



Pages  
2 & 27

Oakton® EcoTestr™  
Pocket Testers  
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Page 35

# Water Quality Catalog

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Pocket Testers**  
pH | Conductivity | TDS

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**Find out more!**

See pages 2 and 27

# Look Inside for...

**Oakton®  
EcoTestr™ pH 2  
Pocket Tester**

★★★★★  
Customer Approved



Page 2



**Oakton®  
TDSTestr® II  
Pocket Tester**

★★★★★  
Customer Approved

Page 28

**NEW**  
**Oakton®  
Waterproof  
DO 450 Meter**

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**Hach® 2100Q  
Turbidity Meter**

★★★★★  
Customer Approved



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## Oakton® Waterproof EcoTestr™ pH 2 Pocket Meter

### No more replacing electrodes

- Easy to use—simply dip and read results on the ergonomic 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.



Model	EcoTestr pH 2
Catalog number	<a href="#">JM-35423-10</a>
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	

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

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

**New Lower Price!**  
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## 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.



Model	Standard	Advanced	Elite	
Catalog number	<a href="#">JM-95941-02</a>	<a href="#">JM-95941-04</a>	<a href="#">JM-95941-06</a>	
Range	pH	2.0 to 12.0	2.0 to 12.0	
	Temperature	—	—	5 to 40°C
Resolution	pH	0.1	0.1	0.01
	Temperature	—	—	0.1°C
Accuracy	pH	±0.1	±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				

[JM-95941-52](#) Replacement reference electrode, KCl gel-filled

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

## 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
- Make note of open date so you know the expiration date
- NIST-traceable calibration report from an ISO Guide 34 and ISO 17025 accredited laboratory included with each 17-oz (500-mL) bottle
- Store at room temperature

**What's included:** Certificate of Analysis, step-by-step calibration instructions, temperature compensation chart, and SDS.

**NEW**



pH	Catalog number	Price
4.01	<a href="#">JM-00651-20</a>	
7.00	<a href="#">JM-00651-22</a>	
10.00	<a href="#">JM-00651-24</a>	

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# 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
<b>Catalog number</b>	<b>JM-35634-10</b>	<b>JM-35634-20</b>	<b>JM-35634-30</b>
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)		
<b>Price</b>			

### Accessories

**JM-35624-38** Replacement pH sensor

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

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



pH

Testers



## 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	<b>JM-35624-70</b>	
Waterproof pHTestr 10	<b>JM-35634-70</b>	
Waterproof pHTestr 20	<b>JM-35634-80</b>	
Waterproof pHTestr 30	<b>JM-35634-90</b>	



## 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



### Specifications

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

### 1. Tester

Description	Catalog number	Price
pHTestr 10 BNC pocket meter	<a href="#">JM-35634-14</a>	

[JM-17106-20](#) NIST-traceable calibration with data

### 2. Electrodes

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

## 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.



“Lightweight and portable.”



### Specifications

<b>Range:</b> -999 mV to 1000 mV	<b>Calibration:</b> ±150 mV offset adjustment
<b>Resolution:</b> 1 mV	<b>Power:</b> four 1.5 V button cell batteries (included)
<b>Accuracy:</b> ±2 mV	
<b>Temperature compensation:</b> none	



Description	Catalog number	Price
ORPTestr 10 pocket meter	<a href="#">JM-35650-10</a>	
ORPTestr 10 BNC pocket meter	<a href="#">JM-35650-14</a>	

### Accessories

- [JM-35650-09](#) Replacement sensor for 35650-10
- [JM-59001-75](#) ORP single-junction electrode for 35650-14
- [JM-59001-77](#) ORP double-junction electrode for 35650-14
- [JM-05478-60](#) YSI® Zobell solution, 1.25 g
- [JM-09377-16](#) Replacement batteries, 1.5 V. Pack of 6

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# 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 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.



Model	PCTestr 35	PTTestr 35	PCSTestr 35	
<b>Catalog number</b>	<a href="#">JM-35425-00</a>	<a href="#">JM-35425-05</a>	<a href="#">JM-35425-10</a>	
<b>Range</b>	pH	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
<b>Resolution</b>	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)
	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
<b>Accuracy</b>	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)
	pH	±0.1	±0.1	±0.01
	Conductivity	1% full scale	—	1% full-scale
<b>Calibration</b>	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)
<b>Temperature compensation</b>	Automatic or manual, 32 to 122°F (0 to 50°C)			
<b>Buffer recognition</b>	USA: 1.68, 4.01, 7.00, 10.01, 12.45; NIST: 1.68, 4.01, 6.86, 9.18, 12.45			
	Four 1.5 V button cell batteries (included)			
<b>Power</b>	Four 1.5 V button cell batteries (included)			
<b>Price</b>				

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

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

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

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



pH

Testers



## 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



Spear tip fits into microcentrifuge tubes.

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.



#### 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	<a href="#">JM-35634-40</a>	

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

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

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

## Oakton® pH 5+ and pH 6+ Meters

### Get high accuracy at low prices

- Autobuffer recognition for up to five-point calibration provides  $\pm 0.01$  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

**OAKTON**

ISO9001:2008 CERTIFIED SUPPLIER CE Meter only

#### Specifications

Mode	pH	mV (pH 6+ only)	Temperature
Range	0.00 to 14.00 pH	$\pm 1000$ mV or rel mV	0 to 100.0°C
Resolution	0.01 pH	1 mV	0.1°C
Accuracy	$\pm 0.01$ pH	$\pm 2$ mV	$\pm 0.5^\circ\text{C}$
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)	$\pm 20$ 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	<a href="#">JM-35613-50</a>		<a href="#">JM-35613-51</a>	
pH 6+		<a href="#">JM-35613-20</a>		<a href="#">JM-35613-41</a>	
pH 5+	Meter with probe	<a href="#">JM-35613-52</a>		<a href="#">JM-35613-53</a>	
pH 6+		<a href="#">JM-35613-22</a>		<a href="#">JM-35613-42</a>	
pH 5+	Meter kit	<a href="#">JM-35613-54</a>		<a href="#">JM-35613-55</a>	
pH 6+		<a href="#">JM-35613-24</a>		<a href="#">JM-35613-44</a>	

#### Accessories

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

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

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

**JM-35613-05 Replacement ATC probe,** stainless steel

**JM-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
- $\pm 1999$  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.



**OAKTON**

ISO9001:2008 CERTIFIED SUPPLIER CE Meter only

#### Specifications

Mode	Ion	mV	pH	Temperature
Range	0.01 to 1999 ppm	$\pm 500$ 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	$\pm 1$ mV	$\pm 0.01$	$\pm 0.5^\circ\text{C}$
Calibration	2 to 3 points: 0.1; 1; 10; 1000 ppm (minimum 2 points)	$\pm 50$ 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	<a href="#">JM-35613-80</a>		<a href="#">JM-35613-81</a>	
	Meter kit	<a href="#">JM-35613-82</a>		<a href="#">JM-35613-83</a>	

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

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

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

**JM-09376-00 Replacement batteries,** AAA. Pack of 12

**JM-17106-20 NIST-traceable calibration** with data for pH meter

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[ColeParmer.com/pHMeters](http://ColeParmer.com/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) for accuracy even in fluctuating temperatures. Select temperature readout from °C or °F to suit your application.

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.



Description	Meter only	Meter with probe	Meter kit
<b>Model</b>	<b>pH 150</b>		
<b>Catalog number</b>	<a href="#">JM-35614-32</a>	<a href="#">JM-35614-30</a>	<a href="#">JM-35614-90</a>
<b>Precalibrated catalog number</b>	<a href="#">JM-35614-34</a>	<a href="#">JM-35614-33</a>	<a href="#">JM-35614-91</a>
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)		
<b>Price</b>			
<b>Precalibrated price</b>			

### Accessories

[JM-35808-71](#) Replacement "All-in-One" combination pH electrode with built-in ATC; single-junction, epoxy body, BNC connector

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

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

[JM-35614-51](#) Hard carrying case, for 150/450 meters

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

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

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



Mount to wall to save valuable bench space

pH

Handheld Meters

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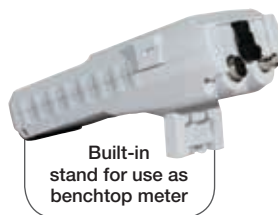
# Oakton® Waterproof pH 450 Meter

## Eliminate difficulty in reading measurements

- Use it in any environment with backlit display and rugged design
- 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
- 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

OAKTON®

**NEW**



Built-in stand for use as benchtop meter

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.



Meter only

Description	Meter only	Meter with probe	Meter kit
<b>Model</b>	<b>pH 450</b>		
<b>Catalog number</b>	<a href="#">JM-35618-32</a>	<a href="#">JM-35618-30</a>	<a href="#">JM-35618-90</a>
<b>Precalibrated cat. no.</b>	<a href="#">JM-35618-34</a>	<a href="#">JM-35618-33</a>	<a href="#">JM-35618-91</a>
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); universal power adapter (optional)		
<b>Price</b>			
<b>Precalibrated price</b>			

**Save time, save money!**

**Choose Precalibrated**

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

Precalibrated by **INNOCAL**  
INNOVATIVE CALIBRATION SOLUTIONS

### Accessories

[JM-35808-71](#) Replacement "All-in-One" pH electrode with built-in ATC; single-junction, epoxy body, BNC connector

[JM-35808-72](#) "All-in-One" pH electrode with built-in ATC; double-junction, epoxy body, BNC connector

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

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

[JM-35614-51](#) Hard carrying case, for 150/450 meters

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

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

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

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

[JM-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.



Description	Meter with combination probe	Meter with separate probes	Meter kit with combination probe	Meter kit with separate probes
<b>Model</b>	<b>pH/CON 450</b>			
<b>Catalog number</b>	<a href="#">JM-35630-10</a>	<a href="#">JM-35630-12</a>	<a href="#">JM-35630-80</a>	<a href="#">JM-35630-90</a>
<b>Precalibrated catalog number</b>	<a href="#">JM-35630-11</a>	<a href="#">JM-35630-13</a>	<a href="#">JM-35630-81</a>	<a href="#">JM-35630-91</a>
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	USB or RS-232			
Power	Stores up to 500 data sets			
Price	Two AA batteries (included), 500 hours (without backlight); AC adapter (optional)			
Precalibrated price				

**NEW**



pH

Handheld Meters

### Accessories

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

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

**JM-35630-51 Replacement combination pH/CON/ATC probe**

**JM-35608-55 Conductivity cell, K = 0.1**

**JM-35608-50 Replacement conductivity cell, K = 0.1**

**JM-35608-51 Conductivity cell, K = 1.0**

**JM-35614-50 Replacement Grip-Clip holder**

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

**JM-35630-53 Data cable for USB connectivity**

**JM-35420-01 Data cable for RS-232 connectivity**

**JM-35420-72 Optional AC adapter, 110/220 VAC**

**JM-09376-01 Replacement batteries, AA. Pack of 4**

**JM-17106-20 NIST-traceable calibration with data for pH meter**

**JM-17090-30 NIST-traceable calibration with data for conductivity meter**

## 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

**NEW**



**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	
<b>Catalog number</b>	<b>JM-59200-02</b>	<b>JM-59200-04</b>	
<b>Range</b>	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)	
<b>Resolution</b>	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	
<b>Accuracy</b>	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)		
<b>Price</b>			

- [JM-59200-06](#) Replacement pH probe with temperature
- [JM-59200-09](#) Replacement conductivity probe, K = 1
- [JM-59200-11](#) Conductivity probe, K = 0.1
- [JM-59200-13](#) Conductivity probe, K = 10
- [JM-09376-01](#) Replacement batteries, AA. Pack of 4

## Oakton® Waterproof pH/DO 450 Meter

**NEW**

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.



Description	Meter only	Meter kit
<b>Model</b>	<b>PD 450</b>	
<b>Catalog number</b>	<b>JM-35632-32</b>	<b>JM-35632-80</b>
<b>Precalibrated cat. no.</b>	<b>JM-35632-34</b>	<b>JM-35632-81</b>
<b>Range/Resolution</b>	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)
<b>Accuracy</b>	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	
<b>Price</b>		
<b>Precalibrated price</b>		

[JM-59002-75](#) "All-in-One" pH electrode with built-in ATC. Single-junction; epoxy body; BNC connector

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

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

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

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

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

[JM-35418-83](#) Optional adapter, 110/220 VAC

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

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

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

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



# 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.



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	<a href="#">JM-58825-06</a>	<a href="#">JM-58825-08</a>	<a href="#">JM-58825-16</a>	<a href="#">JM-58825-18</a>	<a href="#">JM-58825-64</a>	<a href="#">JM-58825-66</a>
Range	pH	-2.00 to 16.00	-2.00 to 20.000	-2.000 to 20.001	-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
	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
	mV	0.1	0.1	0.1	0.1	0.1
	ISE	—	—	—	—	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
	Temperature	±0.1	±0.1	±0.1	±0.1	±0.1
Temp. compensation	Automatic or manual	Automatic or manual	Automatic or manual	Automatic or manual	Automatic or manual	Automatic or manual
Calibration points	Up to 3	Up to 3	Up to 5	Up to 5	Up to 5	Up to 5
Buffer recognition	USA, NIST, and DIN	USA, NIST, and DIN	USA, NIST, and DIN	USA, NIST, and DIN	USA, NIST, and DIN	USA, NIST, and DIN
Data logging	50 points	50 points	2000 points with time-and-date stamp	2000 points with time-and-date stamp	2000 points with time-and-date stamp	2000 points with time-and-date stamp
Output	—	—	RS-232, USB	RS-232, USB	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	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						



pH

Handheld Meters

### Accessories

- [JM-58825-52](#) Hard carrying case
- [JM-58825-53](#) Protective meter armor
- [JM-58822-03](#) Universal AC power adapter
- [JM-05719-14](#) Orion Triode pH/ATC electrode; refillable, epoxy body
- [JM-05718-28](#) ROSS™ Triode pH/ATC electrode
- [JM-55350-68](#) pH buffer kit. Includes 473 mL each of 4, 7, 10 buffers and storage solution, and 60 mL of cleaning solution
- [JM-09376-01](#) Replacement batteries, AA. Pack of 4
- [JM-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	<a href="#">JM-55350-26</a>		<a href="#">JM-55350-28</a>	
4.01	<a href="#">JM-55350-40</a>		<a href="#">JM-55350-42</a>	
5.00	—	—	<a href="#">JM-55350-38</a>	
6.86	<a href="#">JM-55350-54</a>		<a href="#">JM-55350-56</a>	
7.00	<a href="#">JM-55350-44</a>		<a href="#">JM-55350-46</a>	
9.18	<a href="#">JM-55350-58</a>		<a href="#">JM-55350-60</a>	
10.01	<a href="#">JM-55350-48</a>		<a href="#">JM-55350-52</a>	
12.46	<a href="#">JM-55350-62</a>		<a href="#">JM-55350-64</a>	

- [JM-55350-66](#) ROSS All-in-One pH buffer kit
- [JM-55350-68](#) Standard All-in-One pH buffer kit

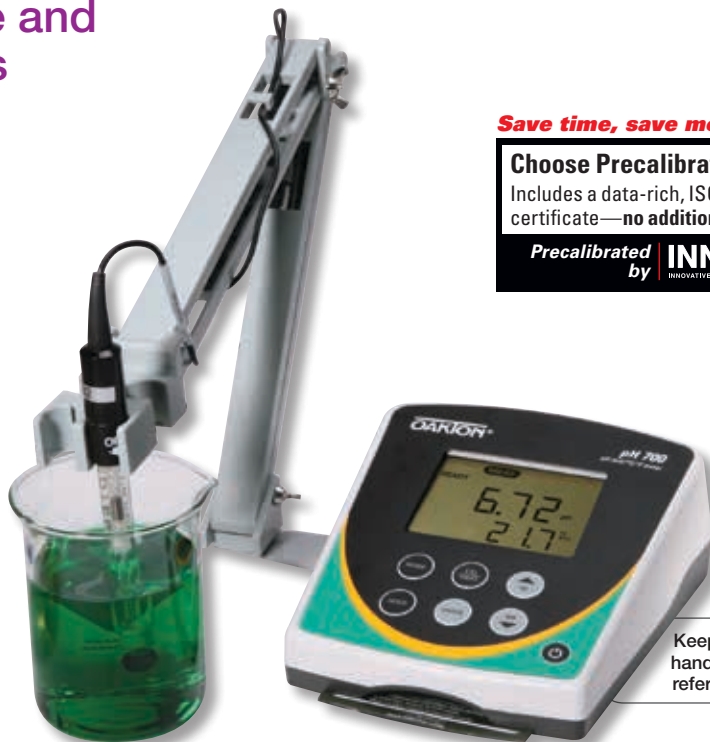
## Oakton® Benchtop pH 700 and Ion 700 Meters

### 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.



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Keep procedures handy with quick-reference pull out

### Search

For our complete selection of pH/ion meters, go to...  
[ColeParmer.com/pHMeters](http://ColeParmer.com/pHMeters)

OAKTON®

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CE

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	<a href="#">JM-35419-00</a>		<a href="#">JM-35419-01</a>	
pH 700	Meter with "all-in-one" pH/ATC electrode	<a href="#">JM-35419-03</a>		<a href="#">JM-35419-05</a>	
Ion 700		<a href="#">JM-35419-23</a>		<a href="#">JM-35419-27</a>	
pH 700	Meter with double-junction pH electrode, ATC probe, and removable electrode holder	<a href="#">JM-35419-10</a>		<a href="#">JM-35419-11</a>	
Ion 700		<a href="#">JM-35419-20</a>		<a href="#">JM-35419-24</a>	
pH 700	Meter with removable electrode holder	<a href="#">JM-35419-12</a>		<a href="#">JM-35419-15</a>	
Ion 700		<a href="#">JM-35419-22</a>		<a href="#">JM-35419-26</a>	

### Accessories

[JM-59001-65](#) Combination pH electrode; single junction, gel-filled, epoxy body

[JM-59001-70](#) Combination pH electrode; double junction, gel-filled, epoxy body

[JM-35811-71](#) "All-in-one" combination pH electrode; single junction, gel-filled, epoxy body

[JM-35805-04](#) Replacement combination pH electrode; double junction, refillable, glass body

[JM-35613-13](#) Replacement ATC probe, SS

[JM-35420-54](#) Replacement electrode arm

[JM-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



Meter only

### Specifications

**Conductivity cell constant:** fixed at K = 1.0 cm<sup>-1</sup>

**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	<a href="#">JM-35413-20</a>		<a href="#">JM-35413-21</a>	
	Meter with pH and conductivity/temperature probes	<a href="#">JM-35413-00</a>		<a href="#">JM-35413-01</a>	
PC 2700	Meter only	<a href="#">JM-35414-20</a>		<a href="#">JM-35414-21</a>	
	Meter with pH and conductivity/temperature probes	<a href="#">JM-35414-00</a>		<a href="#">JM-35414-01</a>	

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

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

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

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

## 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

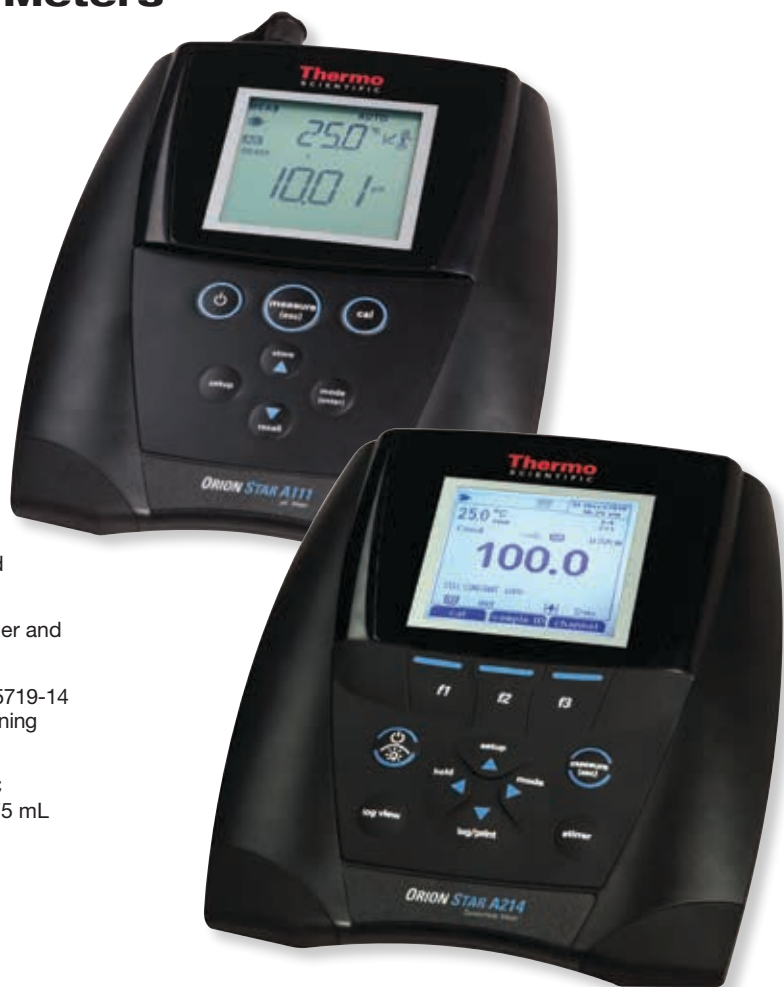
**Star A111 pH Meter** is a low-cost option that combines simplicity with accuracy—making it great for everyday pH measurements.

**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.



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	<a href="#">JM-58825-02</a>	<a href="#">JM-58825-04</a>	<a href="#">JM-58825-22</a>	<a href="#">JM-58825-24</a>	<a href="#">JM-58825-26</a>	<a href="#">JM-58825-28</a>
Parameters	pH/mV/temperature		pH/mV/temperature		pH/mV/ion/temperature	
Range	pH	-2.00 to 16.00	-2.000 to 20.000		-2.000 to 20.001	
	mV	±1600.0 mV; ±1999.9 rel mV	±2000.0 mV		±2000.0 mV	
	ISE	—	—		0 to 19999	
	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	0.1, 0.01, 0.001		0.1, 0.01, 0.001	
	mV	0.1	0.1		0.1	
	ISE	—	—		3 significant digits	
	Temperature	0.1	0.1		0.1	
Accuracy	pH	±0.01	±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	
	ISE	—	—		±0.2 mV or 0.05% of reading	
	Temperature	±0.1	±0.1		±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

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

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

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

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

[JM-05718-28](#) Ross Triode pH/ATC electrode

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

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

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



# Thermo Scientific™ Orion™ VERSA STAR™ Advanced Meter

## Configure to your exact needs

- Customize the four measurement channels as you need—meter automatically recognizes module changes
- Intuitive multilanguage interface on large, color graphic LCD
- Nonvolatile memory holds up to 2000 data points with time-and-date stamp
- Simple data transfer and meter updates with included software and USB and RS-232 ports
- Select from five interchangeable parameter modules:
  - pH/temperature
  - Conductivity/temperature
  - Dissolved oxygen/RDO/temperature
  - pH/ISE/temperature
  - pH/temperature with LogR technology (advanced electrode diagnostics and temperature-compensated pH readings)

This VERSA STAR advanced electrochemistry meter provides the versatility to operate up to four measurement channels at the same time. Simply choose from five parameter modules to customize the meter as you need it for now—and change out modules at a later time. Meter automatically recognizes the module changes, so there's no need to turn unit off.

Easily set the large, color graphic LCD to show all four channels or customize with only the information you need. Display shows readings with temperature, connections, time, date, sample ID, user ID and calibration data. Plain language screen prompts, soft keys, and a multilanguage interface which supports English, Spanish, French, Italian, German, and Chinese.

**What's included:** data analysis software, electrode arm with redesigned holder, and universal AC power adapter.



### Specifications

Range	Resolution	Accuracy	Temperature compensation
pH	pH	pH	Automatic or manual
mV	mV	mV	Calibration points
ISE	ISE	ISE	Buffer recognition
Conductivity	Conductivity	Conductivity	Data logging
TDS	TDS	TDS	Output
Salinity/Resistivity	Salinity/Resistivity	Salinity/Resistivity	Power
Dissolved oxygen (polarographic)	Dissolved oxygen (polarographic)	Dissolved oxygen (polarographic)	
Dissolved oxygen (RDO)	Dissolved oxygen (RDO)	Dissolved oxygen (RDO)	
Temperature	Temperature	Temperature	

Description	Catalog number	Price
Meter only (no module)	<a href="#">JM-58825-80</a>	
Meter with pH module	<a href="#">JM-58825-81</a>	
Meter with conductivity module	<a href="#">JM-58825-83</a>	
Meter with DO/RDO module	<a href="#">JM-58825-85</a>	
Meter with pH LogR module	<a href="#">JM-58825-93</a>	
Meter with pH/ISE module	<a href="#">JM-58825-87</a>	
Meter with two pH/ISE modules	<a href="#">JM-58825-89</a>	
Meter with pH and conductivity modules	<a href="#">JM-58825-91</a>	
Meter with pH/ISE, conductivity, and DO/RDO modules	<a href="#">JM-58825-95</a>	
Meter with two pH/ISE, one conductivity, and one DO/RDO modules	<a href="#">JM-58825-97</a>	

### Interchangeable Parameter Modules

**JM-58825-21 pH module** includes mV and temperature measurements. With 6-point calibration with automatic recognition of NIST, USA, and DIN buffers

**JM-58825-23 Conductivity module** includes TDS, salinity, resistivity, and temperature measurements. With selectable reference temperatures and 6 calibration points

**JM-58825-25 DO/RDO module** includes BOD and temperature measurements for polarographic or RDO optical probes. With barometric pressure and salinity factor corrections

**JM-58825-27 pH/ISE module** includes mV and temperature measurements. With 6-point calibration, auto-blank, timed end point, and low concentration stability

**JM-58825-29 pH with LogR module** includes mV and temperature measurements. Provides temperature-compensated pH readings without a temperature sensor. With advanced electrode diagnostics

**Search**

VERSA STAR meter kits contain all the probes, solutions, and accessories you need!  
Go to . . . [ColeParmer.com/VersaStar](http://ColeParmer.com/VersaStar)

## WTW® MultiLine 3410 Meter

### Select the features you need

- Graphical display of measured value and calibrated range for continuous measurement control
- Display one measurement channel of any sensor type
- Intelligent digital sensors automatically log on to meter once connected
- Sensor quality is displayed graphically for easy electrode diagnostics
- Waterproof USB connection for ultra-flexible data output



Single-channel meter features brilliant high-resolution color displays. Measured readings, channel, and connector position information can be read at a glance. Unique display configuration also provides diagnostic information on sensor quality—easily tell when it is time for calibration or replacement! Plain display of calibrated measurement range ensures accurate readings.

Store up to 10,000 GLP-compliant measurements. Export data via waterproof USB or mini-USB interface. Waterproof connections are ideal for portable field measurements.

**What's included:** indicated sensor, carrying case, calibration kit, stand, sample beaker, and batteries.



### Specifications

Range	pH	-2.000 to 20.000
	mV	±1250.0, ±2000.0
	Conductivity	0 to 2000 mS, 0.00 to 19.99 µS
	TDS	0 to 1999 mg/L, 0 to 199.9 g/L
	Dissolved oxygen	0.00 to 20.00 mg/L; 0.0 to 200.0 % saturation
Resolution	pH	0.1, 0.01, 0.001
	mV	0.1, 1
	Conductivity	1 mS, 0.01 µS
	TDS	1 mg/L, 0.1 g/L
	Dissolved oxygen	0.01 mg/L; 0.1 % saturation
Accuracy	Temperature	0.1
	pH	±0.004
	mV	±0.2
	Conductivity	±0.5% of reading
	TDS	±0.5% of reading
Temperature compensation	Dissolved oxygen	±0.5% of reading
	Temperature	±0.2°
	Temperature compensation	Manual or automatic (nLF)
	Data logging capabilities	10,000 data sets
	Power	Four AA batteries (included)

Description	Catalog number	Price
Meter kit with pH probe	<a href="#">JM-99575-03</a>	
Meter kit with conductivity probe	<a href="#">JM-99575-10</a>	
Meter kit with optical dissolved oxygen probe	<a href="#">JM-99575-07</a>	

**JM-99575-31** Replacement pH probe, plastic body, gel-filled, 4.9-ft (1.5-m) cable

**JM-99575-38** Replacement 4-cell conductivity probe, K = 0.475; 4.9-ft (1.5-m) cable

**JM-99575-43** Replacement optical dissolved oxygen probe, 4.9-ft (1.5-m) cable

**JM-17106-20** NIST-traceable calibration for pH meters

**JM-17090-30** NIST-traceable calibration for conductivity meters

## 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

**NEW**



OAKTON®

pH	Color	Catalog number	Price
4.00	Orange	<a href="#">JM-35850-12</a>	
7.00	Green	<a href="#">JM-35850-14</a>	
10.00	Blue	<a href="#">JM-35850-16</a>	

## 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



Cole-Parmer®

pH	Six 100-mL vials		One 500-mL bottle	
	Catalog number	Price	Catalog number	Price
4.01	<a href="#">JM-00655-30</a>		<a href="#">JM-00655-40</a>	
7.00	<a href="#">JM-00655-32</a>		<a href="#">JM-00655-42</a>	
10.01	<a href="#">JM-00655-34</a>		<a href="#">JM-00655-44</a>	

## 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

**NEW**



**What's included:** Certificate of Analysis, step-by-step calibration instructions, temperature compensation chart, and SDS.

Cole-Parmer®

pH	Catalog number	Price
4.01	<a href="#">JM-00651-20</a>	
7.00	<a href="#">JM-00651-22</a>	
10.00	<a href="#">JM-00651-24</a>	



## Oakton® pH Buffer Solutions

Keep your readings accurate with these quality buffers

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



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



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



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

**JM-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

**NEW**

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



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



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

## 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	<a href="#">JM-00653-06</a>		<a href="#">JM-35655-06</a>	
Storage	<a href="#">JM-00653-04</a>		<a href="#">JM-35655-04</a>	

## 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	<a href="#">JM-05992-47</a>	
4 KCl	<a href="#">JM-05992-48</a>	

## 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/packaging	Catalog number	Price
One-pint (475-mL) bottle	<a href="#">JM-05730-55</a>	
Five 2-oz (60-mL) bottles	<a href="#">JM-05730-57</a>	

## 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	<a href="#">JM-35617-50</a>	

## Oakton® pH Indicator Strips

Easy-to-distinguish colors at every pH interval

- Just dip and read with color comparator chart
- Choose 0.5 or 1.0 pH unit strips
- Strips measure 2¾" (7 cm) long
- Each vial contains 100 strips

**NEW**



pH range	pH interval	Catalog number	Price
0 to 14	1.0	<a href="#">JM-35850-02</a>	
5 to 9	0.5	<a href="#">JM-35850-04</a>	
0 to 6	0.5	<a href="#">JM-35850-06</a>	

## 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

**NEW**



pH range	Catalog number	Price
0 to 13	<a href="#">JM-35850-08</a>	

## 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	<a href="#">JM-59200-05</a>	

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

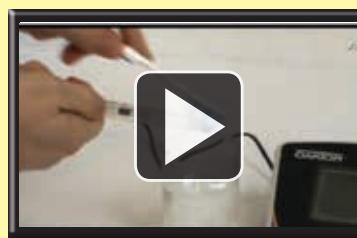
## Get fast, stable readings

- 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.

