meters

Don't second-guess readings

- Stable readings locked in with Auto-Read™ function
- Get more data with large display—temperature, electrode status, mode, calibration data, and more
- Be more accurate with selectable cell constant and reference temperatures

Star A112 Conductivity Meter is a low-cost option that combines simplicity with accuracy. Ideal for everyday conductivity, TDS, and temperature measurements.

Star A212 Conductivity and A215 pH/Conductivity Meters meet all US Pharmacopoeia (USP) requirements. They support a multilanguage interface, improved stability algorithms, extended data logging, and improved data security over the Star meters. GLP-related features include extended data sets with time-and-date stamp and electrode verification. Meters use RS-232 or USB for connectivity and include data analysis software.

Meters include: electrode arm with redesigned probe holder and universal power adapter.

Star A112 meter kit adds: conductivity probe (K = 1) and 1413 µS conductivity standard (five 60-mL bottles).

Star A212 meter kit adds: conductivity probe (K = 0.475) and 1413 µS conductivity standard (five 60-mL bottles).

Star A215 meter kit adds: conductivity probe (K = 1), 1413 µS conductivity standard (five 60-mL bottles), ROSS™ Triode pH/ATC electrode, and pH 4, 7, 10 buffers and storage solution (475-mL bottles).



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Description		A112 Cond meter only	A112 Cond meter kit	A212 Cond meter only	A212 Cond meter kit	A215 pH/Cond meter only	A215 pH/Cond meter kit
Catalog number		AL-19704-41	AL-19704-43	AL-19704-22	AL-19704-24	AL-58825-36	AL-58825-38
Parameters		Conductivity/TDS/temperature		Conductivity/TDS/salinity/resistivity/temperature		pH/mV/conductivity/TDS/salinity/resistivity/temperature	
Range	pH	—		—		–2.000 to 20.000	
	mV	—		—		±2000.0 mV	
	Conductivity	0.1 µS to 200 mS		0.001 µS to 3000 mS		0.001 µS to 3000 mS	
	TDS	1 to 19,999 ppm		0 to 200 ppt		0 to 200 ppt	
	Salinity	—		0.01 to 80.0 ppt NaCl		0.01 to 80.0 ppt NaCl	
	Resistivity	—		2 Ω to 100 MΩ		2 Ω to 100 MΩ	
	Temperature	23 to 221°F (–5 to 105°C)		23 to 221°F (–5 to 105°C)		23 to 221°F (–5 to 105°C)	
Resolution	pH	—		—		0.1, 0.01, 0.001	
	mV	—		—		0.1	
	Conductivity	0.01 µS		0.001 µS		0.001 µS	
	TDS	4 significant digits		4 significant digits		4 significant digits	
	Salinity	—		0.01		0.01	
	Resistivity	—		2 Ω		2 Ω	
	Temperature	0.1		0.1		0.1	
Accuracy	pH	—		—		±0.002	
	mV	—		—		±0.2 or 0.05% of reading	
	Conductivity	±0.5% of reading ± 1 digit		±0.5% of reading ± 1 digit		±0.5% of reading ± 1 digit	
	TDS	±0.5% of reading ± 1 digit		±0.5% of reading ± 1 digit		±0.5% of reading ± 1 digit	
	Salinity	—		±0.1		±0.1	
	Resistivity	—		0.5% of reading ± 1 digit		0.5% of reading ± 1 digit	
	Temperature	±0.1		±0.1		±0.1	
Temperature compensation		Automatic or manual		Automatic or manual		Automatic or manual	
Calibration points		1		Up to 5		Up to 5	
Data logging		50 sets		2000 sets with time-and-date stamp		2000 sets with time-and-date stamp	
Output		—		RS-232, USB		RS-232, USB	
Power		100 to 240 VAC (power adapter included) or four AA batteries (not included)					
Price							

Accessories

[AL-58825-50](#) Electrode arm

[AL-58825-51](#) Base for electrode arm

[AL-58822-03](#) Replacement AC power adapter

[AL-19704-70](#) Orion DuraProbe conductivity probe, K = 0.475

[AL-19704-46](#) Conductivity calibration kit, resistor set

[AL-05718-34](#) ROSS Triode pH/ATC electrode

[AL-55350-68](#) pH buffer kit. Includes 473 mL each of 4, 7, 10 buffers and storage solution, and 60 mL of cleaning solution

[AL-09376-01](#) Batteries, AA. Pack of 4

[AL-17106-20](#) NIST-traceable calibration with data for pH meter

[AL-17090-30](#) NIST-traceable calibration with data for conductivity meter

Cole-Parmer® Conductivity Solutions, NIST-Traceable Reference Materials

**Trust your standards—
high accuracy**

- Up to $\pm 0.25\%$ accuracy verified by an ISO Guide 34 and ISO 17025 accredited lab

A. Batch-Tested Bottles, 16-oz

- Easy calibration with included instructions and temperature compensation chart
- Includes NIST-traceable certificate and batch testing information

B. Individually Tested Bottles, 16-oz

- Each bottle individually calibrated—NIST-traceable certificate included with serial number and testing information
- Easy calibration with step-by-step instructions and included temperature compensation chart

C. One-Shot® Vials, pack of six 3.4-oz vials

- Fresh solution each time you calibrate—single-use vials eliminate contamination
- Grab it and go—convenient for field use; calibrate right in vial
- Includes NIST-traceable calibration report and temperature compensation chart



Conductivity (µS)	Resistivity (MΩ)	TDS (ppm)	Catalog number	Price
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A. Batch tested, one 16-oz (473-mL) glass bottle

1	1	0.66	AL-00652-20	
5	0.2	3.3	AL-00652-22	
10	0.1	6.6	AL-00652-24	
100	0.01	66	AL-00652-26	
1000	0.001	666	AL-00652-28	
1413	0.00071	933	AL-00652-30	
10,000	0.0001	6666	AL-00652-32	
100,000	0.00001	66,666	AL-00652-34	
150,000	0.0000066	100,000	AL-00652-53	
200,000	0.000005	133,333	AL-00652-55	

B. Individually tested, one 16-oz (473-mL) glass bottle

1	1	0.66	AL-00652-40	
5	0.2	3.3	AL-00652-42	
10	0.1	6.6	AL-00652-44	
100	0.01	66	AL-00652-46	
1000	0.001	666	AL-00652-48	
1413	0.00071	933	AL-00652-50	
10,000	0.0001	6666	AL-00652-52	
100,000	0.00001	66,666	AL-00652-54	
150,000	0.0000066	100,000	AL-00652-56	
200,000	0.000005	133,333	AL-00652-58	

C. One-Shot®, pack of six 3.4-oz (100-mL) vials

5	0.2	3.3	AL-00652-60	
10	0.1	6.6	AL-00652-62	
100	0.01	66	AL-00652-64	
1000	0.001	666	AL-00652-66	
1413	0.00071	933	AL-00652-68	
10,000	0.0001	6666	AL-00652-70	
100,000	0.00001	66,666	AL-00652-72	
150,000	0.0000066	100,000	AL-00652-76	
200,000	0.000005	133,333	AL-00652-78	
Assortment†	—	—	AL-00652-74	

†Assortment has one 100-mL vial each of 10, 100, 1000, 1413, 10,000, and 100,000 µS.



A

C

Oakton® Calibration Solutions

Save money while calibrating

- KCl, NaCl, and 442 conversions printed right on the bottle
- Temperature corrections at hand—printed right on the 17-oz (500-mL) bottle



OAKTON®

Conductivity (µS)	Conductivity-to-TDS calibration values			Catalog number	Price
	ppm KCl	ppm NaCl	ppm 442		
23	11.6	10.7	14.74	AL-00653-23	
84	40.38	38.04	50.5	AL-00653-16	
447	226	215	300	AL-00653-47	
1413	745	702	1000	AL-00653-18	
1500	757	737	1050	AL-00653-15	
2070	1045	1041	1500	AL-00653-27	
2764	1382	1414	2062	AL-00653-20	
8974	5101	4487	7608	AL-00653-89	
12,880	7447	7230	11,367	AL-00606-10	
15,000	8759	8532	13,455	AL-00653-50	
80,000	52,168	48,384	79,688	AL-00653-32	

Conductivity Calibration Pouches

Calibrate on the go!

- Single-use pouches for easy calibrations
- Quick-reference conversion table printed on each pack



Conductivity (µS)	Conductivity-to-TDS calibration values			Catalog number	Price/pk of 20
	ppm KCL	ppm NaCl	ppm 442		
10	4.8	4.7	7.0	AL-35653-09	
447	226	216	300	AL-35653-10	
1413	745	702	1000	AL-35653-11	
2764	1382	1414	2062	AL-35653-12	
15,000	8759	8532	13,445	AL-35653-13	
Rinse solution	—	—	—	AL-35653-00	

Cole-Parmer® Extended-Life Conductivity Standards

Extend shelf life to 5 years!

- Sealed, metal-lined storage envelope eliminates transpiration—store standards up to 5 years before opening
- Open sealed envelope to begin the 1-year shelf life—bottle and Certificate of Analysis have a convenient marking area to write the new expiration date
- NIST-traceable calibration report from an ISO Guide 34 and ISO 17025 accredited laboratory included with each 17-oz (500-mL) bottle



Cole-Parmer®

Conductivity (µS)	Resistivity (MΩ)	Conductivity-to-TDS calibration values (ppm KCl)	Catalog number	Price
2	0.5	0.3	AL-00651-41	
10	0.1	4.4	AL-00651-42	
100	0.01	51	AL-00651-43	
147	0.007	73	AL-00651-44	
1000	0.001	524	AL-00651-45	
1413	0.00071	745	AL-00651-46	
10,000	0.0001	5695	AL-00651-47	
100,000	0.00001	65,611	AL-00651-48	

Teky's Tips



Dissolved Oxygen Technologies: Which Works Best for You?

Galvanic cells

Pros: No warm-up time; more stable and accurate at low DO levels than polarographic probes

Cons: Oxygen is consumed during measurement; requires flowing or stirred samples; periodic probe maintenance and recalibration; cells eventually wear out

Polarographic cells

Pros: Longer overall lifetime than galvanic cells

Cons: Warm-up time prior to measurement; oxygen is consumed during measurement; requires flowing or stirred samples; frequent probe maintenance and recalibration

Optical

Pros: Better stability; non-consumptive method; infrequent probe maintenance and recalibration

Cons: Use of optical technology is still not approved for some applications

How Optical Dissolved Oxygen Works

The optical detection of dissolved oxygen is based on the principle that dissolved oxygen quenches the luminescence associated with the chemical dyes in the sensor. The probe measures dissolved oxygen by emitting a blue light that causes the sensing element to luminesce (glow red). The luminescence is inversely proportional to the level of dissolved oxygen present (based on Stern-Volmer relationship). When no oxygen is present, the luminescence signal is at its maximum; and as oxygen is introduced, the luminescence decreases.

Three ways of measuring optical dissolved oxygen are the magnitude domain, time domain, and phase domain. Magnitude measures the peak height of luminescence. Accuracy degrades over time as the sensor degrades due to photo-bleaching; frequent calibration is required for this method. The time domain measures the decay rate of luminescence. Signal-to-noise ratio can limit the sensor range in this method. The phase domain (phase detector) measures the phase difference based on the entire signal and reference wave forms across a population of pulses. This method delivers the highest accuracy over the widest operating range and is commonly applied.

Optical meters provide the convenience of no membrane replacement, no electrolyte replacement, no incoming flow required, and no hydrogen sulfide interference. The meters also offer a short response time, minimal drift, and minimal maintenance. Exposure to alcohols and other organics must be limited to avoid damage to the sensor.

Oakton® DO 6+ Dissolved Oxygen Meter

High accuracy without a high price

- No warm-up time required
- No need to hold meter—protective rubber boot is also a stand
- Low-maintenance, galvanic probe
- Choose display—ppm or mg/L

Six simple buttons for freezing measurements, toggling between units and temperature results, setup, calibration, and automatic barometric and salinity compensation. View electrode slope, zero offset, and millivolt values for electrode diagnostics.

Meter includes: electrolyte solution, membrane cap, protective rubber boot/stand, and four AAA batteries.

Kit adds: two membrane caps, solution bottles, rinse bottle, and hard plastic carrying case.



Protective boot also functions as a stand.

OAKTON®

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CE Meter only

Specifications

Mode	mg/L (ppm)	% O ₂ saturation	Temperature (°C)
Range	0.00 to 20.00	0.0 to 200.0	0.0 to 50.0
Resolution	0.01	0.1	0.1
Accuracy	±1.5% full-scale	±1.5% full-scale	±0.5

Temperature compensation: automatic from 0 to 50°C

Salinity compensation: Manual input, automatic correction
Range: 0.0 to 50.0 ppt
Resolution: 0.1 ppt

Barometric pressure compensation: Manual input, automatic correction
Range: 500 to 1499 mm Hg
Resolution: 1 mm Hg

Memory: none

Power: four AAA batteries (included)

Description	Catalog number	Price
DO 6+ meter only	AL-35643-10	
DO 6+ meter with probe 35642-50	AL-35643-12	
DO 6+ meter kit	AL-35643-14	

Accessories

[AL-35642-50](#) Replacement DO probe with 3-ft (0.9-m) cable

[AL-35642-52](#) DO probe with 10-ft (3-m) cable

[AL-35642-54](#) DO probe with 30-ft (9-m) cable

[AL-35642-55](#) Replacement DO probe maintenance kit includes one membrane cap and 10 mL of electrolyte solution

[AL-09376-00](#) Replacement batteries; AAA. Pack of 12

Oakton® Waterproof DO and PD 450 Meters

Eliminate maintenance time and costs

- Rugged, waterproof and dustproof with an IP67 rating for use in any environment
- No costly, tiresome membranes or solutions with optical RDO technology
- More accurate readings with barometric pressure and salinity correction
- Download and analyze data easily with USB and RS-232 output for up to 500 data sets
- Take it with you—500 hours battery life or optional universal power adapter

Get fast response times and long-term stability with minimal maintenance with optical measurement technology. Ensure measurement accuracy with automatic temperature compensation (ATC), barometric pressure compensation, and salinity correction. View % saturation or mg/L (ppm) simultaneously with temperature on the large LCD screen. Waterproof, IP67-rated housing is ideal for the even the harshest environments.

Additional features include ready (stability) indicator, smart averaging, hold function, calibration alarm, and battery-life indicator. Order optional cables for USB and RS-232 connectivity.

Meter only includes: two AA batteries.

DO 450 dissolved oxygen meter kit adds: RDO probe (35640-53), sensor cap (35640-51), RDO weight (35640-59), RDO calibration chamber (35640-58), sample bottles, and hard carrying case.

PD 450 pH/dissolved oxygen meter kit adds: items in DO 450 meter kit plus pH probe (59002-75) and pH calibration solutions.



PD 450 meter kit



OAKTON®

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TUV

GS

CE

IP 67

3

Meter only

Description		DO 450 meter only	DO 450 meter kit	PD 450 meter only	PD 450 meter kit
Catalog number		AL-35640-32	AL-35640-90	AL-35632-32	AL-35632-80
Range	pH	—	—	—2.00 to 16.00 pH	—2.00 to 16.00 pH
	mV	—	—	±2000 mV	±2000 mV
	Dissolved oxygen (ppm)	0 to 20 ppm	0 to 20 ppm	0 to 20 ppm	0 to 20 ppm
	Dissolved oxygen (% saturation)	0 to 200%	0 to 200%	0 to 200%	0 to 200%
	Temperature	–17.0 to 230.0°F (–10.0 to 110.0°C)	–17.0 to 230.0°F (–10.0 to 110.0°C)	–17.0 to 230.0°F (–10.0 to 110.0°C)	–17.0 to 230.0°F (–10.0 to 110.0°C)
Resolution	pH	—	—	0.01 pH	0.01 pH
	mV	—	—	0.1 (>199.9 mV); 1 mV (beyond)	0.1 (>199.9 mV); 1 mV (beyond)
	Dissolved oxygen (ppm)	0.1 ppm	0.1 ppm	0.1	0.1
	Dissolved oxygen (% saturation)	0.10%	0.10%	0.1	0.1
	Temperature	0.1°C/°F	0.1°C/°F	0.1°C	0.1°C
Accuracy	pH	—	—	±0.01 pH	±0.01 pH
	mV	—	—	±0.2 (>199.9 mV); ±2 mV (beyond)	±0.2 (>199.9 mV); ±2 mV (beyond)
	Dissolved oxygen (ppm)	±2%	±2%	±2%	±2%
	Dissolved oxygen (% saturation)	±2%	±2%	±2%	±2%
	Temperature	±0.9°F (±0.5°C)	±0.9°F (±0.5°C)	0.5°C	0.5°C
Barometric pressure compensation		Manual	Manual	Manual	Manual
Salinity correction		Manual; 0 to 45	Manual; 0 to 45	Manual; 0 to 45	Manual; 0 to 45
Temperature compensation		Automatic or manual from –10 to 110°C	Automatic or manual from –10 to 110°C	Automatic or manual from –10 to 110°C	Automatic or manual from –10 to 110°C
Memory		Stores up to 500 data sets	Stores up to 500 data sets	Stores up to 500 data sets	Stores up to 500 data sets
Output		USB or RS-232	USB or RS-232	USB or RS-232	USB or RS-232
Power		Two AA batteries (included), >500 hours continuous use; or optional universal power adapter	Two AA batteries (included), >500 hours continuous use; or optional universal power adapter	Two AA batteries (included); or optional universal power adapter	Two AA batteries (included); or optional universal power adapter
Price					

Accessories

[AL-35640-51](#) Replacement RDO sensor cap

[AL-35640-53](#) Replacement RDO probe, 10-ft (3-m) cable

[AL-35640-55](#) RDO probe, 20-ft (6-m) cable

[AL-35640-57](#) RDO probe, 50-ft (15-m) cable

[AL-35640-58](#) RDO calibration chamber

[AL-35640-59](#) RDO weight, screw thread to attach to probe

[AL-59002-75](#) "All-in-One" pH electrode with built-in ATC.

