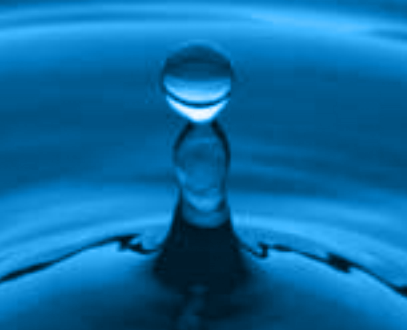
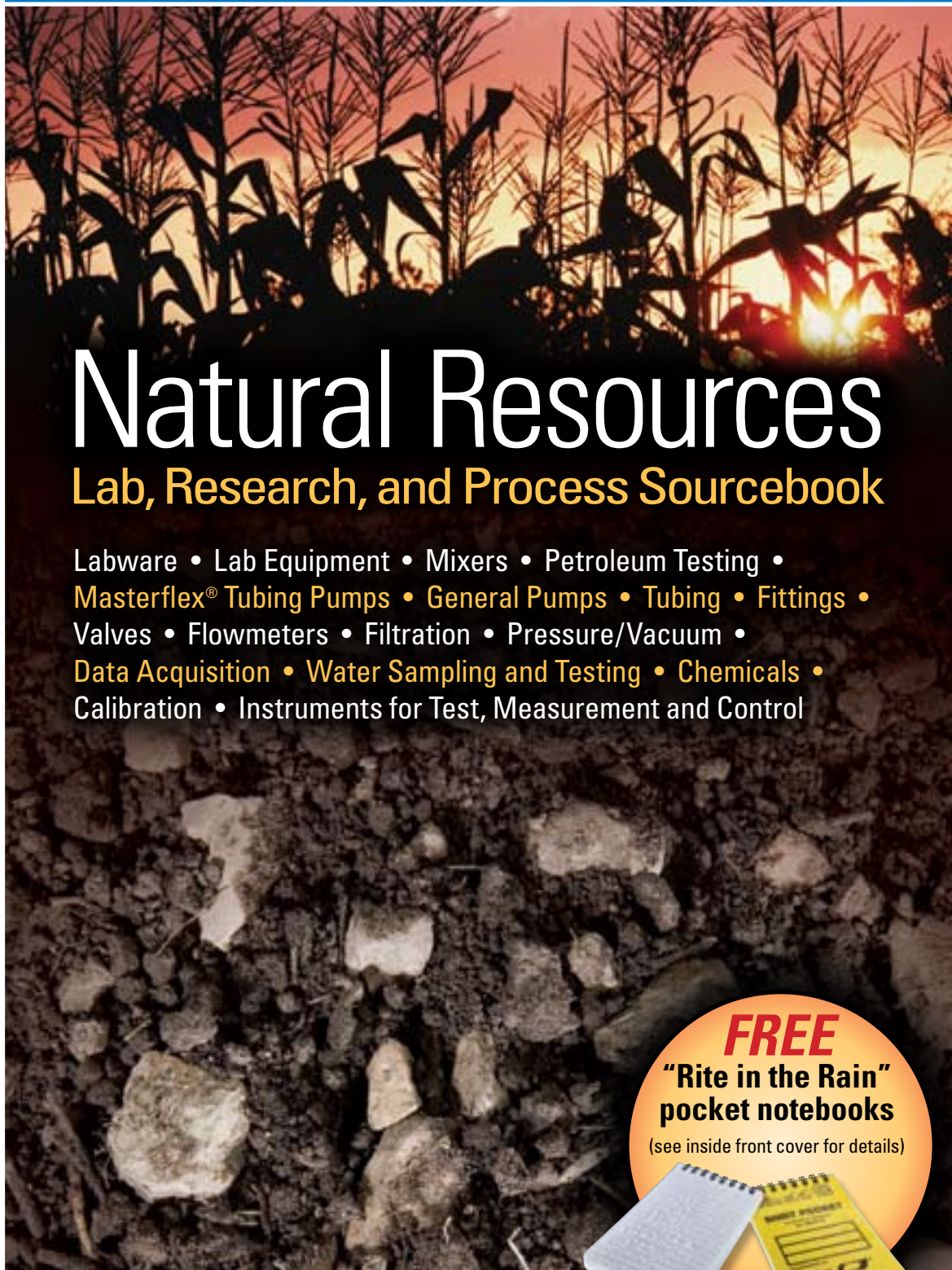




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Natural Resources

Lab, Research, and Process Sourcebook

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Natural Resources

Lab, Research, and Process Sourcebook

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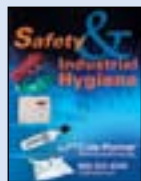
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- ☐ Masterflex® Encyclopedia Vol. 3
- ☐ 2006/07 Cole-Parmer® Industrial Catalog
- ☐ Cole-Parmer® Safety & Industrial Hygiene
- ☐ 2006 Cole-Parmer® Water Quality

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- ☐ In Plant/Production
- ☐ Other

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- ☐ Education
- ☐ Government/Regulatory
- ☐ Water Treatment
- ☐ Electrical/Semiconductors
- ☐ Petroleum
- ☐ Other: _____
- ☐ Environmental
- ☐ Pharmaceutical

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Cole-Parmer Symmetry[™] EC Portable Toploading Balances



More extensive offering of
"Balances"

New



10000-08

Enhanced features for more demanding applications

- Print function for GLP-compliance
- Percent weighing
- Built-in RS-232 interface
- Capacity tracker—warns of approaching overloads

Symmetry EC Toploading balances are an excellent choice for quality and affordability. These balances are ideal for routine weighing applications requiring accuracy and traceability for GLP requirements. The balances offer the most common features used by general laboratories. The balances also feature a capacity tracker that warns you of approaching overload conditions. For precise weighing and superior quality at an affordable price, Symmetry EC balances are an excellent choice for any laboratory.

What's included: AC power adapter with 6-ft cord.

ISO9001:2000
SUPPLIER CERTIFIED

CE 2 year
warranty

Specifications & Ordering Information

Calibration: external,
with calibration mass
Automatic shutoff: yes

Weighing units:
g, ct, lb, oz, d, gn, ozt, dwt
Output: RS-232

Stability indicator: yes
Housing size: 7½"W x 2½"H x 10"D

Pan size: 5"

115 VAC		220 VAC		Capacity	Readability	Repeatability	Linearity	Recommended calibration mass*		
Catalog number	Price	Catalog number	Price					Cat. no.	Mass	Price
SI-10000-07	-	SI-10000-27	-	120 g	0.005 g	0.005 g	±0.01 g	SI-10150-19	100 g	
SI-10000-08	-	SI-10000-28	-	400 g	0.01 g	0.01 g	±0.02 g	SI-10150-22	300 g	
SI-10000-09	-	SI-10000-29	-	800 g	0.01 g	0.01 g	±0.04 g	SI-10150-24	500 g	
SI-10000-23	-	SI-10000-24	-	2000 g	0.05 g	0.05 g	±0.1 g	SI-10150-27	2000 g	
SI-10000-10	-	SI-10000-30	-	4000 g	0.1 g	0.1 g	±0.1 g	SI-10150-29	4000 g	

*Class 4 calibration mass with certificate of traceability.

Symmetry balances are designed with the features your laboratory uses regularly—so you don't pay for what you don't need! Symmetry balances offer the quality and performance that you've come to expect from Cole-Parmer.

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ColeParmer.com/BalanceStore

New

Our Balance Store makes it easy to find the right balance for your needs.

Cole-Parmer Symmetry[™] PR Precision Toploading Balances

Durable cast-aluminum housing with precision weighing satisfies any laboratory application

- Easy-to-read oversized display with large digits
- Parts counting, percent weighing
- Fast stabilization and response time

Balances feature weighing applications used most often by laboratories—parts counting, weighing, and percentage weighing, while maintaining extremely affordable prices. Use the parts counting application to count multiple items of the same mass by comparing to a preset value. Use the percent weighing feature to display a sample weight as a percentage in reference to a preset reference weight. Symmetry PR balances feature an RS-232 output for sending data to an external printer. Durable cast aluminum housing offers superior chemical resistance and protection. A large weighing surface allows placement of a wide variety of samples. Backlit LCD with large digits provides easy viewing of weighing results. An additional communications port is included which provides the option of future expansion and communications with a separate printing device.

What's included: 115 or 220 VAC power adapter and draft shield.

Specifications & Ordering Information

Calibration: external, with calibration mass
Automatic shutoff: yes

Weighing units: g, ct, oz, dwt, mg, grains
Output: RS-232

Stability indicator: yes
Housing size: 10"W x 4"H x 14"D[†]

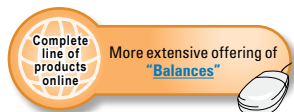
ISO9001:2000
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CE 2 year
warranty

115 VAC		220 VAC		Capacity	Readability	Repeatability	Linearity	Pan size	Recommended calibration mass*		
Cat. no.	Price	Cat. no.	Price						Cat. no.	Mass	Price
SI-10000-11		SI-10000-31		210 g		0.02 g	±0.02 g		SI-10150-06	200 g	
SI-10000-12		SI-10000-32		410 g	0.001 g	0.001 g	±0.001 g	5½" x 5½"	SI-10150-07	300 g	
SI-10000-13		SI-10000-33		2200 g	0.01 g	0.01 g	±0.01 g	7½" x 8¼"	SI-10150-12	2000 g	
SI-10000-14		SI-10000-34		4400 g					SI-10150-14	4000 g	

*Class 1 calibration mass with certificate of calibration.

[†]Height excludes draft shield



New

METTLER TOLEDO Classic Plus AB-S and PB-S FACT Analytical and Toploading Balances

Classic Plus balances feature metal housing and rugged MonoBloc weigh cell

- User-friendly applications with large, ergonomic touch-sensitive keys
- Fully Automatic Calibration Technology (FACT) temperature-activated internal calibration
- Precise and reliable, with overload protection and chemical-resistant materials
- Applications include piece counting, percent weighing, dynamic weighing, adaptation to the types of weighing

Classic Plus balances feature Fully Automatic Calibration Technology (FACT) from Mettler-Toledo. As temperatures change and influence the accuracy of the weighing result, FACT adjusts the balance automatically. Avoid time-consuming checks using external weights or a manually triggered internal adjustment. The rugged metal housing and simple operation guarantee strong performance even in harsh environments.

The AB-S/FACT analytical balances offer easy access and loading for simple operation. The easy-to-read display only indicates the bare necessities to prevent mistakes. These balances also offer hi-tech weigh cells.

What's included: 115 VAC power adapter, RS-232 interface, below-balance weigh hook. Analytical balances and toploading models 11333-25 and -27 also include an all-glass draft shield.

Precision toploading balance 11333-25 (shown with draft shield)

Toploading balance 11333-35

Analytical balance 11333-12

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For weigh dishes and other balance accessories.

SL-01017-50 Aluminum weigh dishes, 57mm.

Specifications & Ordering Information

Calibration: internal, Fully Automatic Calibration Technology (FACT)

Weighing units:

g, kg, mg, ct, lb, oz, ozt, gn

Output: built-in RS-232 interface

Power: 115 VAC, 50/60 Hz; (230 VAC with optional adapter, sold separately below)

Stability filters: vibration, drafts

Pan size

Analytical: 3 1/8" dia
Toploading: 4"

ISO9001:2000
CERTIFIED SUPPLIER



3 year warranty

Chamber size

Analytical: 8 3/8"W x 13 1/2"H x 12 5/8"D

Housing size

Analytical: 9 5/8"W x 13 1/2"H x 12 5/8"D
Toploading: 8 3/8"W x 9 3/4"H x 12 5/8"D

Catalog number	Capacity	Readability	Repeatability	Linearity	Price	Recommended calibration mass		
						Catalog number	Mass	Price
AB-S Analytical balances								
SL-11333-12	31/120 g	0.01/0.1 mg	0.03/0.1 mg	±0.2 mg		SL-10150-04*	100 g	
SL-11333-14	61/320 g		0.05/0.1 mg			SL-10150-07*	300 g	
SL-11333-16	51 g	0.1 mg	0.1 mg	±0.2 mg		SL-10150-03*	50 g	
SL-11333-18	110 g					SL-10150-04*	100 g	
SL-11333-20	220 g					SL-10150-06*	200 g	
SL-11333-22	320 g					SL-10150-07*	300 g	
PB-S Toploading balances								
SL-11333-25	310 g	0.001 g	0.001 g	±0.002 g		SL-10150-22†	300 g	
SL-11333-27	60/310 g	0.1/0.001 g	0.001/0.005 g	±0.02/0.1 g		SL-10150-22†	300 g	
SL-11333-29	610 g	0.01 g	0.1 g	±0.02 g		SL-10150-24†	500 g	
SL-11333-31	1510 g					SL-10150-25†	1000 g	
SL-11333-33	3100 g					SL-10150-28†	3000 g	
SL-11333-35	1510 g	0.1 g	0.05 g	±0.1 g		SL-10150-25†	1000 g	
SL-11333-37	3100 g					SL-10150-28†	3000 g	

*Class 1 calibration mass with certificate of calibration.

†Class 4 calibration mass with certificate of traceability.

Accessories

[SL-11333-90](#) Power adapter; 230 VAC, 50/60 Hz

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For weigh boats, calibration mass sets, platforms, and more balance accessories.

StableTemp Economy Utility Baths

Our best-selling utility baths offer excellent performance at an affordable price!

- $\pm 0.2^{\circ}\text{C}$ stability at 37°C
- Seamless 304 stainless steel tank and powder-coated exterior are corrosion resistant
- Front-panel controls are safe and easy to use

These water baths are ideal for general-purpose application. Bath fluids can be controlled at temperatures as high as 100°C (60°C without cover) with $\pm 0.2^{\circ}$ precision and uniformity. Bath temperature can be read from alcohol thermometer (included) with a range from -20 to 15°C . The steeply gabled, polycarbonate cover accommodates glassware of varying heights and tilts out of your way when loading or removing samples, allowing condensate to drain neatly back into the bath.

What's included: cover, glass thermometer, and a 3-ft power cord with three-prong plug (European plug on 240 VAC models).

Specification & Ordering Information

Temperature range: 5°C above ambient to 100°C (with cover on)

Temperature control: on/off

High-temperature cutoff: yes

Temperature sensor: thermistor

Wetted materials: 304 stainless steel

Temperature stability: (at 37°C) $\pm 0.2^{\circ}\text{C}$

Bath capacity	Bath opening (W x H x D)	Working depth	Overall dimensions (W x H x D)	120 VAC, 60 Hz		240 VAC, 50 Hz	
				Catalog number	Price	Catalog number	Price
2 liters	5 ⁵ / ₁₆ " x 5 ⁷ / ₈ " x 5 ¹³ / ₁₆ "	5 ¹³ / ₁₆ "	8 ⁵ / ₁₆ " x 7 ⁷ / ₈ " x 8 ¹ / ₈ "	SL-12106-70		SL-12106-72	
5 liters	5 ¹⁵ / ₁₆ " x 11 ¹⁵ / ₁₆ " x 5 ¹⁵ / ₁₆ "	5 ¹⁵ / ₁₆ "	9 ⁷ / ₁₆ " x 13 ¹¹ / ₁₆ " x 8 ¹ / ₈ "	SL-12106-74		SL-12106-76	
10 liters	11 ¹¹ / ₁₆ " x 12 ³ / ₄ " x 5 ¹⁵ / ₁₆ "	5 ¹⁵ / ₁₆ "	15 ⁷ / ₁₆ " x 14 ⁷ / ₈ " x 8 ¹ / ₈ "	SL-12106-78		SL-12106-80	
20 liters	11 ¹ / ₂ " x 19 ¹ / ₂ " x 5 ⁷ / ₈ "	5 ⁷ / ₈ "	15 ¹³ / ₁₆ " x 21 ¹¹ / ₁₆ " x 8 ¹ / ₈ "	SL-12106-82		SL-12106-84	
28 liters	11 ⁵ / ₈ " x 19 ⁹ / ₁₆ " x 7 ¹⁵ / ₁₆ "	7 ¹⁵ / ₁₆ "	15 ³ / ₁₆ " x 21 ¹¹ / ₁₆ " x 10 ¹ / ₈ "	SL-12106-86		SL-12106-88	

SL-08796-00 Concentrated lab algicide prevents algae growth in baths and circulators.

A few drops per gallon keeps water pure and odor-free. One 8-oz bottle

Haake Immersion Circulators by Thermo Electron

Temperature control for baths up to 50 liters

- Turbulence reduction system reduces pump speed to 10 L/min for open baths

Swivel-mounted nozzle ensures thorough mixing and even temperature distribution. Attach circulator to any bath wall with a thickness of up to 25 mm (1") using screw clamp. Digital models display the reason whenever the circulator automatically cuts off. Real temperature adjustment ensures accurate display. RS-232 output on models 12206-42 and -47 lets you connect the circulator to a PC. Order optional tap water cooling coil below.

What's included: directional nozzle, screw clamp, and a 6-ft cord. The 115 VAC models include a U.S. standard three-prong plug; 230 VAC models have a European plug. Analog units include a 0 to 100°C glass thermometer with 0.5°C resolution.

Specifications & Ordering Information

ISO9001:2000
CERTIFIED SUPPLIER

CE 2 year warranty

Description		Analog control		Digital control		Digital control with RS-232	
Catalog number		SL-12206-00	SL-12206-05	SL-12206-40	SL-12206-45	SL-12206-42	SL-12206-47
Temp range	Without chilling	25 to 100°C		25 to 100°C		25 to 200°C	
	With coil	20 to 100°C		20 to 100°C		20 to 200°C	
	With chiller/bath	-30 to 100°C		-30 to 100°C		-50 to 200°C	
Temperature stability		$\pm 0.04^{\circ}\text{C}$		$\pm 0.02^{\circ}\text{C}$		$\pm 0.01^{\circ}\text{C}$	
Temperature control		Stable on/off control		PID		PID	
Temperature setting		Analog w/ fine adjustment		Touchpad front panel		Touchpad front panel	
Display resolution		Glass thermometer, 0.5°C		Digital, 0.1° , 0.01°C		Digital, 0.1° , 0.01°C	
Temperature sensor		Glass thermometer		Pt 1000		Pt 1000	
High-temperature cutoff		Yes		Yes		Yes	
Total wattage		1050	1550	1250	2050	1250	2050
Heater wattage		1000	1500	1200	2000	1200	2000
Press. pump	Max head at 0 flow	300 mbar		300 mbar		300 mbar	
	Max flow at 0 head	17 L/min		17 L/min		17 L/min	
Suction pump		None		None		None	
Max tank wall thickness		25 mm (1")		25 mm (1")		25 mm (1")	
Immersion depth		3 to 5 ³ / ₄ "		3 to 5 ³ / ₄ "		3 ⁹ / ₁₆ to 5 ³ / ₄ "	
Wetted materials		Stainless steel, Ryton®		Stainless steel, Ryton®		Stainless steel, Ryton®	
Low-level cutoff		Yes		Yes		Yes	
Overall dimensions (L x W x H)		6" x 3 ³ / ₄ " x 12 ³ / ₄ "		6 ¹ / ₂ " x 4" x 12 ³ / ₄ "		6 ¹ / ₂ " x 4" x 12 ³ / ₄ "	
Power (VAC, Hz)		115, 60	230, 50/60	115, 60	230, 50/60	115, 60	230, 50/60
Price							

SL-12200-51 Tap water cooling coil



12106-74



12206-40

12206-42

Memory stores the titrated volume while the burette is refilling.



Optional drying tube
07878-53

07910-11
(bottles sold separately)

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Click Here

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More extensive offering of "Dispensers"

B
07902-22

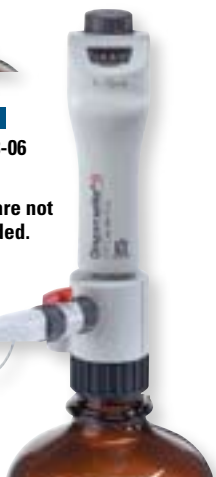


A
07912-02



C
07878-06

Bottles are not included.



Digital Buret™ III Electronic Burettes

Easily calibrate to comply with GLP and ISO regulations

- SafetyPrime™ valve allows priming without wasting titrant
- Mounts directly on bottle to reduce liquid transfer

Eliminate meniscus-reading errors with this electronic burette. Valve block rotates 360° so you can always view bottle label. The digital display easily resets to zero. Stainless steel seals are suitable for aqueous or nonaqueous solutions up to 2N.

What's included: 33-mm and 38-mm polypropylene (PP) bottle adapters; PTFE titrating tube (120-mm horizontal x 195-mm vertical) with threaded safety cap, a 250- to 480-mm telescoping filling tube, lithium battery, and a performance certificate.

ISO9001:2000
CERTIFIED SUPPLIER

Specifications & Ordering Information

Cumulative volume: up to 99.99-mL in 0.01 mL increments	Wetted materials: borosilicate glass, PP, PTFE, ETFE, FEP, PFA, platinum-iridium, and ceramic	Power: lithium battery (included) powers more than 60,000 titrations
Reproducibility: ±0.1%		
Fitting: fits 45-mm bottle thread		

Cat. no.	Seal	Capacity	Accuracy	Price
SL-07910-11	FKM	25 mL	±0.2% (±50 µL)	
SL-07910-16		50 mL	±0.2% (±100 µL)	

SL-07910-07 Adapter, Tefzel®. For 33-mm bottle necks

SL-07878-53 Drying tube. Protects sensitive reagents from moisture or CO₂

SL-07193-05 Drierite® drying agent for 07878-53. Twelve 1 lb packs per carton

BrandTech Dispensette® Bottletop Dispensers

SafetyPrime™ valve recirculates reagent during priming to reduce spurting and to conserve reagent

- Safety discharge system reduces the risk of accidental dispensing
- Valve block rotates 360° so the volume display and bottle label are always visible
- Floating piston design for smooth, one-handed operation
- Reinforced discharge tube with a threaded safety cap

- Polypropylene cylinder sleeve helps protect you in case of accidental breakage

Digital models feature Easy Calibration™ for quick adjustments in the lab without having to retest; units can be calibrated for ISO/GLP compliance. Fits directly onto 45-mm screw-neck bottles and comes with polypropylene adapters. For other neck sizes see "What's included" table below.

Specifications & Ordering Information

Wetted materials

Models A, B, C: platinum-iridium valve spring, borosilicate glass valve balls and cylinder, PTFE washers, PFA-coated piston, ETFE valve bodies and valve block, AlO₃ valve seats, and PP safety cap

Autoclavable: yes

What's included:

For dispenser having maximum volume (mL)	Polypropylene adapters for threaded bottle neck size (mm)	Telescoping filling tube length (mm)
0.5, 1, 2, 5, and 10	24, 28, 33, and 38	125 to 240
25 and 50	28, 33, and 38	125 to 240
100	33 and 38	170 to 330

ISO9001:2000
CERTIFIED SUPPLIER

Catalog number	Volume range	Scale divisions	Accuracy	Reproducibility	Price
A Dispensette III fixed-volume dispensers*					
SL-07912-02	1 mL	—	±0.5%	≤0.1%	
SL-07912-04	2 mL	—			
SL-07912-06	5 mL	—			
SL-07912-08	10 mL	—			
B Dispensette III adjustable-volume dispensers, analog volume setting*					
SL-07902-12	0.05 to 0.5 mL	0.01 mL	±1.0%	≤0.2%	
SL-07902-14	0.2 to 2 mL	0.05 mL	±0.5%	≤0.1%	
SL-07902-16	0.5 to 5 mL	0.1 mL			
SL-07902-18	1 to 10 mL	0.2 mL			
SL-07902-22	2.5 to 25 mL	0.5 mL			
SL-07902-24	5 to 50 mL	1.0 mL	±0.5%	≤0.1%	
SL-07902-26	10 to 100 mL	1.0 mL			
C Dispensette III adjustable-volume dispensers, digital volume setting*					
SL-07878-02	0.2 to 2 mL	0.01 mL	±0.5%	≤0.1%	
SL-07878-04	0.5 to 5 mL	0.02 mL			
SL-07878-06	1 to 10 mL	0.05 mL			
SL-07878-08	2.5 to 25 mL	0.1 mL			
SL-07878-12	5 to 50 mL	0.2 mL			

*The Dispensette III and organic dispensers should not be used with hydrofluoric acid (HF).

Cole-Parmer Fixed-Speed Centrifuges

An economical centrifuge for routine applications

- Molded-in rotor cover and rotor collar gasket enclose the rotor in a sealed compartment to protect against aerosols and splashes
- Motor shuts off when the cover is opened
- Solid steel base and suction cup feet keep centrifuge firmly in place

Model 17250-00 has an on/off switch; model 17250-10 has a 60-minute timer with hold function.

What's included: a six-place rotor with six aluminum tube inserts for 15-mL tubes and a pack of six rubber tube adapters for 10-mL tubes.

Specifications & Ordering Information

Rotor: included

Max tube dimensions: 130 mm L x 20 mm dia

Dimensions: 11"W x 9"H x 12"D

Catalog number	Speed range	Max RCF x g	Timer	Power VAC	Hz	Price
SL-17250-00	Fixed at 3400 rpm	1318	—	115	60	
SL-17250-10			0 to 60			

More info

Rotor for 15-mL tubes included. Accepts tubes with maximum dimensions of 130 mm L x 20 mm dia.



17250-10

IEC General-Purpose Centrifuge

Convenient "at speed" timer starts counting when rotor reaches 95% of set speed—no need to add on for acceleration time!

- Easy-to-use digital control panel—adjust time and variable speed with up/down arrows
- Microprocessor control provides accuracy, dependability, and repeatability of runs
- A variety tube adapters are available for added versatility

Cover interlock prevents cover from being opened during operation. Thirty-minute electronic timer features a hold mode for extended runs.

Note: Rotor is not included with unit. Order swing-out rotor 17354-80 (four 4 x 50 mL tube buckets included) and tube adapters separately at right.



17354-20

Specifications & Ordering Info

ISO 9001:2000
CERTIFIED SUPPLIER

Rotor: order separately below **Dimensions:** 13 1/4"W x 10 3/4"H x 15 3/4"D

Catalog number	Speed range	Max RCF	Timer	Power VAC	Hz	Price
SL-17354-20	0 to 3900 rpm	2200 x g	5 sec to 30 min	120	50/60	
SL-17354-25				240	50/60	

Rotor

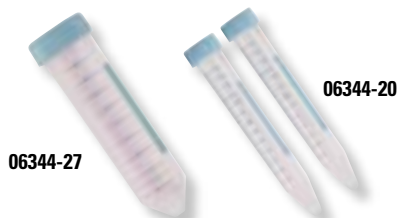
Catalog number	Capacity	Max RCF	Max rpm	Price
SL-17354-80	Four 4 x 50-mL buckets	2200 x g	3900	

Tube Adapters

Catalog number	Capacity	Max tube dimensions	Max RCF	Qty/pk	Price/pk
Conical adapters					
SL-17354-82	1 x 50 mL	29 x 115 mm	1950 x g	2	
SL-17354-84	2 x 15 mL	17 x 120 mm	1900 x g	2	
Tube adapters					
SL-17354-86	4 x 7 to 10 mL	16 x 100 mm	2200 x g	2	
SL-17354-88	7 x 5 to 7 mL	16 x 75 mm	2150 x g	2	
Microtube adapter					
SL-17354-90	10 x 1.5 mL	11 x 41 mm	1700 x g	2	

Cole-Parmer Centrifuge Tubes

These conical-bottom disposable tubes are available in polystyrene (PS) and polypropylene co-polymer (PPCO)—ideal for applications where other tubes would shatter. The 50-mL tubes 06344-25 and 06344-26 are self-standing with molded-in graduations; all other models feature blue printed graduations and a writing patch. Tubes are available sterile-packed in trays or bags, or nonsterile-packed with caps separate. All include screw caps.



06344-27

06344-20

Request the NEW 2007/08 Cole-Parmer® General Catalog for our wide selection of centrifuges and tubes. Call 800-323-4340 or visit www.coleparmer.com/Catalogs



Specifications & Ordering Information

Catalog number	Capacity (mL)	Tube material	Max RCF (x g)	Cap style (cap included)	Sterile	Packaging	Qty/pk	Price/pk
SL-06344-20	15	PS	1800	Screw cap/rim seal	No	1 bag of 500	500	
SL-06344-21	15	PS	1800	Screw cap/rim seal	Yes	10 trays of 50	500	
SL-06344-22	15	PPCO	6400	Screw cap/rim seal	No	1 bag of 500	500	
SL-06344-24	15	PPCO	6400	Screw cap/rim seal	Yes	20 bags of 25	500	
SL-06344-27	50	PPCO	10,000	Flat top/rim seal	No	1 bag of 500	500	
SL-06344-29	50	PPCO	10,000	Flat top/rim seal	Yes	20 bags of 25	500	
SL-06344-26	50*	PPCO	N/A	Flat top/rim seal	No	20 bags of 25	500	
SL-06344-25	50*	PPCO	N/A	Flat top/rim seal	Yes	20 bags of 25	500	

*Self-standing tube

Locator® Auto-Fill Liquid Nitrogen Cryogenic Storage System

Automatically monitors and refills vessels with liquid nitrogen

- Permits unattended storage of cells or microorganisms in the vapor phase of liquid nitrogen

The Locator 7 auto-fill cryogenic storage vessel is designed to attach to your liquid nitrogen tank for automatic filling for vapor-phase storage. The auto-fill controller features audible and visual low/high level liquid nitrogen alarms that alert you to an empty cryogenic storage vessel or prevents vials from coming into contact with liquid nitrogen. System can also be connected to central alarm warning system that triggers alarms and reports power failures.

The Locator 7 system has a larger area in the bottom of the cryogenic vessel that permits maximum holding times of over 22 days in vapor phase. Unbeatable temperature uniformity with advanced vacuum insulation assures all samples are stored below -190°C, even with less than 2" (5 cm) of liquid remaining in the vessel. With storage capacity of over 6000 vials, the unique hanging rack system and gridded design allows for complete tracking and easy retrieval of samples. Secure locking clasp prevents unauthorized entry.

Order complete system, or separate components.

What's included: cryogenic vessel include six 2" box racks.



Complete system
05095-04

Specifications & Ordering Information

Catalog number	Description	Capacity (L)	Neck ID	Static holding time	Evaporation (L/day)	Outer dimensions (L x W x H)	Price
SL-05095-04	Complete system: Locator 7 with six 2" box racks, auto-fill controller, and level monitor	31 (vapor phase)	8½"	22 days	1.4	32" x 30" x 60"	
SL-05095-02	Locator 7 cryogenic storage vessel with six 2" box racks	31 (vapor phase)	8½"	22 days	1.4	32" x 32" x 51"	
SL-05095-00	Auto-fill controller with level alarm (only for use with Locator 7 cryogenic storage vessel)	N/A	N/A	N/A	N/A	31" x 29½" x 25"	

Stackable Acrylic Desiccators with Sliding Trays

Transparent acrylic desiccators feature extra deep sliding trays

- Compact design for use in freezers or refrigerators
- Airtight doors require no lubrication

Models 08933-00 and -10 feature transparent acrylic walls for easy viewing of contents. Airtight doors need no lubrication. Desiccators provide dry, dust-free storage to 100°F (38°C).

What's included: two extra-deep sample trays and a desiccant tray.

Models 08933-20 and -30 have all the features of the desiccators above plus a built-in thermohygrometer. Thermohygrometer has a temperature range of -58 to 158°F (-50 to 70°C) with a ±1.8°F accuracy up to 104°F and a humidity range of 20 to 95% with a ±5% accuracy.

What's included: a thermohygrometer with LCD (models 08933-20, -30), two 1.5 V AAA alkaline batteries, two extra-deep sample trays, and a desiccant tray.

Specifications & Ordering Information

Catalog number	Dimensions (W x H x D)		Price	Replacement shelves	
	Interior	Overall		Cat. no.	Price
Desiccators without thermohygrometer					
SI-08933-00	7" x 8½" x 10"	9¾" x 6¼" x 7¾"		SI-08933-50	
SI-08933-10	9" x 10½" x 16"			SI-08933-60	
Desiccators with built-in thermohygrometer					
SI-08933-20	7" x 8½" x 10"	15½" x 8¼" x 9¾"		SI-08933-50	
SI-08933-30	9" x 10½" x 16"			SI-08933-60	

SL-09376-00 Replacement batteries, 1.5 V, AAA.

For thermohygrometer in models 08933-20 and -30.
Pack of 12

SL-17030-20 NIST-traceable calibration certificate for thermohygmeters



Desiccator 08933-20 features a built-in digital thermohygrometer.

OAKTON® RH/TempLog Datalogger

Keep track of temperature and humidity data for months with this RH/TempLog datalogger! Logger holds up to 16,000 readings on selectable intervals. Built-in clock and calendar track your data in real time.



Cat. no.	Description	Price
SL-35710-10	RH/TempLog datalogger	

Whatman® Filter Papers



The industry standard for high-purity filtration

Our Whatman filter papers offer you flexibility in filter choice without sacrificing quality. All filters are packaged **100/box**; see tables below to order.

A Quantitative Filter Papers are the choice for gravimetric analysis. High-purity hardened filters have a high wet-strength and are chemical resistant to handle vacuum filtration or acid/alkali solutions.

B Qualitative Filter Papers are used for liquid clarifications, analytical separations, or air and water analysis.

A Quantitative Filter Papers

Type	Pore size	Applications	Dia	4.25 cm	5.5 cm	9.0 cm	11.0 cm	12.5 cm	15.0 cm	18.5 cm	24.0 cm
Ashless —less than 0.010% ash											
Whatman 41	20-25 µm	Rapid filtration of coarse and gelatinous precipitates	Cat. no. Price/bx	SL-06647-00	SL-06647-01	SL-06647-02	SL-06647-03	SL-06647-04	SL-06647-05	SL-06647-06	SL-06647-07
Whatman 40	8 µm	Gravimetric analysis, collection of trace elements	Cat. no. Price/bx	SL-06647-10	SL-06647-11	SL-06647-12	SL-06647-13	SL-06647-14	SL-06647-15	SL-06647-16	SL-06647-17
Whatman 42	2.5 µm	For filtering finest crystalline materials	Cat. no. Price/bx	SL-06647-20	SL-06647-21	SL-06647-22	SL-06647-23	SL-06647-24	SL-06647-25	SL-06647-26	SL-06647-27
Hardened ashless —less than 0.008% ash											
Whatman 541	20-25 µm	Coarse filtration for gravimetric analysis	Cat. no. Price/bx	SL-06647-30	SL-06647-31	SL-06647-32	SL-06647-33	SL-06647-34	SL-06647-35	SL-06647-36	SL-06647-37
Whatman 540	8 µm	Gravimetric analysis of metals in acids/alkalies	Cat. no. Price/bx	SL-06647-40	SL-06647-41	SL-06647-42	SL-06647-43	SL-06647-44	SL-06647-45	SL-06647-46	SL-06647-47
Whatman 542	2.7 µm	High retention of finest particulates	Cat. no. Price/bx	SL-06647-50	—	SL-06647-52	SL-06647-53	SL-06647-54	SL-06647-55	SL-06647-56	—

B Qualitative Filter Papers

Type	Pore size	Applications	Dia	4.25 cm	5.5 cm	9.0 cm	11.0 cm	12.5 cm	15.0 cm	18.5 cm	24.0 cm
Whatman 4	20-25 µm	For coarse and gelatinous precipitates, liquid cleanup	Cat. no. Price/bx	SL-06648-00	SL-06648-01	SL-06648-02	SL-06648-03	SL-06648-04	SL-06648-05	SL-06648-06	SL-06648-07
Whatman 1	11 µm	Routine lab applications, student analysis	Cat. no. Price/bx	SL-06648-10	SL-06648-11	SL-06648-12	SL-06648-13	SL-06648-14	SL-06648-15	SL-06648-16	SL-06648-17
Whatman 5	2.5 µm	Highly retentive, ideal for chemical analysis	Cat. no. Price/bx	SL-06648-20	SL-06648-21	SL-06648-22	SL-06648-23	SL-06648-24	SL-06648-25	SL-06648-26	SL-06648-27

Disposable In-Line Gas/Liquid Filters

Choose opaque Kynar® PVDF for the best chemical compatibility, or transparent nylon for low cost

Filter gases or liquids with these microfiber filters. All models have a borosilicate glass filter membrane. See table below for applications and efficiency ratings. Liquid efficiency ratings are 98% of retention of listed particles.

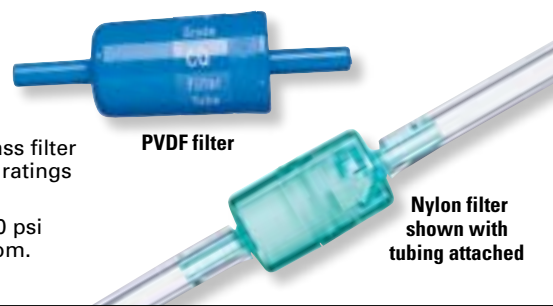
Nylon and PVDF filters have 1/4" OD ports. Max differential pressure for all filters is 40 psi (60 psi for 0.01 µm units). For our chemical compatibility charts, go to ColeParmer.com.

Specifications & Ordering Information

Application	Catalog number	Material	Gas efficiency*	Liquid efficiency	Air flow at 1 psi drop at indicated pressure (ft ³ /hr)			Water flow at indicated pressure drop (GPH)		Max psi	Max temp [†] (at max psi)	Price
					1 psi	60 psi	100 psi	1 psi	5 psi			
High-purity compressed gas; absolute filtration to 0.01 µm	SL-02917-60	Nylon	100% at 0.01 µm	—	18	102	120	—	—	125	110°F (43°C)	
Gas/air filtration—general-purpose use.	SL-02909-10	Nylon	93%	25 µm	34	161	248	12	30	125	110°F (43°C)	
Liquid filtration—remove most visible particles.	SL-02909-20	Nylon	— [‡]	8 µm	32	151	231	10	25			
	SL-02908-40	PVDF	93%	25 µm	34	161	248	12	30			
	SL-02908-50	PVDF	98%	8 µm	32	151	231	10	25			
Gas/air filtration—remove oil and droplets. Liquid filtration—remove all visible particles and most colloidal haze.	SL-02909-30	Nylon	99.99%	2 µm	22	105	162	3	15	125	110°F (43°C)	
	SL-02909-40**	Nylon	—	—	—	—	—	—	—			
	SL-02908-60	PVDF	—	2 µm	—	—	—	3	15			
Gas/air filtration—removal of trace oil vapors ^{††}	SL-02908-62	Nylon	99%	—	0.7	3.7	5	—	—	125	180°F (82°C)	
Gas/air filtration—removal of water vapor ^{††}	SL-02908-64	Nylon	99%	—	0.7	3.7	5	—	—	125	180°F (82°C)	
Gas/air filtration—removal of acidic gases ^{***}	SL-02908-66	Nylon	99%	—	0.7	3.7	5	—	—	125	180°F (82°C)	
Gas/air sterilizing.	SL-02909-50	Nylon	99.999%	0.9 µm	11	55	84	1.5	7.3	125	110°F (43°C)	
Liquid filtration—remove most bacteria.	SL-02909-60	Nylon	99.999+%	0.3 µm	3	13	20	0.4	1.9			
	SL-02908-80	PVDF	99.999%	0.9 µm	11	55	84	1.5	7.3			
	SL-02908-90	PVDF	—	0.3 µm	—	—	—	0.4	1.9			

*Gas ratings are % retention of 0.6 µm particles. [†]Max temperature at 0 psi: nylon is 230°F; stainless steel and Kynar® PVDF are 250°F. [‡]Do not use with gases.

Turns red when saturated. ^{††}Contains activated charcoal. ^{*}Contains mixed sodium and calcium hydroxides.



PVDF filter

Nylon filter shown with tubing attached

Cole-Parmer Syringe Filters

Choose from a wide assortment of membrane types to suit your application. All filters are triton-free and have a bidirectional membrane support and luer lock inlet/outlet for a secure fit to the syringe. For 50-mm membrane filters only, the inlet/outlet connections are stepped hose barbs that taper to fit 1/4" to 1/2" ID tubing. Membrane type and pore size are printed on each filter for easy identification. All Cole-Parmer syringe filters are 100% integrity tested and manufactured in accordance with ISO 9002 standards. Sterile filters are sterilized by gamma radiation. They are certified nonpyrogenic, noncytotoxic, and are blister packed.