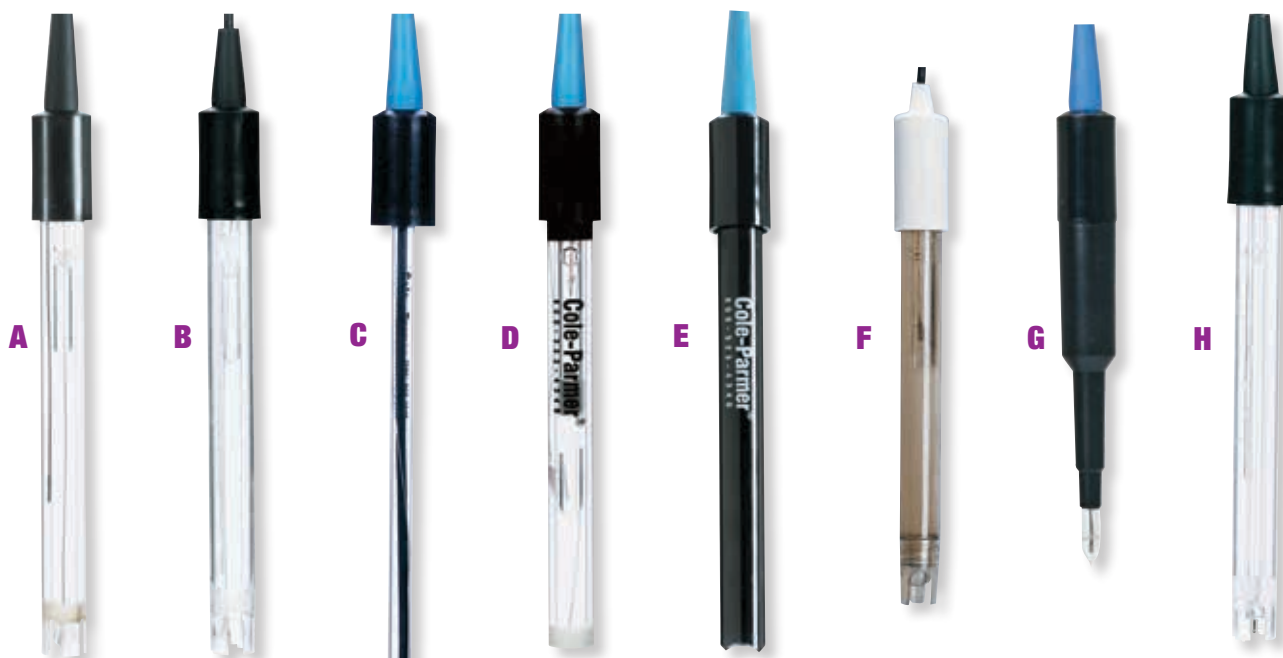
**What's included:** 3.3-ft (1-m) cable with BNC connector.

### See How to...



**Maintain it!**

[ColeParmer.com/pHmaintain](http://ColeParmer.com/pHmaintain)



**Cole-Parmer®**

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

†Use fill solution 05992-48 ††Use fill solution 05992-47

### Accessories

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

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

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

## 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<sup>+</sup> 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.

pH

Laboratory Electrodes



Cole-Parmer®

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

<sup>†</sup>Use fill solution 05992-47.

### Accessories

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

[JM-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.

**NEW**



### Questions?

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

Bob, 7 years of experience

Call: 800-343-4340

E-mail: sales@coleparmer.com



ISO9001:2008  
CERTIFIED SUPPLIER

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

#### Accessories

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

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

## Thermo Scientific™ Orion™ Glass and Epoxy-Body pH Electrodes

### Get precision measurements of virtually any sample

– Available in a variety of styles to meet your measurement needs

**Glass-Body Electrodes** are ideal for laboratory use because they perform at higher temperatures and can be cleaned with common laboratory solvents. **Epoxy-Body Electrodes** are good for applications where rough handling and breakage are a problem. Combination electrodes have either refillable or sealed (gel-filled) references, and include a 3.3-ft (1-m) cable and BNC connector.

**Half-Cell Electrodes** must be used in conjunction with a separate reference electrode. See the table below for available models. Reference electrodes are refillable; order filling solutions separately below. Reference electrodes include a 3.3-ft (1-m) cable and pin-jack connector.



ISO 9001:2008  
CERTIFIED SUPPLIER

Key	Description	Reference junction	Type	Maximum temperature	Length x dia (mm)	Catalog number	Price
<b>Glass-body combination pH electrodes</b>							
A	Research grade	Single	Refillable	194°F (90°C)	120 x 12	<a href="#">JM-05712-06</a>	
B	Research grade, semi-micro tip	Single	Refillable	194°F (90°C)	140 x 6.25	<a href="#">JM-05712-11</a>	
C	Rugged bulb	Single	Refillable	194°F (90°C)	120 x 12	<a href="#">JM-05712-16</a>	
D	Low resistance for viscous samples	Single	Refillable	194°F (90°C)	120 x 12	<a href="#">JM-05712-26</a>	
E	For dirty samples	Double	Refillable	140°F (60°C)	120 x 12	<a href="#">JM-05712-32</a>	
F	For dirty samples, semi-micro tip	Double	Refillable	194°F (90°C)	150 x 4.5	<a href="#">JM-05712-34</a>	
<b>Epoxy-body combination pH electrodes</b>							
G	General purpose	Single	Sealed	176°F (80°C)	110 x 12	<a href="#">JM-05712-41</a>	
H	General purpose, refillable	Single	Refillable	194°F (90°C)	120 x 12	<a href="#">JM-05712-71</a>	
I	General purpose, semi-micro tip	Single	Sealed	176°F (80°C)	150 x 7.5	<a href="#">JM-05711-46</a>	
J	Flat surface tip for surface testing	Single	Sealed	176°F (80°C)	110 x 12	<a href="#">JM-05711-56</a>	
K	Extra-long neck for flasks and bottles	Single	Sealed	176°F (80°C)	305 x 8	<a href="#">JM-05711-51</a>	
L	For dirty samples	Double	Sealed	140°F (60°C)	120 x 12	<a href="#">JM-05711-58</a>	
<b>Glass-body half-cell pH electrode</b>							
M	High accuracy	—	—	194°F (90°C)	110 x 12	<a href="#">JM-05711-01</a>	
<b>Epoxy-body reference electrodes</b>							
N	General purpose, sleeve-type	Single	Refillable	212°F (100°C)	110 x 3	<a href="#">JM-05710-01</a>	
O	General purpose, sleeve-type; easy cleaning	Double	Refillable	212°F (100°C)	110 x 3	<a href="#">JM-05710-10</a>	

#### Accessories

[JM-05730-42](#) Reference fill solution for combination electrodes. 4 M KCl with AgCl. Five 60-mL bottles

[JM-05730-38](#) Reference fill solution for electrode “N”; equitransferent. Five 60-mL bottles

[JM-05730-39](#) Inner chamber fill solution for electrode “O”; equitransferent. Five 60-mL bottles

[JM-05730-40](#) Outer chamber fill solution for electrode “O”; 10% KNO<sub>3</sub>. Five 60-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

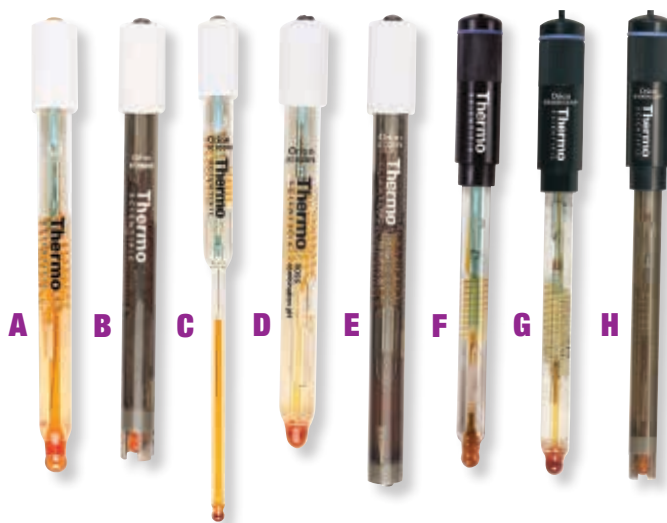
These pH electrodes offer a great mercury-free alternative to calomel electrodes—excellent for use in Tris buffer. The double-junction design protects the inner reference solution and prolongs the life of the electrode. Readings stabilize to 0.01 pH in less than 30 seconds—even with a 50°C temperature 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.



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	<a href="#">JM-05718-02</a>		F	<a href="#">JM-05718-70</a>	
For rugged general-purpose use, Tris buffers, nonaqueous solutions, and DI water	Epoxy body	120 x 12	B	<a href="#">JM-05718-07</a>		G	<a href="#">JM-05718-77</a>	
Small sample size or samples in small-diameter vessels	Glass body	165 (total); 95 x 6	C	<a href="#">JM-05718-16</a>		—	—	
Rugged general-purpose and field use, nonaqueous solutions, and DI water	Glass body with rugged bulb	120 x 12	D	<a href="#">JM-05718-27</a>		H	<a href="#">JM-05718-73</a>	
Soft, moist surfaces of solids or semisolids such as agar plates	Epoxy body, flat surface	120 x 12	E	<a href="#">JM-05718-32</a>		—	—	

### Accessories

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

[JM-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.

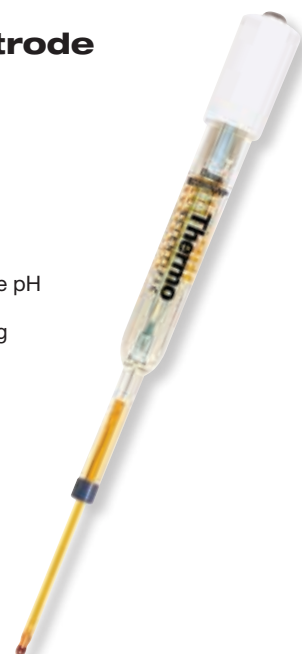


Applications	Description	pH range	Temperature range	Length x dia (mm)	Catalog number	Price
Microtubes, microwell plates, small volumes	ROSS pH microelectrode	0 to 14	32 to 212°F (0 to 100°C)	155 x 3	<a href="#">JM-05718-21</a>	

### Accessories

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

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



pH

Laboratory Electrodes

## 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.”



Epoxy solid-state chloride electrode 27504-08

Glass solid-state fluoride electrode 27502-19

Epoxy glass membrane sodium electrode 27504-30



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

†Optimal pH range for direct measurement.

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

## 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.



pH

Laboratory Electrodes



“Excellent performance.”



Type	Concentration range	Temp/ pH range†	Interferences	Catalog number	Price
<b>Electrode with loose membranes</b>					
Gas sensing	5 x 10 <sup>-7</sup> to 1.0 M (0.01 to 17,000 ppm)	0 to 50°C/ above 11	Volatile amines	<a href="#">JM-27502-00</a>	
<b>Electrode with pre-membraned cap</b>					
Gas sensing	5 x 10 <sup>-7</sup> to 1.0 M (0.01 to 17,000 ppm)	0 to 50°C/ above 11	Volatile amines	<a href="#">JM-27512-00</a>	

†Optimal pH range for direct measurement

#### Accessories

- [JM-27503-00](#) Ammonia standard, 0.1 M NH<sub>4</sub>Cl, 475-mL bottle
- [JM-27503-93](#) Ammonia standard, 1000 ppm ammonia as nitrogen, 475-mL bottle
- [JM-27503-94](#) Ammonia standard, 100 ppm ammonia as nitrogen, 475-mL bottle
- [JM-05730-51](#) Ionic strength adjustor, NaOH and EDTA, 475-mL bottle
- [JM-27503-71](#) Ammonia fill solution, 0.1 M NH<sub>4</sub>Cl, 125-mL bottle
- [JM-27503-95](#) Replacement membranes. Ten membrane tapes, one O-ring, and tweezers
- [JM-27512-95](#) Replacement membrane caps for 27512-00. Pack of 3

**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

Ion	Standards and fill solution kits			Replacement ionic strength adjustors†		
	Catalog number	Formulations for fill/standard solutions	Price	Catalog number	Solution formulation	Price
NH <sub>3</sub>	See adjacent ad for ordering information					
NH <sub>4</sub> <sup>+</sup>	<a href="#">JM-27502-53</a>	0.1 M NaCl/ 1000 ppm as N		<a href="#">JM-27503-53</a>	5 M NaCl	
Br <sup>-</sup>	<a href="#">JM-27502-55</a>	1 M KNO <sub>3</sub> / 1000 ppm as Br <sup>-</sup>		<a href="#">JM-27503-51</a>	5 M NaNO <sub>3</sub>	
Cd <sup>+</sup>	<a href="#">JM-27502-57</a>	1 M KNO <sub>3</sub> ‡		<a href="#">JM-27503-51</a>	5 M NaNO <sub>3</sub>	
Ca <sup>+2</sup>	<a href="#">JM-27502-59</a>	4 M KCl/ 1000 ppm as Ca <sup>+2</sup>		<a href="#">JM-27503-52</a>	4 M KCl	
Cl <sup>-</sup>	<a href="#">JM-27502-63</a>	1 M KNO <sub>3</sub> / 1000 ppm as Cl <sup>-</sup>		<a href="#">JM-27503-51</a>	5 M NaNO <sub>3</sub>	
Cu <sup>+2</sup>	<a href="#">JM-27502-65</a>	1 M KNO <sub>3</sub> / 1000 ppm as Cu <sup>+2</sup>		<a href="#">JM-27503-51</a>	5 M NaNO <sub>3</sub>	
CN <sup>-</sup>	—	—		—	—	
F <sup>-</sup>	<a href="#">JM-27502-69</a>	4 M KCl/ 1000 ppm as F <sup>-</sup>		<a href="#">JM-27503-58</a>	TiSAB I	
I <sup>-</sup>	<a href="#">JM-27502-73</a>	1 M KNO <sub>3</sub> / 1000 ppm as I <sup>-</sup>		<a href="#">JM-27503-51</a>	5 M NaNO <sub>3</sub>	
Pb <sup>+2</sup>	—	—		<a href="#">JM-27503-56</a>	5 M NaClO <sub>4</sub>	
NO <sub>3</sub> <sup>-</sup>	<a href="#">JM-27502-79</a>	0.1 M (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> / 1000 ppm as NO <sub>3</sub> <sup>-</sup>		<a href="#">JM-27503-60</a>	2 M (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	
ClO <sub>4</sub> <sup>-</sup>	<a href="#">JM-27502-85</a>	0.1 M (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> / 1000 ppm as ClO <sub>4</sub> <sup>-</sup>		<a href="#">JM-27503-60</a>	2 M (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	
K <sup>+</sup>	<a href="#">JM-27502-89</a>	0.1 M NaCl/ 1000 ppm as K <sup>+</sup>		<a href="#">JM-27503-53</a>	5 M NaCl	
Ag <sup>+</sup> / S <sup>-2</sup>	<a href="#">JM-27502-91</a>	1 M KNO <sub>3</sub> / 1000 ppm as Ag <sup>+</sup>		<a href="#">JM-27503-51</a>	5 M NaNO <sub>3</sub>	
Na <sup>+</sup>	<a href="#">JM-27502-93</a>	0.1 M NH <sub>4</sub> Cl/ 1000 ppm as Na <sup>+</sup>		<a href="#">JM-27503-54</a>	4 M NH <sub>4</sub> Cl with 4 M NH <sub>4</sub> OH	
X <sup>+</sup> /X <sup>-</sup>	<a href="#">JM-27502-95</a>	4 M KCl/ 0.05 M Hyamine® and 0.01 M SLS††		—	—	
Ca <sup>+2</sup> / Mg <sup>+2</sup>	<a href="#">JM-27502-99</a>	4 M KCl/ 1000 ppm as Ca <sup>+2</sup>		<a href="#">JM-27503-52</a>	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	<a href="#">JM-05718-28</a>	
B	Epoxy body, refillable	MiniDIN for Star Series pH meters	<a href="#">JM-05718-34</a>	
		8-pin DIN for older A+ meters	<a href="#">JM-05718-36</a>	
C	Epoxy body, gel-filled	MiniDIN for Star Series pH meters	<a href="#">JM-05718-44</a>	
		8-pin DIN for older A+ meters	<a href="#">JM-05718-46</a>	

### Accessories

[JM-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.

ISO9001:2008  
CERTIFIED SUPPLIER

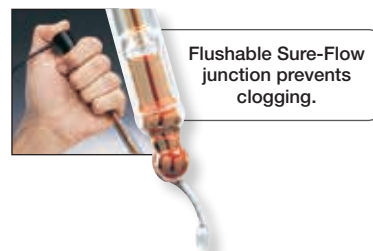
Key	Description	Reference type	Length x dia (mm)	Catalog number	Price
A	Orion, glass body	Ag/AgCl	120 x 12	<a href="#">JM-05718-55</a>	
B	Orion, epoxy body			<a href="#">JM-05718-57</a>	
C	ROSS, glass body	ROSS	120 x 12	<a href="#">JM-05718-51</a>	
D	ROSS, epoxy body			<a href="#">JM-05718-53</a>	

### Accessories

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

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

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





## Oakton® Waterproof EcoTestr™ TDS and EC Pocket Meters

### Simply dip and read

- 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
- No sensor to replace—price allows you to just replace meter

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

**New Lower Price!**  
Now through December 31, 2015



Description	EcoTestr TDS Low	EcoTestr TDS High	EcoTestr EC Low	EcoTestr EC High
<b>Catalog number</b>	<b>JM-35462-10</b>	<b>JM-35462-15</b>	<b>JM-35462-30</b>	<b>JM-35462-35</b>
Range	—	—	0 to 1990 µS	0 to 19.90 mS
Resolution	10 ppm	0.1 ppt	—	—
Accuracy	±1% FS	±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			
<b>Price</b>				

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



Conductivity

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!
- Pre-calibrated against NaCl standards for immediate use

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



Description	SaltTestr 11
<b>Catalog number</b>	<b>JM-35662-52</b>
Range	0.0 to 10.00 ppt (g/L)
Resolution	0.01 ppt
Accuracy	±1% full-scale, 0.00 to 7.00 ppt; ±3% full-scale over 7.00 ppt
Temperature compensation	Automatic
Power	Four 1.5 V batteries (included)
<b>Price</b>	

**JM-35661-17** Replacement sensor

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

**JM-09377-16** Replacement batteries. 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
- Pre-calibrated 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.



Description	EcoTestr Salt
<b>Catalog number</b>	<b>JM-35462-50</b>
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
<b>Price</b>	

**JM-09377-16** Replacement batteries. Pack of 6



## 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



Description	TDSTestr 11 Dual Range	ECTestr 11 Dual Range
Catalog number	<a href="#">JM-35662-10</a>	<a href="#">JM-35662-30</a>
Range	Conductivity: 0 to 2000 ppm; 0 to 10.0 ppt Temperature: 32 to 122°F (0 to 50°C)	0 to 2000 µS; 0 to 20.00 mS 32 to 122°F (0 to 50°C)
Resolution	Conductivity: 10 ppm; 0.10 ppt Temperature: 0.1°F (0.1°C)	10 µS; 0.10 mS 0.1°F (0.1°C)
Accuracy	Conductivity: ±1% full scale Temperature: ±0.9°F (±0.5°C)	±1% full scale ±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 alkaline batteries (included), approximately 150 hours continuous use	
Price		



Replaceable sensor

#### Accessories

[JM-35661-17](#) Replacement sensor for above pin-style testers

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

[JM-35624-45](#) Carrying case

[JM-35661-70](#) Calibration kit, includes two each of TDS calibration solution pouches (447, 1413, 2764, and 15,000 µS), two rinse water pouches, sample jar, and foam-lined carrying case. Use with any Oakton TDS/ECTestr meter

[JM-17090-30](#) NIST-traceable calibration for conductivity meter

## 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

For cup-style measurements, pour a small amount of your sample directly into the sensor cup until it overflows; for dip style, simply immerse tester tip into sample.



Features cup-style sensor—draw or grab samples anywhere!



Description	TDSTestr 11+ Multirange	ECTestr 11+ Multirange
Catalog number	<a href="#">JM-35662-15</a>	<a href="#">JM-35662-35</a>
Range	Conductivity: 0 to 200.0, 0 to 2000 ppm; 0 to 10.00 ppt Temperature: 32 to 122°F (0 to 50°C)	0 to 200.0, 0 to 2000 µS/cm; 0 to 20.00 mS/cm 32 to 122°F (0 to 50°C)
Resolution	Conductivity: 0.1, 1 ppm; 0.01 ppt Temperature: 0.1°F (0.1°C)	0.1, 1 µS/cm; 0.01 mS/cm 0.1°F (0.1°C)
Accuracy	Conductivity: ±1% full scale Temperature: ±0.9°F (±0.5°C)	±1% full scale ±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 alkaline batteries (included), approximately 150 hours continuous use	
Price		

[JM-35661-08](#) Replacement sensor for cup-style testers

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

[JM-17090-30](#) NIST-traceable calibration for conductivity meter





## Oakton® CON 6+ and TDS 6+ Meter Kits

### Easy, push-button calibration

- High accuracy at an affordable price, ±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



Rubber boot protects meter and doubles as a convenient stand

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.

**Save time, save money!**

#### Choose Precalibrated

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

Precalibrated by **INNOCAL**  
INNOVATIVE CALIBRATION SOLUTIONS



Description	CON 6+ kit	Precalibrated CON 6+ kit	TDS 6+ kit	Precalibrated TDS 6+ kit
<b>Catalog number</b>	<b>JM-35604-04</b>	<b>JM-35604-05</b>	<b>JM-35604-24</b>	<b>JM-35604-25</b>
Range	0 to 20.00, 0 to 200.0, 0 to 2000 µS; 0 to 20.00, 0 to 200.0 mS	—	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	±1% full-scale	—	±0.5°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	—	—	0.4 to 1.00 adjustable	—
Calibration points	—	5 maximum, one per range	—	—
Power	—	Four AAA batteries (included)	—	—
<b>Price</b>				

†With K = 10 probe

#### Accessories

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

## Cole-Parmer® C100 Conductivity/TDS/Salinity Meter

### Achieve basic, accurate readings affordably

**NEW**

- 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.



Model	C100	
<b>Catalog number</b>	<b>JM-59200-08</b>	
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)	
<b>Price</b>		

#### Accessories

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

Find even more online! Go to [ColeParmer.com](http://ColeParmer.com) to search more than 100,000 products.



**NEW**

## 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 as well—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). 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, 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.

**OAKTON®**

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TUV  
GS

CE

IP  
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3

Description		CON 150 meter with probe	CON 150 meter kit
Catalog number		<a href="#">JM-35607-32</a>	<a href="#">JM-35607-90</a>
Precalibrated catalog number		<a href="#">JM-35607-34</a>	<a href="#">JM-35607-91</a>
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			

#### Accessories

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

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

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

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

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

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

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

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



Built-in meter stand for steady benchtop use.

#### Save time, save money!

##### Choose Precalibrated

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

Precalibrated by **INNOCAL®**  
INNOVATIVE CALIBRATION SOLUTIONS



# 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.



**NEW**

Easy one-button data logging

Description	CON 450 meter with probe	CON 450 meter kit
Catalog number	<a href="#">JM-35608-32</a>	<a href="#">JM-35608-80</a>
Precalibrated catalog number	<a href="#">JM-35608-34</a>	<a href="#">JM-35608-81</a>
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		

Save time, save money!

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

Precalibrated by **INNOCAL**  
INNOVATIVE CALIBRATION SOLUTIONS



Convenient kit saves you money!

### Accessories

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

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

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

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

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

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

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

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

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

# Thermo Scientific™ Orion™ Star™ A-Series Conductivity and pH/CON 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
- Perfect for field testing—feature a durable, waterproof IP67-rated housing

**Star A122 Conductivity Meter** is a low-cost option that combines simplicity with accuracy. 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 Pharmacopoeia (USP) requirements.

**Meters include:** four AA batteries.

**Star A122 meter kit adds:** conductivity cell (K = 1), 1413 µS conductivity standard (five 60-mL bottles), rinse solution (10 pouches), protective armor with electrode holder, and hard carrying case.

**Star A222 meter kit adds:** conductivity cell (K = 0.475), 1413 µS conductivity standard and rinse solution (10 pouches), protective armor with electrode holder, and hard carrying case.

**Star A325 meter kit adds:** conductivity cell (K = 0.475), 1413 µS conductivity standard and rinse solution (10 pouches), ROSS™ Triode pH/ATC electrode, pH buffers (4, 7, 10) and storage solution (10 pouches), protective armor with electrode holder, and hard carrying case.



Description	A122 CON meter only	A122 CON meter kit	A222 CON meter only	A222 CON meter kit	A325 pH/CON meter only	A325 pH/CON meter kit	
Catalog number	<a href="#">JM-19704-45</a>	<a href="#">JM-19704-47</a>	<a href="#">JM-19704-16</a>	<a href="#">JM-19704-18</a>	<a href="#">JM-58825-68</a>	<a href="#">JM-58825-70</a>	
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	—	0.01 µS to 3000 mS	—	0.01 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	Four AA batteries (included) or optional AC adapter						
Price							

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

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

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

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

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

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

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

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

[JM-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.

### A. Analog Conductivity Meters

Choose from one, three, or four ranges.

### B. Analog Conductivity/Resistivity Meter

Test both standard and high-purity water samples with five conductivity ranges and one resistivity range.

### C. Analog Total Dissolved Solids Meters

Available with one or three ranges.

### D. Analog pH/Conductivity Meter

Get accurate, on-the-spot measurements of pH and conductivity with this compact meter. Meter features analog display of conductivity measurements from 0 to 10,000  $\mu\text{S}$  in four ranges. Meter also includes a pH sensor that measures pH from 2.0 to 12.0 pH.

The optional calibration kit 01489-51 includes a large foam-lined carrying case; 2-oz bottles of pH 4, 7 and 10 buffers; and a 7000  $\mu\text{S}$  conductivity standard.



Conductivity

Handheld Meters

Key		A			B	C		D
Catalog number		JM-01489-10	JM-01489-20	JM-01489-35	JM-01489-30	JM-01489-15	JM-01489-25	JM-01489-62
Range	Conductivity	0 to 5000 $\mu\text{S}$	0 to 50 $\mu\text{S}$ , 0 to 500 $\mu\text{S}$ , 0 to 5000 $\mu\text{S}$	0 to 10 $\mu\text{S}$ , 0 to 100 $\mu\text{S}$ , 0 to 1000 $\mu\text{S}$ , 0 to 10,000 $\mu\text{S}$	0 to 0.5 $\mu\text{S}$ , 0 to 5 $\mu\text{S}$ 0 to 50 $\mu\text{S}$ , 0 to 500 $\mu\text{S}$ , 0 to 5000 $\mu\text{S}$	—	—	0 to 10,000 $\mu\text{S}$
	Resistivity	—	—	—	2 to 30 M $\Omega$	—	—	—
	TDS	—	—	—	—	0 to 5000 ppm	0 to 50 ppm, 0 to 500 ppm 0 to 5000 ppm	—
	pH	—	—	—	—	—	—	2.0 to 12.0 pH
Resolution	Conductivity	0.2 $\mu\text{S}$	0.2 $\mu\text{S}$	0.2 $\mu\text{S}$	0.2 $\mu\text{S}$	—	—	0.2 $\mu\text{S}$
	Resistivity	—	—	—	0.2 M $\Omega$	—	—	—
	TDS	—	—	—	—	0.2 ppm	0.2 ppm	—
	pH	—	—	—	—	—	—	$\pm 0.2$ pH
Accuracy	Conductivity	$\pm 2\%$ full-scale	$\pm 2\%$ full-scale	$\pm 2\%$ full-scale	$\pm 2\%$ full-scale	—	—	$\pm 2\%$ full-scale
	Resistivity	—	—	—	$\pm 2\%$ full-scale	—	—	—
	TDS	—	—	—	—	$\pm 2\%$ full-scale	$\pm 2\%$ full-scale	—
	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)	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								



**Need Help Selecting?**

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

Charles, 42 years of experience

Call: 800-323-4340 E-mail: sales@coleparmer.com

#### Accessories

- JM-01489-50** Range extender increases conductivity range by 10x (for example, 0 to 50,000  $\mu\text{S}$  for model 01489-10)
- JM-01489-48** Plastic sided foam-lined carrying case
- JM-01489-51** Calibration kit for model 01489-62
- JM-01489-63** Replacement pH sensor for model 01489-62
- JM-09376-04** Replacement batteries, 9 V. Pack of 4
- JM-17090-30** NIST-traceable calibration with data for conductivity meters

## MYRON L TechPro II™ Waterproof Conductivity and pH/CON Meters

Just rinse, fill, and read

- Waterproof housing even floats if dropped in water
- Simple, push-button calibration
- Don't worry about fluctuating temperatures—automatic temperature compensation to 77°F (25°C)
- Minimal sample required—just 1.2 mL for pH and 5 mL for conductivity
- Get greater resolution with autoranging function between 0 and 9999 µS or 10 to 20.00 mS

Model 19707-07 features an internal, non-refillable pH sensor that protects the glass pH bulb from breakage while allowing field replacement.



Description		TP1	TPH1
Catalog number		<a href="#">JM-19707-05</a>	<a href="#">JM-19707-07</a>
Range	Conductivity	0 to 9999 µS; 10 to 20.00 mS	
	TDS	0 to 9999 ppm; 10 to 20.00 ppt	
	pH	—	0 to 14
	Temperature	32 to 160°F (0 to 71°C)	
Resolution	Conductivity	1 µS; 0.01 mS	
	TDS	1 ppm; 0.01 ppt	
	pH	—	0.01
	Temperature	0.1°F/°C	
Accuracy	Conductivity	±1% of reading	
	TDS	±1% of reading	
	pH	—	±0.02
	Temperature	±1°F/°C	
Temperature compensation		Automatic, 32 to 160°F (0 to 71°C)	
Power/battery life		One 9 V battery (included)/ >100 hours	
Price			

[JM-19401-60](#) Carrying case, soft sided

[JM-19070-50](#) Replacement pH sensor for model 19707-07

[JM-09376-04](#) Replacement batteries, 9 V. Pack of 4

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

## MYRON L Calibration Solutions

Be more accurate

- Get reliable readings with ±1% accuracy

Include NIST-traceable calibration report supplied by the manufacturer. One 32-oz (946-mL) bottle.



Conductivity (µS)	Conductivity-to-TDS calibration values			Catalog number	Price
	ppm KCl	ppm NaCl	ppm 442		
23.8	—	11.08	15	<a href="#">JM-01489-90</a>	
445	—	214	300	<a href="#">JM-01489-93</a>	
700	—	340	478	<a href="#">JM-01489-94</a>	
3900	—	2027	3000	<a href="#">JM-01489-96</a>	
30,100	—	18,235	30,000	<a href="#">JM-01489-99</a>	

## 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		<a href="#">JM-19401-12</a>	<a href="#">JM-19401-22</a>
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	—	0 to 14.00 pH
	ORP	—	±999 mV
	Chlorine	—	0.20 to 9.99 ppm
	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	—	0.01 pH unit
	ORP	—	1 mV
	Chlorine	—	0.01
	Temperature	0.1°F (0.1°C)	
Accuracy	Conductivity	±1% of reading	
	TDS	±1% of reading	
	Resistivity	±1% of reading	
	pH	—	±0.01 pH
	ORP	—	±1 mV
	Chlorine	—	±2.5% of reading
	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			

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

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

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

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

[JM-09376-04](#) Replacement batteries, 9 V. Pack of 4

[JM-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.