Single-junction; epoxy body; BNC connector

[AL-35618-05](#) ATC probe. Use with any standard pH electrode for temperature compensation

[AL-35630-53](#) Data cable for USB connectivity

[AL-35420-01](#) Data cable for RS-232 connectivity

[AL-35420-72](#) Universal power adapter, 110/220 VAC

[AL-09376-01](#) Replacement batteries, AA. Pack of 4

[AL-17106-20](#) NIST-traceable calibration with data for pH meter

Thermo Scientific™ Orion™ Star™ A-Series Portable Dissolved Oxygen and pH/DO Meters

No need to toggle screens

- Get more data on one screen—temperature, electrode status, mode, calibration, and more
- Know when reading is complete with Auto-Read™ function
- Increased accuracy with selectable cell constant and reference temperatures

Thermo Scientific Orion Star A-series portable dissolved oxygen and pH/dissolved oxygen meters are ideal for field testing—they feature a durable, waterproof IP67-rated housing. Directly measure DO in mg/L (ppm) or % saturation with temperature, barometric pressure, and salinity corrections.

Star A123 DO Meter with automatic temperature and manual pressure and salinity compensation is a low-cost option that combines simplicity with accuracy. Ideal for everyday oxygen measurements.

Star A223 RDO/DO and A326 pH/RDO/DO Meters let you choose between RDO optical probes and polarographic probes. Meters support a multilanguage interface, improved stability algorithms, extended data logging, and better data security over other Star meters. Meters use RS-232 or USB for connectivity and include data analysis software. GLP-related features include 2000 data points with time/date stamp and electrode verification.

Meters include: four AA batteries.

Star A123 meter kit adds: polarographic probe (53101-60), DO probe maintenance kit (53107-55), protective armor, and hard carrying case.

Star A223 meter kit adds: RDO optical probe (53104-54), protective armor, and hard carrying case.

Star A326 meter kit adds: ROSS™ Triode pH/ATC electrode (05718-34); RDO optical probe (53104-54); 10 pouches each of 4, 7, 10 pH buffer and storage solution; protective armor; and hard carrying case.



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Meter only

Description		A123 DO meter only	A123 DO meter kit	A223 RDO/DO meter only	A223 RDO/DO meter kit	A326 pH/DO/RDO meter only	A326 pH/DO/RDO meter kit
Catalog number		AL-53101-25	AL-53101-27	AL-53101-16	AL-53101-18	AL-58825-72	AL-58825-74
Parameters		DO/temperature		RDO/DO/temperature		RDO/DO/pH/mV/temperature	
Range	pH	—		—		-2.000 to 20.001	
	mV	—		—		±2000.0 mV	
	Dissolved oxygen (polarographic)	0 to 20 mg/L; 0 to 200% saturation		0 to 90 mg/L; 0 to 600% saturation		0 to 90 mg/L; 0 to 600% saturation	
	Dissolved oxygen (optical)	—		1 to 50 mg/L; 0 to 500% saturation		1 to 50 mg/L; 0 to 500% saturation	
Temperature		23 to 221 °F (-5 to 105 °C)		23 to 221 °F (-5 to 105 °C)		23 to 221 °F (-5 to 105 °C)	
Resolution	pH	—		—		0.1, 0.01, 0.001	
	mV	—		—		0.1	
	Dissolved oxygen (polarographic)	1, 0.1		0.1, 0.01		0.1, 0.01	
	Dissolved oxygen (optical)	—		1, 0.1		1, 0.1	
Accuracy	Temperature	0.1		0.1		0.1	
	pH	—		—		±0.002	
	mV	—		—		±0.2 or 0.05% of reading	
	Dissolved oxygen (polarographic)	±0.2		±0.2 mg/L; ±2%		±0.2 mg/L; ±2%	
Accuracy	Dissolved oxygen (optical)	—		±0.2 up to 20 mg/L; ±10% from 20 to 50 mg/L; ±2%		±0.2 up to 20 mg/L; ±10% from 20 to 50 mg/L; ±2%	
	Temperature	±0.1		±0.1		±0.1	
Temperature compensation		Automatic		Automatic		Automatic	
Barometric pressure compensation		Manual		Automatic		Automatic	
Salinity compensation		Manual		Manual		Manual	
Data logging		50 sets		2000 sets with time-and-date stamp		2000 sets with time-and-date stamp	
Output		—		RS-232, USB		RS-232, USB	
Power		Four AA batteries or optional AC adapter		Four AA batteries or optional AC adapter		Four AA batteries or optional AC adapter	
Price							

Accessories

[AL-58825-52](#) Hard carrying case

[AL-58825-53](#) Protective meter armor with electrode holder

[AL-58822-03](#) Universal AC power adapter

[AL-53104-54](#) Orion RDO probe, optical

[AL-53101-60](#) Orion DO probe, polarographic

[AL-53107-55](#) DO probe maintenance kit, polarographic

[AL-05718-34](#) ROSS Triode pH/ATC electrode

[AL-55350-68](#) pH buffer kit. Includes 473 mL each of 4, 7, 10 buffers and storage solution, and 60 mL of cleaning solution

[AL-09376-01](#) Replacement batteries, AA. Pack of 4

[AL-17106-20](#) NIST-traceable calibration with data for pH meter

YSI® Professional Series DO Meters

Configurable to your needs

- Combine meter, probes, and cable lengths to meet your needs
- Handheld meters offer menu-driven software for added convenience
- Read your measurements easily in any light with backlit graphic display and keypad

The YSI Professional series provides plug-and-play capabilities to give you a meter with as much functionality as needed. Don't buy unnecessary accessories, simply build your own system by ordering the meter, probe(s), and cables(s) you need.

Easy-to-use meters feature graphic display with detailed messages and instructions that translate to less time reading manuals. Display and keypad are backlit, making them ideal for low-light situations. Rugged rubber over-molded case protects meters during use. Meters are IP67 rated and waterproof, even without the battery lid.

These DO meters accept either classic polarographic or "instant-on" galvanic DO sensors with screw-on membrane caps for ease of maintenance. These meters also feature selectable two-point DO calibration and automatic barometric compensation for greater accuracy.



REQUIRED System Components

- 1) Meter
- 2) Probe(s)
- 3) Cable(s)



Pro2030 meter

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CERTIFIED SUPPLIER

IP 67

3
Meter only

1. YSI Professional Series Meters

Model	Pro20	Pro1020	Pro2030
Catalog number	AL-59352-04	AL-59352-10	AL-59352-14
Parameters	DO/Temperature	pH/DO/Temperature	Conductivity/DO/Temperature
Range	Dissolved oxygen	0 to 50 mg/L	—
	Barometric pressure	Automatic correction, 500 to 800 mm Hg	—
	pH	0 to 14.00 pH	—
	mV	±1999 mV	—
	Conductivity	—	0 to 200 mS
	TDS	—	0 to 100 g/L
	Salinity	Manual input, automatic correction	0 to 70 ppt
	Temperature	—5 to 55°C	—
Accuracy	Dissolved oxygen	±2% of reading or ±0.2 mg/L, whichever is greater (6% above 20 mg/L)	
	Barometric pressure	±3 mm Hg within 15°C from calibration point	
	pH	±0.2 pH	—
	mV	±20 mV	—
	Conductivity	—	±0.5% of reading or ±0.001 mS/cm, whichever is greater
	TDS	—	±1% of reading
	Salinity	—	±1% of reading or ±0.1 ppt, whichever is greater
Temperature compensation		Automatic, -5 to 55°C	
Display		Four-line backlit, graphic LCD	
Power		Two C batteries (included)	
Dimensions (L x W x H)		8½" x 3¼" x 2¼" (21.6 x 8.3 x 5.7 cm)	
Price			

2. DO Probes for Professional Series

Description	Catalog number	Price
Galvanic DO	AL-59352-32	
Polarographic DO	AL-59352-34	
BOD probe	AL-59352-35	
pH probe	AL-59352-20	
ORP probe	AL-59352-22	

Accessories

[AL-99852-80](#) DO membrane kit;
polyethylene, 1.25 mil. Pack of 6
[AL-05519-61](#) DO membrane kit;
PTFE, 1.0 mil. Pack of 6

3. Cables for YSI Professional Series

All cables include a temperature probe. Cables for Pro2030 meters also include a conductivity probe.

Compatible with meter	Pro20		Pro1020		Pro2030	
Cable length	Catalog number	Price	Catalog number	Price	Catalog number	Price
3 ft (1 m)	AL-59352-43		AL-59352-63		AL-59352-79	
13 ft (4 m)	AL-59352-44		AL-59352-64		AL-59352-80	
33 ft (10 m)	AL-59352-46		AL-59352-66		AL-59352-82	

Note: Additional cable lengths available at ColeParmer.com.



YSI® ProODO™ Optical Dissolved Oxygen Meter

No cleaning electrodes or changing solutions

- Optical technology reduces probe maintenance and calibration costs for long-term savings
- Expanded range of 0 to 500% saturation for high-level oxygen readings
- Waterproof IP67-rated case and connections
- No stirring with nonconsumptive luminescent method



REQUIRED System Components

- 1) Meter
- 2) Probe(s)



The YSI ProODO meter uses optical technology for increased DO stability, accuracy, and response times. Additional benefits include no warm-up period and no probe fouling. Meter stores up to 2000 data sets for long-term field use. Output readings to desktop software via USB connection.

“Smart” digital sensors store calibration data allowing probes to be interchanged to different meters without recalibration. Calibrations hold up to one year.

The ProODO does not need a flowing sample making it well-suited for applications where stirring is undesirable such as deep-water profiling, and reducing the possibility of operator error.

What's included: batteries, communications saddle, USB cable, and data manager software.

1. YSI ProODO Meter

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Meter only

Model		ProODO
Catalog number		AL-59353-00
Range	Dissolved oxygen	0 to 500%; 0 to 50 mg/L
	Barometric pressure	375 to 825 mm Hg
	Temperature	–5 to 70°C
Resolution	Dissolved oxygen	0.1% air saturation; 0.01 or 0.1 mg/L (auto-scaling)
	Barometric pressure	0.1 mm Hg
	Temperature	0.01°C
Accuracy	Dissolved oxygen	±1% of reading from 0 to 200%; ±15% of reading from 200 to 500%; ±0.1mg or 1% of reading from 0 to 20 mg/L whichever is larger, ±15% of reading from 20 to 50 mg/L
	Barometric pressure	±1.5 mm Hg from 0 to 50°C
	Temperature	±0.2°C
Salinity correction		0 to 70 ppt; manual input
Temperature compensation		Automatic
Calibration		DO: one or two point; barometer: one point
Data storage		2000 data sets
Output		USB 2.0 (cable and software included)
Power		Two C batteries (included)
Price		

2. Probes for YSI ProODO Meter

Cable length	Catalog number	Price
3 ft (1 m)	AL-59353-02	
13 ft (4 m)	AL-59353-03	
33 ft (10 m)	AL-59353-04	
66 ft (20 m)	AL-59353-05	
100 ft (30 m)	AL-59353-06	
133 ft (40 m)	AL-59353-07	
166 ft (50 m)	AL-59353-08	
200 ft (60 m)	AL-59353-09	
330 ft (100 m)	AL-59353-10	

Accessories

[AL-59353-01](#) Replacement sensing element

[AL-59352-91](#) Belt clip attaches meter to belt loop holder

[AL-59352-92](#) Carrying case, soft-sided

[AL-59352-93](#) Carrying case, hard-sided

[AL-59352-94](#) Weights; stackable, for optical DO probe. 4.2 oz

YSI® ProOBOD Probe

No recalibrating when switching meters

- Smart sensor retains calibration
- Fits standard 300-mL US/Japan or International BOD bottles
- Ensure a representative sample and improve response time with self-stirring probe

YSI ProOBOD probe uses optical measurement technology for BOD applications, providing greater measurement stability, and reducing probe maintenance and calibration costs. Probe has a keyed military spec connector design allowing the OBOD to be easily removed from the meter.

What's included: 110 to 230 VAC power supply.



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Description	Catalog number	Price
ProOBOD probe, US/Japanese version	AL-59353-30	
ProOBOD probe, International version	AL-59353-31	

Accessories

[AL-59353-32](#) ProOBOD sensor cap

[AL-59353-34](#) Lab dock holder for ProODO instrument and BOD bottle

Oakton® DO 700 and DO 2700 Benchtop Dissolved Oxygen Meters

Don't waste valuable bench space

- Space-saving design takes up less bench space
- No more squinting—large display allows for reading across the room
- Store up to 500 readings for later retrieval

Oakton DO 700 meter measures dissolved oxygen in mg/L, ppm, or % saturation with simultaneous temperature display in °F or °C. Large LCD features annunciators to aid in meter use and troubleshooting.

Oakton DO 2700 meter offers a more advanced user interface and measurement capabilities than the 700-series meter. Meter meets GLP requirements—all calibration and measurement data is stored with a time/date stamp. Bundled self-stirring probe and bidirectional RS-232 for BOD and other advanced dissolved oxygen applications. Built-in barometer automatically corrects for atmospheric pressure changes. Oversized graphic LCD with backlight allows readings under all conditions.

DO 700 includes: dissolved oxygen probe 35642-50, built-in electrode stand, and 100/240 VAC power adapter.

DO 2700 includes: self-stirring dissolved oxygen/BOD probe 35420-82, six membrane caps and electrolyte, and 100/240 VAC power adapter.



Water-resistant keypad and convenient pullout reference guide

OAKTON®

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CE Meter only

Description		DO 700 meter	Precalibrated DO 700 meter	DO 2700 meter	Precalibrated DO 2700 meter
Catalog number		AL-35415-00	AL-35415-01	AL-35416-00	AL-35416-01
Range	Dissolved oxygen	0 to 30 mg/L		0 to 19.99 mg/L; 50.0 mg/L	
	% saturation	0 to 199.9%; 300%		0 to 600.0%	
	Temperature	32 to 122°F (0 to 50°C)		32 to 122°F (0 to 50°C)	
Resolution	Dissolved oxygen	0.01		0.01, 0.1	
	% saturation	0.1%		0.1%	
	Temperature	0.1°F (0.1°C)		0.1°F (0.1°C)	
Accuracy	Dissolved oxygen	±0.5% full scale		±0.5% full scale	
	% saturation	±0.5% full scale		±0.5% full scale	
	Temperature	±0.9°F (±0.5°C)		±0.5°F (±0.3°C)	
Temperature compensation		Manual or automatic from 32 to 122°F (0 to 50°C)		Manual or automatic from 32 to 122°F (0 to 50°C)	
Salinity compensation		Manual input, automatic correction from 0 to 50 ppt		Manual input, automatic correction from 0 to 50.0 ppt	
Data logging		100 data sets		500 data sets	
Output		—		RS-232	
Power		100/240 VAC universal adapter (included)		100/240 VAC universal adapter (included)	
Price					

Accessories

[AL-35642-50](#) Replacement DO probe with 3-ft (0.9-m) cable for DO 700 meter

[AL-35642-55](#) DO probe maintenance kit for 35642-50 includes one membrane cap and 10 mL of electrolyte solution

[AL-35820-64](#) In-line fitting for DO 700 probe 35642-50

[AL-35420-82](#) Replacement self-stirring DO/BOD probe with 3-ft (0.9-m) cable for DO 2700 meter

[AL-53109-55](#) DO probe maintenance kit for 35420-82 includes six membrane caps and 30 mL of electrolyte solution

[AL-35420-01](#) RS-232 cable for 2700-series meter

[AL-35630-53](#) USB cable for 2700-series meter

Environmental Express® Disposable BOD Bottles

Reduce contamination and increase test accuracy

- No precleaning required!
- Laboratory tested and US EPA approved
- Packed in plastic-lined boxes to eliminate dust and residue

These PET bottles offer a specially formulated carbon coating that prevents oxygen from diffusing into or out of your sample, unlike ordinary plastic bottles. The unique amorphous carbon inner wall is just 1000 angstroms thick, but it provides a superior barrier resulting in uniform blanks, precise standard recoveries, and quality test data. Order caps separately below.



ENVIRONMENTAL EXPRESS®
a Cole-Parmer company

Capacity	Catalog number	Qty/pk	Price/pk
300 mL	AL-53200-02	100	

[AL-53200-12](#) BOD bottle stopper, acrylic. Pack of 25

[AL-53200-14](#) BOD overcap prevents evaporation. Pack of 50

BOD Bottle Carrier and Storage Racks

Organize and transport bottles with ease

- Won't corrode—available in chemical-resistant polypropylene (PP) or plastic-coated versions
- Save space by stacking plastic-coated racks



53200-20



53200-22

Capacity	Dimensions (W x H x D)	Catalog number	Price
Chemical-resistant PP BOD bottle carrier; pack of 2			
8 x 300-mL bottles	13 1/8" x 6 1/4" x 6 3/4" (33.3 x 15.9 x 17.1 cm)	AL-53200-20†	
Plastic-coated BOD bottle storage racks			
20 x 60-mL bottles	13" x 6" x 10" (33 x 15.2 x 25.4 cm)	AL-53200-21	
12 x 300-mL bottles	13" x 8" x 10" (33 x 20.3 x 25.4 cm)	AL-53200-22	
12 x 300-mL bottles	12 1/2" x 7 1/4" x 9 1/4" (31.8 x 18.4 x 23.5 cm)	AL-53200-23†	

†Autoclavable.