Complete line of products online

More extensive offering of "Filtration" products

Syringe filter 02915-92 (syringe not included, order on page 26)



Built-in prefilter 02915-92



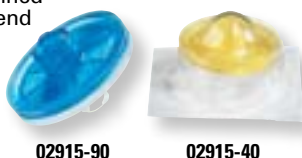
Membrane Specifications

Membrane dia	Housing type	Sample volume	Retention volume*	Pressure limit at 25°C	Max temp	Effective filtration area
4 mm	PP	≤1 mL	5 µL	87 psi	127°C	0.07 cm ²
15 mm	PP	≤5 mL	10 µL	87 psi	127°C	1.7 cm ²
25 mm	PP	≤100 mL	0.1 mL	87 psi	127°C	4.8 cm ²
26 mm	Acrylic	≤100 mL	0.1 mL	87 psi	50°C	5.3 cm ²
50 mm	PP	≤2 L	0.5 mL	60 psi	134°C	20 cm ²

*Varies for glass prefilters; see glass prefilter table below.

Built-In Prefilters with Cellulose Acetate Final Filter

Borosilicate glass fiber prefilters combined with cellulose acetate membranes extend the life of the final filter when using viscous, proteinaceous, or particulate-laden samples. Use these filters to eliminate prefiltration step, reduce retention volume and sample loss, and achieve faster flow rates.



02915-90

02915-40

Catalog number	Pore size	Membrane dia	Housing	Retention volume	Qty/ bx	Price/ bx
Nonsterile filters						
SL-02915-90	0.20 μm	26 mm	Acrylic	0.23 mL	100	
SL-02915-92	0.45 μm				100	
SL-02915-94	0.80 μm				100	
Sterile filters						
SL-02915-40	0.20 μm	26 mm	Acrylic	0.23 mL	50	

Cellulose Acetate Filters

Cellulose acetate membranes exhibit low protein binding—ideal for filtering biological solutions.



02915-60

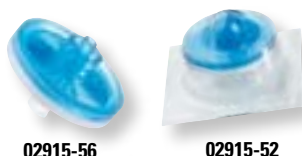
02915-62

02915-10

Catalog number	Pore size	Membrane dia	Housing	Color	Qty/bx	Price/bx
Nonsterile filters						
SL-02915-60	0.22 µm	26 mm	Acrylic	Blue	100	
SL-02915-58	0.45 µm			Clear	100	
SL-02915-62	0.80 µm			Green	100	
Sterile filters						
SL-02915-12	0.22 µm	26 mm	Acrylic	Blue	50	
SL-02915-00	0.45 µm			Clear	50	
SL-02915-10	0.80 µm			Green	50	

Nitrocellulose Filters

Nitrocellulose (CN) filters exhibit the highest protein retention of all membranes—good binding matrix for macromolecules. Provide fast flow rates with aqueous solutions.



02915-56

02915-52

Catalog number	Pore size	Membrane dia	Housing	Color	Qty/bx	Price/bx
Nonsterile filter						
SL-02915-56	0.20 µm	26 mm	Acrylic	Blue	100	
Sterile filters						
SL-02915-52	0.20 µm	26 mm	Acrylic	Blue	50	
SL-02915-53	0.45 µm				50	

Technical info

Typical Filter Applications

Membrane type	Applications
Glass prefilter	One-step prefiltration and filtration. Choose the final membrane to meet your application. 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.

Nylon Filters

Hydrophilic nylon membranes have extremely low levels of extractables and contain no wetting agents. They offer good chemical resistance and are ideal for aqueous and most organic samples.



02915-16

02915-04

Catalog number	Pore size	Membrane dia	Housing	Color	Qty/bx	Price/bx
Nonsterile filters						
SL-02915-16	0.22 μm	25 mm	PP	Natural	100	
SL-02915-14	0.45 μm				100	
Sterile filters						
SL-02915-04	0.20 μm	25 mm	PP	Red	50	
SL-02915-02	0.45 μm			Natural	50	

PTFE Filters

Polytetrafluoroethylene (PTFE) membranes are unaffected by most organic solvents, concentrated acids and bases, propellant, and cryogenic fluids. Can be used for gas/air filtration.



29550-08

02915-20

02915-28

Catalog number	Pore size	Membrane dia	Housing	Color	Qty/bx	Price/bx
Nonsterile filters						
SL-29550-08	0.20 µm	15 mm	PP	Natural	100	
SL-29550-10	0.45 µm				100	
SL-02915-20	0.20 µm	25 mm	PP	Natural	100	
SL-02915-22	0.45 µm				100	
SL-02915-28	0.20 µm	50 mm	PP	Natural	20	
SL-02915-30	0.45 µm				20	
Sterile filters						
SL-02915-08	0.20 µm	25 mm	PP	Natural	50	
SL-02915-06	0.50 µm				50	

Double-Open-End Liquid Filter Cartridges

▲ Spun Gradient-Density Cartridges. Ideal for removing a broad range of deformable and non-deformable particles such as sand, silt, sludge, rust, and scale. Polypropylene construction is resistant to chemical and bacterial attack. One-micron and five-micron cartridges are certified to NSF Standard 42 for materials and impart no taste, odor, or color. Suitable to 145°F (63°C).

Catalog number	µm rating, nominal	Flow rate [†]	Length	Price
SL-01509-14	1	5 GPM at 0.6 psid	10"	
SL-01509-15	5	5 GPM at 0.2 psid		
SL-01509-35	25	5 GPM at 0.2 psid		
SL-01509-37	1	10 GPM at 0.6 psid	20"	
SL-01509-40	5	10 GPM at 0.6 psid		
SL-01509-41	25	10 GPM at 0.2 psid		

■ High-Efficiency Pleated Filter Cartridges. The pleated polypropylene (PP) design offers flow rates and dirt-loading capacities higher than spun or wound depth cartridges. This filter is biologically safe and designed to meet FDA requirements for regulated industries such as food, pharma, and semicon. All-PP construction provides broad chemical compatibility. The gradient density microfiber media provides removal of a broader range of particle sizes than typical pleated filters. Suitable to 122°F (50°C).

Catalog number	µm rating, nominal	Flow rate [†]	Length	Price/ea
SL-29830-00	0.2	2 GPM at 1 psid	10"	
SL-29830-01		2 GPM at <1 psid	20"	

[†]psid refers to pounds per square inch pressure drop through the filter system. For optimal performance, change cartridges at 25 psid.



Complete line of products online

More extensive offering of "Water Purification" products



Go to
www.coleparmer.com
for double-open-end
filter housings.

A
01509-35

B
29830-00

C
06479-20

■ Filter Cartridges for Ultrapure Applications. These cartridges are autoclavable to 250°F (121°C) and in-line sterilizable to 257°F (125°C) for up to 30-minute cycles. They are tolerant to an accumulated exposure of 10 hours. The filters may also be sanitized with compatible chemical agents. All cartridges are suitable to 180°F (82°C) at 10 psid.

The cartridges comply with U.S. CFR Title 21 guidelines for repeated food contact, comply with USP Class VI. 121°C Plastics guidelines, and pass the MEM Elution Cytotoxicity Test. Aqueous extracts contain less than 0.25 EU/mL and typically exhibit low levels of non-volatile residues.

Multi-Layer Nylon Cartridges. These consist of two pleated nylon membranes with the top acting as a prefilter to increase cartridge life and efficiency.

Semiconductor Cartridges. Single-layer PES membrane over PP core. Each is flushed with high-purity water to leach less than 5 ppb TOC and less than 5 ppb trace metals. Ideal for any high-purity chemical or DI water application.

Catalog number	Cartridge type	µm rating	Length	Price/ea
SL-06479-16	Serial nylon	0.2	10"	
SL-06479-20		0.45		
SL-06479-60	Semiconductor	0.2		



Complete line of products online

More extensive offering of "Filtration" products



Cole-Parmer® Ion-X-Changer Filter Cartridges

Design your system with any combination of four cartridges

Choose from four grades of disposable filter cartridges safe for hook up to any laboratory tap water system. With the outlet line open, inlet pressures can be up to 100 psi on each cartridge. Cartridge resins change color to indicate remaining lifespan. All cartridges measure 18¾" L x 3¼" dia and must be used with mounting brackets (order separately below right).

Adsorber cartridge removes most organic compounds, free chlorine, and chloramines. Use to pretreat water before deionization when your raw water source contains appreciable amounts of contaminants. Normal replacement is every third time you replace a deionization cartridge.

Metex cartridge removes most metallic ions to levels of 0.1% of the influent concentration. Use to remove ammonia and other cations from condensate samples. Use this cartridge to recover precious metals. Capacity is 3200 grains expressed as CaCO₃.

Universal cartridge produces water equivalent to single-distilled water, removing all ionized constituents (including NO₃⁻, PO₄³⁻, and NH₃OH) except free CO₂ and silica. Capacity is 1600 grains expressed as CaCO₃.

Research cartridge produces water ionically equivalent to triple-distilled water, removing all ionized minerals down to a level of 4 ppb or less as well as CO₂ and silica. When used in tandem, these cartridges produce water with a resistivity of 15 MΩ-cm or greater. Capacity is 1000 grains expressed as CaCO₃.

Specifications & Ordering Information

Pressure drop per cartridge: 5 psi			Max working temp: 75°F (23.9°C)			
Catalog number	Cartridge type	Max flow rate	Inlet pressure		Max inlet water temp	Price*
			Max	Min		
SL-01506-15	Adsorber	7.2 GPH	100 psi	5 psi	100°F (37.8°C)	
SL-01506-45	Metex					
SL-01506-25	Universal					
SL-01506-35	Research					

*Discount: Save 10% on six or more cartridges.

Suggested System Combinations



1 Adsorber/universal system combination produces water free of all ionized constituents except free CO₂ and silica.

2 Two universal and two research cartridges operating in tandem increase deionization capacity by 15%. Use with water that has a mineral salt concentration of 10 grains per gallon or more. Mount cartridges in pairs and use until the left cartridge is spent. Then shift the right cartridge to the left side and replace the right side with a new cartridge.

Mounting bracket kit: comes with two mounting brackets, faucet diverter assembly with 4-ft of ¼" OD white vinyl tubing, and 12-ft of ¼" OD polyethylene connection/dispensing tubing. Use one bracket for single cartridge installation or two for tandem cartridge installation. Tandem installation increases the capacity of each cartridge about 15%. When the first cartridge is spent, the second cartridge catches any spillover.

SL-01506-60 Mounting bracket kit

StableTemp Muffle Furnaces

Complete line of products online

More extensive offering of "Furnaces"

Reach maximum temperature quickly—rise times as fast as 25 minutes

- Autotune feature helps eliminate temperature overshoot
- Energy efficient insulation keeps exterior safe to touch
- Models available with extensive programming capabilities

These furnaces are available in three sizes and three controller options to meet your application requirements. All models have autotune feature which allows the furnace to perform better at a particular set point and load, eliminating temperature overshoot for a commonly used application. An optional RS-485 communications port is available to let you use these furnaces with your computer. RS-485 option is factory installed—you must order separately below at the same time as you order your furnace.

The fully embedded heating elements maintain temperature uniformity. A door switch cuts power to the heating elements when the door is opened minimizing your exposure to hot temperatures and extending the life of the heating elements. Unique ceramic fiber insulation and double walled construction minimize exterior surface temperatures. The removable hearth plate prevents damage to furnace from spills.

Basic Control Furnaces feature a single LED display that toggles between actual and set point temperatures.

Single Set Point Control Furnaces have two LED displays to simultaneously display actual and set point temperatures.

Programmable Control Furnaces have two LED displays to simultaneously display actual and set point temperatures. These furnaces can store up to 31 programs with up to 126 segments total.* Easily create programs with copy, paste, edit, and delete functions. Set furnaces to automatically run programs up to 999 times.

What's included: hearth plate and power cord with a plug (with the 323 and 1123 cu in. models). No cord is supplied with the 2592 cu in. models.



Furnace
33858-00

Protect your benchtop

Benchtop protector plate prevents heat contact with benchtop. Temperature range from -392 to 1200°F (-236 to 649°C).

SL-06005-00 Benchtop protector plate measures 9" x 9"



Specifications & Ordering Information

Operating temperature range: 100 to 1100°C

Temperature control accuracy: ±1°C



3 year warranty
Controller only

Freight Transport
Items over 100 lb

Catalog number	Capacity (cu in.)	Dimensions (W x H x D)		Temperature uniformity	Rise time (to 1050°C)	Power		Shpg wt lb (kg)	Price
		Chamber	Overall			VAC, Hz	Watts		
Basic control furnaces									
SL-33858-00 SL-33858-05	323	6" x 6" x 9"	17" x 21½" x 21"	±5°C	25 minutes	120, 50/60 240, 50/60	1800	110 (49.9)	
SL-33858-10 SL-33858-20	1123 2592	9" x 9" x 14" 12" x 12" x 18"	21" x 26" x 25¾" 24" x 28" x 30"	±5°C	35 minutes 45 minutes	208/240, 50/60 208/240, 50/60	3500 5600	150 (68.1) 165 (74.9)	
Single set point control furnaces									
SL-33858-30 SL-33858-35	323	6" x 6" x 9"	17" x 21½" x 21"	±5°C	25 minutes	120, 50/60 240, 50/60	1800	110 (49.9)	
SL-33858-40 SL-33858-50	1123 2592	9" x 9" x 14" 12" x 12" x 18"	21" x 26" x 25¾" 24" x 28" x 30"	±5°C	35 minutes 45 minutes	208/240, 50/60 208/240, 50/60	3500 5600	150 (68.1) 165 (74.9)	
Programmable control furnaces*									
SL-33858-60 SL-33858-65	323	6" x 6" x 9"	17" x 21½" x 21"	±5°C	25 minutes	120, 50/60 240, 50/60	1800	110 (49.9)	
SL-33858-70 SL-33858-80	1123 2592	9" x 9" x 14" 12" x 12" x 18"	21" x 26" x 25¾" 24" x 28" x 30"	±5°C	35 minutes 45 minutes	208/240, 50/60 208/240, 50/60	3500 5600	150 (68.1) 165 (74.9)	

*Program capacity is dependent on memory (351 byte maximum available). For example: furnaces can store one program with up to 116 segments (using 349 bytes), or four programs with up to 28 segments each (using 340 bytes).

Accessories

SL-33858-90 RS-485 communications port lets you use furnace with computer. Factory-installed; must be ordered at same time as furnace. Order software separately below

SL-33858-92 Cable, 25-ft long. Required to connect furnace to computer

SL-33910-52 Cable, daisy chain

SL-89820-80 CALgraphix software is cost-effective process monitoring and controller configuration software. Ideal in applications where there is a requirement to monitor and record temperature or other process values. The software is designed to control multiple controllers directly from your computer. CALgraphix software features datalogging, charting, alarm indication, instrument-setting cloning, controller configuration/programming, and a virtual instrument display. Compatible with Windows®-based operating systems.



89820-80



52450-00

New

Lindberg®/Blue M® Gravity Convection Ovens

Temperature control accuracy of $\pm 0.3\%$ of set point, temperature range up to 260°C

- Use in a variety of baking, drying, conditioning, preheating, and curing applications

These ovens feature analog control instrumentation with separate LED indicator for accurate, dependable temperature control. The 3"-thick fiberglass insulated walls and silicone door gaskets help prevent heat loss. An independent overtemperature protection device disables the heating element and activates audible and visual warnings if the temperature range is exceeded, protecting the work process and load. Choose from enameled steel or stainless steel exteriors.

What's included: two shelves and a 10-ft power cord with plug.



Specifications & Ordering Information

Temperature range: 40 to 260°C

Temperature display: LED

Temperature control accuracy:

Models 05015-00, -04: $\pm 5\%$ of set point

Models 52450-00 to -50: $\pm 0.3\%$ of set point

Control type:

Models 05015-00, -04: hydraulic thermostat

Models 52450-00 to -50: single set point programmable (SSP)

Resolution: 0.1°C/1°C depending on temperature

Construction: polished 304 SS interior, heavy-gauge steel exterior

Capacity (cu ft)	Temperature uniformity	Rise time to 260°C (minutes)	Shelf positions	Dimensions (W x H x D)		Power			Shpg wt lb (kg)	Enameled steel exterior		Stainless steel exterior	
				Chamber	Overall	VAC	Hz	Amps		Cat. no.	Price	Cat. no.	Price
1.0	$\pm 5\%$ of set point	24	16	12" x 12" x 12"	16" x 20 ³ / ₁₆ " x 17 ¹ / ₂ "	120	50/60	4.6	51 (23.2)	SL-05015-00		—	—
2.0			24	17" x 17" x 12"	21" x 23 ¹ / ₂ " x 17 ¹ / ₂ "	120	50/60	4.6	64 (29.1)	SL-05015-04		—	—
3.0	$\pm 3\%$ at 100°C	24	16	19" x 18" x 15"	29" x 31" x 22"	120	50/60	13.3	185 (83.9)	SL-52450-00		SL-52450-30	
						208/240	50/60	6.7	185 (83.9)	SL-52450-10		SL-52450-40	
						230	50	7	185 (83.9)	SL-52450-20		SL-52450-50	

SL-33910-00 RS-485 digital communications port. Factory installed; must be ordered with the oven

SL-52450-60 Additional shelf, nickel plated. For models with enameled steel exterior

SL-52450-70 Additional shelf, stainless steel. For models with stainless steel exterior



StableTemp® Vacuum Ovens

Operate at atmospheric pressure or at a vacuum up to 30" Hg

- Polycarbonate shield protects door glass from shattering

Ideal for carefully controlled processes such as desiccating, vacuum embedding, plating, and semiconductor processing. 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 1/4" ID tubing.

Radiant warm-wall heat provides excellent temperature uniformity of $\pm 4^\circ\text{C}$ at 150°C. Use the dial thermometer to monitor the chamber temperature. Insert other types of probes such as gas and humidity into the two rear 1/4" 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 three-wire power cord (120 VAC models include plug).



05053-10



Specifications & Ordering Information

Temperature range: 5°C above ambient to 200°C

Control type: hydraulic thermostat

Temperature display: dial gauge

Vacuum range: 0 to 30" Hg

Vacuum display: dial gauge

Construction: stainless steel chamber and heavy-gauge steel exterior

Catalog number	Capacity (cu ft)	Temperature uniformity	Shelf positions	Dimensions (W x H x D)		Power		Shpg wt lb (kg)	Price
				Chamber	Overall	VAC	Amps		
SL-05053-10 SL-05053-12	0.7	$\pm 5^\circ\text{C}$ at 100°C	2 (fixed)	10" x 10" x 12"	20" x 16 ¹ / ₄ " x 16"	120 240	5.0 2.5	130 (59.0)	
SL-05053-20 SL-05053-22	2.3	$\pm 5^\circ\text{C}$ at 100°C	2 (fixed)	14" x 14" x 20"	25" x 22" x 25"	120 240	13.3 6.7	310 (140)	

SL-06413-20 Tygon® vacuum tubing, 1/4" (6.4 mm) ID. Pack of 10 ft

Vela® Stirrers and Stirring Hot Plates

Drip edge directs spill away from knobs—protects inside components

- Integral ring-stand holder accommodates 1/2" dia support rod

Stirrers are available with ceramic top plates; stirring hot plates with ceramic or ceramic-coated top plates. Choose corrosion-resistant ceramic for high-temperature applications; reach maximum temperature in just 8 minutes. Select ceramic-coated for lower temperatures and better temperature uniformity.

Integral ring-stand holder accommodates a 1/2" dia support rod; order below. Model 03403-40 comes with a 20 A power cord set; model 03403-42 is supplied with a 15 A power cord set.

What's included: a 6-ft cord with plug and one stir bar.

Note: These units are not recommended for use with metal vessels.



Stirring hot plate
03403-10



Integral ring-stand holder
accepts a 1/2" dia support rod.

Stirrer 03402-40



GO to ColeParmer.com

For Vela® hot plates.



ISO9001:2000
CERTIFIED SUPPLIER



Indicated
models only

Specifications & Ordering Information

Rise time: Ceramic top plates: 8 min; Ceramic-coated top plates: 10 min

Temperature stability: Ceramic: ±7°C; Ceramic-coated: ±5°C

Catalog number	Top plate		Temperature range	Overall dimensions (W x H x D)	Speed range	Max stirring capacity	Power				CE	Plug type	Price		
	Dimensions	Material					VAC	Hz	Amps	Watts					
Stirrers															
SI-03402-00	4" x 4"	Ceramic	—	6 1/4" x 4 7/8" x 6 1/2"	100 to 1000 rpm	10 lb gross	120	60	0.23	20	No	U.S. 3-pr			
SI-03402-10	7" x 7"			9" x 5" x 9 5/8"	100 to 1000 rpm	25 lb gross	120	60	0.27	18	No	U.S. 3-pr			
SI-03402-16	7" x 7"						240	50/60	0.1	11	Yes	Euro			
SI-03402-40	12" x 12"			14 1/4" x 5 7/8" x 14 3/4"	100 to 1000 rpm	25 lb gross	120	60	0.4	31	No	U.S. 3-pr			
SI-03402-46							240	50/60	0.25	43	Yes	Euro			
Stirring hot plates															
SI-03403-00	4" x 4"	Ceramic	302 to 1000°F (150 to 538°C)	6 1/4" x 4 7/8" x 6 1/2"	100 to 1000 rpm	10 lb gross	120	60	3.3	395	No	U.S. 3-pr			
SI-03403-06							240	50/60	1.6	393	Yes	Euro			
SI-03403-10	7" x 7"	Ceramic	302 to 1000°F (150 to 538°C)	9" x 5" x 9 5/8"	100 to 1000 rpm	25 lb gross	120	60	9.5	1118	No	U.S. 3-pr			
SI-03403-16							240	50/60	4.7	1111	Yes	Euro			
SI-03403-20	7" x 7"	Ceramic-coated	101 to 700°F (38 to 371°C)	9" x 5" x 9 5/8"	100 to 1000 rpm	25 lb gross	120	60	7.3	858	No	U.S. 3-pr			
SI-03403-25							240	50/60	3.6	851	No	U.S. 3-pr			
SI-03403-40	12" x 12"	Ceramic	250 to 700°F (121 to 371°C)	14 1/4" x 5 7/8" x 14 3/4"	100 to 1000 rpm	25 lb gross	120	60	13.7	1650	No	20 A			
SI-03403-42*											No	15 A			
SI-03403-45					302 to 1000°F (150 to 538°C)	14 1/4" x 5 7/8" x 14 3/4"	100 to 1000 rpm	25 lb gross	240	50/60	12.0	3155	No	U.S. 3-pr	
SI-03403-46												Yes	Euro		

*This model is not CSA-approved.

SI-08040-70 Support rod, stainless steel, 24" L x 1/2" dia



Cole-Parmer® Magnetic Stirrers and Stirring Hot Plates

Stepless speed control provides smooth stirring action to 1500 rpm

- Unique U-shaped magnet holds stir bar tightly

Use our economical stirrer for all of your magnetic stirring applications—from gentle agitating to vigorous churning. The large, permanent drive magnet ensures positive coupling of drive to stir bar. Permanently lubricated, brushless drive motor provides long, trouble-free operation. Stirring hot plates are available with anodized aluminum or ceramic top plates. Choose the corrosion-resistant ceramic for your higher temperature applications.

What's included: 6-ft cord with plug.



04803-03

Specifications & Ordering Information



ISO9001:2000
CERTIFIED SUPPLIER

Catalog number	Top plate		Temperature range	Overall dimensions (W x H x D)	Speed range	Max stirring capacity	Power				CE	Plug type	Price
	Dimensions	Material					VAC	Hz	Amps	Watts			
Stirrers													
SI-04802-01	6" x 6"	Anodized aluminum	—	6" x 4" x 6"	100 to 1500 rpm	2.5 L	115	60	0.3	30	No	U.S. std	
SI-04802-03							230	50	0.15		Yes	Euro	
Stirring hot plates													
SI-04803-01	6" x 6"	Anodized aluminum	120 to 700°F	6" x 4 7/8" x 6"	100 to 1500 rpm	2.5 L	115	60	4	360	No	U.S. std	
SI-04803-03							230	50			Yes	Euro	
SI-04803-05	6" x 6"	Ceramic	120 to 842°F	6" x 4 7/8" x 6"	100 to 1500 rpm	2.5 L	115	60	4	450	No	U.S. std	
SI-04803-07							230	50			Yes	Euro	

Silicone Rubber Tapes

Suitable for direct contact with conductive surfaces

- Silicone rubber resists moisture and solvents
- Heat to 500°F (260°C)

Fine-strand resistance wires are double insulated with braided fiberglass and knitted into flat tapes. Tapes are then completely enclosed in high-strength, high-temperature-resistant silicone rubber. Rubber resists moisture and solvents. Silicone rubber-insulated lead wires extend two feet from both ends of the tape to simplify connection to power source. No additional ties needed.

The 120 VAC tapes have integrally molded separable plugs; the 240 VAC models do not include plug.

WARNING: Do not overlap tapes!



03111-20

Disposable Gloves



09709-41



86232-51



86287-63

Complete line of products online

More extensive offering of "Safety" products

Specifications & Ordering Information

Watts	Dimensions (L x W)	120 VAC tapes		240 VAC tapes	
		Cat. no.	Price	Cat. no.	Price
52	2 ft x 1/2"	SI-03111-20		SI-03111-21	
104	4 ft x 1/2"	SI-03111-40		SI-03111-41	
156	6 ft x 1/2"	SI-03111-60		SI-03111-61	
208	8 ft x 1/2"	SI-03111-80		SI-03111-81	
260	10 ft x 1/2"	SI-03111-10		SI-03111-11	
312	12 ft x 1/2"	SI-03111-12		SI-03111-13	
104	2 ft x 1"	SI-03110-20		SI-03110-21	
208	4 ft x 1"	SI-03110-40		SI-03110-41	
312	6 ft x 1"	SI-03110-60		SI-03110-61	
416	8 ft x 1"	SI-03110-80		SI-03110-81	
208	2 ft x 2"	SI-03112-20		SI-03112-21	
416	4 ft x 2"	SI-03112-40		SI-03112-41	
624	6 ft x 2"	SI-03112-60		SI-03112-61	
832	8 ft x 2"	SI-03112-80		SI-03112-81	

Specifications & Ordering Information

Catalog number	Description	Properties	Size	Price/bx*
A High-Five textured latex gloves; ambidextrous. Box of 100				
SI-09709-39	Textured surface offers outstanding gripping power in wet or dry conditions. Gloves feature beaded cuffs and are lightly powdered with USP cornstarch for easy donning. Meet or exceed federal and ASTM tear- and puncture-resistance standards.	Length: 9½" Thickness: 7 mil	S	
SI-09709-41			M	
SI-09709-43			L	
SI-09709-45			XL	
B Best® N-DEX® industrial grade nitrile gloves; ambidextrous. Box of 50				
SI-86287-60	Low-powder, soft nitrile formulation for excellent tactilesensitivity, comfort, dexterity, chemical- and puncture-resistance.	Length: 9½" Thickness: 8 mil	S	
SI-86287-61			M	
SI-86287-62			L	
SI-86287-63			XL	
C Microflex® NeoPro™ chloroprene gloves; ambidextrous. Box of 100				
SI-86232-50	Powder free, non-latex chloroprene gloves provide the integrity of a synthetic with the feel of natural latex. Added features include light texturing and beaded, tear-resistant cuff.	Length: 9½" Thickness: 6 mil	S	
SI-86232-51			M	
SI-86232-52			L	
SI-86232-53			XL	

*Discount: Save 10% on 10 or more boxes of gloves.

GO to ColeParmer.com

See our complete selection of heating tapes.

Complete line of products online

More extensive offering of "Heating Equipment"

Grounded Heating Tapes

Safe for heating metal vessels

- Heat to 842°F (450°C)

Wind heating tape around glass, ceramic, or metal vessels—grounding prevents shock hazard. Temperature-resistant fiberglass sleeves encase heating element; ground wire at core. The maximum surface loading is 4 watts/sq in. Leads are 3 1/2" long with electrical connector at one end. Tapes include ties at both ends.

WARNING: Do not overlap tapes!

Specifications & Ordering Information

Watts	Dimensions (L x W)	115 VAC tapes		230 VAC tapes	
		Cat. no.	Price	Cat. no.	Price
100	2 ft x 1"	SI-03121-10		SI-03121-12	
150	3 ft x 1"	SI-03121-20		SI-03121-22	
200	4 ft x 1"	SI-03121-30		SI-03121-32	
300	6 ft x 1"	SI-03121-40		SI-03121-42	
400	8 ft x 1"	SI-03121-50		SI-03121-52	
600	12 ft x 1"	SI-03121-60		SI-03121-62	
800	16 ft x 1"	SI-03121-70		SI-03121-72	
1200	24 ft x 1"	—	—	SI-03121-82	
1600	32 ft x 1"	—	—	SI-03121-92	

SI-50001-00 Line cord, 120 VAC, 3-prong plug, 6-ft (1.8-m)



03121-10

Use ties to secure heating tapes to vessels.



Best® Nitri-Solv® Knit Chemical-Resistant Gloves

New

Provides flexibility and dexterity not found in a thicker glove

Nitrile glove features an interlock knit liner for added comfort and protection. Rough-finish texture delivers a sure grip, in even the oiliest and wet applications. Provides excellent protection from a wide array of solvents, oils, and acids.



86483-20

Specifications & Ordering Information

Catalog number	Size	Length	Thickness	Price per pair	
				1 pr	12 pr
SI-86483-20	Medium Large X-large	14"	15 mil		
SI-86483-21					
SI-86483-22					

PYREX® Brand 1000 Beakers

- Griffin, low form, double scale, graduated

Beakers with spouts are manufactured with uniform wall thickness to offer optimum balance between thermal shock resistance and mechanical strength. The 250-mL to 4000-mL beakers have a double graduated metric scale to indicate approximate content. All sizes have an extra large marking spot. The 10-mL size is not graduated.

Reference: ASTM E-960.

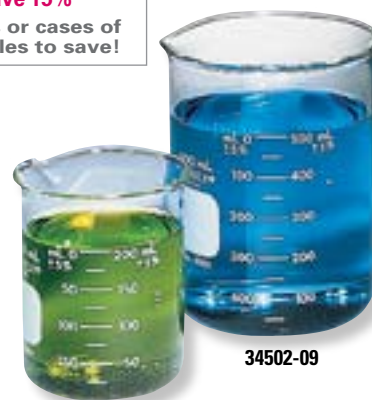
Capacity (mL)	Graduation range (mL)	Graduation interval (mL)	Catalog number	Qty/ pk	Price/ pk	Catalog number	Qty/ cs	Price/ cs
10	—	—	SL-34502-01	12		SL-34502-21	48	
20	5 to 15	5	SL-34502-02			SL-34502-22		
30	5 to 25	10	SL-34502-03			SL-34502-23		
50	10 to 40	10	SL-34502-04			SL-34502-24		
100	20 to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

buy more, save more

5-9 pk/cs
save 10%

10+ pk/cs
save 15%

Mix and match packs or cases of items from "red" tables to save!



34502-09

34502-07

Technical info

Although Pyrex® products are able to tolerate extreme temperatures, use caution. Heat all liquids slowly—fast heating causes bumping, which may cause the solution to splatter. Cool labware slowly to prevent breakage—placing hot glassware on cold or wet surfaces, or cold labware on hot surfaces, may cause the glass to shatter.

Qorpak Sample Containers

- Manufactured from clear, undistorted, commercial USP Type III soda-lime glass
- Chemical-resistant, PTFE-lined screw-on caps provide a positive, liquid-tight seal even after repeated openings
- Extended shelf life of packaging allows long term storage of sample container stock with zero permeation
- Reduce lab costs with these economical sample bottles

A Clear Narrow-Mouth Sample Bottles

Bottles ship ready to use with screw-on caps in place, and a supply of self-adhesive labels. Caps are not autoclavable.

Capacity oz (mL)	Neck size	Catalog number	Qty/ cs	Price/ cs
1 (30)	20 mm	SL-34602-10	48	
2 (60)	20 mm	SL-34602-20	24	
4 (120)	22 mm	SL-34602-30	24	
8 (240)	24 mm	SL-34602-40	24	
16 (480)	28 mm	SL-34602-50	12	
32 (960)	33 mm	SL-34602-60	12	

B Clear Wide-Mouth Sample Jars

Capacity oz (mL)	Neck size	Catalog number	Qty/ pk	Price/ pk	Catalog number	Qty/ cs	Price/ cs
1 (30)	43 mm	—	—	—	SL-34600-21	48	
2 (60)	53 mm	SL-34600-02	4		SL-34600-22	24	
4 (120)	58 mm	SL-34600-03	4		SL-34600-23	24	
6 (180)	63 mm	SL-34600-04	4		SL-34600-24	24	
8 (240)	70 mm	SL-34600-05	4		SL-34600-25	24	
16 (480)	89 mm	SL-34600-06	4		SL-34600-26	12	
32 (960)	89 mm	SL-34600-07	4		SL-34600-27	12	

C Graduated Clear Wide-Mouth Sample Bottles

French square design allows a more economical use of shelf space while making the container easier to grip when pouring.

Capacity oz (mL)	Neck size	Graduations mL (oz)	Catalog number	Qty/ cs	Price/ cs
1 (30)	33 mm	5 (0.25)	SL-34601-10	48	
2 (60)	38 mm	5 (0.25)	SL-34601-20	48	
4 (120)	48 mm	5 (0.25)	SL-34601-30	24	
8 (240)	58 mm	20 (0.25)	SL-34601-40	24	
16 (480)	70 mm	20 (0.25)	SL-34601-50	24	
32 (960)	58 mm	20 (0.25)	SL-34601-60	12	

Complete line of products online
More extensive offering of "Labware"

A



34602-50

34602-10

B



34600-06

34600-02

C



Square bottle beaker 34601-60

Round bottle beaker 34601-40

buy more,
save more

6-29 packs
save 10%

30-119 packs
save 15%

120+ packs
save 20%

Mix and match packs of any items from the "blue" tables to save!

PYREX[®] Brand 65340 Flasks

- Filtering, heavy wall, protective coating*, tubulation, graduated

These flasks feature a protective PVC coating for longer product life and safety. Protective coating helps prevent glass from shattering and reduces spills. Flasks are autoclavable (121°C), resistant to thermal shock, and are graduated to show approximate capacity. Tubulation OD is 10 mm on sizes up through 1000 mL; 12.5 mm on 2000-mL and 4000-mL sizes. The uncoated tubulation allows easy connection of standard size tubing. **Note:** Do not place over direct heat or flame. Do not heat above 120°C moist heat or 110°C dry heat.

Capacity (mL)	Graduation range (mL)	Graduation (mL)	Stopper no.	Catalog number	Qty/cs	Price/cs
250	75 to 250	25	6	SL-34577-21	6	
500	150 to 500	50	7	SL-34577-22	6	
1000	300 to 1000	50	8	SL-34577-23	6	
2000	600 to 2000	200	9	SL-34577-24	4	
4000	1500 to 4000	500	12	SL-34577-25	2	

*Covered by U.S. Patent #4940613.

[SL-06413-30](#) Tygon[®] vacuum tubing, 3/8" ID (for 10-mm tubulation). Pack of 10 ft

[SL-06413-40](#) Tygon vacuum tubing, 1/2" ID (for 12.5-mm tubulation). Pack of 10 ft



Protective PVC coating

34577-21

Cole-Parmer[®] Serialized Class A Graduated Glass Cylinders

- Available with certificate of traceability and certificate of calibration
- Single metric scale

Choose cylinders with a certificate of traceability to NIST standards or with a certificate of calibration and traceability. All support ISO 9000 requirements and are calibrated in accordance with ASTM E 542. Cylinders meet ASTM E 694 specifications and accuracy requirements of ASTM 1272. Cylinder glass meets ASTM E 438.

Each cylinder features an easy-to-read white scale and a molded base. Models with certificate of calibration and traceability feature fused-in serial numbers.

Cylinders Calibrated "To Contain"



Capacity (mL)	Graduations (mL)	Tolerance (mL)	With certificate of traceability			With certificates of calibration and traceability		
			Catalog number	Qty/pk	Price/pk	Catalog number	Qty/pk	Price/pk
10	0.1	±0.10	SL-34300-17	1		SL-34300-18	1	
25	0.2	±0.17	SL-34300-19			SL-34300-20		
50	1	±0.25	SL-34300-21			SL-34300-22		
100	1	±0.40	SL-34300-23			SL-34300-24		
250	2	±0.80	SL-34300-25	1		SL-34300-26	1	
500	5	±1.30	SL-34300-27			SL-34300-28		
1000	10	±3.0	SL-34300-29			SL-34300-30		
2000	20	±5.0	SL-34300-31			SL-34300-32		

Cylinders Calibrated "To Deliver"



Capacity (mL)	Graduations (mL)	Tolerance (mL)	With certificate of traceability			With certificates of calibration and traceability		
			Catalog number	Qty/pk	Price/pk	Catalog number	Qty/pk	Price/pk
10	0.1	±0.10	SL-34300-01	1		SL-34300-02	1	
25	0.2	±0.17	SL-34300-03			SL-34300-04		
50	1	±0.25	SL-34300-05			SL-34300-06		
100	1	±0.40	SL-34300-07			SL-34300-08		
250	2	±0.80	SL-34300-09	1		SL-34300-10	1	
500	5	±1.3	SL-34300-11			SL-34300-12		
1000	10	±3.0	SL-34300-15			SL-34300-16		
2000	20	±5.0	SL-34300-13			SL-34300-14		



34300-27 calibrated "To Contain"

34300-15 calibrated "To Deliver"

Graduated Pouring Beakers, 304 SS (medium gauge)

Catalog number	Capacity mL (oz)	Graduations mL (oz)	Dimensions H x OD	Qty/pk	Price/1 pk	Save 10% 6-29 pks	Save 15% 30-119 pks	Save 20% 120+ pks
SL-07220-00	500 (16)	50 (2)	3 3/4" x 4 5/8"	1				
SL-07222-00	1000 (32)	100 (2)	5 1/4" x 4 3/4"	1				
SL-07224-00	2000 (64)	100 (4)	6 1/2" x 5 1/2"	1				
SL-07225-00	4000 (132)	200 (4)	8 1/2" x 6 1/4"	1				



07224-00



Sanitary Bottles, 316L SS (heavy gauge)

Sanitary bottles are made from sanitary 316L stainless steel with #8, 5 Ra finish on interior and exterior. Bottles feature a sanitary Tri-Clover® flange opening; include an endcap, Buna gasket, and Tri-Clamp® clamp.

Catalog number	Capacity (liters)	Tri-Clover flange	Height	Neck ID	Bottom OD	Qty/ pk	Price/ pk
SL-07506-01	1	2"	8 1/8"	1 1/8"	4"	1	
SL-07506-31		3"	7 1/8"	3"	4"	1	
SL-07506-02	2	2"	10 1/4"	1 1/8"	4 3/4"	1	
SL-07506-32		4"	10 1/8"	3 3/8"	4 3/4"	1	
SL-07506-05	5	2"	12 5/8"	1 1/8"	7 1/8"	1	
SL-07506-35		4"	12 1/4"	3 3/8"	6 5/8"	1	
SL-07506-10	10	2"	15 1/4"	1 1/8"	8 3/4"	1	
SL-07506-80		4"	14 1/4"	3 3/8"	8 3/8"	1	
SL-07506-20	20	2"	18 1/8"	1 1/8"	10 5/8"	1	
SL-07506-90		4"	17 1/2"	3 3/8"	10 5/8"	1	

Deep Trays, 304 SS (medium gauge)

Catalog number	Capacity (gal.)	Dimensions (L x W x H)	Qty/ pk	Price/ 1 pk	Save 10% 6-29 pks	Save 15% 30-119 pks	Save 20% 120+ pks
SL-07242-10	1/4	6 7/8" x 6 3/8" x 2 1/2"	1				
SL-07243-10	1/2	10 3/8" x 6 3/8" x 2 1/2"	1				
SL-07244-10	5/8	12 3/4" x 6 7/8" x 2 1/2"	1				
SL-07245-10	3/4	10 3/8" x 6 3/8" x 4"	1				
SL-07246-10	1	12 3/4" x 6 7/8" x 4"	1				
SL-07234-10	1 1/8	10 3/8" x 6 3/8" x 6"	1				
SL-07235-05	1 1/2	16 1/2" x 10" x 2 1/2"	1				
SL-07236-10	1 1/2	12 3/4" x 6 7/8" x 6"	1				
SL-07235-10	1 3/4	12 3/4" x 10 3/8" x 4"	1				
SL-07237-10	2 1/4	20 3/4" x 12 3/4" x 2 1/2"	1				
SL-07238-10	2 1/2	12 3/4" x 10 3/8" x 6"	1				
SL-07239-05*	2 1/2	12 3/4" x 10 3/8" x 8"	1				
SL-07239-10	3 3/4	20 3/4" x 12 3/4" x 4"	1				
SL-07240-10	5 1/2	20 3/4" x 12 3/4" x 6"	1				
SL-07241-00	7 3/4	20 3/4" x 12 3/4" x 8"	1				
SL-07240-95*	8	21 1/4" x 13 3/4" x 8"	1				

*Heavy gauge

More info

Wall thickness is listed as either:

Medium gauge
20 to 24 gauge =
0.024" to 0.037"

Heavy gauge
18 to 20 gauge =
0.037" to 0.050"

Tote Pail with Cover, 304 SS (medium gauge)

Pail features a carrying handle, a second handle for use as a hand grip, and a hook-on, snug-fitting cover. Extra-heavy, 12-gauge steel bottom.