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



**Save time, save money!**

**Choose Precalibrated**

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



Description	CON 700 meter	Precalibrated CON 700 meter	CON 2700 meter	Precalibrated CON 2700 meter
<b>Catalog number</b>	<b>JM-35411-00</b>	<b>JM-35411-01</b>	<b>JM-35412-00</b>	<b>JM-35412-01</b>
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 ppm; 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
<b>2-cell conductivity probes for CON 700 or CON 2700 meters</b>			
0.1	Epoxy/platinum	<a href="#">JM-35608-72</a>	
1.0	Uitem®/stainless steel	<a href="#">JM-35608-74</a>	
1.0	Glass/platinum	<a href="#">JM-35608-76</a>	
10	Epoxy/platinum	<a href="#">JM-35608-78</a>	
<b>4-cell conductivity probes for CON 2700 meter only</b>			
0.1	Epoxy/platinum	<a href="#">JM-35608-90</a>	
1.0	Epoxy/graphite	<a href="#">JM-35412-10</a>	
1.0	Glass/platinum	<a href="#">JM-35608-92</a>	
10	Epoxy/platinum	<a href="#">JM-35608-94</a>	

### Accessories

[JM-35420-01](#) RS-232 cable for 2700 series meters

[JM-35630-53](#) USB cable for 2700 series meters

[JM-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).



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	<a href="#">JM-19704-41</a>	<a href="#">JM-19704-43</a>	<a href="#">JM-19704-22</a>	<a href="#">JM-19704-24</a>	<a href="#">JM-58825-36</a>	<a href="#">JM-58825-38</a>
Parameters	Conductivity/TDS/temperature		Conductivity/TDS/salinity/resistivity/temperature		pH/mV/conductivity/TDS/salinity/resistivity/temperature	
Range	pH mV Conductivity TDS Salinity Resistivity Temperature		— — 0.001 µS to 3000 mS 0 to 200 ppt 0.01 to 80.0 ppt NaCl 2 Ω to 100 MΩ 23 to 221°F (–5 to 105°C)		–2.000 to 20.000 ±2000.0 mV 0.001 µS to 3000 mS 0 to 200 ppt 0.01 to 80.0 ppt NaCl 2 Ω to 100 MΩ 23 to 221°F (–5 to 105°C)	
Resolution	pH mV Conductivity TDS Salinity Resistivity Temperature		— — 0.001 µS 4 significant digits — 2 Ω 0.1		0.1, 0.01, 0.001 0.1 0.001 µS 4 significant digits 0.01 2 Ω 0.1	
Accuracy	pH mV Conductivity TDS Salinity Resistivity Temperature		— — ±0.5% of reading ± 1 digit ±0.5% of reading ± 1 digit — 0.5% of reading ± 1 digit ±0.1		±0.002 ±0.2 or 0.05% of reading ±0.5% of reading ± 1 digit ±0.5% of reading ± 1 digit ±0.1 0.5% of reading ± 1 digit ±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

- [JM-58825-50](#) Electrode arm
- [JM-58825-51](#) Base for electrode arm
- [JM-58822-03](#) Replacement AC power adapter
- [JM-19704-70](#) Orion DuraProbe conductivity probe, K = 0.475
- [JM-19704-46](#) Conductivity calibration kit, resistor set
- [JM-05718-34](#) ROSS Triode pH/ATC electrode

- [JM-55350-68](#) pH buffer kit. Includes 473 mL each of 4, 7, 10 buffers and storage solution, and 60 mL of cleaning solution
- [JM-09376-01](#) Batteries, AA. Pack of 4
- [JM-17106-20](#) NIST-traceable calibration with data for pH meter
- [JM-17090-30](#) NIST-traceable calibration with data for conductivity meter



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

Reference Materials

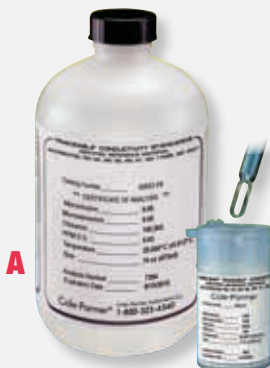
**Trust your standards—high accuracy**

- Up to ±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



**A**

**C**

### 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
<b>A. Batch tested, one 16-oz (473-mL) glass bottle</b>				
1	1	0.66	JM-00652-20	
5	0.2	3.3	JM-00652-22	
10	0.1	6.6	JM-00652-24	
100	0.01	66	JM-00652-26	
1000	0.001	666	JM-00652-28	
1413	0.00071	933	JM-00652-30	
10,000	0.0001	6666	JM-00652-32	
100,000	0.00001	66,666	JM-00652-34	
150,000	0.0000066	100,000	JM-00652-53	
200,000	0.000005	133,333	JM-00652-55	
<b>B. Individually tested, one 16-oz (473-mL) glass bottle</b>				
1	1	0.66	JM-00652-40	
5	0.2	3.3	JM-00652-42	
10	0.1	6.6	JM-00652-44	
100	0.01	66	JM-00652-46	
1000	0.001	666	JM-00652-48	
1413	0.00071	933	JM-00652-50	
10,000	0.0001	6666	JM-00652-52	
100,000	0.00001	66,666	JM-00652-54	
150,000	0.0000066	100,000	JM-00652-56	
200,000	0.000005	133,333	JM-00652-58	
<b>C. One-Shot®, pack of six 3.4-oz (100-mL) vials</b>				
5	0.2	3.3	JM-00652-60	
10	0.1	6.6	JM-00652-62	
100	0.01	66	JM-00652-64	
1000	0.001	666	JM-00652-66	
1413	0.00071	933	JM-00652-68	
10,000	0.0001	6666	JM-00652-70	
100,000	0.00001	66,666	JM-00652-72	
150,000	0.0000066	100,000	JM-00652-76	
200,000	0.000005	133,333	JM-00652-78	
Assortment†	—	—	JM-00652-74	

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

## 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



Conductivity (µS)	Conductivity-to-TDS calibration values			Catalog number	Price
	ppm KCl	ppm NaCl	ppm 442		
23	11.6	10.7	14.74	JM-00653-23	
84	40.38	38.04	50.5	JM-00653-16	
447	226	215	300	JM-00653-47	
1413	745	702	1000	JM-00653-18	
1500	757	737	1050	JM-00653-15	
2070	1045	1041	1500	JM-00653-27	
2764	1382	1414	2062	JM-00653-20	
8974	5101	4487	7608	JM-00653-89	
12,880	7447	7230	11,367	JM-00606-10	
15,000	8759	8532	13,455	JM-00653-50	
80,000	52,168	48,384	79,688	JM-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	JM-35653-09	
447	226	216	300	JM-35653-10	
1413	745	702	1000	JM-35653-11	
2764	1382	1414	2062	JM-35653-12	
15,000	8759	8532	13,445	JM-35653-13	
Rinse solution	—	—	—	JM-35653-00	

## Cole-Parmer® Extended-Life Conductivity Standards

Extend shelf life to 5 years!

**NEW**

- 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



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

ISO9001:2008  
CERTIFIED SUPPLIER

CE Meter only

### Specifications

Mode	mg/L (ppm)	% O <sub>2</sub> 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	<a href="#">JM-35643-10</a>	
DO 6+ meter with probe 35642-50	<a href="#">JM-35643-12</a>	
DO 6+ meter kit	<a href="#">JM-35643-14</a>	

### Accessories

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

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

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

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

[JM-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.



Meter only

Description	DO 450 meter only	DO 450 meter kit	PD 450 meter only	PD 450 meter kit
<b>Catalog number</b>	<a href="#">JM-35640-32</a>	<a href="#">JM-35640-90</a>	<a href="#">JM-35632-32</a>	<a href="#">JM-35632-80</a>
Range	pH	—	—	-2.00 to 16.00 pH
	mV	—	—	±2000 mV
	Dissolved oxygen (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%
	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)
Resolution	pH	—	—	0.01 pH
	mV	—	—	0.1 (>199.9 mV); 1 mV (beyond)
	Dissolved oxygen (ppm)	0.1 ppm	0.1 ppm	0.1
	Dissolved oxygen (% saturation)	0.10%	0.10%	0.1
Accuracy	pH	—	—	±0.01 pH
	mV	—	—	±0.2 (>199.9 mV); ±2 mV (beyond)
	Dissolved oxygen (ppm)	±2%	±2%	±2%
	Dissolved oxygen (% saturation)	±2%	±2%	±2%
Barometric pressure compensation	Manual	Manual	Manual	Manual
	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

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

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

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

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

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

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

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

Single-junction; epoxy body; BNC connector

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

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

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

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

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

[JM-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.



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		<a href="#">JM-53101-25</a>	<a href="#">JM-53101-27</a>	<a href="#">JM-53101-16</a>	<a href="#">JM-53101-18</a>	<a href="#">JM-58825-72</a>	<a href="#">JM-58825-74</a>
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	
Temperature		0.1		0.1		0.1	
Accuracy	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%	
	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

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

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

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

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

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

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

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

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

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

[JM-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.

**NEW**  
Model



**REQUIRED System Components**

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



Pro2030 meter

ISO9001:2008  
CERTIFIED SUPPLIER

IP67

Meter only

Oxygen

Handheld Meters

### 1. YSI Professional Series Meters

Model	Pro20	Pro1020	Pro2030	
Catalog number	<a href="#">JM-59352-04</a>	<a href="#">JM-59352-10</a>	<a href="#">JM-59352-14</a>	
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	<a href="#">JM-59352-32</a>	
Polarographic DO	<a href="#">JM-59352-34</a>	
BOD probe	<a href="#">JM-59352-35</a>	
pH probe	<a href="#">JM-59352-20</a>	
ORP probe	<a href="#">JM-59352-22</a>	

#### Accessories

[JM-99852-80](#) DO membrane kit; polyethylene, 1.25 mil. Pack of 6

[JM-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)		<a href="#">JM-59352-43</a>		<a href="#">JM-59352-63</a>		<a href="#">JM-59352-79</a>	
	13 ft (4 m)	<a href="#">JM-59352-44</a>		<a href="#">JM-59352-64</a>		<a href="#">JM-59352-80</a>	
	33 ft (10 m)	<a href="#">JM-59352-46</a>		<a href="#">JM-59352-66</a>		<a href="#">JM-59352-82</a>	

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



Model	ProODO	
Catalog number	<a href="#">JM-59353-00</a>	
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)	<a href="#">JM-59353-02</a>	
13 ft (4 m)	<a href="#">JM-59353-03</a>	
33 ft (10 m)	<a href="#">JM-59353-04</a>	
66 ft (20 m)	<a href="#">JM-59353-05</a>	
100 ft (30 m)	<a href="#">JM-59353-06</a>	
133 ft (40 m)	<a href="#">JM-59353-07</a>	
166 ft (50 m)	<a href="#">JM-59353-08</a>	
200 ft (60 m)	<a href="#">JM-59353-09</a>	
330 ft (100 m)	<a href="#">JM-59353-10</a>	

#### Accessories

- [JM-59353-01](#) Replacement sensing element
- [JM-59352-91](#) Belt clip attaches meter to belt loop holder
- [JM-59352-92](#) Carrying case, soft-sided
- [JM-59352-93](#) Carrying case, hard-sided
- [JM-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.



Description	Catalog number	Price
ProOBOD probe, US/Japanese version	<a href="#">JM-59353-30</a>	
ProOBOD probe, International version	<a href="#">JM-59353-31</a>	

#### Accessories

- [JM-59353-32](#) ProOBOD sensor cap
- [JM-59353-34](#) Lab dock holder for ProODO instrument and BOD bottle

# YSI® Pro DSS Multiparameter Sampling Instrument

## Conduct complete water quality surveys with a single instrument

- Reduce your gear load—one universal cable for wide range of sensors
- Change sensors without recalibrating—digital smart sensor stores calibration data
- Measure up to 17 different parameters—accepts up to four sensors at a time
- Use in even the harshest field environments
- Easily store data sets (with or without GLP information), site lists, and data ID tags
- Transfer data and recharge battery via micro USB connection
- Included KorDSS software for data management features geo-mapping capability



**NEW**



### REQUIRED System Components

- 1) Instrument
- 2) Sensors
- 3) Cable

Fully customizable, this multiparameter instrument is available with and without Global Positioning System (GPS). With the built-in GPS, coordinates can be logged along with measurement data for geo-mapping. Cable lengths vary from 3.3 to 328 ft (1 to 100 m). A water depth sensor is available on cables 98.4-ft (30-m) and longer.

**What's included:** hand strap, USB cable for connection to PC, cable for connection to USB flash drive, USB flash drive with KorDSS software, rechargeable lithium-ion battery, and universal AC power supply.



### 1. Pro DSS Instrument

Model	Pro DSS without GPS	Pro DSS with GPS
<b>Catalog number</b>	<a href="#">JM-59354-00</a>	<a href="#">JM-59354-05</a>
<b>Range</b>	pH	0 to 14.00 pH
	ORP	±1999 mV
	Ammonia	0 to 200 mg/L
	Chloride	0 to 18,000 mg/L
	Nitrate	0 to 200 mg/L
	Conductivity	0 to 200 mS/cm
	TDS†	0 to 100 g/L
	Dissolved oxygen	0 to 500%, 0 to 50 mg/L
	Turbidity	0 to 4000 FNU
	Barometer‡	375 to 825 mm Hg
	Temperature††	23 to 158°F (°5 to 70°C)
Depth	0 to 328 ft (0 to 100 m)	
<b>Accuracy</b>	pH	±0.2 pH
	ORP	±20 mV
	Ammonium/ammonia	±10% of rdg or 2 mg/L, whichever is greater
	Chloride	±15% of rdg or 5 mg/L, whichever is greater
	Nitrate	±10% of rdg or 2 mg/L, whichever is greater
	Conductivity	±0.5% of rdg or 0.001 mS/cm, whichever is greater (up to 100 mS/cm), ±1.0% of rdg from 100 to 200 mS/cm
	TDS	Calculated parameter based on conductivity accuracy
	Dissolved oxygen	±1% of rdg or 1% saturation, whichever is greater (up to 200%), ±8% of rdg (above 200%); ±0.1 mg/L or 1% of rdg, whichever is greater (up to 20 mg/L), ±8% of rdg (above 20 mg/L)
	Turbidity	±0.3 FNU or ±2% of rdg, whichever is greater (up to 999 FNU); ±5% of rdg (above 999 FNU)
	Barometer	±1.5 mm Hg from 0 to 50°C
	Temperature	±0.36°F (0.2°C)
Depth	±0.013 ft (±0.004 m) for cables 3.3 to 32.8 ft (1 to 10 m); ±0.13 ft (±0.04 m) for cables 65.6 ft (20 m) and longer	
Logging modes	Single point or continuous with autostable feature	
Memory	100,000 data points, 100 user-defined sites, 100 user-defined data ID tags	
GLP compliance	400 detailed GLP records	
Output	Micro USB	
Power	Rechargeable Li-ion battery (included); 48 hr typical life (backlight off)	
<b>Price</b>		

†Calculated parameter. ‡Integrated parameter. ††Thermistor installed on conductivity sensor.

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

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

### 2. ProDSS Smart Sensors

Choose only the sensors you need for your application.

**Dissolved oxygen sensor** (59354-10) features optical technology using lifetime-based detectors.

**Conductivity cell** (59354-11) has four electrodes and houses the Automatic Temperature Compensation (ATC) thermistor.

**Turbidity sensor** (59354-12) is an optical nephelometric type with a 90° scatter.

**pH sensor** (59354-13) is a combination type with an Ag/AgCl gel-filled glass bulb. Sensor module is replaceable.

**ORP sensor** (59354-14) has a platinum button and Ag/AgCl reference. Sensor module is replaceable.

**Ion-selective electrodes** (59354-15, -16, and -17) have replaceable sensor modules.

Parameter	Catalog number	Price
Dissolved oxygen, optical luminescence, lifetime method	<a href="#">JM-59354-10</a>	
Conductivity cell, four-electrode	<a href="#">JM-59354-11</a>	
Turbidity, nephelometric	<a href="#">JM-59354-12</a>	
pH, glass combination	<a href="#">JM-59354-13</a>	
ORP, platinum button	<a href="#">JM-59354-14</a>	
Ammonium ISE	<a href="#">JM-59354-15</a>	
Nitrate ISE	<a href="#">JM-59354-16</a>	
Chloride ISE	<a href="#">JM-59354-17</a>	

### 3. Cables

Cable length	Catalog number	Price
<b>Without depth sensor</b>		
3.3 ft (1 m)	<a href="#">JM-59354-20</a>	
13.1 ft (4 m)	<a href="#">JM-59354-21</a>	
32.8 ft (10 m)	<a href="#">JM-59354-22</a>	
65.6 ft (20 m)	<a href="#">JM-59354-23</a>	
98.4 ft (30 m)	<a href="#">JM-59354-24</a>	
<b>With depth sensor</b>		
98.4 ft (30 m)	<a href="#">JM-59354-30</a>	
164 ft (50 m)	<a href="#">JM-59354-31</a>	
230 ft (70 m)	<a href="#">JM-59354-32</a>	
295 ft (90 m)	<a href="#">JM-59354-33</a>	
328 ft (100 m)	<a href="#">JM-59354-34</a>	

Oxygen

Handheld Meters

## 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.

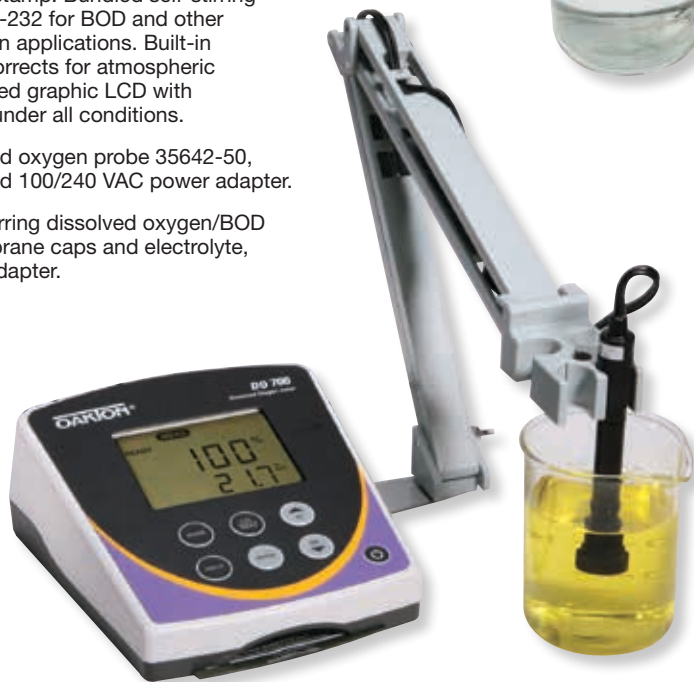
Oakton DO 2700 meter offers a more advanced user interface and measurement capabilities than the 700-series meter. Meter meets GLP requirements—all calibration and measurement data is stored with a time/date stamp. Bundled self-stirring probe and bidirectional RS-232 for BOD and other advanced dissolved 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®

ISO9001:2008  
CERTIFIED SUPPLIER

CE Meter only

Description		DO 700 meter	Precalibrated DO 700 meter	DO 2700 meter	Precalibrated DO 2700 meter
Catalog number		<a href="#">JM-35415-00</a>	<a href="#">JM-35415-01</a>	<a href="#">JM-35416-00</a>	<a href="#">JM-35416-01</a>
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

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

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

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

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

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

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

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



# YSI® MultiLab DO/BOD and DO/BOD/pH Benchtop Meters

## Meet US EPA-approved methods for DO and BOD

- Large, easy-to-read graphical display with backlight
- Digital plug-and-play sensors for optical DO, BOD, and pH
- CMC function monitors sensor's measuring range against calibration range
- Data logging with GLP time-and-date traceability and USB connectivity
- BOD Analyst Pro software automatically calculates BOD values

IP64-rated waterproof meters feature intuitive menu-driven interface, large graphical display with backlight, manual and automatic data logging with GLP traceability, and convenient USB data transfer. The CMC function continually monitors and displays the measuring range of the sensor; indicating if it is within the calibration range.

Meters use Intelligent Design Sensors (IDS) that digitally store their serial number, unique ID, and calibration data. The sensors can be moved from one meter to another and transfer their calibration data.

**What's included:** optical DO/BOD probe, electrode stand, USB cable, and universal AC power adapter. Meters with BOD software (05510-04 and 05510-08) also include BOD Analyst Pro desktop software to automatically calculate BOD values. DO/BOD/pH meters (05510-06 and 05510-08) also include a double-junction pH electrode with 5-ft (1.5-m) cable.



Description	DO/BOD meter	DO/BOD meter with software	DO/BOD/pH meter	DO/BOD/pH meter with software
<b>Catalog number</b>	<b>JM-05510-02</b>	<b>JM-05510-04</b>	<b>JM-05510-06</b>	<b>JM-05510-08</b>
Description	Dissolved oxygen/BOD		Dissolved oxygen/BOD/pH	
Range	Oxygen (mg/L)	0 to 50	0 to 50	
	Oxygen (% saturation)	0 to 500 air saturation	0 to 500 air saturation	
	pH	—	0.000 to 14.000	
	Temperature	50 to 104°F (10 to 40°C)	50 to 104°F (10 to 40°C)	
Resolution	Oxygen (mg/L)	0.01	0.01	
	Oxygen (% saturation)	0.1	0.1	
	pH	—	0.001	
	Temperature	0.1°C	0.1°C	
Accuracy	Oxygen (mg/L)	0 to 20 ±0.1 mg/L or ±1% whichever is greater; 20 to 50 ±10% reading	0 to 20 ±0.1 mg/L or ±1% whichever is greater; 20 to 50 ±10% reading	
	Oxygen (% saturation)	±1%	±1%	
	pH	—	±0.004	
	Temperature	±0.2	±0.2	
Temperature compensation	Automatic		Automatic	
Data logging	500 data sets (manual); 5000 (automatic)		500 data sets (manual); 10,000 (automatic)	
Output	Mini USB		Mini USB, USB-A	
Power	100 to 240 VAC, 50/60 Hz; four AA batteries		100 to 240 VAC, 50/60 Hz	
<b>Price</b>				

### Accessories

**JM-05510-50 Replacement pH electrode;** epoxy, double junction, gel, 10-ft (3-m) cable

**JM-05510-52 ORP electrode;** glass, double junction, gel, 5-ft (1.5-m) cable

**JM-05510-54 Replacement DO/BOD probe;** optical, self-stirring, 6.5-ft (2-m) cable

**JM-05510-56 pH adapter** for standard BNC electrodes

## Oakton® Zero Oxygen Solutions

### Ensure the accuracy of your dissolved oxygen meter

- Undergoes testing using the Winkler method



Description	Size	Catalog number	Price
Oakton zero oxygen solution	500-mL bottle	<b>JM-00653-00</b>	
Zero oxygen sachets	Pack of 10 sachets	<b>JM-53024-53</b>	



Oxygen

Benchtop Meters

# WTW® OxiTop® BOD Self-Check Measurement Systems

## Eliminate daily checks and increase data reliability with automated BOD testing

**NEW**

- Data is automatically stored in the measuring head
- Receive readings directly in mg/L
- Save time—no more diluting samples
- No need to monitor temperature—AutoTemp function delays testing until temperature stabilizes

These OxiTop automated BOD measurement systems provide a ready-to-use solution for both small and large laboratories. Choose the OxiTop IS system when a small number of tests need to be performed. The OxiTop Control system is ideal for larger operations, letting you coordinate test start times and keep track of complex data sets for up to 100 samples. Both systems are available in 6- and 12-place configurations and include everything you need to begin testing.

Convenient and simple to use—place the OxiTop measuring head directly on the BOD bottle containing the sample. The head senses pressure changes caused by cellular respiration within the closed system and converts that data into BOD values. The measurements are then stored in the imbedded memory for later retrieval.

The included IS stirrer base maintains constant temperature and distributes oxygen evenly throughout the sample. Order the optional thermostat box to incubate samples at 20°C; the box can accommodate an entire 12-place OxiTop system.

**A. OxiTop IS System** uses the OxiTop measuring head with an LED display. The head automatically stores one value every 24 hours for five days. This system is best suited for fewer tests since programming and data recording must be done by hand.

**B. OxiTop Control System** lets you control up to 100 samples simultaneously for effortless data management and reporting. This system uses the OxiTop-C measuring head, which has an infrared interface rather than a display. Data is wirelessly transmitted to the handheld controller where readings are displayed numerically in mg/L and graphically as a progress curve. Each measuring head is automatically assigned a unique ID number, eliminating manual identification of multiple samples. Data can be accessed any time, even during sampling, allowing you to check for errors at an early stage. The sample rate is adjustable and can extend beyond the typical five-day duration. Order additional OxiTop-Control head kits to increase throughput to 100 samples.

**What's included:** OxiTop measuring heads, IS stirrer base (100/240 VAC, 50/60 Hz), amber glass bottles (510 mL), carbon dioxide absorbent, nitrification inhibitor, overflow flask, stir bars, stir bar remover, and batteries. OxiTop Control System also includes OC 100 controller.



A



B



Range	Accuracy	Sampling rate	Memory	Output	6-place system		12-place system	
					Catalog number	Price	Catalog number	Price
<b>A. OxiTop IS system</b>								
BOD: 0 to 4000 mg/L Pressure: 500 to 1350 hPa	±1 digit (±3.55 hPa)	1 reading every 24 hours, over 5 days	5 readings	—	<a href="#">JM-59354-02</a>		<a href="#">JM-59354-04</a>	
<b>B. OxiTop control system</b>								
BOD: 0 to 4000 mg/L Pressure: 500 to 1350 hPa	±1% of reading ±1 hPa	0.5 hour to 99 days	180 to 360 data sets <sup>†</sup> per measuring head; controller collects data from up to 120 measuring heads	RS-232, IR	<a href="#">JM-59354-42</a>		<a href="#">JM-59354-44</a>	

<sup>†</sup>Actual number depends on measuring time.

### Accessories

[JM-59354-51](#) OxiTop thermostat box incubates up to 12 OxiTop bottles at 20°C. 115 VAC, 60 Hz

[JM-59354-52](#) OxiTop thermostat box incubates up to 12 OxiTop bottles at 20°C. 240 VAC, 50 Hz

[JM-59354-46](#) OxiTop Control head kit with IS stirrer base and accessories, 6 units

[JM-59354-48](#) OxiTop Control head kit with IS stirrer base and accessories, 12 units



Thermostat box



## 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.

**NEW**



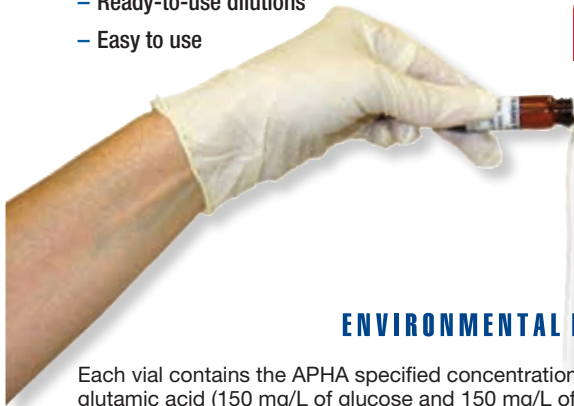
Description	Catalog number	Qty/pk	Price/pk
Polyseed capsules for BOD	<a href="#">JM-53200-33</a>	50	
Polyseed NX capsules for CBOD	<a href="#">JM-53200-34</a>	50	

## 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

**NEW**



**ENVIRONMENTAL EXPRESS®**

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	<a href="#">JM-53200-11</a>	24	
GGA for 60-mL BOD bottles, 1.2-mL ampule	<a href="#">JM-53200-13</a>	24	



**Can't choose?**

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Katie, 5 years of experience

Call: 800-323-4340 E-mail: [sales@coleparmer.com](mailto:sales@coleparmer.com) Chat live: [ColeParmer.com](http://ColeParmer.com)

## Environmental Express® Disposable BOD Bottles

Reduce contamination and increase test accuracy

**NEW**

- 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®**

Capacity	Catalog number	Qty/pk	Price/pk
300 mL	<a href="#">JM-53200-02</a>	100	

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

[JM-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

**NEW**



53200-20



53200-22

**ENVIRONMENTAL EXPRESS®**

Capacity	Dimensions (W x H x D)	Catalog number	Price
<b>Chemical-resistant PP BOD bottle carrier; pack of 2</b>			
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)	<a href="#">JM-53200-20†</a>	
<b>Plastic-coated BOD bottle storage racks</b>			
20 x 60-mL bottles	13" x 6" x 10" (33 x 15.2 x 25.4 cm)	<a href="#">JM-53200-21</a>	
12 x 300-mL bottles	13" x 8" x 10" (33 x 20.3 x 25.4 cm)	<a href="#">JM-53200-22</a>	
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)	<a href="#">JM-53200-23†</a>	

†Autoclavable.

## Environmental Express® COD Reagent Vials

Save money while getting accurate readings

**NEW**

- 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



### ENVIRONMENTAL EXPRESS®

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
<b>Low-range COD reagent vials – 10 MDL</b>					
0 to 150	Yes	Yes	21258-15/25	<a href="#">JM-35200-02</a>	
0 to 150	No	No	25650-15/25	<a href="#">JM-35200-08</a>	
<b>Standard-range COD reagent vials – 30 MDL</b>					
0 to 1500	Yes	Yes	21259-15/25	<a href="#">JM-35200-03</a>	
0 to 1500	No	No	25651-15/25	<a href="#">JM-35200-09</a>	
<b>Ultra-high-range COD reagent vials – 300 MDL</b>					
0 to 15,000	Yes	No	24159-15/25	<a href="#">JM-35200-04</a>	
0 to 15,000	No	No	—	<a href="#">JM-35200-10</a>	

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

**Wait!**

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ColeParmer.com**

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  - ✓ Find full **product details**
- And much more!