Polyseed® Capsules for BOD and CBOD

Get fresh, consistent seed each time

- One easy-to-use capsule performs approximately 100 tests

Polyseed Capsules contain a special blend of microbial cultures that provide a uniform standard for BOD analysis.

Polyseed NX Capsules contain a chemical additive to inhibit nitrogenous oxygen demand when performing CBOD.



Description	Catalog number	Qty/pk	Price/pk
Polyseed capsules for BOD	AL-53200-33	50	
Polyseed NX capsules for CBOD	AL-53200-34	50	

Environmental Express® Single-Use Glucose-Glutamic Acid Vials

Eliminate pipetting and dilutions

- No more worrying about sample contamination
- Ready-to-use dilutions
- Easy to use



ENVIRONMENTAL EXPRESS®
a Cole-Parmer company

Each vial contains the APHA specified concentration of glucose glutamic acid (150 mg/L of glucose and 150 mg/L of glutamic acid). Simply shake the vial thoroughly, remove the seal and cap, pour contents, and rinse emptied vial at least two times with BOD water into the check standard solution. Product has a 24-month shelf life and is supplied with SDS.

Description	Catalog number	Qty/pk	Price/pk
GGA for 300-mL BOD bottles, 6-mL vial	AL-53200-11	24	
GGA for 60-mL BOD bottles, 1.2-mL ampule	AL-53200-13	24	



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Environmental Express® COD Reagent Vials

Save money while
getting accurate
readings



ENVIRONMENTAL EXPRESS®
a Cole-Parmer company

- No need to modify your instrument or method
- Don't sacrifice quality—laboratory tested and verified
- Easy to use—add sample, heat, and read sample
- Each glass vial measures 16 x 100 mm and requires only 2 mL of sample

These reagent vials are available in both EPA-compliant and mercury-free versions for low-, standard-, and ultra-high-range analysis. Glass vials are 16 mm x 100 mm to work with your existing COD reactor and spectrophotometer. Simply add 2 mL of your sample, heat in your reactor, and read.

Mercury-free and ultra-high-range reagent vials are not approved for EPA Methods and should be used when EPA reporting is not required and chlorine interference is not a factor. COD reagent vials may contain acid, mercury, and silver and must be disposed of properly.

What's included: Certificate of Analysis and SDS.

Range mg/L (ppm)	Contains mercury†	EPA approved	Comparable Hach number	Catalog number	Price/pk of 100
Low-range COD reagent vials – 10 MDL					
0 to 150	Yes	Yes	21258-15/25	AL-35200-02	
0 to 150	No	No	25650-15/25	AL-35200-08	
Standard-range COD reagent vials – 30 MDL					
0 to 1500	Yes	Yes	21259-15/25	AL-35200-03	
0 to 1500	No	No	25651-15/25	AL-35200-09	
Ultra-high-range COD reagent vials – 300 MDL					
0 to 15,000	Yes	No	24159-15/25	AL-35200-04	
0 to 15,000	No	No	—	AL-35200-10	

†Some COD reagent vials contain acid, mercury, and silver and must be disposed of properly.

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Oakton® Zero Oxygen Solutions

Maximize your
meter accuracy

- Ensure accuracy—tested using Winkler method for better results
- Manufactured according to the APHA and ASTM formulation with high-purity, oxygen-free water

OAKTON®



Description	Size	Catalog number	Price
Oakton zero oxygen solution	500 mL bottle	AL-00653-00	
Zero oxygen sachets	Pack of 10	AL-53024-53	

LaMotte® Dissolved Oxygen Test Kit

Don't miss a measurement

- Inexpensive backup in case of meter failure
- Test samples or calibrate meters using Winkler titration method
- Enough for up to 50 tests
- Eliminate nitrate interference with azide modification



Description	Range	Resolution	Catalog number	Price
Dissolved oxygen test kit	0 to 10 ppm	0.2 ppm	AL-53003-00	
Dissolved oxygen reagent refill			AL-53003-05	

CHEMets® Colorimetric Dissolved Oxygen Test Kits

Quick, visual results

- Just break tip of ampoule in cup, fill with sample, and swirl
- Accurate visual results with comparator chart

What's included: PP case; all necessary apparatus; and reagent vials for 30 tests.



Test	Range	Catalog number	Price
Dissolved oxygen (accuracy of ±4%)	0 to 40 ppb	AL-05540-20	
	0 to 100 ppb	AL-05540-25	
	0 to 1 ppm	AL-05540-30	
	1 to 12 ppm	AL-05540-40	

Hach® 2100Q Portable Turbidity Meter

No more difficult calibrations

- Meets or exceeds design and performance criteria as specified in US EPA method 180.1
- Eliminate guesswork or duplicate runs with the innovative Rapidly Settling Turbidity™ (RST)—allows for accurate and repeatable measurement of rapidly settling samples
- Customizable power and connectivity options for added versatility



This portable turbidity meter features a unique optical system that compensates for potential interferences. Intuitive user interface prompts you during calibration and verification for hassle-free setup.

Additional meter features include 23 preprogrammed menu languages, time-and-date stamped readings, and closed cap control eliminating stray light interference.

What's included: StablCal™ primary calibration standards in sealed vials (20, 100, 800 NTU), six sample cells, 10 NTU primary verification standard, silicone oil, oiling cloth, batteries, and carrying case.



Specifications

Range: 0 to 1000 NTU	Sample volume: 10 mL
Resolution: 0.01 NTU on lowest range	Sample cell size: 60 mm H x 25 mm dia
Accuracy: ±2% of reading	Response time: mode dependent
Light source: tungsten filament lamp	Data logging capabilities: 500 points
Photodetector: silicon photodiode	Output: optional USB

Description	Power	Catalog number	Price
2100Q portable turbidity meter	Four AA batteries (included) or 100 to 230 VAC, 50/60 Hz (with optional power module)	AL-99511-10	

Accessories

[AL-99511-13](#) Power module

with USB output; 100 to 230 VAC, 50/60 Hz

[AL-99511-14](#) Power module; 100 to 230 VAC, 50/60 Hz

[AL-99511-20](#) Replacement StablCal calibration standards.

Includes one sealed vial each of 20, 100, 800 NTU

[AL-99511-21](#) Replacement 10 NTU verification standard

[AL-99512-75](#) Replacement silicone oil, 15 mL

[AL-99511-55](#) Replacement sample cells. Pack of 6

[AL-99512-68](#) Degassing kit

Cole-Parmer® Waterproof Turbidity Meter

Achieve more accurate readings across entire range

- Sealed optical system with infrared light for higher accuracy
- Meets performance criteria as specified by ISO 7027 (DIN EN 27027) method
- Get full-range accuracy with 4-point push-button calibration
- Autoranging from 0 to 1000 nephelometric turbidity units (NTU)
- Waterproof and dustproof with IP67-rated housing that floats

The Cole-Parmer turbidity meter is easy to calibrate—meter automatically prompts you to the next calibration standard. Large custom LCD displays reading and units of measure. Other features include diagnostic error messages and auto off.

What's included: primary standards, cuvettes, hard carrying case, and four AA batteries.



Specifications

Range: 0 to 1000 NTU	Sample volume: 10 mL
Resolution: 0.01, 0.1, 1 NTU	Response time: <6 seconds
Accuracy: ±2% of reading from 0 to 500 NTU; ±3% of reading from 500 to 1000 NTU	Data logging capabilities: none
Light source: infrared LED	Output: none

Description	Power	Catalog number	Price
Waterproof turbidity meter	Four AA batteries (included)	AL-59200-70	

Accessories

[AL-35635-52](#) Replacement calibration set. Includes 4 x 60 mL bottles of 0.02, 20, 100 and 800 NTU standards

[AL-35653-55](#) Cuvettes. Pack of 3

[AL-09376-01](#) Replacement batteries, AA. Pack of 4

Search

For turbidity standard solutions, go to...

ColeParmer.ca/Turbidity

LaMotte® Handheld Turbidity Meters

Get higher accuracy and a wider range

- Advanced microprocessor offers high-accuracy readings
- Available with either EPA- or ISO-compliant optical systems
- Battery operated for field and on-site testing convenience

These compact portable meters are equipped with a unique optics configuration to read low turbidity levels down to 0.05 NTU and high levels up to 4000 NTU. Large, menu-driven LCD features five measuring units, seven user-selectable languages, data logging capabilities to 500 points, and USB interface for downloading data to your computer.

What's included: 60 mL each of 0, 1, and 10 NTU standards; plastic sample bottle; four glass sample vials; USB cable and wall plug; and waterproof plastic carrying case.



Specifications

Range: 0 to 4000 NTU

Resolution: 0.01 NTU/FNU from 0.00 to 10.99, 0.1 NTU/FNU from 11.0 to 109.9, 1 NTU/FNU from 110 to 4000

Accuracy: ±2% from 0 to 100 NTU; ±3% from 100 to 4000 NTU

Light source

US EPA model 05563-22: tungsten lamp
ISO model 05563-24: 860 nm LED

Photodetector: silicon photodiode

Sample volume: 10 mL

Sample cell size: 25 mm dia, flat-bottom tube

Response time: <2 sec

Data logging capabilities: 500 points

Output: USB

Turbidity Standards, 60-mL bottle

Value	Catalog number	Price
Standards for EPA-compliant turbidimeter		
0 NTU	AL-05565-25	
1 NTU	AL-05563-31	
10 NTU	AL-05563-33	
100 NTU	AL-05563-35	
Standards for ISO-compliant turbidimeter		
0 NTU	AL-05565-25	
1 NTU	AL-05563-51	
10 NTU	AL-05563-53	
100 NTU	AL-05563-55	

[AL-05563-66](#) Sample vials, glass.
Pack of 6

Description	Power	Catalog number	Price
Portable turbidity meter, US EPA 180.1 compliant	Rechargeable lithium battery	AL-05563-22	
Portable turbidity meter, ISO 7027 compliant	(included) and wall plug	AL-05563-24	

Velp Flocculator Jar Testers

Save money and chemicals by testing on a smaller scale

- ASTM D203S compliant method
- Choose from portable or laboratory models, with four or six positions

Jar testers are designed to test the efficiency of flocculation or precipitation reagents on a small scale. Stirring rod shafts can individually be stopped and height can be adjusted while the system is operating. Choose from portable or laboratory testers.

Portable Jar Tester is ideal for performing on-site jar tests. The space-saving design has four stirring positions situated around a central lamp, making it easier to observe the flocculation process. Set stirring speed mechanically to 20, 40, 50, 100 or 120 rpm, and set time for 1 to 30 minutes. This portable tester requires 1-L beakers (order separately, 34512-11, pack of 6).

Laboratory Jar Testers are available with four or six positions. The JTL model has a single motor driving all positions at a consistent speed from 10 to 300 rpm; timer can be set from 1 to 999 minutes or 0 to 99 hours. The FC model offers individual speed control—nine settings from 10 to 200 rpm—at each position. Both feature an illuminated back panel for enhanced visibility. These lab units require standard 2-L beakers (order separately, 34512-13, pack of 4).

What's included: stainless steel stirring rods and universal AC adapter.



Model	Portable (FP)	Laboratory (JTL)		Laboratory with individual speed control (FC)	
Catalog number	AL-99561-05	AL-99561-13	AL-99561-15	AL-99561-17	AL-99561-19
Number of positions	4	4	6	4	6
Stirring control	20, 40, 50, 100, 120 rpm	10 to 300 rpm (variable)		10, 15, 30, 45, 60, 90, 120, 150, 200 rpm	
Timer control	1 to 30 min	1 to 999 min; 1 to 99 hrs; or continuous		Continuous	
Beaker size	1 L	2 L		2 L	
Power	100/240 VAC, 50/60 Hz	100/240 VAC, 50/60 Hz		100/240 VAC, 50/60 Hz	
Price					

Accessories

[AL-34512-11](#) PYREX® glass beakers; 1000 mL, for portable unit. Pack of 6

[AL-34512-13](#) PYREX® glass beakers; 2000 mL, for laboratory units. Pack of 4

Cole-Parmer® Disposable Bailers

Easy tie-off, greater water flow, and improved sink rate

- Individually weighted and sealed bailers are cleaned and rinsed with deionized water before packaging



Polyethylene bailers are opaque; PVC and FEP bailers are clear.



All bailers have metal inserts for faster sink rate

These disposable bailers feature tapered ends and low-sag cord cleat to reduce hang-ups and snags. The angled nozzle ensures positive check-valve control. Choose from virgin polyethylene construction for strength and durability, virgin PVC for strength and economy of polyethylene with transparent features of FEP, or virgin FEP construction for high-purity applications. Double check-valve bailers allow you to sample from specific depth (point-source sampling).



Length in. (cm)	Outside diameter in. (cm)	Number of check valves	Qty/cs	Catalog number	Price/cs*
Polyethylene (PE) bailers					
12 (30.5)	1.6 (4.06)	One	24	AL-99157-00	
		Two		AL-99157-01	
36 (91.4)	0.5 (1.27)	One	24	AL-99157-20	
		Two		AL-99157-21	
36 (91.4)	0.75 (1.91)	One	24	AL-99157-30	
		Two		AL-99157-32	
36 (91.4)	1.6 (4.06)	One	24	AL-99157-02	
		Two		AL-99157-03	
48 (121.9)	1.6 (4.06)	One	24	AL-99157-04	
		Two		AL-99157-05	
PVC bailers					
12 (30.5)	1.6 (4.06)	One	24	AL-99157-40	
36 (91.4)				AL-99157-42	
48 (121.9)				AL-99157-44	
FEP bailers					
36 (91.4)	0.5 (1.27)	One	12	AL-99157-23	
		Two		AL-99157-24	
36 (91.4)	1.6 (4.06)	One	12	AL-99157-12	
		Two		AL-99157-13	

*Discounts: Save 10% on 5–9 cases and 15% on 10+ cases, in any assortment.

Slow Emptying Devices

Reduces flow from bailer, minimizing agitation for VOC analysis.

Use for bailers	Catalog number	Price**
99157-00, -01, -02, -03, -04, -05, -40, -42, -44	AL-99157-06	
99157-12, -13	AL-99157-16	
99157-20, -21	AL-99157-22	
99157-23, -24	AL-99157-25	

**Discounts: Save 10% on 5–9 emptying devices and 15% on 10+ emptying devices.

QuickFilter® Groundwater Filter

Disposable 0.45-µm filter cartridge with polyether-sulfone membrane. Filter has bailer interface tube for direct connection to bottom of bailer. Gravity forces water through the filter into your sample container.



[AL-99157-50](#) QuickFilter groundwater filter

Swing Samplers

Easy collection from any angle

- Easily collect samples from horizontally flowing streams

Use swing sampler to obtain liquids, powders, or even small solids. Includes one 960-mL bottle and fits almost any other laboratory sample bottles.



Length	Catalog number	Price
6 to 12 ft (1.8 to 3.7 m)	AL-99155-30	
8 to 24 ft (2.4 to 7.3 m)	AL-99155-32	

[AL-99155-34](#) Small snapper, 500-mL bottles

[AL-99155-36](#) Large snapper, 1000-mL bottles

Sludge Judge® Sludge Samplers

No more straining

- Add middle sections to take samples from any distance
- Order a complete system or customize to your needs
- Just dip and sample—ball valve opens when lowered into sample
- Know sample volume with easy-read 1-ft increment markings

Basic Sludge Judge and Sludge Judge Ultra versions have ¾" (1.9 cm) diameter pipe sections and hold approximately 3 oz (89 mL) of fluid per foot. Sludge Judge II version has 1¼" (3.2 cm) diameter pipe sections doubling the overall capacity of the sampler. Sludge Judge Ultra additionally features an ultraviolet stabilizer which reduces material degradation from UV light.



Description	Length	Catalog number	Price
Sludge Judge sampler, ¾" (1.9 cm) diameter			
Sludge Judge; top, middle, bottom sections	3 x 5 ft (1.5 m)	AL-05465-70	
Replacement bottom section with valve	5 ft (1.5 m)	AL-05465-72	
Replacement middle section/extension section	5 ft (1.5 m)	AL-05465-31	
Replacement top section with nylon rope	5 ft (1.5 m)	AL-05465-76	
Sludge Judge II sampler, 1¼" (3.2 cm) diameter			
Sludge Judge II; top, middle, bottom sections	3 x 5 ft (1.5 m)	AL-05465-30	
Replacement bottom section with valve	5 ft (1.5 m)	AL-05465-31	
Replacement middle section/extension section	5 ft (1.5 m)	AL-05465-32	
Replacement top section with nylon rope	5 ft (1.5 m)	AL-05465-33	
Sludge Judge Ultra sampler, ¾" (1.9 cm) diameter, UV resistant			
Sludge Judge Ultra; top, middle, bottom sections	3 x 5 ft (1.5 m)	AL-05465-40	
Replacement bottom section with valve	5 ft (1.5 m)	AL-05465-41	
Replacement middle section/extension section	5 ft (1.5 m)	AL-05465-42	
Replacement top section with nylon rope	5 ft (1.5 m)	AL-05465-43	

[AL-05465-77](#) Canvas carrying case

[AL-05465-78](#) Cleaning brush

Raven CORETAKER® Sampler Will not break!

- Lifetime “no-breakage” guarantee
- Nonthreaded couplers using the Slip-Loc quick-connect/disconnect design
- Floats for easy retrieval
- Ideal for direct measurement of sludge blanket thickness

Rigid 8-ft lengths of clear, 1¼" (3.2 cm) dia polycarbonate tubing will not turn cloudy from sunlight or become brittle in cold weather.