Catalog number	Capacity (qts)	Dimensions H x OD	Qty/ pk	Price/ 1 pk	Save 10% 6-29 pks	Save 15% 30-119 pks	Save 20% 120+ pks
SL-07261-20	19 3/4	16" x 10 1/4"	1				

WHIRL-PAK® Sterile Sampling Bags, LDPE

Use these sterile LDPE bags to safely hold your solids and liquids. To use, simply flip bag around wire/tape and bend wire to seal. Puncture-proof tabs ensure wire will not poke through even after extensive use. Available with or without a white labeling area.

Catalog number	Capacity oz (mL)	Size (W x L)	Thickness (mil)	Qty/ pk	Price/ 1 pk	Save 10% 6-29 pks	Save 15% 30-119 pks	Save 20% 120+ pks
Sampling bags without white labeling area								
SL-06499-10	4 (118)	3" x 7 1/4"	2.25	500				
SL-06499-20	18 (532)	4 1/2" x 9"	2.5	500				
SL-06499-30	24 (710)	6" x 9"	3.0	500				
SL-06499-40	36 (1065)	5" x 15"	3.0	500				
SL-06499-50	42 (1242)	6" x 15"	3.0	500				
Standup sampling bags with white labeling area								
SL-06499-16	4 (118)	3" x 7 1/4"	2.5	500				
SL-06499-21	18 (532)	4 1/2" x 9"	3.0	500				
SL-06499-31	24 (710)	6" x 9"	3.0	500				
Sampling bags with white labeling area								
SL-06499-60	2 (58)	3" x 5"	2.5	500				
SL-06499-70	4 (118)	3" x 7 1/4"	2.25	500				
SL-06499-80	18 (532)	4 1/2" x 9"	2.5	500				
SL-06499-85	24 (710)	6" x 9"	3.0	500				



06499-16 06499-21



Narrow- and Wide-Mouth Bottles, LDPE, HDPE, PP

- Bulk packed for greater savings!
- Narrow- and wide-mouth Cole Parmer bottles are reliable and sturdy.
- Choose from three materials; all include a leakproof PP closure.

HDPE Bottles are manufactured with FDA-approved resin for noncontaminating storage of chemicals and food-grade products.

LDPE Bottles are translucent and ideal for food and general-use laboratory applications.

PP Bottles are rigid and offer superior chemical resistance; perfect for storage and sampling of liquids and solids. **Autoclavable.**



New



06038-64

06038-74

06038-26

Capacity mL (oz)	Narrow-mouth bottles				Wide-mouth bottles			
	Catalog number	Cap size	Qty/pk	Price/pk	Catalog number	Cap size	Qty/pk	Price/pk
HDPE								
30 (1)	SL-06038-62	22 mm	72		SL-06045-21	28 mm	72	
60 (2)	SL-06038-64	22 mm	72		SL-06045-23	33 mm	72	
125 (4)	SL-06038-66	28 mm	72		SL-06045-25	38 mm	72	
250 (8)	SL-06038-68	28 mm	72		SL-06045-27	45 mm	72	
500 (16)	SL-06038-70	28 mm	48		SL-06045-29	55 mm	48	
1000 (32)	SL-06038-72	28 mm	24		SL-06045-31	65 mm	24	
2000 (64)	SL-06038-74	45 mm	6		SL-06045-33	65 mm	6	
LDPE								
30 (1)	—	—	—	—	SL-06045-01	26 mm	72	
60 (2)	SL-06038-22	22 mm	72		SL-06045-03	33 mm	72	
125 (4)	SL-06038-24	28 mm	72		SL-06045-05	38 mm	72	
250 (8)	SL-06038-26	28 mm	72		SL-06045-07	45 mm	72	
500 (16)	SL-06038-28	28 mm	48		SL-06045-09	45 mm	48	
1000 (32)	SL-06038-30	28 mm	24		SL-06045-11	45 mm	6	
PP, autoclavable								
30 (1)	SL-06038-42	22 mm	72		SL-06045-41	28 mm	72	
60 (2)	SL-06038-44	22 mm	72		SL-06045-43	33 mm	72	
125 (4)	SL-06038-46	28 mm	72		SL-06045-45	38 mm	72	
250 (8)	SL-06038-48	28 mm	72		SL-06045-47	45 mm	72	
500 (16)	SL-06038-50	28 mm	48		SL-06045-49	55 mm	48	
1000 (32)	SL-06038-52	28 mm	24		SL-06045-51	65 mm	24	
2000 (64)	SL-06038-54	45 mm	6		SL-06045-53	65 mm	6	

Cole-Parmer Square One-Quart Tall and Short Bottles, HDPE

These durable bottles are FDA-approved. Bottles have a one-quart capacity—choose either tall bottles or short bottles with handle. Both models have a 38-mm polypropylene (PP) cap with a polyethylene (PE) liner that prevents leaks.



Catalog number	Description	Cap size	Qty/pk	Price/1 pk	Save 10% 6-29 pks	Save 15% 30-119 pks	Save 20% 120+ pks
SL-62270-02	Square tall	38 mm	36				
SL-62270-12	Square short, with handle	38 mm	54				

SL-06049-15 Carrying rack measures 13"W x 6"H x 10"D. Holds 12 square tall bottles (sold above) or any bottle with a maximum outside diameter (OD) of 2 7/8"



62270-02

62270-12

Rack
06049-15

Graduated 4-oz Sample Containers, PP

Graduated polypropylene containers are translucent, unbreakable, and chemical-resistant. Containers tolerate strong acids, alkalis, and most organic solvents. Full-turn screw thread provides leakproof seal. Choose from sterile or nonsterile versions; sterile containers are individually bagged. Containers come with identification labels and color-coded HDPE caps (green—sterile; white—nonsterile).

Catalog number	Capacity oz (mL)	Description	Qty/pk	Price/1 pk	Save 10% 6-29 pks	Save 15% 30-119 pks	Save 20% 120+ pks
SL-06049-40	4 (118)	Sterile	100				
SL-06049-50	4 (118)	Nonsterile	500				



06049-40

STERILE

06049-50



06100-10

Collapsible Containers, LDPE

These containers nest uniformly when empty and expand readily when filled with liquid. They include polypropylene (PP) caps with injection-molded threads. Order optional quick service faucets and shipping cartons below.

Catalog number	Volume (gallons)	Cap size	Qty/pk	Price/1 pk	Save 10% 6-29 pks	Save 15% 30-119 pks	Save 20% 120+ pks
SL-06100-10	¼	38 mm	12				
SL-06100-20	1		12				
SL-06100-30	2½		10				
SL-06100-40	5		10				

Quick Service Faucets

Each faucet has a 38-mm PP screw cap, PP spigot, and LDPE body. Model 06061-02 is vented for smooth flow. FDA approved.

Catalog number	Spigot size	Qty/pk	Price/1 pk
SL-06061-01	8 mm	12	
SL-06061-02	20 mm		

Shipping Cartons

Delivered flat for easy delivery and storage. Model 06100-03 features double walls for added strength when shipping larger volumes.

Catalog number	Use with container	Test weight	Qty/pk	Price/1 pk
SL-06100-01	06100-10	200 lb	1	
SL-06100-02	06100-20	275 lb		
SL-06100-03	06100-30	275 lb		



06061-01



06100-01



06727-00

06727-42

06727-10

Disposable Lab Containers, HDPE

Stackable, translucent high-density polyethylene containers resist damage from boiling and freezing, and are impervious to most lab chemicals (including formaldehyde). Come with tight-fitting lids.

Catalog number	Capacity mL (oz)	Dimensions (H x OD)	Qty/pk	Price/1 pk	Save 10% 6-29 pks	Save 15% 30-119 pks	Save 20% 120+ pks
SL-06727-00	120 (4)	1½" x 3½"	250				
SL-06727-10	240 (8)	2¾" x 2¾"	250				
SL-06727-20	480 (16)	3¾" x 2¾"	100				
SL-06727-30	960 (32)	4¾" x 3¾"	100				
SL-06727-35	2000 (64)	6" x 5½"	50				
SL-06727-42	2500 (83)	5¾" x 6¾"	25				
SL-06727-50	5000 (170)	8½" x 7¾"	25				



06104-00

NALGENE® Wide-Mouth Jar, Teflon® PFA

This wide-mouth jar provides excellent chemical resistance; use from -454 to 482°F (-270 to 250°C). Store samples and standards or use for some digestion procedures. Translucent, seamless jar is 133 mm high (with closure) x 119 mm OD. **Autoclavable.**

Catalog number	Capacity mL (oz)	Cap size	Qty/pk	Price/1 pk	Save 10% 6-29 pks	Save 15% 30-119 pks	Save 20% 120+ pks
SL-06104-00	960 (32)	120 mm	1				



06069-10

NALGENE® Jerricans with Handle, HDPE

Rugged jerricans are built wide and low for stability. Integral spout allows accurate pouring. Liter and gallon graduations are molded in. Strap-fastened polypropylene (PP) screw closure.

Catalog number	Liters (gallons)	Cap size	Qty/pk	Price/1 pk	Save 10% 6-29 pks	Save 15% 30-119 pks	Save 20% 120+ pks
SL-06069-10	6 (1½)	53B	1				
SL-06069-20	10 (2½)						
SL-06069-25	13 (3½)						
SL-06069-30	20 (5)						

[SL-63000-20](#) Replacement cap; PP, 53B. Pack of 12

NALGENE® Plastic Separatory Funnels, PP

Funnels all have Teflon® PTFE plug and housing. Funnels are leakproof and require no lubrication. **Autoclavable** except for stopcock, which should be chemically disinfected.

Catalog number	Capacity (mL)	Closure size	Stem length	Stem OD	Qty/ pk	Price/ 1 pk	Save 10% 6-29 pks	Save 15% 30-119 pks	Save 20% 120+ pks
Polypropylene body with polypropylene screw closure									
SL-06126-10	125	28 mm	65 mm	8.5 mm	1				
SL-06126-20	250	33 mm							
SL-06126-50	500	43 mm							
SL-06126-60	1000	53 mm							
Teflon FEP body with Tefzel® ETFE screw closure									
SL-06125-10	125	28 mm	65 mm	8.5 mm	1				
SL-06125-20	250	33 mm							
SL-06125-50	500	43 mm							
SL-06125-60	1000	53 mm							
SL-06125-70	2000	53 mm							



PP
06126-10



Sterile Sampling Scoops, PS

Individually sterilized and bagged in a polyethylene bag.



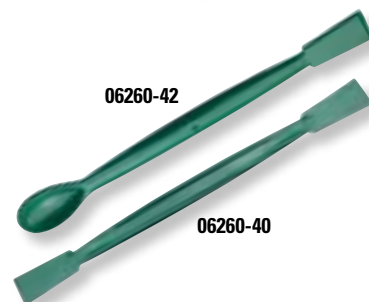
Catalog number	Capacity mL (oz)	Scoop (L x W)	Handle length	Qty/cs	Price/cs
SL-06260-10	60 (2)	3" x 1"	4"	100	
SL-06260-20	120 (4)	3½" x 1"			



Two-Sided Spatulas, Polyamide

Strong polyamide spatulas are glass fiber reinforced. Good chemical resistance against solvents; poor resistance to acids or oxidizing agents. Choose either double spatula or spoon/spatula style. Flat spatula end measures 1¼"L x ¾"W. Spoon end measures 1¼"L and holds ½ tsp.

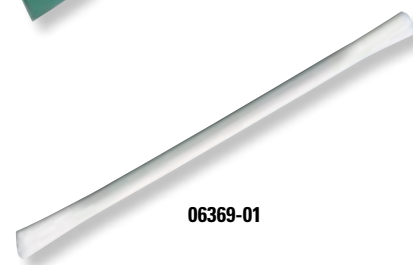
Catalog number	Style	Overall length	Qty/ pk	Price/ 1 pk	Save 10% 6-29 pks	Save 15% 30-119 pks	Save 20% 120+ pks
SL-06260-40	Double spatula	7"	10				
SL-06260-42	Spoon/spatula	7"	10				



Chemware® Policeman, PTFE

PTFE Policeman has chisel- and diagonal-cut tips for scraping. Max temperature is 550°F (287°C). **Autoclavable**.

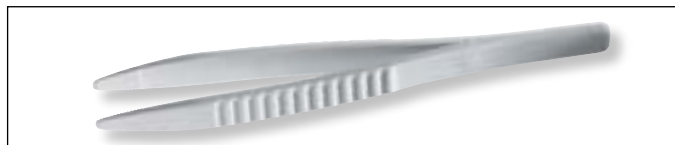
Catalog number	Max width at tips	Overall length	Qty/ pk	Price/ 1 pk	Save 10% 6-29 pks	Save 15% 30-119 pks	Save 20% 120+ pks
SL-06369-01	½"	6"	1				



06369-01

Disposable Forceps, Reinforced Nylon

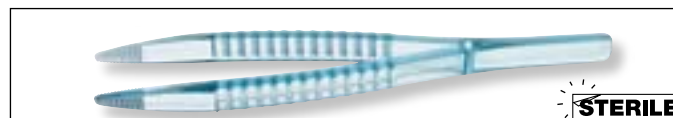
Features corrugated handles, serrated blades, and rounded tips. **Autoclavable**.



Catalog number	Length	Qty/ pk	Price/ 1 pk	Save 10% 6-29 pks	Save 15% 30-119 pks	Save 20% 120+ pks
SL-06443-15	4½"	100				

Disposable Sterile Forceps, Polystyrene

Features corrugated handles and rounded serrated tips. Sterile—come individually wrapped.



Catalog number	Length	Qty/ pk	Price/ 1 pk
SL-06443-20	4½"	100	

One-Liter Waring® Blenders

Precision quality blenders for many laboratory applications



04241-10

04245-30



04249-00



04246-52

A Two-Speed Blenders feature push-button speed control for 18,000 and 22,000 rpm operation. All models include a container, lid, and stainless steel (SS) blades. The 120 VAC models are UL-listed and have a 6-ft cord with U.S. standard plug; 240 VAC models are CE-marked and have a 6-ft cord only.

B Two-Speed Blenders with Timer offer the same features as "A" plus a mechanical 60-second timer that allows automatic shutoff and a push-button speed control for 18,000 and 22,000 rpm operation.



Specifications & Ordering Information

Catalog number	Container material	rpm	Timer	Motor type	Power			Shpg wt lb (kg)	Price
					VAC	Hz	Amps		
A Two-speed blenders									
SI-04242-10 SI-04241-10	Glass SS	18,000; 22,000	—	Standard	120	50/60	3.6	12 (5.5) 10 (4.6)	
SI-04242-11 SI-04241-11	Glass SS	18,000; 22,000	—	Standard	240	50/60	1.9	13 (5.9) 11 (5.0)	
SI-04241-20 SI-04241-22	Glass SS	18,000; 22,000	—	Heavy-duty	120	50/60	7.0	13 (5.9) 11 (5.0)	
B Two-speed blenders with timer									
SI-04245-30 SI-04245-20	Glass SS	18,000; 22,000	60 sec	Standard	120	50/60	3.6	12 (5.5) 10 (4.6)	
SI-04245-31 SI-04245-21	Glass SS	18,000; 22,000	60 sec	Standard	240	50/60	1.9	14 (6.4) 11 (5.0)	
SI-04245-40 SI-04245-42	Glass SS	18,000; 22,000	60 sec	Heavy-duty	120	50/60	7.0	13 (5.9) 11 (5.0)	

Accessories

Variable-Speed Controller. Use this controller with all one-liter, 120 VAC blenders (max 8 amps) on this page. Controller lets you adjust speed from 0 to the maximum speed. Unit has a 6-ft, three-wire grounded cord.

SI-04246-52 Variable-speed controller, 120 VAC

SI-04249-00 Replacement blade assembly

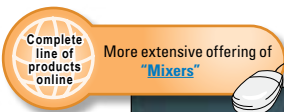
Heidolph Laboratory Mixers

Reliable, variable-speed mixers feature wide-range stepless speed control

Brushless motors have sealed, lubricated bearings for long, virtually maintenance-free service life. Mixers are rated for continuous-duty operation and are thermal-overload protected for extra safety.

Model "A" features an enclosed but vented motor; model "B" features a totally enclosed, fan-cooled (TEFC) motor for safe, smooth, and vibrationless operation. Both models have through-shaft design, enabling you to accommodate a variety of mixing vessels with a single shaft. You can also easily adjust propeller depth for optimum mixing efficiency.

What's included: Jacobs®-type chuck, 1/2"-dia mounting rod (6"L for model "B"; 12"L for model "A"), and 6 1/2-ft cord with three-prong plug. Order shafts, impellers, and accessories on page 22.



04400-00



04400-08

Specifications & Ordering Information

Key	Catalog number	Description	Speed (rpm)	hp	Max torque	Max mixing shaft dia*	Power (VAC, Hz)	Price
A	SI-54400-00	Economical, dual-range, cone drive, no LED	40 to 315;	1/40	142 in-oz	5/16" (8.0 mm)	115, 60	
	SI-54400-02	Standard, dual-range gear-driven, no LED	315 to 2700				230, 50	
	SI-54400-04	Standard, dual-range gear-driven, no LED	40 to 400;	1/30	567 in-oz	3/8" (10.0 mm)	115, 60	
B	SI-54400-06	Standard, dual-range gear-driven, no LED	200 to 2000				230, 50	
	SI-54400-08	Standard, dual-range gear-driven, LED	40 to 400;	1/30	567 in-oz	3/8" (10.0 mm)	115, 60	
	SI-54400-10	Standard, dual-range gear-driven, LED	200 to 2000				230, 50	
	SI-54400-12	High-torque, dual-range gear-driven, LED	40 to 400;	1/20	737 in-oz	3/8" (10.0 mm)	115, 60	
	SI-54400-14	High-torque, dual-range gear-driven, LED	200 to 2000				230, 50	

* Shaft not included.

Cole-Parmer Modular Digital Reversing Mixer

New



Unique, dual-keypad operation allows for complete mixer adjustment up to six feet away!

- Countdown timer
- Reversing and timed cycles
- Heavy-duty motor
- Sample light
- Remote controller
- IP54 rating on both mixer head and remote controller
- Multiposition bracket for standing, hanging, or affixing to metal surfaces with magnets
- Two speed ranges for up to 4000 rpm or maximum torque of 142 in-oz
- Lockout feature prevents inadvertent setting changes

Use the full-function, pendant remote controller to increase the speed, start/stop, set the timer, reverse the direction of the motor and even turn on the sample light. This controller, as well as the mixer head, meets IP54 ratings so it will be able to withstand the occasional splashes and spills. The versatile remote controller can be detached from the mixer head in situations where a remote is not needed.

Controller design features include comfortable ergonomic handheld design, multiposition stand/hook, and multiple-cord management channels. The multiposition stand/hook allows for vertical or horizontal orientation resting on a countertop with a simple change in the direction of the stand. The stand bracket also doubles as a hook to hang the controller on lab lattice, clamp, or any other straight bar up to 3/4" in diameter and minimum length of 3". Two button magnets on the back of the controller affix to metal surfaces like fume hoods and cabinets. Built-in cord management features a track along the back to allow the remote cord to be channeled out of the top, left bottom, right bottom, or center bottom of the controller.

Control lockout feature is available either via the remote control or from the integrated controls on the mixer head by simply holding the start/pause button for 8 seconds. This locks out all controls to prevent inadvertent speed or timer changes. The power button operates while in lockout mode for an emergency stop, and the integrated mixing light can be turned on and off to view the sample being stirred.

What's included:

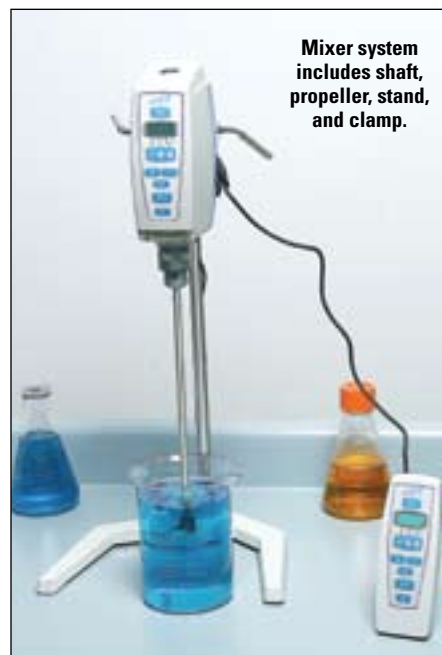
Mixer only: mixer head, remote pendant controller with 6-ft cord, adjustable chuck (accepts rod up to 3/8" dia), chuck key, mounting support rod, external power supply, and grounded power cord and plug assembly.

Mixer system: mixer 50005-00 (-10) and all components listed above, mixer propeller/shaft 50801-62, support stand 50801-50, and support clamp 04561-24.

Two button magnets for easy mounting on ferrous metals.

Multiple channels for ideal cable management.

Multiposition stands for vertical or horizontal standing, or hang from lab lattice with the versatile hook.



Mixer system includes shaft, propeller, stand, and clamp.



Safely adjust mixer setting without opening the fume hood.

Specifications & Ordering Information

Catalog number	Description	Speed range (rpm)	Max torque	hp	Power (VAC, Hz)	Price
SL-50005-00	Mixer	40 to 2000	142 in-oz	1/10	100 to 230, 50/60	
SL-50005-50	Complete system					
SL-50005-10	Mixer	80 to 4000	74 in-oz	1/10		
SL-50005-60	Complete system					

Accessories

SL-50801-62 Mixer propeller, 316 SS; pitched 2 1/8"-dia blade, 5/16" dia x 16"L shaft

SL-50801-51 Mixer impeller, 316 SS; compactstraight 1 1/4"-dia blade, 5/16" dia x 16"L shaft

SL-50801-52 Mixer impeller, 316 SS; compactsquare 1 1/2"-dia blade, 5/16" dia x 16"L shaft

SL-50801-50 Mixer stand, 12" x 9 1/2" base with a 5/8" dia x 24"L solid rod

SL-04561-24 Heavy-duty clamp, secures to stand rods up to 1 1/8" dia. Made of cast zinc-aluminum with chemical-resistant epoxy coating

Remote controller face



3 year warranty

Our Modular Digital Reversing Mixer is on page 1163 in our NEW 2007/08 Cole-Parmer® General Catalog. Request your copy today, call 800-323-4340 or visit www.coleparmer.com/Catalogs





New

Mixer 50705-00 with digital display



Four-Blade Propeller
\$92 value, yours free!

Boss Head Clamp
\$66 value, yours free!

Plate Stand
\$268 value, yours free!

IKA® Digital Dual-Range Mixer

Complete system with \$426 worth of accessories!

- Through-shaft design provides virtual limitless adjustment for impeller depth
- Two speed ranges to suit a variety of mixing applications
- Maintenance-free motor rated for continuous duty

Use this versatile, affordable mixer for liquid volumes up to five gallons 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. Through-shaft design permits adjustment of shaft length and impeller depth—allows you to place or remove mixing vessels without repositioning the mixer.

The motor and drive unit are conveniently integrated into a compact aluminum and thermoplastic housing with easy-to-use controls. The quiet, fan-cooled motor features thermal overload shut-off and an efficient heat-dissipating design to ensure a long service life. Motor is maintenance-free and rated for continuous duty. Mixer features stepless speed control. The 1/2" LCD shows rotational speed in rpm and enables you to precisely control and repeat process parameters.

What's included: chuck (accepts up to 3/8" [10-mm] dia shafts), 6 1/4"L x 1/2" dia mounting rod, four-blade propeller, mixer stand, clamp, and a 6 1/2-ft, three-wire power cord (115 VAC model includes plug).

Specifications & Ordering Information

Motor power input: 70 watts

Dimensions: 3 1/2"W x 11 1/2"H x 7 3/8"D

Catalog number	Speed range (rpm)	hp	Max torque (in-oz)	Power (VAC)	Price
SL-50705-00 SL-50705-10	60 to 500/240 to 2000	1/10	259	115 230	



General-Purpose Mixer Shafts and Propellers

Made of corrosion-resistant 316 stainless steel

A Shafts. All 3/8" dia shafts are machined on one end to accept a 5/16" bore dia propeller.

Catalog number	Shaft dimensions	Price
SL-04553-50	5/16" dia x 12"L	
SL-04553-52	3/8" dia x 12"L	
SL-04553-55	5/16" dia x 18"L	
SL-04553-57	3/8" dia x 18"L	
SL-04537-10	3/8" dia x 24"L	
SL-04538-10	3/8" dia x 30"L	

B Turbine Propellers are for airless mixing in deep containers.

C Three-Blade Propellers are for general-purpose mixing. Use alone or mount several on a single shaft for thorough agitation.

D Lightweight Three-Blade Propellers have blades that twist to achieve the desired pitch.

E Folding Propeller is for use in narrow-mouth vessels. Folded diameter is 1 1/16".

F Ring Guard Propeller protects dip tubes or sensors in your mixing vessel.

Key	Catalog number	Overall dia	Bore dia	Price
B	SL-04544-00	2"	5/16"	
	SL-04544-10	2"	3/8"	
C	SL-04553-60	1"	5/16"	
	SL-04553-62	1 1/2"	5/16"	
	SL-04553-64	2"	5/16"	
	SL-04553-65	2"	3/8"	
	SL-04553-68	3"	5/16"	
D	SL-04349-10	2"	1/4"	
	SL-04349-00	3 1/2"	5/16"	
E	SL-04543-00	2" open	5/16"	
F	SL-04545-00	2"	5/16"	

Leica® Zoom E-Series Stereozoom Microscopes

Sharp stereo images—an ideal choice for quality inspection of small parts, electronics, or food

- Heat-free natural color with LED illumination
- Zoom control provides a continuous magnification range

Crisp, sharp stereo images and three-direction reflected light options offer a wide variety for viewing specimens. Rugged cast-aluminum design stands up to years of heavy use while encased optics are protected from dust, dirt, and tampering.

Model 49400-16 has an integrated CMOS 3.0 megapixel camera with SD card slot, analog/USB 2.0 output and Leica data software.

Specifications & Ordering Information

Catalog number	Total magnification	Eyepiece	Illuminator(s)	Power	Price
SL-49400-01	10x to 30x	10x/20mm	LED reflected and transmitted light	110 to 120 VAC	
SL-49400-06	8x to 35x	10x/20mm	LED lighting with variable intensity	110 to 120 VAC	
SL-49400-11	12.8x to 56x	10x/20mm	LED lighting with variable intensity	110 to 120 VAC	
SL-49400-16	8x to 35x	10x/20mm	LED lighting with variable intensity and built-in 3 mega pixel camera	110 to 120 VAC	

SL-49400-90 Carrying case

SL-49400-64 Eyeguards



49400-01



More extensive offering of
"Microscopes"



Digital Camera Binocular Compound Microscopes

Share images via the Internet!

- Binocular compound microscopes feature super-contrast, plan, or plan-phase objectives

These digital camera microscopes include powerful analysis and manipulation software that counts and measures objects. Measure the length of shapes with metric or English scales. Compute areas of an entire image or portions of it. Combine images, each with a different focus, into one clear image. Enhance saved images with audio narration recordings using MIG format. Software requires a minimum of Windows® 98 or Mac OS® 9.01, 64 MB RAM, and a 4 MB display card (not included). The white balance correction switch along with adjustable color, brightness, and contrast controls ensure color-correct images.

What's included: high eyepoint 10x widefield eyepieces with rubber cups and diopter adjustment on one eyepiece, an Abbe N.A. 1.25 slide-in condenser, blue filter, frosted glass, measurement calibration slide, and dust cover. The plan-phase model also includes a five-position phase contrast turret, N.A. 1.25 condenser with iris diaphragm, and a phase centering telescope.



Specifications & Ordering Information

Objectives: parfocalled, parcentered, achromatic

Functions: count, capture, measure, record, amalgamate, Internet meeting

Illuminator: 20 W halogen with rheostat

Stage dimensions: 145 mm x 135 mm,
76 mm x 50 mm movement range

Pixels: 640 x 480 with PCI card (not included)

Resolution: 320 x 240, 480 TV lines

Shutter speed: 30 fps

Output: digital

Cable(s): USB, RCA-Video, S-Video

Data transfer: 7.5 MB/sec

Data formats: BMP, JPG, MIG

Catalog number	Magnification	Power	Price
SL-48925-00	4x/10x/40x/100x (super contrast)	115 VAC, 60 Hz 230 VAC, 50 Hz	
SL-48925-05			
SL-48925-10	4x/10x/40x/100x (plan)	115 VAC, 60 Hz 230 VAC, 50 Hz	
SL-48925-15			
SL-48925-20	10x/20x/40x/100x (plan-phase)	115 VAC, 60 Hz 230 VAC, 50 Hz	
SL-48925-25			



48925-00

Cole-Parmer Brand Slides

Our slides feature precision ground edges on all four sides. The raised coating on the Superfrost and Colorfrost slides keeps them separated to prevent sticking and scratching. Slides measure 75 x 25 mm and are 1-mm thick. They are available in one gross (144 slides) or one case (10 gross) quantities.

Description	One gross (144 slides)		One case (10 gross)	
	Catalog number	Price	Catalog number	Price/cs
Plain	SL-48500-00		SL-48500-20	
Frosted	SL-48501-00		SL-48501-20	
White Superfrost	SL-48502-00		SL-48502-20	
Blue Colorfrost	SL-48503-00		SL-48503-20	



Eppendorf® Fixed-Volume Reference Pipettors

User calibration ensures dispensing accuracy

Pipettors permit easy, uniform filling and emptying. One button lets you control measuring stroke, blow-out, and tip ejection. Integrated tip ejector fits into most containers and is removable for access to narrow tubes. Ribbed barrel ensures a secure grip. Ultramicro pipettors have a shielded piston to prevent damage.

Pipettors are fully autoclavable and can be decontaminated by UV-light (254 nm). Calibration wrench is included. Tips and optional carousel stand are sold below.

Specifications & Ordering Information

Tip ejector: removable Autoclavable: yes

Catalog number	Volume (µL)	Accuracy	Reproducibility	Price
Ultramicro fixed-volume pipettors				
SL-24503-00	1	±2.5%	≤1.8%	
SL-24503-10	2	±2.0%	≤1.2%	
SL-24503-20	5	±1.5%	≤0.8%	
SL-24503-30	10	±1.0%	≤0.5%	
Fixed-volume pipettors				
SL-24504-00	10	±1.0%	≤0.5%	
SL-24504-04	20	±0.8%	≤0.3%	
SL-24504-06	25	±0.8%	≤0.3%	
SL-24504-08	30	±0.8%	≤0.3%	
SL-24504-12	50	±0.7%	≤0.3%	
SL-24504-20	100	±0.6%	≤0.2%	
SL-24504-24	200	±0.6%	≤0.2%	
SL-24504-32	500	±0.6%	≤0.2%	
SL-24504-34	750	±0.6%	≤0.2%	
SL-24504-40	1000	±0.6%	≤0.2%	
SL-24504-42	1500	±0.6%	≤0.2%	
SL-24504-44	2000	±0.6%	≤0.2%	
SL-24504-46	2500	±0.6%	≤0.2%	

ISO9001:2000
CERTIFIED SUPPLIER

3 year
warranty

Accessories

Catalog number	Volume (µL)	Package description	Price
Cole-Parmer® pipette tips			
SL-25711-02	0.2 to 100	10 racks of 96/pk	
SL-25711-18		Bulk pack 1000	
SL-25711-20	0 to 200	10 racks of 96/pk	
SL-25711-56		Bulk pack 1000	
SL-25711-58	200 to 1300	10 racks of 100/pk	
Eppendorf® pipette tips			
SL-07936-97	10	10 racks of 96	
SL-07936-99		Bulk case of 1000	
SL-07936-90	20	10 racks of 96	
SL-07936-89		Bulk case of 1000	
SL-07935-32	200	10 racks of 96	
SL-07935-12		Bulk case of 1000	
SL-07935-41	1000	10 racks of 96	
SL-07935-20		Bulk case of 1000	
SL-07935-53	2500	Case of 144	
SL-07935-22		10 racks of 50	

SL-24503-50 Carousel stand. Holds up to six pipettors



24504-20



Top view

GO to ColeParmer.com

For complete pipette tip selection.



Low-Cost Brix and Salt Refractometers

Durable units provide quick and easy measurements

Use these economical refractometers to take quick and easy measurements. Refractometers feature adjustable focus and a zero adjustment screw for calibration. Each refractometer is calibrated and adjusted to read at 68°F (20°C). Models with automatic temperature compensation (ATC) are ideal for applications where the temperatures of your samples vary.

Refractometers are made of corrosion-resistant brass and have rubber-insulated grips. Include hard case, calibration screwdriver, and instructions.

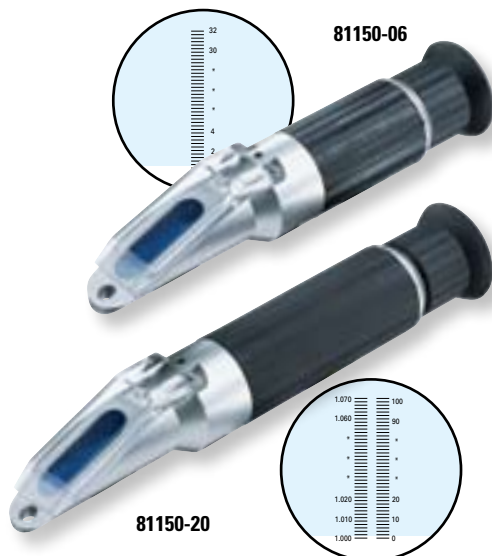
Brix Refractometers measure soluble solid concentration of sugars, salts, proteins, and more in foods and liquids—ideal for quality control and R & D applications. Use to measure percent Brix of juices, beverages, and other sugar-based liquids.

Salt Refractometers measure salt content in parts per thousand (ppt) and specific gravity or percent salinity, depending on model. Use to measure salt concentration of water or brine.

Specifications & Ordering Information

Catalog number	Range	Resolution	Accuracy	ATC	Price
Brix refractometers					
SL-81150-02	0 to 10% Brix	0.1% Brix	±0.1% Brix	50 to 86°F (10 to 30°C)	
SL-81150-04	0 to 18% Brix	0.2% Brix	±0.15% Brix	No	
SL-81150-06	0 to 32% Brix	0.2% Brix	±0.2% Brix	No	
SL-81150-08	0 to 32% Brix	0.2% Brix	±0.2% Brix	50 to 86°F (10 to 30°C)	
SL-81150-10	28 to 62% Brix	0.2% Brix	±0.2% Brix	No	
SL-81150-12	45 to 82% Brix	0.5% Brix	±0.3% Brix	No	
SL-81150-14	58 to 90% Brix	1.0% Brix	±0.5% Brix	No	
Salt refractometers					
SL-81150-20	0 to 100 ppt salinity; 1.000 to 1.070 SGU*	1.0 ppt; 0.001 SGU*	±1.0 ppt; ±0.001 SGU*	50 to 86°F (10 to 30°C)	
SL-81150-22	0 to 28% salinity	0.2%	±0.2%	No	

*SGU = specific gravity units



81150-06

81150-20



Technical info

To select the appropriate testing sieve for your application, first consider sample size, weight, screenability, and range of particle sizes. Then determine the required diameter and height of your sieve(s). A full-height, 8" diameter sieve is the most commonly used sieve size. Half-height sieves are ideal for testing small samples, but you must be careful not to spill or overload the sieve; overloading will reduce accuracy and repeatability, and will create a longer sieving time.



59990-17



59984-04

Cole-Parmer Brass and Stainless Steel Testing Sieves

8" and 12" Diameter Testing Sieves

All sieves are serialized, come with test sieve certificate and meet ASTM E1 specifications. All components of the SS assemblies included in the fabrication of the sieve are FDA approved. For additional testing sieves, NIST-traceable sieves, covers, and receiving pans, please visit our Web site at www.coleparmer.com.

ISO 9001:2000
SUPPLIER CERTIFIED

Sieve opening (mm)	U.S. standard	Tyler standard	8" testing sieves						Catalog number suffix (-XX)
			Brass frame/brass wire		SS frame/SS wire		Brass frame/SS mesh		
			Full height*	Half height*	Full height*	Half height*	Full height*	Half height*	
2.36	No. 8	8 mesh	SL-59980-00	SL-59981-00	SL-59984-00	SL-59985-00	SL-59940-00	SL-59941-00	-00
2.00	No. 10	9 mesh	SL-59980-01	SL-59981-01	SL-59984-01	SL-59985-01	SL-59940-01	SL-59941-01	-01
1.70	No. 12	10 mesh	SL-59980-02	SL-59981-02	SL-59984-02	SL-59985-02	SL-59940-02	SL-59941-02	-02
1.40	No. 14	12 mesh	SL-59980-03	SL-59981-03	SL-59984-03	SL-59985-03	SL-59940-03	SL-59941-03	-03
1.18	No. 16	14 mesh	SL-59980-04	SL-59981-04	SL-59984-04	SL-59985-04	SL-59940-04	SL-59941-04	-04
1.00	No. 18	16 mesh	SL-59980-05	SL-59981-05	SL-59984-05	SL-59985-05	SL-59940-05	SL-59941-05	-05
0.850	No. 20	20 mesh	SL-59980-06	SL-59981-06	SL-59984-06	SL-59985-06	SL-59940-06	SL-59941-06	-06
0.710	No. 25	24 mesh	SL-59980-07	SL-59981-07	SL-59984-07	SL-59985-07	SL-59940-07	SL-59941-07	-07
0.600	No. 30	28 mesh	SL-59980-08	SL-59981-08	SL-59984-08	SL-59985-08	SL-59940-08	SL-59941-08	-08
0.500	No. 35	32 mesh	SL-59980-09	SL-59981-09	SL-59984-09	SL-59985-09	SL-59940-09	SL-59941-09	-09
0.425	No. 40	35 mesh	SL-59980-10	SL-59981-10	SL-59984-10	SL-59985-10	SL-59940-10	SL-59941-10	-10
0.355	No. 45	42 mesh	SL-59980-11	SL-59981-11	SL-59984-11	SL-59985-11	SL-59940-11	SL-59941-11	-11
0.300	No. 50	48 mesh	SL-59980-12	SL-59981-12	SL-59984-12	SL-59985-12	SL-59940-12	SL-59941-12	-12
0.250	No. 60	60 mesh	SL-59980-13	SL-59981-13	SL-59984-13	SL-59985-13	SL-59940-13	SL-59941-13	-13
0.212	No. 70	65 mesh	SL-59980-14	SL-59981-14	SL-59984-14	SL-59985-14	SL-59940-14	SL-59941-14	-14
0.180	No. 80	80 mesh	SL-59980-15	SL-59981-15	SL-59984-15	SL-59985-15	SL-59940-15	SL-59941-15	-15
0.150	No. 100	100 mesh	SL-59980-16	SL-59981-16	SL-59984-16	SL-59985-16	SL-59940-16	SL-59941-16	-16
0.125	No. 120	115 mesh	SL-59980-17	SL-59981-17	SL-59984-17	SL-59985-17	SL-59940-17	SL-59941-17	-17
0.106	No. 140	150 mesh	SL-59980-18	SL-59981-18	SL-59984-18	SL-59985-18	SL-59940-18	SL-59941-18	-18
0.090	No. 170	170 mesh	SL-59980-19	SL-59981-19	SL-59984-19	SL-59985-19	SL-59940-19	SL-59941-19	-19
0.075	No. 200	200 mesh	SL-59980-20	SL-59981-20	SL-59984-20	SL-59985-20	SL-59940-20	SL-59941-20	-20
0.063	No. 230	250 mesh	SL-59980-21	SL-59981-21	SL-59984-21	SL-59985-21	SL-59940-21	SL-59941-21	-21
0.053	No. 270	270 mesh	SL-59980-22	SL-59981-22	SL-59984-22	SL-59985-22	SL-59940-22	SL-59941-22	-22
0.045	No. 325	325 mesh	SL-59980-23	SL-59981-23	SL-59984-23	SL-59985-23	SL-59940-23	SL-59941-23	-23
0.038	No. 400	400 mesh	SL-59980-24	SL-59981-24	SL-59984-24	SL-59985-24	SL-59940-24	SL-59941-24	-24

*Full height sieves measure 2" deep; half height sieves measure 1" deep.