## 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	<a href="#">JM-00653-00</a>	
Zero oxygen sachets	Pack of 10	<a href="#">JM-53024-53</a>	

## 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	<a href="#">JM-53003-00</a>	
Dissolved oxygen reagent refill			<a href="#">JM-53003-05</a>	

## 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	<a href="#">JM-05540-20</a>	
	0 to 100 ppb	<a href="#">JM-05540-25</a>	
	0 to 1 ppm	<a href="#">JM-05540-30</a>	
	1 to 12 ppm	<a href="#">JM-05540-40</a>	



## 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:** StabiCal™ 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

<b>Range:</b> 0 to 1000 NTU	<b>Sample volume:</b> 10 mL
<b>Resolution:</b> 0.01 NTU on lowest range	<b>Sample cell size:</b> 60 mm H x 25 mm dia
<b>Accuracy:</b> ±2% of reading	<b>Response time:</b> mode dependent
<b>Light source:</b> tungsten filament lamp	<b>Data logging capabilities:</b> 500 points
<b>Photodetector:</b> silicon photodiode	<b>Output:</b> 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)	<a href="#">JM-99511-10</a>	

#### Accessories

- [JM-99511-13](#) Power module with USB output; 100 to 230 VAC, 50/60 Hz
- [JM-99511-14](#) Power module; 100 to 230 VAC, 50/60 Hz
- [JM-99511-20](#) Replacement StabiCal calibration standards. Includes one sealed vial each of 20, 100, 800 NTU
- [JM-99511-21](#) Replacement 10 NTU verification standard
- [JM-99512-75](#) Replacement silicone oil, 15 mL
- [JM-99511-55](#) Replacement sample cells. Pack of 6
- [JM-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

**NEW**



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

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

Description	Power	Catalog number	Price
Waterproof turbidity meter	Four AA batteries (included)	<a href="#">JM-59200-70</a>	

#### Accessories

- [JM-35635-52](#) Replacement calibration set. Includes 4 x 60 mL bottles of 0.02, 20, 100 and 800 NTU standards
- [JM-35653-55](#) Cuvettes. Pack of 3
- [JM-09376-01](#) Replacement batteries, AA. Pack of 4

#### Search

For turbidity standard solutions, go to...  
[ColeParmer.com/Turbidity](http://ColeParmer.com/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

<b>Range:</b> 0 to 4000 NTU	<b>Photodetector:</b> silicon photodiode
<b>Resolution:</b> 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	<b>Sample volume:</b> 10 mL
<b>Accuracy:</b> ±2% from 0 to 100 NTU; ±3% from 100 to 4000 NTU	<b>Sample cell size:</b> 25 mm dia, flat-bottom tube
<b>Light source</b> US EPA model 05563-22: tungsten lamp ISO model 05563-24: 860 nm LED	<b>Response time:</b> <2 sec
	<b>Data logging capabilities:</b> 500 points
	<b>Output:</b> USB

#### Turbidity Standards, 60-mL bottle

Value	Catalog number	Price
<b>Standards for EPA-compliant turbidimeter</b>		
0 NTU	<a href="#">JM-05565-25</a>	
1 NTU	<a href="#">JM-05563-31</a>	
10 NTU	<a href="#">JM-05563-33</a>	
100 NTU	<a href="#">JM-05563-35</a>	
<b>Standards for ISO-compliant turbidimeter</b>		
0 NTU	<a href="#">JM-05565-25</a>	
1 NTU	<a href="#">JM-05563-51</a>	
10 NTU	<a href="#">JM-05563-53</a>	
100 NTU	<a href="#">JM-05563-55</a>	

Description	Power	Catalog number	Price
Portable turbidity meter, US EPA 180.1 compliant	Rechargeable lithium battery	<a href="#">JM-05563-22</a>	
Portable turbidity meter, ISO 7027 compliant	(included) and wall plug	<a href="#">JM-05563-24</a>	

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

## Velp Flocculator Jar Testers

### Save money and chemicals by testing on a smaller scale

**NEW**

- 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 (JLT)		Laboratory with individual speed control (FC)	
<b>Catalog number</b>	<a href="#">JM-99561-05</a>	<a href="#">JM-99561-13</a>	<a href="#">JM-99561-15</a>	<a href="#">JM-99561-17</a>	<a href="#">JM-99561-19</a>
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	
<b>Price</b>					

#### Accessories

[JM-34512-11](#) PYREX® glass beakers; 1000 mL, for portable unit. Pack of 6  
[JM-34512-13](#) PYREX® glass beakers; 2000 mL, for laboratory units. Pack of 4



## Cole-Parmer® Disposable Polyethylene, PVC, and FEP 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



All bailers have metal inserts for faster sink rate

These disposable bailers feature tapered ends and low-snag 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).



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



Length in. (cm)	Outside diameter in. (cm)	Number of check valves	Qty/cs	Catalog number	Price/cs*
<b>Polyethylene bailers</b>					
12 (30.5)	1.6 (4.06)	One	24	JM-99157-00	
		Two		JM-99157-01	
36 (91.4)	0.5 (1.27)	One	24	JM-99157-20	
		Two		JM-99157-21	
36 (91.4)	0.75 (1.91)	One	24	JM-99157-30	
		Two		JM-99157-32	
36 (91.4)	1.6 (4.06)	One	24	JM-99157-02	
		Two		JM-99157-03	
48 (121.9)	1.6 (4.06)	One	24	JM-99157-04	
		Two		JM-99157-05	
<b>PVC bailers</b>					
12 (30.5)	1.6 (4.06)	One	24	JM-99157-40	
36 (91.4)				JM-99157-42	
48 (121.9)				JM-99157-44	
<b>FEP bailers</b>					
36 (91.4)	0.5 (1.27)	One	12	JM-99157-23	
		Two		JM-99157-24	
36 (91.4)	1.6 (4.06)	One	12	JM-99157-12	
		Two		JM-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	JM-99157-06	
99157-12, -13	JM-99157-16	
99157-20, -21	JM-99157-22	
99157-23, -24	JM-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 polyethersulfone membrane. Filter has bailer interface tube for direct connection to bottom of bailer. Gravity forces water through the filter into your sample container.



**JM-99157-50** QuickFilter groundwater filter

## Drum and Tank Samplers

**No leachable fillers or plasticizers**

- No glass parts to break for added safety and protection
- Easily identify layers through translucent material
- Easy to clean

### A. Dipstik™ Samplers

Sample free-flowing liquids from almost any source. Safety-pour top permits safe and neat transfer of contents. Push/seal bottom snaps close easily. Polypropylene samplers have heat welded bottom caps.



Length	Volume (ml)	Catalog number	Price
<b>Dipstik samplers, FEP</b>			
3½ ft (1.1 m)	200	JM-99200-00	
7 ft (2.1 m)	475	JM-99200-02	
<b>Disposable Dipstik samplers, polypropylene</b>			
3½ ft (1.1 m)	200	JM-99200-10	
7 ft (2.1 m)	475	JM-99200-12	

### B. Mucksucker™ Samplers

High-suction syringe action is ideal for viscous fluids. Come with both a push/seal bottom and a coring bottom. Coring bottom features a wide mouth for handling sludge samples. PTFE construction.

Length	Volume (ml)	Catalog number	Price
3½ ft (1.1 m)	200	JM-99200-20	
7 ft (2.1 m)	475	JM-99200-22	

## 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)	JM-99155-30	
8 to 24 ft (2.4 to 7.3 m)	JM-99155-32	

**JM-99155-34** Small snapper, 500-mL bottles

**JM-99155-36** Large snapper, 1000-mL bottles

## Raven CORETAKER® 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 (2.4-m) 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)	<a href="#">JM-05465-60</a>	
24 ft (7.3 m)	<a href="#">JM-05465-62</a>	

## 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



06282-77

06282-72



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	<a href="#">JM-06282-70</a>	
		Blue PS			<a href="#">JM-06282-72</a>	
100 (3)	15" (38.1 cm)	Clear PS	Metal screw cap	100	<a href="#">JM-06282-75</a>	
		Blue PS			<a href="#">JM-06282-77</a>	
250 (8)	13" (33.0 cm)	Clear PS	Metal screw cap	50	<a href="#">JM-06282-79</a>	
		Blue PS			<a href="#">JM-06282-81</a>	
40 (1.4)	9" (22.9 cm)	Blue PP	PE screw cap	250	<a href="#">JM-06282-85</a>	
45 (1.5)			PP hinge lid		<a href="#">JM-06282-87</a>	
90 (3)			PP hinge lid		<a href="#">JM-06282-89</a>	
125 (4)			PP screw cap		<a href="#">JM-06282-91</a>	

## Open Water Grab Samplers® Get samples easily at desired depth

- Simple operation—just pull ring
- No more difficult transporting—breaks down into 6-ft sections
- Ready to use—include 1000-mL glass bottle for immediate sampling
- Fits into 4¼" (10.8 cm) or greater openings



Length	Catalog number	Price
6 ft (1.8 m)	<a href="#">JM-99152-00</a>	
12 ft (3.7 m)	<a href="#">JM-99152-10</a>	
18 ft (5.5 m)	<a href="#">JM-99152-20</a>	

[JM-99152-50](#) Replacement bottle



## 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.



Screw-on cups let you easily take multiple samples.



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	Catalog number	Price/pk
<b>Dippers with replaceable cup</b>					
500 (16)	3⅞" (9.8 cm)	36" (0.9 m)	1	<a href="#">JM-06282-00</a>	
		72" (1.8 m)		<a href="#">JM-06282-05</a>	
<b>Extra/replacement screw-on PP cup</b>					
500 (16)	3⅞" (9.8 cm)	—	1	<a href="#">JM-06282-50</a>	

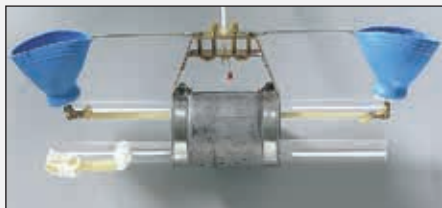
## Water Samplers

### Minimize contamination

#### Low-Cost Water Sampler

Sampler is attached to 66-ft (20-m) calibrated line for depth measurement.

Fitted plungers provide a positive seal preventing your sample from mixing with intermediate layers of water. Sampler includes a brass messenger for activation and a lead collar for rapid descent and minimal drift due to water currents. Sampler features a side drain outlet for removing small test samples.



Bottle type	Volume (liters)	Catalog number	Price
Acrylic	1.0	<a href="#">JM-05488-20</a>	

#### Kemmerer Water Samplers

Sample at specific depths between 3 and 600 feet (0.9 and 183 m). The messenger activates the unique trip heads that ensure closure in fast flowing streams or turbulent waters, regardless of line angle. The 304 SS models have urethane end seals (do not use when mercury concentrations exceed 1 ppm). Acrylic models have silicone end seals. All models include a plastic carrying case; order messenger and line separately at right.

Bottle type	Volume (liters)	Catalog number	Price
304 SS	0.4	<a href="#">JM-05485-00</a>	
	1.2	<a href="#">JM-05485-10</a>	
Acrylic	1.2	<a href="#">JM-05486-00</a>	
	2.2	<a href="#">JM-05486-10</a>	



#### Alpha Water Samplers

Suitable for use in oceans, deep lakes, and corrosive waters (do not use when mercury concentrations exceed 1 ppm). Urethane end seals snap shut with minimum surface disturbance on messenger contact. Drain valve provides easy sample removal. Samplers include a carrying case; order messenger and line separately below.



Bottle type	Volume (liters)	Catalog number	Price
<b>Vertical alpha water samplers</b>			
PVC		<a href="#">JM-05487-00</a>	
Acrylic	2.2	<a href="#">JM-05487-10</a>	
<b>Horizontal alpha water samplers</b>			
PVC		<a href="#">JM-05488-00</a>	
Acrylic	2.2	<a href="#">JM-05488-10</a>	

#### Accessories for Kemmerer and Alpha Water Samplers

**Solid 3/16" (0.3 cm) Braided Polyester Line** is for use with sampling equipment that weighs less than 75 lb (34 kg). Maximum load is 110 lb (50 kg).

[JM-05499-33 Braided polyester line](#), 338 ft (100 m)

**Tapered Nose Messengers** activate closing mechanisms on sampling equipment. Fit up to 1/4" (0.6 cm) line.

[JM-05499-10 Messenger](#); 11-oz split-barrel, stainless steel; 4"L x 1" dia (10.1 x 2.5 cm). Enclosed spring mechanism

[JM-05499-15 Messenger](#); 8-oz solid-barrel, stainless steel; 2 1/2"L x 1" dia (6.4 x 2.5 cm)



## 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 3/4" (1.9 cm) diameter pipe sections and hold approximately 3 oz (89 mL) of fluid per foot. Sludge Judge II version has 1 1/4" (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
<b>Sludge Judge sampler, 3/4" (1.9 cm) diameter</b>			
Sludge Judge; top, middle, bottom sections	3 x 5 ft (1.5 m)	<a href="#">JM-05465-70</a>	
Replacement bottom section with valve	5 ft (1.5 m)	<a href="#">JM-05465-72</a>	
Replacement middle section/extension section	5 ft (1.5 m)	<a href="#">JM-05465-74</a>	
Replacement top section with nylon rope	5 ft (1.5 m)	<a href="#">JM-05465-76</a>	
<b>Sludge Judge II sampler, 1 1/4" (3.2 cm) diameter</b>			
Sludge Judge II; top, middle, bottom sections	3 x 5 ft (1.5 m)	<a href="#">JM-05465-30</a>	
Replacement bottom section with valve	5 ft (1.5 m)	<a href="#">JM-05465-31</a>	
Replacement middle section/extension section	5 ft (1.5 m)	<a href="#">JM-05465-32</a>	
Replacement top section with nylon rope	5 ft (1.5 m)	<a href="#">JM-05465-33</a>	
<b>Sludge Judge Ultra sampler, 3/4" (1.9 cm) diameter, UV resistant</b>			
Sludge Judge Ultra; top, middle, bottom sections	3 x 5 ft (1.5 m)	<a href="#">JM-05465-40</a>	
Replacement bottom section with valve	5 ft (1.5 m)	<a href="#">JM-05465-41</a>	
Replacement middle section/extension section	5 ft (1.5 m)	<a href="#">JM-05465-42</a>	
Replacement top section with nylon rope	5 ft (1.5 m)	<a href="#">JM-05465-43</a>	

#### Accessories

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

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

## 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 below).

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
- 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
- Rechargeable battery for field applications

## MASTERFLEX®

ISO9001:2008  
CERTIFIED SUPPLIER

Power supplies are:



rpm	Nominal voltage	IP rating	Dimensions (L x W x H)	Power* VAC (50/60 Hz)	Catalog number	Price
<b>E/S portable sampling drive</b>						
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	JM-07571-00	
				12 VDC on 230	JM-07571-05	
<b>E/S composite sampler</b>						
600	12 VDC or AC line	IP56	11" x 13½" x 17½" (28 x 34 x 44 cm)	12 VDC on 115/230	JM-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.

**JM-07516-12** Easy-Load pump head, for use with L/S sizes 15 and 24 tubing

**JM-07015-20** Standard pump head, for use with L/S size 15

**JM-07024-20** Standard pump head, for use with L/S size 24

**JM-07571-50** Automotive power adapter, 25-ft (7.6 m) cable

**JM-07580-50** Carrying strap, optional

**JM-77390-00** PTFE tubing pump head, optional

**JM-77390-50** PTFE tubing set. 2-mm ID, 4-mm OD. Set of 2

**JM-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)	JM-96400-15	
	L/S 24		JM-96400-24	
Tygon® E-Lab	L/S 15	50 ft (15.2 m)	JM-06509-15	
	L/S 24		JM-06509-24	
Tygon E-LFL	L/S 15	25 ft (7.6 m)	JM-06440-15	
	L/S 24		JM-06440-24	

Find even more information online!  
For flow rates of tubing, go to [ColeParmer.com](http://ColeParmer.com).

## 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 non-toxic, 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 (NELAC) 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.



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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
<b>Sodium thiosulfate bags for potable water sampling</b>					
4 (118)	3" x 7½" (7.6 x 19 cm)	2.25	100	JM-06499-90	
18 (532)	4½" x 9" (11.4 x 22.8 cm)	2.5	100	JM-06499-95	
<b>Stand-up sodium thiosulfate bags for potable water sampling</b>					
4 (118)	3" x 7½" (7.6 x 19 cm)	2.25	100	JM-06499-77	
18 (532)	4½" x 9" (11.4 x 22.8 cm)	2.5	100	JM-06499-97	
<b>Sodium thiosulfate bag for wastewater sampling</b>					
4 (118)	3" x 7½" (7.6 x 19 cm)	2.25	100	JM-06499-86	
<b>Coli-Test bag for water sampling, indicates total coliform and E. coli</b>					
4 (118)	3" x 7½" (7.6 x 19 cm)	2.5	100	JM-06499-88	

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

## Imhoff Settling Cone

### Determine settleable materials

- Externally graduated in mL from the bottom upward

Clear styrene-acrylonitrile cone can be used with a heavy-gauge steel support rack (sold separately below). Rack holds up to three cones and measures 17½"L x 5½"W x 16"H (44.5 x 14.0 x 40.6 cm).



Imhoff settling cone shown with support rack

Description	Catalog number	Price*
Imhoff settling cone	JM-06340-02	

\*Discount: Save 10% on 4 or more cones.

**JM-06340-20** Support rack





## 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	Catalog number	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	<a href="#">JM-05546-02</a>	
Alkalinity	0 to 240 ppm	50	<a href="#">JM-05546-04</a>	
Ammonia (nitrogen)	0 to 6 ppm	25	<a href="#">JM-05546-06</a>	
Arsenic (low level)	0 to 500 ppb	100	<a href="#">JM-05546-08</a>	
Arsenic (dual range)	0 to 500 ppb; 0 to 4000 ppb	100	<a href="#">JM-05546-12</a>	
Chloride (low level)	30 to 600 ppm	40	<a href="#">JM-05546-16</a>	
Chloride	300 to 6000 ppm	40	<a href="#">JM-05546-18</a>	
Free and total chlorine	0 to 10 ppm	250 <sup>†</sup>	<a href="#">JM-05546-20</a>	
Free and total chlorine	1 to 10 ppm	50	<a href="#">JM-05546-22</a>	
Free chlorine	0 to 600 ppm	100	<a href="#">JM-05546-24</a>	
Free and total copper	0 to 3 ppm	25	<a href="#">JM-05546-26</a>	
Total hardness, as CaCO <sub>3</sub>	0 to 425 ppm	250 <sup>†</sup>	<a href="#">JM-05546-28</a>	
Total hardness, as CaCO <sub>3</sub>	1 to 425 ppm	50	<a href="#">JM-05546-30</a>	
Total dissolved iron	0 to 5 ppm	25	<a href="#">JM-05546-32</a>	
Nitrate and nitrite	0 to 50 ppm; 0 to 3 ppm	25	<a href="#">JM-05546-36</a>	
pH (midrange)	4 to 9 pH	50	<a href="#">JM-05546-40</a>	
pH (full range)	0 to 14 pH	100	<a href="#">JM-05546-42</a>	
Phosphorous, o-phosphate	0 to 50 ppm	50	<a href="#">JM-05546-44</a>	

<sup>†</sup>Individually wrapped test strips.

## 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	<a href="#">JM-99532-30</a>	
Chlorine	10, 50, 100, and 200 ppm	200	<a href="#">JM-99532-31</a>	
Chlorine, HR	0, 50, 100, 250, 500, and 800 ppm	50	<a href="#">JM-99532-36</a>	
Iodine	12, 25, 50, and 100 ppm	200	<a href="#">JM-99532-32</a>	
Chlorine dioxide	0 to 10 ppm	50	<a href="#">JM-99532-33</a>	
Chlorine dioxide	0 to 500 ppm	50	<a href="#">JM-99532-34</a>	
Peracetic acid	0, 10, 20, 40, 60, 85, and 160 ppm	50	<a href="#">JM-99532-35</a>	

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

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

## Hach® Pocket Colorimeter™ II Kits

No need to calibrate—  
just zero and read

**NEW**

- 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  $\pm 2$  nm  
**Pathlength:** 25 mm  
**Power:** four AAA batteries (included)



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

†US EPA accepted method.

### Accessories

- [JM-99574-96](#) Speccheck standard for chlorine, DPD
- [JM-99574-95](#) Speccheck standard for fluoride
- [JM-09376-00](#) Replacement batteries, AAA. Pack of 12



## Questions?

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

Bob, 7 years of experience

Call: 800-323-4340    E-mail: [sales@coleparmer.com](mailto:sales@coleparmer.com)    Chat live: [ColeParmer.com](http://ColeParmer.com)

## 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 Powder Pack™, 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)  
**Display:** backlit LCD  
**Wavelength accuracy:**  $\pm 1$  nm  
**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)	
				Catalog number	Price
Ammonia, nitrogen	0.01 to 1.0	<a href="#">JM-99561-65</a>		<a href="#">JM-99560-74</a>	
Ammonia, free	0.01 to 4.5	<a href="#">JM-99561-67</a>		<a href="#">JM-99560-75</a>	
Chlorine, free and total	0.02 to 2.0 (free) 0.1 to 8.0 (total)	<a href="#">JM-99561-76</a>		<a href="#">JM-99560-54</a> (free)	
				<a href="#">JM-99560-58</a> (total)	
Copper	0.05 to 5.0	<a href="#">JM-99561-85</a>		<a href="#">JM-99560-62</a>	
Iron, ferro	0.02 to 3.0	<a href="#">JM-99561-86</a>		<a href="#">JM-99560-64</a>	
Iron, TPTZ	0.02 to 1.8	<a href="#">JM-99561-87</a>		<a href="#">JM-99560-63</a>	
Manganese (low)	0.01 to 0.7	<a href="#">JM-99561-88</a>		<a href="#">JM-99560-65</a>	
Manganese (high)	0.1 to 20	<a href="#">JM-99561-89</a>		<a href="#">JM-99560-66</a>	
Molybdate	0.03 to 1.8	<a href="#">JM-99561-90</a>		<a href="#">JM-99560-67</a>	
Phosphate, ortho	0.06 to 2.5	<a href="#">JM-99561-92</a>		<a href="#">JM-99560-77</a>	
Silica (low)	0.1 to 1.6	<a href="#">JM-99561-94</a>		<a href="#">JM-99560-87</a>	
Silica (high)	1 to 90	<a href="#">JM-99561-96</a>		<a href="#">JM-99560-88</a>	

### Accessories

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



# 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.



Water Testing

Colorimeters



### Specifications

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

Range	Wavelengths	Catalog number	Price
0 to 2 A	420, 520, 560, 610 nm	<a href="#">JM-99573-10</a>	

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

†Requires COD reactor sold at right.

### Accessories for Colorimeter

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

### Accessories for COD Tests

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

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## Thermo Scientific™ AquaMate™ Spectrophotometers

### Save time—over 260 preprogrammed methods

- Customizable for your needs with methods you use most
- High accuracy with one-point calibration adjustment
- Meet your GLP and GMP requirements

The preprogrammed and user-customizable water quality methods offer absorbance, % transmittance, and concentration testing. Meters feature three USB connectors, providing the option to store methods and data to a USB stick, transfer data to a computer, or print data to an external printer.

A wide range of vial sizes can be used with the three-position cell holder (turret): 13 to 25 mm round vials, 20 to 50 mm rectangular vials, and a 10 mm square vial. Systems are compatible with Orion, Merck, Chemetrics, and Hach chemistries.

**AquaMate AQ7000 Vis Spectrophotometer** is the cost-effective solution for routine visible measurements. It offers 325 to 1100 nm selectable wavelengths, ideal for most concentration measurements.

**AquaMate AQ8000 Vis Spectrophotometer** offers extensive, full-wavelength measurement options. The 190 to 1100 nm selectable wavelength range provides unsurpassed data quality into the near-IR region. Superior signal-to-noise performance and fast wavelength scanning allow fast, high-quality spectral data analysis.

**What's included:** three-position cell holder, methods on USB stick, USB cable, dust cover, and power cord. Model 99564-20 also includes a six-position and single-position cell holder.



Model	AquaMate AQ7000 Visible	AquaMate AQ8000 UV-Visible
Catalog number	<a href="#">JM-99564-10</a>	<a href="#">JM-99564-20</a>
Beam type	Single beam	Dual beam
Bandwidth	5 nm	1.8 nm
Wavelength range	325 to 1100 nm	190 to 1100 nm
Wavelength accuracy	±1 nm	±1 nm
Photometric ranges	Transmittance	-0.3 to 125 %
	Absorbance	-0.1 to 3 A
	Concentration	±9999 C
Drift	0.002 A/hr (after warm-up)	0.0005 A/hr (after warm-up)
Stray light	<0.1% T at 340 and 400 nm	<0.1% T at 340 and 400 nm
Source lamp	Tungsten halogen, 1000 hrs life	Xenon flash, 5 yrs life
Detector	Silicon photodiode	Two silicon photodiodes
Output	USB type A and B	USB type A and B
Dimensions (W x H x D)	11¼" x 9¾" x 15¼" (30 x 25 x 40 cm)	
Power	100 to 240 VAC, 50/60 Hz	
Price		

#### Accessories

- [JM-99564-56](#) AquaMate six-position cell holder
- [JM-99564-58](#) Replacement AquaMate three-position cell holder
- [JM-99564-60](#) AquaMate single-position cell holder.
- [JM-99564-61](#) Replacement AquaMate USB memory stick with methods

## Disposable Cuvettes

### No more washing cuvettes!

Use these economical, single-use cuvettes to obtain consistent spectrophotometric data. Available in standard, semi-micro, and fluorometry configurations. Use polystyrene cuvettes for visible spectral analysis; polymethacrylate cuvettes are preferred for UV range testing. Path length: 10 mm.

#### Specifications

**Polystyrene:** % Transmission: maximum from 340 to 800 nm

**Methacrylate:** % Transmission: maximum from 285 to 750 nm

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	<a href="#">JM-06343-10</a>		<a href="#">JM-06343-15</a>	
Semi-micro	1.5			<a href="#">JM-06343-20</a>		<a href="#">JM-06343-70</a>	
Fluorometry	4.5	4	12.5 x 45 x 12.5	<a href="#">JM-06343-60</a>		<a href="#">JM-06343-80</a>	

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



#### Accessories

- [JM-06343-31](#) Cuvette caps, LDPE. Case of 1000
- [JM-06343-35](#) Cuvette stirring spatulas, PS. Case of 1000



## 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



Model 83055-20 features a concentration mode and an RS-232 and USB interface. Use the interface to print or download data to your PC—order optional printer, software, and cables at right for integrated data collection.

**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 under "Accessories" below.



Bandwidth	20 nm	10 nm
<b>Catalog number</b>	<b>JM-83055-10</b>	<b>JM-83055-20</b>
Bandwidth	20 nm	10 nm
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 1999 C
Output	USB	RS-232 / USB
Power (50/60 Hz)	115/230 VAC switchable	
<b>Price</b>		

#### Accessories

**JM-83055-25** Optional 230 VAC power cable

**JM-06343-10** Square disposable cuvettes; polystyrene, 4.5 mL. Pack of 500

**JM-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

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

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

## Cole-Parmer® UV/Visible Spectrophotometers

### Save time—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
<b>Catalog number</b>	<b>JM-83059-10</b>	<b>JM-83059-15</b>
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	
<b>Price</b>		

#### Accessories

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

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

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

**JM-83057-74** Sipper system, 230 VAC. With external controller unit and peristaltic pump; requires flow cell and tubing

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

**JM-83057-78** Flow cell, glass (visible spectra)

**JM-83057-79** Flow cell, quartz (UV spectra)

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

## 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.



**NEW**

## Hach® TitraLab® pH/Total Alkalinity and Hardness Kits

### Simplify your routine water titrations

- Minimal training required—ready-to-use, preprogrammed methods
- User interface in English, Spanish, French, and Italian
- GLP-compliant data logging for up to 55 data sets
- No need to buy separate components—kits include all accessories



**NEW**

Get fast titration results from application specific kits that are ready-to-use with preprogrammed methods for accurate results from high-resolution 40,000-step electronic burette. Data logging stores up to 55 data sets with date and time stamp. Complete kits include everything except chemicals to run the titrations.

**pH/Total Alkalinity kit** performs acid-base titrations in water with up-to-three point calibration.

**Total Hardness (calcium and magnesium) kit** performs complexometric titrations in water with a range from 6 to 800 ppm CaCO<sub>3</sub>.

**What's included:** 94100-30 includes: pH combination electrode, stirrer and stirring bar, valve for burette, syringe, and universal power cord. 94100-40 includes: silver rod electrode, stirrer and stirring bar, valve for burette, pump cassette with tubing (2 mm ID), syringe, and universal power cord.

ISO9001:2008 CERTIFIED SUPPLIER **CE**

#### Specifications

ISO9001:2008 CERTIFIED SUPPLIER **CE**

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

Model	Tests	Catalog number	Price
Easy pH titrator system	Acid/base	<a href="#">JM-94190-02</a>	
Easy Cl titrator system	Precipitation	<a href="#">JM-94190-04</a>	
Easy Ox titrator system	Redox	<a href="#">JM-94190-06</a>	
Easy Pro titrator system	Acid/base, precipitation, and redox	<a href="#">JM-94190-08</a>	
Easy KFV titrator system	Karl Fischer volumetric	<a href="#">JM-94190-10</a>	

#### Accessories

- [JM-94190-55](#) EasyDirect titration software package
- [JM-94190-50](#) Replacement pH electrode, with BNC connector
- [JM-94190-51](#) pH electrode, for non-aqueous applications, with BNC connector
- [JM-94190-52](#) Replacement redox electrode, with BNC connector
- [JM-94190-53](#) Replacement KF electrode, with BNC connector
- [JM-94190-54](#) Replacement precipitation electrode, with BNC connector

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#### Specifications

**Volume resolution:** 0.001 mL      **Units:** ppm, mg/L, meq/L, mmol/L, CaCO<sub>3</sub>, dGH, gpg, °dH, °clark, °F  
**Data logging:** stores up to 55 data sets      **Power:** 100 to 240 VAC; 50/60 Hz  
**Sample size:** 50 mL

Description	Catalog number	Price
TitraLab pH/total alkalinity analyzer	<a href="#">JM-94100-30</a>	
TitraLab total hardness analyzer	<a href="#">JM-94100-40</a>	

#### Accessories

- [JM-59004-54](#) Replacement pH combination electrode
- [JM-66201-03](#) Replacement beakers, polypropylene, 50 mL. Pack of 10
- [JM-04775-40](#) Replacement stirring bars, PTFE-coated, 20 x 6 mm. Pack of 10
- [JM-07944-12](#) Replacement syringe, plastic, 10mL. Pack of 50

## PFXi-195 Series Short-Pathlength Color Meters

### Eliminate user subjectivity

**NEW**



- 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

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.

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.

#### Specifications

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

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

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

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

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

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

## Comparator 2000 Portable Color Grading Systems

### Economical, visual color measurement anywhere

- Available with the most popular color scales
- Simply place sample in vial and compare transmittance to glass color standards

These durable, portable systems allow you to make quick visual comparisons between your sample and a range of stable colored glass standards on a disc. Battery-operated illuminator offers flexibility for laboratory, plant, or field color grading. With the two-section field of view, the sample transmittance is directly compared with individual colored glass standards on a test disc.

The comparator is ideal for light-colored samples with visual color (pathlength up to 40 mm); an illuminator is added to systems for measuring unsaturated samples requiring a longer pathlength.

**What's included:** discs containing colored glass filters, sample cells/tubes, calibration filter with certificate, and three AA batteries (for illuminator models).