Slip-Loc quick-disconnect coupler and twin double O-ring seals to ensure a liquid-tight connection. Sampler features a check valve for sample release; soft-foam, floating lanyard, and numbered yellow 1-ft (0.3-m) markers.



Length	Catalog number	Price
16 ft (4.9 m)	AL-05465-60	
24 ft (7.3 m)	AL-05465-62	

Dippas® Sampling Dipper/ Container Systems

Eliminate cross-contamination

- Take and send sample in same container
- Easy to use: take sample, snap off handle, and seal container
- Individually wrapped and sterilized



Capacity mL (oz)	Handle length	Container material/color	Cap included	Qty/pk	Catalog number	Price/pk
30 (1)	8" (20.3 cm)	Clear PS	PE screw cap	50	AL-06282-70	
		Blue PS			AL-06282-72	
100 (3)	15" (38.1 cm)	Clear PS	Metal screw cap	100	AL-06282-75	
		Blue PS			AL-06282-77	
250 (8)	13" (33.0 cm)	Clear PS	Metal screw cap	50	AL-06282-79	
		Blue PS			AL-06282-81	
40 (1.4)	9" (22.9 cm)	Blue PP	PE screw cap	250	AL-06282-85	
45 (1.5)			PP hinge lid		AL-06282-87	
90 (3)			PP hinge lid	150	AL-06282-89	
125 (4)			PP screw cap	100	AL-06282-91	

WHIRL-PAK® Water Sampling Bags

Keep samples safe—easy-seal bags hold liquids

- Quick and easy sealing—flip bag around wire/tape and bend to seal
- No more poking—puncture-proof tabs keep wire intact even after extensive use
- Keep track of samples with write-on strip



Sodium Thiosulfate Bags are EPA approved for potable water collection; contain a nontoxic, nonnutritive 10-mg active ingredient tablet of sodium thiosulfate to neutralize the chlorine at the point of collection.

Stand-Up Sodium Thiosulfate Bags add a special gusset at the bottom which allows it to stand up completely by itself when full. No rack or holder is needed to keep it upright.

Sodium Thiosulfate Bag for Wastewater meets National Environmental Laboratory Accreditation Conference (NELAP) standard for sampling wastewater treated with 15 mg/L of chlorine; contains 30 mg of nontoxic, nonnutritive sodium thiosulfate.

Coli-Test Bag has a special barrier film that provides a visual color change when total coliform or *E. coli* is present in samples; contains 10 mg of sodium thiosulfate and is self-standing.



Buy More...Save More!

20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Capacity oz (mL)	Size (W x L)	Thickness (mil)	Qty/pk	Catalog number	Price/pk
Sodium thiosulfate bags for potable water sampling					
4 (118)	3" x 7½" (7.6 x 19 cm)	2.25	100	AL-06499-90	
18 (532)	4½" x 9" (11.4 x 22.8 cm)	2.5	100	AL-06499-95	
Stand-up sodium thiosulfate bags for potable water sampling					
4 (118)	3" x 7½" (7.6 x 19 cm)	2.25	100	AL-06499-77	
18 (532)	4½" x 9" (11.4 x 22.8 cm)	2.5	100	AL-06499-97	
Sodium thiosulfate bag for wastewater sampling					
4 (118)	3" x 7½" (7.6 x 19 cm)	2.25	100	AL-06499-86	
Coli-Test bag for water sampling, indicates total coliform and <i>E. coli</i>					
4 (118)	3" x 7½" (7.6 x 19 cm)	2.5	100	AL-06499-88	

AL-06499-91 Water scoop, 18" (46 cm) L coated handle. Two alligator clips hold a variety of bag sizes

Scienceware® Dippers with Replaceable Cup Easily pour from either side

- Long handles for easy sampling

Lightweight, yet sturdy, dippers feature a polypropylene (PP) cup that screws onto the handle. High-density polyethylene (HDPE) handles are ribbed for a sure grip; end has hook for hanging.

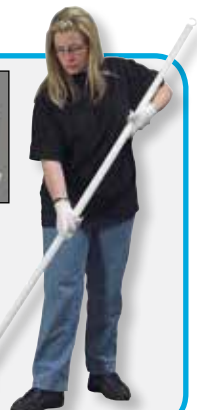
Buy More...Save More!

20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Capacity mL (oz)	Dipper dia	Handle length	Qty/pk	Cat. no.	Price/pk
Dippers with replaceable cup					
500 (16)	3¾" (9.8 cm)	36" (0.9 m)	1	AL-06282-00	
		72" (1.8 m)		AL-06282-05	
Extra/replacement screw-on PP cup					
500 (16)	3¾" (9.8 cm)	—	1	AL-06282-50	



Screw-on cups let you easily take multiple samples.



Masterflex® E/S® Portable Sampling Pumps

E/S Portable Sampling Drive

- Flow rate: 4.2 to 1100 mL/min; depends on tubing size
- Sample depths down to 26 ft (7.9 m).† Simple to use in wells, sewers, or lakes. Reversible flow and prime/purge function
- Variable-speed portable sampling drive operates on internal battery, your 12 V car battery, or from an AC outlet



Portable sampling drive shown with Easy-Load® pump head (sold separately).

Accepts three pump head types: Standard, Easy-Load®, and PTFE-tubing (pump heads sold separately).

E/S Composite Sampler

- Program to meet EPA requirements—sample size and time, delayed start, remote contact closure, momentary and maintained sampling
- Flow rate is 435 to 1650 mL/min depending on tubing size, lift height
- Rechargeable battery for field applications



07580-00

Includes Masterflex Easy-Load pump head, 9-liter HDPE carboy, 12 VDC rechargeable battery, 115/230 VAC power converter and 25 ft (7.6 m) of L/S® 24 peroxide-cured silicone tubing.

MASTERFLEX®

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Power supplies are:



rpm	Nominal voltage	IP rating	Dimensions (L x W x H)	Power† VAC (50/60 Hz)	Catalog number	Price
E/S portable sampling drive						
70 to 400	12 VDC or AC line	IP54	11" x 10" x 16" (28 x 25.4 x 40.6 cm)	12 VDC on 115	AL-07571-00	
				12 VDC on 230	AL-07571-05	
E/S composite sampler						
600	12 VDC or AC line	IP56	11" x 13½" x 17½" (28 x 34 x 44 cm)	12 VDC on 115/230	AL-07580-00	

†Maximum sampling depth can be achieved with L/S® 15 or L/S® 24 Standard pump head
‡Drives run from 12 VDC internal rechargeable batteries, external 12 VDC source (order automotive adapter separately below), or from VAC line source.

[AL-07516-12](#) Easy-Load pump head, for use with L/S sizes 15 and 24 tubing

[AL-07015-20](#) Standard pump head, for use with L/S size 15

[AL-07024-20](#) Standard pump head, for use with L/S size 24

[AL-07571-50](#) Automotive power adapter, 25-ft (7.6 m) cable

[AL-07580-50](#) Carrying strap, optional

[AL-77390-00](#) PTFE tubing pump head, optional

[AL-77390-50](#) PTFE tubing set. 2-mm ID, 4-mm OD. Set of 2

[AL-77390-60](#) PTFE tubing set. 4-mm ID, 6-mm OD. Set of 2

Masterflex High-Performance Precision Pump Tubing

Tubing type	Tubing	Qty/pk	Catalog number	Price/pk
Silicone (peroxide-cured)	L/S 15	25 ft (7.6 m)	AL-96400-15	
	L/S 24		AL-96400-24	
Tygon® E-Lab	L/S 15	50 ft (15.2 m)	AL-06509-15	
	L/S 24		AL-06509-24	
Tygon E-LFL	L/S 15	25 ft (7.6 m)	AL-06440-15	
	L/S 24		AL-06440-24	

Cole-Parmer® Dye Tracers

Know your water flow

- Won't harm the environment—nontoxic and biodegradable
- Easy-to-use color in rapidly diffusing dye identifies dispersion patterns, flow rates, seepage, and more
- Noncarcinogenic fluorescent red dye is ideal for yellowed or heavily algaed water
- For silt-filled water, use fluorescent yellow/green dye
- Use a UV lamp to easily view results where visual detection is difficult with red, yellow/green, or orange dyes
- Brighten murky ponds with blue dye
- Minimum detectable concentration is 1 ppm

Cole-Parmer®



Description	Size	Max gallons of water to obtain 1 ppm	Fluorescent red dye		Fluorescent yellow/green dye		Blue dye		Fluorescent orange dye	
			Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
Quick-dissolving tablets*	200 tablets	60 (red, ylw/grn) 35 (orange) 20 (blue) all per tablet	AL-00295-16		AL-00295-17		AL-00295-18		AL-00295-19	
Concentrate	Pint	3,125 (red) 12,500 (ylw/grn, blue) 4,000 (orange)	AL-00298-16		AL-00298-17		AL-00298-18		AL-00298-19	
Concentrate	Gallon	25,000 (red) 100,000 (ylw/grn, blue) 32,000 (orange)	AL-00298-06		AL-00298-07		AL-00298-08		AL-00298-09	
Powder	Pound	60,400 (red, orange) 120,000 (ylw/grn, blue)	AL-00298-26		AL-00298-27		AL-00298-28		AL-00298-29	

*Discount: Save 10% when you buy eight 200-tablet bottles.

CHEMets® Colorimetric Test Kits

Take it
wherever
you go

- Vacuum-sealed reagents and handy comparator chart for quick, visual results



CHEMets colorimetric test kits let you visually compare the color of your sample to standards using a comparator. Just break tip of ampoule in cup (included) filled with sample. Vacuum pulls sample into ampoule automatically; gently swirl to mix. Handy color comparator (included) provides accurate visual analysis. Vacuum packing keeps reagents active indefinitely (see footnotes).

What's included: reagent vials for 30 tests and carrying case.

Test	Test ranges	Cat. no.	Price
Ammonia/nitrogen, Nesslerization†	0 to 1, 1 to 10 ppm	AL-00291-00	
Chlorine, DPD†, EPA-approved	0 to 1, 1 to 5 ppm	AL-05540-90	
Chlorine, DDPD†	0 to 1.0, 1.0 to 5.0 ppm	AL-05540-42	
Copper, total soluble	0 to 1, 1 to 10 ppm	AL-00290-50	
Detergent††	0 to 3 ppm	AL-05540-00	
	0 to 40 ppb	AL-05540-20	
Dissolved oxygen (accuracy of ±4%)	0 to 100 ppb	AL-05540-25	
	0 to 1 ppm	AL-05540-30	
	1 to 12 ppm	AL-05540-40	
Iron, total soluble	0 to 1, 1 to 10 ppm	AL-00291-40	
Hydrogen peroxide	0 to 1, 1 to 10 ppm	AL-05541-02	
Phenol	0 to 1, 0 to 12 ppm	AL-00290-30	
Phosphate	10 to 150 ppm	AL-00290-52	
Silica	0 to 1 and 1 to 10 ppm	AL-05541-04	
Sulfide, total soluble	0 to 1, 0 to 10 ppm	AL-05540-52	

†Six-month shelf life

†Measures free and total chlorine

††Anionic surfactants

Hach® Water Quality Test Strips

Results in less than
a minute!

- Reduce risk by using as a pre-test validation tool
- No chemical handling or cleanup
- Vial label with color key for easy readings in lab or field



Testing parameter	Testing range	Qty	Cat. no.	Price
5-in-1: Free and total chlorine; total hardness; total alkalinity; pH	0 to 10 ppm; 0 to 25 gpg; 0 to 240 ppm; 6.2 to 8.4 pH	50	AL-05546-02	
Alkalinity	0 to 240 ppm	50	AL-05546-04	
Ammonia (nitrogen)	0 to 6 ppm	25	AL-05546-06	
Arsenic (low level)	0 to 500 ppb	100	AL-05546-08	
Arsenic (dual range)	0 to 500 ppb; 0 to 4000 ppb	100	AL-05546-12	
Chloride (low level)	30 to 600 ppm	40	AL-05546-16	
Chloride	300 to 6000 ppm	40	AL-05546-18	
Free and total chlorine	0 to 10 ppm	250†	AL-05546-20	
Free and total chlorine	1 to 10 ppm	50	AL-05546-22	
Free chlorine	0 to 600 ppm	100	AL-05546-24	
Free and total copper	0 to 3 ppm	25	AL-05546-26	
Total hardness, as CaCO ₃	0 to 425 ppm	250†	AL-05546-28	
Total hardness, as CaCO ₃	1 to 425 ppm	50	AL-05546-30	
Total dissolved iron	0 to 5 ppm	25	AL-05546-32	
Nitrate and nitrite	0 to 50 ppm; 0 to 3 ppm	25	AL-05546-36	
pH (midrange)	4 to 9 pH	50	AL-05546-40	
pH (full range)	0 to 14 pH	100	AL-05546-42	
Phosphorous, o-phosphate	0 to 50 ppm	50	AL-05546-44	

†Individually wrapped test strips.

Hach® Drop Count Titration Kits

Don't order multiple items

- No separate items to order—kits contain all required reagents and apparatus for 100 tests
- Save money and get quick results with this simple drop count titration method
- Keep your kit accessible with rugged carrying case



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Parameter(s)	Method	Ranges	Catalog number	Price/100 tests
Alkalinity (high range)	Sulfuric acid	23 to 495; 385 to 8500 gpg	AL-05545-02	
Alkalinity (low range)	Sulfuric acid	0.4 to 8; 1 to 20 gpg	AL-05545-04	
Alkalinity detection	Sulfuric acid	5 to 100; 20 to 400 ppm	AL-05545-06	
Ascorbic acid (beverages)	Iodometric	10 to 200 ppm	AL-05545-08	
Carbon dioxide	Sodium hydroxide	1.25 to 25; 2 to 40; 5 to 100 ppm	AL-05545-12	
Chloride (low range)	Silver nitrate	5 to 100; 20 to 400 ppm	AL-05545-14	
Chloride (high range)	Silver nitrate	500 to 10,000; 5000 to 100,000 ppm	AL-05545-16	
Chlorine (mid range)	Thiosulfate	0.2 to 4; 1 to 20 ppm	AL-05545-18	
Chlorine (high range)	Thiosulfate	10 to 200 mg/L	AL-05545-20	
Chromium (high range)	Thiosulfate	5 to 100; 50 to 1000 ppm	AL-05545-22	
Dissolved oxygen	Winkler	0.2 to 4; 1 to 20 ppm	AL-05545-24	
Formaldehyde	Thymolphthalein	0.05 to 1; 0.5 to 10%	AL-05545-26	
Hardness (low range)	EDTA	1 to 20 ppm; 1 to 20 gpg	AL-05545-28	
Hardness (high range)	EDTA	1 to 30 gpg	AL-05545-30	
Hardness, total and calcium	EDTA	1 to 20 gpg; 20 to 400 ppm	AL-05545-34	
Hydrogen peroxide	Thiosulfate	0.2 to 2.0; 1 to 10 ppm	AL-05545-36	
Sulfite	Iodometric	1 to 20; 10 to 200 ppm	AL-05545-38	

Note: 1 gpg = 17.1 ppm; 1 ppm = 1 mg/L.

Hach® Pocket Colorimeter™ II Kits

No need to calibrate—just zero and read

- Get quick, accurate results wherever you go
- Store and recall last ten data points and time
- Rugged, IP67-rated waterproof housing is ideal for field testing

Colorimetric readings couldn't be easier—simply zero the instrument with a blank, insert the reacted sample, and read the result.

What's included: reagents, sample cells, carrying case, and four AAA batteries.

Specifications

Light source: LED
Detector: silicon
Wavelength: fixed ± 2 nm
Pathlength: 25 mm
Power: four AAA batteries (included)



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Testing parameter	Testing range (ppm)	Catalog number	Price
Aluminum	0.02 to 0.80	AL-99574-30	
Ammonia	0.01 to 0.80	AL-99574-32	
Bromine	0.05 to 10.0	AL-99574-36	
Chlorine, free†	0.02 to 2.00	AL-99574-42	
Chlorine, total†	0.1 to 8.0	AL-99574-44	
Chlorine, free and total†	0.02 to 8.0	AL-99574-46	
Copper†	0.04 to 5.00	AL-99574-58	
Fluoride†	0.1 to 2.0	AL-99574-62	
Iron, ferro†	0.02 to 5.00	AL-99574-66	
Iron, TPTZ	0.01 to 1.70	AL-99574-68	
Manganese, high range†	0.2 to 20.0	AL-99574-72	
Manganese, low range	0.01 to 0.70	AL-99574-74	
Molybdate	0.02 to 12.00	AL-99574-76	
Nitrate	0.4 to 30.0	AL-99574-80	
Ozone	0.01 to 0.75	AL-99574-82	
Phosphate, ortho†	0.02 to 3.00	AL-99574-84	
Silica	1 to 100	AL-99574-90	
Sulfate†	2 to 70	AL-99574-92	

†US EPA accepted method.

Accessories

[AL-99574-96](#) Speccheck standard for chlorine, DPD

[AL-99574-95](#) Speccheck standard for fluoride

[AL-09376-00](#) Replacement batteries, AAA. Pack of 12

Lovibond® MD100 Single-Parameter Colorimeter Kits

Take and record measurements on the go

- Read measurements in any environment with large backlit display
- Ergonomic, waterproof design for easy handheld use in lab, field, or plant
- Don't lose data—feature 16-point automatic data storage with time-and-date stamp
- Save time and money by calibrating against prepared standards
- Uses popular PowderPack™, tablet, and liquid chemistries

What's included: three 24-mm sample cells with light-shield caps, reagents for 100 tests, foam-lined case, and four AAA batteries.