Sieve opening (mm)	U.S. standard	Tyler standard	12" testing sieves				Catalog number suffix (-XX)
			Brass frame/brass wire		SS frame/SS wire		
			Full height*	Half height*	Full height*	Half height*	
2.36	No. 8	8 mesh	SL-59990-00	SL-59991-00	SL-59994-00	SL-59995-00	-00
2.00	No. 10	9 mesh	SL-59990-01	SL-59991-01	SL-59994-01	SL-59995-01	-01
1.70	No. 12	10 mesh	SL-59990-02	SL-59991-02	SL-59994-02	SL-59995-02	-02
1.40	No. 14	12 mesh	SL-59990-03	SL-59991-03	SL-59994-03	SL-59995-03	-03
1.18	No. 16	14 mesh	SL-59990-04	SL-59991-04	SL-59994-04	SL-59995-04	-04
1.00	No. 18	16 mesh	SL-59990-05	SL-59991-05	SL-59994-05	SL-59995-05	-05
0.850	No. 20	20 mesh	SL-59990-06	SL-59991-06	SL-59994-06	SL-59995-06	-06
0.710	No. 25	24 mesh	SL-59990-07	SL-59991-07	SL-59994-07	SL-59995-07	-07
0.600	No. 30	28 mesh	SL-59990-08	SL-59991-08	SL-59994-08	SL-59995-08	-08
0.500	No. 35	32 mesh	SL-59990-09	SL-59991-09	SL-59994-09	SL-59995-09	-09
0.425	No. 40	35 mesh	SL-59990-10	SL-59991-10	SL-59994-10	SL-59995-10	-10
0.355	No. 45	42 mesh	SL-59990-11	SL-59991-11	SL-59994-11	SL-59995-11	-11
0.300	No. 50	48 mesh	SL-59990-12	SL-59991-12	SL-59994-12	SL-59995-12	-12
0.250	No. 60	60 mesh	SL-59990-13	SL-59991-13	SL-59994-13	SL-59995-13	-13
0.212	No. 70	65 mesh	SL-59990-14	SL-59991-14	SL-59994-14	SL-59995-14	-14
0.180	No. 80	80 mesh	SL-59990-15	SL-59991-15	SL-59994-15	SL-59995-15	-15
0.150	No. 100	100 mesh	SL-59990-16	SL-59991-16	SL-59994-16	SL-59995-16	-16
0.125	No. 120	115 mesh	SL-59990-17	SL-59991-17	SL-59994-17	SL-59995-17	-17
0.106	No. 140	150 mesh	SL-59990-18	SL-59991-18	SL-59994-18	SL-59995-18	-18
0.090	No. 170	170 mesh	SL-59990-19	SL-59991-19	SL-59994-19	SL-59995-19	-19
0.075	No. 200	200 mesh	SL-59990-20	SL-59991-20	SL-59994-20	SL-59995-20	-20
0.063	No. 230	250 mesh	SL-59990-21	SL-59991-21	SL-59994-21	SL-59995-21	-21
0.053	No. 270	270 mesh	SL-59990-22	SL-59991-22	SL-59994-22	SL-59995-22	-22
0.045	No. 325	325 mesh	SL-59990-23	SL-59991-23	SL-59994-23	SL-59995-23	-23
0.038	No. 400	400 mesh	SL-59990-24	SL-59991-24	SL-59994-24	SL-59995-24	-24

†Full height sieves measure 3 1/4" deep; half height sieves measure 1 1/2" deep.

Sieve Cleaning Brushes

Use to clean wire cloth test sieves. Round sieve brush has nylon bristles and wood handle. Rectangular sieve brush has brass bristles and wood handle.



59986-97

59986-96

SL-59986-96 Round brush for 120 mesh sieves and finer
SL-59986-97 Rectangular brush for 100 mesh sieves and coarser

B-D™ Disposable Syringes

Ideal for use with syringe filters

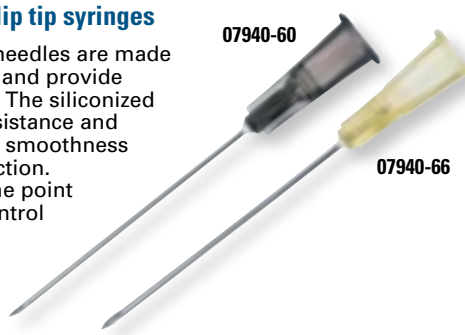
Use these sterile, polypropylene syringes for your general-purpose applications. Syringes come in an easy-to-open sealed package and can be autoclaved out of the package. A tip shield is included. Needles are not included; order separately at right.



B-D™ Needles

Fit luer-lock and slip tip syringes

Sterile, disposable needles are made from stainless steel and provide superior sharpness. The siliconized cannulae reduce resistance and maintain speed and smoothness throughout the injection. A sheath protects the point and cannula. Lot control number on package indicates complete sterility. Needles are packaged in strips of five.



Specifications & Ordering Information

Catalog number	Capacity	Graduations	Syringe type	Qty/bx	Price/bx
SL-07940-00	1 mL	1/100 mL	Luer lock	100	
SL-07940-02	3 mL	1/10 mL	Luer lock	100	
SL-07940-04	5 mL	1/5 mL	Luer lock	100	
SL-07940-06	10 mL	1/5 mL	Luer lock	100	
SL-07940-08	20 mL	1 mL, 3/4 oz in., 1/2 oz	Luer lock	40	
SL-07940-12	30 mL	1 mL, 1 oz in., 1/2 oz	Luer lock	40	
SL-07940-14	60 mL	1 mL, 2 oz in., 1/2 oz	Luer lock	40	
SL-07940-16			Luer lock		
SL-07940-18			Luer lock		
SL-07940-20			Luer lock		
SL-07940-22			Luer lock		
SL-07940-30			Luer lock		
SL-07940-28			Luer lock		

Specifications & Ordering Information

Catalog number	Gauge	Length	O.D. (mm)	Tip type	Color	Qty/bx	Price/bx
SL-07940-52	25G	1"	0.51	Bevel	Blue	100	
SL-07940-54		1 1/2"					
SL-07940-56	23G	1"	0.64	Bevel	Turquoise	100	
SL-07940-58	22G	1"	0.71	Bevel	Black	100	
SL-07940-60		1 1/2"					
SL-07940-62	21G	1"	0.81	Bevel	Green	100	
SL-07940-64	20G	1"	0.89	Bevel	Yellow	100	
SL-07940-66		1 1/2"					
SL-07940-68	18G	1"	1.24	Bevel	Pink	100	
SL-07940-70		1 1/2"					



Cole-Parmer Jumbo Digit Dual-Channel Clock/Timer

Timer features a 3"W x 2 1/2"H LCD that tilts for easy viewing. Use both channels simultaneously to count down, or use one to count up and the other to count down. Clock displays time in 12- or 24-hour formats; timer recalls previous time set. A 70 dB alarm sounds at the end of the countdown; timer displays time elapsed since the end of a countdown.

What's included: wall-mounting bracket and one AAA battery.



94440-10 CE

Request the NEW 2007/08 Cole-Parmer® General Catalog for our full line of timing equipment. Call 800-323-4340 or visit www.coleparmer.com/Catalogs



Specifications & Ordering Information

Catalog number (timer)	SL-94440-10
Number of channels	One
Timing capacity	12 or 24 hours
Resolution	0.01 sec
Accuracy	±2.6 sec/day
Count direction	Up/down
Display	Dual LCD, 1"H
Clock	Yes
Alarm	1 min beep
Battery included	One AAA battery
Dimensions (W x H x D)	3 3/4" x 5 1/2" x 1 3/4"
Price/ea*	
Catalog number (battery)	SL-09376-00
Price/pk	

*Discounts: Save 10% on 10 to 24 timers, and 20% on 25 or more timers.

Cole-Parmer Lab Controller

Three independent timing modes are offered—count up, countdown with alarm, or countdown repeat at any two specific times

Times can be set from one second to 100 hours. Alarms are volume controlled and can be manually stopped or set up to automatically turn off.

Clock displays day of week and time of day. Includes a metric converter and six-digit display calculator with add, subtract, multiply, and divide functions.

What's included: NIST-traceable certificate and ABS plastic case.



Specifications & Ordering Information

Number of Programs: 224 "on/off" per day; 1568 "on/off" per week

Display: 6-digit LED, 1/2"H
Dimensions: 6 1/2"W x 4 3/4"H x 3 1/2"D

Catalog number	Control capabilities	Timing capacity	Accuracy	Power (VAC, Hz)	Price
SL-94400-80	125 VAC, 15 A, 1875 W	1 second to 168 hours	±0.01 sec/day	125, 50/60	

New



94400-80

Cole-Parmer Ultrasonic Cleaners

High-frequency 42 kHz sound waves provide greater cleaning power and increased reliability

- Sweep frequency provides uniform cleaning by creating overlapping sound waves

These cleaners transform low-frequency AC current into 42 kHz high-frequency sound waves via an electroacoustic transducer. The transducer creates sinusoidal waves, which in turn cause cavitation—the formation and violent collapse of minute vacuum bubbles in the solution. These implosions thoroughly scrub every surface with which the solution makes contact, yet are not harsh on delicate items. Cleaners also feature “sweep” frequency that provides uniform cleaning throughout the tank by creating overlapping ultrasonic waves and eliminating inconsistent cleaning due to areas of intense ultrasonic activity.

The leakproof housing features super-sealing double O-rings and recessed ventilation.

The 304 stainless steel (SS) tank is surrounded by a durable, impact-resistant polypropylene housing. Sealed membrane control panel is impervious to splashes and spills.

Choose from five sizes of cleaners—all are available with mechanical timer; with heater and mechanical timer; or with heater, digital timer, temperature monitor, and degas feature.

What's included: a polypropylene lid (a SS lid on 08894-series), integral handles, nonskid feet, and a 7½-ft power cord (115 VAC models include plug; 230 VAC models do not include plug).

Ultrasonic Cleaners with Mechanical Timer

Our most economical and easy-to-operate cleaners—set the time with just one quick twist of the dial. Analog mechanical timer enables controlled cleaning cycles up to 60 minutes.



Ultrasonic Cleaners with Heater and Mechanical Timer

For enhanced cleaning capabilities, order a cleaner with heater and mechanical timer. Maximum heater temperature is 156°F (69°C). Built-in temperature sensor prevents overheating, automatically shuts down heating and ultrasonics when solution temperature exceeds 158°F (70°C). Set cleaning cycle up to 60 minutes.



Insert tray and beaker positioning cover not included; order separately.



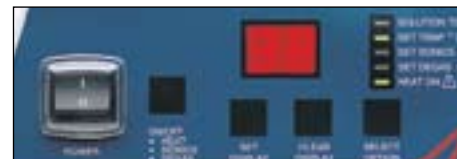
08891-21



08890-11

Ultrasonic Cleaners with Heater, Digital Timer, Temperature Monitor, and Degas Feature

For critical cleaning applications, choose a cleaner with heater, digital timer, temperature monitor, and degas feature. The degas feature eliminates air bubbles from the solution for more efficient cleaning. Built-in temperature sensor prevents overheating, automatically shuts down heating and ultrasonics when solution exceeds 158°F (70°C). Heater is adjustable from 68 to 156°F (20 to 69°C); set timer cleaning cycle up to 99 minutes.



Specifications and Ordering Information



Capacity	Tank dimensions (L x W x H)	Power (50/60 Hz)	With mechanical timer			With heater and mechanical timer			With heater, digital timer, temperature monitor, and degas feature		
			Catalog number	Amps	Price	Catalog number	Amps	Price	Catalog number	Amps	Price
½ gallon*	5½" x 6" x 4"	115 VAC 230 VAC	SL-08890-01 SL-08890-06	0.8 0.4		SL-08890-11 SL-08890-16	1.3 0.6		SL-08890-21 SL-08890-26	1.4 0.7	
¾ gallon*	9½" x 5½" x 4"	115 VAC 230 VAC	SL-08891-01 SL-08891-06	1.1 0.6		SL-08891-11 SL-08891-16	2.0 1.0		SL-08891-21 SL-08891-26	2.0 1.1	
1½ gallons†	11½" x 6" x 6"	115 VAC 230 VAC	SL-08892-01 SL-08892-06	1.1 0.6		SL-08892-11 SL-08892-16	2.8 1.5		SL-08892-21 SL-08892-26	2.9 1.5	
2½ gallons†	11½" x 9½" x 6"	115 VAC 230 VAC	SL-08893-01 SL-08893-06	1.5 0.8		SL-08893-11 SL-08893-16	4.2 2.0		SL-08893-21 SL-08893-26	4.2 2.1	
5½ gallons†	19½" x 11" x 6"	115 VAC 230 VAC	SL-08894-01 SL-08894-06	2.7 1.4		SL-08894-11 SL-08894-16	8.0 4.0		SL-08894-21 SL-08894-26	8.0 4.0	

*The ½- and ¾-gallon cleaners have a pour spout.

†The 1½-, 2½-, and 5½- gallon cleaners have a quick-disconnect drain.



Manual Flash Point Testers

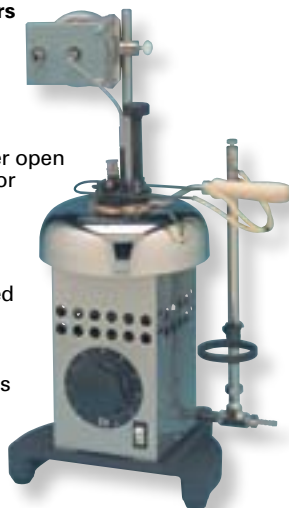
Adjustable heater provides excellent accuracy

Pensky-Martens Closed-Cup Flash Testers are used to determine the flash point of fuels, lubricating oils, liquids containing suspended solids, and liquids that tend to form a surface film during testing.

They feature a cover that slides the shutter open to apply test flame. Select from electrical or gas heated models. Electrical models are equipped with a 750 watt nickel-chromium heater. Gas models have a built-in nickel-plated brass natural gas burner and liquid propane burner mounted on a cast iron base. Testers include a thermometer holder, brass test cup with handle, pilot flame, test flame reference bead, built-in stirrer, plated brass thermometer ferrule, and cooling vents. Order stirrer motor separately at right.

Tag Closed-Cup Flash Testers are used to determine the flash point of liquids with viscosity below 5.5 cSt at 104°F (40°C) or below 9.5 cSt at 77°F (25°C), and flash point below 200°F (93°C) except cut-back asphalts, liquids that form a surface film under test conditions, and materials that contain suspended solids.

They feature a bath and cover made of plated brass; heater is enclosed in a cast aluminum base assembly. Testers include brass test cup, plated brass thermometer ferrules, and test flame reference bead.



Pensky-Martens flash tester 59871-00 shown with motor 59871-50

Cleveland Open-Cup Flash Tester are ideal for measuring flash and fire points of all petroleum products, except fuel oils and those having an open cup flash below 175°F (79°C). They feature a thermometer support that raises for easy placement and removal of test cup. Heater is enclosed in a stainless steel housing with cooling vents. Tester includes test flame applicator, thermometer support, brass test cup, and heating plate.

Specifications & Ordering Information

Catalog number	ASTM method	Power (50/60 Hz)	Dimensions (L x W x H)	Price
Pensky-Martens closed-cup flash testers				
SL-59871-00	D93	115 VAC	9½" x 8" x 22½"	
SL-59871-05		220 VAC		
SL-59871-07		Gas heated		
Tag closed-cup flash testers				
SL-59871-10	D56	115 VAC	5" x 5" x 16"	
SL-59871-15		220 VAC		
SL-59871-17		Gas heated		
Cleveland open-cup flash tester				
SL-59871-20	D 92	115 VAC	10" x 5½" x 14"	
SL-59871-25		220 VAC		

SL-59871-50 Stirrer motor for Pensky-Martens tester. Slow-speed motor rotates stirrer at 115 rpm. Features adjustable support bracket and rod. Installs in base of flash tester. 115 VAC, 50/60 Hz operation

SL-59871-51 Stirrer motor for 230 VAC, 50 Hz operation

SL-59871-52 Draft shield



Front View Distillation Apparatus

Observe temperatures of samples when evaporated and condensed under controlled conditions

Conforms to ASTM D86, D285, and related international specifications. Distillation system evaporates and condenses samples under controlled conditions, for observation of the temperatures at which various percentages are recovered, and/or the percentages recovered at specified temperatures. Units have a 13.2 cu ft capacity, and measure 15¼"L x 18¼"W x 19½"H.

Front View Distillation Apparatus

(Groups 0, 1, 2, and 3) is designed for testing motor and aviation gasolines, aviation turbine fuels, naphthas, kerosenes, distillate fuels, natural gasoline, liquid hydrocarbon mixtures, and other petroleum products. Features a 1000 W heater with stepless variable control, and push-turn heater elevation control knob.

Front View Distillation Apparatus

(Group 4) is designed for testing grade no. 2 fuel oil, grade no. 2-D diesel fuel oil, and other distillates requiring condenser bath temperatures up to 140°F (60°C). Also suitable for gasolines, aviation turbine fuels, naphthas, kerosenes, and other liquid petroleum products. Features a 300 W copper immersion condenser heater with stepless electronic control.

What's included: fully insulated stainless steel condenser and heater units (flask support platform, viewing window, and rack and pinion heater elevation mechanism), and graduate support block and flask.



More extensive offering of "Petroleum Testing" products

Specifications & Ordering Information

Catalog number	Heater unit orientation	Power (VAC, Hz)	Price
Front view distillation apparatus, Groups 0, 1, 2, and 3			
SL-59873-00	Right side	115, 50/60	
SL-59873-05		220, 50/60	
SL-59873-10	Left side	115, 50/60	
SL-59873-15		220, 50/60	
Front view distillation apparatus, Group 4			
SL-59873-20	Right side	115, 50/60	
SL-59873-25		220, 50/60	
SL-59873-30	Left side	115, 50/60	
SL-59873-35		220, 50/60	



59873-05

MASTERFLEX® L/S® Tubing Pump Systems

A L/S Economy Console Pumps

- Most economical Masterflex L/S pump systems
- Separate single-turn speed control and lighted power switch—maintain speed setting while turning on/off
- Stackable, small-footprint pump saves bench space
- Durable steel housing
- Complete system includes L/S economy console drive 07554-90 (115 VAC) or 07554-95 (230 VAC)

A
77910-30



B L/S Modular Pumps

- Modular design—place components where convenient; controller/motor connected by 6-ft cable
- Reversible pumping—pump in either direction
- Complete system includes L/S modular drive 07553-70 (115 VAC) or 07553-77 (230 VAC)



B
77913-20

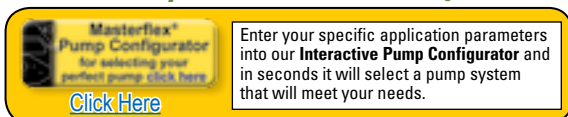
C L/S Digital Dispensing/Metering Pumps

- Four-digit LED display shows motor rpm, flow rate, dispense volume, and copy number
- Dispense by: mL—vol in mL of each dispense, from 0.001 to 9999 mL; Copy—1 to 9999 dispense cycles; or SEC—time between each cycle
- Dispense interval mode—set pause time from 1 to 9999 sec
- Membrane keypad for easy programming—keypad lockout prevents accidents or tampering
- Programmed calibration ensures accuracy
- Remote control of speed, direction, start/stop with TTL pulse tachometer output
- Complete system includes L/S brushless digital drive 07523-60 (115/230 VAC dual voltage)



C
77921-50

Pump selection made easy!



Specifications & Ordering Information

ISO9001:2000 CERTIFIED SUPPLIER 2 year warranty

Catalog number	Flow range* (mL/min)	Pump head included	Tubing included	Tubing sizes accepted	Drive speed range (rpm)	Drive IP rating	Power (50/60 Hz)	Price
A L/S Economy console pumps								
SL-77910-30	16 to 480	L/S Easy-Load® 3 77800-60	Tygon® LFL L/S 16 06429-16; 10 ft (3 m)	L/S 13, L/S 14, L/S 16, L/S 25, L/S 17, L/S 18	20 to 600	IP23	90 to 130 VAC, 1.5 A	
SL-77910-35							180 to 260 VAC, 0.8 A	
SL-77910-20	56 to 1700	L/S Easy-Load II 77200-62	Tygon LFL L/S 24 06429-24; 10 ft (3 m)	L/S 15, L/S 24, L/S 35, L/S 36			90 to 130 VAC, 1.5 A	
SL-77910-25							180 to 260 VAC, 0.8 A	
B L/S Modular pumps								
SL-77913-40	4.8 to 480	L/S Easy-Load 3 77800-60	Tygon LFL L/S 16 06429-16; 10 ft (3 m)	L/S 13, L/S 14, L/S 16, L/S 25, L/S 17, L/S 18	6 to 600	Controller: IP23 Motor: IP21	90 to 130 VAC, 1.5 A	
SL-77913-45							180 to 260 VAC, 0.8 A	
SL-77913-20	17 to 1700	L/S Easy-Load II 77200-62	Tygon LFL L/S 24 06429-24; 10 ft (3 m)	L/S 15, L/S 24, L/S 35, L/S 36			90 to 130 VAC, 1.5 A	
SL-77913-25							180 to 260 VAC, 0.8 A	
C L/S Digital dispensing/metering pumps								
SL-77921-50	8 to 480	L/S Easy-Load 3 77800-60	Tygon LFL L/S 16 06429-16; 10 ft (3 m)	L/S 13, L/S 14, L/S 16, L/S 25, L/S 17, L/S 18	10 to 600	IP23	Dual voltage: 90 to 130 VAC, 1.5 A and 190 to 260 VAC, 0.8 A	
SL-77921-40	28 to 1700	L/S Easy-Load II 77200-62	Tygon LFL L/S 24 06429-24; 10 ft (3 m)	L/S 15, L/S 24, L/S 35, L/S 36			Dual voltage: 90 to 130 VAC, 1.5 A and 190 to 260 VAC, 0.8 A	

*Flow range with included tubing; extend the flow range of these systems with additional sizes of tubing; order on pages 31–32.



MASTERflex® L/S® Specialty Pump Systems

A L/S PTFE Tubing Pump

- A peristaltic tubing pump that accepts rigid PTFE tubing—pump solvents and aggressive or high-purity fluids
- Pump at pressures up to 100 psi (6.9 bar); applications include filtration, chemical injection, and high-purity sampling
- Tough anodized aluminum and acetal pump head with six-roller stainless steel rotor assembly
- Pre-formed PTFE tubing sets are quick and easy to load; order additional tubing sets separately below
- Complete system includes L/S variable-speed console drive 07520-60 (115 VAC) or 07520-67 (230 VAC)



A
L/S PTFE
tubing pump
77912-00

B L/S PTFE Diaphragm Pump

- All-PTFE wetted parts maintain fluid purity and handle aggressive fluids
- Pump at pressures up to 75 psi (5.0 bar)
- Precision 10-turn speed control with locking feature enables precise, repeatable metering
- Control drive remotely via DB9 connector; start/stop by open collector or contact closure, speed control with 4 to 20 mA or 2 to 10 VDC input
- Complete system includes L/S variable-speed console drive with remote I/O 77521-40 (115 VAC) or 77521-47 (230 VAC)



B
L/S PTFE
diaphragm pump
77915-00

*Pump selection
made easy!*

Masterflex®
Pump Configurator
for selecting your
perfect pump click here

[Click Here](#)

Enter your specific
application parameters
into our **Interactive
Pump Configurator** and
in seconds it will select
a pump system that will
meet your needs.

C L/S Air-Powered Pump

- Use where electricity is unsafe or impractical—operate from existing compressed air source; 20 to 100 psi (1.4 to 6.9 bar) required
- Smooth starting low-maintenance motor in a durable painted-steel housing
- Complete system includes L/S air-powered drive 07569-00 (115/230 VAC)



C
L/S air-powered
pump 77931-10

Specifications & Ordering Information

ISO9001:2000
CERTIFIED SUPPLIER

UL US

CE

2 year
warranty

Catalog number	Flow range* (mL/min)	Pump head included	Tubing included	Tubing sizes accepted	Drive speed range (rpm)	Drive IP rating	Power (50/60 Hz)	Price
A L/S PTFE tubing pump								
SL-77912-00	0.25 to 65	L/S PTFE tubing pump head 77390-00	PTFE tubing set 77390-60 4 mm ID x 6 mm OD	—	1 to 300†	IP23	90 to 130 VAC, 2.3 A	
SL-77912-07							180 to 260 VAC, 1.2 A	
B L/S PTFE diaphragm pump								
SL-77915-00	80 to 800	L/S PTFE diaphragm pump head 07090-42	¼" ID x ¾" OD PTFE tubing 06605-15, 12 ft (3.6 m)	—	40 to 400†	IP23	90 to 130 VAC, 2.3 A	
SL-77915-07							180 to 260 VAC, 1.2 A	
C L/S Air-powered pump								
SL-77931-10	170 to 1700	L/S Easy-Load II 77200-62	Tygon® LFL L/S 24 06429-24; 10 ft (3 m)	L/S 15, L/S 24, L/S 35, L/S 36	60 to 600	IP44	3 to 25 cfm (0.08 to 0.7 m³/min) at 20 to 100 psi (1.4 to 6.9 bar)	

*Flow range with included tubing; extend the flow range of these systems with additional sizes of tubing; order on pages 31-32.

†Recommended drive speed operating range for included pump head.

Accessories for L/S PTFE Tubing Pump System **A**

PTFE-Tubing Sets

PTFE-tubing sets include two 15" (38 cm) lengths and cannot be substituted with ordinary PTFE tubing. Order the compression fittings listed at right to adapt tubing sets to your system.

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

SL-77390-60 PTFE-tubing set.
4-mm ID, 6-mm OD. Set of 2

For 4-mm OD PTFE-Tubing Sets

SL-31321-61 Straight connector, 40 psi (2.8 bar) max

SL-06407-15 PTFE extension tubing, 4-mm OD.
Pack of 12 ft (3.7 m)

For 6-mm OD PTFE-Tubing Sets

SL-31321-64 Straight connector, 135 psi (9.2 bar) max

SL-06407-20 PTFE extension tubing, 6-mm OD.
Pack of 12 ft (3.7 m)

MASTERflex® L/S® Precision Pump Tubing

Ensure optimal performance from your Masterflex® pump

- Custom extruded to fit Masterflex pumps
- Engineered for long life in peristaltic pump applications
- Lot-to-lot consistency provides superior accuracy and repeatability

Masterflex L/S pump tubing is manufactured to extremely close tolerances that match our L/S pump heads, ensuring accurate, repeatable flow and long tubing life. Our pump tubing is factory-tested and optically inspected to provide the best performance from your peristaltic pump. With 19 different materials available, there is an L/S pump

tubing formulation suitable for nearly any fluid handling application.

Our High-performance precision pump tubing listed on page 32 features a thicker wall compared to our Precision pump tubing, making it the best choice for applications involving pressure, suction lift, viscous fluids, or long tubing life.

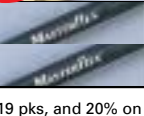
L/S® Precision Pump Tubing Specifications

Pump tubing cross sections	Precision pump tubing					
						
	L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18
Inside diameter (nominal), in. (mm)	0.03 (0.8)	0.06 (1.6)	0.12 (3.1)	0.19 (4.8)	0.25 (6.4)	0.31 (7.9)
Hose barb size, in. (mm)	1/16 (1.6)	1/16 (1.6)	1/8 (3.2)	3/16 (4.8)	1/4 (6.4)	3/8 (9.5)
Flow range (approximate)* with 1 to 600 rpm drive, mL/min	0.06 to 36	0.21 to 130	0.8 to 480	1.7 to 1000	2.8 to 1700	3.8 to 2300
Maximum pressure, continuous†	25 psig (1.7 bar)			20 psig (1.4 bar)	15 psig (1.0 bar)	10 psig (0.7 bar)
Maximum pressure, intermittent†	40 psig (2.7 bar)			35 psig (2.4 bar)	20 psig (1.4 bar)	15 psig (1.0 bar)
Maximum vacuum†	26" Hg (660 mm Hg)			20" Hg (510 mm Hg)		
Suction lift†	29 ft H ₂ O (8.8 m H ₂ O)			22 ft H ₂ O (6.7 m H ₂ O)		

*Determined under the following conditions: 0 psi at inlet, 0.5 psi at outlet; water temperature at 72°F (22°C).

†Actual performance varies depending on tubing formulation—values shown are for firm tubing. Values for STA-PURE®/CHEM-SURE® pump tubing are 60 psi (4.1 bar) continuous, 100 psi (6.9 bar) intermittent.

L/S® Precision Pump Tubing Ordering Information*

Pump tubing formulation / size			L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18
Silicone (platinum-cured)	25 ft (7.6 m) per pack		SL-96410-13	SL-96410-14	SL-96410-16	SL-96410-25	SL-96410-17	SL-96410-18
Silicone (peroxide-cured)	25 ft (7.6 m) per pack		SL-96400-13	SL-96400-14	SL-96400-16	SL-96400-25	SL-96400-17	SL-96400-18
BioPharm silicone (platinum-cured)	25 ft (7.6 m) per pack		SL-96420-13	SL-96420-14	SL-96420-16	SL-96420-25	SL-96420-17	SL-96420-18
BioPharm Plus silicone (platinum-cured)	25 ft (7.6 m) per pack		SL-96440-13	SL-96440-14	SL-96440-16	SL-96440-25	SL-96440-17	SL-96440-18
C-FLEX® (50 A)	25 ft (7.6 m) per pack		SL-06424-13	SL-06424-14	SL-06424-16	SL-06424-25	SL-06424-17	SL-06424-18
PharMed® BPT	25 ft (7.6 m) per pack		SL-06508-13	SL-06508-14	SL-06508-16	SL-06508-25	SL-06508-17	SL-06508-18
PharmaPure®†	25 ft (7.6 m) per pack		SL-06435-13	SL-06435-14	SL-06435-16	SL-06435-25	SL-06435-17	SL-06435-18
STA-PURE®	12" (30.5 cm) per pack		—	SL-96200-14	SL-96200-16	SL-96200-25	SL-96200-17	SL-96200-18
CHEM-SURE®	12" (30.5 cm) per pack		—	SL-96210-14	SL-96210-16	SL-96210-25	SL-96210-17	SL-96210-18
Tygon® LFL	25 ft (7.6 m) per pack		SL-06429-13	SL-06429-14	SL-06429-16	SL-06429-25	SL-06429-17	SL-06429-18
Tygon® Food (B-44-4X)	50 ft (15.2 m) per pack		SL-06419-13	SL-06419-14	SL-06419-16	SL-06419-25	SL-06419-17	SL-06419-18
Tygon® lab (R-3603)	50 ft (15.2 m) per pack		SL-06409-13	SL-06409-14	SL-06409-16	SL-06409-25	SL-06409-17	SL-06409-18
Tygon® fuel & lubricant (F-4040-A)	50 ft (15.2 m) per pack		SL-06401-13	SL-06401-14	SL-06401-16	SL-06401-25	SL-06401-17	SL-06401-18
Tygon® chemical (2001)†	50 ft (15.2 m) per pack		SL-06475-13	SL-06475-14	SL-06475-16	SL-06475-25	SL-06475-17	SL-06475-18
Norprene® (A 60 G)	50 ft (15.2 m) per pack		SL-06404-13	SL-06404-14	SL-06404-16	SL-06404-25	SL-06404-17	SL-06404-18
Norprene® Food (A 60 F)	50 ft (15.2 m) per pack		SL-06402-13	SL-06402-14	SL-06402-16	SL-06402-25	SL-06402-17	SL-06402-18
Chem-Durance™**	50 ft (15.2 m) per pack	 New	SL-06432-13	SL-06432-14	SL-06432-16	SL-06432-25	SL-06432-17	SL-06432-18
Viton®	25 ft (7.6 m) per pack		SL-06412-13	SL-06412-14	SL-06412-16	SL-06412-25	SL-06412-17	SL-06412-18
FDA Viton®	25 ft (7.6 m) per pack		SL-96412-13	SL-96412-14	SL-96412-16	SL-96412-25	SL-96412-17	SL-96412-18

*Discounts: Save 10% on 4-9 pks, 15% on 10-19 pks, and 20% on 20 or more pks; assortable among all types and sizes; except STA-PURE® and CHEM-SURE®.

†These formulations are recommended for use with Easy-Load® and Easy-Load® II pump heads only.

**This formulation is recommended for use with Standard, Easy-Load®, Easy-Load® II, and High-Performance pump heads only.



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



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For help selecting the right Masterflex® pump tubing formulation for your application, visit our Web site at www.coleparmer.com/MasterflexTubing

Pulse Dampener

Virtually eliminate pulsation in your output flow. Pulse dampener features a polyethylene body. It includes five pairs of fittings and PTFE-pipe thread tape. Pulse dampener accepts all L/S® tubing sizes and I/P® 26 size tubing.

[SL-07596-20](#) Pulse dampener



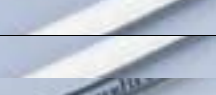
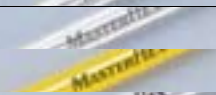
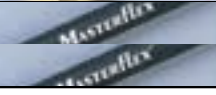
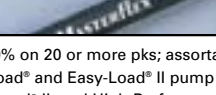
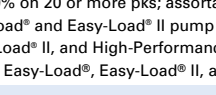
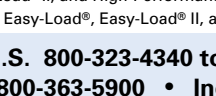
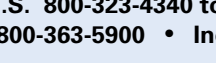
L/S® High-Performance Precision Pump Tubing Specifications

Pump tubing cross sections	High-performance precision pump tubing			
				
	L/S 15	L/S 24	L/S 35	L/S 36
Inside diameter (nominal), in. (mm)	0.19 (4.8)	0.25 (6.4)	0.31 (7.9)	0.38 (9.7)
Hose barb size, in. (mm)	3/16 (4.8)	1/4 (6.4)	3/8 (9.5)	3/8 (9.5)
Flow range (approximate)* with 1 to 600 rpm drive, mL/min	1.7 to 1000	2.8 to 1700	3.8 to 2300	4.8 to 2900
Value in () obtained with High-Performance pump head	(1.8 to 1100)	(3.0 to 1800)	(4.3 to 2600)	(5.8 to 3400)
Maximum pressure, continuous†	25 psig (1.7 bar)		20 psig (1.4 bar)	15 psig (1.0 bar)
Maximum pressure, intermittent†	40 psig (2.7 bar)		35 psig (2.4 bar)	20 psig (1.4 bar)
Maximum vacuum†	26" Hg (660 mm Hg)		24" Hg (610 mm Hg)	
Suction lift†	29 ft H ₂ O (8.8 m H ₂ O)		27 ft H ₂ O (8.3 m H ₂ O)	

*Determined under the following conditions: 0 psi at inlet, 0.5 psi at outlet; water temperature at 72°F (22°C).
values shown are for firm tubing. Values for STA-PURE®/CHEM-SURE® pump tubing are 60 psi (4.1 bar) continuous, 100 psi (6.9 bar) intermittent.

†Actual performance varies depending on tubing formulation—

L/S® High-Performance Precision Pump Tubing Ordering Information*

Pump tubing formulation / size			L/S 15	L/S 24	L/S 35	L/S 36
Silicone (platinum-cured)	25 ft (7.6 m) per pack		SL-96410-15	SL-96410-24	SL-96410-35	SL-96410-36
Silicone (peroxide-cured)	25 ft (7.6 m) per pack		SL-96400-15	SL-96400-24	SL-96400-35	SL-96400-36
BioPharm silicone (platinum-cured)	25 ft (7.6 m) per pack		SL-96420-15	SL-96420-24	SL-96420-35	SL-96420-36
BioPharm Plus silicone (platinum-cured)	25 ft (7.6 m) per pack		SL-96440-15	SL-96440-24	SL-96440-35	SL-96440-36
C-FLEX® (50 A)	25 ft (7.6 m) per pack		SL-06424-15	SL-06424-24	SL-06424-35	SL-06424-36
PharMed® BPT	25 ft (7.6 m) per pack		SL-06508-15	SL-06508-24	SL-06508-35	SL-06508-36
PharmaPure®†	25 ft (7.6 m) per pack		SL-06435-15	SL-06435-24	—	—
STA-PURE®	14" (35.6 cm) per pack		SL-96200-15	SL-96200-24	SL-96200-35	—
CHEM-SURE®	14" (35.6 cm) per pack		SL-96210-15	SL-96210-24	SL-96210-35	—
Tygon® LFL	25 ft (7.6 m) per pack		SL-06429-15	SL-06429-24	SL-06429-35	SL-06429-36
Tygon® Food (B-44-4X)	50 ft (15.2 m) per pack		SL-06419-15	SL-06419-24	SL-06419-35	SL-06419-36
Tygon® lab (R-3603)	50 ft (15.2 m) per pack		SL-06409-15	SL-06409-24	SL-06409-35	SL-06409-36
Tygon® fuel & lubricant (F-4040-A)	50 ft (15.2 m) per pack		SL-06401-15	SL-06401-24	SL-06401-35	SL-06401-36
Tygon® chemical (2001)†	50 ft (15.2 m) per pack		SL-06475-15	SL-06475-24	—	—
Norprene® (A 60 G)	50 ft (15.2 m) per pack		SL-06404-15	SL-06404-24	SL-06404-35	SL-06404-36
Norprene® Food (A 60 F)	50 ft (15.2 m) per pack		SL-06402-15	SL-06402-24	SL-06402-35	SL-06402-36
Chem-Durance™**	50 ft (15.2 m) per pack		New SL-06432-15	SL-06432-24	SL-06432-35 ††	—
Viton®	25 ft (7.6 m) per pack		SL-06412-15	SL-06412-24	SL-06412-35	SL-06412-36
FDA Viton®	25 ft (7.6 m) per pack		SL-96412-15	SL-96412-24	SL-96412-35	SL-96412-36

*Discounts: Save 10% on 4-9 pks, 15% on 10-19 pks, and 20% on 20 or more pks; assortable among all types and sizes; except STA-PURE® and CHEM-SURE®.

†These formulations are recommended for use with Easy-Load® and Easy-Load® II pump heads only.

††This size is recommended for use with Easy-Load®, Easy-Load® II, and High-Performance pump heads only.

**This formulation is recommended for use with Standard, Easy-Load®, Easy-Load® II, and High-Performance pump heads only.

MASTERflex® I/P® Tubing Pump Systems

A I/P Multichannel Pumps

- Combination CW/OFF/CCW switch lets you purge tubing before or after pumping, and pump in either direction
- IP55-rated housing is easy to clean—simply hose down after use
- Use up to three pump heads to pump multiple channels of fluid
- Tough, painted-steel/aluminum housing and steel mounting skid
- Complete system includes I/P fixed-speed drive 07588-60 (115 VAC) or 07588-65 (230 VAC)

B I/P Modular Pumps

- Modular design allows for convenient placement of components—motor/controller connected by 6-ft cable
- Reversible pumping—pump in either direction
- Separate speed control and on/off/reverse switch
- Complete system includes I/P modular drive 07591-00 (115 VAC) or 07591-07 (230 VAC)

C I/P Variable-Speed Air-Powered Pump

- Use when electrical power may be unsafe or impractical—for safe operation, carefully ground to protect from static electricity
- Operate from your compressor—requires 3 to 25 cfm (0.08 to 0.7 m³/min) at 20 to 100 psi (1.4 to 6.9 bar)
- Smooth-starting, low-maintenance motor
- Complete system includes I/P variable-speed air-powered drive 07589-30



A
07588-80



B
77962-00



C
77980-00

Technical info

For detailed technical information and the most complete listings of Masterflex® parts and accessories, please see our Masterflex® Encyclopedia, Vol. 3.

Request your free copy at www.coleparmer.com/Catalogs



Specifications & Ordering Information

ISO9001:2000 CERTIFIED SUPPLIER cUL US CE 2 year warranty

Catalog number	Flow range* (LPM)	Pump head included	Tubing included	Tubing sizes accepted	Drive speed range (rpm)	Drive IP rating	Power (50/60 Hz)	Price
A I/P Multichannel pump								
SL-07588-80	2.3 per channel	I/P Easy-Load® 77601-10 (three)	Tygon® LFL I/P 73 06429-73; 10 ft (3 m)	I/P 26, I/P 73, I/P 82	100	IP55	90 to 130 VAC, 8.0 A	
SL-07588-87	1.9 per channel				83		190 to 260 VAC, 4.0 A	
B I/P Modular pump								
SL-77962-00	0.2 to 8.0	I/P Easy-Load 77601-10	Tygon LFL I/P 73 06429-73; 10 ft (3 m)	I/P 26, I/P 73, I/P 82	20 to 650	Controller: IP22 Motor: IP34	90 to 130 VAC, 3.0 A	
SL-77962-07							180 to 260 VAC, 1.5 A	
C I/P Variable-speed air-powered pump								
SL-77980-00	1.2 to 8.0	I/P Easy-Load 77601-10	Tygon LFL I/P 73 06429-73; 10 ft (3 m)	I/P 26, I/P 73, I/P 82	100 to 650	IP34	3 to 25 cfm (0.08 to 0.7 m³/min) at 20 to 100 psi (1.4 to 6.9 bar)	

*Flow range with included tubing; extend the flow range of these systems with additional sizes of tubing; order on page 35.