#### Specifications

<b>Mode:</b> transmittance	<b>Light source:</b> tungsten halogen	<b>Illuminator power:</b> three AA batteries (included)
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Description	Applications	Color scales (included)	Range	Cell type (included)	Catalog number	Price
AF334 comparator	Food and beverage; colored oils, fats and waxes	Gardner	1 to 18 units	10 mm	<a href="#">JM-99562-40</a>	
AF329 comparator with illuminator	Water and wastewater; edible oils and fats; petroleum oils and waxes	Pt-Co/Hazen/APHA	0 to 250 mg Pt/L	Nessler	<a href="#">JM-99562-42</a>	
AF328 comparator with illuminator		Pt-Co/Hazen/APHA, low level	0 to 70 mg Pt/L	Nessler	<a href="#">JM-99562-44</a>	
AF325 comparator with illuminator		Pt-Co/Hazen/APHA	10 to 250 mg Pt/L	Nessler	<a href="#">JM-99562-48</a>	
AF327 comparator with illuminator	Water and wastewater; chemicals; edible oils and fats; petroleum oils and waxes	Pt-Co/Hazen/APHA, ASTM D1209, low level	0 to 70 mg Pt/L	Nessler	<a href="#">JM-99562-46</a>	

[JM-99562-51](#) Replacement optical cell, 10 mm...

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

[JM-99562-57](#) Replacement optical cell, Nessler

## PearlSense™ T UV Transmittance Monitors

### Eliminate drift from multiple lamps and sensors

- Save money and get stable readings with ultra-long life UV-C LED light source
- Be more versatile—mount inline, in an open channel, or use as a handheld unit

Ultraviolet radiation is a cost-effective method for wastewater and water disinfection—merges lamp and sensor for elimination of drift. Lamp does not require warm-up time, so on/off is instantaneous and measurements are available immediately on the backlit LCD.

Online meters can be used in high-purity monitoring, or use the self-cleaning model for murky conditions. Offline model is portable and battery-operated—perfect to grab sample readings!

**What's included:** battery charger (offline model), connection cable (online models), and cleaning kit (cloth and cotton swabs).

**NEW**



#### Specifications

**Light source:** UV-LED  
**Wavelength/pathlength:** 254 nm at 1 cm  
**Accuracy:** ±1.0% T  
**Repeatability:** ±0.1% T  
**Resolution:** 0.1% T

**Temperature range:** 32 to 122° (0 to 50°C)  
**Measuring interval:** every 60 seconds (online models only) or manually controlled  
**Process connection:** 1.5 sanitary Tri-Clamp® (online models only)

Description	Range (% T)	Output	Power	Catalog number	Price
Offline, portable	10 to 100	—	Rechargeable battery	<a href="#">JM-99522-02</a>	
Online, high-purity	95 to 100	4 to 20 mA	24 VDC	<a href="#">JM-99522-04</a>	
Online, self-cleaning	10 to 100	4 to 20 mA	24 VDC	<a href="#">JM-99522-06</a>	

[JM-99522-50](#) Carrying case, foam lined canvas, for portable/offline unit

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## 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



Description	Size	Max gallons of water to obtain 1 ppm	Fluorescent red dye		Fluorescent yellow/green dye		Blue dye		Fluorescent orange dye	
			Catalog number	Price	Catalog number	Price	Catalog number	Price	Catalog number	Price
Quick-dissolving tablets	200 tablets	60 (red, ylw/grn) 35 (orange) 20 (blue) all per tablet	<a href="#">JM-00295-16</a>		<a href="#">JM-00295-17</a>		<a href="#">JM-00295-18</a>		<a href="#">JM-00295-19</a>	
Concentrate	Pint	3,125 (red) 12,500 (ylw/grn, blue) 4,000 (orange)	<a href="#">JM-00298-16</a>		<a href="#">JM-00298-17</a>		<a href="#">JM-00298-18</a>		<a href="#">JM-00298-19</a>	
Concentrate	Gallon	25,000 (red) 100,000 (ylw/grn, blue) 32,000 (orange)	<a href="#">JM-00298-06</a>		<a href="#">JM-00298-07</a>		<a href="#">JM-00298-08</a>		<a href="#">JM-00298-09</a>	
Powder	Pound	60,400 (red, orange) 120,000 (ylw/grn, blue)	<a href="#">JM-00298-26</a>		<a href="#">JM-00298-27</a>		<a href="#">JM-00298-28</a>		<a href="#">JM-00298-29</a>	

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



# Introducing **ENVIRONMENTAL EXPRESS**<sup>®</sup> Innovative Products for Improved Efficiency

## ENVIRONMENTAL EXPRESS<sup>®</sup>

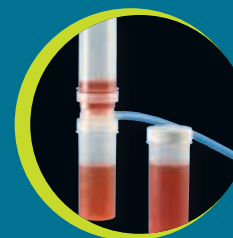
### Digestion

Save time, money, and simplify sample prep with HotBlock<sup>®</sup> systems... pages 64–65



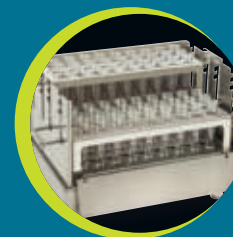
### FlipMate<sup>®</sup> Filtration Systems

Get better sample filtering without needing a separate filtration device... page 67



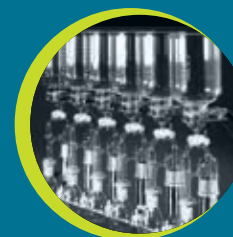
### Distillation

Perform digestions automatically with the HotBlock<sup>®</sup> TKN systems... page 68



### Extraction

Achieve sample collection in just five easy steps with StepSaver<sup>™</sup> systems... page 71



### ProWeigh<sup>®</sup> Filters

Eliminate the need to wash, dry, and preweigh filters before use... page 74



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## 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	<a href="#">JM-53205-00</a>	
						120	60	9	<a href="#">JM-53205-02</a>	
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)	240	50	5	<a href="#">JM-53205-03</a>	
						120	60	13	<a href="#">JM-53205-04</a>	
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)	240	50	7	<a href="#">JM-53205-05</a>	
						120	60	9	<a href="#">JM-53205-06</a>	
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)	240	50	15	<a href="#">JM-53205-07</a>	
						120	60	13	<a href="#">JM-53205-08</a>	
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)	240	50	9	<a href="#">JM-53205-09</a>	

†Order cups separately on page 66.

## Environmental Express® HotBlock® Hot Plate

### Heat vessels with flat bottoms with ease

- 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	<a href="#">JM-53205-10</a>	
		240	50	7	<a href="#">JM-53205-11</a>	

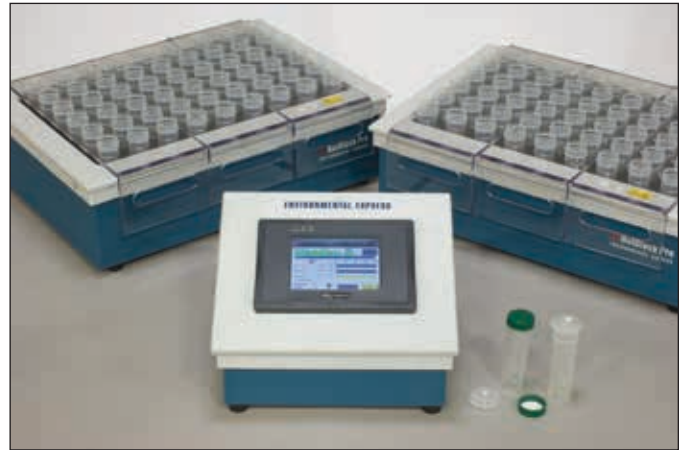
# Environmental Express® HotBlock® Pro Systems

## 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 by the user
- 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**

### 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	<a href="#">JM-53201-50</a>	
	240	50	<a href="#">JM-53201-51</a>	



CE  
240 VAC  
models



### REQUIRED System Components

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

### 2. HotBlock Pro Hot Blocks (choose 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	<a href="#">JM-53201-52</a>	
						240	50	4.5	<a href="#">JM-53201-53</a>	
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	<a href="#">JM-53201-54</a>	
						240	50	4.5	<a href="#">JM-53201-55</a>	
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	<a href="#">JM-53201-56</a>	
						240	50	4.5	<a href="#">JM-53201-57</a>	
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	<a href="#">JM-53201-58</a>	
						240	50	4.5	<a href="#">JM-53201-59</a>	
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	<a href="#">JM-53201-60</a>	
						240	50	4.5	<a href="#">JM-53201-61</a>	

†Order cups separately on page 66.

### 3. External Temperature Probe

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



## Questions?

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Polo, 8 years of experience

## 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®

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	<a href="#">JM-53201-01</a>	1000	
50-mL digestion cup	68 mL	To 50 mL	30 x 106 mm	Green, with liner	<a href="#">JM-53201-03</a>	500	
50-mL digestion cup	68 mL	To 50 mL	30 x 106 mm	White, with liner	<a href="#">JM-53201-05</a>	500	
100-mL digestion cup	125 mL	To 100 mL	46 x 100 mm	White, no liner	<a href="#">JM-53201-07</a>	225	

## 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	<a href="#">JM-53205-49</a>	
(1) 18-place rack	50 mL	53201-03, -05	1 rack	<a href="#">JM-53201-11</a>	
(1) 15-place and (1) 10-place rack	100 mL	53201-07	2 racks	<a href="#">JM-53201-13</a>	
(1) 15-place and (2) 10-place rack	100 mL	53201-07	3 racks	<a href="#">JM-53205-48</a>	



## 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	<a href="#">JM-53201-02</a>	1000	
For 50-mL digestion cups	44 mm	<a href="#">JM-53201-04</a>	1000	
For 100-mL digestion cups	52 mm	<a href="#">JM-53201-08</a>	500	

## Disposable Reflux Cap

Center hole for smooth addition of reagents

- Fits 50-mL digestion cup (SC475)
- Achieve equal reflux as the ribbed watch glasses above



Diameter	Catalog number	Qty/pk	Price/pk
34 mm	<a href="#">JM-53201-06</a>	1000	

# 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	<a href="#">JM-35202-00</a>	100	
Acid-washed glass fiber with polyethylene frit	0.7	No	TCLP extractions	<a href="#">JM-35202-01</a>	100	
PVDF with PTFE prefilter	0.45	No	Dissolved metals only	<a href="#">JM-35202-02</a>	100	
Certified PTFE	2	Yes	Trace level analysis	<a href="#">JM-35202-03</a>	100	
PVDF with PTFE prefilter	0.45	Yes	Dissolved metals only	<a href="#">JM-35202-04</a>	100	
Polyethylene frit	2	No	Use with 15-mL digestion cups	<a href="#">JM-35202-05</a>	100	

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

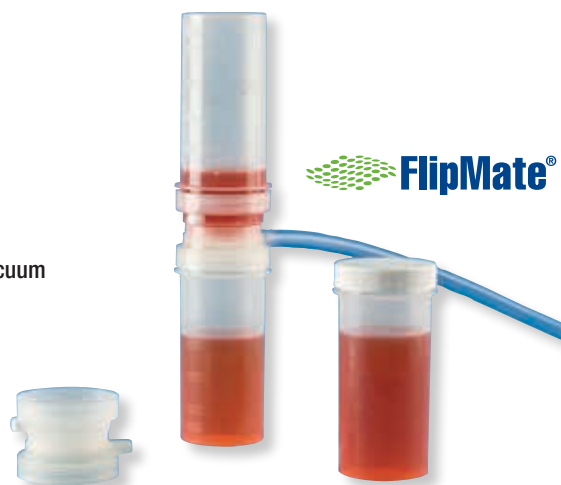
[JM-35202-07](#) Replacement plunger fits 50-mL cup. Pack of 500

# Environmental Express® FlipMate® Systems

## Get quick filtration with ease

- Simply screw on filtration assembly, add an additional digestion cup, and apply vacuum
- Sample is ready in just seconds

**Complete systems include:** FlipMate 50 systems include 200 FlipMate filtration assemblies, 400 digestion cups (53201-03), and 200 caps. FlipMate 100 systems include 100 FlipMate filtration assemblies, 200 digestion cups (53201-07), and 100 caps.



Membrane type	Pore size (µm)	Sample size	Complete FlipMate System			FlipMate Filtration Assembly Only		
			Catalog number	Qty/pk	Price/pk	Catalog number	Qty/pk	Price/pk
<b>FlipMate 50 systems</b>								
PES filter with prefilter	0.45	50 mL	<a href="#">JM-35202-08</a>	200		<a href="#">JM-35202-15</a>	100	
PES filter with prefilter, white caps	0.45	50 mL	<a href="#">JM-35202-09</a>	200		—	—	
Glass fiber filter	1.5	50 mL	<a href="#">JM-35202-10</a>	200		<a href="#">JM-35202-16</a>	100	
Glass fiber filter, white caps	1.5	50 mL	<a href="#">JM-35202-11</a>	200		—	—	
PES filter without prefilter	0.45	50 mL	<a href="#">JM-35202-12</a>	200		<a href="#">JM-35202-17</a>	100	
PES filter with PTFE prefilter†	0.45	50 mL	<a href="#">JM-35202-13</a>	200		<a href="#">JM-35202-18</a>	100	
Glass fiber filter with PTFE prefilter†	0.7	50 mL	<a href="#">JM-35202-14</a>	200		<a href="#">JM-35202-19</a>	100	
Acid-washed glass fiber filter without prefilter	0.7	50 mL	—	—		<a href="#">JM-35202-20</a>	100	
PVDF filter†	0.45	50 mL	—	—		<a href="#">JM-35202-21</a>	100	
<b>FlipMate 100 systems</b>								
PES filter with prefilter	0.45	100 mL	<a href="#">JM-35202-22</a>	100		<a href="#">JM-35202-28</a>	50	
Glass fiber filter	1.5	100 mL	<a href="#">JM-35202-23</a>	100		<a href="#">JM-35202-29</a>	50	
PES filter with prefilter	0.2	100 mL	<a href="#">JM-35202-24</a>	100		<a href="#">JM-35202-30</a>	50	
Acid-washed glass fiber filter without prefilter	0.7	100 mL	<a href="#">JM-35202-25</a>	100		<a href="#">JM-35202-31</a>	50	
Acid-washed glass fiber filter without prefilter	>10	100 mL	<a href="#">JM-35202-26</a>	100		<a href="#">JM-35202-32</a>	50	
PES filter with PTFE prefilter†	0.45	100 mL	<a href="#">JM-35202-27</a>	100		<a href="#">JM-35202-33</a>	50	

†Certified for trace metals

[JM-53205-19](#) FlipMate vacuum manifold, 12 place for both 50 and 100 mL cups

[JM-79301-21](#) Hand-operated vacuum pump

# Environmental Express® HotBlock® TKN Systems

## No need to monitor—performs digestions automatically

**NEW**

- Be more flexible with higher temperature capabilities— heats up to 450°C
- Get up and running quicker—block heats faster so you get digesting faster
- Program and recall up to 8 applications (including TKN) with the advanced touch-screen controller
- Choose between two configurations—28 or 54 positions— to suit your needs
- No need to buy separate glassware for your systems—glassware can be used with our SimpleDist® systems as well

Don't struggle to perform TKN, the controller is programmed to ramp the temperature of the block to 160°C and hold that temperature for 60 minutes. Then the block temperature automatically ramps to 380°C over the course of 60 minutes and holds that temperature for an additional 30 minutes. At that point the block shuts off to end the digestion. Temperature, ramp rate, and hold times are easily programmed for other procedures. Up to 20 steps can be incorporated for each digestion procedure.



**HotBlock® TKN**

### Specifications

**Temperature range:** ambient to 450°C      **Power:** 240 VAC, 50/60 Hz

Description	Catalog number	Price
<b>Blocks only</b>		
28-well digestion block only	<a href="#">JM-35205-66</a>	
54-well digestion block only	<a href="#">JM-35205-67</a>	
<b>Controllers only</b>		
Simple controller	<a href="#">JM-35205-68</a>	
Advanced touch-screen controller	<a href="#">JM-35205-69</a>	
<b>Complete HotBlockTKN systems</b>		
54-well block digestion system with simple controller and threaded tubes	<a href="#">JM-35205-70</a>	
54-well block digestion system with simple controller and nonthreaded tubes	<a href="#">JM-35205-71</a>	



Simple controller



Advanced touch-screen controller

### Digestion Tubes and Stopper

- Optimize your TKN analysis for better results
- Interchangeable glassware also works with the SimpleDist® system on page 69
- Get maximum heat transfer with flat-bottom, borosilicate glass vessels
- Ideal for general reflux and digestion methods
- Teardrop stopper is ideal for the capture and condensation of digestion fumes, reducing the loss of acid and preventing cross-contamination of samples



Description	Catalog number	Price/ea
Threaded tube	<a href="#">JM-35205-72</a>	
Non-threaded tube	<a href="#">JM-35205-73</a>	
Teardrop stopper	<a href="#">JM-35205-74</a>	

### Standards and Reagents

- Meet EPA methods 351.1 and 351.2



Description	Volume	Catalog number	Price
<b>Standards</b>			
Standard, ammonia as nitrogen, 1000 µg/mL	100 mL	<a href="#">JM-35205-14</a>	
	500 mL	<a href="#">JM-35205-13</a>	
<b>TKN Preparation</b>			
Copper sulfate pentahydrate	500 g	<a href="#">JM-35205-36</a>	
Digestion reagent with mercury†	1 L	<a href="#">JM-35205-39</a>	
Digestion reagent for nitrogen without mercury†	1 L	<a href="#">JM-35205-37</a>	
Carbon boiling chips	8 oz	<a href="#">JM-35205-41</a>	
<b>TKN Analysis</b>			
EDTA reagent, 5% w/v	500 mL	<a href="#">JM-35205-43</a>	
Sodium hypochlorite, 2–3% w/v	1 L	<a href="#">JM-35205-44</a>	
Sodium nitroprusside, 0.05% w/v	500 mL	<a href="#">JM-35205-45</a>	
Sodium phenate solution	500 mL	<a href="#">JM-35205-47</a>	

†Hazardous shipping rates apply.

## Environmental Express® SimpleDist® Distillation System

### Perform safe and easy ammonia and cyanide distillations

**NEW**

- 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®**

ETL For HotBlock® CE

Description	Power	Catalog number	Price
SimpleDist complete 12-valve system	120 VAC, 6 A	<a href="#">JM-35209-84</a>	
	240 VAC, 3 A	<a href="#">JM-35209-85</a>	

#### Accessories

Description	Catalog number	Qty/pk	Price
Boiling tube, borosilicate glass, 30 x 200 mm	<a href="#">JM-35209-88</a>	1	
Tube rack, 12-place	<a href="#">JM-35209-89</a>	1	
Collection traps, 25 mL	<a href="#">JM-35209-90</a>	100	
Reagent addition tube with funnel tip	<a href="#">JM-35209-91</a>	100	
Screw cap, open-top, polypropylene, 38 mm	<a href="#">JM-35209-92</a>	6	
Black washer, neoprene, for 38-mm screw caps	<a href="#">JM-35209-93</a>	6	
Two-port cap insert, for 38-mm screw caps	<a href="#">JM-35209-94</a>	6	
Tubing adapters to fit 1/4" ID tubing and cyanide trap	<a href="#">JM-35209-95</a>	12	
Tubing kit, 12 precut pieces of tubing with adapters pre-inserted in one end	<a href="#">JM-35209-96</a>	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 <sub>2</sub> SO <sub>4</sub> ; 5-mL tubes	<a href="#">JM-35209-78</a>	50	
Snip & Pour reagent, 1.25 N NaOH; 5-mL tubes	<a href="#">JM-35209-81</a>	50	
Snip & Pour reagent, 20 g/L boric acid; 5-mL tubes	<a href="#">JM-35209-83</a>	50	

ENVIRONMENTAL EXPRESS®



Environmental Testing

Distillation

## Environmental Express® SimpleDist® Micro Heating Block

### Eliminate broken glassware

**NEW**

- Accepts disposable polypropylene distillation tubes—no more costly glass apparatus to clean or replace
- Save time—smaller sample size means quicker distillations
- Reduce waste—requires just 6 mL of sample
- Distills 26 samples simultaneously
- No need for cooling water
- For optimal results, use our disposable micro tubes below

The EPA approves the use of micro distillation systems with disposable tubes for reporting of cyanide; system can be adapted for ammonia reporting as well. This high-throughput unit lets you distill 26 samples simultaneously, using only 6 mL of sample per tube. It's quick and easy—everything is done in the micro tube! Simply add sample, heat, and bring the distillate to volume in the collection part of the tube.

The SimpleDist Micro heating block is made from PTFE-coated graphite enclosed in durable Kydex® housing and features an easy-to-use LED controller.



SimpleDist Micro heating block shown with disposable distillation micro tubes—order tubes separately below.



Description	Number of wells	Temperature range	Dimensions (W x H x D) 34" x 7½" x 8" (86.4 x 19.1 x 20.3 cm)	120 VAC		240 VAC	
				Catalog number	Price	Catalog number	Price
SimpleDist Micro heating block	26	Ambient to 150°C		<a href="#">JM-35202-36</a>		<a href="#">JM-35202-38</a>	

**NEW**

## Environmental Express® Disposable Distillation Micro Tubes

### Save time and improve safety in your lab

- Eliminate broken glassware—made of polypropylene with hydrophobic membrane and cap
- No more having to wash distillation tubes—just use and toss!
- Molded-in graduations at 6 mL and 10 mL for easy measuring
- Score line for quick separation of collection tube
- Compatible with most micro distillation systems



**ENVIRONMENTAL EXPRESS®**

Qty/ pk	Ammonia tubes		Cyanide tubes		Phenol tubes	
	Catalog number	Price/pk	Catalog number	Price/pk	Catalog number	Price/pk
10	<a href="#">JM-35202-90</a>		<a href="#">JM-35202-70</a>		<a href="#">JM-35202-80</a>	
21	<a href="#">JM-35202-91</a>		<a href="#">JM-35202-71</a>		<a href="#">JM-35202-81</a>	
26	<a href="#">JM-35202-92</a>		<a href="#">JM-35202-72</a>		<a href="#">JM-35202-82</a>	
100	<a href="#">JM-35202-93</a>		<a href="#">JM-35202-73</a>		<a href="#">JM-35202-83</a>	

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## Environmental Express® StepSaver™ Complete Extraction Systems

Choose the right system for your needs

- Customizable—select your funnels, extraction disk size, number of stations, and type of manifold
- No separate drying step—drying cartridge removes excess water so sample is ready for evaporation
- Solvent and eluted oil collected into convenient collection flask
- Meet EPA Method 1664 for oil and grease
- Your choice of economical glass funnels or convenient disposable polypropylene funnels
- Select a PVC manifold with 1, 3, or 7 stations or a stainless steel manifold with 1, 3, or 6 stations

**NEW**



**StepSaver™**

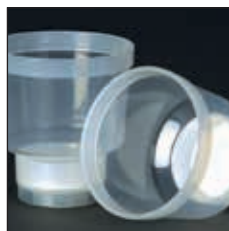
### StepSaver Extraction Systems with Glass Funnels

- Reduce waste and save money with reusable glass funnels
- Funnels include either Environmental Express UltraPrep™ or UltraFlow® 47-mm extraction disks
- Complete with all glassware needed

**What's included:** manifold, HDPE waste carboy with tubing and fittings, 20 47-mm extraction disks, 50 sodium sulfate drying cartridges, 20 Environmental Express Snip & Pour® standards 10-mL vials (40 mg HEM), and 20 Snip & Pour MDL standards 10-mL vials (7 mg HEM). Each station (specified in table) comes with 1000-mL glass funnel, extraction head with 2-way PTFE stopcock, stainless steel filter screen, sealing gasket, aluminum clamp, Keck® clip, and two glass collection flasks (100 mL).

### StepSaver Extraction Systems with Disposable Funnels

- No need to clean glass funnels with disposable polypropylene funnels
- Funnels hold 250 mL of liquid
- Both funnels feature a double-layer extraction disk, eliminating the need for a prefilter
- UltraPrep funnels do not require any conditioning before use—the included extraction disk is preactivated and ready to use



**What's included:** all components in the glass funnel systems except instead of the glass funnel for each station, you will receive 40 disposable funnels.

Number of stations	With UltraPrep extraction disk		With UltraFlow extraction disk	
	Catalog number	Price	Catalog number	Price
<b>StepSaver systems with PVC manifold</b>				
1	<a href="#">JM-35211-00</a>		<a href="#">JM-35210-00</a>	
3	<a href="#">JM-35211-01</a>		<a href="#">JM-35210-01</a>	
7	<a href="#">JM-35211-02</a>		<a href="#">JM-35210-02</a>	
<b>StepSaver systems with stainless steel manifold</b>				
1	<a href="#">JM-35211-03</a>		<a href="#">JM-35210-03</a>	
3	<a href="#">JM-35211-04</a>		<a href="#">JM-35210-04</a>	
6	<a href="#">JM-35211-05</a>		<a href="#">JM-35210-05</a>	

[JM-35210-06](#) Individual station with 47-mm glass funnel

[JM-35210-07](#) Individual station with 90-mm glass funnel

Number of stations	UltraPrep funnel		UltraFlow funnel	
	Catalog number	Price	Catalog number	Price
<b>StepSaver systems with PVC manifold</b>				
1	<a href="#">JM-35210-15</a>		<a href="#">JM-35210-08</a>	
3	<a href="#">JM-35210-16</a>		<a href="#">JM-35210-09</a>	
7	<a href="#">JM-35210-17</a>		<a href="#">JM-35210-10</a>	
<b>StepSaver systems with stainless steel manifold</b>				
1	<a href="#">JM-35210-18</a>		<a href="#">JM-35210-11</a>	
3	<a href="#">JM-35210-19</a>		<a href="#">JM-35210-12</a>	
6	<a href="#">JM-35210-20</a>		<a href="#">JM-35210-13</a>	

[JM-35210-14](#) Individual station, 47 mm, without funnel or extraction disk

[JM-35210-38](#) UltraPrep disposable polypropylene funnel; 47-mm extraction disk, 250-mL capacity. Pack of 20

[JM-35210-28](#) UltraFlow disposable polypropylene funnel; 47-mm extraction disk, 250-mL capacity. Pack of 20

## Manifolds for Environmental Express® StepSaver™ Systems

Create your own vacuum filtration system

- Choose PVC or stainless steel construction
- Control each branch independently with 3-way PTFE valves

**NEW**

Number of places	Length	Catalog number	Price
<b>PVC manifolds</b>			
1	12"	<a href="#">JM-35211-52</a>	
3	22"	<a href="#">JM-35211-53</a>	
7	45"	<a href="#">JM-35211-54</a>	
<b>Stainless steel manifolds</b>			
1	12"	<a href="#">JM-35211-55</a>	
3	18"	<a href="#">JM-35211-56</a>	
6	28½"	<a href="#">JM-35211-57</a>	



[JM-35211-50](#) 3M® Empire™ Filter Aid 400 microglass beads for filtration of suspended solids. One 1.5-kg bottle

## Environmental Express® UltraPrep™ Preactivated C-18 Premium Extraction Disks

No need to condition before use

- Eliminates the need for additional solvent such as methanol
- Ensure method compliance—unique hydrophilic C-18 material does not need to be kept wet, eliminating the risk of co-solvent contact with sample
- Improve filtration speed and recovery with prefilter layer of coarse glass fiber
- Follow EPA 1664 for solid phase extraction of oil and grease



Filter size	Catalog number	Qty/pk	Price/pk
47 mm	<a href="#">JM-35210-34</a>	20	
90 mm	<a href="#">JM-35210-35</a>	15	
100 mm	<a href="#">JM-35210-36</a>	15	

[JM-35210-38](#) UltraPrep disposable polypropylene funnel; 47-mm extraction disk, 250-mL capacity. Pack of 20

**NEW**



## Environmental Express® UltraFlow® C-18 Extraction Disks

Eliminate the need for a prefilter

- Improve your recovery
- Two layers allow for HEM fractions to be attracted to fine glass fiber bottom layer, while coarse glass fiber top layer eliminates the need for a prefilter
- Follow EPA 1664 for testing



Filter size	Catalog number	Qty/pk	Price/pk
47 mm	<a href="#">JM-35210-24</a>	20	
90 mm	<a href="#">JM-35210-26</a>	15	
100 mm	<a href="#">JM-35210-27</a>	15	

[JM-35210-28](#) UltraFlow disposable polypropylene funnel; 47-mm extraction disk, 250-mL capacity. Pack of 20

**NEW**

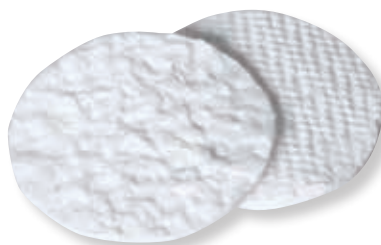


## Environmental Express® UltraLow® C-18 Extraction Disks

Use 30% less hexane

- Get same extraction capacity as UltraFlow® disks (above) without the built-in prefilter
- May not be suitable for samples containing large amounts of fats, silts, colloidal substances, or suspended material

**NEW**



### ENVIRONMENTAL EXPRESS®

Filter size	Catalog number	Qty/pk	Price/pk
47 mm	<a href="#">JM-35210-32</a>	20	
90 mm	<a href="#">JM-35210-33</a>	15	
100 mm	<a href="#">JM-35210-31</a>	15	

#### Accessories

[JM-35210-21](#) Glass fiber prefilter, 47 mm. Pack of 50

[JM-35210-23](#) Glass fiber prefilter, 90 mm. Pack of 50

### Teky's Tips



#### Oil and Grease Extraction

It is important to remove all water from the analysis prior to evaporation. This is accomplished via two steps in the extraction procedure.

The first is to pull vacuum on the SPE disk for approximately 10 minutes after the sample has finished passing through the disk. This will remove water that may be trapped between the fibers in the disk.

The second is in the use of the sodium sulfate cartridges. This will remove traces of water that may be pulled out with the hexane during the elution stage. Because it is impossible to determine how much water will need to be removed with each sample, the drying cartridges are recommended as a single-use item.

## Environmental Express® QuikVap® Evaporating System

### One system handles both flask and pan analysis methods

- Simply switch out adapter plate to accommodate flasks or pans
- Evaporate *n*-hexane quickly and effectively by adjusting temperature, airflow, and vessel configuration
- Use digital controller to accurately set and maintain temperature throughout the evaporation process
- Attach system to air or nitrogen source and preheat to 65°C; evaporation of 40 mL of solvent in just 20 minutes
- Use system with 100-mL flasks or aluminum pans below

This easy-to-use evaporation system provides quick drying of samples. Simply connect to dried air or nitrogen source, preheat block to 65°C, adjust flow of air, and evaporate to dryness. Transfer samples to a desiccator and then reweigh.

**Caution:** Operation should take place under an operational fume hood.

**What's included:** block heater with six-position flask manifold, anodized aluminum pan adapter plate, six curved needles, six needle adapters, flow control valve with hose barb adapter, and one box of 105-mm aluminum pans.

#### ENVIRONMENTAL EXPRESS®

Description	120 VAC		240 VAC	
	Catalog number	Price	Catalog number	Price
QuikVap evaporating system	<a href="#">JM-35210-40</a>		<a href="#">JM-35210-41</a>	



The included pan adapter plate easily converts the system for analysis using aluminum pans.