Specifications

Light source: LED (temperature compensated)
Wavelength accuracy: ± 1 nm
Display: backlit LCD
Data storage: 16 data sets
Power: four AAA batteries (included)

Test parameter	Range with powder reagents (mg/L)	Catalog number	Price	Replacement reagent (100 tests)	
				Cat. no.	Price
Ammonia, nitrogen	0.01 to 1.0	AL-99561-65		—	—
Ammonia, free	0.01 to 4.5	AL-99561-67		AL-99560-75	
Chlorine, free and total	0.02 to 2.0 (free) 0.1 to 8.0 (total)	AL-99561-76		AL-99560-54 (free)	
				AL-99560-58 (total)	
Copper	0.05 to 5.0	AL-99561-85		AL-99560-62	
Iron, ferro	0.02 to 3.0	AL-99561-86		AL-99560-64	
Iron, TPTZ	0.02 to 1.8	AL-99561-87		AL-99560-63	
Manganese (low)	0.01 to 0.7	AL-99561-88		AL-99560-65	
Manganese (high)	0.1 to 20	AL-99561-89		AL-99560-66	
Molybdate	0.03 to 1.8	AL-99561-90		AL-99560-67	
Phosphate, ortho	0.06 to 2.5	AL-99561-92		AL-99560-77	
Silica (low)	0.1 to 1.6	AL-99561-94		AL-99560-87	
Silica (high)	1 to 90	AL-99561-96		AL-99560-88	

LaMotte® Sanitizer Strength Test Strips

Quickly test your sanitizer strength

- No more waiting for results—simply compare color change to chart to get results
- Keep strips safe in included waterproof vial
- Get a longer shelf life from QAC strips 99535-30 with included desiccant cap

Parameter	Testing range	Qty/vial	Catalog number	Price/vial
QAC	50, 100, 200, and 400 ppm	100	AL-99532-30	
Chlorine	10, 50, 100, and 200 ppm	200	AL-99532-31	
Chlorine, HR	0, 50, 100, 250, 500, and 800 ppm	50	AL-99532-36	
Iodine	12, 25, 50, and 100 ppm	200	AL-99532-32	
Chlorine dioxide	0 to 10 ppm	50	AL-99532-33	
Chlorine dioxide	0 to 500 ppm	50	AL-99532-34	
Peracetic acid	0, 10, 20, 40, 60, 85, and 160 ppm	50	AL-99532-35	



Hach® DR 900 Colorimeter

No need to program—select from 90 methods

- Recall programs quicker with “favorites” list for easier selection
- Intuitive user interface allows quick selection and easy testing—in 22 languages
- Record and analyze up to 500 data sets with easy USB transfer
- Stands up to your environment with rugged, IP67-rated waterproof design

The handheld DR 900 colorimeter allows quick and easy access to the most common water testing methods. Unit features automatic wavelength selection, advanced reagent blank correction, and calibration curve adjustment. Analysis can be performed with user-set or preset reaction times with built-in timer. Large backlit display reads results as concentration, absorbance, or percent transmittance.

What's included: two 25-mL glass vials, two 10-mL plastic vials, COD vial adapter, USB cable, and four AA batteries.



Specifications

Wavelength selection: automatic	Output: waterproof mini USB port
Light source: LED	Data logging capabilities: 500 data sets with time/date stamp
Concentration units: µg/L, mg/L, g/L, ABS, %T	Power: four AA batteries (included)



Range	Wavelengths	Catalog number	Price
0 to 2 A	420, 520, 560, 610 nm	AL-99573-10	

Test Kits

Order as many test kits as needed to complete your water testing protocol. More test kits are available—if you don't see the one you need, call our Application Specialists for availability.

Chemical oxygen demand (COD) test kits require a COD reactor (sold separately at right). The manganese III COD test kit 99574-27 (order below) is an alternative to “non-green” tests—produces no mercury, chromium, or silver waste! All reagents in kits are packaged as powder pillows.

Description	Range	Tests/kit	Catalog number	Price/kit
Standard test kits				
Aluminum	0 to 0.8	100	AL-99574-03	
Chlorine, free (USEPA)	0 to 2.0	100	AL-99574-04	
Chlorine, total (USEPA)	0 to 2.0	100	AL-99574-05	
Copper, free	0 to 210 ppb	100	AL-99574-06	
Cyanide	0 to 0.24	100	AL-99574-07	
Fluoride, SPADNS	0 to 2.0	25	AL-99574-08	
Iron, total (USEPA)	0 to 3.0	100	AL-99574-09	
Manganese (USEPA)	0 to 20	100	AL-99574-10	
Nitrate, high range	0 to 30	100	AL-99574-11	
Nitrate, low range	0 to 0.50	100	AL-99574-12	
Nitrite, LR (USEPA)	0 to 0.35	100	AL-99574-13	
Nitrogen, total (TNT)	0 to 25	50	AL-99574-14†	
Oxygen, dissolved, high range	0 to 15	25	AL-99574-15	
Ozone, mid range	0 to 0.75	25	AL-99574-16	
Phosphorus (USEPA)	0 to 2.5	100	AL-99574-17	
Phosphorus, total (USEPA)	0 to 3.5	50	AL-99574-18†	
Silica, high range	0 to 75	100	AL-99574-19	
Sulfate (USEPA)	0 to 70	100	AL-99574-21	
Sulfide (USEPA)	0 to 0.7	100	AL-99574-22	
Zinc	0 to 3.0	100	AL-99574-23	
Chemical oxygen demand (COD) test kits				
COD, low range (USEPA)	0 to 150	25	AL-99574-25†	
COD, high range (USEPA)	0 to 1500	25	AL-99574-26†	
COD, manganese III	20 to 1000	25	AL-99574-27†	

†Requires COD reactor sold at right.

Accessories for Colorimeter

- [AL-99573-50](#) Data transfer adapter connects colorimeter to your computer
- [AL-99573-51](#) HachLink software
- [AL-99573-52](#) Soft-sided nylon case with shoulder strap
- [AL-99573-53](#) Hard-sided case
- [AL-99573-55](#) Replacement COD/TNT tube adapter
- [AL-09376-01](#) Replacement batteries, AA. Pack of 4

Accessories for COD Tests

- [AL-99574-60](#) COD reactor, 120 VAC
- [AL-99574-65](#) COD reactor, 240 VAC
- [AL-99574-52](#) Volumetric pipette, 2-mL
- [AL-99574-53](#) Pipette filler, safety bulb
- [AL-99574-54](#) Test tube rack

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Cole-Parmer® Visible Spectrophotometers

Get precise results

- Save time and reduce errors with auto-zeroing
- Maintain calibration and prevent damage with end-of-range stop on adjustment knob
- No manual adjustments—built-in filters automatically switch to accommodate wavelength setting



What's included: twelve 10-mm diameter test tubes cuvettes, cuvette adapter, dust cover, and 7-ft (2.1-m) cord with a US standard plug. For 230 VAC operation, order the optional 83055-25 power cable separately.



Bandwidth	20 nm	10 nm
Catalog number	AL-83055-10	AL-83055-20
Wavelength range	335 to 1000 nm	
Wavelength accuracy	±2 nm	
Photometric ranges	Transmittance	0 to 125% T
	Absorbance	0 to 2 A
	Concentration	0 to 1.95 A
Output	USB	0 to 1999 C
Power (50/60 Hz)	115/230 VAC switchable	
Price		

AL-83055-21 PC application software for model 83055-20. Standard Curve, Abs./%T/Conc., and Abs. vs time; for Windows® 95, 98, and XP. Includes serial cable 83055-24

AL-83055-24 RS-232 cable for model 83055-20. Female 9-pin to female 9-pin

AL-83055-22 Printer cable for model 83055-20. Male 25-pin to female 9-pin

Cole-Parmer® UV/Visible Spectrophotometers

Store and recall 200 test methods



- Leverage software for DNA/RNA/protein and kinetics analysis
- Be more productive with included four-position cuvette holder
- Responds precisely to transmittance changes for better results
- Optional Peltier temperature controller and/or sipper system for total utility
- Create standard curves and get wavelength scanning feature with optional software

What's included: a 7-ft (2.1-m) detachable cord, dust cover, two-position 10-mm cuvette holder, four glass cuvettes, and two quartz cuvettes.



Power (VAC, Hz)	115, 60	230, 50
Catalog number	AL-83059-10	AL-83059-15
Bandwidth	4 nm	
Wavelength range	200 to 1000 nm	
Wavelength accuracy	± 2 nm	
Photometric ranges	Transmittance	0 to 125% T
	Absorbance	–0.1 to 2.5 A
	Concentration	0 to 1999 C
Memory capability	Up to 200 standard curves	
Output	RS-232/USB	
Price		

AL-83057-65 Software, graphics. Standard curve, Abs./%T/Conc., Abs. vs time; for Windows® XP

AL-83057-66 Temperature control system; 115 VAC, 15 to 40°C. With external controller and Peltier 10 mm cell holder

AL-83057-68 Sipper system, 115 VAC. With external controller unit and peristaltic pump; requires flow cell and tubing

AL-83057-70 Temperature control/sipper system, 115 VAC. Combines 83057-66 and 83057-68; requires flow cell and tubing

AL-83057-78 Flow cell, glass (visible spectra)

AL-83057-79 Flow cell, quartz (UV spectra)

AL-83057-64 Two-position long cuvette holder, 100 mm max

Disposable Cuvettes

No more washing cuvettes!

Use these economical, single-use cuvettes to obtain consistent spectrophotometric data. Use polystyrene cuvettes for visible spectral analysis; polymethacrylate cuvettes are preferred for UV range testing. Pathlength: 10 mm.

Type	Capacity (mL)	No. of clear sides	Dimensions W x H x D (mm)	Polystyrene		Methacrylate	
				Catalog number	Price/pk of 500*	Catalog number	Price/pk of 500*
Standard	4.5	2	12.5 x 45 x 12.5	AL-06343-10		AL-06343-15	
Semi-micro	1.5			AL-06343-20		AL-06343-70	
Fluorometry	4.5	4	12.5 x 45 x 12.5	AL-06343-60		AL-06343-80	

*Discounts: Save 10% on 2–9 pks, 15% on 10–39 pks, and 20% on 40+ pks.

AL-06343-31 Cuvette caps, LDPE. Case of 1000

AL-06343-35 Cuvette stirring spatulas, PS. Case of 1000



Mettler Toledo EasyPlus™ Titrator Systems

No more manual titrations

- Easy operation via Apps-based user interface
- Ensure the accuracy of your measurements with precise burettes and sensors
- Download and analyze data with optional EasyDirect™ software

Everything you need in one affordable package for acid/base, acidity, precipitation, redox, and Karl Fischer volumetric titrations. Although small in size, these quality titrators provide highly accurate and consistent results.

Operation is simple and intuitive thanks to the smartphone-based Apps-driven user interface; use it to control all major functions. Easily perform basic titrations and receive automatic results from predefined formulas. Setup and tutorial with navigation is available in 14 languages. Minimize downtime with diagnostic tools for most common issues.

What's included: EasyPlus titrator, sensor, burette, sample vessel, stirrer, tubing, fittings, and power cord.



Specifications

Resolution: 0.1 mV
Repeatability: 0.5% RDS
Output: USB
Power: 100 to 240 VAC, 50/60 Hz

Model	Tests	Catalog number	Price
Easy pH titrator system	Acid/base	AL-94190-02	
Easy Cl titrator system	Precipitation	AL-94190-04	
Easy Ox titrator system	Redox	AL-94190-06	
Easy Pro titrator system	Acid/base, precipitation, and redox	AL-94190-08	
Easy KFV titrator system	Karl Fischer volumetric	AL-94190-10	

Accessories

[AL-94190-55](#) EasyDirect titration software package

[AL-94190-50](#) Replacement pH electrode, with BNC connector

[AL-94190-51](#) pH electrode, for non-aqueous applications, with BNC connector

[AL-94190-52](#) Replacement redox electrode, with BNC connector

[AL-94190-53](#) Replacement KF electrode, with BNC connector

[AL-94190-54](#) Replacement precipitation electrode, with BNC connector

Aquamax KF Plus Touch-Screen Potentiometric Titrator

Touch-screen swipe technology—operate even with gloves on



- Store up to 1000 methods—with 50 “one-touch” favorites on homepage
- Features continuous dosing operation for manual titrations
- Color-coded electrodes are automatically recognized by system

Easy-to-operate, robust titration system supports dynamic, incremental, and manual titration modes with preprogrammed methods conforming to ASTM standards. Methods include TAN, TAB, acid/base, iodine value, saponification, water hardness; as well as a range of wine, dairy, petroleum, food, and water testing methods. Plus, you can create your own method or modify an existing method with the system.

Flexible data management system stores up to 1000 results and allows for export to a computer or printer with USB cable or *Bluetooth*® connectivity. Also available are RS-232 ports to connect a balance or autosampler for high throughput operation.

What's included: titrator with built-in stirrer, 170-mL titration vessel, electrode platform, syringe drive, syringe assembly kit, burette, cables, blue acid/base electrode, electrode sleeve and fittings, bottle cap with drying tube and inset hole plugs, PTFE stir bars, printer, paper, universal power adapter, and 24 VDC car adapter.

Specifications

Range: ±3200 mV
Resolution: 0.1 mV
Accuracy: ±0.1 mV
Temperature range: 32 to 212°F (0 to 100°C)
Temperature resolution: 0.1°
Temp. accuracy: ±0.54°F (0.3°C)
Dispensing accuracy: ±0.05 to 0.1%
Syringe volumes: 12.5 mL or 5 mL
Output: two USB for printers, USB sticks, computers; two RS-232 for balance and autosampler; *Bluetooth*® printing
Data logging: 1000 results
Power: universal 110/240 VAC, 50/60 Hz; 24 VDC power pack

Description	Catalog number	Price
Touch-screen potentiometric titrator	AL-94105-00	

Bluetooth® word mark and logos are registered trademarks owned by *Bluetooth* SIG, Inc.

[AL-94105-04](#) Repl. electrode for acid/base aqueous titrations, blue

[AL-94105-03](#) Electrode for nonaqueous titrations, red

[AL-94105-05](#) Electrode for precipitation, yellow

[AL-94105-06](#) Electrode for redox reactions; green

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Lovibond® PFXi-195 Series Short-Pathlength Color Meters

Eliminate user subjectivity

- Meters provide unbiased color measurements based on reference standards
- Large graphic LCD with user-friendly prompts in several languages
- Meet your requirements—extensive choice of standard color scales or customize from reference samples
- Easily removable sample chamber offering a range of sample cell sizes
- Data output meets GLP standards with date, time, sample, and user ID

Spectrophotometric color meters provide accurate, reliable color data from optically clear samples. The meter automatically measures color transmittance and displays results directly in industry color scales, CIE values, and as spectral data.

The short-pathlength meter is ideal for slightly colored solutions, like wastewater, syrups, honey, dark oils, and beers. Be sure of



your readings with self-diagnostic check tests and calibrations using certified glass filter(s) included with meter (filters differ depending upon model). Transfer data easily via USB, LAN, and RS-232 interfaces. Remote calibration and maintenance service are also available via the Internet.

What's included: optical glass cells, data analysis software, calibration filter(s) with certificate, spare lamp, and 10-ft (3-m) power cable with US, UK, and EU plugs.

Specifications

Pathlength: 0.1 to 50 mm	Bandwidth: 10 nm	Data logging: 100,000 measurements	Power: 90 to 240 VAC
Spectral range: 420 to 710 nm	Light source: tungsten halogen	Output: USB, LAN, RS-232	

Applications	Color scales	Catalog number	Price
Liquid chemicals and oils	Pt-Co/Hazen/APHA, Gardner, Iodine, CIE, spectral data	AL-99562-02	
Petroleum oils and fuels	Saybolt, ASTM, Pt-Co/Hazen/APHA, Iodine, CIE, spectral data	AL-99562-04	
Dark oils and fats	FAC, Gardner, CIE, spectral data	AL-99562-06	
Pharmaceutical solutions	European and US Pharmacopoeia, Pt-Co/Hazen/APHA, CIE, spectral data	AL-99562-08	
Water and wastewater	ADMI, Pt-Co/Hazen/APHA, CIE, spectral data	AL-99562-15	

[AL-99562-51](#) Optical glass cell, 1 x 10 mm

[AL-99562-53](#) Optical glass cell, 1 x 33 mm

[AL-99562-55](#) Optical glass cell, 1 x 50 mm

[AL-99562-57](#) Optical glass cell, 1 mm x 1 inch

Lovibond® EComparator Series Colorimeters

Progress to electronic color measurement with confidence

NEW

- Interpret results easily with visual color comparison mode and direct digital reading
- Obtain quality checks with on-screen warning system—results displayed in green, yellow, or red
- Flexible pathlength—use supplied cuvettes or up to a 50 mm cuvette
- Get accurate results with light-blocking shield
- Battery or AC operation with small footprint is ideal for lab or field use
- Feature internationally recognized industry standards

What's included: plastic and glass cuvettes, color reference standards, cell divider, carrying case, USB power supply and cable, and four AA batteries.