A
77970-20

MASTERFLEX® I/P® Digital Pump Systems

A I/P Modular Digital Dispensing/Metering Pumps

- Digital readout displays exact flow rate, dispense volume, copy number, or drive rpm
- Program controller for continuous pumping, single dose dispensing, or repetitive dispensing—set dispense interval from 1 to 999 seconds
- Keypad lockout feature prevents accidental changes or tampering
- Remote control of speed, direction, start/stop with TTL pulse tachometer output
- Complete system includes I/P digital modular drive 07592-20 (115 VAC) or 07592-27 (230 VAC)

B I/P Brushless Process Pumps

- Powerful, low-maintenance drives for higher flow feed, metering, and transfer
- Precise, repeatable speed control via three-turn potentiometer for quick, easy adjustments—percent speed is displayed on an easy-to-read LED from 5 to 100% full speed with 1% resolution
- Nonchip epoxy-coated, IP55-rated enclosure is protected from dust and low-pressure jets of water
- Complete system includes I/P brushless process drive 77411-00 (115/230 VAC dual voltage)
- Remote outputs: "pump ready" signal and 4-20 mA outputs (requires 77300-32 remote cable kit, sold separately below)

C I/P Digital Brushless Process Pumps

- Accurately dispense, meter, or transfer in process applications
- Sealed 316 stainless steel housing is IP66 and NEMA 4X rated for washdown
- Six-digit LED displays rpm, flow rate, dispense volume, cumulative volume, dispense interval, and copy number
- Reversible, maintenance-free brushless motor with tachometer feedback for $\pm 0.25\%$ speed-control accuracy
- User-selectable metric or English flow units—dispense in liters or gallons
- Scaleable remote control—via fluid resistant input/output connector
- Complete system includes I/P digital brushless process drive 77420-00 (115/230 VAC)



B
77965-10



C
77964-00

Specifications & Ordering Information

ISO9001:2000 CERTIFIED SUPPLIER 2 year warranty

Catalog number	Flow range* (LPM)	Pump head included	Tubing included	Tubing sizes accepted	Drive speed range (rpm)	Drive IP rating	Power (50/60 Hz)	Price
A I/P Modular digital dispensing metering pump								
SL-77970-20	0.2 to 8.0	I/P Easy-Load® 77601-10	Tygon® LFL I/P 73 06429-73; 10 ft (3 m)	I/P 26, I/P 73, I/P 82	20 to 650	Controller: IP22 Motor: IP34	90 to 130 VAC, 4.4 A	
SL-77970-27							190 to 260 VAC, 2.2 A	
B I/P Brushless process pump								
SL-77965-00	0.4 to 8.0	I/P Easy-Load 77601-10	Tygon LFL I/P 73, 06429-73; 10 ft (3 m)	I/P 26, I/P 73, I/P 82	33 to 650	IP55	90 to 130 VAC, 4.5 A, 220 to 260 VAC, 2.6 A	
SL-77965-10	0.7 to 13.0	I/P High-Performance 77600-62	Tygon LFL I/P 88, 06429-88; 3 ft (1 m)	I/P 70, I/P 88, I/P 89	33 to 650	IP55	90 to 130 VAC, 4.5 A, 220 to 260 VAC, 2.6 A	
C I/P Digital brushless process pump								
SL-77964-00	0.01 to 8.0	I/P Easy-Load 77601-10	Tygon LFL I/P 73, 06429-73; 10 ft (3 m)	I/P 26, I/P 73, I/P 82	1 to 650	IP66	90 to 130 VAC, 4.5 A, 220 to 260 VAC, 2.5 A	
SL-77964-10	0.02 to 13.0	I/P High-Performance 77600-62	Tygon LFL I/P 88, 06429-88; 3 ft (1 m)	I/P 70, I/P 88, I/P 89	1 to 650	IP66	90 to 130 VAC, 4.5 A, 220 to 260 VAC, 2.5 A	

*Flow range with included tubing; extend the flow range of these systems with additional sizes of tubing; order on page 35.

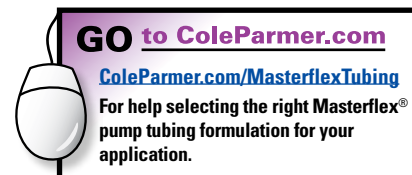
Accessories (for 77965-00 and -10 only)

SL-77300-32 Remote cable kit

MASTERFLEX® I/P® Precision and High-Performance Precision Pump Tubing

- Ensure optimal Masterflex pump performance
- Custom extruded to fit Masterflex pumps
- Engineered for long life in peristaltic pumps
- Lot-to-lot consistency provides superior accuracy and repeatability

Masterflex I/P pump tubing is manufactured to extremely close tolerances that match our I/P pump heads, ensuring accurate, repeatable flow and long tubing life. Our tubing is factory-tested and optically inspected to provide the best performance from your peristaltic pump.



I/P® Pump Tubing Specifications

Pump tubing cross sections	I/P® Precision pump tubing			I/P® High-performance precision pump tubing		
	I/P 26	I/P 73	I/P 82	I/P 70	I/P 88	I/P 89
Inside diameter (nominal)	0.25" (6.4 mm)	0.37" (9.5 mm)	0.5" (12.7 mm)	0.37" (9.5 mm)	0.5" (12.7 mm)	0.62" (15.88 mm)
Hose barb size (nominal)	¼" (6.4 mm)	⅜" (9.5 mm)	½" (12.7 mm)	⅜" (9.5 mm)	½" (12.7 mm)	⅝" (15.88 mm)
Flow range (approximate)* with 1 to 650 rpm drive	0.01 to 4 LPM (0.002 to 1.1 GPM)	0.01 to 8 LPM (0.002 to 2.1 GPM)	0.02 to 13 LPM (0.005 to 3.5 GPM)	0.01 to 8 LPM (0.002 to 2.1 GPM)	0.02 to 13 LPM (0.005 to 3.5 GPM)	0.03 to 17 LPM (0.007 to 4.5 GPM)
Maximum pressure ¹ , continuous	25 psi (1.7 bar)	25 psi (1.7 bar)	15 psi (1.0 bar)	25 psi (1.7 bar)	25 psi (1.7 bar)	15 psi (1.0 bar)
Maximum pressure ¹ , intermittent	40 psi (2.7 bar)	40 psi (2.7 bar)	20 psi (1.4 bar)	40 psi (2.7 bar)	35 psi (2.4 bar)	20 psi (1.4 bar)
Maximum vacuum ¹	26" Hg (660 mm Hg)	26" Hg (660 mm Hg)	20" Hg (510 mm Hg)	26" Hg (660 mm Hg)	26" Hg (660 mm Hg)	24" Hg (610 mm Hg)
Suction lift ¹	29 ft H ₂ O (8.8 m H ₂ O)	29 ft H ₂ O (8.8 m H ₂ O)	23 ft H ₂ O (7.0 m H ₂ O)	29 ft H ₂ O (8.8 m H ₂ O)	29 ft H ₂ O (8.8 m H ₂ O)	27 ft H ₂ O (8.2 m H ₂ O)

*Determined under the following conditions: 0 psi at inlet, 0.5 psi at outlet; water temperature at 72°F (22°C). ¹Actual performance varies depending on tubing formulation—values shown are for firm tubing. Values for STA-PURE®/CHEM-SURE® pump tubing are 60 psi (4.1 bar) continuous, 100 psi (6.9 bar) intermittent.

I/P® Pump Tubing Ordering Information*

Pump tubing formulation			Precision pump tubing			High-performance precision pump tubing		
			I/P 26	I/P 73	I/P 82	I/P 70	I/P 88	I/P 89
Silicone (platinum cured)	25 ft (7.6 m) per pack	Masterflex	SL-96410-26	SL-96410-73	SL-96410-82	SL-96510-70	SL-96510-88	SL-96510-89
Silicone (peroxide cured)	25 ft (7.6 m) per pack	Masterflex	SL-96400-26	SL-96400-73	SL-96400-82	SL-96400-70	SL-96400-88	SL-96400-89
BioPharm silicone (platinum)	25 ft (7.6 m) per pack	Masterflex	SL-96420-26	SL-96420-73	SL-96420-82	SL-96421-70	SL-96421-88	SL-96421-89
BioPharm Plus silicone (platinum)	25 ft (7.6 m) per pack	Masterflex	SL-96440-26	SL-96440-73	SL-96440-82	SL-96441-70	SL-96441-88	SL-96441-89
C-FLEX® (50 A)	25 ft (7.6 m) per pack	Masterflex	SL-06424-26	SL-06424-73	SL-06424-82	SL-06424-70	SL-06424-88	SL-06424-89
PharMed® BPT	25 ft (7.6 m) per pack	Masterflex	SL-06508-26	SL-06508-73	SL-06508-82	SL-06508-70	SL-06508-88	SL-06508-89
PharmaPure® ^{††}	25 ft (7.6 m) per pack	Masterflex	SL-06435-26	SL-06435-73	SL-06435-82	—	—	—
STA-PURE®	24" (61 cm) per pack	Masterflex	SL-96200-26	SL-96200-73	SL-96200-82	—	—	—
CHEM-SURE®	24" (61 cm) per pack	Masterflex	SL-96210-26	SL-96210-73	SL-96210-82	—	—	—
Tygon® LFL	25 ft (7.6 m) per pack	Masterflex	SL-06429-26	SL-06429-73	SL-06429-82	SL-06429-70	SL-06429-88	SL-06429-89
Tygon® Food (B-44-4X)	50 ft (15.2 m) per pack	Masterflex	SL-06419-26	SL-06419-73	SL-06419-82	—	—	—
Tygon® lab (R-3603)	50 ft (15.2 m) per pack	Masterflex	SL-06409-26	SL-06409-73	SL-06409-82	SL-06409-70	SL-06409-88	SL-06409-89
Tygon® fuel & lubricant (F-4040-A)	50 ft (15.2 m) per pack	Masterflex	SL-06401-26	SL-06401-73	SL-06401-82	—	—	—
Tygon® chemical (2001) [†]	50 ft (15.2 m) per pack	Masterflex	SL-06475-26	SL-06475-73	SL-06475-82	—	—	—
Norprene® (A 60 G)	50 ft (15.2 m) per pack	Masterflex	SL-06404-26	SL-06404-73	SL-06404-82	SL-06404-70	SL-06404-88	SL-06404-89
Norprene® Food (A 60 F)	50 ft (15.2 m) per pack	Masterflex	SL-06402-26	SL-06402-73	SL-06402-82	SL-06402-70	SL-06402-88	SL-06402-89
Chem-Durance™ ^{††}	50 ft (15.2 m) per pack	Masterflex New	—	SL-06432-73	SL-06432-82	SL-06432-70	SL-06432-88	SL-06432-89
Viton®	25 ft (7.6 m) per pack	Masterflex	SL-06412-26	SL-06412-73	—	—	—	—
FDA Viton®	25 ft (7.6 m) per pack	Masterflex	SL-96412-26	SL-96412-73	—	—	—	—

*Discounts: Save 10% on 4-9 pks, 15% on 10-19 pks, and 20% on 20 or more pks; assortable among all types and sizes except for STA-PURE® and CHEM-SURE®.

[†]Recommended for use with Easy-Load® pump head only.

^{††}Recommended for use with Easy-Load® or High-Performance pump heads only.

ISMATEC® Ecoflow® Pump

Integrated drive and pump head design allows for easy operation and worry-free use

- Adjustable bidirectional, stepless speed control
- Meets requirements for IP31 protection rating
- Rugged stainless steel and aluminum housing

This Ecoflow pump offers Ismatec's quality and dependability at an affordable price. Drive and three-roller head are integrated into one unit, so there are fewer small parts to jam or break. With a flow rate up to 3800 mL/min, this easy-to-use pump meets the requirements for many general applications. The large control knob allows for easy speed control, even while wearing gloves. A safety switch allows pump operation only when the tubing bed cover is closed. LED light indicates on/off status. Aluminum and stainless steel/PPS housing are easy to clean. Use with any formulation of standard pump tubing listed below.

What's included: 6-ft cord with plug.

New

The Ecoflow pump is an excellent drive for lab fluid transfer applications.

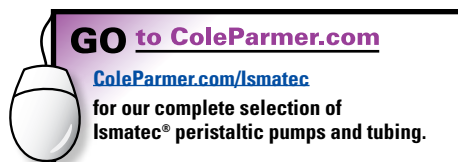


ISO 9001:2000
CERTIFIED SUPPLIER

CE 2 year warranty

Specifications & Ordering Information

Catalog number	Flow range per channel	Channels	Speed	Rollers	Tubing	Dimensions (W x H x D)	Power	Price
SL-78024-00	100 to 3800 mL/min	1	80 to 670 rpm	3	Pump	9 1/4" x 5" x 9 1/2"	115 VAC, 60 Hz	

**Pump Tubing for ISMATEC® Ecoflow® Pump**

Pump tubing comes in various formulations and sizes to fit your application. Since tubing comes in one continuous piece, there is no need for extension tubing.

Nominal Tubing Flow Range Information

ID (mm)	OD (mm)	Flow ranges (mL/min) with pump 78024-00
3.2	6.4	100 to 750
4.8	8.0	210 to 1450
6.4	9.6	360 to 2500
8.0	11.2	550 to 3800

Specifications & Ordering Information

ID (mm)	OD (mm)	Wall (mm)	Tygon®			Silicone (peroxide cured)			Norpren®			Viton®		
			Cat. no.	Ft/pk	Price/pk*	Cat. no.	Ft/pk	Price/pk*	Cat. no.	Ft/pk	Price/pk*	Cat. no.	Ft/pk	Price/pk*
3.2	6.4	1.6	SL-06408-47	50		SL-06411-67	25		SL-06410-02	50		—	—	—
4.8	8.0	1.6	SL-06408-03	50		SL-06411-03	25		SL-06410-04	50		SL-06412-25	25	
6.4	9.6	1.6	SL-06408-50	50		SL-06411-71	25		SL-06410-05	50		SL-06412-18	25	
8.0	11.2	1.6	SL-06408-52	50		SL-06411-75	25		SL-06410-08	50		SL-06434-05	25	

*Discounts: Save 10% on 4–9 packs, 15% on 10–19 packs, 20% on 20 packs or more; assortable among all types and sizes.

Magnetic Drive Pumps with Enclosed Motors

Twin bearing system handles thrust loads for extended service life

- Quiet, energy efficient, and compact
- Internal cooling circuit reduces bearing temperature
- Enclosed motor for use in harsh environments

A Moderate-Flow Polypropylene Pumps are an ideal option for process, recirculation or transfer applications where continuous flow and excellent chemical resistance are needed.

B Fluoroplastic Pumps with carbon fiber-reinforced ETFE are designed for highly corrosive or high purity applications.

What's included: a 6-ft cord with stripped ends.



Polypropylene moderate-flow pump
72010-20



Fluoroplastic pump
72011-00

A Moderate-Flow Polypropylene Pumps

Specifications & Ordering Information



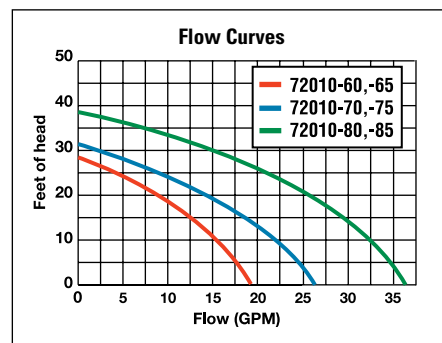
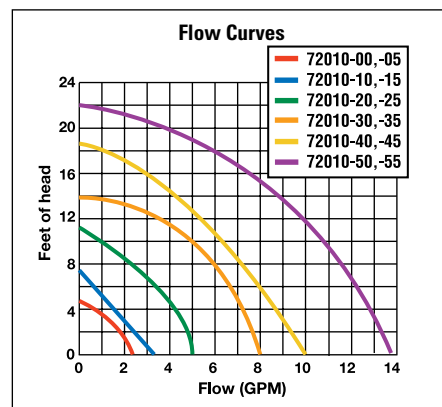
115 V only 220 V only

Wetted parts

Front/rear casings and impeller/magnet capsule:
glass fiber-reinforced polypropylene
Spindle and thrust ring: alumina ceramic 99.5%
Casing O-ring: Viton®
Bearing: PTFE

Duty cycle: continuous

Catalog number	Max flow (GPM)	Max head (ft)	Max system pressure (psi)	Max temp °F (°C)	Connections		Motor		Power		Dimensions (L x W x H)	Price
					Hose barb	NPT(M)	hp	rpm	VAC	Amps		
SL-72010-00 SL-72010-05	2.3	4.5	2.8	176 (80)	1/2"	—	1/250	3400	115 220	0.25 0.13	4 1/8" x 3" x 3 3/4"	
SL-72010-10 SL-72010-15	3.1	6.8	4.3	176 (80)	1/2"	—	1/125	3400	115 220	0.40 0.20	4 1/8" x 3" x 3 3/4"	
SL-72010-20 SL-72010-25	5	11.1	7.2	176 (80)	1/2"	—	1/75	3400	115 220	0.29 0.15	7 1/8" x 3 3/4" x 4 1/2"	
SL-72010-30 SL-72010-35	8.2	14.1	10.0	176 (80)	5/8"	—	1/38	3400	115 220	0.53 0.27	8 1/4" x 4 1/4" x 4"	
SL-72010-40 SL-72010-45	10	17.7	11.6	176 (80)	—	3/4"	1/16	3400	115 220	1.10 0.55	10 1/8" x 4 3/4" x 4 1/8"	
SL-72010-50 SL-72010-55	13.7	21.3	14.2	176 (80)	—	3/4"	1/12	3400	115 220	1.30 0.65	10 5/8" x 4 3/4" x 5 1/8"	
SL-72010-60 SL-72010-65	18.4	26.9	17.1	176 (80)	—	1"	1/9	3400	115 220	1.60 0.80	10 7/8" x 4 3/4" x 6 1/8"	
SL-72010-70 SL-72010-75	25.6	31.8	21.3	176 (80)	—	1"	1/4	3400	115 220	2.80 1.40	10 1/4" x 5 3/4" x 6 1/8"	
SL-72010-80 SL-72010-85	35.6	39	25.6	176 (80)	—	1"	1/3	3400	115 220	3.40 1.70	12 3/4" x 6 1/4" x 7"	



B Fluoroplastic Pumps

Specifications & Ordering Information



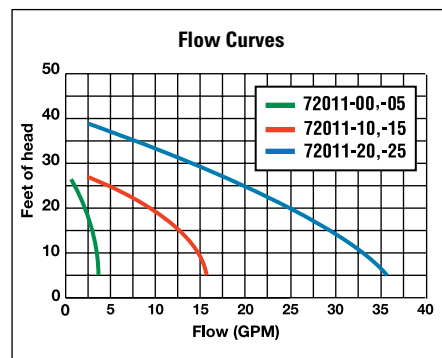
115 V only 220 V only

Wetted parts

Front/rear casings and impeller/magnet capsule:
carbon fiber-reinforced ETFE
Spindle and thrust ring: silicone carbide
Casing O-ring: Viton®
Bearing: silicone carbide

Duty cycle: continuous

Catalog number	Max flow (GPM)	Max head (ft)	Max system pressure (psi)	Max temp °F (°C)	Connections NPT(M)	Motor		Power		Dimensions (L x W x H)	Price
						hp	rpm	VAC	Amps		
SL-72011-00 SL-72011-05	3.2	26	17	190 (87)	1/2"	1/16	3300	115 220	0.25 0.13	9 1/8" x 4 3/4" x 5 1/8"	
SL-72011-10 SL-72011-15	16	26	21.3	190 (87)	1"	1/9	3300	115 220	1.9 0.95	10 3/4" x 4 3/4" x 6 1/8"	
SL-72011-20 SL-72011-25	36	38	31.2	190 (87)	1"	1/3	3300	115 220	3.4 1.7	12 5/8" x 6 1/4" x 6 7/8"	



LMI Solenoid Diaphragm Metering Pumps

Manually adjustable stroke length and stroke frequency provide precise control of flow rates

- Clear face cover protects pump controls on low flow models (1 GPH and lower)
- Chemical-resistant housing provides protection in harsh environments

A Manual Control Pumps

These pumps include a four-function valve—an anti-siphon, back pressure, priming, and pressure relief valve all in one.

B Remote Control Pumps

An external pulse trigger can be accepted for remote stroke frequency control. Low-flow pump models (1 GPH and lower) include easy access to 4-pin connections.

C Digital Remote Control Pumps

Microprocessor control and an LCD display provides precise accuracy. Programmable controller features three external control modes—pulse multiply, pulse divide, or 4-to-20 mA response. Pumps allow you to multiply or divide incoming pulse signal by 1 to 999.

What's included: a four-function valve (except high-flow remote control pumps, models 74514-50 and -55), 16-ft polyethylene tubing, foot valve/strainer, and 8-ft power cord with molded plug.

Service kits include: a replacement diaphragm, seal, four pump head screws, and check valves.



Specifications & Ordering Information

Maximum temperature: 250°F (121°C)

Repeatability: ±2% full-scale

Suction lift: 5 ft (dry)

Wetted parts

Models 74514-50 and -55: PVC head and fittings, ceramic balls, Fluorofilm® diaphragm, PTFE seal ring

All other models: PVC head and fittings, ceramic balls, Fluorofilm diaphragm, PVDF/Polyprel seal ring

External trigger (remote control and digital remote control pumps only): contact closure, transistor, or opto-isolator rated for 15 VDC, 2 mA

Input signal (digital remote control pumps only): 4 to 20 mA, 0 to 20 mA

Flow range		Max psi	Port size	Dimensions (L x W x H)	115 VAC, 50/60 Hz			230 VAC, 50 Hz			Service kits	
GPH	mL/min				Cat. no.	Amps	Price	Cat. no.	Amps	Price	Cat. no.	Price
A Manual control pumps												
0.006 to 0.42	0.4 to 26.7	140	1/4" OD	10 1/2" x 4 1/8" x 9 3/8"	SL-74517-00	1.4		SL-74517-05	0.7		SL-74513-08	
0.01 to 1.0	0.63 to 63.3	110	3/8" OD		SL-74517-10			SL-74517-15			SL-74513-18	
0.013 to 2.5	0.79 to 158.3	100	3/8" OD	13 7/8" x 5 3/4" x 10 7/8"	SL-74513-20	3.5		SL-74513-25	1.75		SL-74513-18	
0.02 to 4.0	1.26 to 251.7	100		14 1/4" x 5 3/4" x 10 7/8"	SL-74513-30			SL-74513-35			SL-74513-38	
0.45 to 8.0	2.52 to 500.0	60		14 1/4" x 5 3/4" x 10 7/8"	SL-74513-40			SL-74513-45			SL-74513-48	
B Remote control pumps												
0.006 to 0.42	0.4 to 26.7	140	1/4" OD	10 1/2" x 4 1/8" x 9 3/8"	SL-74519-00	1.4		SL-74519-05	0.7		SL-74513-08	
0.01 to 1.0	0.63 to 63.3	110	3/8" OD		SL-74519-10			SL-74519-15			SL-74513-18	
0.013 to 2.5	0.79 to 158.3	100	3/8" OD	13 7/8" x 5 3/4" x 10 7/8"	SL-74514-20	3.5		SL-74514-25	1.75		SL-74513-18	
0.02 to 4.0	1.26 to 251.7	100		14 1/4" x 5 3/4" x 10 7/8"	SL-74514-30			SL-74514-35			SL-74513-38	
0.45 to 8.0	2.52 to 500.0	60		14 1/4" x 5 3/4" x 10 7/8"	SL-74514-40			SL-74514-45			SL-74513-48	
0.1 to 20.0	6.33 to 1262.0	25	1/2" OD	14 1/4" x 5 3/4" x 10 7/8"	SL-74514-50			SL-74514-55			SL-74514-58	
C Digital remote control pumps												
0.006 to 0.42	0.4 to 26.7	140	1/4" OD	10 1/2" x 4 1/8" x 9 3/8"	SL-74521-00	1.4		SL-74521-05	0.7		SL-74513-08	
0.01 to 1.0	0.63 to 63.3	110	3/8" OD		SL-74521-10			SL-74521-15			SL-74513-18	
0.013 to 2.5	0.79 to 158.3	100	3/8" OD	13 7/8" x 5 3/4" x 10 7/8"	SL-74516-20	3.5		SL-74516-25	1.75		SL-74513-18	
0.02 to 4.0	1.26 to 251.7	100		14 1/4" x 5 3/4" x 10 7/8"	SL-74516-30			SL-74516-35			SL-74513-38	
0.45 to 8.0	2.52 to 500.0	60		14 1/4" x 5 3/4" x 10 7/8"	SL-74516-40			SL-74516-45			SL-74513-48	

ISO 9001:2000
CERTIFIED SUPPLIER

UL
SP

CE
available on request

NSF

2 year warranty

Plastic Hand-Operated Drum Pumps

Ideal for most acid/base or ionic salt applications

A Siphon/Lift Pail Pump

- Suitable for pumping petroleum products or water

B Threaded Hand Pump

- Pump detergents, water, dilute alkalis, and waxes from drums or pails— $\frac{3}{4}$ " NPT(M) intake threads permit semi-permanent attachment
- Optional adapters securely attach pump to a variety of containers—order online

C Siphon/Lift Drum Pump

- Equipped with a 2" IPS bung adapter for pumping detergents, water, dilute alkalis, or waxes from drums

D Water and Chemical Siphons

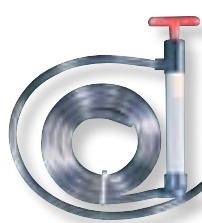
- Portable and self-priming
- Chemical siphons (70607-10, -12) suitable for acid and alkali transfer

E HDPE Hand Pump

- Pump acids, alcohols, and alkalis from carboys, drums, or tanks
- Go online to order optional LDPE adapters to securely mount pump on drums

F Heavy-Duty Acid-Transfer Pumps

- UL-listed for sulfuric acid transfer at 50% concentration
- Withstand temperatures up to 120°F (49°C)



A 06437-00



B 06433-60



C 06437-10



D 70607-00



E 06425-05



F 06433-30

Specifications & Ordering Information

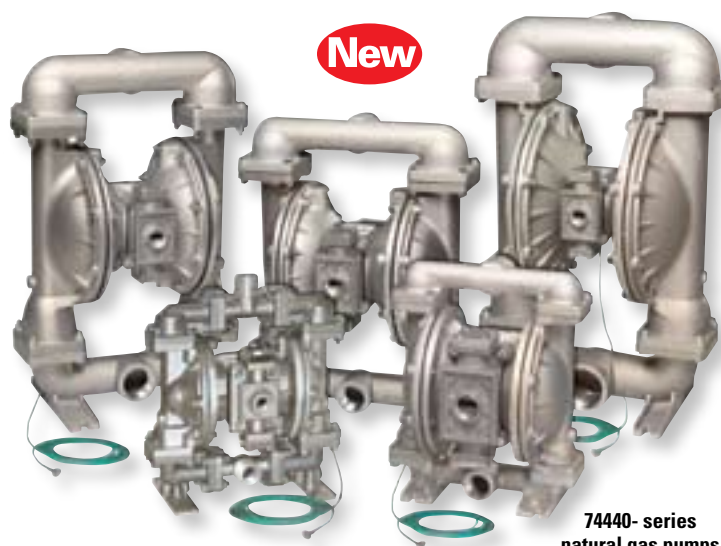
Key	Catalog number	Strokes/gallon	Wetted materials	Container adapter	Inlet tube L OD	Outlet hose L OD	Dimensions L Dia	Price
A	SL-06437-00	32	PVC barrel and hose, urethane-Buna valves and seals	None	72" 1/2"	36" 1/2"	9" 1 1/4"	
B	SL-06433-60	26	PVC body and hose, Hypalon® valves and seals, LDPE tube	3/4" NPT(M)*	18" 9/16"	9" 9/16"	12" 1 1/4"	
C	SL-06437-10	16	PVC body and hose, Hypalon valves and seals, LDPE tube	2" IPS	18" 9/16"	48" 9/16"	18" 1 1/4"	
	SL-70607-00	32	PVC barrel, shaft, and hose	None	None	60" 9/16"	9" 1 1/4"	
	SL-70607-10	26	PVC barrel and hose, LDPE tube	18" 9/16"	48" 9/16"	12" 1 1/4"	1 1/4"	
	SL-70607-12	12	PVC barrel and hose, PVC tube	2" IPS	—	48" 9/16"	36" 1 1/4"	
E	SL-06425-05	6	All HDPE parts	None	34" 1 1/2"	14" 1 1/2"	38" 1 3/16"	
	SL-06433-00			Glass carboy	—	—	36" 1 1/4"	
	SL-06433-10			None	—	—	38" 1 1/2"	
F	SL-06433-20		Solvent-welded PVC body and shaft, Viton valves and seals	2" IPS	—	—	36" 1 1/4"	
	SL-06433-30			Buttress Dell drum (M)	—	—	36" 1 1/4"	
	SL-06433-40			81-mm buttress (F)	—	—	36" 1 1/4"	

*Optional adapters are available—order separately online at www.coleparmer.com.

Special-Duty Air-Operated Double-Diaphragm Pumps

Natural gas operated and mining pumps

- Natural gas operated pump is CSA and NACE compliant
- Natural gas pumps are fully groundable
- Mining pump has Santoprene® elastomers, providing higher abrasion resistance
- Mining pump handles up to nearly 2" solids easily
- Heavy-duty pilot valve simplifies maintenance repairs due to "dirty" air
- Stall proof—stops automatically when discharged valve is closed



74440-series natural gas pumps

Specifications & Ordering Information

Suction lift: 24 ft, H₂O

Duty cycle: continuous

Viscosity: up to 11,000 cp

Run dry: yes

Max media pressure: 125 psig

Catalog number	Max GPM	Max psi	Port size	Max particle size	Max temp	Diaphragm material	Air inlet requirements			Dimensions (L x W x H)	Shpg wt lb (kg)	Price		
							Connection	Max psi	scfm					
A Natural gas powered pumps (instead of air)														
SL-74440-30	15	100	1/2" MNPT	0.125"	190° (88°C)	Buna N	1/4" NPT(F)	100	24	11½" x 10¼" x 7⅝"	15 (6.8)			
SL-74440-32	45		1" NPT(F)				1/2" NPT(F)		45	12¾" x 10¼" x 10⅝"	28 (12.7)			
SL-74440-34	105		1½" NPT(F)	0.25"			3/4" NPT(F)		60	21⅝" x 16⅝" x 12⅜"	59 (26.8)			
SL-74440-36	150		2" NPT(F)						110	26⅜" x 16⅝" x 12⅜"	69 (31.3)			
B Mining pump														
SL-74440-40	155	100	2" NPT(F)	1.9"	150° (66°C)	Santoprene	¾ NPT (F)	100	150	27" x 24½" x 26"	130 (59.0)			

Cole-Parmer Close-Coupled Industrial Gear Pumps

Rugged corrosion-resistant bronze construction provides long service life

- Compact footprint with close-coupled design
- Easy assembly to NEMA and IEC motor frames

These rotary gear pumps are suitable for all liquids that are compatible with bronze—most common liquids are water, oil and mild chemicals (pH from 4 to 11). Long service life is achieved through thoughtful design and chosen materials of construction: bronze pump housings and gears, 303 stainless steel shafts, carbon-graphite bearings, and Buna N lip seal.

Choose a gear pump head to mount to your own motor (adapters for NEMA or IEC motors are sold separately below) or select a system that has the pump head conveniently mounted to a standard (NEMA 56C) TEFC motor.

Specifications & Ordering Information

Suction lift: 20 ft (pump needs to be primed initially and foot valve is recommended)

Duty cycle: continuous

Reversible: no

Run dry: no

Particulates: no

Catalog number	Flow at 1750 rpm (GPM)	Max pressure (psig)	Port size	Max temperature	Relief valve	Motor		Power		Dimensions, pump head (L x W x H)	Price
						Speed	hp	VAC	Hz		
Pump heads only											
SL-70738-00	1.0	100	1/4"	140°F (60°C)	No	—	—	—	—	4 ¹³ / ₁₆ " x 2 ¹¹ / ₁₆ " x 3 ³ / ₁₆ "	
SL-70738-02	2.0		1/4"							5 ³ / ₁₆ " x 2 ¹¹ / ₁₆ " x 3 ³ / ₁₆ "	
SL-70738-04	4.5		3/8"							5 ³ / ₁₆ " x 2 ¹³ / ₁₆ " x 4"	
SL-70738-10	1.0	100	1/4"	140°F (60°C)	Yes	—	—	—	—	4 ¹³ / ₁₆ " x 4 ⁵ / ₁₆ " x 3 ³ / ₁₆ "	
SL-70738-12	2.0		1/4"							5 ³ / ₁₆ " x 4 ⁵ / ₁₆ " x 3 ³ / ₁₆ "	
SL-70738-14	4.5		3/8"							5 ³ / ₁₆ " x 2 ¹³ / ₁₆ " x 4 ³ / ₈ "	
Systems (pump head mounted on NEMA 56C TEFC motor)											
SL-70738-50	1.0	100	1/4"	140°F (60°C)	No	1750 rpm	1/3	115/208-230	60	4 ¹³ / ₁₆ " x 2 ¹¹ / ₁₆ " x 3 ³ / ₁₆ "	
SL-70738-52	2.0		1/4"							5 ³ / ₁₆ " x 2 ¹¹ / ₁₆ " x 3 ³ / ₁₆ "	
SL-70738-54	4.5		3/8"							5 ³ / ₁₆ " x 2 ¹³ / ₁₆ " x 4"	
SL-70738-60	1.0	100	1/4"	140°F (60°C)	Yes	1750 rpm	1/3	115/208-230	60	4 ¹³ / ₁₆ " x 4 ⁵ / ₁₆ " x 3 ³ / ₁₆ "	
SL-70738-62	2.0		1/4"							5 ³ / ₁₆ " x 4 ⁵ / ₁₆ " x 3 ³ / ₁₆ "	
SL-70738-64	4.5		3/8"							5 ³ / ₁₆ " x 2 ¹³ / ₁₆ " x 4 ³ / ₈ "	

[SL-70738-90](#) Pump head adapter, for NEMA

[SL-70738-92](#) Pump head adapter, for IEC motor

Cole-Parmer Gear Pump Systems

New

Low-flow 0.017 mL/rev models

Order the complete system—drive and pump head—with a single catalog number

Benchtop Analog Drive

Analog drives provide continuous-duty operation with Micropump® A-mount pump heads. Gradual, one-second acceleration offers smooth control of drive speed and flow rate. The permanent-magnet, direct-current (PMDC) drive is built to last—excellent for long-term applications.

Benchtop Digital Drive

Calibrate, copy, and dispense features produce precise, pulseless batching and dispensing. Displacement and flow values for all Micropump A-mount pump heads are stored in memory—simply enter the pump head size (gear code) to retrieve the displacement per revolution. IP23-rated enclosure protects the internal components.

What's included: the 115 VAC models have a 6-ft modular line cord with U.S. standard plug; the 220 VAC models have a 6-ft modular line cord with IEC 320/CEE 22 connector—specify country to obtain correct line cord.



74014-30

Specifications & Ordering Information

Viscosity: 0.2 to 1500 cp

Suction lift: 24" of H₂O (at 1750 rpm)

Duty cycle: continuous

Remote control

74013-00 to -75: none

74014-00 to -75: (input) on/off by contact closure 0 to 10 VDC, 0 to 20 mA, 4 to 20 mA, and remote output

Max system temperature: 104°F (60°C)

Speed

Analog drives: 50 to 5000 rpm

Digital drives: 60 to 3600 rpm

ISO9001:2000
SUPPLIER CERTIFIED

UL US CE 2 year warranty

Dimensions

Analog drives: 8 1/2" L x 6 3/8" W x 5 1/2" H

Digital drives: 7 3/4" L x 1 1/2" W x 7 1/4" H

Flow rates (mL/min)*			Max pressure		Port size NPT(F)	Wetted parts			Temperature range	Power (VAC)	Benchtop analog drives		Benchtop digital drives		Service kits	
mL/rev	at 50 rpm	at 3600 rpm	Diff (psi)	System (psi)		Body	Gears	Seals			Catalog number	Price	Catalog number	Price	Catalog number	Price
0.017	0.85	85	20	300	1/8"				316 SS	Graphite						
0.092	4.60	331.2	75	300	1/8"	316 SS	PPS	PTFE	-50 to 350°F (-46 to 177°C)	115 220	SL-74013-00 SL-74013-05	SL-74014-00 SL-74014-05	SL-74012-02	-		
0.316	15.8	1137.6	75	300	1/8"	316 SS	PPS	PTFE	-50 to 130°F (-46 to 54°C)	115 220	SL-74013-10 SL-74013-15	SL-74014-10 SL-74014-15	SL-74012-12	-		
0.64	32.0	2304	75	300	1/8"	316 SS	PPS	PTFE	-50 to 130°F (-46 to 54°C)	115 220	SL-74013-20 SL-74013-25	SL-74014-20 SL-74014-25	SL-74012-22	-		
0.91	45.5	3276	75	300	1/8"	316 SS	PPS	PTFE	-50 to 130°F (-46 to 54°C)	115 220	SL-74013-30 SL-74013-35	SL-74014-30 SL-74014-35	SL-74012-32	-		
1.17	58.5	4212	60	300	1/8"	316 SS	PPS	Viton®	-50 to 350°F (-46 to 177°C)	115 220	SL-74013-40 SL-74013-45	SL-74014-40 SL-74014-45	SL-74012-42	-		

*Flow rates in mL/min are based on water at room temperature and no back pressure.

Cole-Parmer Air Admiral® Vacuum/Pressure Pumps and Stations

Compact size and integral handle make pump easily transportable

- Economical pump serves as pressure or vacuum source with an excellent price-to-performance ratio
- Low-friction piston runs cool and quiet for a long service life with consistent performance

This pump is designed for portability and versatility with a tough, lightweight plastic housing and integral carrying handle. The long-wearing motor delivers performance characteristics suitable for a wide range of applications. Pump features a convenient cord storage compartment in its base.

Air Admiral Vacuum Stations provide you with the portability of the standard Air Admiral but with enhanced features of a vacuum gauge to measure the level of the system, regulator valve to adjust the vacuum level, and a catchpot to prevent ingestion of fluids in the pump.

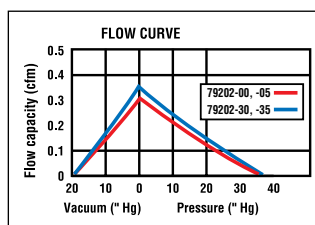
What's included: 6-ft cord with plug (U.S. standard on 115 VAC models; European plug on 230 VAC models).

Note: Do not pump liquids or immerse pump. Avoid organic, basic, and acidic vapors.

Specifications & Ordering Information

Wetted parts: glass-filled polyester piston cup retainer and head, Ryton® cylinder sleeve, valves of Viton® fluoroelastomer, PTFE piston cup, silicone tubing, Delrin® fittings

Dimensions: 7⁵/₈" L x 4¹/₂" W x 7¹/₂" H
Duty cycle: continuous



79202-00

New



79202-30



Catalog number	Free-air capacity cfm (L/min)	Max vacuum	Max pressure	Max temp	Port sizes (vacuum/pressure)	Motor		Noise rating	Power (VAC, Hz)	Amps	Price
						Type	hp				
Air Admiral vacuum pumps											
SL-79202-00	0.37 (10.5)	20" Hg	33 psi	104°F (40°C)	1/4" hose barb	Shaded pole	1/25	57 dB(A) at 3 ft (1 m)	115, 60	1.6	
SL-79202-05	0.31 (8.8)								230, 50	0.8	
Air Admiral vacuum station											
SL-79202-30	0.37 (10.5)	20" Hg	—	104°F (40°C)	1/4" hose barb	Shaded pole	1/25	57 dB(A) at 3 ft (1 m)	115, 60	1.6	
SL-79202-35	0.31 (8.8)								230, 50	0.8	

SL-06413-20 Tygon® vacuum tubing, 1/4" ID x 5/8" OD. Pack of 10 feet

High-Capacity Vacuum/Pressure Pumps

Free-air capacities up to 2.2 cfm (62.3 L/min)

- Shaded-pole fan-cooled motor has thermal overload switch to protect your pump system
- Heads on pumps 07061-60 and -05 are connected in parallel for higher capacity; heads on 07061-11 and -13 are connected in series for greater vacuum
- Select pumps with or without gauges, regulators, and valves.

What's included: 6-ft, three-wire cord (U.S. standard plug on 115 VAC models). Models 07061-11 and -13 includes a filter/muffler.