Environmental Testing

Extraction

## Aluminum Evaporating Pans

### Get effective evaporation affordably

- No need to clean—just toss when analysis is complete



Capacity	Diameter	Catalog number	Qty/pk	Price
80 mL	73 mm	<a href="#">JM-01018-29</a>	1000	
150 mL	103 mm	<a href="#">JM-01018-31</a>	1000	

## Round-Bottom Collection Flask

### Quality glassware for reliable testing

- Heavy-wall borosilicate glass with 24/25 ground glass joint



**NEW**

Capacity	TS joint	Catalog number	Price
100 mL	24/25	<a href="#">JM-35211-51</a>	

## Environmental Express® ProWeigh® and ProWeigh® Double Filters

No more washing, drying, and preweighing filters—it's already done for you!

- Get individual weights immediately—filter ID and weight is printed on each individual pan
- Eliminate loose fibers and inaccurate weights with precise, laser-cut edges

Save time and get faster results with these prepared filters. Each filter is washed, dried, and weighed robotically to the nearest 0.1 mg, then transferred to an aluminum dish that is printed with a barcode and the filter weight. Simply record the weight, filter your sample, dry the filter, and weigh the final product. ProWeigh filters are prepared and approved for use in *Standard Methods*.

### ProWeigh Filters for Volatiles

are specifically treated for use to determine fixed or volatile solids. After rinsing and drying, the filters are then heated to 550°C in a muffle furnace to drive off any volatile materials. They are then desiccated, weighed to 0.1 mg and quality inspected for accuracy.

**ProWeigh Double Filters** are weighed twice to ensure accuracy. After the initial weighing and labeling, the filters are reweighed to ensure a stable weight!

Each filter is supplied in an aluminum dish. Dishes are stacked in sleeves of 25 and packaged in boxes of 100.



### Standard Methods Approved for (Since 1997):

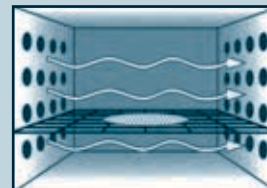
Parameter	EPA Method	Standard Method
Total Dissolved Solids	160.1	2540C
Total Suspended Solids	160.2	2540D
Volatile Suspended Solids	160.4	2540E

Pore size (µm)	Filter size	Catalog number	Qty/pk	Price/pk
<b>ProWeigh filters for total suspended solids (TSS)</b>				
1.5	32 mm	<a href="#">JM-53200-51</a>	100	
1.5	42 mm	<a href="#">JM-53200-52</a>	100	
1.5	47 mm	<a href="#">JM-53200-53</a>	100	
1.5	55 mm	<a href="#">JM-53200-54</a>	100	
1.5	70 mm	<a href="#">JM-53200-55</a>	100	
1.5	76 mm	<a href="#">JM-53200-56</a>	100	
1.5	90 mm	<a href="#">JM-53200-57</a>	100	
1.5	110 mm	<a href="#">JM-53200-58</a>	100	
<b>ProWeigh filters for volatiles</b>				
1.5	42 mm	<a href="#">JM-53200-62</a>	100	
1.5	47 mm	<a href="#">JM-53200-63</a>	100	
1.5	55 mm	<a href="#">JM-53200-64</a>	100	
1.5	70 mm	<a href="#">JM-53200-65</a>	100	
1.5	76 mm	<a href="#">JM-53200-66</a>	100	
1.5	90 mm	<a href="#">JM-53200-67</a>	100	
1.5	110 mm	<a href="#">JM-53200-68</a>	100	
<b>ProWeigh Double filters for total suspended solids (TSS)</b>				
1.5	47 mm	<a href="#">JM-53200-73</a>	100	
1.5	76 mm	<a href="#">JM-53200-76</a>	100	
1.5	90 mm	<a href="#">JM-53200-77</a>	100	
<b>ProWeigh Double filters for volatiles</b>				
1.5	47 mm	<a href="#">JM-53200-83</a>	100	

No need to prepare your filters before use—it's already done for you!



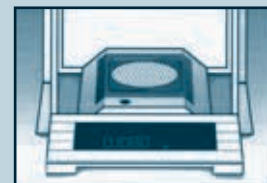
Each ProWeigh filter is washed under vacuum three times with 20 mL aliquots of deionized water.



Filter drying in horizontal flow mechanical ovens ensures uniform drying with no dead spots.



Cooling in a desiccator provides moisture-free, stable filter weights.



All ProWeigh filters are weighed on certified electronic analytical balances.

**Wait!**

There's More at  
[ColeParmer.com](http://ColeParmer.com)

Browse **100,000+** products plus find  
**Technical Resources** to help you choose



## OHAUS® Scout® Pro Portable Balances

### Superior performance and easy two-button operation

- Excellent shock resistance and overload protection
- Parts counting with auto optimization, % weighing, totalization, and display hold
- Software lock switch and integrated transport lock
- Optional snap-in RS-232 and USB interfaces are easy to install

**What's included:** weiJM-below hook, AC adapter, calibration mass (200-, 400- and 600-g models). Operate on four AA batteries (order separately).



#### Specifications

**Calibration:** external, with calibration mass

**Power:** four AA batteries (not included); 115 or 230 VAC (adapter included)

**Weighing units:** g, kg, oz, lb, lb:oz, t, dwt



Capacity	Readability	Repeatability	Linearity	Pan size	115 VAC		230 VAC	
					Catalog number	Price	Catalog number	Price
200 g	0.01 g	±0.01 g	±0.01 g	4¾" (12.1 cm) dia	<a href="#">JM-11010-50</a>		<a href="#">JM-11010-51</a>	
400 g					<a href="#">JM-11010-52</a>		<a href="#">JM-11010-53</a>	
400 g					<a href="#">JM-11010-54</a>		<a href="#">JM-11010-56</a>	
600 g					<a href="#">JM-11010-59</a>		<a href="#">JM-11010-70</a>	
600 g	0.1 g	±0.1 g	±0.1 g	5½"L x 6½"W (14.0 x 16.5 cm)	<a href="#">JM-11010-57</a>		<a href="#">JM-11010-58</a>	
600 g	0.1 g	±0.1 g	±0.1 g		<a href="#">JM-11010-59</a>		<a href="#">JM-11010-60</a>	
2000 g	0.1 g	±0.1 g	±0.1 g		<a href="#">JM-11010-61</a>		<a href="#">JM-11010-63</a>	
4000 g					<a href="#">JM-11010-71</a>		<a href="#">JM-11010-72</a>	
6000 g				<a href="#">JM-11010-64</a>		<a href="#">JM-11010-65</a>		
6000 g	1 g	±1 g	±1 g					

[JM-11010-55](#) Security cable

[JM-11010-92](#) Cable interface, RS-232

[JM-11010-94](#) Cable interface, USB

[JM-11901-59](#) Dot matrix impact printer

[JM-11901-47](#) Thermal printer

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

[JM-17101-52](#) NIST-traceable calibration with data for balances

## METTLER TOLEDO NewClassic ML-T Analytical Balances

### Designed for mobility and easy operation

- Extra-large color TFT touch-screen display with intuitive user interface—operate even while wearing gloves
- AC or battery operable for up to 8 hours—ideal for whenever a power supply is hard to find
- LevelControl warns you when the balance is not level and provides on-screen help to correct
- Advanced MonoBloc weighing technology provides fast and accurate results
- MinWeigh function displays the weight value in red until the net sample is above the preprogrammed minimum value
- Overload protection guards the weighing cell against excess weight overload
- Easy-clean feature saves time and effort with all washable parts being dishwasher-safe

**What's included:** glass draft shield, 120 VAC power adapter, and eight rechargeable AA batteries with charger.

**NEW**



#### Specifications

**Calibration:** FACT internal calibration

**Output:** RS-232, USB

**Weighing units:** g, kg, mg, ct, lb, oz, ozt, GN, dwt, momme, mesghal, tael, tical, tola, and baht

**Power:** 120 VAC power adapter or eight rechargeable AA batteries with charger

Capacity	Readability	Repeatability	Linearity	Pan size	Catalog number	Price
52 g	0.001 g	±0.001 g	±0.002 g	3½" (9 cm) dia	<a href="#">JM-11337-00</a>	
120 g	0.001 g	±0.001 g	±0.002 g		<a href="#">JM-11337-01</a>	
220 g	0.001 g	±0.001 g	±0.002 g		<a href="#">JM-11337-02</a>	
320 g	0.001 g	±0.001 g	±0.002 g		<a href="#">JM-11337-03</a>	

[JM-17101-52](#) NIST-traceable calibration with data for balances

## Cole-Parmer® Tri-Corner Beakers, PP

### Easy pouring from three sides

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



#### Buy More...Save More!

- 15% 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	<a href="#">JM-06020-01</a>	100	
100 (3.5)	10	<a href="#">JM-06020-03</a>		
250 (8)	20	<a href="#">JM-06020-05</a>		
400 (13)	40	<a href="#">JM-06020-07</a>	100	
800 (26)	50	<a href="#">JM-06020-09</a>		
1000 (32)	50	<a href="#">JM-06020-11</a>		
Five of each above	—	<a href="#">JM-06010-07</a>		

## Cole-Parmer® Class A Griffin Low-Form Graduated Glass Beakers

### Easy readings and exceptional durability

- 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



#### 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)	—	<a href="#">JM-34503-42†</a>	12	
25 (3/8)	5	<a href="#">JM-34503-44</a>	12	
50 (1 1/4)	10	<a href="#">JM-34503-46</a>	12	
100 (3)	10	<a href="#">JM-34503-48</a>	12	
150 (5)	20	<a href="#">JM-34503-50</a>	12	
250 (8)	25	<a href="#">JM-34503-52</a>	12	
400 (13)	25	<a href="#">JM-34503-54</a>	12	
600 (20)	50	<a href="#">JM-34503-56</a>	6	
1000 (32)	50	<a href="#">JM-34503-58</a>	6	
2000 (64)	100	<a href="#">JM-34503-60</a>	4	
3000 (96)	125	<a href="#">JM-34503-62</a>	1	
5000 (160)	250	<a href="#">JM-34503-64</a>	1	

†The 10-mL beaker does not have graduations

## 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
10 (1/8)	—	—	<a href="#">JM-34502-01</a>	12	
20 (3/8)	5 to 15	5	<a href="#">JM-34502-02</a>		
30 (1)	5 to 25	10	<a href="#">JM-34502-03</a>		
50 (1 1/4)	10 to 40	10	<a href="#">JM-34502-04</a>	12	
100 (3)	20 to 80	10	<a href="#">JM-34502-05</a>		
150 (5)	20 to 140	10	<a href="#">JM-34502-06</a>		
250 (8)	25 to 200	25	<a href="#">JM-34502-07</a>		
400 (13)	25 to 325	25	<a href="#">JM-34502-08</a>		
600 (20)	50 to 500	50	<a href="#">JM-34502-09</a>		
800 (27)	50 to 750	50	<a href="#">JM-34502-10</a>	6	
1000 (32)	50 to 1000	50	<a href="#">JM-34502-11</a>	6	
1500 (51)	200 to 1400	100	<a href="#">JM-34502-12</a>	4	
2000 (64)	200 to 2000	100	<a href="#">JM-34502-13</a>	4	
3000 (96)	250 to 2500	125	<a href="#">JM-34502-14</a>	1	
4000 (128)	500 to 3500	250	<a href="#">JM-34502-15</a>	1	
10 (1/8)	—	—	<a href="#">JM-34502-21</a>	48	
20 (3/8)	5 to 15	5	<a href="#">JM-34502-22</a>		
30 (1)	5 to 25	10	<a href="#">JM-34502-23</a>		
50 (1 1/4)	10 to 40	10	<a href="#">JM-34502-24</a>		
100 (3)	20 to 80	10	<a href="#">JM-34502-25</a>	48	
150 (5)	20 to 140	10	<a href="#">JM-34502-26</a>		
250 (8)	25 to 200	25	<a href="#">JM-34502-27</a>		
400 (13)	25 to 325	25	<a href="#">JM-34502-28</a>		
600 (20)	50 to 500	50	<a href="#">JM-34502-29</a>	36	
800 (27)	50 to 750	50	<a href="#">JM-34502-30</a>	24	
1000 (32)	50 to 1000	50	<a href="#">JM-34502-31</a>	24	
1500 (51)	200 to 1400	100	<a href="#">JM-34502-32</a>	16	
2000 (64)	200 to 2000	100	<a href="#">JM-34502-33</a>	8	
3000 (96)	250 to 2500	125	<a href="#">JM-34502-34</a>	6	
4000 (128)	500 to 3500	250	<a href="#">JM-34502-35</a>	6	
Starter set contains one each of 50 mL, 100 mL, 250 mL, 600 mL, 1000 mL			<a href="#">JM-34502-90</a>	5	

## Cole-Parmer® Weighing Dishes

- Features crimped angled wall and flat bottom with a large finger-tab
- Oil-free and non-coated aluminum



Capacity	Size	Catalog number	Qty/pk	Price/pk
8 mL	1 1/8" dia	<a href="#">JM-01018-26</a>	500	
20 mL	1 3/4" dia	<a href="#">JM-01018-51</a>	100	
20 mL	1 3/4" dia	<a href="#">JM-01017-51</a>	1000	
60 mL	2 1/4" dia	<a href="#">JM-01018-50</a>	100	
60 mL	2 1/4" dia	<a href="#">JM-01017-50</a>	1000	
80 mL	2 3/4" dia	<a href="#">JM-01018-52</a>	100	
80 mL	2 3/4" dia	<a href="#">JM-01017-52</a>	1000	

## 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. For our full range of benchtop dissolved oxygen meters including BOD, go to [www.coleparmer.com/oxygen](http://www.coleparmer.com/oxygen).



Capacity mL (oz)	Description	Number sequence	Catalog number	Qty/ cs	Price/ cs
300 (10)	Pennyhead stopper BOD bottles, clear	Unnumbered	<a href="#">JM-03660-14</a>	24	
300 (10)	Robotic stopper BOD bottles, clear	Unnumbered	<a href="#">JM-03660-15</a>	24	
300 (10)	Robotic stopper BOD bottles, clear	1–24	<a href="#">JM-03660-16</a>	24	
		25–48	<a href="#">JM-03660-17</a>		
		49–72	<a href="#">JM-03660-18</a>		
		73–96	<a href="#">JM-03660-19</a>		

#### Accessories

[JM-03660-09](#) Cap and insert for use with 03660-15 BOD bottles. Pack of 50

[JM-03660-12](#) Rubber bottle leash holds stopper to bottle. Pack of 25

[JM-03660-20](#) BOD bottle rack, holds twelve 300-mL bottles

## Graduated Sample Containers, PP

### No more leaks—leakproof for better sampling

- Easier sampling—graduated for measuring directly
- 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	Qty/ pk	Catalog number	Price/ pk
118 (4)	Sterile, no tab	100	<a href="#">JM-06049-40</a>	
118 (4)	Nonsterile with white tab	500	<a href="#">JM-06049-50</a>	

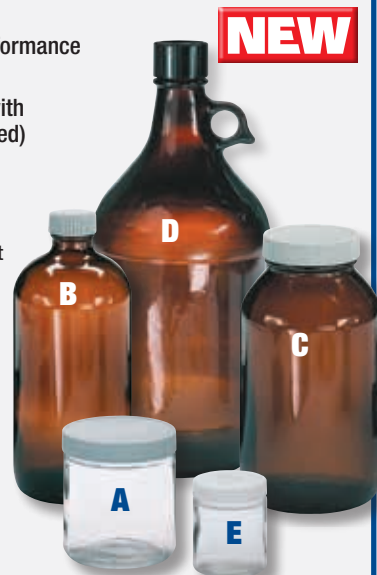
## Cole-Parmer® Precleaned EPA Sample Containers

### No contaminants—precleaned and ready to use

- 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
<b>A. Clear wide-mouth glass jars</b>				
60 (2)	53 mm	24	<a href="#">JM-99540-40</a>	
125 (4)	58 mm	24	<a href="#">JM-99540-41</a>	
250 (8)	70 mm	12	<a href="#">JM-99540-42</a>	
500 (16)	89 mm	12	<a href="#">JM-99540-43</a>	
950 (32)	89 mm	12	<a href="#">JM-99540-44</a>	
<b>B. Amber narrow-mouth glass bottles</b>				
125 (4)	22 mm	24	<a href="#">JM-99540-30</a>	
250 (8)	24-414	12	<a href="#">JM-99540-31</a>	
500 (16)	28 mm	12	<a href="#">JM-99540-32</a>	
1000 (34)	33-430	12	<a href="#">JM-99540-33</a>	
<b>C. Amber wide-mouth glass bottles</b>				
125 (4)	38 mm	12	<a href="#">JM-99540-51</a>	
250 (8)	45 mm	12	<a href="#">JM-99540-53</a>	
500 (16)	53 mm	12	<a href="#">JM-99540-55</a>	
950 (32)	53 mm	12	<a href="#">JM-99540-57</a>	
<b>D. Amber narrow-mouth glass jugs</b>				
2500 (80)	38-430	6	<a href="#">JM-99540-34</a>	
4000 (135)	38-430	4	<a href="#">JM-99540-35</a>	
<b>E. Clear wide-mouth glass septa jars</b>				
60 (2)	53 mm	24	<a href="#">JM-99540-20</a>	
125 (4)	58 mm	24	<a href="#">JM-99540-21</a>	

## DON'T RISK IT!

Our chemical compatibility database provides important information on chemical resistance—check it out at [ColeParmer.com/ChemChart](http://ColeParmer.com/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	<a href="#">JM-06209-10</a>	
25 mL	0.1 mL	500 mL	<a href="#">JM-06209-20</a>	
50 mL	0.1 mL	1000 mL	<a href="#">JM-06209-30</a>	

[JM-06703-00](#) Support stand with center rod; 30" (76 cm) L x 1/2" (1.3 cm) dia

[JM-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- $\mu$ 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	$\pm 0.20$ mL	<a href="#">JM-25503-20</a>	
50 mL	$\pm 0.20$ mL	<a href="#">JM-25503-25</a>	

[JM-25503-28](#) Interface cable, RS-232

[JM-25503-29](#) Discharge unit

[JM-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	<a href="#">JM-07879-10</a>	
15 mL	0.1 mL	500 mL	<a href="#">JM-07879-20</a>	
25 mL	0.1 mL	1000 mL	<a href="#">JM-07879-30</a>	
50 mL	0.1 mL	1000 mL	<a href="#">JM-07879-40</a>	

## 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.



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#### 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	$\pm 0.2\%$ ( $\pm 50$ $\mu$ L)	<a href="#">JM-07910-51</a>	
50 mL	$\pm 0.2\%$ ( $\pm 100$ $\mu$ L)	<a href="#">JM-07910-53</a>	

#### Accessories

[JM-07878-53](#) Drying tube. Protects sensitive reagents from moisture or CO<sub>2</sub>

[JM-07193-05](#) Drierite® drying agent for 07878-53. Twelve 1-lb packs per carton





## Cole-Parmer® FS-3500 Portable Centrifuges

Don't be tied down—portable design goes where you need it

- No more struggling—stainless steel handle for easy carrying
- Easily plugs into car—included 12 volt adapter with optional AC adapter also available
- Spin safely—dual latch lid for ensuring unit is secure
- Spin samples from 2 to 15 mL—fixed-angle rotor accepts optional adapters for other size tubes



### Specifications

**Rotor (included):** fixed angle; six-place for models 17415-01 and -02; eight-place for models 17415-11 and -12



Description	Speed range	Max RCF x g	Timer	Power	Catalog number	Price
Six-place portable centrifuge	3500 rpm	1640	0 to 30 minutes	12 VDC	<a href="#">JM-17415-01</a>	
Six-place portable centrifuge with 18-place tube holder					<a href="#">JM-17415-02</a>	
Eight-place portable centrifuge					<a href="#">JM-17415-11</a>	
Eight-place portable centrifuge with 18-place tube holder					<a href="#">JM-17415-12</a>	

[JM-17415-22](#) Power adapter, 110 VAC

[JM-17415-23](#) Power adapter, 220 VAC

[JM-17415-26](#) Small tube adapters for 2-mL tubes. Pack of 2

[JM-17415-27](#) Greiner tube lift adapters. Pack of 12

[JM-17415-29](#) Optional tube holder, 18-place

Equipment & Supplies

Centrifuges

## Hermle Z206A High-Capacity, Compact Research Centrifuge

Customize as your needs change

- Rotor choice offers flexibility—process 1.5-, 5-, 15-, or 50-mL capacities
- Automatic braking controls deceleration to protect delicate samples
- Imbalance sensor disables centrifuge and flashes an error message if unstable operating conditions occur

Features easy-to-use control knobs. Accurate digital display lets you view preset speed and actual speed. Durable ABS-plastic housing resists chemical and physical shock. Lid lock system improves safety by preventing the centrifuge from operating while the lid is open.



Fixed-angle rotor 17306-50



Swing-out rotor 17306-54

Fixed-angle rotor 17306-52

Speed range	Max RCF x g	Timer	Power		Catalog number	Price
			VAC	Hz		
200 to 6000 rpm	4180	10 sec to 99 hrs 59 min	120	50/60	<a href="#">JM-17306-01</a>	
			230	50/60	<a href="#">JM-17306-06</a>	

### Rotors

Type	Capacity	Max rpm	Max RCF x g	Catalog number	Price
Fixed angle	12 x 15-mL tubes	6000	4180	<a href="#">JM-17306-50</a>	
	6 x 50-mL tubes	6000	3820	<a href="#">JM-17306-52</a>	
	18 x 1.5-mL tubes	6000	2930	<a href="#">JM-17306-56</a>	
Swing out	6 x 5-mL tubes	3500	1450	<a href="#">JM-17306-54</a>	

### Tube Adapters

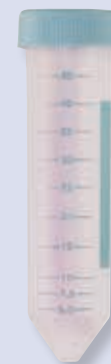
Capacity	Max tube size	Qty/pk	Catalog number	Price/pk
<b>Tube adapters for 15-mL fixed angle rotor 17306-50</b>				
10- to 12-mL round	17.5 mm x 115 mm	4	<a href="#">JM-17306-60</a>	
<b>Tube adapters for 50-mL fixed angle rotor 17306-52</b>				
15-mL conical/round	17 mm x 120 mm	4	<a href="#">JM-17306-64</a>	
7-mL round	13.5 mm x 115 mm	4	<a href="#">JM-17306-66</a>	
<b>Tube adapters for 1.5-mL fixed angle rotor 17306-56</b>				
0.5-mL tubes	—	6	<a href="#">JM-17405-80</a>	
0.4-mL tubes		6	<a href="#">JM-17420-67</a>	
0.2-mL PCR tubes		6	<a href="#">JM-17420-69</a>	

## Cole-Parmer® Conical-Bottom Disposable Plastic Tubes

– Perform separations without shattering glass



Capacity (mL)	Tube material	Dia x H (mm)	Max RCF (x g)	Cap style (cap included)	Sterile	Packaging	Qty/pk	Catalog number	Price/pk
15	PS	17 x 118	1800	Screw cap/rim seal	No	1 bag of 500	500	<a href="#">JM-06344-20</a>	
	PS	17 x 118	1800	Screw cap/rim seal	Yes	10 trays of 50		<a href="#">JM-06344-21</a>	
15	PPCO	17 x 119	6400	Screw cap/rim seal	No	1 bag of 500	500	<a href="#">JM-06344-22</a>	
	PPCO	17 x 119	6400	Screw cap/rim seal	Yes	10 trays of 50		<a href="#">JM-06344-23</a>	
	PPCO	17 x 119	6400	Screw cap/rim seal	Yes	20 bags of 25		<a href="#">JM-06344-24</a>	
50	PPCO	29 x 115	10,000	Flat top/rim seal	No	1 bag of 500	500	<a href="#">JM-06344-27</a>	
	PPCO	29 x 115	10,000	Flat top/rim seal	Yes	20 trays of 25		<a href="#">JM-06344-28</a>	
	PPCO	29 x 115	10,000	Flat top/rim seal	Yes	20 bags of 25		<a href="#">JM-06344-29</a>	
50†	PPCO	29 x 115	N/A	Flat top/rim seal	No	20 bags of 25	500	<a href="#">JM-06344-26</a>	
	PPCO	29 x 115	N/A	Flat top/rim seal	Yes	20 bags of 25		<a href="#">JM-06344-25</a>	



†Self-standing tube

## 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 Type	Dia	Pore size	Housing	Retention volume	Qty/ bx	Catalog number	Price/ bx
<b>Nonsterile filters</b>							
Cellulose acetate	26 mm	0.20 µm	Acrylic	0.23 mL	100	JM-02915-90	
		0.45 µm					
		0.80 µm					
<b>Sterile filter</b>							
Cellulose acetate	26 mm	0.20 µm	Acrylic	0.23 mL	50	JM-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
<b>Nonsterile filters</b>						
0.22 µm	26 mm	Acrylic	Blue	100	JM-02915-60	
0.45 µm			Clear			
0.80 µm			Green			
<b>Sterile filters</b>						
0.22 µm	26 mm	Acrylic	Blue	50	JM-02915-12	
0.45 µm			Clear			
0.80 µm			Green			

### 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
<b>Nonsterile filters</b>						
0.22 µm	25 mm	PP	Natural	100	JM-02915-16	
0.45 µm					JM-02915-14	
<b>Sterile filters</b>						
0.20 µm	25 mm	PP	Red	50	JM-02915-04	
0.45 µm			Natural		JM-02915-02	



## 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, alkalis, 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 <sup>†</sup>	Pressure limit at 25°C	Max temp	Effective filtration area
15 mm	PP	≤5 mL	10 µL	87 psi	127°C	1.7 cm <sup>2</sup>
25 mm	PP	≤100 mL	0.1 mL	87 psi	127°C	4.8 cm <sup>2</sup>
26 mm	Acrylic	≤100 mL	0.1 mL	87 psi	50°C	5.3 cm <sup>2</sup>
50 mm	PP	≤2 L	0.5 mL	60 psi	134°C	20 cm <sup>2</sup>

<sup>†</sup>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 1/4" to 1/2" ID tubing



Pore size	Membrane dia	Housing	Color	Qty/bx	Cat. no.	Price/bx
<b>Nonsterile filters</b>						
0.20 µm	15 mm	PP	Natural	100	JM-29550-08	
0.45 µm					JM-29550-10	
0.20 µm	25 mm	PP	Natural	100	JM-02915-20	
0.45 µm					JM-02915-22	
0.20 µm	50 mm	PP	Natural	20	JM-02915-28	
0.45 µm					JM-02915-30	
<b>Sterile filters</b>						
0.20 µm	25 mm	PP	Natural	50	JM-02915-08	
0.50 µm					JM-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
<b>Nonsterile filter</b>						
0.20 µm	26 mm	Acrylic	Blue	100	JM-02915-56	
<b>Sterile filters</b>						
0.20 µm	26 mm	Acrylic	Blue	50	JM-02915-52	
0.45 µm					JM-02915-53	



## Cole-Parmer® Mini Incubator

### Compact and economical



- Holds up to 14 microwell plates or 54 test tubes
- Stack units to increase capacity without using more bench space
- Heating element lies in the back—eliminating the risk of scorching the sample when placed on the chamber floor



PVC outer cover

Capacity cu ft (L)	Temperature range	Dimensions (W x H x D)		Power (VAC, Hz)	Catalog number	Price
		Chamber	Overall			
0.1 (2.8)	5° above ambient to 42°C	7¼" x 5¼" x 5¾"	7½" x 6¾" x 6½"	120, 50/60	<a href="#">JM-03608-14</a>	
		(18.4 x 13.3 x 14.6 cm)	(19.5 x 15.7 x 16.5 cm)	230, 50/60	<a href="#">JM-03608-15</a>	

## Cole-Parmer® StableTemp™ Undercounter BOD Incubator

### Incubate up to 114 BOD bottles

- Microprocessor-based controller is conveniently mounted on the door for easy access
- Chamber interior features a two-amp outlet for auxiliary equipment

Incubator includes a chamber safety thermostat set at 62°C. Digital LED display clearly shows temperature readings and alarm indicator. The LED alarm alerts you to over/under temperature conditions.

**What's included:** chamber safety thermostat, 2 A outlet in the chamber, RTD temperature probe, compressor relay, shelves (two removable; three molded in door), and 8-ft (2.4-m) power cord with US standard plug.

**StableTemp**



Capacity cu ft (L)	Temperature range	Accuracy	Temperature uniformity	Chamber dimensions (W x H x D)	Power (VAC, Hz)	Catalog number	Price
6.1	–10 to 60°C	±0.2°C	±1°C	21" x 28¼" x 20½" (53.3 x 71.8 x 52.1 cm)	115, 60	<a href="#">JM-39063-00</a>	
					230, 50	<a href="#">JM-39063-05</a>	

## Thermo Scientific™ Precision™ BOD Incubators

### See samples clearly with illuminated interior

- Fully gasketed door with key lock provides safety and temperature stability
- Ideal for BOD and COD determinations, cell and bacterial cultures, and other applications requiring controlled temperature below and above ambient

Mechanical convection incubators feature a microprocessor control that provides high and low limit protection set points and front-panel calibration. Use the RS-232 to connect to a computer. Easy-to-clean, corrosion-resistant construction inside and out.

**Standard Incubator** has instructions printed right on the front control panel to help you easily set the temperature protection limits.

**Illuminated Incubator** is perfect for plant tissue growth studies. Two 48" fluorescent lamps provide over 300 footcandles of uniform light. The timer lets you create as many as two heat/light cycles each day for seven days.

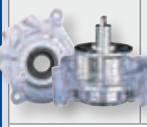








**What's included:** recorder jacks and an 8-ft (2.4-m) power cord with three-prong plug.



Capacity cu ft (L)	Temperature range	Accuracy	Temperature uniformity†	Chamber dimensions (W x H x D)	No. of shelf positions	No. of shelves included	Power (VAC, Hz)	Catalog number	Price
<b>Standard BOD incubator</b>									
20.0 (566)	–10 to 50°C	±0.1°C	±0.9°C at –10°C; ±0.5°C at 20°C; ±0.6°C at 50°C	26½" x 57" x 20" (67.3 x 144.8 x 50.8 cm)	6	6	115, 60	<a href="#">JM-39350-00</a>	
							230, 50/60	<a href="#">JM-39350-05</a>	
<b>Illuminated BOD incubator</b>									
17.8 (504)	–10 to 50°C (lights off); 10 to 50°C (lights on)	±0.2°C	±2.0°C at –10°C; ±0.6°C at 20°C; ±0.5°C at 50°C	26½" x 57" x 20" (67.3 x 144.8 x 50.8 cm)	6	6	115, 60	<a href="#">JM-39350-10</a>	
							230, 50/60	<a href="#">JM-39350-15</a>	

†Uniformity listed is without illumination.