CE

Specifications

Light source: white LED	Display: 3.5" (320 x 240), 24-bit, color touch screen	Data storage: >20,000 readings	Power: four AA batteries or USB cable
Sensor: tristimulus		Interface: USB 2.0 (mini)	

Applications	Color scales	Range	Repeatability	Pathlength	Comparator view	Catalog number	Price
Water industry; clear oils; chemicals such as glycerin, plasticizers, solvents, carbon tetrachloride, and petroleum spirits	Pt-Co/Hazen/APHA	0 to 500	±3% or ±1 unit	50 mm	2 field	AL-99575-55	
Resins, varnishes, lacquers, drying oils, fatty acids, lecithins, and sunflower and linseed oils	Gardner	0 to 18	±0.2	10 mm	2 field	AL-99575-60	
Light petroleum products such as aviation fuel, kerosene, naphthas, white mineral oils, hydrocarbon solvents, and petroleum waxes	Saybolt	–16 to 30	±1	50 mm	3 field	AL-99575-65	
Lubricating, heating, and diesel fuel oils	ASTM	0 to 8	±0.1	33 mm	3 field	AL-99575-70	

[AL-99599-16](#) Cuvette cleaning cloth

Environmental Express® HotBlock® Digestion Systems

Perform digestions faster, cleaner, and more reliably

- Eliminate corrosion and sample contamination—made of PTFE-coated graphite and other nonmetallic materials
- No additional cables or controllers—all electronics housed below unit
- Get uniform heating to all samples, up to 150°C
- Easily transport samples with included polycarbonate transfer racks

HotBlock digestion systems are EPA approved for all methods approved for hot plate digestions including, but not limited to, methods 3005, 3010, 3050A, 3050B, 200.2, 200.7, 200.8, 7470A, 7471A, 245.1 and 245.7.



Sample size	Number of wells	Digestion cup compatibility [†]	Uniformity	Maximum temperature	Dimensions (W x H x D)	Power			Catalog number	Price
						VAC	Hz	Amps		
15 mL	96	53201-01	±2.7°F (1.5°C)	302°F (150°C)	15" x 9" x 21½" (38 x 23 x 54 cm)	120	60	13	AL-53205-00	
50 mL	36	53201-03, -05	±2.7°F (1.5°C)	302°F (150°C)	15" x 9" x 15" (38 x 23 x 38 cm)	120	60	9	AL-53205-02	
						240	50	5	AL-53205-03	
50 mL	54	53201-03, -05	±2.7°F (1.5°C)	302°F (150°C)	15" x 9" x 21½" (38 x 23 x 54 cm)	120	60	13	AL-53205-04	
						240	50	7	AL-53205-05	
100 mL	25	53201-07	±2.7°F (1.5°C)	302°F (150°C)	15" x 9" x 15" (38 x 23 x 38 cm)	120	60	9	AL-53205-06	
						240	50	15	AL-53205-07	
100 mL	35	53201-07	±2.7°F (1.5°C)	302°F (150°C)	15" x 9" x 21½" (38 x 23 x 54 cm)	120	60	13	AL-53205-08	
						240	50	9	AL-53205-09	

[†]Order cups separately on page 53.

Polycarbonate Transfer Racks

Safely place multiple samples into heating block

- No more moving one sample at a time
- Resists heat and acids

Description	Sample size	Digestion cup compatibility	Number of racks/pk	Catalog number	Price/pk
(3) 32-place racks	15 mL	53201-01	3 racks	AL-53205-49	
(1) 18-place rack	50 mL	53201-03, -05	1 rack	AL-53201-11	
(1) 15-place and (1) 10-place rack	100 mL	53201-07	2 racks	AL-53201-13	
(1) 15-place and (2) 10-place rack	100 mL	53201-07	3 racks	AL-53205-48	



Ribbed Watch Glasses

Achieve partial reflux during digestion

- Easily place and remove watch glass with center stem
- Free of contaminants—made of polypropylene



Description	Diameter	Catalog number	Qty/pk	Price/pk
For 15-mL digestion cups	19.5 mm	AL-53201-02	1000	
For 50-mL digestion cups	44 mm	AL-53201-04	1000	
For 100-mL digestion cups	52 mm	AL-53201-08	500	

Disposable Reflux Cap

Center hole for smooth addition of reagents

- Fits 50-mL digestion cup
- Achieve equal reflux as the ribbed watch glasses above



Diameter	Catalog number	Qty/pk	Price/pk
34 mm	AL-53201-06	1000	

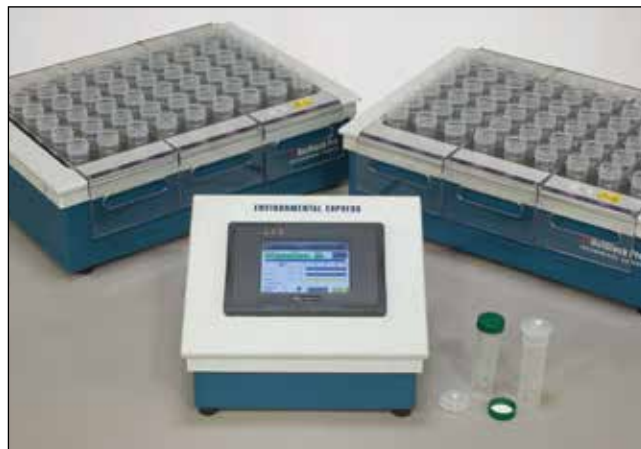
Environmental Express® HotBlock® Pro Systems

Network up to two HotBlocks with just a touch

- Control up to two HotBlock Pro units simultaneously with touch-screen controller
- Custom methods can easily be programmed, edited, and saved
- Monitor each step in process on easy-view screen
- Position controller outside of a fume hood for safe operation

Touch-Screen Controller module features:

- **Status Screen** continually displays parameters and status of each block currently running. When utilizing external temperature probes, the screen displays the current sample temperature. At the conclusion of the method, an alarm sounds and the heat is turned off.
- **Method Configuration Screen** is used for programming and saving digestion procedures. User-defined parameters include Ramp, Set Point Temp, Soak Time and Pause. Up to 15 individual methods can be created, named and saved for future use.
- **Timer Screen** provides an automatic countdown timer for a variety of uses.
- Each block can be paused at any time using the **Pause Feature**, either manually or as a programmed step during the digestion procedure.



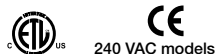
HotBlock® Pro



REQUIRED System Components

- 1) HotBlock Pro controller
 - 2) HotBlock Pro hot blocks
- Optional**
- 3) Temperature probe

1. HotBlock Pro Controller



Dimensions (L x W)	Power		Catalog number	Price
	VAC	Hz		
9.25" x 8.75" (23.5 x 21.3 cm)	120	60	AL-53201-50	
	240	50	AL-53201-51	

2. HotBlock Pro Hot Blocks (chose up to two per controller)

Sample size	Number of wells	Digestion cup compatibility†	Uniformity	Maximum temperature	Dimensions (W x H x D)	Power			Catalog number	Price
						VAC	Hz	Amps		
15 mL	96	53201-01	±0.4°F (0.2°C)	302°F (150°C)	15" x 9" x 21½" (38 x 23 x 54 cm)	120	60	9	AL-53201-52	
						240	50	4.5	AL-53201-53	
50 mL	36	53201-03, -05	±0.4°F (0.2°C)	302°F (150°C)	15" x 9" x 15" (38 x 23 x 38 cm)	120	60	9	AL-53201-54	
						240	50	4.5	AL-53201-55	
50 mL	54	53201-03, -05	±0.4°F (0.2°C)	302°F (150°C)	15" x 9" x 21½" (38 x 23 x 54 cm)	120	60	9	AL-53201-56	
						240	50	4.5	AL-53201-57	
100 mL	25	53201-07	±0.4°F (0.2°C)	302°F (150°C)	15" x 9" x 15" (38 x 23 x 38 cm)	120	60	9	AL-53201-58	
						240	50	4.5	AL-53201-59	
100 mL	35	53201-07	±0.4°F (0.2°C)	302°F (150°C)	15" x 9" x 21½" (38 x 23 x 54 cm)	120	60	9	AL-53201-60	
						240	50	4.5	AL-53201-61	

†Order cups separately on page 53.

3. External Temperature Probe

[AL-53201-62](#) Thermocouple probe for HotBlock Pro system

Environmental Express® HotBlock® Hot Plate

Heat vessels with flat bottoms with ease

HotBlock®

- Durable graphite and Kydex® construction
- Uniform heating of samples
- Low-wattage mat uses a maximum of 1065 watts of power

Temperature range	Dimensions (W x H x D)	Power			Catalog number	Price
		VAC	Hz	Amps		
Ambient to 302°F (150°C)	15" x 9" x 21½" (38 x 23 x 54 cm)	120	60	14	AL-53205-10	
		240	50	7	AL-53205-11	



Environmental Express® Disposable Screw-Cap Digestion Cups

Trust your measurements—graduated for better sample dilutions

- Volume certified for accuracy within 0.5%
- Certified for low metals background
- Choose 15-, 50-, and 100-mL volumes for your application and Environmental Express HotBlock® digestions

These digestion cups are specifically designed to provide exceptional performance in your Environmental Express HotBlock system. Manufactured from clarified polypropylene, cups provide higher temperature stability and greater chemical resistance. Graduated design allows you to dilute, digest, and store sample in the same vessel.

The 50-mL digestion cups have a total capacity of 68 mL; select from either green or white screw caps. The 100-mL digestion cup has a total capacity of 125 mL, whereas the 15-mL digestion cup has a total capacity of 18 mL.

Screw caps (except for 53201-01) are lined with 0.040" polyethylene-faced foam liners for a leak-proof seal. Only the metals-free polyethylene liner comes into contact with the sample.



ENVIRONMENTAL EXPRESS®
a Cole-Parmer company

Description	Total capacity	Graduations	Dimensions	Cap	Catalog number	Qty/cs	Price/cs
15-mL digestion cup	18 mL	To 15 mL	17.5 x 105 mm	Clear, with liner	AL-53201-01	1000	
50-mL digestion cup	68 mL	To 50 mL	30 x 106 mm	Green, with liner	AL-53201-03	500	
50-mL digestion cup	68 mL	To 50 mL	30 x 106 mm	White, with liner	AL-53201-05	500	
100-mL digestion cup	125 mL	To 100 mL	46 x 100 mm	White, no liner	AL-53201-07	225	

Environmental Express® FilterMate® Filtration Systems

Eliminate sample transfer—filter and digest in the same cup

- Filter 15- and 50-mL samples within sample cups
- Simple to use—attach FilterMate plunger to filter assembly, then press down on plunger
- No need for separate filtration devices before analyzing samples

These easy-to-use filtration systems filter within vessels so you don't need to do a separate filtration of sample before analysis.

What's included: 100 filter assemblies and plungers.



Optional holder keeps FilterMate stable

Membrane type	Pore size (µm)	Lot certified	Applications	Catalog number	Qty/pk	Price/pk
PTFE-faced polypropylene	2	No	Most laboratory applications	AL-35202-00	100	
Acid-washed glass fiber with polyethylene frit	0.7	No	TCLP extractions	AL-35202-01	100	
PVDF with PTFE prefilter	0.45	No	Dissolved metals only	AL-35202-02	100	
Certified PTFE	2	Yes	Trace level analysis	AL-35202-03	100	
PVDF with PTFE prefilter	0.45	Yes	Dissolved metals only	AL-35202-04	100	
Polyethylene frit	2	No	Use with 15-mL digestion cups	AL-35202-05	100	

[AL-35202-06](#) Holder for FilterMate filtrations, secures the 50-mL digestion cup during filtration. HDPE material

[AL-35202-07](#) Replacement plunger fits 50-mL cup. Pack of 500

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Environmental Express® SimpleDist® Distillation System

Perform safe and easy ammonia and cyanide distillations

- Minimize cleanup—only glassware to clean is the boiling tube
- No chiller or water lines required—distilled ammonia and cyanide collected right in the trap
- Conforms to EPA and Standard Methods

The SimpleDist distillation system is ideal for performing cyanide and ammonia distillations following established US EPA and *Standard Methods* methodology.

Easy to operate—distilled ammonia or cyanide is collected in the trap and does not require the use of a chiller or any water lines. Sample solution boils in the boiling tube, and the ammonia or cyanide gas is released and pulled by vacuum to the collection trap containing the appropriate catch solution. A hydrophobic porous frit in the base of the collection trap allows the vacuum to pull the gas into the scrubbing solution but prevents the solution from flowing back into the boiling tube. After collection is complete, the convenient collection trap is removed, and contents are ready for analysis.

Conform to established methods—SimpleDist system uses the same reagents in the same molar concentrations as EPA Method 335.4 and *Standard Method 4500-CN-C* for Cyanide as well as *EPA Method 350.1* and *Standard Methods 4500-NH3* for ammonia.

This complete SimpleDist system comes with a 12-place HotBlock® digestion system and a 12-valve manifold kit.



SimpleDist®

For HotBlock®

Description	Power	Catalog number	Price
SimpleDist complete 12-valve system	120 VAC, 6 A	AL-35209-84	
	240 VAC, 3 A	AL-35209-85	

Accessories

Description	Catalog number	Qty/pk	Price/pk
Boiling tube, borosilicate glass, 30 x 200 mm	AL-35209-88	1	
Tube rack, 12-place	AL-35209-89	1	
Collection traps, 25 mL	AL-35209-90	100	
Reagent addition tube with funnel tip	AL-35209-91	100	
Screw cap, open-top, polypropylene, 38 mm	AL-35209-92	6	
Black washer, neoprene, for 38-mm screw caps	AL-35209-93	6	
Two-port cap insert, for 38-mm screw caps	AL-35209-94	6	
Tubing adapters to fit 1/4" ID tubing and cyanide trap	AL-35209-95	12	
Tubing kit; 12 precut pieces of tubing with adapters pre-inserted in one end	AL-35209-96	1	

Environmental Express® Snip & Pour® Premeasured Reagents

for Environmental Express SimpleDist® Distillation System

No more measuring reagents

- Deliver the precise reagent volume to your sample each time, while increasing accuracy
- Just snip the corner, pour contents into collection trap, and fill to appropriate volume

Description	Catalog number	Qty/pk	Price/pk
Snip & Pour reagent, 0.2 N H ₂ SO ₄ ; 5-mL tubes	AL-35209-78	50	
Snip & Pour reagent, 1.25 N NaOH; 5-mL tubes	AL-35209-81	50	
Snip & Pour reagent, 20 g/L boric acid; 5-mL tubes	AL-35209-83	50	

ENVIRONMENTAL EXPRESS®
a Cole-Parmer company



Sample Prep and Storage Made Easy



Cole-Parmer® Nitrile Gloves

Cole-Parmer® Vortex Shaker

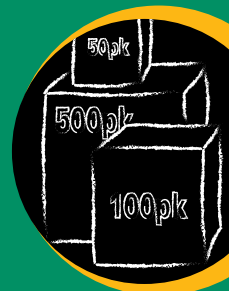
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You need it, we've got it! Thousands of items guaranteed in stock



Stock up and Save

Save up to 20% on labware and supplies



Chemical Compatibility

Check material compatibility before you buy

ColeParmer.ca/Chemchart



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800-323-4340
— or Ch@t Live —

Product Selection | Troubleshooting | And More...

Not sure what to choose?

Our expert Application Specialists can help you find the right product for your application.



PYREX® Brand 1000 Griffin Low-Form Beakers

Stand up to thermal shock



- Uniform wall thickness offers optimal balance of thermal shock resistance and mechanical strength
- Know how much is left and how much is gone—double graduation scale indicates approximate content (on 250- to 400-mL sizes only)
- No mystery liquids—extra-large marking spot for easy identification
- Reference: ASTM E-960

Buy More...Save More!

15% off on 10+ packs or cases **10%** off on 5 to 9 packs or cases

Capacity mL (oz)	Graduation range (mL)	Graduation interval (mL)	Catalog number	Qty/ pk	Price/ pk	Catalog number	Qty/ cs	Price/ cs
10 (1/8)	—	—	AL-34502-01	12		AL-34502-21	48	
20 (2/5)	5 to 15	5	AL-34502-02			AL-34502-22		
30 (1)	5 to 25	10	AL-34502-03			AL-34502-23		
50 (1 3/4)	10 to 40	10	AL-34502-04			AL-34502-24		
100 (3)	20 to 80	10	AL-34502-05	12		AL-34502-25	48	
150 (5)	20 to 140	10	AL-34502-06			AL-34502-26		
250 (8)	25 to 200	25	AL-34502-07			AL-34502-27		
400 (13)	25 to 325	25	AL-34502-08			AL-34502-28		
600 (20)	50 to 500	50	AL-34502-09	6		AL-34502-29	36	
800 (27)	50 to 750	50	AL-34502-10	6		AL-34502-30	24	
1000 (32)	50 to 1000	50	AL-34502-11	6		AL-34502-31	24	
1500 (51)	200 to 1400	100	AL-34502-12	4		AL-34502-32	16	
2000 (64)	200 to 2000	100	AL-34502-13	4		AL-34502-33	8	
3000 (96)	250 to 2500	125	AL-34502-14	1		AL-34502-34	6	
4000 (128)	500 to 3500	250	AL-34502-15	1		AL-34502-35	6	
Starter set contains one each of 50 mL, 100 mL, 250 mL, 600 mL, 1000 mL						AL-34502-90	5	

Cole-Parmer® Tri-Corner Beakers, PP

Easy pouring from three sides

- Easily mix on stirrer—flat bottom keeps stir bars centered
- Accurate to $\pm 5\%$; molded graduations
- Withstand temperatures to 250°F (121°C)
- Autoclavable



Cole-Parmer®

Buy More...Save More!