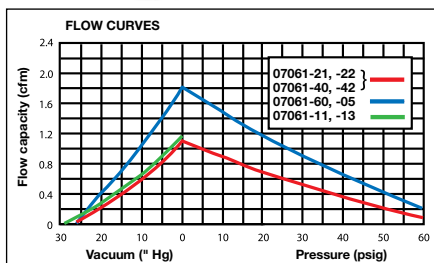
Specifications & Ordering Information

Wetted parts: aluminum, stainless steel, Nordel®, and Nomex®

Port size: 1/4" NPT(F), 3/8" hose barb on gauges

Duty cycle: continuous
Noise rating: 68 dB(A)

Motor: permanent split capacitor



07061-40

ISO9001:2000
CERTIFIED SUPPLIER

Catalog number	Pump head configuration	Free-air capacity cfm (L/min)	Max vacuum	Max pressure	Max temperature	hp	Power (VAC, Hz)	Amps	Dimensions (L x W x H)	Price
Pump without gauges or regulators (order regulators separately below; order gauges on page 47 and at ColeParmer.com)										
SL-07061-21 SL-07061-22	Single	1.1 (31.2) 1.0 (28.3)	25.5" Hg 24.0" Hg	60 psi	100°F (38°C)	1/8	115, 60 220/240, 50	4.2 2.2/1.9	7 ⁵ / ₈ " x 5 ¹ / ₈ " x 10 ¹ / ₄ "	
Pumps with gauges, regulators, and adjustable relief valve										
SL-07061-40 SL-07061-42	Single	1.1 (31.2) 1.0 (28.3)	25.5" Hg 24.0" Hg	60 psi	100°F (38°C)	1/8	115, 60 220/240, 50	4.2 2.2/1.9	7 ⁵ / ₈ " x 5 ¹ / ₈ " x 10 ¹ / ₄ "	
SL-07061-60 SL-07061-05	Dual/parallel	2.2 (62.3) 1.8 (51.0)	25.5" Hg 24.0" Hg	60 psi	100°F (38°C)	1/4	115, 60 220, 50	3.6 2.0	11 ¹³ / ₁₆ " x 5 ¹ / ₂ " x 10 ¹ / ₄ "	
Pump with vacuum gauge only										
SL-07061-11 SL-07061-13	Dual/series	1.15 (32.5) 0.85 (24.0)	29.0" Hg 28.0" Hg	—	100°F (38°C)	1/4	115, 60 220, 50	3.6 2.0	11 ¹³ / ₁₆ " x 5 ¹ / ₂ " x 10 ¹ / ₄ "	

SL-07061-32 Pressure regulator assembly for pumps 07061-21 and -22

SL-07061-30 Vacuum regulator assembly for pumps 07061-21 and -22

SL-07061-01 Service kit for all pumps

SL-07061-03 Service kit for dual-head pumps. Pumps 07061-60, -05, -11 and -13 also require kit 07061-01 above

SL-07061-06 Diaphragm for all models, neoprene/nylon

SL-07061-04 Replacement diaphragm for all models, Nordel/Nomex

Cole-Parmer PFA Tubing



Applications: Demanding lab, chemical, electrical, mechanical, pharmaceutical, and automotive applications. For the transfer of high-temperature or highly corrosive materials. Also good for high-purity work.

Characteristics: Chemically inert, nontoxic, and virtually nonporous. Excellent crack- and stress-resistance. Low coefficient of friction. Translucent.

Resin certification: Resin is FDA-compliant (21 CFR 177.1550); meets USP Class VI requirements. Tubing is manufactured according to GMP.

Temperature range: -320 to 500°F (-195 to 260°C)

Sterilize: Autoclave, ethylene oxide, or use dry heat.

Catalog number	Dimensions: in. (mm)			Max psi at 70°F	Price
	ID	OD	Wall		
SL-06371-00	1/32 (0.8)	1/16 (1.6)	1/64 (0.4)	600	
SL-06375-01	1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	592	
SL-06371-01	3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	471	
SL-06371-02	1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	385	
SL-06371-13	1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	600	
SL-06375-02	5/32 (4.0)	1/4 (6.4)	3/64 (1.2)	421	
SL-06371-03	3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	280	
SL-06371-14	3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	471	
SL-06375-04	7/32 (5.6)	5/16 (8.0)	3/64 (1.2)	300	
SL-06371-04	1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	220	
SL-06375-05	1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	388	
SL-06371-11	19/64 (7.5)	3/8 (9.6)	5/128 (1.0)	229	
SL-06371-05	5/16 (8.0)	3/8 (9.6)	1/32 (0.8)	180	
SL-06371-15	5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	324	
SL-06371-06	3/8 (9.6)	7/16 (11.2)	1/32 (0.8)	153	
SL-06375-07	3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	283	
SL-06371-12	2/5 (10.2)	1/2 (12.7)	1/20 (1.2)	220	
SL-06371-07	7/16 (11.2)	1/2 (12.8)	1/32 (0.8)	133	
SL-06371-16	7/16 (11.2)	9/16 (14.3)	1/16 (1.6)	246	
SL-06371-08	1/2 (12.8)	9/16 (14.3)	1/32 (0.8)	117	
SL-06371-17	1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	220	
SL-06371-09	9/16 (14.3)	5/8 (16.0)	1/32 (0.8)	105	
SL-06371-18	9/16 (14.3)	11/16 (17.5)	1/16 (1.6)	198	
SL-06376-22	5/8 (16.0)	11/16 (17.6)	1/32 (0.8)	95	
SL-06375-08	5/8 (16.0)	3/4 (19.2)	1/16 (1.6)	150	
SL-06371-10	11/16 (17.5)	3/4 (19.1)	1/32 (0.8)	87	
SL-06371-19	11/16 (17.5)	13/16 (20.6)	1/16 (1.6)	166	
SL-06376-24	3/4 (19.0)	13/16 (20.6)	1/32 (0.8)	87	
SL-06371-20	3/4 (19.0)	7/8 (22.2)	1/16 (1.6)	153	
SL-06376-28	1 1/4 (31.8)	1 1/2 (34.1)	1/25 (1.2)	80	

Cole-Parmer PTFE Tubing



Applications: Demanding lab, chemical, electrical, mechanical, pharmaceutical, and automotive applications. Good for high-purity work. PTFE tubing withstands extreme temperatures.

Characteristics: Chemically inert, nontoxic, and virtually nonporous. Excellent crack- and stress-resistance. Low coefficient of friction. Translucent.

Resin certification: Resin is FDA-compliant (21 CFR 177.1550); meets USP Class VI requirements. Tubing is manufactured according to GMP.

Temperature range: -400 to 500°F (-240 to 260°C)

Sterilize: With autoclave, ethylene oxide, or use dry heat.

Catalog number	Dimensions: in. (mm)			Max psi at 70°F	Price/pk
	ID	OD	Wall		
SL-06407-41	1/32 (0.8)	1/16 (1.6)	1/64 (0.4)	370	
SL-06605-00	1/32 (0.8)	1/16 (1.6)	1/64 (0.4)	375	
SL-06407-42	1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	370	
SL-06605-01	3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	294	
SL-06605-02	1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	240	
SL-06605-13	1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	375	
SL-06605-11	5/32 (4.0)	1/4 (6.4)	3/64 (1.2)	274	
SL-06407-44	3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	175	
SL-06605-14	3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	294	
SL-06605-03	1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	137	
SL-06605-15	1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	240	
SL-06407-46	19/64 (7.5)	3/8 (9.6)	1/25 (1.0)	143	
SL-06605-04	5/16 (8.0)	3/8 (9.6)	1/32 (0.8)	113	
SL-06605-16	5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	203	
SL-06605-05	3/8 (9.6)	7/16 (11.2)	1/32 (0.8)	96	
SL-06605-17	3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	175	
SL-06407-48	2/5 (10.2)	1/2 (12.8)	1/20 (1.4)	137	
SL-06605-06	7/16 (11.2)	1/2 (12.8)	1/32 (0.8)	83	
SL-06605-19	7/16 (11.2)	9/16 (14.3)	1/16 (1.6)	154	
SL-06605-07	1/2 (12.8)	9/16 (14.3)	1/32 (0.8)	73	
SL-06605-20	1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	137	
SL-06605-08	9/16 (14.3)	5/8 (16.0)	1/32 (0.8)	66	
SL-06605-21	9/16 (14.3)	11/16 (17.5)	1/16 (1.6)	124	
SL-06605-09	5/8 (16.0)	11/16 (17.6)	1/32 (0.8)	59	
SL-06605-22	5/8 (16.0)	3/4 (19.2)	1/16 (1.6)	113	
SL-06605-10	11/16 (17.5)	3/4 (19.1)	1/32 (0.8)	54	
SL-06605-23	11/16 (17.5)	13/16 (20.6)	1/16 (1.6)	103	
SL-06605-25	3/4 (19.0)	7/8 (22.2)	1/16 (1.6)	96	

Cole-Parmer FEP Tubing



Applications: Demanding lab, chemical, electrical, mechanical, pharmaceutical, and automotive applications. Excellent for the transfer of extreme temperature or highly corrosive materials. Also good for high-purity work.

Characteristics: Chemically inert, nontoxic, heat resistant, with a low coefficient of friction. Doesn't deteriorate with age. Tough, but bends even at -454°F (-270°C). Translucent.

Resin certification: Resin is FDA-compliant (21 CFR 177.1550); meets USP Class VI requirements. Tubing is manufactured according to GMP.

Temperature range: -454 to 400°F (-270 to 205°C)

Sterilize: With autoclave, ethylene oxide, or use dry heat.

Catalog number	Dimensions: in. (mm)			Max psi at 70°F	Price/25-ft pk
	ID	OD	Wall		
SL-06406-60	1/32 (0.8)	1/16 (1.6)	1/64 (0.4)	500	
SL-06406-62	1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	444	
SL-06406-63	3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	353	
SL-06406-64	1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	289	
SL-06450-05	1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	450	
SL-06450-04	5/32 (4.0)	1/4 (6.4)	3/64 (1.2)	329	
SL-06406-66	3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	209	
SL-06450-06	3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	353	
SL-06406-72	1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	150	
SL-06450-07	1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	288	
SL-06450-02	19/64 (7.5)	3/8 (9.6)	5/128 (1.0)	172	
SL-06406-74	5/16 (8.0)	3/8 (9.6)	1/32 (0.8)	140	
SL-06450-08	5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	243	
SL-06406-12	3/8 (9.6)	7/16 (11.2)	1/32 (0.8)	110	
SL-06450-09	3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	210	
SL-06450-03	2/5 (10.2)	1/2 (12.7)	1/20 (1.2)	165	
SL-06406-76	7/16 (11.1)	1/2 (12.8)	1/32 (0.8)	102	
SL-06450-14	7/16 (11.1)	9/16 (14.3)	1/16 (1.6)	185	
SL-06406-18	1/2 (12.8)	9/16 (14.3)	1/32 (0.8)	88	
SL-06450-15	1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	165	
SL-06406-78	9/16 (14.3)	5/8 (16.0)	1/32 (0.8)	77	
SL-06450-16	9/16 (14.3)	11/16 (17.5)	1/16 (1.6)	149	
SL-06450-00	5/8 (16.0)	11/16 (17.5)	1/32 (0.8)	71	
SL-06450-17	5/8 (16.0)	3/4 (19.2)	1/16 (1.6)	135	
SL-06450-01	11/16 (17.5)	3/4 (19.1)	1/32 (0.8)	65	
SL-06450-18	11/16 (17.5)	13/16 (20.6)	1/16 (1.6)	124	
SL-06450-19	3/4 (19.2)	7/8 (22.2)	1/16 (1.6)	115	

**buy more,
save more**

4-9 packs **save 10%** 10-19 packs **save 15%** 20+ packs **save 20%**

Mix and match packs of any items from the "green" tables to save!

Tygon® Fuel and Lubricant Tubing



Formulation: Tygon F-4040-A

Applications: Fuels and industrial lubricants—gasoline, kerosene, heating oils, cutting compounds, and glycol-based coolants. Resists most hydrocarbons.

Characteristics: Resists embrittlement and swelling, ozone- and UV-resistant, with low-extractability. Translucent yellow.

Resin certification: Tubing is manufactured according to GMP.

Temperature range: -35 to 165°F (-37 to 74°C)

Sterilization: Not recommended.

Catalog number	Dimensions: in. (mm)			Max psi at 70°F	Price/50-ft pk
	ID	OD	Wall		
SL-95633-00	3/32 (2.4)	3/16 (4.8)	3/64 (1.2)	52	
SL-95633-01	1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	52	
SL-95633-02	3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	37	
SL-95633-03	1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	30	
SL-95633-04	5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	25	
SL-95633-05	3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	21	
SL-95633-06	7/16 (11.2)	9/16 (14.4)	1/16 (1.6)	19	
SL-95633-08	1/2 (12.8)	3/4 (19.2)	1/8 (3.2)	30	
SL-95633-09	5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	25	
SL-95633-10	3/4 (19.2)	1 (25.4)	1/8 (3.2)	21	

Certificates of Tubing and Fitting Resin Compliance

Cole-Parmer will provide a certificate of tubing resin compliance FREE at your request with each tubing or fittings order. Resin certificates list your company's name, PO number, order reference number, catalog number, tubing or fitting formulation, compound number, lot number, and the regulations and agencies the tubing complies with, including: FDA (United States Food and Drug

Administration), USP (U.S. Pharmacopoeia), USDA (U.S. Department of Agriculture), National Formulary, NSF International, GMP (Good Manufacturing Practices), EP, and 3A.

Look for the "certification ribbon" (see above) on pages 42-44 to identify when a certificate of resin compliance is available.

Tygon® Lab Tubing



Formulation: Tygon R-3603

Applications: General laboratory use.

Characteristics: Long life, won't age or oxidize, fits tightly to glass and metal, bends to small radius curves, nontoxic. Transparent.

Resin certification: FDA-compliant (21 CFR 175.300). Made according to GMP.

Temperature range: -58 to 165°F (-50 to 74°C)

Sterilize: Ethylene oxide or autoclave for 30 min at 250°F (121°C), 15 psi. After autoclaving, dry at no more than 150°F (66°C) for 2 to 2 1/2 hours.

Catalog number	Dimensions: in. (mm)			Max psi at 70°F	Price/50-ft pk
	ID	OD	Wall		
SL-06408-60	1/32 (0.8)	3/32 (2.4)	1/32 (0.8)	52	
SL-06408-62	1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	49	
SL-06408-66	1/16 (1.6)	3/16 (4.8)	1/16 (1.6)	75	
SL-06408-63	3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	40	
SL-06408-64	1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	31	
SL-06408-47	1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	43	
SL-06408-71	1/8 (3.2)	3/8 (9.6)	1/8 (3.2)	82	
SL-06408-65	5/32 (4.0)	7/32 (5.6)	1/32 (0.8)	25	
SL-06408-66	3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	24	
SL-06408-03	3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	32	
SL-06408-48	3/16 (4.8)	7/16 (11.2)	1/8 (3.2)	58	
SL-06408-49	1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	19	
SL-06408-50	1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	25	
SL-06408-72	1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	34	
SL-06408-51	1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	43	
SL-06408-52	5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	21	
SL-06408-53	5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	29	
SL-06408-54	5/16 (8.0)	3/4 (19.2)	1/8 (3.2)	36	
SL-06408-12	3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	18	
SL-06408-55	3/8 (9.6)	9/16 (14.4)	3/32 (2.4)	25	
SL-06408-56	3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	32	
SL-06408-15	7/16 (11.2)	9/16 (14.4)	1/16 (1.6)	16	
SL-06408-18	1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	14	
SL-06408-57	1/2 (12.8)	11/16 (17.6)	3/32 (2.4)	20	
SL-06408-74	1/2 (12.8)	3/4 (19.2)	1/8 (3.2)	25	
SL-06408-25	5/8 (16.0)	13/16 (20.8)	3/32 (2.4)	17	
SL-06408-58	5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	21	
SL-06408-31	3/4 (19.2)	1 (25.4)	1/8 (3.2)	18	
SL-06408-36	1 (25.4)	1 1/4 (31.8)	1/8 (3.2)	14	
SL-06408-59	1 (25.4)	1 3/8 (35.0)	3/16 (4.8)	19	
SL-06408-75	1 1/4 (31.7)	1 1/2 (38.1)	1/8 (3.1)	17	
SL-06408-76	1 1/4 (31.7)	1 3/4 (44.4)	1/4 (6.4)	30	
SL-06408-77	1 1/2 (38.1)	2 (50.8)	1/4 (6.4)	26	

Cole-Parmer Compression Fitting Kits

Get organized today!

Organize the fittings at your workbench with these convenient fittings kits. An assortment of compression fittings in a variety of sizes comes in an impact-resistant plastic box with secure snap-shut latch to prevent spillage. Follow the label card to locate the fittings you need easily. Choose from three fitting materials: nylon, white polypropylene (PP), and Kynar®. Order storage rack separately below table.

Nylon. Good chemical resistance. Temp range: -40 to 200°F (-40 to 93°C).

White polypropylene (PP). Very good chemical resistance. Temp range: 0 to 275°F (-17 to 135°C).

Kynar®. Excellent chemical resistance. Temp range: -79 to 275°F (-62 to 135°C).

Fitting sizes	Material	Catalog number	Price
Union connector/reducer kits			
Straight union: 1/4", 5/16", 3/8", 1/2"	Nylon	SL-31514-51	
Reducing union: 1/4" x 1/4", 3/8" x 1/4", 1/2" x 3/8"	White PP	SL-31514-52	
Elbow: 1/4", 3/8", 1/2"	Kynar®	SL-31514-53	
Tee: 1/4", 5/16", 3/8", 1/2"			
PP compression nut: 1/4", 5/16", 3/8", 1/2"			
Threaded adapter kits			
Male threaded adapter: 1/4" x 1/4", 5/16" x 1/4", 3/8" x 1/4", 1/2" x 3/8", 1/2" x 1/2"	Nylon	SL-31514-54	
Male threaded adapter elbow: 1/4" x 1/4", 5/16" x 1/4", 3/8" x 1/4", 1/2" x 3/8", 1/2" x 1/2"	White PP	SL-31514-55	
Female threaded adapter: 1/4" x 1/4", 5/16" x 1/4", 3/8" x 1/4", 1/2" x 3/8"	Kynar	SL-31514-56	
PP compression nut: 1/4", 5/16", 3/8", 1/2"			
Elbow/tee kits			
Union elbow: 1/4", 3/8", 1/2"	Nylon	SL-31514-57	
Union tee: 1/8", 1/4", 5/16", 3/8", 1/2"	White PP	SL-31514-58	
Male pipe adapter elbow: 1/8" x 1/8", 1/4" x 1/8", 1/4" x 1/4", 3/8" x 1/4", 3/8" x 3/8", 1/2" x 1/2"	Kynar	SL-31514-59	
PP compression nut: 1/4", 5/16", 3/8", 1/2"			

SL-31513-32 Storage rack holds four kits





Cole-Parmer Barbed Fitting Kits

Get organized today!

Organize your workstation with these convenient barbed fittings kits. Assorted fittings come in an impact-resistant plastic box with secure snap-shut latches to prevent spillage. Labeled compartments let you easily locate the fittings you want. Choose from four materials: high-density polyethylene, black nylon, natural polypropylene, and natural Kynar®. Order storage racks separately below right. (Kits only, not assorted packs.)

High-Density Polyethylene (HDPE)

Very good chemical resistance.
Temp range: -65 to 190°F (-53 to 87°C)

Nylon

Good chemical resistance.
Temp range: -40 to 200°F (-40 to 93°C)

Natural Polypropylene (PP)

Very good chemical resistance.
Temp range: 0 to 275°F (-17 to 135°C)

Kynar®

Excellent chemical resistance.
Temp range: -79 to 275°F (-62 to 35°C)



Labeled compartments help you find the fitting you want in a snap!

GO to page(s) 43

FREE certificates of fittings compliance are available—see page 43 for details.



GO to ColeParmer.com

ColeParmer.com/Tubing

For our full line of tubing and accessories.

Fitting sizes	Material	Catalog number	Price
Barbed connector/reducer kits			
Straight: 1/16" x 3/32", 1/8", 5/32", 3/16", 1/4"	HDPE	SL-31514-01	
Reducing: 1/16" x (3/32", 1/8"); 1/8" x (1/16", 3/32", 5/32", 3/16", 1/4"); 1/4" x (5/32", 3/16", 5/16")	Nylon	SL-31514-02	
Press-in Plugs 1/16", 3/32", 1/8"	Natural PP	SL-31514-03	
	Kynar®	SL-31514-04	
Straight: 1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 1"	HDPE	SL-31514-05	
Reducing: 1/4" x (5/16", 3/8", 1/2", 5/8"); 3/8" x (5/16", 1/2", 5/8"); 1/2" x (5/16", 5/8"); 5/16" x 5/8"	Nylon	SL-31514-06	
	Natural PP	SL-31514-07	
	Kynar	SL-31514-08	
Threaded barb adapter kits			
10-32 taper x 1/16", 3/32", 1/8", barb;	HDPE	SL-31514-09	
1/8" NPT(M) x 1/16", 3/32", 1/4", 5/16", 3/8";	Nylon	SL-31514-10	
1/4" NPT(M) x 1/8", 5/32", 3/16", 1/4", 5/16", 3/8", 1/2";	Natural PP	SL-31514-11	
3/8" NPT(M) x 1/4", 5/32", 3/8", 1/2"; 1/2" NPT(M) x 1/4", 3/8", 1/2", 5/8", 3/4"	Kynar	SL-31514-12	
1/8" NPT(M) x (1/4", 3/8"); 1/4" NPT(M) x (1/4", 3/8", 1/2");	HDPE	SL-31514-33	
3/8" NPT(M) x (1/4", 3/8", 1/2"); 1/2" NPT(M) x (1/4", 3/8", 1/2", 3/4");	Nylon	SL-31514-34	
3/4" NPT(M) x (1/4", 3/8", 1/2", 3/4", 1"); 1" NPT(M) x 1" barb.	Natural PP	SL-31514-35	
Nipples: 1/8" NPT(M), 1/4" NPT(M), 3/8" NPT(M), 1/2" NPT(M).	Kynar	SL-31514-36	
Barbed elbow/tee/Y-connector kits			
Elbows: 1/16", 3/32", 1/8", 5/32", 3/16", 1/4", 5/16"	HDPE	SL-31514-13	
Tees: 1/16", 3/32", 1/8", 5/32", 3/16", 1/4", 5/16"	Nylon	SL-31514-14	
Y-connectors: 1/16", 3/16", 1/4", 3/8"	Natural PP	SL-31514-15	
	Kynar	SL-31514-16	
Elbows: 1/4", 3/8", 1/2", 5/8", 3/4", 1"	HDPE	SL-31514-17	
Tees: 1/4", 3/8", 1/2", 5/8", 3/4"	Nylon	SL-31514-18	
	Natural PP	SL-31514-19	
	Kynar	SL-31514-20	
Threaded elbow/tee/plug/nipple kits			
Elbows: 10-32 taper x (1/16", 3/32", 1/8") barb;	HDPE	SL-31514-21	
1/8" NPT(M) x (1/16", 5/32", 1/4", 5/16", 3/8") barb	Nylon	SL-31514-22	
Tees: 10-32 taper x (1/16", 3/32", 1/8"); 1/8" NPT(M) x (1/16", 5/32", 1/4", 3/8")	Natural PP	SL-31514-23	
Nipples: 1/8" NPT(M) x 1/4", 3/8", 1/2"; Plug: 1/4" NPT(M)	Kynar	SL-31514-24	
Elbows: 1/8" NPT(M) x (1/4", 3/8"); 1/4" NPT(M) x (1/4", 3/8", 1/2");	HDPE	SL-31514-25	
3/8" NPT(M) x (1/4", 3/8", 1/2"); 1/2" NPT(M) x (1/4", 3/8", 1/2", 3/4")	Nylon	SL-31514-26	
Tees: 1/8" NPT(M) x (1/4", 3/8"); 1/4" NPT(M) x (1/4", 3/8", 1/2"); 1/2" NPT(M) x (1/4", 3/8", 1/2", 3/4")	Natural PP	SL-31514-27	
	Kynar	SL-31514-28	
BSPT threaded kits			
Adapters: 1/8" BSPT(M) x (1/8", 1/4", 3/8" barb);	HDPE	SL-31514-32	
1/4" BSPT(M) x (1/4", 3/8", 1/2" barb); 3/8" BSPT(M) x (1/4", 3/8" barb)	Nylon	SL-31514-29	
Elbows: 1/8" BSPT(M) x (1/8", 1/4", 3/8" barb);	Natural PP	SL-31514-30	
1/4" BSPT(M) x (1/4", 1/4", 1/2" barb); 3/8" BSPT(M) x (1/4", 3/8" barb)	Kynar	SL-31514-31	
Tees: 1/8" BSPT(M) x (1/8", 1/4", 3/8" barb); 1/4" BSPT(M) x (1/4", 3/8", 1/2" barb); 3/8" BSPT(M) x (1/4", 3/8" barb)			
Assortment packs			
Assortment pack includes straight, reducing, elbow, tee, and Y fittings in metric sizes from 4 to 16 mm (146 pieces total)	PP	SL-06286-00	
Mini fitting assortment pack. Contains 25 straight fittings, and 3/32" tubing ID sizes (240 pieces total)	PP	SL-06365-90	
T connector pack. Contains six each of the 4- to 14-mm sizes (36 pieces total)	PP	SL-06294-82	
Y connector pack. Contains six each of the 4- to 14-mm sizes	PP	SL-06295-82	
Straight/reducing connector pack. Contains two of each size of 1/16" to 1/8" fittings. (22 pieces total)	PP	SL-06460-00	
Assorted luer fittings (507 pieces total). See ColeParmer.com for kit composition.	PP, nylon, PC	SL-45511-00	

SL-31513-12 Storage rack holds four kits (models 31514-01, -02, -03, -04, -17, -18, -19, -20, -25, -26, -27, -28)

SL-31513-32 Storage rack holds four kits (all other models)

Note: Storage racks above are for kits only, not assortment packs.

Cole-Parmer Manifold Mixing Solenoid Valves

For liquid or gas control systems with aggressive or high-purity fluids

- PTFE wetted parts
- Continuous duty and high cycle life
- For pressure or vacuum service

These normally closed solenoid mixing valves feature low power consumption, minimal dead volume, and fast response time. All valves come with 15" (26 gauge) PTFE-coated lead wires.

Specifications & Ordering Information

Max temperature: 158°F (70°C)

Watts/solenoid: 2.6

Pressure

Orifice: 1/16"

Max flow: 14 LPM at 20 psi

Inlet port: 28" Hg to 20 psi

Ports: 1/4-28 flat bottom

Outlet port: 28" Hg to 35 psi

Description	12 VDC		24 VDC	
	Catalog number	Price	Catalog number	Price
2 solenoid, 2 inlet, 1 outlet	SL-01356-00		SL-01356-02	
3 solenoid, 3 inlet, 1 outlet	SL-01356-04		SL-01356-06	
4 solenoid, 4 inlet, 1 outlet	SL-01356-08		SL-01356-10	
5 solenoid, 5 inlet, 1 outlet	SL-01356-12		SL-01356-14	
6 solenoid, 6 inlet, 1 outlet	SL-01356-16		SL-01356-18	
8 solenoid, 8 inlet, 1 outlet	SL-01356-20		SL-01356-22	



CE

CoolCube™ Circuit

Preserve the life of your solenoid valves with this "hit and hold" circuit

01356-52



Cat. no.	Dimensions	Price
SL-01356-52	3/4" (19 mm) dia	

Cole-Parmer Solenoid-Operated Valves

Economical solenoid valve for use with many aggressive fluids

- Isolated solenoid eliminates contamination of fluid
- Fluid contacts only the polysulfone body and EPDM diaphragm

These valves feature excellent chemical resistance, fast response time, high cycle life, low power consumption and minimal dead volume. The fluid media does not come in contact with the solenoid or any metal parts. This two-way valve is available in normally open and normally closed configurations. It features simple barbed tubing connectors for quick and secure attachment; connector OD is 3/32".

Specifications & Ordering Information

Description	Orifice	C _v	Pressure range	Response time	Watts	12 VDC		24 VDC	
						Catalog number	Price	Catalog number	Price
Two-way normally closed	1/16"	0.02	Vac to 20 psi	20 ms	2.6	SL-05864-01		SL-05864-02	
Two-way normally open				25 ms		SL-05864-03		SL-05864-04	

New



05864-03

Cole-Parmer 2- and 3-Way Direct Lift Solenoid Valves

All-PTFE flow path is ideal for use with high-purity or corrosive fluids

- Minimal dead volume reduces problems with trapped liquids
- All wetted parts made of inert PTFE

Rated for 26" Hg vacuum. Maximum fluid temperature is 158°F (70°C). All valves have 15" PTFE-coated lead wires. Valves are compact and lightweight—mount them almost anywhere. Mounting holes on both the top and bottom enable you to install valves in any position.

Specifications & Ordering Information

Ports NPT(F)	Orifice	Max flow* at max psi	Max psi	Response time	Watts	12 VDC		24 VDC	
						Cat. no.	Price	Cat. no.	Price
2-way normally closed valves									
1/4-28	1/16"	16 L/min	30	20 ms	4.0	SL-01540-01		SL-01540-02	
1/4-28	1/16"	30 L/min	60	25 ms	8.0	SL-01540-03		SL-01540-04	
1/4-28	3/32"	25 L/min	20	20 ms	5.1	SL-01540-05		SL-01540-06	
1/8	5/32"	48 L/min	18	30 ms	8.0	SL-01540-07		SL-01540-08	
2-way normally open valves									
1/4-28	1/16"	16 L/min	30	20 ms	4.0	SL-01540-09		SL-01540-10	
3-way valves									
1/4-28	1/16"	16 L/min	30	20 ms	4.0	SL-01540-11		SL-01540-12	
1/4-28	1/16"	30 L/min	60	25 ms	8.0	SL-01540-13		SL-01540-14	
1/4-28	3/32"	25 L/min	20	25 ms	5.1	SL-01540-15		SL-01540-16	
1/8	5/32"	48 L/min	18	30 ms	8.0	SL-01540-17		SL-01540-18	

*Specified flow rates are for air.



01540-01

01540-13

Miniature Check Valves

Use with liquids and gases for pressure or vacuum applications. Breaking pressure is 0.18 psi, closing pressure is 0.014 psi. Maximum temperature (at maximum psi) is 250°F (121°C) for "A," "C," and "D," 200°F (93°C) for "B." Install in any position.

Note: Valves require 1 psi back pressure for a tight seal.



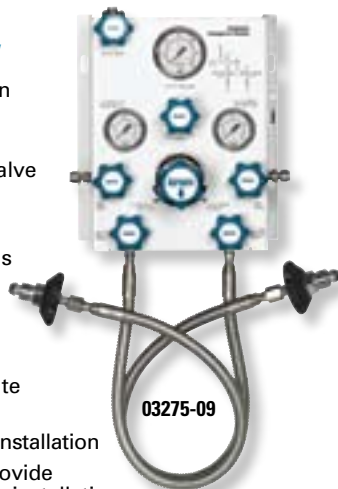
Specifications & Ordering Information

Catalog number	Tubing ID	C _v	Working pressure	Price
A Nylon body and fluorosilicone diaphragm				
SL-98553-00	1/8"	0.12	3 to 5 psi	
SL-98553-01	3/16"	0.13	3 to 5 psi	
SL-98553-02	1/4"	0.13	3 to 5 psi	
SL-98553-03	5/16"	0.22	3 to 30 psi	
B PP body and Viton® diaphragm				
SL-98553-10	1/8"	0.11	3 to 5 psi	
SL-98553-11	3/16"	0.12	3 to 5 psi	
SL-98553-12	1/4"	0.12	3 to 5 psi	
SL-98553-13	5/16"	0.13	3 to 5 psi	
C PVDF body and Viton diaphragm				
SL-98553-20	1/8"	0.11	3 to 5 psi	
SL-98553-21	3/16"	0.12	3 to 5 psi	
SL-98553-22	1/4"	0.12	3 to 5 psi	
SL-98553-23	5/16"	0.13	3 to 5 psi	
SL-98553-34	3/8"	0.12	3 to 5 psi	
D PVDF body and Kalrez® diaphragm				
SL-98553-32	1/4"	0.12	3 to 5 psi	

High-Purity Changeover Panels

Automatic changeover provides uninterrupted high-purity gas supply

- Eliminates atmospheric contamination during cylinder change out
- Includes mounting panel, pigtails, isolation valves, and outlet shut-off valve
- Control knob permits safe removal of empty cylinder
- Convuluted stainless steel diaphragms provide superior leak integrity without contamination from nonmetallic liner or seal
- Diaphragm packless isolation valves allow for purging pigtails and eliminate atmospheric contaminants
- Wall-mount panel affords easy on-site installation



These high-purity changeover panels provide continuous, uninterrupted gas supply on installations where reserve cylinders are used. Each unit consists of two identical regulators, one delivering gas at a slightly higher pressure than its twin. When the service cylinder is empty, the unit automatically withdraws gas from the reserve cylinder, eliminating the need to shut down the system to replace empty cylinders. Pressure gauges immediately indicate which cylinder is in use. Optional alarm indicates when cylinder changeover has occurred. The high-purity design and materials of construction (brass or stainless steel) make this system ideally suited for chromatography and laboratory gas applications. For applications using portable cylinder banks, a 6-foot pigtail is strongly recommended. Order pigtails and factory-installed alarm package at right.

Cole-Parmer Multi-Turn Needle Valves

Maximum pressure is 75 psi; maximum temperature is 200°F (93°C). Wetted parts are body and O-ring made of PTFE and CTFE valve spindle. Choose aluminum (Al) or 316 stainless steel (SS) body. Orifice is 0.125".



Specifications & Ordering Information

Catalog number	Max flow rate (mL/min)		Body type	Price
	Air	H ₂ O		
Multi-turn needle valves; 1/8" NPT(F) connectors				
SL-06393-70	2400	130	Aluminum	
SL-06393-60	55,000	2800		
SL-06393-80	2400	130	316 SS	
SL-06393-82	55,000	2800		
Multi-turn needle valves; 3/8" nipple connectors				
SL-06393-61	2400	130	Aluminum	
SL-06393-71	55,000	2800		
SL-06393-90	2400	130	316 SS	
SL-06393-92	55,000	2800		
Multi-turn needle valves; connectors for 1/4" OD (PTFE compression fittings, incl.)				
SL-06393-66	2400	130	Aluminum	
SL-06393-68	55,000	2800		
SL-06393-94	2400	130	316 SS	
SL-06393-96	55,000	2800		

Specifications & Ordering Information

Outlet pressure range: 10 to 200 psig (adjustable)
Max rated inlet pressure: 3000 psig
Max flow rate: 200 scfh @ 200 psig
Ambient operating temperature: -40 to 150°F (40 to 66°C)
Inlet gauge range: 0 to 4000 psig
Delivery gauge range: 0 to 300 psig
Designed leak rate: bubble-tight (helium)
Outlet: 1/4" Swagelok® fitting

Pigtails: 30" stainless steel (SS) corrugated bellows

Materials

Body: nickel-plated brass or stainless steel
 Bonnet: nickel-plated brass
 Seat: PCTFE
 Inlet gauge: 1 1/2" nickel plated brass or SS
 Diaphragm: 316L SS
 Outlet gauge: 2" nickel-plated brass or stainless steel
 Filter: SS screen (40-micron)

No. of cylinders	Brass		316 stainless steel	
	Cat. no.	Price	Cat. no.	Price
2	SL-03275-02		SL-03275-09	
4	SL-03275-04		SL-03275-11	
6	SL-03275-06		SL-03275-13	
8	SL-03275-08		SL-03275-15	

Accessories

SL-03275-17 Six-foot pigtails for use with portable cylinder banks (2 cylinder kit)
SL-03275-19 Six-foot pigtails for use with portable cylinder banks (4 cylinder kit)
SL-03275-21 Alarm package (non-explosion)
SL-03275-23 Alarm package (explosion proof)

Ashcroft® Digital Industrial Gauges

Operate with battery, 4 to 20 mA,
or in-line 12 to 36 VDC

- In-line powered unit acts as gauge, transducer, and switch
- Intrinsically-safe IP65 case
- Easy-to-read five-digit display

Digital industrial gauge is perfect for pharmaceutical and biotech applications with its $\pm 0.25\%$ accuracy. This accuracy includes linearity, hysteresis, repeatability, and terminal point accuracy.

The multi-functionality of the gauge is great for chemical, pulp and paper, wastewater, and filtration processes, using local indication with the 4 to 20 mA output and switching options. Switch is rated for 125 VAC, 0.5 amp. Gauge has unlimited deadband throughout its range and superior set point flexibility. Loop and line-powered gauges have output signals that enable monitoring and control from remote areas such as control rooms or enclosures. Gauge range is vacuum to 20,000 psi.

Gauge also has the added versatility of 10 engineering units, a menu-driven display of additional features, and password-protected calibration with zero and span. Max-pressure indication is standard, as well as battery life indicator and bar graph showing percent of full-scale pressure.

Menu mode allows access to configuration of gauge settings and auto-off options, as well as update rates, dampening, and field recalibration. Batteries are easily accessible—no tools needed.

Socket and sensor are stainless steel and welded together for added durability. Case is constructed of chemical resistant Noryl®, which has superior impact strength, is lightweight, and is hydrolytically stable. Lens is constructed of polyester.

What's included: two C batteries (for battery powered gauges only).

Specifications



Accuracy: $\pm 0.25\%$ full-scale

Dial size: 4 1/2"

Units of measure: psi, " H₂O, ft H₂O, mPa, mBar, kPa, kg/cm², Bar, " Hg, mm Hg

Operating temperature:

14 to 140°F (10 to 60°C)

Media compatibility: any media compatible with 17-4 and 316 stainless steel

Process connection: 1/4" NPT(M)

Zero adjustment range:
manual adjustment using menu

Output

Loop powered: 4 to 20 mA
Line powered: 12 to 36 VDC with single SPDT switch

Power

Battery powered: two C batteries
Loop powered: 4 to 20 mA
Line powered: 12 to 36 VDC

Display: 5-digit LCD, 0.88"H

Dimensions: 6"W x 5 3/4"H x 3 1/8"D



Ordering Information

Range	Resolution	Battery powered		Loop powered		Line powered	
		Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
30" Hg to 15 psi	0.00001" Hg	SL-68338-00		SL-68338-28		SL-68338-56	
30" Hg to 30 psi	0.00001" Hg	SL-68338-02		SL-68338-30		SL-68338-58	
30" Hg to 60 psi	0.00001" Hg	SL-68338-04		SL-68338-32		SL-68338-60	
0 to 30 psi	0.0001 psi	SL-68338-06		SL-68338-34		SL-68338-62	
0 to 60 psi	0.0005 psi	SL-68338-08		SL-68338-36		SL-68338-64	
0 to 100 psi	0.005 psi	SL-68338-10		SL-68338-38		SL-68338-66	
0 to 200 psi	0.01 psi	SL-68338-12		SL-68338-40		SL-68338-68	
0 to 600 psi	0.05 psi	SL-68338-14		SL-68338-42		SL-68338-70	
0 to 1000 psi	0.05 psi	SL-68338-16		SL-68338-44		SL-68338-72	
0 to 3000 psi	0.1 psi	SL-68338-18		SL-68338-46		SL-68338-74	
0 to 5000 psi	0.5 psi	SL-68338-20		SL-68338-48		SL-68338-76	
0 to 10,000 psi	0.5 psi	SL-68338-22		SL-68338-50		SL-68338-78	
0 to 15,000 psi	1.0 psi	SL-68338-24		SL-68338-52		SL-68338-80	
0 to 20,000 psi	1.0 psi	SL-68338-26		SL-68338-54		SL-68338-82	

SL-09376-02 Replacement batteries; C. Pack of 4

Ashcroft® Digital Pressure Gauges

Stainless steel sensor and nine engineering units make this gauge suitable for many applications

- $\pm 0.5\%$ full scale terminal point accuracy
- Easy-to-read, 4-digit display
- Ranges from vacuum to 5000 psi

A versatile and economic choice for a wide variety of pressure measurement applications. The many features of this gauge make it easy to use and a great value, such as zero and span field calibrations and a cycle life of 10⁵.

The case material is made of chemical-resistant Noryl®. Gauges feature backlight and peak hold. Sensor is welded to the socket for added durability. Max pressure indication reduces chances of damage to the unit. Gauges meet safety requirement of ASME B40.7, and are CE approved. Overpressure rating is 120 to 200% of range.