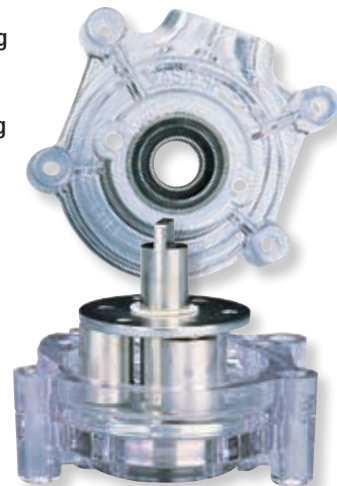
## L/S® Pump Heads Selection Guide

Description	Flow rates (mL/min)	Multichannel or stackable	Special features	Page number
<b>Standard</b>				
	0.001 to 2900 mL/min	Yes, stack up to 4 heads	<ul style="list-style-type: none"> <li>✓ Highest precision, yet economical</li> <li>✓ Accurate, repeatable fluid transfer</li> <li>✓ Each head dedicated to one tubing size</li> </ul>	82
<b>Easy-Load® II</b>				
	0.001 to 2900 mL/min	Yes, stack up to 4 heads	<ul style="list-style-type: none"> <li>✓ Easy tubing changes</li> <li>✓ Automatic retention</li> <li>✓ Adjustable occlusion</li> </ul>	83
<b>Easy-Load® 3</b>				
	0.001 to 2900 mL/min	Yes, stack up to 4 heads	<ul style="list-style-type: none"> <li>✓ Easy tubing changes</li> <li>✓ Automatic retention</li> <li>✓ Same side tubing entry/exit</li> <li>✓ Install and stack without tools or hardware</li> </ul>	ColeParmer.com
<b>Easy-Load®</b>				
	0.001 to 2300 mL/min	Yes, stack up to 4 heads	<ul style="list-style-type: none"> <li>✓ Load or change multiple tubing sizes quickly and easily</li> <li>✓ Low maintenance</li> <li>✓ Models available for ATEX Zone 2 applications</li> </ul>	ColeParmer.com
<b>High-Performance</b>				
	0.006 to 3400 mL/min	No	<ul style="list-style-type: none"> <li>✓ Highest flow rate of any L/S pump head</li> <li>✓ Up to 100 psi with L/S HP (High-Pressure) pump tubing</li> <li>✓ ATEX Zone 2 applications model available</li> </ul>	ColeParmer.com
<b>PTFE-Tubing</b>				
	0.001 to 65 mL/min	No	<ul style="list-style-type: none"> <li>✓ Uses rigid PTFE-tubing</li> <li>✓ Pressures up to 150 psi</li> <li>✓ Transfer aggressive solvents</li> <li>✓ High purity</li> </ul>	ColeParmer.com
<b>Multichannel</b>				
	0.00005 to 2300 mL/min (per channel)	Yes, stack up to 32 channels	<ul style="list-style-type: none"> <li>✓ Synchronous flow from up to 32 channels without cartridges</li> <li>✓ Two-stop tubing sets are easy to load with no adjustment needed</li> </ul>	ColeParmer.com
<b>Multichannel Cartridge</b>				
	0.00001 to 1700 mL/min (per channel)	Yes, 1 to 12 channels	<ul style="list-style-type: none"> <li>✓ Synchronous flow rates</li> <li>✓ Run up to 12 channels on a single pump head</li> <li>✓ Easy tubing changes</li> <li>✓ Holds tubing securely in place</li> </ul>	ColeParmer.com
<b>PTFE-Diaphragm</b>				
	10.0 to 800 mL/min	No	<ul style="list-style-type: none"> <li>✓ PTFE and borosilicate glass are the only wetted parts</li> <li>✓ Up to 100 psi (6.9 bar)</li> <li>✓ Accurate metering</li> <li>✓ Handles aggressive fluids</li> </ul>	ColeParmer.com

## L/S® Standard Pump Heads

Ideal for accurate and repeatable fluid transfer applications

- Available with PC housing with CRS or SS rotor, or PPS housing with SS rotor
- PC housing allows you to see pump in operation; PPS housing and SS rotors have excellent chemical resistance



### FEATURES

- ✓ Best overall pump head performance
- ✓ Designed and optimized for one tubing size
- ✓ Stack up to four heads

### A. Standard Pump Heads for Precision Tubing

- Flow rates: 0.001 to 2300 mL/min
- Perfect for common fluid transfer applications
- Select a pump head for one of the following precision tubing sizes: L/S 13, L/S 14, L/S 16, L/S 17, L/S 18

### B. Standard Pump Heads for High-Performance Precision Tubing

- Flow rates: 0.033 to 2900 mL/min
- Accepts our high-performance precision tubing—choose these pump heads for better pressure generation, suction lift, viscous fluid transfer, and longer tubing life
- Select a pump head for one of the following high-performance tubing sizes: L/S 15, L/S 24, L/S 35, L/S 36



Pump tubing size	mL per rev	Flow rates in mL/min		Catalog number†‡		
		0.02 to 100 rpm	6 to 600 rpm	PC housing		PPS housing
				CRS rotor	SS rotor	SS rotor
<b>A. Standard pump heads for precision pump tubing</b>						
L/S 13	0.06	0.001 to 6	0.36 to 36	JM-07013-20	JM-07013-21	JM-07013-52
L/S 14	0.21	0.004 to 21	1.3 to 130	JM-07014-20	JM-07014-21	JM-07014-52
L/S 16	0.8	0.016 to 80	4.8 to 480	JM-07016-20	JM-07016-21	JM-07016-52
L/S 17	2.8	0.059 to 280	17 to 1700	JM-07017-20	JM-07017-21	JM-07017-52
L/S 18	3.8	0.077 to 380	23 to 2300	JM-07018-20	JM-07018-21	JM-07018-52
			Price			
<b>B. Standard pump heads for high-performance precision pump tubing</b>						
L/S 15	1.7	0.033 to 170	10 to 1000	JM-07015-20	JM-07015-21	JM-07015-52
L/S 24	2.8	0.057 to 280	17 to 1700	JM-07024-20	JM-07024-21	JM-07024-52
L/S 35	3.8	0.077 to 380	23 to 2300	JM-07035-20	JM-07035-21	—
			Price			
L/S 36	4.8	0.096 to 480	29 to 2900	JM-07036-30	JM-07036-31	—
			Price			

†PC = polycarbonate PPS = polyphenylene sulfide  
CRS = cold-rolled steel SS = stainless steel

‡Maximum system pressure = L/S 13, L/S 14, L/S 15, L/S 16, L/S 24: 40 psi (2.7 bar); L/S 17, L/S 36: 20 psi (1.4 bar); L/S 18: 15 psi (1.0 bar); L/S 35: 35 psi (2.4 bar)

### Mounting Hardware

Stack up to four L/S Standard pump heads on one drive (see drive specifications for recommended number of heads). Hardware is stainless steel.

Heads to be mounted	Catalog number	Price/st
<b>Hardware for Standard Heads L/S 13 to 35</b>		
One	JM-07013-04	
Two	JM-07013-05	
Three	JM-07013-08	
Four	JM-07013-09	
<b>Hardware for Standard Head L/S 36</b>		
One	JM-07036-01	
Two	JM-07036-02	



# L/S® Easy-Load® II Pump Heads

## No more slipping of tubing—automatic retention holds it securely in place

- Reduced pulsation and improved pressure performance and mechanical stability with standard four-roller rotor
- Pump heads made of durable PPS housing
- Choice of rotors—economical CRS rotors or SS rotors for better chemical resistance and durability
- Don't let pressure get to you. Choose models with adjustable occlusion—tighten for higher pressure, loosen for longer tubing life

### A. Pump Heads for Precision Pump Tubing (not shown)

- Wide flow range for wider range of applications from 0.06 to 2300 mL/min

### B. Pump Heads for High-Performance Precision Pump Tubing

- Pump viscous liquids and get better pressure generation and suction lift

### C. Two-Channel Pump Heads for Precision Pump Tubing

- No need to stack heads, get two channels in one head!

**What's included:** single-channel mounting hardware and a 15" (38-cm) length of silicone pump tubing. Pump head comes ready to mount to drive. Hardware for mounting two or more heads is available below.



C



B

**FEATURES**

- ✓ Load tubing easily
- ✓ Accepts several tubing sizes for a wide flow range
- ✓ Stack up to four heads

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Pump tubing size accepted	mL per rev	Flow rates in mL/min		Maximum system pressure† psi (bar)	Catalog number‡						
		1 to 100 rpm	6 to 600 rpm		Fixed occlusion		Adjustable occlusion				
					CRS rotor	SS rotor	SS rotor	SS rotor			
				Cat. no.		Price		Cat. no.		Price	
<b>A. Easy-Load II pump heads for precision pump tubing (not shown)</b>											
L/S 13	0.06	0.06 to 6	0.36 to 36	40 (2.7)							
L/S 14	0.21	0.21 to 21	1.3 to 130	40 (2.7)							
L/S 16	0.8	0.8 to 80	4.8 to 480	40 (2.7)	<a href="#">JM-77200-50</a>			<a href="#">JM-77200-60</a>		<a href="#">JM-77201-60</a>	
L/S 25	1.7	1.7 to 170	10 to 1000	35 (2.4)							
L/S 17	2.8	2.8 to 280	17 to 1700	20 (1.4)							
L/S 18	3.8	3.8 to 380	23 to 2300	15 (1.0)							
<b>B. Easy-Load II pump heads for high-performance precision pump tubing</b>											
L/S 15	1.7	1.7 to 170	10 to 1000	40 (2.7)							
L/S 24	2.8	2.8 to 280	17 to 1700	40 (2.7)	<a href="#">JM-77200-52</a>			<a href="#">JM-77200-62</a>		<a href="#">JM-77201-62</a>	
L/S 35	3.8	3.8 to 380	23 to 2300	35 (2.4)							
L/S 36	4.8	4.8 to 480	29 to 2900	20 (1.4)							
<b>C. Two-channel Easy-Load II pump heads for precision pump tubing</b>											
L/S 13	0.06	0.06 to 6	0.36 to 36	40 (2.7)							
L/S 14	0.21	0.21 to 21	1.3 to 130	40 (2.7)	<a href="#">JM-77202-50</a>			<a href="#">JM-77202-60</a>			
L/S 16	0.8	0.8 to 80	4.8 to 480	40 (2.7)							
L/S 25	1.7	1.7 to 170	10 to 1000	35 (2.4)							

†Actual performance varies depending on pump tubing formulation—values shown are for firm pump tubing. ‡CRS = cold-rolled steel SS = stainless steel

Equipment & Supplies

Masterflex® L/S® Pumps

### Mounting Hardware for Easy-Load II Heads

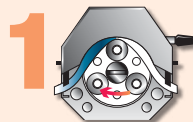
Mount up to four L/S Easy-Load II pump heads on a single drive; see individual drive specifications for maximum number of heads to be mounted. Mounting hardware is stainless steel.

Heads to be mounted	Catalog number	Price/st
One	<a href="#">JM-77200-01</a>	
Two	<a href="#">JM-77200-02</a>	
Three	<a href="#">JM-77200-03</a>	
Four	<a href="#">JM-77200-04</a>	

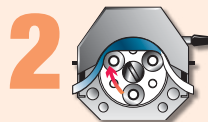
### Teky's Tips



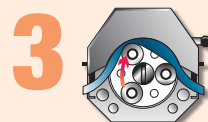
### How Masterflex Pump Heads Work



1 Tubing is placed in the tubing bed—between the rotor and housing—where it is occluded (squeezed).



2 The rollers on the rotor move across the tubing, pushing the fluid. The tubing behind the rollers recovers its shape, creates a vacuum, and draws fluid in behind it.



3 A "pillow" of fluid is formed between the rollers. This is specific to the ID of the tubing and the geometry of the rotor. Flow rate is determined by multiplying speed by the size of the pillow. This pillow stays fairly constant except with extremely viscous fluids.

## L/S® High-Performance Precision Pump Tubing

### Thicker wall compared to our Precision pump tubing

– Best choice for applications involving pressure, suction lift, viscous fluids, or long tubing life

Tubing size	L/S 15	L/S 24	L/S 35	L/S 36
Inner diameter	4.8 mm (0.19")	6.4 mm (0.25")	7.9 mm (0.31")	9.7 mm (0.38")
Hose barb size	4.8 mm (3/16")	6.4 mm (1/4")	9.5 mm (3/8")	9.5 mm (3/8")
Flow range (approximate) <sup>†</sup>	1.7 to 1000 mL/min (1.8 to 1100 mL/min)	2.8 to 1700 mL/min (3.0 to 1800 mL/min)	3.8 to 2300 mL/min (4.3 to 2600 mL/min)	4.8 to 2900 mL/min (5.8 to 3400 mL/min)

Pump tubing formulation	Description	Compatible pump head				
<b>Silicone</b> (platinum-cured) 	<ul style="list-style-type: none"> <li>Complies with USP Class V, EP, FDA, REACH, RoHS, ADFC</li> <li>Low protein binding, fungus resistant, phthalate and latex-free</li> <li>Accommodates a wide temperature range</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>High-Performance</li> </ul>	<a href="#">JM-96410-15</a>	<a href="#">JM-96410-24</a>	<a href="#">JM-96410-35</a>	<a href="#">JM-96410-36</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>Silicone</b> (peroxide-cured) 	<ul style="list-style-type: none"> <li>Complies with USP Class VI, EP, FDA, 3A, REACH, RoHS, ADFC</li> <li>Greater physical compression capability</li> <li>Economical, longer tubing life</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>High-Performance</li> </ul>	<a href="#">JM-96400-15</a>	<a href="#">JM-96400-24</a>	<a href="#">JM-96400-35</a>	<a href="#">JM-96400-36</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>BioPharm Silicone</b> (platinum-cured) 	<ul style="list-style-type: none"> <li>Complies with USP Class VI, EP, FDA, 3A, REACH, RoHS, ADFC</li> <li>Low absorption; excellent biocompatibility</li> <li>Very low extractable; weather, ozone, corona, radiation resistant</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>High-Performance</li> </ul>	<a href="#">JM-96420-15</a>	<a href="#">JM-96420-24</a>	<a href="#">JM-96420-35</a>	<a href="#">JM-96420-36</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>BioPharm Plus Silicone</b> (platinum-cured) 	<ul style="list-style-type: none"> <li>Complies with USP Class VI, EP, FDA, REACH, RoHS, ADFC</li> <li>Ultra-smooth—minimizes particle entrapment</li> <li>Very low extractable—ideal for lab, biotech, and pharmaceutical applications</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>High-Performance</li> </ul>	<a href="#">JM-96440-15</a>	<a href="#">JM-96440-24</a>	<a href="#">JM-96440-35</a>	<a href="#">JM-96440-36</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>Puri-Flex™</b> 	<ul style="list-style-type: none"> <li>Complies with USP Class VI, FDA, 3A, REACH, RoHS, ADFC</li> <li>Heat sealable, weldable, and economical</li> <li>Long pump life when compared to silicone or many other TPE tubings</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>High-Performance</li> </ul>	<a href="#">JM-96419-15</a>	<a href="#">JM-96419-24</a>	<a href="#">JM-96419-35</a>	<a href="#">JM-96419-36</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>C-Flex®</b> 	<ul style="list-style-type: none"> <li>Complies with USP Class VI, EP, REACH, RoHS, ADFC</li> <li>Heat sealable, weldable, economical</li> <li>Better resistance to pH fluctuations</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>High-Performance</li> </ul>	<a href="#">JM-06424-15</a>	<a href="#">JM-06424-24</a>	<a href="#">JM-06424-35</a>	<a href="#">JM-06424-36</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>C-Flex® ULTRA</b> 	<ul style="list-style-type: none"> <li>Complies with USP Class VI, EP, REACH, RoHS, ADFC</li> <li>Longest life of any C-Flex formulation</li> <li>Lowest spallation and reduced residue</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>High-Performance</li> </ul>	<a href="#">JM-06434-15</a>	<a href="#">JM-06434-24</a>	<a href="#">JM-06434-35</a>	<a href="#">JM-06434-36</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>PharMed® BPT</b> 	<ul style="list-style-type: none"> <li>Complies with USP Class VI, EP, FDA, NSF, REACH, RoHS</li> <li>&gt;10,000 hours of tubing life; sealable, weldable</li> <li>Ideal for tissue and cell culture work</li> </ul>	<ul style="list-style-type: none"> <li>Standard</li> <li>Easy-Load</li> <li>Easy-Load II</li> <li>Easy-Load 3</li> <li>High-Performance</li> </ul>	<a href="#">JM-06508-15</a>	<a href="#">JM-06508-24</a>	<a href="#">JM-06508-35</a>	<a href="#">JM-06508-36</a>
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	7.6 m (25 ft)/pk
<b>PharmaPure®</b> 	<ul style="list-style-type: none"> <li>Complies with USP Class VI, EP, FDA, REACH, RoHS</li> <li>Nontoxic and nonhemolytic biocompatible</li> <li>Long life even under pressure with VERY low spallation</li> </ul>	<ul style="list-style-type: none"> <li>Easy-Load</li> <li>Easy-Load II</li> </ul>	<a href="#">JM-06435-15</a>	<a href="#">JM-06435-24</a>	—	—
			7.6 m (25 ft)/pk	7.6 m (25 ft)/pk	—	—

<sup>†</sup>Value in ( ) obtained by High-Performance pump head. Flow range determined under the following conditions: Using a 1 to 600 rpm drive; 0 psi at inlet, 0.5 psi at outlet; water temperature at 22°C (72°F).



# L/S® Variable-Speed Economy Console Drives

## Economical and versatile variable-speed drive with a wide flow range

- 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 ±5% speed control. Smooth operation and long service life.
- 115 VAC models: UL and cUL listed; 230 VAC models: CE compliant

Drives accept nine different pump head types: Standard, Easy-Load®, Easy-Load II, Easy-Load 3, Multichannel, High-Performance, Cartridge, PTFE-tubing, and PTFE-diaphragm. Drives 07554-90 and -95 are not recommended for use with the PTFE-tubing and PTFE-diaphragm pump heads.

**What's included:** 6-ft (1.8-m) line cord—115 VAC: US standard plug; 230 VAC: IEC 320/CEE22 socket. Please specify country of destination when ordering.

### FEATURES

- ✓ Flow rates: 0.0035 to 2900 mL/min
- ✓ Variable speed from 7 to 600 rpm
- ✓ Low-flow metering or general fluid transfer



Equipment & Supplies

Masterflex® L/S® Pumps

### Flow Rates in mL/min (flow rates in parentheses can only be obtained with the High-Performance pump head)

rpm	Precision pump tubing						High-performance precision pump tubing			
	L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18	L/S 15	L/S 24	L/S 35	L/S 36
	Standard†, Easy-Load®, Easy-Load® II, Easy-Load® 3						Multichannel‡, Standard, Easy-Load II, Easy-Load 3, High-Performance			
	Cartridge, Multichannel			Cartridge			Easy-Load			
20 to 600	1.2 to 36	4.2 to 130	16 to 480	34 to 1000	56 to 1700	76 to 2300	34 to 1000	56 to 1700	76 to 2300	96 to 2900
7 to 200	0.42 to 12	1.4 to 43	5.6 to 160	12 to 330	20 to 570	27 to 770	12 to 330 (13 to 370)	20 to 570 (21 to 600)	27 to 770 (30 to 870)	34 to 970 (41 to 1130)

†The Standard pump head is not available for L/S 25.

‡Multichannel head is not available for L/S 36. Multichannel and Cartridge heads are available for microbore tubing.



rpm	Speed control	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power (50/60 Hz)		Catalog number	Price
						VAC	Amps		
20 to 600	±5%	1	1/20 hp (37 W)	IP22	9" x 7" x 5 1/4" (22.9 x 18.1 x 13.3 cm)	90 to 130	1.5	<b>JM-07554-90</b>	
180 to 260						0.8	<b>JM-07554-95</b>		
7 to 200		2				90 to 130	1.5	<b>JM-07554-80</b>	
						180 to 260	0.8	<b>JM-07554-85</b>	

**JM-17050-01** NIST-traceable calibration with data for peristaltic pump drive



**Choose a Complete System**  
One catalog number includes all 3!

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	<b>JM-77910-30</b>	
				Console drive 07554-95 20 to 600 rpm	230 VAC, 50/60 Hz	<b>JM-77910-35</b>	
	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	<b>JM-77910-20</b>	
				Console drive 07554-95 20 to 600 rpm	230 VAC, 50/60 Hz	<b>JM-77910-25</b>	

## L/S® Precision Variable-Speed Console Drives

Don't lose control of your metering applications—digital display gives you precise control

- Accurate and repeatable settings with 3-digit LED display of rpm
- Pump fluid in either direction with reversible motor—perfect for purging tubing
- Save space and increase productivity by stacking 2 or 4 pump heads on the same drive to create a multichannel pump system
- Maximize processes in a minimal footprint by stacking splash-resistant, IP33-rated drives
- Two ways to control speed, direction, and start/stop—use either the membrane keypad or remote control capabilities
- Customize for your application—drives accept nine pump head types: Standard, Easy-Load®, Easy-Load® II, Easy-Load® 3, Multichannel, High-Performance, Cartridge, PTFE-Tubing, and PTFE-Diaphragm

**FEATURES**

- ✓ Flow rates: 0.06 to 3400 mL/min
- ✓ Variable speed from 1 to 600 rpm
- ✓ Reversible motor accepts up to four pump heads



Stack up to 4 heads to maximize productivity in less space

### Flow Rates in mL/min (flow rates in parentheses can only be obtained with the High-Performance pump head)

rpm	Precision pump tubing						High-performance precision pump tubing			
	L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18	L/S 15	L/S 24	L/S 35	L/S 36
	Standard†, Easy-Load, Easy-Load II, Easy-Load 3						Multichannel‡, Standard†, Easy-Load II, Easy-Load 3, High-Performance			
	Cartridge, Multichannel			Cartridge			Easy-Load			
6 to 600	0.36 to 36	1.3 to 130	4.8 to 480	10 to 1000	17 to 1700	23 to 2300	10 to 1000 (11 to 1100)	17 to 1700 (18 to 1800)	23 to 2300 (26 to 2600)	29 to 2900 (34 to 3400)
1 to 100	0.06 to 6	0.21 to 21	0.8 to 80	1.7 to 170	2.8 to 280	3.8 to 380	1.7 to 170 (1.8 to 180)	2.8 to 280 (3.0 to 300)	3.8 to 380 (4.3 to 430)	4.8 to 480 (5.8 to 580)

†The Standard pump head is not available for L/S 25. ‡Multichannel head is not available for L/S 36. Multichannel and Cartridge heads are available for microbore tubing.



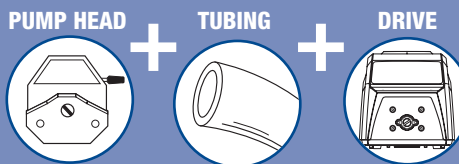
rpm	Speed control (resolution)	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power (50/60 Hz)		Catalog number	Price
						VAC	Amps		
6 to 600	±0.25% (1 rpm at 600 rpm; 0.1 rpm at 100 rpm)	2	1/10 hp (75 W)	IP33	10" x 8.5" x 8.5" (25.4 x 21.6 x 21.6 cm)	90 to 260	1.8 at 115 VAC, 1.2 at 230 VAC	JM-07528-10	
3 to 300		2						JM-07528-20	
1 to 100		4						JM-07528-30	

### Accessories

- JM-07595-45 Connector**, DB9 male. Use for 4 to 20 mA remote control
- JM-07595-47 Cable assembly**, DB9 male connector and 25-ft (7.9-m) cable with stripped wire terminal ends. Use for remote control
- JM-77595-35 Foot switch**, DB9 male

- JM-07528-80 Handheld remote controller**; for remote control of start/stop, route tubing through handle for dispensing into containers
- JM-17050-01 NIST-traceable calibration** with data for peristaltic pump drive

Choose a Complete System  
One catalog number includes all 3!



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)	Precision console drive 07528-10 6 to 600 rpm	90 to 260 VAC, 50/60 Hz	JM-77916-10	
	17 to 1700 mL/min	Easy-Load II 77200-62	C-Flex® ULTRA L/S 24 tubing 06434-24 10 ft (3 m)			JM-77916-20	



## Cole-Parmer® Ultra-Compact Digital Mixer

### Get powerful, general mixing in a small unit

- Mix up to 2 liters of water at a maximum speed of 2500 rpm
- Don't order separate components—includes mixer, stand, and two mixing blades
- Maintenance-free brushless DC motor provides speeds from 50 to 2500 rpm
- Includes optional auto-start feature in the event of power loss
- Remembers last speed used before powering off

**What's included:** stand with 19¾" L x ¾" dia (500 mm L x 10 mm dia) rod, integral clamp, 1¾" (30 mm) dia 316 stainless steel (SS) axial blade, 1¾" (30 mm) dia 316 SS straight blade impeller, 7¾" x ¼" dia (187.5 mm x 6 mm dia) impeller shaft, and universal power adapter with 6-ft (1.8-m) cord.



Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price
50 to 2500	1/100	14.2	100 to 240, 50/60	<b>JM-50006-01</b>	

**JM-17050-03** NIST-traceable calibration with data for mixer



Equipment & Supplies

Mixers

## IKA® RW 20 Digital Dual-Range Mixer

### No separate components to purchase—complete system is ready to go!

- No downtime—maintenance-free motor for continuous duty
- Fulfill all your lab mixing needs—two speed ranges for a variety of applications
- No need to move mixer head to reposition propeller—through-shaft design for easy movement
- No difficult controls—easy-to-use knob and LED display for accurate setting

Use this versatile, affordable mixer for liquid volumes up to 5 gallons (18.9 liters) and viscosities up to 10,000 cps (approximately the viscosity of honey). Select speed from 60 to 2000 rpm in two ranges for a variety of applications.

**What's included:** chuck (accepts up to ¾" [10 mm] dia shafts), 6¼" L x ½" dia (159 mm L x 10 mm dia) mounting rod, four-blade propeller mixer stand, and clamp.



Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price
60 to 500/ 240 to 2000	1/25	259	115, 50/60	<b>JM-50705-00</b>	
			230, 50/60	<b>JM-50705-10</b>	



Complete system includes propeller, clamp, and stand



Four-Blade Propeller  
**Yours free!**

Boss Head Clamp  
**Yours free!**

Plate Stand  
**Yours free!**

## Real-Torque Digital™ Brushless Mixers

### Won't let speed change even as viscosity changes

- Maintenance-free, nonventilated motor for continuous use
- Set torque reading at zero via torque tare function
- Easily alter shaft length with through-shaft design

These mixers feature overload protection that automatically shuts off the mixer if maximum torque is exceeded—an LED light signals overload conditions.

**What's included:** calibration certificate, stainless steel chuck and key (accepts up to ⅜" [9.5 mm] dia shafts), chuck guard, 5" L x ½" dia (127 mm L x 13 mm dia) mounting rod, and 6-ft (1.8-m) cord with three-prong plug.



Speed range (torque)		Motor	Power (50/60 Hz)	Catalog number	Price
Low speed	High speed				
12 to 360 rpm (800 in-oz)	360 to 1800 rpm (160 in-oz)	1/5 hp	115 VAC	<b>JM-50800-00</b>	
			230 VAC	<b>JM-50800-05</b>	
20 to 600 rpm (480 in-oz)	600 to 3000 rpm (96 in-oz)	1/5 hp	115 VAC	<b>JM-50800-10</b>	
			230 VAC	<b>JM-50800-15</b>	
40 to 1200 rpm (240 in-oz)	1200 to 6000 rpm (48 in-oz)	1/5 hp	115 VAC	<b>JM-50800-20</b>	
			230 VAC	<b>JM-50800-25</b>	



Chuck guard for added protection

## Cole-Parmer® StableTemp™ Economical Gravity Convection Ovens

Save money while getting the features you need

- Durable powder-coated cold-rolled steel exterior
- Double-wall aluminum interior with 1"-thick (2.5 cm) silica-based insulation

These economical gravity convection ovens are designed for the budget-conscious laboratory needing to perform basic drying and baking applications. Temperature is controlled via a bimetallic thermostat from ambient  $\pm 5$  to 210°C. All models feature a pilot light to indicate when the oven is in operation and a preset high temperature limit safety thermostat.

**What's included:** two adjustable chrome-plated wire shelves, one fixed shelf. The 120 VAC model has a three-wire cord and plug; the 230 VAC model has a three-wire cord only.



StableTemp

### Specifications

**Temperature range:** ambient  $\pm 5^\circ\text{C}$  to 210°C

**Temperature display:** glass thermometer (not included)

**Temperature accuracy:**  $\pm 9^\circ\text{C}$  at 100°C



Capacity, cu ft (L)	Shelf positions	Dimensions (W x H x D), in. (cm)		Shpg wt lb (kg)	120 VAC, 60 Hz		230 VAC, 50/60 Hz	
		Chamber	Overall		Catalog number	Price	Catalog number	Price
1.7 (48.1)	3	16 x 16¼ x 11½ (41 x 41 x 29)	18½ x 22½ x 13½ (47 x 57 x 34)	57 (26)	<a href="#">JM-52120-02</a>		<a href="#">JM-52120-03</a>	

[JM-52100-50](#) Replacement shelf for ovens 52120-02 and -03

[JM-17002-30](#) NIST-traceable calibration with data for ovens

## Cole-Parmer® StableTemp™ Vacuum Ovens

Keep an eye on your samples

- Protect yourself from shattering glass—polycarbonate shielded glass door

Control vacuum levels between 0 and 30" Hg. Silicone door gasket and positive door latch assure a tight seal at all vacuum levels. A three-way valve allows easy evacuation, purging, and venting. The front-mounted stainless steel vacuum line fittings accept ¼" ID tubing.

Insert other types of probes such as gas and humidity into the two rear ¼" NPT(F) ports to monitor the internal atmosphere. Built-in overtemperature thermostat protects your samples from overheating. Aluminum shelves provide minimal heat retention, reducing hot spots.

**What's included:** a dial thermometer, one-piece shelf assembly with two aluminum shelves, and a 6-ft (1.8-m) three-wire power cord (120 VAC models include plug).