20% off on 120+ **15%** off on 30 to 119 **10%** off on 6 to 29 packs or cases

Capacity, mL (oz)	Graduations (mL)	Catalog number	Qty/pk	Price/pk
50 (1.5)	10	AL-06020-01	100	
100 (3.5)	10	AL-06020-03		
250 (8)	20	AL-06020-05		
400 (13)	40	AL-06020-07	100	
800 (26)	50	AL-06020-09		
1000 (32)	50	AL-06020-11		
Five of each above	—	AL-06010-07	30	

Cole-Parmer® Weighing Dishes

- Features crimped angled wall and flat bottom with a large finger-tab
- Oil-free and noncoated aluminum



Capacity	Size	Catalog number	Qty/pk	Price/pk
8 mL	1 1/8" dia	AL-01018-26	500	
20 mL	1 3/4" dia	AL-01018-51	100	
		AL-01017-51	1000	
60 mL	2 1/4" dia	AL-01018-50	100	
		AL-01017-50	1000	
80 mL	2 3/4" dia	AL-01018-52	100	
		AL-01017-52	1000	

Cole-Parmer® Class A Griffin Low-Form Graduated Glass Beakers

Easy readings and exceptional durability

NEW

- Double-scale graduations for easy measuring while pouring in or out
- Meet ASTM E960 specifications for Class A borosilicate glass beakers
- Stand up to temperatures of 445°F (230°C) for long-term, or 752°F (400°C) for short-term
- Autoclavable



Cole-Parmer®

Buy More...Save More!

15% off on 10+ packs or cases **10%** off on 5 to 9 packs or cases

Capacity mL (oz)	Graduation interval (mL)	Catalog number	Qty/pk	Price/pk
10 (1/8)	—	AL-34503-42†	12	
25 (2/5)	5	AL-34503-44	12	
50 (1 3/4)	10	AL-34503-46	12	
100 (3)	10	AL-34503-48	12	
150 (5)	20	AL-34503-50	12	
250 (8)	25	AL-34503-52	12	
400 (13)	25	AL-34503-54	12	
600 (20)	50	AL-34503-56	6	
1000 (32)	50	AL-34503-58	6	
2000 (64)	100	AL-34503-60	4	
3000 (96)	125	AL-34503-62	1	
5000 (160)	250	AL-34503-64	1	

†The 10-mL beaker does not have graduations

Graduated Sample Containers, PP

Graduated for easier sampling

- Durable design—translucent, unbreakable, and chemical resistant
- Sterile containers are individually wrapped



Buy More...Save More!
20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases



Capacity mL (oz)	Description	Catalog number	Qty/pk	Price/pk
118 (4)	Sterile, no tab	AL-06049-40	100	
118 (4)	Nonsterile with white tab	AL-06049-50	500	

Wheaton BOD Bottles and Bottle Racks

Easily identify samples

- Clear glass BOD bottles come with glass stoppers and a white write-on marking space

Use a bottle rack for storing and transporting your BOD bottles. Racks are corrosion resistant and plastisol coated.



Capacity mL (oz)	Description	Number sequence	Catalog number	Qty/cs	Price/cs
300 (10)	Pennyhead stopper BOD bottles, clear	Unnumbered	AL-03660-14	24	
300 (10)	Robotic stopper BOD bottles, clear	Unnumbered	AL-03660-15	24	
300 (10)	Robotic stopper BOD bottles, clear	1–24	AL-03660-16	24	
		25–48	AL-03660-17		
		49–72	AL-03660-18		
		73–96	AL-03660-19		

Accessories

[AL-03660-09](#) Cap and insert for use with 03660-15 BOD bottles. Pack of 50

[AL-03660-12](#) Rubber bottle leash holds stopper to bottle. Pack of 25

[AL-03660-20](#) BOD bottle rack, holds twelve 300-mL bottles

Cole-Parmer® Precleaned EPA Sample Containers

No contaminants—precleaned and ready to use

NEW

- Include certificate of conformance to EPA specifications
- Identify samples easier with included labels (unattached)

A-D. Glass Bottles, Jars, and Jugs are processed and certified to meet the requirements of the current US EPA “Specifications and Guidance for Contaminant-Free Sample Containers” document for semi-volatile organics, pesticides, PCBs, metals, cyanide, fluoride, nitrate and nitrite analyses. Include PTFE-lined caps.

E. Glass Septa Jars are processed and certified to meet the requirements of the current US EPA “Specifications and Guidance for Contaminant-Free Sample Containers” document for purgeable volatile organic analysis. Include PTFE-lined silicone septa bonded to open-top caps.



Cole-Parmer®

Capacity mL (oz)	Neck size	Qty/cs	Catalog number	Price/cs
A. Clear wide-mouth glass jars				
60 (2)	53 mm	24	AL-99540-40	
125 (4)	58 mm	24	AL-99540-41	
250 (8)	70 mm	12	AL-99540-42	
500 (16)	89 mm	12	AL-99540-43	
950 (32)	89 mm	12	AL-99540-44	
B. Amber narrow-mouth glass bottles				
125 (4)	22 mm	24	AL-99540-30	
250 (8)	24-414	12	AL-99540-31	
500 (16)	28 mm	12	AL-99540-32	
1000 (34)	33-430	12	AL-99540-33	
C. Amber wide-mouth glass bottles				
125 (4)	38 mm	12	AL-99540-51	
250 (8)	45 mm	12	AL-99540-53	
500 (16)	53 mm	12	AL-99540-55	
950 (32)	53 mm	12	AL-99540-57	
D. Amber narrow-mouth glass jugs				
2500 (80)	38-430	6	AL-99540-34	
4000 (135)	38-430	4	AL-99540-35	
E. Clear wide-mouth glass septa jars				
60 (2)	53 mm	24	AL-99540-20	
125 (4)	58 mm	24	AL-99540-21	

DON'T RISK IT!

Our chemical compatibility database provides important information on chemical resistance—check it out at ColeParmer.ca/ChemChart



Thermo Scientific™ Nalgene™ Automatic Self-Zeroing Burettes

No lubrication of PTFE plug needed

- Won't break—made of clear acrylic body, PTFE stopcock, and PMP tip
- Individually calibrated for accuracy to meet ASTM E 287 requirements

Unaffected by most dilute acids and bases (except HF and ammonium hydroxide). Use over full pH range. Not designed for use with alcohols or organic solvents. Include a cover, a squeeze bottle with closure, and 3 ft (1 m) of vinyl tubing.

Burette 06209-30 shown with stand 06703-00 and clamp 06703-10

Capacity	Graduation intervals	Reservoir	Catalog number	Price
10 mL	0.1 mL	500 mL	AL-06209-10	
25 mL	0.1 mL	500 mL	AL-06209-20	
50 mL	0.1 mL	1000 mL	AL-06209-30	

[AL-06703-00](#) Support stand with center rod; 30" (76 cm) L x 1/2" (1.3 cm) dia

[AL-06703-10](#) Single burette clamp, HDPE

Hirschmann® Solarus® Electronic Burettes

No more charging or changing batteries

- Operates on solar power for energy savings
- No more lost reagents—recirculating system primes burette
- Easy-to-use keypad and LCD for calibration and direction information
- Head rotates 360° for better viewing
- Manipulate and report data easily with RS-232 output
- Autoclavable to 250°F (121°C)

Note: Not intended for use with hydrofluoric acid.

What's included: recirculating tube, suction tube, thread adapters, and individual test certificate.

Specifications

Cumulative volume: 99.99 mL in 10- μ L increments

Reproducibility: $\leq 0.2\%$ of volume

Fitting: A45, A32, A38, and S40

Wetted materials: inert ECTFE and FEP; PTFE compound piston; calibrated Duran® (borosilicate 3.3) cylinder; borosilicate glass valve ball and seat; Hastelloy® valve springs

Power: solar panels

Capacity	Accuracy	Catalog number	Price
20 mL	± 0.20 mL	AL-25503-20	
50 mL	± 0.20 mL	AL-25503-25	

[AL-25503-28](#) Interface cable, RS-232

[AL-25503-29](#) Discharge unit

[AL-22050-58](#) USB to DB9(M) RS-232 serial adapter cable. Includes 2-ft cable and driver software. Compatible with Windows® 98SE, ME, 2000, XP, Vista, and 7

Automatic Self-Zeroing, Self-Supporting Burettes

Prevent contamination from outside elements

- Get easy, drop-by-drop delivery with unique push-button stopcock
- Quickly repeat titration by presetting drop speed with screw clamp
- Easy-to-read blue graduations

What's included: LDPE bottle, base, and tube; vinyl stopper; glass burette; and PP stopcock.

Capacity	Subdivisions	Reservoir	Catalog number	Price
10 mL	0.05 mL	500 mL	AL-07879-10	
15 mL	0.1 mL	500 mL	AL-07879-20	
25 mL	0.1 mL	1000 mL	AL-07879-30	
50 mL	0.1 mL	1000 mL	AL-07879-40	

Titrette® Digital Bottletop Electronic Burettes

Easily calibrate for GLP and ISO compliance

- No more wasting titrant with SafetyPrime™ valve
- Eliminate meniscus reading errors—dispensed results displayed on LCD with 0.01-mL resolution
- Mount directly to bottle (not included), reducing liquid transfer
- Always view bottle label with 360° rotatable valve block
- Suitable for solutions up to 2N

What's included: 33-mm, 38-mm, and STJ 29/32 polypropylene (PP) bottle adapters; fine-tip titrating tube, a 195- to 350-mm telescoping filling tube, lithium battery, and a performance certificate.

ISO9001:2008
CERTIFIED SUPPLIER



Specifications

Cumulative volume: up to 99.99 mL in 0.01-mL increments

Reproducibility: $\pm 0.1\%$

Fitting: fits 45-mm bottle thread

Wetted materials: borosilicate glass, PP, PTFE, ETFE, FEP, PFA, platinum-iridium, and ceramic

Power: lithium battery (included) >60,000 titrations

Capacity	Accuracy	Catalog number	Price
25 mL	$\pm 0.2\%$ (± 50 μ L)	AL-07910-51	
50 mL	$\pm 0.2\%$ (± 100 μ L)	AL-07910-53	

Accessories

[AL-07878-53](#) Drying tube. Protects sensitive reagents from moisture or CO₂

[AL-07193-05](#) Drierite® drying agent for 07878-53. Twelve 1-lb packs per carton

Cole-Parmer® Syringe Filters

Get easy, reliable filtration—
just slip on and twist

- Easy identification—membrane type and pore size printed on each filter
- Filter more confidently—filters are 100% integrity tested and manufactured in accordance with ISO 9002 standards
- Get a secure fit—bidirectional membrane support and luer lock inlet/outlet
- Sterile filters are sterilized by gamma irradiation and certified nonpyrogenic, noncytotoxic, and blister packed

Glass Prefilters with Final Filter

- Save time—borosilicate glass fiber prefilter and cellulose filter in one
- Prefilter extends life of final filter by removing particulates from sample
- Reduces retention volume and sample loss



Membrane		Pore size	Housing	Retention volume	Qty/ bx	Catalog number	Price/ bx
Type	Dia						
Nonsterile filters							
Cellulose acetate	26 mm	0.20 µm	Acrylic	0.23 mL	100	AL-02915-90	
		0.45 µm				AL-02915-92	
		0.80 µm				AL-02915-94	
Sterile filter							
Cellulose acetate	26 mm	0.20 µm	Acrylic	0.23 mL	50	AL-02915-40	

Cellulose Acetate Filters

- Low protein binding—ideal for biological solutions
- Use for sterilization and clarification of aqueous solutions



Pore size	Membrane dia	Housing	Color	Qty/bx	Catalog number	Price/bx
Nonsterile filters						
0.22 µm	26 mm	Acrylic	Blue	100	AL-02915-60	
0.45 µm			Clear		AL-02915-58	
0.80 µm			Green		AL-02915-62	
Sterile filters						
0.22 µm	26 mm	Acrylic	Blue	50	AL-02915-12	
0.45 µm			Clear		AL-02915-00	
0.80 µm			Green		AL-02915-10	

Nylon Filters

- Low levels of extractables with no wetting agents
- Hydrophilic nylon for good chemical resistance—ideal for aqueous and most organics



Pore size	Membrane dia	Housing	Color	Qty/bx	Catalog number	Price/bx
Nonsterile filters						
0.22 µm	25 mm	PP	Natural	100	AL-02915-16	
0.45 µm					AL-02915-14	
Sterile filters						
0.20 µm	25 mm	PP	Red	50	AL-02915-04	
0.45 µm			Natural		AL-02915-02	

Cole-Parmer®

Teky's Tips



Choose the Right Filter!

Membrane type	Applications
Glass prefilter	One-step prefiltration and filtration. Choose the final membrane to meet your application needs. High particle loading capacity.
Cellulose acetate	Sterilization and clarification of aqueous solutions. Low protein binding.
Nylon	Filtration of organic and aqueous solutions. Low extractables.
PTFE	Sterilization of gases and alcohols; cleaning acids, alkalies, and organic solvents; venting purposes. For aggressive chemicals.
Nitrocellulose	High protein retention; microbiological analysis, waste water treatment; sterilization of aqueous solutions.

Specifications

Membrane dia	Housing type	Sample volume	Retention volume†	Pressure limit at 25°C	Max temp	Effective filtration area
15 mm	PP	≤5 mL	10 µL	87 psi	127°C	1.7 cm²
25 mm	PP	≤100 mL	0.1 mL	87 psi	127°C	4.8 cm²
26 mm	Acrylic	≤100 mL	0.1 mL	87 psi	50°C	5.3 cm²
50 mm	PP	≤2 L	0.5 mL	60 psi	134°C	20 cm²

†Varies for glass prefilters; see glass prefilter table below.

PTFE Filters

- Ideal for aggressive chemicals—organic solvents, concentrated acids and bases, propellants and more
- Use for gas/air filtration
- 50-mm membranes have stepped hose barb connectors for ¼" to ½" ID tubing



Pore size	Membrane dia	Housing	Color	Qty/bx	Cat. no.	Price/bx
Nonsterile filters						
0.20 µm	15 mm	PP	Natural	100	AL-29550-08	
0.45 µm					AL-29550-10	
0.20 µm	25 mm	PP	Natural	100	AL-02915-20	
0.45 µm					AL-02915-22	
0.20 µm	50 mm	PP	Natural	20	AL-02915-28	
0.45 µm					AL-02915-30	
Sterile filters						
0.20 µm	25 mm	PP	Natural	50	AL-02915-08	
0.50 µm					AL-02915-06	

Nitrocellulose Filters

- Good for macromolecules—highest protein retention
- Get fast flow rates with aqueous solutions
- Ideal for microbiological analysis, waste water treatment, and sterilization of aqueous solutions



Pore size	Membrane dia	Housing	Color	Qty/bx	Cat. no.	Price/bx
Nonsterile filter						
0.20 µm	26 mm	Acrylic	Blue	100	AL-02915-56	
Sterile filters						
0.20 µm	26 mm	Acrylic	Blue	50	AL-02915-52	
0.45 µm					AL-02915-53	

Masterflex® C/L® Digital Microflex® Pumps

Pump in even the tightest spaces!

- Pump fluids in either direction—easily switchable reversing motor
- Easy tubing changes—open cover and release occlusion bed in one motion
- Icon-driven menu allows quick programming and setup
- Copy dispense function for filling and dispensing applications
- Remote control of speed, direction, and start/stop/prime via 25-pin connector on back of drive
- Microflex pump head accepts continuous lengths of tubing for clean flow paths
- Tubing calibration ensures accuracy

NEW

FEATURES

- ✓ Flow range: 0.00013 to 43 mL/min
- ✓ Reversible pumping
- ✓ Remote control capabilities



MASTERFLEX®

Power supplies are:

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Flow Rates in mL/min

rpm	Microbore pump tubing size (ID)							
	0.19 mm	0.25 mm	0.51 mm	0.89 mm	1.14 mm	1.42 mm	2.06 mm	2.79 mm
0.1 to 300	0.00013 to 0.39	0.0002 to 0.66	0.0009 to 2.6	0.003 to 7.5	0.004 to 11.4	0.006 to 17.1	0.011 to 32	0.014 to 43

rpm	Speed control (repeatability)	Number of channels	Number of rollers	Reversible motor	IP rating	Dimensions (L x W x H) (20.5 x 14 x 15.7 cm)	VAC, Hz	Power Amps	Catalog number	Price
0.1 to 300	±0.1%	1	3	Yes	IP33	8 1/16" x 5 1/2" x 6 3/16"	90 to 260	0.34 at 115 VAC, 0.2 at 230 VAC	AL-77123-00	

AL-07523-92 Foot switch, momentary start/stop; DB25 male; 6-ft (1.8-m) cable

AL-07523-95 Cable assembly, DB25 male connector and 25-ft (7.9-m) cable with stripped wire ends

AL-07523-97 Handheld remote controller, DB25 male, route tubing through handle for dispensing applications; 6-ft (1.8-m) cable

AL-77123-80 Replacement single-channel Microflex pump head

AL-07525-90 Replacement power supply, 90 to 260 VAC

AL-17050-01 NIST-traceable calibration with data for peristaltic pump drive

For a full selection of Masterflex tubing, go to ColeParmer.ca/Masterflex.

Masterflex® L/S® Digital Miniflex® Pump Systems

Small footprint, yet delivers accurate flow over a wide range

- Flow range of 0.004 to 315 mL/min (depending on model and tubing size selected)
- Tubing calibration function ensures accuracy
- Open-head sensor stops drive when pump head is opened
- Remote control via 25-pin connector on back of drive
- Automatic tubing retention makes tube loading quick and easy

Compact, stackable pump with durable ABS housing is easy to wipe down and keep clean. The Miniflex pump head features a wide occlusion angle that prevents fluid backflow up to the rated pressure of the tubing. Self-lubricating thermoplastic polyester rollers are low friction and long wearing for smooth operation and long life.