Specifications & Ordering Information



Accuracy: $\pm 0.5\%$ full-scale

Dial size: 2 1/2"

Units of measure:

psi, in Hg, cm Hg, mm Hg, kPa, mPa, Bar, kg/cm², ft H₂O

Operating temperature:

14 to 140°F (-10 to 60°C)

Media compatibility: any media not corrosive to stainless steel

Process connection:

1/4" NPT(M) bottom

Power: two AAA batteries (included)

Display: 4-digit, LCD, 0.5"H characters

Catalog number	Range	Resolution	Price
SL-68332-00	0 to 30" Hg	0.01" Hg	
SL-68332-02	0 to 30 psi	0.01 psi	
SL-68332-04	0 to 60 psi	0.01 psi	
SL-68332-06	0 to 100 psi	0.01 psi	
SL-68332-08	0 to 200 psi	0.1 psi	
SL-68332-10	0 to 300 psi	0.1 psi	
SL-68332-12	0 to 500 psi	0.1 psi	
SL-68332-14	0 to 1000 psi	0.1 psi	
SL-68332-16	0 to 5000 psi	1.0 psi	

SL-09376-00 Replacement batteries, AAA. Pack of 4

Complete
line of
products
onlineMore extensive offering of
"Flowmeters"**Cole-Parmer 150-mm Flowmeters****Longer 150-mm scale makes these flowmeters perfect for applications demanding high resolution**

- Ceramic millimeter scale is fused directly to flowtube
- A vertical tangential locator line ensures hairline accuracy in reading float position
- 16-turn high-precision valve features a "nonrising stem" to more accurately set your desired flow point

Each flowmeter consists of a heavy-walled glass flowtube mounted in a frame with white acrylic back plate (1/8" thick). Aluminum flowmeters are economical and good for general use with noncorrosive gases and liquids. Brass flowmeters are economical and good for use with water.

The 316 stainless steel flowmeters feature excellent chemical compatibility. Select a flowmeter with a high-precision valve for superior flow rate control—ideal for low-flow applications, for metering samples, and calibration gases for gas analyzers.

All flowmeters come with correlation data sheets for water and air at standard temperature and pressure (STP). We can also supply calibration data for oxygen, nitrogen, hydrogen, helium, CO₂, argon, other liquids and gases, and for conditions other than STP—call our Application Specialists for more information.



Front shield magnifies the scale 16% for easy reading

GO to ColeParmer.com

Pressure drop information for these flowmeters is available by clicking on the desired catalog number, then clicking on "More Info" in the sidebar.

Specifications**Accuracy:** ±2% full-scale**Repeatability:** ±0.25% full-scale**Operating temperature:**
-15 to 250°F (-26 to 121°C)**Maximum pressure:** 200 psi**Connections:** 1/8" NPT(F)**Materials of Construction**

Part	Aluminum	Brass	SS
Flowtube	Borosilicate glass		
Fittings, valves	Aluminum	Chrome-plated brass	316 SS
O-rings	Buna N		Viton®
Float	Glass, 316 SS, or carboloy		
Shield	Polycarbonate		
Frame	Aluminum/acrylic		

ISO 9001:2000
SUPPLIER CERTIFIED**Ordering Information**

Maximum flow rate (mL/min) [†]								Float [‡]	Correlated meters without valves		
H ₂ O*	Air*	O ₂	N ₂	H ₂	He	CO ₂	Ar		Aluminum	Brass	316 SS
									Cat. no.	Cat. no.	Cat. no.
0.19	18.7	17	20	37	16	23.6	15.4	G	SI-03267-00	SI-03269-50	SI-03269-01
0.53	49.1	42	48	94	46.2	56.4	43.5	G	SI-03267-04	SI-03269-54	SI-03269-05
0.85	92	81	92	208	90.1	103.1	75.6	G	SI-03267-08	SI-03269-58	SI-03269-09
0.94	73.1	54	62	123	53	72	49	SS	SI-03267-02	SI-03269-52	SI-03269-03
2.45	137	131	143	301	133	150	113	SS	SI-03267-06	SI-03269-56	SI-03269-07
4.74	264	233	271	627	283	281	218	SS	SI-03267-09	SI-03269-60	SI-03269-16
5.5	374	340	382	1021	450	355	305	G	SI-03267-15	SI-03269-62	SI-03269-18
16.5	825	772	827	2620	1490	725	687	G	SI-03267-16	SI-03269-66	SI-03269-17
20.4	817.1	753	824	2496	1290	728	676	SS	SI-03267-17	SI-03269-64	SI-03269-15
46	1682	1545	1662	5547	3397	1420	1380	SS	SI-03267-18	SI-03269-68	SI-03269-19
53.5	2313	2169	2395	7817	4880	2048	1949	G	SI-03267-20	SI-03269-70	SI-03269-21
84	3807	3485	3868	13,105	7803	3374	3151	G	SI-03267-24	SI-03269-74	SI-03269-25
130.4	4562	4341	4685	15,855	9770	3990	3903	SS	SI-03267-22	SI-03269-72	SI-03269-23
210	8678	8269	8916	29,840	19,426	7485	7366	G	SI-03267-28	SI-03269-78	SI-03269-29
217	7590	6992	7722	27,804	15,960	6308	6384	SS	SI-03267-26	SI-03269-76	SI-03269-27
506	16,737	15,710	17,021	59,996	38,576	14,051	14,131	SS	SI-03267-30	SI-03269-80	SI-03269-31
High-flow flowmeters											
541	22,586	22,263	33,920	85,812	54,586	19,654	20,035	G	SI-03267-32	SI-03269-82	SI-03269-33
1288	41,512	39,567	43,000	159,699	113,034	36,788	37,550	SS	SI-03267-34	SI-03269-84	SI-03269-35
1881	59,494	54,902	59,580	221,872	146,500	54,163	56,044	C	SI-03267-36	SI-03269-86	SI-03269-37

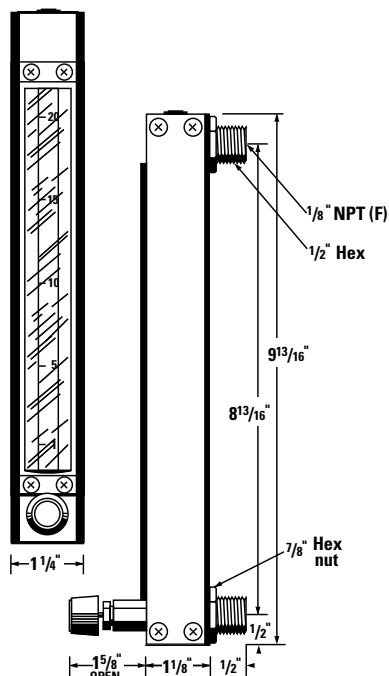
*Correlation data sheets for water and air are included with flowmeters.

[†]Flow rates are at standard temperature and pressure (70°F and 14.7 psi). Minimum flow rate is approx 10% of the maximum flow rate.[‡]Float material key: G = glass, SS = 316 stainless steel, C = carboloy

Aluminum flowmeter
without valve 03267-00

To Panel Mount

Drill two holes to fit inlet and outlet according to the diagrams below. Face width is 1 1/4". Secure flowmeter with the two retaining hex nuts (included).



Complete line of products online

More extensive offering of "Flowmeters"



Tripod Bases

Securely bench mount up to three flowmeters in any combination. Three leveling screws and spirit level are built into a clear acrylic base.



Catalog number	Number of meters held	Price
SL-03226-10	1	
SL-03226-30	1, 2, or 3	

Ordering Information

Correlated meters with valves			Correlated meters with high-resolution valves		
Aluminum	Brass	316 SS	Aluminum	Brass	316 SS
Cat. no.	Cat. no.	Cat. no.	Cat. no.	Cat. no.	Cat. no.
SL-03217-00	SL-03294-00	SL-03219-01	SL-03227-00	SL-03295-00	SL-03229-01
SL-03217-04	SL-03294-04	SL-03219-05	SL-03227-04	SL-03295-04	SL-03229-05
SL-03217-08	SL-03294-08	SL-03219-09	SL-03227-08	SL-03295-08	SL-03229-09
SL-03217-02	SL-03294-02	SL-03219-03	SL-03227-02	SL-03295-02	SL-03229-03
SL-03217-06	SL-03294-06	SL-03219-07	SL-03227-06	SL-03295-06	SL-03229-07
SL-03217-10	SL-03294-10	SL-03219-11	SL-03227-10	SL-03295-10	SL-03229-11
SL-03217-12	SL-03294-12	SL-03219-13	SL-03227-12	SL-03295-12	SL-03229-13
SL-03217-16	SL-03294-16	SL-03219-17	SL-03227-16	SL-03295-16	SL-03229-17
SL-03217-14	SL-03294-14	SL-03219-15	SL-03227-14	SL-03295-14	SL-03229-15
SL-03217-18	SL-03294-18	SL-03219-19	SL-03227-18	SL-03295-18	SL-03229-19
SL-03217-20	SL-03294-20	SL-03219-21	SL-03227-20	SL-03295-20	SL-03229-21
SL-03217-24	SL-03294-24	SL-03219-25	SL-03227-24	SL-03295-24	SL-03229-25
SL-03217-22	SL-03294-22	SL-03219-23	SL-03227-22	SL-03295-22	SL-03229-23
SL-03217-28	SL-03294-28	SL-03219-29	SL-03227-28	SL-03295-28	SL-03229-29
SL-03217-26	SL-03294-26	SL-03219-27	SL-03227-26	SL-03295-26	SL-03229-27
SL-03217-30	SL-03294-30	SL-03219-31	SL-03227-30	SL-03295-30	SL-03229-31
High-flow flowmeters					
SL-03217-32	SL-03294-32	SL-03219-33	SL-03227-32	SL-03295-32	SL-03229-33
SL-03217-34	SL-03294-34	SL-03219-35	SL-03227-34	SL-03295-34	SL-03229-35
SL-03217-36	SL-03294-36	SL-03219-37	SL-03227-36	SL-03295-36	SL-03229-37



316 SS flowmeter with high-resolution valve 03229-01

Brass flowmeter with valve 03294-16

INNOCAL®
INNOVATIVE CALIBRATION SOLUTIONS



Service includes a NIST-traceable calibration certificate with before and after test data at five- to seven points across range (0.1 to 60 LPM, 1 to 60,000 sccm).

SL-17080-00 NIST-traceable certificate for air/gas flowmeter

SL-17080-10 NIST-traceable certificate for mass flowmeter

Cole-Parmer Flowmeters and Proportional Controllers for Gases

Versatility and high accuracy from a laminar-based mass flowmeter

- Accuracy of $\pm 0.8\%$ of reading, $\pm 0.2\%$ full-scale; repeatability of $\pm 0.2\%$
- Measure 17 standard gases—user selectable from display
- 100 to 1 turndown with ranges of 0.5 sccm full-scale up to 1500 SLPM

These meters measure flow via pressure drop across a laminar flow element (LFE). Because the flow element makes the flow stream laminar, placement in the process does not require straight pipe runs upstream or downstream of the meter, greatly simplifying installation. As compared to thermal mass technologies, the LFE design provides an ultrafast response within 10 milliseconds and offers "instant on" with no warm-up time.

An integrated keypad around the display is all that is required to program the unit for service. The 0 to 5 VDC output allows transmission of the flow value to a remote display, recorder, or controller regulating a valve or pump.

Flow controllers feature an integrated PID to direct the unit's response to process changes. Flow set point is established with keypad, the optional set point control module, a 0 to 5 V signal, or an RS-232 input signal. Order set point control modules separately from the table. For portable flow metering applications, order the battery pack listed below table.

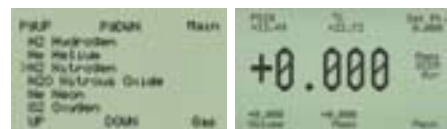
What's included: flowmeters include the integrated sensor, display, and transmitter; controllers also include the valve assembly. All models include a 120 VAC power adapter; 220 VAC European adapters may be ordered separately below.



Mass flowmeter 32908-59 shown with optional battery pack 32929-50



Flow controller 32907-11



Meters and controllers feature a dynamic display that simultaneously shows flow rate, line pressure, fluid temperature, and (for controllers) the set point. For the units shown, both power and input/output signals are transmitted through a single multi-pin connector.



Specifications & Ordering Information

Max particulate size

Up to 1 LPM: 20 μm
 >1 LPM to 1000 LPM: 50 μm

Accuracy: $\pm 0.8\%$ of reading;
 $\pm 0.2\%$ full-scale

Repeatability: $\pm 0.2\%$

Response time

Flowmeters: 10 msec
 Flow controllers: 100 msec

Operating temperature:

14 to 122°F (–10 to 50°C)

Max pressure: 125 psig

Pressure drop: 0.8 psig (flowmeter)

Output signal: 0 to 5 VDC, RS-232

Input signal: 0 to 5 VDC, RS-232

Wetted materials

Flowmeters: 302 and 303 SS, Viton®, silicone RTV, and glass-reinforced nylon
 Flow controllers: 302, 303, 304, 410 SS; Viton, silicone RTV, glass-reinforced nylon, nickel, brass, Delrin®, and Loctite® adhesives 326, 401, and 609

Power

Flowmeters: 7 to 30 VDC at 30 mA
 Flow controllers
 Models ≤ 10 LPM: 12 to 25 VDC at 250 mA
 Models ≤ 50 LPM: 24 to 30 VDC at 750 mA

Display type: four-digit, seven-line LCD;
 $\frac{1}{4}$ " H flow display

Connections

≤ 10 mL/min: 10-32 UNF
 50 mL/min to 10 LPM: $\frac{1}{8}$ " NPT(F)
 50 to 100 LPM: $\frac{1}{4}$ " NPT(F)
 100 and 250 LPM: $\frac{1}{2}$ " NPT(F)
 500 and 1000 LPM: $\frac{3}{4}$ " NPT(F)

Dimensions	Flowmeters/controllers*
Models ≤ 50 mL/min	2 $\frac{3}{8}$ " L x 3 $\frac{3}{8}$ " H x 1 $\frac{1}{4}$ " D
Models 100 mL/min to 10 LPM	2 $\frac{3}{8}$ " L x 4 $\frac{1}{4}$ " H x 1 $\frac{1}{4}$ " D
Models 50 LPM to 100 LPM	4" L x 4 $\frac{3}{8}$ " H x 1 $\frac{1}{2}$ " D
Models 250 LPM to 1000 LPM	4" L x 5 $\frac{1}{2}$ " H x 1 $\frac{1}{2}$ " D
Set point module	2 $\frac{3}{8}$ " W x 2" H x 1" D

*Dimensions do not include control valve.

Flow range	Mass flowmeters		Mass flow controllers		Volumetric flowmeters		Volumetric flow controllers		Set point modules ¹	
	Catalog number	Price	Catalog number	Price	Catalog number	Price	Catalog number	Price	Catalog number	Price
0.01 to 1 mL/min	SI-32908-51		SI-32907-51		SI-32908-01		SI-32907-01		SI-32907-83	
0.05 to 5 mL/min	SI-32908-53		SI-32907-53		SI-32908-03		SI-32907-03		SI-32907-85	
0.1 to 10 mL/min	SI-32908-55		SI-32907-55		SI-32908-05		SI-32907-05		SI-32907-87	
0.5 to 50 mL/min	SI-32908-57		SI-32907-57		SI-32908-07		SI-32907-07		SI-32907-89	
1 to 100 mL/min	SI-32908-59		SI-32907-59		SI-32908-09		SI-32907-09		SI-32907-91	
2 to 200 mL/min	SI-32908-61		SI-32907-61		SI-32908-11		SI-32907-11		SI-32907-93	
5 to 500 mL/min	SI-32908-63		SI-32907-63		SI-32908-13		SI-32907-13		SI-32907-97	
0.01 to 1 LPM	SI-32908-67		SI-32907-67		SI-32908-17		SI-32907-17		SI-32907-83	
0.05 to 5 LPM	SI-32908-69		SI-32907-69		SI-32908-19		SI-32907-19		SI-32907-85	
0.1 to 10 LPM	SI-32908-71		SI-32907-71		SI-32908-21		SI-32907-21		SI-32907-87	
0.5 to 50 LPM	SI-32908-73		SI-32907-73		SI-32908-23		SI-32907-23		SI-32907-89	
1 to 100 LPM	SI-32908-75		SI-32907-75		SI-32908-25		SI-32907-25		SI-32907-91	
2.5 to 250 LPM	SI-32908-77		SI-32907-77		SI-32908-27		SI-32907-27		SI-32907-95	
5 to 500 LPM	SI-32908-79		SI-32907-79		SI-32908-29		SI-32907-29		SI-32907-97	
10 to 1000 LPM	SI-32908-81		SI-32907-81		SI-32908-31		—	—	SI-32907-99	

¹May be ordered as an option.

SI-32916-57 Power adapter, 220 VAC; for all flowmeters or controllers 10 LPM or less, European plug included

SI-32916-58 Power adapter, 220 VAC; for controllers 50 LPM and greater, European plug included

SI-32929-50 Battery pack, for portable operation of mass or volumetric flowmeter only

SI-32929-89 Connection cable, 8-DIN to stripped ends

GasAlertClip™ Extreme Personal Monitors

Compact and easy to use—no maintenance required!

Operated by an advanced microcontroller and electrochemical sensor, the GasAlertClip Extreme monitors provide continuous, maintenance-free operation for up to two years from the day of activation. These disposable battery-operated monitors are easy to use—simply clip the meter to your pocket or belt and go!

View important gas-reading information and detector life remaining data on the full-feature LCD display. No calibration is required for H₂S or CO; O₂ self calibrates. Monitors feature audible, visible, and vibrating alarms. Each monitor is encased in a shock- and water-resistant ABS enclosure and offers RFI protection to withstand the rigors of industrial and field use.

What's included: alligator belt clip and calibration cap.



86383-03
Lightweight and unobtrusive

New

Complete line of products online

More extensive offering of "Air/Gas Analysis" products



Approval:

UL: Class I, Div. 1, A, B, C, D; Class I, Zone 0,
Group IIC CENELEC: EEx ia IIC

ATEX



Specifications & Ordering Info

Alarm: 95 dB at 1 ft
(audible/visible/vibrating)

Power: 3 V lithium battery (included)

Functions: low-battery indicator

Dimensions: 2"W x 3¼"H x 1"D

Display: alphanumeric status panel

Instrument wt: 4 oz (0.1 kg)

Catalog number	Sensor	Range	Accuracy	Alarm set points		Price
				Low	High	
GasAlertClip with 2-year sensor						
SL-86383-01	CO	0 to 300 ppm	±1 ppm	35 ppm	200 ppm	
SL-86383-03	H ₂ S	0 to 100 ppm	±0.3 ppm	10 ppm	15 ppm	
SL-86383-05	O ₂	0 to 30%	±0.1%	19.5%	23.5%	
SL-86383-07	SO ₂	0 to 100 ppm	±1 ppm	5 ppm	10 ppm	
GasAlertClip3 Extreme with 3-year sensor						
SL-86383-09	H ₂ S	0 to 100 ppm	±0.3 ppm	10 ppm	15 ppm	
SL-86383-11	CO	0 to 300 ppm	±1 ppm	35 ppm	200 ppm	

Sensidyne® Gas Detection Tubes

Measure a wide variety of gases and vapors with this detection system

Box of 10 single tubes (10 tests).
Over 40 detection tubes are available online at ColeParmer.com.



Gas sampling pump
81900-05 shown with
sampling tube
(tubes sold separately)

Specifications & Ordering Information

Cat. no.	Gas/vapor	Range	TLV	Price/bx
SL-81900-15	Carbon dioxide	1 to 20%	5000 ppm	
SL-81900-17	Carbon monoxide (HR)	0.1 to 20%	25 ppm	
SL-81900-76	Hydrogen sulfide (LR)	3 to 150/0.75 to 37.5 ppm	10 ppm	

*HR = high range; LR = low range

SL-81900-05 Gas sampling pump. Precision, hand-operated piston pump works with Sensidyne® gas detection tubes (order separately above). Features stroke counter, flow-finish indicator that signals stroke completion, and built-in tube-tip breaker. Fail-safe handle lock ensures accurate 50- and 100-cc samples with a single stroke. Includes soft case

Triple-Output Power Supplies

Multiple outputs provide greater application versatility

Rugged power supplies continuously monitor selection of three voltage and current outputs.

Model 26868-30 features two fixed and one adjustable outputs, positive or negative polarity, constant voltage and current modes, current limiting, and short protection.

Model 26868-32 features one fixed and two adjustable outputs, selectable series or parallel operation, independent or tracking operation, adjustable current limit, and protection against short circuits, over voltage, and reverse polarity.

Models 26868-34 and -36 feature three adjustable outputs, selectable series or parallel operation, independent or tracking operation, adjustable current limit, protection from overload, and reverse polarity.

What's included: three-prong, 6-ft power cord.



26868-30



26868-32



26868-34

Specifications & Ordering Information

Load regulation:
< 0.01% +3 mV; < 0.2% +3 mA

Ripple: <1 mV_{rms}; <3 mA_{rms}

Line regulation:
< 0.01% +3 mV; < 0.2% +3 mA

Power requirements:
120 VAC, 60 Hz

Catalog number	Display	Output	Dimensions	Price
SL-26868-30	Digital	0 to 30 VDC; 0 to 3 A 12 VDC; 0 to 500 mA 5 VDC; 0 to 500 mA	8½"W x 5"H x 11½"D	
SL-26868-32	Analog	0 to 24 VDC; 0 to 500 mA 0 to 24 VDC; 0 to 500 mA 5 VDC; 4 A	11¾"W x 5½"H x 11"D	
SL-26868-34	Digital	0 to 30 VDC; 0 to 2 A 0 to 30 VDC; 0 to 2 A 4 to 6.5 VDC; 5 A	10½"W x 5¾"H x 12"D	
SL-26868-36	Digital	0 to 35 VDC; 0 to 3 A 0 to 35 VDC; 0 to 3 A 2 to 6.5 VDC; 5 A	10½"W x 5¾"H x 12"D	

Digi-SENSE® Thermocouple Thermometers

IP54 splash- and dust-resistant case

- Easy-to-use models for production personnel
- Model available for 1000-reading real-time datalogging

Monitor the temperature of finished products and processing equipment with our Digi-Sense thermometers. Select a Digi-Sense single-input thermometer for your basic applications or the dual-input thermometer to simultaneously measure two temperatures.

All meters are intrinsically safe and feature an ergonomic design, sealed silicone rubber keypad, ABS/polycarbonate plastic case, and a built-in tilt stand. Easy-to-use automatic field calibration ensures accurate readings. Order thermocouple probes separately below. Meters include two AA batteries. Measure 3¼"W x 6¼"H x 1¼"D.

Single-Input Thermometers accept one probe with miniconnectors (sold separately below). Features easy-to-use four-button design, large ½" LCD screen, hold button and °F/°C selection.

Dual-Input Thermometer accepts two probes with miniconnectors (sold separately below). Triple LCD display shows two temperature readings and the differential simultaneously. Min/max function is ideal for monitoring unattended operation. Memory stores up to 25 sets of readings.



Specifications & Ordering Information

ISO9001:2000
CERTIFIED SUPPLIER



3 year warranty

91100-00

Catalog number	Type	Range	Accuracy	Resolution	Push-button keys	Price
Single-input thermometers						
SL-91100-00	J	-328 to 1832°F (-200 to 1000°C)	Below -99°F: ±0.25% of reading ±2°F (1°C).	0.1° (between -99.9° and 299.9°) or 1° (below -99.9° and above 299.9°)	On/off, hold, calibration, and °F/°C	
SL-91100-10	K	-418 to 2501°F (-250 to 1372°C)	Above -99.9°F: ±0.2% of reading ±0.9°F (0.5°C).			
SL-91100-20	T	-418 to 752°F (-250 to 400°C)				
Dual-input thermometer						
SL-91100-40	J	-328 to 1832°F (-200 to 1000°C)	Below -238°F (-150°C): ±0.25% of reading ±2°F (1°C).	0.1° (999.9°) or 1° (>999.9°)	On/off, hold, calibration, °F/°C, J-T-E-K, maximum, minimum, differential, store, recall, clear, and 0.1°/1°	
	K	-418 to 2501°F (-250 to 1372°C)	Above -238°F (-150°C): ±0.1% of reading ±0.7°F (0.4°C).			
	T	-418 to 752°F (-250 to 400°C)				
	E	-418 to 1832°F (-250 to 1000°C)				

Some of Our Most Popular Thermocouple and RTD Probes

All probes include a 5-ft coiled cord with strain relief spring that protects from repeated flexing and tugging. Ergonomic, easy-to-grip glass-filled nylon handle provides maximum insulation and impact resistance; fingerstops prevent fingers from sliding and prevent probe from rolling. Rugged thermoset plastic miniconnector also included.

General-purpose probe

Penetration probe

Air/gas probe

Handle

Mini-connector

Surface probe

Probe Type	General-purpose probes (5"L)			Penetration probes (4"L)			Air/gas probes (8.5"L)			Surface probes (9.9"L)		
	Max temp	Cat. no.	Price	Max temp	Cat. no.	Price	Max temp	Cat. no.	Price	Max temp	Cat. no.	Price
J	1400°F (760°C)	SL-08517-55		1400°F (760°C)	SL-08517-65		1000°F (537°C)	SL-08517-75		1200°F (649°C)	SL-08517-80	
K	1652°F (900°C)	SL-08516-55		1652°F (900°C)	SL-08516-65		1000°F (537°C)	SL-08516-75		1200°F (649°C)	SL-08516-80	
T	752°F (400°C)	SL-08500-55		752°F (400°C)	SL-08500-65		1000°F (537°C)	SL-08500-75		650°F (343°C)	SL-08500-80	
RTD	932°F (500°C)	SL-08117-70		932°F (500°C)	SL-08117-85		932°F (500°C)	SL-08117-90		932°F (500°C)	SL-08117-75	

Digi-SENSE® ThermoLogR Precision RTD Thermometer

Log up to 1000 data points in real time with time and date record

- LCD has three four-digit displays
- Accepts one RTD probe with Digi-Sense® three-pin connector

This handheld datalogging thermometer is ideal for use in food processing plants, research and science labs, building maintenance areas and more! The rugged ABS plastic case has a splash and dust resistant IP54-rated housing. The sealed silicone rubber keypad features a hold function to freeze current reading, °F/°C selectable switch, and calibration button. The triple-reading display shows current, minimum and maximum measurements, and has a low-battery indicator. A built-in stand allows for easy benchtop use and hands-free operation. Thermometer conforms to DIN IEC 751 revised to ITS-90. RTD probes sold separately above or visit www.coleparmer.com/Temperature.

Digi-Sense ThermoLogR
RTD thermometer shown
with probe 08117-85



Specifications & Ordering Information

ISO9001:2000
CERTIFIED SUPPLIER



3 year warranty

Display: 0.4"H for top LCD; 0.2"H for bottom LCD

Power: two AA batteries (included)

Low battery indicator: yes

Output: infrared or optional RS-232

Battery life: >300 hours

Dimensions: 3¾"W x 6¼"H x 1¼"D

Catalog number	Range	Resolution	Accuracy	Probe type	Price
SL-93410-50	-330 to 2210°F (-201 to 1210°C)	From -100.0 to -330°F/°C: 0.1°F/°C From -99.99 to 99.99°F/°C: 0.01°F/°C From 100.0 to 999.9°F/°C: 0.1°F/°C Above 1000°F/°C: 1°F/°C	From -100.0 to -330°F/°C: ±0.1°F/°C From -99.99 to 99.99°F/°C: ±0.06°F (±0.03°C) From 100.0 to 999.9°F/°C: ±0.1°F/°C Above 1000°F/°C: ±1°F/°C	100 Ω RTD Digi-Sense round 3-pin (not included)	

Digi-SENSE® Benchtop Thermocouple/Thermistor/RTD Temperature Controllers

Outlet receptacle allows direct plug-in of heating devices

- Two control modes—On/Off or PID for more accurate control

These temperature controllers can be used for a wide variety of applications. Choose from standard or advanced models. Both controller models provide excellent control accuracy and power capabilities, making them ideal for pilot process plants, R & D labs, or for OEM requirements.

Both models accept eight thermocouple types with miniconnectors; advanced models also accept thermistor probes with 1/4" phono plugs and RTD probes with 3-pin connectors.

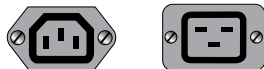
Features—Rear panel output receptacle for direct plug-in of heaters and other resistive devices. Field calibrations help to improve system accuracy by entering the offset value to correct for individual probe error. Simultaneously view both the measured and set point on the two-line alphanumeric display. Temperature scale selectable to read in °F, °C, K (Kelvin), or °R (Rankine). Front panel LEDs indicate output and alarm conditions. Multiple control modes from simple On/Off control to sophisticated autotuning PID control. Nonvolatile EEPROM memory stores setup and operating parameters, even if power is lost. The 115 VAC models include a 6-ft power cord and U.S. standard plug and receptacle; the 230 VAC models feature an IEC cord set and receptacle (specify country of destination when ordering).

Multiple safety features—Output power to load device is automatically shut down in the event of a broken sensor or control loop break. Over-temperature protection shuts down the system if the user-settable over-temperature or timer is exceeded. Outlet power receptacle is fused separately from the controller for added safety. Audible and visual out-of-range alarms are also included.

Advanced models have all the features of the standard controllers, plus higher heater output capacity of 1750/3450 watts max., 9-segment ramp and soak profiling for more complicated processes, RS-232 computer interface, free software that features real-time graphing and simple setup of ramp and soak programming, alarm relay with adjustable hysteresis, and 4 to 20 mA and 1 to 5 V outputs* for connection to a recorder or datalogger. In addition to thermocouple inputs, advanced models also accept RTD and thermistor inputs (probes sold separately). Go to www.coleparmer.com/Temperature for our full line of temperature probes.

*Use a 250 Ω resistor to convert to a 1 to 5 V signal.

230 volt models use IEC connectors:



89000-05 (10 amp) 89000-15 (15 amp)

Front View



Temperature controller 89000-00

- A** Heat ON indicator
- B** Cool ON indicator
- C** Autotune indicator
- D** Start/stop button
- E** Autotune button
- F** Alarm indicator
- G** Alarm silence button
- H** Set point change button
- I** Setup menu button
- J** Decrement
- K** Increment
- L** Cursor control
- M** 2 line x 16 character vacuum fluorescent display

Back View



Advanced model 89000-10 (shown)

- N** Cole-Parmer® 3-pin RTD connection
- O** Thermistor connection
- P** Thermocouple mini-connection
- Q** Bidirectional RS-232 connection
- R** Removable plug for output and alarm relay

Specifications & Ordering Information

Input type	Range
J	-310 to 1832°F (-190 to 1000°C)
K	-328 to 2502°F (-200 to 1372°C)
T	-328 to 752°F (-200 to 400°C)
E	-328 to 1832°F (-200 to 1000°C)
N	-328 to 2372°F (-200 to 1300°C)
B	392 to 3272°F (200 to 1800°C)
R	32 to 3214°F (0 to 1768°C)
S	32 to 3214°F (0 to 1768°C)
Thermistor†	32 to 212°F (0 to 100°C)
100 Ω Pt RTD†	-328 to 1562°F (-200 to 850°C)

†Advanced models only

Control type: on/off, programmable PID, autotune PID
Resolution: 0.1°; 1° above 999.9° and below -99.9°
Accuracy
 Types J, K, T, E, and N: ±0.1% of reading, ±0.7°F (0.4°C) above -248°F (-100°C); ±0.1% of reading, ±2°F (1°C) below -248°F (-100°C)
 Types B, R, and S: ±0.1% of reading, ±1.8°F (1.0°C)
 Thermistors and RTDs: ±0.1% of reading, ±0.7°F (0.4°C)
Display: vacuum fluorescent, two lines, 16-character alphanumeric, 3/16"H each

Operating ambient: 32 to 104°F (0 to 40°C); 0 to 90% RH, noncondensing
Digital output†: isolated RS-232; 300 to 9600 baud
Control output
 Standard models: powered receptacle rated for 115/230 VAC, 10 A max
 Advanced models: powered receptacle rated for 115/230 VAC, 15 A max
Alarm output†: one SPDT relay rated for 230 VAC, 2 A max; resistive
Dimensions: 7 1/4"W x 3 3/4"H x 10"D (185 W x 94 H x 254 mm D)

Catalog number	Description	Communication	Control output	Alarm output	Ramp/soak	Recorder output	Power (49 to 61 Hz)	Price
SL-89000-00	Standard	None	1150 watts	No	No	No	115 VAC, 10 A max	
SL-89000-05			2300 watts				230 VAC, 10 A max	
SL-89000-10	Advanced	RS-232	1725 watts	Yes	Yes; 9 programs, 16-segment each	4 to 20/20 to 4 mA, selectable, 1 to 5 VDC	115 VAC, 15 A max	
SL-89000-15			3450 watts				230 VAC, 15 A max	

SL-89000-50 Panel-mount kit

SL-89000-98 Heater sizing software, for models 89000-00 and -05 (included with models 89000-10 and -15). Aids in selecting the appropriate heater components

OAKION® InfraPro® Infrared Thermometers

Easily measure moving objects and dangerous targets from a distance

New



35639-20

GO to ColeParmer.com

For our complete line of infrared thermometers.



- Single, extra-bright laser targets your measurement area
- InfraPro 3, 4, and 5 feature an RTD input to take contact measurements

Rugged enough for industrial use, yet compact and lightweight enough to be carried around with you, these infrared thermometers are extremely easy to use: just aim, pull the trigger, and read the display. The 4½-digit backlit display shows temperature readings in °F or °C; low-battery indication; and hold, scan, and max. Display holds for 7 seconds. Underrange and overrange conditions are also indicated on the display. Extra-bright laser is visible in indoor and outdoor applications.

Advanced models 35639-20, -30, and -40 indicate max, min, dif, avg, emissivity, high alarm, low alarm, probe, log, and recall. Other features include an RTD input, 12 datalogging points, adjustable emissivity, and a rubber grip and nose that improve resistance to shock, damage, water, and dust. InfraPro 5 is rated intrinsically safe, Class I Division 1, Groups A, B, C, D and Class I, Zone 0, AEx ia IIC, T4 at 50°C.

What's included: one 9 V battery and a hard carrying case. InfraPro 5 also includes an intrinsically safe RTD contact probe.

ISO9001:2000
SUPPLIER CERTIFIED

CE



Specifications & Ordering Information

Catalog number	SL-35639-00	SL-35639-20	SL-35639-30	SL-35639-40
Description	InfraPro 1	InfraPro 3 advanced	InfraPro 4 advanced	InfraPro 5 intrinsically safe
Range	-25 to 999°F (-32 to 535°C)	-25 to 1100°F (-32 to 600°C)	-25 to 1400°F (-32 to 760°C)	-25 to 1400°F (-32 to 760°C)
Resolution	0.5°F (0.2°C)	0.1°F (0.1°C)	0.1°F (0.1°C)	0.1°F (0.1°C)
Accuracy	±1% of the reading or ±2°F (±1°C) whichever is greater			
Response time	500 msec	500 msec	500 msec	500 msec
Emissivity	Fixed at 0.95	0.10 to 1.00	0.10 to 1.00	0.10 to 1.00
Distance-to-target ratio	12:1	30:1	50:1	50:1
Power	9 V battery (included)	9 V battery (included)	9 V battery (included)	9 V battery (included)
Contact probe	—	Optional	Optional	Included
Dimensions	8"L x 6"W x 2"H	8"L x 6"W x 2"H	8"L x 6"W x 2"H	8"L x 6"W x 2"H
Price				

SL-35629-50 Contact probe for 35639-20 and -30. Range is -40 to 500°F; 40"L coiled cable

SL-35629-90 Soft carrying case with integral belt loop and Velcro® closure

ERTCO® Precision and Fractional Degree Spirit-Filled Thermometers

Precise graduations for accurate measurements!



Fractional-degree thermometer
93905-86

Precision thermometer
93905-84

Avoid mercury contamination problems—these spirit-filled thermometers are environmentally safe. Precision thermometers are accurate to ±1 scale division below 212°F (100°C), to ±1.5 scale divisions from 212 to 302°F (100 to 150°C), and to ±2.5 scale divisions above 302°F (150°C). Fractional-degree thermometers are accurate to ±2 scale divisions (±0.2°C).

Models 08126-52, 93901-17, and 93905-86 and -87 have a white background; all others have a yellow background. Each thermometer has a 6- to 7-mm diameter and an individual serial number.

Specifications & Ordering Information

Temperature range	Scale divisions	Length	Immersion depth	Fill	Catalog number	Price
Precision spirit-filled thermometers						
-35 to 50°C	1°C	305 mm	Total	Spirit	SL-93905-80	
-20 to 110°C	1°C	305 mm	Total	Spirit	SL-93905-81	
-30 to 120°F	1°F	305 mm	Total	Spirit	SL-93905-83	
0 to 230°F	2°F	305 mm	Total	Spirit	SL-93905-84	
-20 to 110°C	1°C	305 mm	76 mm	Spirit	SL-93905-91	
-20 to 150°C	1°C	305 mm	76 mm	Spirit	SL-93905-92	
-10 to 200°C	1°C	305 mm	76 mm	Spirit	SL-93905-93	
-30 to 120°F	1°F	305 mm	76 mm	Spirit	SL-93905-94	
0 to 230°F	2°F	305 mm	76 mm	Spirit	SL-93905-95	
20 to 400°F	2°F	305 mm	76 mm	Spirit	SL-93905-97	
-100 to 50°C	1°C	305 mm	Total	Spirit	SL-08126-52	
-100 to 50°C	1°C	305 mm	76 mm	Spirit	SL-93901-17	
Fractional-degree spirit-filled thermometers						
-1 to 51°C	0.1°C	457 mm	Total	Spirit	SL-93905-88	
-1 to 101°C	0.1°C	610 mm	Total	Spirit	SL-93905-89	
-1 to 201°C	0.2°C	610 mm	Total	Spirit	SL-93905-99	
-1 to 51°C	0.1°C	457 mm	76 mm	Spirit	SL-93905-86	
-1 to 101°C	0.1°C	610 mm	76 mm	Spirit	SL-93905-87	
-1 to 201°C	0.2°C	610 mm	76 mm	Spirit	SL-93905-98	

*Model 08126-52 is SAMA specified to CT55.

SL-17006-03 NIST-traceable calibration certificate for liquid-filled thermometers; three points across ranges

Cole-Parmer® USB Data Acquisition Modules

Powered from the USB port—no external power connection required

These economical plug-and-play data acquisition modules are ideal for monitoring process, manufacturing, quality control, testing, or lab environments. Units feature multifunction I/O, digital I/O, temperature measurement capabilities, and integrated screw terminals—eliminating the need for external cable connections. The external green LED confirms communication to your PC. The rugged compact design is perfect for harsh environments and for saving valuable benchspace. All modules are fully compatible with USB 1.1 as well as USB 2.0, and are powered by the 5 volt USB supply from your computer.

Model 18200-00 features eight channels single-ended and four channels differential, 12-bit resolution (11-bit in SE mode), 1.2 kS/sec sampling rate for up to 4000 samples, 16 direct I/O bits, one counter, external trigger input, and two 10-bit D/As. Configure each digital port independently for either input or output.

Model 18200-10 features all the same functions as 18200-00, but provides a faster sampling rate of 50 kS/sec and two 12-bit D/As.

Model 18200-20 provides eight, simultaneously sampled, 16-bit analog inputs with a continuous high-accuracy, high-speed total throughput of 100 kS/sec; 8-bits of digital I/O; and a 32-bit counter capable of counting TTL pulses.

Model 18200-30 provides eight temperature inputs for eight different thermocouple types (J, K, T, R, S, B, N, E); 2-, 3-, or 4-wire RTDs; thermistors; and semiconductor temperature sensors. Each channel provides the capability of monitoring any of the supported input types, allowing you to mix and match the sensor measurement without the need of additional signal conditioning.

Model 18200-40 features eight thermocouple input channels (J, K, T, R, S, B, N, E), eight bits of digital I/O, 500 V of isolation, and built-in ambient temperature sensor ensuring high-accuracy measurements.

What's included: software suite and 6-ft USB cable.

Software Suite

The included software suite provides four software programs (listed below) and is supported by SoftWIRE®, DASyLab®, LabVIEW™, and is compatible with Windows® 98SE/ME/2000/XP operating systems.

• **TracerDAQ™** provides strip chart, datalogging, and oscilloscope capabilities. Simply select channels to display, input ranges, sampling rates, and click on "run". Data is logged as a text or Excel file, allowing you to save graphical displays as bitmaps.

• **InstaCal™** installation, test, and calibration application software detects new hardware and configures your computer making a module ready to take accurate measurements. Set and store special features and configurations based on your application requirements.

• **Universal Library®** is a set of programming libraries and drivers compatible with all the popular Windows-based programming languages. Software is built upon individual functions; each of which programs, triggers, reads from, or writes to the board's I/O components. Simplifies configurations and operation of all hardware with a single universal set of functions.

• **Universal Library for LabVIEW™** provides LabVIEW drivers for hardware and a powerful set of VIs and programming examples for LabView version 6.0 or later.