StableTemp

### Specifications

**Control type:** hydraulic thermostat

**Vacuum range:** 0 to 30" Hg

**Temperature display:** dial gauge

**Vacuum display:** dial gauge



Capacity cu ft (L)	Temperature range	Temperature uniformity	Shelf positions	Dimensions (W x H x D), in. (cm)		Power (VAC)	Shpg wt lb (kg)	Catalog number	Price
				Chamber	Overall				
0.7 (19.8)	5°C above ambient to 200°C	$\pm 6^\circ\text{C}$ at 100°C	2 (fixed)	10 x 10 x 12 (25 x 25 x 30)	20 x 16¼ x 16 (51 x 41 x 41)	120	130 (59.0)	<a href="#">JM-05053-10</a>	
						240		<a href="#">JM-05053-12</a>	
2.3 (65.1)		$\pm 5^\circ\text{C}$ at 100°C	2 (fixed)	14 x 14 x 20 (36 x 36 x 51)	25 x 22 x 25 (63 x 56 x 63)	120	310 (140)	<a href="#">JM-05053-20</a>	
						240		<a href="#">JM-05053-22</a>	

[JM-17002-30](#) NIST-traceable calibration with data for ovens



## 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							
<b>A</b>	Small bulb, graduated	0.1 mL	0.3 mL	0.8 mL	1.5 mL	21	4 <sup>9</sup> / <sub>8</sub> (117)	500	<a href="#">JM-06226-37</a>	
<b>B</b>	Small bulb, graduated	0.25 mL	1 mL	2.2 mL	3.9 mL	25	5 <sup>1</sup> / <sub>2</sub> (140)	500	<a href="#">JM-06226-41</a>	
<b>C</b>	Large capacity, thin stem	—	—	3.3 mL	4.6 mL	25	6 <sup>1</sup> / <sub>8</sub> (156)	500	<a href="#">JM-06226-65</a>	
<b>D</b>	Large capacity, fine tip	—	—	3.5 mL	5.8 mL	50	6 <sup>1</sup> / <sub>4</sub> (159)	500	<a href="#">JM-06226-67</a>	
<b>E</b>	Large capacity, graduated	0.25 mL	1 mL	3.4 mL	5.8 mL	25	6 <sup>1</sup> / <sub>8</sub> (156)	500	<a href="#">JM-06226-61</a>	
<b>F</b>	Large capacity, extra-long stem	—	—	2.3 mL	6.0 mL	25	9 (229)	400	<a href="#">JM-06226-69</a>	
<b>G</b>	Large capacity, graduated	0.5 mL	3.0 mL	3.2 mL	7.5 mL	20	6 <sup>1</sup> / <sub>8</sub> (156)	500	<a href="#">JM-06226-63</a>	
<b>H</b>	Jumbo bulb, long stem	—	—	8.0 mL	15.0 mL	19	6 <sup>1</sup> / <sub>8</sub> (156)	250	<a href="#">JM-06226-51</a>	

## 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.



Unitary dropper  
06096-00



Disposable dropper  
06223-15

Capacity (mL)	Qty/pk	Catalog number	Price/pk
<b>Nalgene unitary dropper</b>			
1.6	100	<a href="#">JM-06096-00</a>	
<b>Disposable droppers</b>			
1.5	100	<a href="#">JM-06223-15</a>	
5.0	100	<a href="#">JM-06223-25</a>	

## 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.



**Cole-Parmer®**

### Tips

Volume (µL)	Qty/pk	Catalog number	Price/pk
0.2 to 10	1000	<a href="#">JM-25711-06</a>	
0 to 200	1000	<a href="#">JM-25711-12</a>	
	960	<a href="#">JM-25711-14</a>	
50 to 1000	1000	<a href="#">JM-18889-08</a>	
	1000	<a href="#">JM-25711-70</a>	
1000 to 5000	500	<a href="#">JM-25711-71</a>	
	250	<a href="#">JM-25711-72</a>	

### Specifications

**Tip ejector:** tip ejector with blow-out step    **Autoclavable:** autoclavable tip cone and lower section assembly

Volume	Increments	Accuracy	Reproducibility	Catalog number	Price
<b>Fixed-volume pipettors</b>					
100 µL	—	±0.3%	±0.2%	<a href="#">JM-21600-00</a>	
200 µL				<a href="#">JM-21600-02</a>	
500 µL				<a href="#">JM-21600-04</a>	
1000 µL				<a href="#">JM-21600-06</a>	
5000 µL				<a href="#">JM-21600-08</a>	
<b>Adjustable-volume pipettors</b>					
0.1 to 10 µL	0.1 µL	±2.5%	1.33%	<a href="#">JM-21600-10</a>	
5 to 50 µL	1.0 µL	±1.3%	0.7%	<a href="#">JM-21600-12</a>	
	1.0 µL	±1.1%	0.4%	<a href="#">JM-21600-14</a>	
40 to 200 µL	1.0 µL	±0.9%	0.3%	<a href="#">JM-21600-16</a>	
	10.0 µL	±0.8%	0.2%	<a href="#">JM-21600-18</a>	
200 to 1000 µL	100.0 µL	±0.6%	0.2%	<a href="#">JM-21600-20</a>	

## Atago® Digital Pocket Refractometers

### Stop estimating readings

ISO9001:2008 CERTIFIED SUPPLIER CE IP 65

- Simple operation—apply sample, press start, and reading is displayed in seconds
- Extended range for added flexibility
- Rugged design is IP65-rated and easy to clean
- Easy calibration—just clean prism, add water, press the zero key

#### Specifications

**Temperature**  
Range: 10 to 100°C  
Resolution: 0.1°C  
Accuracy: ±1°C

**Sample volume:** 0.3 mL  
**Response time:** 3 seconds  
**Power:** Two AAA batteries (included)

Range	Resolution	Accuracy	ATC	Catalog number	Price
0.0 to 53.0% Brix	0.1% Brix	±0.2% Brix	50 to 212°F (10 to 100°C)	JM-02941-51	
45.0 to 93.0% Brix				JM-02941-52	
0.0 to 93.0% Brix				JM-02941-53	
0.0 to 85.0% Brix				JM-02941-54	

**What's included:** storage case and two AAA batteries.

#### Accessories

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

[JM-17105-00](#) NIST-traceable calibration with data for refractometers



## Reichert® Precision Abbe Refractometers

### Get more precise readings easily

Ideal for pharmaceutical, industrial fluid, chemical, petrochemical, plastic, and food/beverage industries. Each model features four measurement modes: % solids (Brix), % solids (temperature-compensated Brix), refractive index, and refractive index (temperature compensated). Automatic temperature compensation (ATC) corrects measurements to 20°C or any other user-defined reference temperature.

Each model features two RS-232 serial ports for communication to a PC or printer. The stainless steel enclosed prism is sealed with solvent-resistant epoxy to prevent damage from harsh chemicals. Long-life internal LEDs provide illumination for greater than 100,000 hours. Automatic temperature equilibration detection software on each model ensures that the sample and prism temperature is stable, providing accurate and precise measurements.

**Arias 500 Model 81001-20** offers semi-automatic measurement capability. Align the shadowline image anywhere in the crosshair target and press "read." The OptiMatrix dual LSA detectors automatically locate the actual shadowline eliminating manual interpretation. Illumination source is 589 nm, requiring no color correction by the operator. Unit measures in two levels of resolution: high precision at two significant digits % solids (Brix) and five significant digits (RI); or standard precision at one significant digit % solids (Brix) and four significant digits (RI).

**Mark III Model 81001-30** offers manual measurement capability. Align the shadowline intersect across the crosshair target and press "read." The single LSA detector interprets the placement of the shadowline and displays measurement on the LCD screen. Unit measures in standard precision only—one significant digit % solids (Brix) and four significant digits (RI). Additional features include multilanguage capability, date-and-time stamping, password protection, and up to fourteen programmable custom scales.

**What's included:** calibration oil, dust cover, and three 5-ft (1.5-m) power cords (US, EU, and UK).



81001-20



81001-30



#### Specifications

**Sample volume:** 0.1 mL (minimum)

**Output:** two RS-232 serial ports

Model	Range	Resolution	Accuracy	ATC	Power	Catalog number	Price
Arias 500	0.00 to 95.00% Brix, 1.30000 to 1.70000 RI	0.01% Brix, 0.00001 RI	±0.03% Brix, ±0.00005 RI	50 to 104°F (10 to 40°C)	110 to 240 VAC, 50/60 Hz	<a href="#">JM-81001-20</a>	
Mark III	0.00 to 95.0% Brix, 1.3000 to 1.7000 RI	0.1% Brix, 0.0001 RI	0.1% Brix, 0.0001 RI			<a href="#">JM-81001-30</a>	

#### Accessories

[JM-81001-50](#) Replacement lamp. Pack of 3

[JM-81001-60](#) Replacement standard solution for model 81001-20;  
7 mL of 1-bromonaphthalene

[JM-17105-00](#) NIST-traceable calibration with data for  
refractometers

## 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



Speed range	Max stirring capacity	Power		Catalog number	Price
		VAC	Hz		
10 to 1100 rpm	5 L	120/240	50/60	<a href="#">JM-86579-10</a>	

## 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.



Top plate		Speed range	Max load	Max stirring capacity	Catalog number	Price
Dimensions	Material					
3 <sup>3</sup> / <sub>4</sub> " x 3 <sup>3</sup> / <sub>4</sub> " (9.5 x 9.5 cm)	Metal	200 to 700 rpm	10 lb (4.5 kg)	2.5 L	<a href="#">JM-04804-01</a>	

Equipment & Supplies

Stirrers

## Cole-Parmer® Stirrers and Stirring Hot Plates

### Get to work faster—reach max temperature in two minutes

- Stir bar doesn't dance—unique U-shaped magnet holds stir bar tightly
- Front-panel controls are positioned to prevent you from touching the hot plate
- Choose corrosion-resistant ceramic or more uniform aluminum top
- Stepless speed control provides smooth stirring action to 1500 rpm

A large, permanent drive magnet, ensures positive coupling of drive to stir bar. Permanently lubricated, brushless drive motor provides long, trouble-free operation.



Volume per position	Top plate		Heating		Speed range	115 VAC, 60 Hz		230 VAC, 50 Hz	
	Dimensions	Material	Temp range	Max load		Cat. no.	Price	Cat. no.	Price
<b>Stirrers</b>									
2.5 L	6" x 6" (15.2 x 15.2 cm)	Aluminum	—	15 lb (6.8 kg)	100 to 1500 rpm	<a href="#">JM-04802-01</a>		<a href="#">JM-04802-03</a>	
10 L	12" x 12" (30.5 x 30.5 cm)	Aluminum	—	25 lb (11.4 kg)	100 to 1500 rpm	<a href="#">JM-04802-11</a>		<a href="#">JM-04802-13</a>	
<b>Stirring hot plates</b>									
2.5 L	6" x 6" (15.2 x 15.2 cm)	Aluminum	120 to 700°F (49 to 371°C)	15 lb (6.8 kg)	100 to 1500 rpm	<a href="#">JM-04803-01</a>		<a href="#">JM-04803-03</a>	
2.5 L	6" x 6" (15.2 x 15.2 cm)	Ceramic	120 to 842°F (49 to 450°C)	15 lb (6.8 kg)	100 to 1500 rpm	<a href="#">JM-04803-05</a>		<a href="#">JM-04803-07</a>	
10 L	12" x 12" (30.5 x 30.5 cm)	Aluminum	120 to 700°F (49 to 371°C)	25 lb (11.4 kg)	100 to 1500 rpm	<a href="#">JM-04803-11</a>		<a href="#">JM-04803-13</a>	
10 L	12" x 12" (30.5 x 30.5 cm)	Ceramic	120 to 752°F (49 to 400°C)	25 lb (11.4 kg)	100 to 1500 rpm	<a href="#">JM-04803-15</a>		<a href="#">JM-04803-17</a>	

## 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)	—		<a href="#">JM-04775-10</a>	
1/2" (12.7 mm)	5/16" (7.9 mm)	<a href="#">JM-08548-00</a>		<a href="#">JM-04770-20</a>	
5/8" (15.9 mm)	5/16" (7.9 mm)	<a href="#">JM-08549-00</a>		<a href="#">JM-04770-30</a>	
1" (25.4 mm)	3/8" (9.5 mm)	<a href="#">JM-08550-00</a>		<a href="#">JM-04770-40</a>	
1 1/2" (38.1 mm)	3/8" (9.5 mm)	<a href="#">JM-08551-00</a>		<a href="#">JM-04770-50</a>	
2" (50.8 mm)	3/8" (9.5 mm)	<a href="#">JM-08552-00</a>		<a href="#">JM-04770-60</a>	
2 1/2" (63.5 mm)	3/8" (9.5 mm)	<a href="#">JM-04775-75</a>		—	
2 1/2" (63.5 mm)	1/2" (12.7 mm)	—		<a href="#">JM-04770-70</a>	
3" (76.2 mm)	1/2" (12.7 mm)	<a href="#">JM-04612-30</a>		<a href="#">JM-04612-40</a>	

†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 include 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. Large Head Pocket Thermometer** offers fast response and laboratory accuracy. The head of the thermometer is square allowing the unit not to roll when placed on a flat surface. Features include probe guard, °F/°C switchable ranges and auto power-off to conserve battery life. Includes a NIST-traceable calibration report with data supplied by InnoCal.

**C. 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.

**D. Key-Chain “Mini” Thermometer** is pocket sized and perfect for carrying around anywhere. Clip onto a lab coat, jacket zipper, belt loop, backpack, or key ring. Features °F/°C switchable ranges and display updates every second. Use ON/OFF button to conserve battery life.

**E. Long-Stem Thermometer** has an 8" or 11 1/2" long stem, °F/°C switchable ranges, and display updates every second. Use ON/OFF button to conserve battery life.

**F. Rotating-Display Thermometer** can be angled up to 180° for easy reading. Extra-long 8" stem is ideal for measuring reagents, water baths, air, liquids, and any semisolid. Features °F/°C selection. Use ON/OFF button to conserve battery life.

**G. T-Handle Thermometer** is designed for penetrating semisolids and features °F/°C switchable ranges. Display updates every second. Use ON/OFF button to conserve battery life or auto shutoff at one hour.

**H. Pen-Style Thermometer** has °F/°C switchable ranges and display updates every second. Data Hold button to freeze readings. Use ON/OFF button to conserve battery life.

**I. NIST-Traceable Pen-Style Thermometer** has a unique, flat-profile design. Probe guard snaps into handle to extend the overall length to 10 3/4" 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 diameter	Catalog number	Price
<b>A</b>	–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	<a href="#">JM-20250-33</a>	
<b>B</b>	–40 to 482°F (–40 to 250°C)	0.1°F (0.1°C)	1.5% ± 2° full scale	5" L x 0.16" dia	<a href="#">JM-20250-32</a>	
<b>C</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	<a href="#">JM-90003-00*</a>	
<b>D</b>	–58 to 302°F (–50 to 150°C)	0.1°F (0.1°C)	±1.8°F (1.0°C)	10" L x 0.14" dia	<a href="#">JM-90205-05</a>	
<b>E</b>	–58 to 302°F (–50 to 150°C)	0.1° from –19 to 199.9°; 1° outside this range	±1.8°F (±1°C)	1" L x 0.14" dia	<a href="#">JM-90205-10</a>	
	–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	<a href="#">JM-90225-15</a>	
	–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	<a href="#">JM-90205-01</a>	
	–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	<a href="#">JM-94460-40</a>	
<b>F</b>	–58 to 536°F (–50 to 280°C)	0.1° from –20 to 200°F; 1° outside this range	±1.8°F (1.0°C)	11.5" L x 0.14" dia	<a href="#">JM-90205-02</a>	
<b>G</b>	–58 to 302°F (–50 to 150°C)	0.1° from –19 to 199.9°; 1° outside this range	±1.8°F (1.0°C)	8" L x 0.14" dia	<a href="#">JM-90205-25</a>	
<b>H</b>	–58 to 302°F (–50 to 150°C)	0.1° from –19 to 199.9°; 1° outside this range	±1.8°F (±1.0°C)	5.3" L x 0.14" dia	<a href="#">JM-90051-00</a>	
<b>I</b>	–58 to 572°F (–50 to 300°C)	0.1° from –19 to 199.9°; 1° outside this range	±2°F (±1.5°C)	2.5" L x 0.16" dia	<a href="#">JM-90001-02</a>	
	–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	<a href="#">JM-90205-15</a>	

\*90003-00 does not come precalibrated †Basic accuracy shown, full accuracy available online

[JM-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 timing to freeze the split-time display while total timing continues
- Water-, dust-, and shock-resistant

**What's included:** neck cord and 1.5 V button cell battery.

#### B. Cole-Parmer® Stopwatch

- Time single and split events
- Alarm clock displays time of day and day of week
- Dust- and shock-resistant

**What's included:** neck cord and 1.5 V button cell battery.

#### C. Cole-Parmer ½"-Big-Digit Stopwatch

- Displays time-of-day, date, and day of week
- Keep track of time with time of day alarm
- Water-, dust-, and shock-resistant
- Includes clip and hook and loop strip for easy attaching

**What's included:** neck cord, 1.5 V button cell battery, and NIST-traceable calibration report supplied by the manufacturer.

#### D. 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

**What's included:** neck cord, 1.5 V button cell battery, and NIST-traceable calibration report supplied by the manufacturer.

#### E. Water-Resistant Stopwatch

- Get excellent water resistance and easy readability
- Count up to 24 hours with 1/100th second resolution up to 40 minutes; 1 second after that
- Lap function, alarm, clock, and calendar

**What's included:** neck cord and button cell battery.

#### F. 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

**What's included:** neck cord, button cell battery, and NIST-traceable calibration report supplied by the manufacturer.

#### G. Heavy-Duty Stopwatch/Timer

- Slip-, shock-, and water-resistant
- Includes electroluminescent display, time and date, and built-in tally counter up to 3999

**What's included:** neck cord and button cell battery.

#### H. Extech® Stopwatch/Timer

- Get more accuracy – three-mode countdown accurate to 1/100th of a second for 19 hours
- Recall up to 500 records of split and lap times
- Clock function and programmable alarm with daily alarm and calendar

**What's included:** neck cord and button cell battery.



A, D



B



C



E



F



G



H

Key	A	B	C	D	E	F	G	H
Timing modes	Single-event, lap, cumulative split	Single-event, lap, cumulative split	Single-event, pause, cumulative split	Single-event, lap, cumulative split	Single-event, lap, cumulative split	Single-event, lap, cumulative split	Single-event, lap, cumulative split	Single-event, lap, cumulative split
Timing capacity	24 hours	24 hours	24 hours	24 hours	24 hours	24 hours	40 hours	20 hours
Resolution	0.01/1 sec†	0.01/1 sec†	0.01/1 sec†	0.01/1 sec†	0.01/1 sec†	0.01/1 sec†	0.01/1 sec†	0.01/1 sec†
Accuracy	±5 sec/day	±5 sec/day	±0.001%	±5 sec/day	±3 sec/day	±0.01	±1 sec/day	±5 sec/day
Count direction	Up	Up	Up	Up	Up	Up	Up	Up/down
Display	LCD, ¾"H	LCD, ½"H	LCD, ¾"H	LCD, ¾"H	LCD, ¾"H	LCD, ¼"H	LCD, ½"H	LCD, ¾"H
Clock alarm	1 min beep	1 min beep	1 min beep	1 min beep	1 min beep	1 min beep	None	Yes
Battery included	1.5 V button cell	1.5 V button cell	1.5 V button cell	1.5 V button cell	3 V button cell	3 V button cell	3 V button cell	3 V button cell
Catalog number	<b>JM-35002-11</b>	<b>JM-35002-15</b>	<b>JM-94460-28</b>	<b>JM-35002-13</b>	<b>JM-94461-80</b>	<b>JM-94460-55</b>	<b>JM-94410-81</b>	<b>JM-26845-35</b>
Price								

†Resolution is 0.01 second for the first 30 minutes of timing and 1 second thereafter. ††Resolution is 0.01 second for the first 40 minutes of timing and 1 second thereafter.

‡Resolution is 0.01 second for the first 19 minutes of timing and 1 second thereafter.

## Cole-Parmer® Chloride Analyzer

Save time—faster and more accurate salt determination

- Results in just 72 seconds
- Ensure quality with easily repeatable measurements and calibrations in mg/L and mmol/L
- Download and analyze data via RS-232 PC connection



The system is ideal for use in the food, pharmaceutical, agricultural, and petroleum industries. The system utilizes a method based on coulometric titration—an absolute method where the reagent, silver ions, is precisely and quantitatively generated at time of analysis by passing a constant current between electrodes. The end point is detected by the use of sensing electrodes which measure the change in the solution conductivity that occurs when excess silver ions are present in the solution. Unlike a conductivity meter, this analyzer actually titrates chloride with silver as in official methods.

**What's included:** printer cable, RS-232 port, acid buffer reagent (500 mL), 200 mg/L chloride standard (100 mL), one set of electrodes, three anodes, two 14-mL marked beakers, electrode cleaning polish, stirrer, and 6-ft (1.8-m) power cord with US plug.

### Specifications

<b>Range:</b> 10 to 999 mg/L chloride, 2 to 165 mg% salt	<b>Measurement time:</b> 36 seconds to reach 100 mg/L
<b>Resolution:</b> 1 mg/L chloride	<b>Output:</b> RS-232
<b>Accuracy:</b> ±3 mg/L at the 200 mg/L level	<b>Reproducibility:</b> CV < 1% for 20 replicate samples at 200 mg/L (excluding pipetting errors)
<b>Sample size:</b> 500 µL	

Description	Power	Catalog number	Price
Chloride analyzer	120 VAC, 50/60 Hz	<a href="#">JM-02656-20</a>	

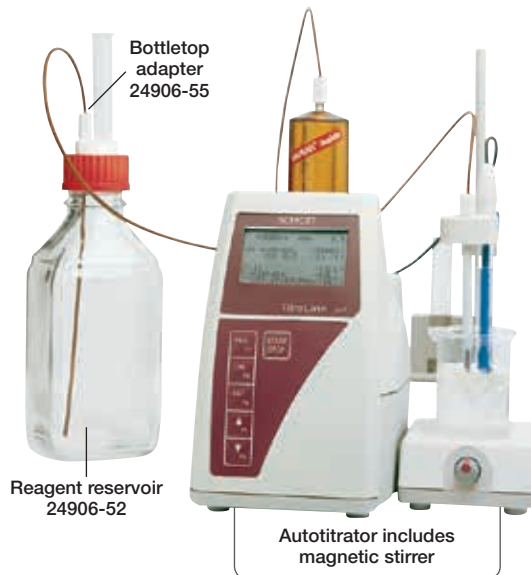
### Accessories

- [JM-02656-30](#) Acid buffer reagent, 500-mL bottle
- [JM-02656-32](#) Silver electrodes; two detecting electrodes, one cathode
- [JM-02656-34](#) Silver electrodes, anode. Pack of 3
- [JM-02656-39](#) Chloride standard, traceable to NIST standards. One 100-mL bottle

## Schott® Automatic Volumetric Titrator

No more difficult burette readings

- Automatically titrates to your endpoint with easy digital control
- No more overshooting endpoint—stops at preselected pH endpoint or equivalence point



Use the autotitrator with any combination pH electrode. The pH buffer solutions are stored in memory to make calibration easy.

Connect FEP tubing 24906-60 and bottle top adapter 24906-55 to 1-L reagent reservoir 24906-52 and titrator to add reagent. Order reservoir, adapter, and tubing separately below.

**What's included:** glass combination pH electrode, magnetic stirrer, titration stand rod, titration tip holder, titration tip with tubing, glass cylinder and valve system, and 3-ft cord with two-prong plug.

### Specifications

<b>Accuracy:</b> ±0.15% of span	<b>Output:</b> two serial RS-232
<b>Repeatability:</b> ±0.15% of span	<b>Dispensing accuracy:</b> ±0.15% of total volume
<b>Capacity:</b> 20 mL	<b>Display resolution:</b> 0.01 mL



Description	Power	Catalog number	Price
Automatic titrator	115 VAC	<a href="#">JM-24906-20</a>	
	220 VAC	<a href="#">JM-24906-25</a>	

### Accessories

- [JM-24906-52](#) Reagent reservoir, one liter
- [JM-24906-55](#) Bottle top adapter for reagent reservoir
- [JM-24906-60](#) FEP tubing, 40" (100 cm)
- [JM-24906-75](#) Replacement silver electrode
- [JM-55503-00](#) Replacement pH electrode, glass

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Browse 100,000+ products plus find **Technical Resources** to help you choose



## Cole-Parmer® Rotational Viscometers

### Include 316 stainless steel spindles for better resistance

- Select from 10 language options
- Ensure accurate readings by calibrating your viscometer to a known standard

Determine the dynamic viscosity of samples in applications such as food (sauces, juices, and syrups), adhesives, petroleum products, biofuels, paints, pharmaceuticals, chemicals, and more! Over/under range alarm sounds when your sample is too high/low for the spindle selected. All models feature 10 language options (English, French, German, Italian, Japanese, Spanish, Portuguese, Dutch, Polish, and Catalan), push-button control with easy-to-use menu system, motor self-test, user calibration to a known standard, and universal power supply.

**Basic Viscometers** are an economical choice for fast, accurate viscosity readings. Feature a 4-line display that shows selected speed, selected spindle, viscosity, and % of full scale.

**Basic Viscometers with USB Output** include software to download data through the USB output to your PC for analysis. Store up to 10 user programs for repeated tests. Display selected speed, selected spindle, viscosity, % torque, shear rate, and shear stress on the 5-line display. Enter the sample density, and the unit calculates and displays kinematic viscosity (cSt) as well.

**Advanced Viscometers with Temperature Probe** have three times the speed selections and double the speed range of the basic models. Monitor and display temperature with the included RTD temperature probe. Program features include time to torque, time to stop, ramp, and multistep.

**Programmable Viscometers** feature 2600 speed selections and the highest speed range, up to 250 rpm. Monitor and display temperature with the included RTD temperature probe. Control the viscometer through a PC using the included software; also includes curves, graphs, and database references.

Optional low viscosity adapters allow measurement down to 1 cp when used with low range viscometers and 3.2 cp when used with medium range viscometers. Model 98965-54 includes a water jacket for attachments to an external circulating bath (not included; go to [www.coleparmer.com](http://www.coleparmer.com) for our full selection).

**What's included:** 316 stainless steel spindles (four spindles for the low range and six for the other ranges), spindle protector, stand, carrying case, and universal power supply. Models 98965-43 through -48 also include data logging software; USB cable. Models 98965-49 through -51 also include control software, data logging software, and USB cable.



Cole-Parmer®



Viscosity range	Rotational speed range	Number of selectable speeds	Output	Catalog number	Price
<b>Basic viscometers</b>					
20 to 2,000,000 cp (low)	0.3 to 100 rpm	18	None	JM-98965-40	
100 to 13,000,000 cp (medium)				JM-98965-41	
200 to 106,000,000 cp (high)				JM-98965-42	
<b>Basic viscometers with data logging software and USB cable</b>					
20 to 2,000,000 cp (low)	0.3 to 100 rpm	18	USB	JM-98965-43	
100 to 13,000,000 cp (medium)				JM-98965-44	
200 to 106,000,000 cp (high)				JM-98965-45	
<b>Advanced viscometers with temperature probe, data logging software, and USB cable</b>					
20 to 6,000,000 cp (low)	0.01 to 200 rpm	54	USB	JM-98965-46	
100 to 40,000,000 cp (medium)				JM-98965-47	
200 to 106,000,000 cp (high)				JM-98965-48	
<b>Programmable viscometers with temperature probe, control software, data logging software, and USB cable</b>					
20 to 6,000,000 cp (low)	0.01 to 250 rpm	2600	USB	JM-98965-49	
100 to 40,000,000 cp (medium)				JM-98965-50	
200 to 106,000,000 cp (high)				JM-98965-51	

### Specifications

**Accuracy:** ±1% full-scale

**Resolution**

<10,000 cp: 0.1 cp  
≥10,000 cp: 1 cp

**Reproducibility:** ±0.2%

**Temperature probe (indicated models):**

100 Ω Pt RTD; 32 to 212°F (0 to 100°C)

**Power:** 100 to 240 VAC, 50/60 Hz

### Search

For our full selection of viscometer accessories, go to...

[ColeParmer.com/Viscometers](http://ColeParmer.com/Viscometers)

[JM-98965-54](#) Low-viscosity adapter with water jacket

[JM-98965-55](#) Low-viscosity adapter

[JM-17107-01](#) NIST-traceable calibration with data for viscometers

## Cole-Parmer® Ion-X-Changer Filter Cartridges

### Customize to your exact needs

- Design your system with any combination of up to four different cartridges
- Purify water up to 15 MΩ-cm
- Know when to change cartridges—resins go from purple to brown when replacement is needed†
- Use mounting brackets for installation

**Mounting Bracket Kit** comes with two mounting brackets, faucet diverter assembly with 4 ft (1.2 m) of ¼" OD white vinyl tubing, and 12 ft (3.6 m) of ¼" OD polyethylene connection/dispensing tubing. Use one bracket for single cartridge installation or two for tandem cartridge installation.



#### Specifications

**Pressure drop per cartridge:** 5 psi (0.3 bar)  
**Maximum working temperature:** 75°F (23.9°C)

**Cartridge dimensions (L x dia):**  
18¾" x 3¼" (17.6 x 8.3 cm)

Cartridge type	Application	Max flow rate	Inlet pressure		Max inlet water temp	Capacity grains as CaCO <sub>3</sub>	Catalog number	Price*
			Max	Min				
Adsorber	Pretreatment: removes most organic compounds, free chlorine, and chloramines	7.2 GPH (27.3 L/hr)	100 psi (6.9 bar)	5 psi (0.3 bar)	100°F (37.8°C)	—	<a href="#">JM-01506-15</a>	
Metex	Removes most metallic ions, ammonia, other cations; recovers precious metals					3200	<a href="#">JM-01506-45</a>	
Universal	Produces water equivalent to single-distilled water					1600	<a href="#">JM-01506-25</a>	
Research	Produces water ionically equivalent to triple-distilled water					1000	<a href="#">JM-01506-35</a>	

†Except for Adsorber cartridge 01506-15, which needs to be replaced when approximately 1500 gallons (5600 liters) of water have flowed through the cartridge.  
\*Discount: Save 10% on six or more cartridges.

[JM-01506-60](#) Mounting bracket kit

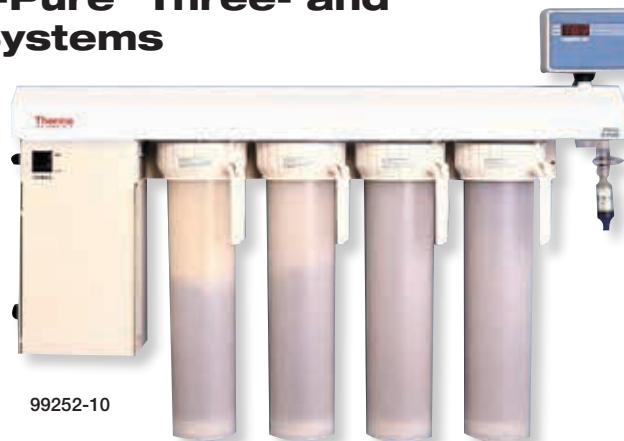
## Thermo Scientific™ Barnstead™ E-Pure™ Three- and Four-Holder Water Purification Systems

### Know your water purity instantly

- Digital resistivity meter (included) indicates water purity
- Produce ASTM Type I water
- Recirculation pump ensures water purity

E-Pure systems meet or exceed ASTM and CISI-CLRW requirements for bacteria-free, Type I reagent-grade water. Inert wetted parts prevent contamination of purified water. A built-in, whisper-quiet recirculation pump with pressure regulator ensures Type I reagent grade water on demand.

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99252-10

Max flow rate	Inlet pressure		Inlet water temperature	Inlet connections	No. of holders	Dimensions (W x H x D)	Power (VAC, Hz)	Catalog number	Price
	Max	Min							
2 L/min	100 psi (6.9 bar)	5 psi (0.3 bar)	40 to 120°F (4 to 49°C)	¼" NPT(F)	3	29" x 28" x 7½"	120, 60	<a href="#">JM-99252-00</a>	
						(73.6 x 71.1 x 19 cm)	240, 50/60	<a href="#">JM-99252-05</a>	
					4	35" x 28" x 7½"	120, 60	<a href="#">JM-99252-10</a>	
						(88.9 x 71.1 x 19 cm)	240, 50/60	<a href="#">JM-99252-15</a>	

[JM-99254-02](#) Remote Dispenser with filter

[JM-99261-60](#) Final filter, 0.2 µm, for 99254-02

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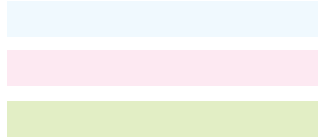


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