Flow Rates in mL/min

rpm	Precision pump tubing			
	L/S 13	L/S 14	L/S 16	L/S 25
Single-channel pump 07525-20				
0.1 to 300	0.004 to 12	0.014 to 42	0.05 to 162	0.11 to 315
Dual-channel pump 07525-40				
0.1 to 300	0.004 to 12	0.014 to 42	0.05 to 162	—

Number of channels	rpm	Speed control (repeatability)	Reversible motor	IP rating	Dimensions (L x W x H) (23.9 x 14.0 x 15.7 cm)	Power (50/60 Hz)		Catalog number	Price
						VAC	Amps		
1	0.1 to 300	±0.1%	Yes	IP33		90 to 260	0.34 at 115 VAC, 0.2 at 230 VAC	AL-07525-20	
2								AL-07525-40	

AL-07523-92 Foot switch, momentary start/stop; DB25 male; 6-ft (1.8-m) cable

AL-07523-95 Cable assembly, DB25 male connector and 25-ft (7.9-m) cable with stripped wire ends

AL-07523-97 Handheld remote controller, DB25 male, route tubing through handle for dispensing applications; 6-ft (1.8-m) cable

AL-77220-20 Replacement single-channel Miniflex pump head

AL-77220-30 Replacement dual-channel Miniflex pump head

AL-07525-90 Replacement power supply, 90 to 260 VAC

AL-17050-01 NIST-traceable calibration with data for peristaltic pump drive

MASTERFLEX®

FEATURES

- ✓ Flow rates: 0.004 to 315 mL/min
- ✓ Intuitive icon-driven programming
- ✓ Tubing calibration for accuracy
- ✓ Single- or dual-channel models



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Masterflex® L/S® Variable-Speed Economy Modular Pumps

Versatile with a wide flow range and simple controls

- Separate motor and controller are connected via a 6-ft (1.9 m) cable—place components where convenient or where space allows
- Single-turn speed control and on/off switch with green power indicator—maintain speed setting while turning pump on and off
- The 1/10-hp reversible motor has soft start and back EMF for $\pm 2\%$ speed control
- Painted steel housing is IP33 rated for protection from vertically falling water
- 115 VAC models are ETL and cETL listed; 230 VAC models are CE marked in compliance with EU standards



NEW



FEATURES

- ✓ Flow rates: 0.06 to 3400 mL/min
- ✓ Variable speed—1 to 100 or 6 to 600 rpm
- ✓ Convenient modular design

MASTERFLEX®

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CERTIFIED SUPPLIER



System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	4.8 to 480 mL/min	Easy-Load® 3 77800-60	C-Flex® ULTRA L/S 16 tubing 06434-16 10 ft (3 m)	Modular drive 07559-00 6 to 600 rpm	115 VAC, 50/60 Hz	AL-77913-02	
				Modular drive 07559-05 6 to 600 rpm	230 VAC, 50/60 Hz	AL-77913-07	
	17 to 1700 mL/min	Easy-Load II 77200-62	C-Flex ULTRA L/S 24 tubing 06434-24 10 ft (3 m)	Modular drive 07559-00 6 to 600 rpm	115 VAC, 50/60 Hz	AL-77913-12	
				Modular drive 07559-05 6 to 600 rpm	230 VAC, 50/60 Hz	AL-77913-17	

Masterflex® L/S® Variable-Speed Economy Console Pumps

Economical and versatile variable-speed drive with a wide flow range

MASTERFLEX®

- Pump head flow rate: 0.42 to 2900 mL/min; cartridge head flow rate: 0.0035 to 1700 mL/min
- Separate single-turn speed control and on/off switch with green power indicator. Maintain speed setting while turning on/off
- The 1/20-hp unidirectional motor has soft start and back EMF for $\pm 5\%$ speed control. Smooth operation and long service life.

FEATURES

- ✓ Flow rates: 0.0035 to 2900 mL/min
- ✓ Variable speed from 7 to 600 rpm
- ✓ Low-flow metering or general fluid transfer



System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	16 to 480 mL/min	Easy-Load® 3 77800-60	C-Flex® ULTRA L/S 16 tubing 06434-16 10 ft (3 m)	Console drive 07554-90 20 to 600 rpm	115 VAC, 50/60 Hz	AL-77910-30	
				Console drive 07554-95 20 to 600 rpm	230 VAC, 50/60 Hz	AL-77910-35	
	56 to 1700 mL/min	Easy-Load II 77200-62	C-Flex ULTRA L/S 24 tubing 06434-24 10 ft (3 m)	Console drive 07554-90 20 to 600 rpm	115 VAC, 50/60 Hz	AL-77910-20	
				Console drive 07554-95 20 to 600 rpm	230 VAC, 50/60 Hz	AL-77910-25	

Disposable Transfer Pipettes

Easily draw and deliver solutions

- Deliver repeatable, uniform drops
- Eliminate cross-contamination with these low-cost, disposable LDPE pipettes



Key	Description	Graduations		Bulb draw	Total capacity	Drops per mL	Length in. (mm)	Qty/ pk	Catalog number	Price/ pk
		Increments	Maximum							
A	Small bulb, graduated	0.1 mL	0.3 mL	0.8 mL	1.5 mL	21	4 ⁵ / ₈ (117)	500	AL-06226-37	
B	Small bulb, graduated	0.25 mL	1 mL	2.2 mL	3.9 mL	25	5 ¹ / ₂ (140)	500	AL-06226-41	
C	Large capacity, thin stem	—	—	3.3 mL	4.6 mL	25	6 ¹ / ₈ (156)	500	AL-06226-65	
D	Large capacity, fine tip	—	—	3.5 mL	5.8 mL	50	6 ¹ / ₄ (159)	500	AL-06226-67	
E	Large capacity, graduated	0.25 mL	1 mL	3.4 mL	5.8 mL	25	6 ¹ / ₈ (156)	500	AL-06226-61	
F	Large capacity, extra-long stem	—	—	2.3 mL	6.0 mL	25	9 (229)	400	AL-06226-69	
G	Large capacity, graduated	0.5 mL	3.0 mL	3.2 mL	7.5 mL	20	6 ¹ / ₈ (156)	500	AL-06226-63	
H	Jumbo bulb, long stem	—	—	8.0 mL	15.0 mL	19	6 ¹ / ₈ (156)	250	AL-06226-51	

Unitary Droppers, LDPE

No more cleaning dispensers

Thermo Scientific™ Nalgene™ Unitary Dropper is a one-piece molded dropper that delivers 30 to 35 drops per mL. Tube length is 68 mm.

Disposable Droppers are one-piece molded droppers with bellows-action bulbs. Use for infectious or toxic substances.

Capacity (mL)	Qty/pk	Catalog number	Price/pk
Nalgene unitary dropper			
1.6	100	AL-06096-00	
Disposable droppers			
1.5	100	AL-06223-15	
5.0	100	AL-06223-25	



Unitary dropper
06096-00



Disposable
dropper 06223-15

Cole-Parmer® Single-Channel Pipettors

Don't sacrifice performance for price

- Ergonomic, lightweight design with soft plunger movement minimizes hand fatigue

Pipettors feature streamlined, low-pressure tip ejector for easy access to narrow containers. They facilitate last drop dispensing and reverse pipetting technique with two-stage plunger operation for blow-out. Easy to calibrate and disassemble for routine servicing or autoclaving. Adjustable-volume pipettors feature quick, easy click-stop, digital volume settings. Individually calibrated in accordance with DIN 12650 Standards and supplied with a computer-generated calibration document supplied by the manufacturer and calibration tool.

Specifications

Tip ejector: tip ejector with blow-out step **Autoclavable:** autoclavable tip cone and lower section assembly

Volume	Increments	Accuracy	Reproducibility	Catalog number	Price
Fixed-volume pipettors					
100 µL	—	±0.3%	±0.2%	AL-21600-00	
200 µL				AL-21600-02	
500 µL				AL-21600-04	
1000 µL				AL-21600-06	
5000 µL				AL-21600-08	
Adjustable-volume pipettors					
0.1 to 10 µL	0.1 µL	±2.5%	1.33%	AL-21600-10	
5 to 50 µL	1.0 µL	±1.3%	0.7%	AL-21600-12	
20 to 100 µL	1.0 µL	±1.1%	0.4%	AL-21600-14	
40 to 200 µL	1.0 µL	±0.9%	0.3%	AL-21600-16	
200 to 1000 µL	10.0 µL	±0.8%	0.2%	AL-21600-18	
1 to 5 mL	100.0 µL	±0.6%	0.2%	AL-21600-20	



Tips

Volume (µL)	Qty/ pk	Catalog number	Price/ pk
0.2 to 10	1000	AL-25711-06	
	1000	AL-25711-12	
0 to 200	960	AL-25711-14	
50 to 1000	1000	AL-18889-08	
	1000	AL-25711-70	
1000 to 5000	500	AL-25711-71	
	250	AL-25711-72	

Low-Profile Magnetic Stirrer

Continuous operation without the heat—ideal for heat-sensitive samples

- High chemical resistance with ABS plastic design
- Low-profile housing for limited-height locations



CE

Speed range	Max stirring capacity	Power		Catalog number	Price
		VAC	Hz		
10 to 1100 rpm	5 L	120/240	50/60	AL-86579-10	

Cole-Parmer® Battery-Powered Magnetic Stirrer

Portable—ideal for field analysis

- Stepless speed control to 700 rpm

Take this compact, battery-powered magnetic stirrer anywhere or use it in the lab and eliminate the need for cumbersome extension cords. Stirrer features stepless speed control knob, corrosion-resistant epoxy-coated metal case, nonskid rubber top plate, and four rubber feet.

What's included: two AA batteries.

Cole-Parmer®



Top plate		Speed range	Max load	Max stirring capacity	Catalog number	Price
Dimensions	Material					
3 3/4" x 3 3/4" (9.5 x 9.5 cm)	Metal	200 to 700 rpm	10 lb (4.5 kg)	2.5 L	AL-04804-01	

Cole-Parmer® Stirrers and Stirring Hot Plates

Reduce clutter with space-saving design

NEW

- Heat one large vessel or several small ones—easily accommodate four 250-mL beakers
- Be safe—flashing light warns when top plate is hot (above 50°C), even when unplugged
- Conveniently store unit on its side—minimize storage space needed
- Choose ceramic top for better chemical resistance and higher temperatures



04801-64

Cole-Parmer®

CE

Advanced analog stirring hot plates feature an innovative LED temperature indicator scale, which lights up in colored increments as the top plate heats. Compatible with the optional digital temperature controller for precise sample temperatures.

Top plate		Temperature range	Stirring		120 VAC, 60 Hz		230 VAC, 50 Hz	
Dimensions	Material		Speed range	Max capacity†	Catalog number	Price	Catalog number	Price
Analog stirrers								
6" x 6" (15 x 15 cm)	Ceramic	—	100 to 2000 rpm	15 L	AL-04801-50		AL-04801-52	
	Stainless steel	—			AL-04801-54		AL-04801-56	
Advanced analog stirring hot plates								
6" x 6" (15 x 15 cm)	Ceramic	Ambient to 842°F (450°C)	100 to 2000 rpm	15 L	AL-04801-60		AL-04801-62	
	Coated aluminum	Ambient to 617°F (325°C)			AL-04801-65		AL-04801-67	
Advanced digital stirring hot plates								
6" x 6" (15 x 15 cm)	Ceramic	Ambient to 842°F (450°C)	100 to 2000 rpm	15 L	AL-04801-64		AL-04801-66	
	Coated aluminum	Ambient to 617°F (325°C)			AL-04801-68		AL-04801-70	

†Based on water contained in a 20-L glass flat-bottom flask.

AL-04801-80 Digital temperature controller for advanced models. Use as a temperature controller from 20 to 200°C or as a digital thermometer from -4 to 325°C.

Cole-Parmer® Mono-Mold® Stir Bars

- Resist spin out at high speeds
- Super-strong alnico V magnets remain coupled to drive magnets even at high speeds
- Chemically inert, low-friction, leakproof PTFE coating provides smooth spinning and maximum energy transfer



Size		With spinning ring		Without spinning ring	
Length	Diameter†	Cat. no.	Price	Cat. no.	Price
7/16" (11.1 mm)	3/16" (4.8 mm)	—	—	AL-04775-10	
1/2" (12.7 mm)	5/16" (7.9 mm)	AL-08548-00		AL-04770-20	
5/8" (15.9 mm)	5/16" (7.9 mm)	AL-08549-00		AL-04770-30	
1" (25.4 mm)	3/8" (9.5 mm)	AL-08550-00		AL-04770-40	
1 1/2" (38.1 mm)	3/8" (9.5 mm)	AL-08551-00		AL-04770-50	
2" (50.8 mm)	3/8" (9.5 mm)	AL-08552-00		AL-04770-60	
2 1/2" (63.5 mm)	3/8" (9.5 mm)	AL-04775-75		—	—
2 1/2" (63.5 mm)	1/2" (12.7 mm)	—	—	AL-04770-70	
3" (76.2 mm)	1/2" (12.7 mm)	AL-04612-30		AL-04612-40	

†Diameter given does not include the diameter of the spinning ring.

Digi-Sense® General-Purpose Digital Pocket Thermometers

Don't risk accuracy—precalibrated

- 304 stainless steel penetration stem
- All include a protective case with pocket clip and battery

A. Pen-Style Pocket Thermometer offers fast response and laboratory accuracy. Features probe guard, Min/Max/Hold, °F/°C switchable ranges and auto power-off to conserve battery life. Includes a NIST-traceable calibration report with data supplied by InnoCal.

B. Waterproof Thermometer features a dishwasher-safe sealed case. Features °F/°C switchable ranges, a Min/Max button, and display updates every second. Use ON/OFF button to conserve battery life.

C. Long-Stem Thermometer has an 8" or 11½" long stem, °F/°C switchable ranges, and display updates every second. Use ON/OFF button to conserve battery life.

D. NIST-Traceable Pen-Style Thermometer has a unique, flat-profile design. Probe guard snaps into handle to extend the overall length to 10¾" making it ideal for hard-to-reach locations. Features °F/°C switchable ranges, Hold button, display that updates every second, and an ON/OFF button to conserve battery life.



Key letter	Range	Resolution	Accuracy†	Probe size	Catalog number	Price
A	–40 to 482°F (–40 to 250°C)	0.1°F (0.1°C)	1.5% ± 2° full scale	4.6" L x 0.16" dia	AL-20250-33	
B	14 to 392°F (–10 to 200°C)	0.1° up to 199.9°; 1° above 200°	±1.8°F (±1.0°C)	5" L x 0.14" dia	AL-90003-00‡	
				10" L x 0.14" dia	AL-90205-05	
C	–58 to 302°F (–50 to 150°C)	0.1° from –19 to 199.9°; 1° outside this range	±1.8°F (±1°C)	8" L x 0.14" dia	AL-90225-15	
	–58 to 302°F (–50 to 150°C)	0.1° from –19 to 199.9°; 1° outside this range	±0.5°F (±0.2°C)	8" L x 0.14" dia	AL-90205-01	
	–58 to 572°F (–50 to 300°C)	0.1° from –19 to 199.9°; 1° outside this range	±1.8°F (±1°C)	11.5" L x 0.14" dia	AL-94460-40	
	–58 to 302°F (–50 to 150°C)	0.1° from –19 to 199.9°; 1° outside this range	±0.5°F (±0.2°C)	11.5" L x 0.14" dia	AL-90205-02	
D	–58 to 572°F (–50 to 300°C)	0.1° from –20 to 200°F; 1° outside this range	±3°F (1.5°C)	3.5" L x 0.14" dia	AL-90205-15	

†Basic accuracy shown, full accuracy available online.

‡Model 90003-00 does not come precalibrated.

AL-17003-00 NIST-traceable recalibration with data for pocket thermometers

Digital Stopwatches

Time the length of any event or activity

A. Oakton® Economical Stopwatch

- Separate start/stop and reset buttons
- Alarm clock shows time of day and day of week
- Split-mode: freeze the split-time display while total timing continues
- Water, dust, and shock-resistant



A, C

B. Cole-Parmer® ½"-Big-Digit Stopwatch

- Displays time-of-day, date, and day of week
- Keep track of time with time of day alarm
- Includes clip and hook and loop strip for easy attaching
- Water, dust, and shock-resistant



B

C. Oakton NIST-Traceable Stopwatch

- Count on accurate timing—NIST-traceable
- View split-time while total timing continues
- Alarm clock shows time of day and day of week
- Water, dust, and shock-resistant

D. Cole-Parmer Waterproof/Shockproof Stopwatch

- Get waterproof operation to three atmospheres
- Shock-proof case is ideal for lab or plant use
- Displays time of day, date, and day of week
- Time-of-day alarm



D

Digital stopwatches include: neck cord, battery, and NIST-traceable calibration report supplied by the manufacturer (except model 35002-11).

Key	A	B	C	D
Timing modes	Single-event, lap, cumulative split			
Timing capacity	24 hours			
Resolution	0.01/1 sec†			
Accuracy	±5 sec/day	±0.001%	±5 sec/day	±0.01
Count direction	Up	Up	Up	Up
Display	LCD, ¾"H	LCD, ¾"H	LCD, ¾"H	LCD, ¼"H
Clock alarm	1 min beep	1 min beep	1 min beep	1 min beep
Battery included	1.5 V button cell	1.5 V button cell	1.5 V button cell	3 V button cell
Cat. no.	AL-35002-11	AL-94460-28	AL-35002-13	AL-94460-55
Price				

†Resolution is 0.01 second for the first 30 minutes of timing and 1 second thereafter.

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