18200-00

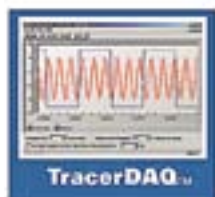
New



18200-30



18200-40



Specifications & Ordering Information

Operating temperature range: 32 to 158°F (0 to 70°C)
Power: +5 volt (USB supplied from host PC)

Dimensions

Models 18200-00, -10, -20: 3"W x 1"H x 3¼"D
Models 18200-30, -40: 3¼"W x 1½"H x 5"D



Catalog number	Analog input				Analog output	Counter/timers		Digital I/O (bi-directional)	Price	
	Number of channels		Sampling rate			Counters	Depth			
	Single-ended	Differential	Single channel (max)	Board (max)						
SL-18200-00	8	4	1.2 kS/s	8 kS/s	Diff mode: $\pm 1\text{ V}$, $\pm 1.25\text{ V}$, $\pm 2\text{ V}$, $\pm 2.5\text{ V}$, $\pm 4\text{ V}$, $\pm 5\text{ V}$, $\pm 10\text{ V}$, $\pm 20\text{ V}$	2	10 bit	1	32 bit	16 bit
SL-18200-10	8	4	50 kS/s	50 kS/s		2	12 bit	1	32 bit	16 bit
SL-18200-20	8	0	50 kS/s	100 kS/s	$\pm 1\text{ V}$, $\pm 2\text{ V}$, $\pm 5\text{ V}$, $\pm 10\text{ V}$	0	0 bit	1	32 bit	8 bit
SL-18200-30	—	8 Tin	2 S/s per channel	16 S/sec total	$\pm 0.080\text{ V}$ (thermocouple: J, K, T, E, R, S, N, or B), RTD 0 to 0.5 V, Thermistor 0 to 2 V, Semiconductor sensor 0 to 2.5 V	—	—	—	—	8 bit
SL-18200-40	—	8 Tin	2 S/s per channel	16 S/sec total	$\pm 0.080\text{ V}$ (thermocouple: J, K, T, E, R, S, N, or B)	—	—	—	—	8 bit

Cole-Parmer Economical 100- and 200-mm Flatbed Recorders

Economical way to record your data

Cole-Parmer® 100- and 200-mm flatbed recorders combine accuracy with value. Measure reliably using the recorders' zero control, 12 selectable input ranges and adjustable 5:1 attenuation. Housing design minimizes your bench space—100-mm models have 0.25 sq. ft. footprint and 200-mm models have 0.40 sq. ft. footprint.

What's included: 115 VAC power adapter, one roll of paper, and pen.

80550-00



Specifications & Ordering Information

Input ranges: 1, 2, 5, 10, 20, 50, 100, 200, 500 mV; 1, 2, 5 V

Accuracy: ±0.5% full-scale

Chart size: 100 or 200 mm

Chart drive: crystal controlled

Chart speeds: 1, 2, 5, 10, 20, 30 cm/min and cm/hr

Input impedance: >1 MΩ

Attenuation: 5:1

Pen response: 0.5 sec full-scale

Power: 115 VAC, 12 VAC, or 12 to 15 VDC

Dimensions

100-mm models: 6¼"L x 6"W x 3¼"H

200-mm models: 6¼"L x 10¼"W x 3¼"H

Catalog number	Number of channels	Chart width	Price
SL-80550-00	One	100 mm	
SL-80550-10	Two	100 mm	
SL-80550-20	One	200 mm	
SL-80550-30	Two	200 mm	



80550-20

Replacement Pens

Catalog number	Color	Price/pk of 6*
For channel one (short nib)		
SL-08498-54	Red	
SL-08498-52	Blue	
SL-08498-53	Green	
SL-08498-58	Black	
For channel two (long nib)		
SL-08498-56	Red	
SL-08498-55	Blue	
SL-08498-57	Green	
SL-08498-59	Black	

Replacement Chart Paper

Catalog number	Width	Length/roll	Price/pk of 4 rolls*
SL-80550-80	100 mm	50 ft	
SL-80550-82	200 mm	50 ft	

*Discount: Save 10% on two or more packs.

MASTERFLEX® E/S™ Portable Sampler

Economical choice for basic sampling applications

- Features a single-turn potentiometer for speed control, ON indicator, and three-position power/reversing switch
- Reversible flow and prime/purge function
- Uses Masterflex® L/S® Standard, PTFE tubing, or Easy-Load® pump heads
- Floats up to 30 minutes if dropped in water when case is closed and latched
- IP54-rated control panel protects against inclement weather and splashing water

The Masterflex E/S portable sampler, part of our environmental sampling series from Masterflex, is designed for the ultimate in portability and versatility. Run up to four hours on the self-contained 12 VDC rechargeable battery, or indefinitely from any AC or 12 VDC power supply. Charge the internal battery from an AC power supply or a DC voltage source of lower voltaic potential than the battery itself. The variable-speed drive has a top speed of 400 rpm, allowing you to adjust the flow rate to the needs of your application.

Pump is encased in a high-visibility yellow housing for easy recognition and recovery in the field. Unit measures 16"H x 11½"W x 10½"D. Pump includes AC adapter with 12-ft cable; order automotive adapter separately at right to run off of a DC power supply. Order pump heads separately below. Order silicone or C-FLEX® tubing from pages 31–32.

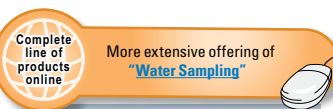


Specifications & Ordering Information

Catalog number	Power	Price
SL-07571-00	115 VAC (includes battery charger)	
SL-07571-05	230 VAC (includes battery charger)	

Masterflex® Easy-Load® Pump Heads

Catalog number	Materials	Tubing size	Price
SL-07518-10	Polysulfone body,	L/S® 25	
SL-07518-12	stainless steel rotor	L/S 15 and L/S 24	



More extensive offering of "Water Sampling"



Masterflex® E/S™ portable sampling pump 07571-00 with Easy-Load® pump head 07518-10

Accessories

SL-07571-50 Automotive adapter, 25-ft cable

SL-07571-52 Auxiliary power supply for 07571-00, 12 VDC. Includes cable to connect to external 115 V power supply input

SL-07571-54 Auxiliary power supply for 07571-05, 12 VDC. Includes cable to connect to external 230 V power supply input

OAKION® Waterproof Conductivity and TDSTests®

New dual- and multirange models increase application range

- Automatically or manually select measuring range
- Replaceable sensor prolongs the life of the instrument
- Single or one point per range push-button calibration

New

Oakton Tests are now available for dual- or multirange conductivity or TDS measurements. Choose either dual-range pin- or multirange cup-style testers depending upon the application and desired resolution. All models have temperature measurement that is displayed in Fahrenheit or Celsius. Features like simple three-button operation, automatic shutoff, low-battery indicator, and waterproof housing that floats make these testers a great value for the money. EC models feature automatic standard recognition.

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

Specifications & Ordering Information

ISO 9001:2000
CERTIFIED SUPPLIER



Catalog number	SL-35662-30	SL-35662-35	SL-35662-10	SL-35662-15
Description	ECTestr 11 Dual-Range	ECTestr 11+ Multirange	TDSTestr 11 Dual-Range	TDSTestr 11+ Multirange
Range	Conductivity	0 to 2000 µS; 0 to 20.00 mS	0 to 200.0, 0 to 2000 µS; 0 to 20.00 mS	0 to 200.0, 0 to 2000 ppm; 0 to 10.00 ppt
	Temperature	32 to 122°F (0 to 50°C)	32 to 122°F (0 to 50°C)	32 to 122°F (0 to 50°C)
Resolution	Conductivity	10 µS; 0.10 mS	0.1, 1 µS; 0.01 mS	10 ppm; 0.10 ppt
	Temperature	0.1°F (0.1°C)	0.1°F (0.1°C)	0.1, 1 ppm; 0.01 ppt
Accuracy	Conductivity	±1% full-scale	±1% full-scale	±1% full-scale
	Temperature	±0.9°F (±0.5°C)	±0.9°F (±0.5°C)	±0.9°F (±0.5°C)
Temperature compensation	Automatic, 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), >150 hours continuous use		Four 1.5 V alkaline batteries (included), >150 hours continuous use	
Display	4-digit LCD, dual line		4-digit LCD, dual line	
Dimensions	6½" L x 1½" dia		6½" L x 1½" dia	
Price				

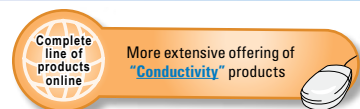
SL-35661-17 Replacement sensor for pin-style, dual-range Tests

SL-35661-08 Replacement sensor for cup-style, multirange Tests

SL-35624-45 Belt-loop carrying case, vinyl



**Cup-style sensor—
draw samples
anywhere!**



35662-30
Pin-style Tests
now measure
and display
temperature.

35662-15
Cup-style Tests
have greater range
and resolution
than pin-style Tests.

MYRON L 4PII and 6PII Waterproof Multiparameter Meters

IP67 Valox® housing—submersible down to 3 feet

- Four-digit LCD reads to 9999 µS/ppm
- Also measure pH and ORP with model 19401-22

These meters are simple and easy to use—just add your sample to the built-in cell cup, push the parameter key, and take a reading. Autoranging function automatically selects from five conductivity or TDS ranges.

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. Easily store and recall up to 100 measurements with time-and-date stamp. Nonvolatile memory retains all data and can be IR downloaded via uDock™ accessory ordered at right. See page 58 for Myron L conductivity standards.

New



19401-22

Specifications & Ordering Information

CE mark and other certification logos.

2 year warranty
Meter only

Catalog number	SL-19401-12	SL-19401-22
Description	4PII meter	6PII meter
Range	Conductivity	0 to 9.99, 10 to 99.99, 100 to 999.9, 1000 to 9999 µS; 10.00 to 200 mS (autoranging)
	TDS	0 to 9.99, 10 to 99.99, 100 to 999.9, 1000 to 9999 ppm; 10.00 to 200 ppt
	Resistivity	10 to 100, 100 to 1000 kΩ; 1 to 30 MΩ
	pH	—
	ORP	—
Resolution	Temperature	32 to 160°F (0 to 71°C)
	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	—
Accuracy	ORP	—
	Temperature	0.1°F (0.1°C)
	Conductivity	±1% of reading
	TDS	±1% of reading
	Resistivity	±1% of reading
Temperature compensation	pH	—
	ORP	—
Power	Automatic from 0 to 71°C; adjustable from 0 to 9.99% per °C	
Battery life	One 9 V battery (included)	
Dimensions	> 100 hours (5000 readings)	
Price	2¾"W x 2½"H x 7¼"D	

SL-19401-30 uDock accessory package, transfers data to computer. Includes docking station, USB cable, and software

SL-19401-50 Replacement pH/ORP sensor, for 6PII meter, model 19401-22

Conductivity Calibration Solutions

NIST-traceable standards to calibrate your conductivity or total dissolved solids (TDS) meter

All calibration solutions have a certificate of analysis available. Use solutions with 442™* concentration values (40% Na₂SO₄, 40% NaHCO₃, 20% NaCl) for most applications. Seawater or brackish water applications require solutions with NaCl concentration values. All values listed in tables are referenced to 25°C.

Note: Myron L solutions include Certificates of Analysis in package. Oakton® certificates available on our Web site or call our Application Specialists for more information.



Specifications & Ordering Information

Catalog number	Conductivity (µS ¹)	Conductivity-to-TDS calibration values			Price
		ppm KCl	ppm NaCl	ppm 442	
Oakton® calibration solutions, 500 mL (17 oz); ±0.5% accuracy at 25°C					
SL-00653-23	23	11.6	10.7	14.74	
SL-00653-16	84	40.38	38.04	50.5	
SL-00653-47	447	226	215	300	
SL-00653-18	1413	745	702	1000	
SL-00653-15	1500	757	737	1050	
SL-00653-27	2070	1045	1041	1500	
SL-00653-20	2764	1382	1414	2062	
SL-00653-89	8974	5101	4487	7608	
SL-00606-10	12,880	7447	7230	11,367	
SL-00653-50	15,000	8759	8532	13,455	
SL-00653-32	80,000	52,168	48,384	79,688	
Myron L calibration solutions with NIST certificates, 32 oz; ±1% accuracy at 25°C					
SL-01489-90	23.8	—	11.08	15	
SL-01489-91	46.7	—	21.8	30	
SL-01489-92	70	—	32.8	45	
SL-01489-93	445	—	214	300	
SL-01489-94	700	—	340	478	
SL-01489-95	2060	—	1036	1500	
SL-01489-96	3900	—	2027	3000	
SL-01489-97	7000	—	3740	5687	
SL-01489-98	16,630	—	9462	15,000	
SL-01489-99	30,100	—	18,235	30,000	
YSI® calibration solutions, 32 oz; ±0.5% accuracy at 25°C					
SL-01482-54	1000	—	495	—	
SL-01482-56	10,000	—	5400	—	
SL-01482-58	100,000	—	—	—	

*Trademark of Myron L Company

¹μS = 1 μmho

Conductivity Calibration Pouches

Single-use 20-mL pouches are sealed to ensure freshness—take these convenient buffer solutions anywhere! A μS-to-ppm conversion table is printed on each pack for quick reference. Accuracy is ±1% at 25°C.



35653-11

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

OAKTON® DO 300 Waterproof Dissolved Oxygen Meters

Complete line of products online

More extensive offering of "Oxygen" products

IP67 waterproof and dustproof housings float

- Perfect for harsh, rugged field conditions
- Memory stores 50 readings with corresponding temperatures and time
- Galvanic probe allows you to take measurements immediately

Dissolved oxygen (DO) readings are displayed in mg/L, ppm, or % saturation simultaneously with temperature values. Adjustable backlit display makes it easy to view readings in low light levels. Calibrate at the independent 100% and 0% calibration points to achieve high accuracy over the entire range. Increase reading accuracy by entering barometric pressure and salinity—meters automatically calculate offset. Setup function displays electrode slope, zero offset, and millivolt. Real-time clock stamps stored readings and calibration data with date and time, making it ideal for Good Laboratory Practice (GLP) standards. Additional features include selectable °C or °F temperature units, HOLD function, ready indicator, and auto-off for battery conservation.



Meters feature backlit display for taking readings in poor lighting.

ISO9001:2000 CERTIFIED SUPPLIER



3 year warranty Meter only

Specifications & Ordering Info

Mode	mg/L (ppm)	% saturation	Temperature
Range	0.00 to 20.00	0.0 to 199.9	32.0 to 122.0°F (0.0 to 50.0°C)
Resolution	0.01	0.1	0.1°F (0.1°C)
Accuracy	±1.5% full-scale		±0.5°F (±0.3°C)

Temperature compensation: automatic from 0 to 50°C

Salinity compensation: manual from 0.0 to 50.0 ppt, 0.1 ppt resolution

Barometric pressure compensation: manual from 500 to 1499 mm Hg; 66.6 to 199.9 kPa, 1 mm Hg; 0.1 kPa resolution

Probe type: galvanic

Memory: up to 50 sets; Real-time clock stamps calibration data and stored data with time and date (month and day)

Display: dual LCD, with eight brightness levels

Power: four 1.5 V AAA batteries (included)

Battery life: 100 hours continuous (use of backlit display decreases battery life)

Dimensions: 7½"L x 3½"W x 1¾"H

Catalog number	Description	Probe cable length	Price
SL-35641-01	Meter only	—	
SL-35641-00	Meter, DO probe, replacement membrane cap, and electrolyte solution	10 ft (3 m)	

SL-35640-60 DO meter accessory kit includes 30-mL electrolyte solution, two membrane caps, rinse bottle and carrying case. Meter is not included

SL-35640-50 DO probe with 10-ft cable

SL-35640-52 DO probe with 25-ft cable

SL-35640-54 DO probe with 50-ft cable

SL-35640-56 DO probe with 100-ft cable

SL-35640-71 Replacement electrolyte solution, 500 mL

SL-35640-80 Replacement membrane kit. Two replacement

Cole-Parmer Self-Cleaning Flat pH and ORP Electrodes

Flat electrode surface prevents buildup of solids

- Double junctions for difficult applications
- Annular junction reduces reference cell fouling

Flat surface does not collect suspended solids—fluid flow across the electrode provides a cleaning action that extends electrode life and improves performance.

Choose either a CPVC housing or chemical-resistant Ryton® housing. Both electrode types have a Viton® O-ring to hold glass bulb in place. Built-in ATC elements and pH BNC connectors match a variety of meters and controllers.



Cole-Parmer pH and ORP Electrodes with Probe Guard

Guard allows full-sized pH bulb, but protects against damage

- Economical single-junction or rugged double-junction designs

These combination electrodes have 3/4" NPT(M) threads on both ends for use as a submersion or in-line sensor.

Select either a single- or double-junction reference and your choice of temperature compensating (ATC) elements. Double-junction electrodes resist contamination from heavy metals, organics, or compounds that might react with the AgCl reference solution.

Cole-Parmer Submersible pH/ORP Electrodes

Excellent for measuring large industrial tanks and processes

- Permanently potted in sturdy ABS plastic housing
- Economical single-junction or rugged double-junction designs
- Three-foot probe length for multiple applications

These combination electrodes are permanently potted in a 3 ft L x 1 1/16" dia ABS plastic sheath—submersible up to the cable. These unique electrodes are ideal for measurements in open containers such as tanks or troughs.

Specifications & Ordering Information

Thread size: 3/4" NPT(M)

Insertion depth: 1.75"

Housing length: 6.75"

Housing material: CPVC or Ryton

Cable: 10 ft, with BNC pH connector

Temperature range

CPVC: 32 to 176°F (0 to 80°C)

Ryton: 32 to 212°F (0 to 100°C)

Maximum pressure: 100 psi

pH Electrodes

pH electrodes with CPVC housing, 0 to 14 pH		pH electrodes with Ryton housing, 0 to 14 pH		ATC element	ATC connector
Catalog number	Price*	Catalog number	Price*		
SL-27003-00		SL-27003-20		None	None
SL-27003-02		SL-27003-22		100 Ω RTD	Mini audio plug
SL-27003-12		SL-27003-23		100 Ω RTD	Tinned ends
SL-27003-04		SL-27003-24		1 kΩ RTD	Spade lugs
SL-27003-06		SL-27003-26		100 kΩ thermistor	1/4" phone plug
SL-27003-10		SL-27003-30		3 kΩ Balco	Spade lugs

ORP Electrodes

Catalog number	Housing material	Band type	Price*
SL-27003-40	CPVC	Platinum	
SL-27003-50	Ryton	Platinum	
SL-27003-60	Ryton	Gold	

*Buy More, Save More!

Save 10% on 6-10 electrodes, 15% on 11-24 electrodes, 20% on 25-50 electrodes of the same model.

Specifications & Ordering Information

Thread size: 3/4" NPT(M)

Insertion depth: 1.75"

Housing length: 6.75"

Housing material: CPVC

Cable: 10 ft, with BNC pH connector

Temperature range: 32 to 176°F (0 to 80°C)

Maximum pressure: 100 psi

Catalog number	ATC element	ATC connector	Price*
Insertion/submersion, single-junction pH electrodes, 0 to 14 pH			
SL-05993-10	None	None	
SL-27300-21	100 Ω RTD	Mini audio plug	
SL-27300-23	100 Ω RTD	Tinned ends	
SL-27300-24	1 kΩ RTD	Spade lugs	
Insertion/submersion, double-junction pH electrodes, 0 to 14 pH			
SL-27301-20	None	None	
SL-27301-21	100 Ω RTD	Mini audio plug	
SL-27301-23	100 Ω RTD	Tinned ends	
SL-27301-24	1 kΩ RTD	Spade lugs	
Insertion/submersion, single-junction ORP electrode			
SL-27300-19	None	None	
Insertion/submersion, double-junction ORP electrode			
SL-27301-19	None	None	

Specifications & Ordering Information

Thread size: None

Insertion depth: up to 3 ft

Housing length: 3 ft

Housing material: ABS plastic

Cable: 10 ft, with BNC pH connector

Maximum pressure: NA

Catalog number	ATC element	ATC connector	Price*
Submersible, single-junction pH electrodes, 0 to 14 pH			
SL-05993-80	None	None	
SL-05993-81	100 Ω RTD	Mini-audio plug	
SL-05993-85	100 Ω RTD	Tinned ends	
SL-05993-84	1 kΩ RTD	Spade lugs	
Submersible, double-junction pH electrodes, 0 to 14 pH			
SL-27001-80	None	None	
SL-27001-81	100 Ω RTD	Mini-audio plug	
SL-27001-83	100 Ω RTD	Tinned ends	
SL-27001-84	1 kΩ RTD	Spade lugs	
Submersible, double-junction ORP electrode			
SL-27001-69	None	None	

New

Tinned-end models

3/4" NPT

5.00"

1.75"

0.78"

Ryton electrode
27003-22

New

Tinned-end models

KEEP
A SPARE

3/4" NPT

5.00"

1.75"

0.78"

05993-10

New

Tinned-end models

3 ft



ABS housing
protects glass
electrode from
breakage.

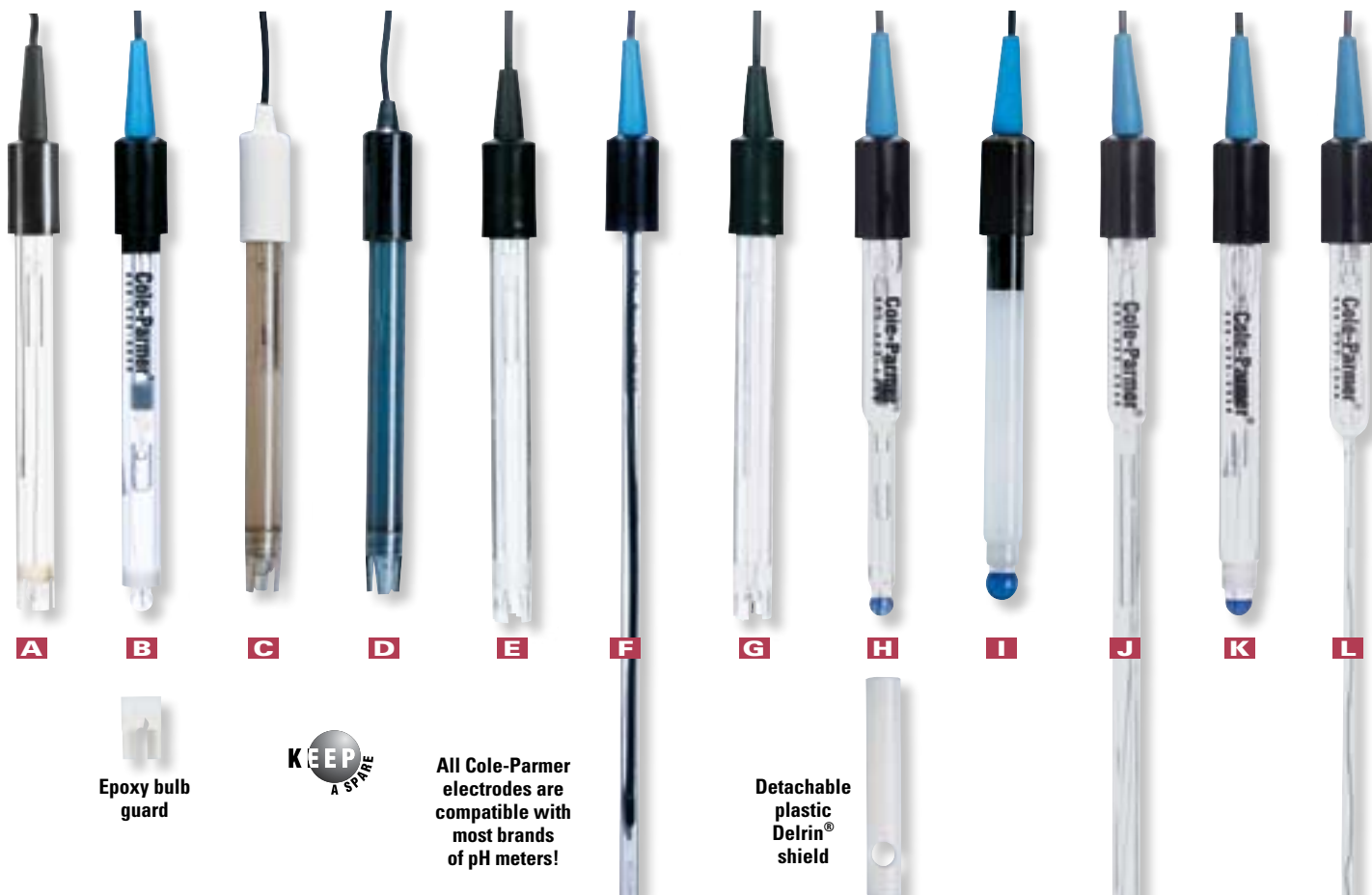
05993-80

1.05"

Cole-Parmer Laboratory Electrodes

Our most popular combination pH and ORP electrodes

- Quality electrodes combine durability, performance, and affordability. All have BNC connectors.



Specifications & Ordering Information

Key	Catalog number	Application	Description	Maximum temperature	Length x dia (mm)	Reference cell type	Price	
Epoxy-body electrodes (sealed, gel-filled unless otherwise noted)								
A	SL-59001-65	Economical general-purpose	Single-junction	176°F (80°C)	127 x 12	Ag/AgCl ₂		
	SL-59001-70		Double-junction		127 x 12			
	SL-59001-75		ORP, single-junction		127 x 12			
	SL-59001-77		ORP, double-junction		127 x 12			
B	SL-05992-40	General-purpose lab and field	Rugged with epoxy bulb guard	176°F (80°C)	148 x 12			
C	SL-05993-25	Aggressive chemicals or dirty samples	PTFE clog-resistant junction	221°F (105°C)	140 x 12			
	SL-05993-28		PTFE clog-resistant, coiled cable		140 x 12			
D	SL-05993-12	Aggressive chemicals or dirty samples	PTFE clog-resistant, easy-to-clean junction	212°F (100°C)	140 x 12			
E	SL-05991-12	Sulfides, heavy metals	Double junction, refillable	176°F (80°C)	148 x 12			
F	SL-05990-45	Test tube sampling	Extra-long slender neck		220 x 6			
G	SL-05990-55	Wastewater/monitor reaction progress	ORP, with platinum pin		155 x 12			
Glass-body electrodes (refillable unless otherwise noted)								
H	SL-05997-10	Rugged lab and field	Detachable plastic Delrin® shield	212°F (100°C)	154 x 8		Ag/AgCl ₂	
I	SL-05998-30	Wide compatibility, high temperature	Double-junction, sealed, KNO ₃ gel-filled	248°F (120°C)	130 x 12			
J	SL-05990-40	Flasks, bottles	Extra-long slender neck	212°F (100°C)	326 x 8			
K	SL-05992-62	Soil electrode; eliminates suspension effect	Extra-wide ceramic junction	176°F (80°C)	145 x 12			
L	SL-05990-30	Test and NMR tubes; organics, metals, proteins	Stable calomel reference, extra-long slender neck	158°F (70°C)	277 x 3.5	Hg/Hg ₂ Cl ₂		

SL-05992-47 Reference fill solution; 3.8 M KCl with AgCl₂ for Ag/AgCl₂ electrodes, Pack of two 125-mL bottles

SL-05992-48 Reference fill solution; 4.0 M KCl for Hg/Hg₂Cl₂ electrodes, Pack of two 125-mL bottles

Can't find the electrode you're looking for?
See our 2007/08 General Catalog featuring 18 pages of laboratory electrodes!

Request your copy today—call 800-323-4340 or visit www.coleparmer.com/Catalogs



OAKION® Waterproof pHTestrs®, ORPTestr®, and pH Spear

Large, easy-to-read display for quick pH or ORP checks

- Economically priced with replaceable, long-life sensors
- IP67-rated housing floats in water and sits flat on the benchtop

Easy-to-operate Testrs feature automatic buffer recognition, auto-off, a hold function, and automatic temperature compensation (pHTestr 10, 20, and 30 only). All waterproof and floating design takes the worry out of dropping the unit while water sampling.

pHTestr Basic, 10, 20, and 30 include a replaceable pH sensor for easy maintenance. pHTestr 10, 20, and 30 feature a double-junction electrode. Great for use with troublesome samples like wastewater, solutions with sulfides or heavy metals, and Tris.

pHTestrBasic is the most economical option with a single-junction sensor and standard horizontal display.

pHTestr 10 is our most affordable big-digit, vertical display tester.

pHTestr 10 BNC allows you the flexibility of using any pH electrode with a BNC connection. Simply change the electrode to suit your needs without having to purchase another meter.

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

pHTestr 30 adds a 0.1-resolution temperature display, selectable for °F or °C.

ORPTestr 10 includes a replaceable platinum band, double-junction electrode, which is ideal for checking chromate reduction, cyanide oxidation, and other ORP readings.

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

pH Spear includes a rugged spear tip sensor—ideal for use with soft foods.

Specifications & Ordering Information

Operating temperature: 32 to 122°F (0 to 50°C)

Battery life: 500+ hours

Power: 1.5 V battery (included)

Catalog number	SL-35634-00	SL-35634-10	SL-35634-14	SL-35634-20	SL-35634-30	SL-35650-10	SL-35650-14	SL- 35634-40
Model	pHTestr Basic	pHTestr 10	pHTestr 10 BNC	pHTestr 20	pHTestr 30 w/temp display	ORPTestr 10	ORPTestr 10 BNC	pH Spear
Range	-1.0 to 15.0 pH		-1.00 to 15.00 pH			-999 mV to +1000 mV		-1.00 to 15.00 pH
Resolution	0.1 pH		0.01 pH			1 mV		0.01 pH
Accuracy	±0.1 pH		±0.01 pH			±2 mV		±0.01 pH
Temperature compensation	None	Automatic	Fixed at 25°C or manual	Automatic		None		Fixed at 25°C or manual
Dimensions					6 1/2" L x 1 1/2" dia			8 1/2" L x 1 1/2" dia
Price								

Accessories

SL-35624-09 Replacement pH sensor for 35634-00

SL-35624-38 Replacement pH sensor for 35634-10, -20, -30

SL-35801-00 pH electrode, epoxy, single-junction BNC for use with 35634-14

SL-35650-09 Replacement ORP sensor for 35650-10

SL-59001-75 ORP electrode, single-junction for use with 35650-14

SL-59001-77 ORP electrode, double-junction for use with 35650-14

SL-35634-50 Replacement pH sensor for 35634-40

SL-05478-60 Zobell ORP calibration solution, 231 mV, 12.5 g

SL-35624-45 Soft carrying case for all waterproof Testrs above

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



00654-00

OAKION® pH Buffer Solutions

Oakton buffers for meters with 0.01 resolution are standardized against NIST-certified pH references within 0.01 pH at 77°F (25°C). Sold in individual bottles.

Specifications & Ordering Information

pH	500-mL bottles		1-L bottles		4-L bottles			
	Cat. no.	Price/ea	Cat. no.	Price/ea	Cat. no.	Price/ea	Cat. no.	Price/cs of 4
4.01	SL-00654-00		SL-05942-22		SL-05942-24		SL-05942-25	
7.00	SL-00654-04		SL-05942-42		SL-05942-44		SL-05942-45	
10.00	SL-00654-08		SL-05942-62		SL-05942-64		SL-05942-65	

SL-05942-10 Buffer solution assortment pack; one 500-mL bottle each of buffer 4, 7, and 10

New



35634-00



35634-10



35634-14



35634-20



35634-30



35650-10

New



35650-14



35634-40

OAKLON®

Acorn® pH 5 and pH 6 Meters

High ± 0.01 pH accuracy at economical prices!

- Convenient, compact design
- Up to five-point push-button calibration with auto-buffer recognition
- Displays pH and temperature with a button press

These meters are perfect for fast, accurate results. Automatic temperature compensation (ATC) ensures accuracy from 0 to 100°C. The pH 6 also reads mV. Meters include a protective rubber boot that also acts as a meter stand.

What's included: four AAA batteries and protective rubber boot.

Meter kits include: meter, pH electrode, ATC probe, pH buffer solutions, three sample bottles, rinse bottle, protective rubber boot, batteries, and hard carrying case.



35613-01
Integral stand for benchtop use

ISO9001:2000
CERTIFIED SUPPLIER

CE **3 year warranty**

Specifications & Ordering Info

Display: 3 1/2-digit LCD

Temperature compensation:

automatic with ATC probe, 0 to 100°C

Power: four AAA batteries (included)

Battery life: 200 hours continuous

Dimensions: 2 3/4"W x 5 3/4"H x 1 3/8"D

Mode	pH	mV (for Acorn pH 6 only)	Temperature
Range	0.00 to 14.00 pH	-1999 to +1999 mV or rel mV	0 to 100.0°C
Resolution	0.01 pH	1 mV	0.1°C
Accuracy	± 0.01 pH	± 2 mV	± 0.5 °C
Calibration	Up to five points: pH 1.68, 4.01, 7.00, 10.00, 12.45 (USA); pH 1.68, 4.01, 6.86, 9.18, 12.45 (NIST) pH 4.10, 6.97 (Pb)	± 20 mV	Offset 0.1°C increments

Catalog number	Model	Description	Mode	Price
SL-35613-01	pH 5	Meter with ATC probe	pH/temp	
SL-35613-11	pH 6		pH/mV/temp	
SL-35613-00	pH 5	Meter with pH electrode and ATC probe	pH/temp	
SL-35613-10	pH 6		pH/mV/temp	
SL-35613-70	pH 5	Meter kit	pH/temp	
SL-35613-72	pH 6		pH/mV/temp	

Accessories

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

SL-05992-14 "All-in-one" combination pH probe with built-in ATC, three-foot coiled cable, semi-domed tip, epoxy body, sealed

SL-35613-05 Replacement ATC probe, stainless steel

SL-09376-00 Replacement batteries; 1.5 V, AAA. Pack of 12

INNOCAL®
INNOVATIVE CALIBRATION SOLUTIONS

Ensure the accuracy of your pH meter

SL-17106-20 NIST-traceable pH meter certificate, with before and after test data at five pH test points (2, 4, 7, 10, 12 pH) and five mV test points across range



OAKLON® Handheld pH 11 Meter

Affordable dual display of pH and temperature

Large, dual-line LCD lets you view pH (or mV) and temperature values simultaneously. Automatic temperature compensation (ATC) ensures accuracy even in fluctuating temperatures. Functions include temperature offset calibration, Hold function, ready indicator, and auto-off. The LCD provides both measurement and troubleshooting data. Recall up to 50 data sets and calibrate up to five pH points from USA and NIST buffers.

What's included: "All-in-One" pH electrode, electrode bracket, and four AAA batteries.

Meter kit includes: meter, "All-in-One" pH electrode 35811-71 with built-in ATC, 20 pH buffer pouches (five each of pH 4.01, 7.00, 10.00, and rinse water), three 50-mL solution bottles, 500-mL rinse bottle, electrode bracket, four AAA batteries, and hard carrying case.



35614-20

ISO9001:2000
CERTIFIED SUPPLIER

CE **2 year warranty meter only**

Specifications & Ordering Info

Range	pH	-2.00 to 16.00
	mV	± 2000 mV
	Temperature	-10.0 to 110.0°C
Resolution	pH	0.01
	mV	0.1 to ± 199.9 mV, 1 mV beyond
	Temperature	0.1°C
Accuracy	pH	± 0.01
	mV	± 0.2 to ± 199.9 mV, ± 2 mV beyond
	Temperature	± 0.5 °C
Temperature compensation		Manual or automatic, 0 to 100°C
Calibration		Up to five points
Buffer recognition		USA: 1.68, 4.01, 7.00, 10.01, 12.45; NIST: 1.68, 4.01, 6.86, 9.18, 12.45
Display		Dual LCD
Datalogging capabilities		50 data sets
Output		None
Power		Four 1.5 V AAA batteries (included) or optional AC adapter
Dimensions		3 1/2"W x 7 3/8"H x 1 3/4"D

Catalog number	Description	Price
SL-35614-20	pH 11 meter with "all-in-one" electrode	
SL-35614-80	pH 11 meter kit	

Accessories

SL-35811-71 "All-in-One" pH electrode, single junction, epoxy body

SL-35811-72 "All-in-One" pH electrode, double junction, epoxy body

SL-35613-05 ATC probe, stainless steel. Measures 6"L x 1/8" dia; includes 3-ft cable with miniconnector

SL-35615-07 Adapter, 110/220 VAC

GO to ColeParmer.com

For the advanced pH 110 meter with GLP-compliant storage of 100 data sets. Search online for **SL-35615-80**.



OAKION® Waterproof pH 600 Meters

Expanded range, resolution, and accuracy, plus increased memory and advanced communications!

- No more excuses for missing data! Out-of-date or unperformed calibrations are now things of the past!
- Don't waste time looking for those cables!
- Use in dirty and wet environments



35418-12

IrDA wireless
communication

Great in the lab!

Great in the field!

Specifications



Model		pH 600 meter	pH 610 meter	pH 620 meter
Parameters		pH/mV/°C	pH/mV/°C	pH/mV/ISE/°C
Range	pH	-2.00 to 19.99	-2.000 to 19.999	-2.000 to 19.999
	mV	±2000	±2000	±2000
	ISE	—	—	0.001 to 19,900 ppm, molar, or mg/L
	Temperature	14 to 230°F (-10 to 110°C)	14 to 230°F (-10 to 110°C)	14 to 230°F (-10 to 110°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	—	—	2 or 3 digits
	Temperature	0.1°F to 199.9°F; 1.0°F from 200 to 230°F (0.1°C)	0.1°F to 199.9°F; 1.0°F from 200 to 230°F (0.1°C)	0.1°F to 199.9°F; 1.0°F from 200 to 230°F (0.1°C)
Accuracy	pH	±0.01	±0.002	±0.002
	mV	±0.2	±0.2	±0.2
	ISE	—	—	0.5% FS (monovalent); 1% FS (divalent)
	Temperature	±0.9°F (±0.5°C)	±0.9°F (±0.5°C)	±0.9°F (±0.5°C)
Temperature compensation		Automatic or manual, 0 to 100°C		
Calibration		Up to 6 points		
Buffer recognition		USA: 1.68, 4.01, 7.00, 10.01, 12.45; NIST: 1.68, 4.01, 6.86, 9.18, 12.45; DIN: 1.09, 3.06, 4.65, 6.79, 9.23, 12.75; PWB: 4.10, 6.97		
Data logging capabilities		500 data sets with GLP time-and-date stamping		
Output		IrDA/RS-232C		
Display		Dot-matrix LCD with backlighting		
Power		Four AA batteries (included) or optional universal AC adapter		
Dimensions		3¼"W x 7¼"H x 2¼"D	3¼"W x 7¼"H x 2¼"D	3¼"W x 7¼"H x 2¼"D

Ordering Information

Catalog number	Model	Description	Price
SL-35418-02	pH 600	Meter only	
SL-35418-00		Meter with probe	
SL-35418-70		Meter kit	
SL-35418-12	pH 610	Meter only	
SL-35418-10		Meter with probe	
SL-35418-80		Meter kit	
SL-35418-22	pH 620	Meter only	
SL-35418-20		Meter with probe	
SL-35418-90		Meter kit	

Accessories

SL-35816-71 "All-in-One" pH electrode with built-in ATC; single junction, epoxy body, 2.5-ft cable with BNC connector

SL-35816-72 "All-in-One" pH electrode with built-in ATC; double junction, epoxy body, 2.5-ft cable with BNC connector

SL-35805-23 Submersible pH electrode; single-junction, ABS plastic housing, BNC connector, 10-ft cable

SL-35418-05 ATC probe. Use for temperature compensation with any pH electrode without built-in ATC

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

SL-09376-01 Batteries; AA. Pack of 4

New



58822-24

Accessories

SL-58822-92 Replacement 3-in-1 pH electrode; gel-filled, epoxy body, BNC connector

SL-19704-82 Replacement conductivity probe; epoxy body/stainless steel sensor, K = 1, 3-ft cable

Thermo Russell pH and Conductivity Meters

Rugged, low-cost handheld meters

Affordable Russell portable meters feature simple operation, a splashproof keypad, and a protective rubber boot for measurements in the field. For laboratory use, the boot doubles as a benchtop stand. The pH meter has three-button calibration with autobuffer recognition with your choice of US, NIST, or pure low-ionic pH buffers standards. The conductivity meter features up to five-point calibration and auto-ranging.

What's included: protective rubber boot/stand and batteries. Model 58822-24 also includes a 3-in-1 gel/epoxy electrode. Model 19704-80 includes a conductivity probe (K = 1) with 3-ft cable.

Specifications & Ordering Information

ISO 9001:2000
CERTIFIED SUPPLIER

CE 2 year warranty

Catalog number	SL-58822-24	SL-19704-80
Description	pH meter	Conductivity meter
Range	pH	0.00 to 14.00
	mV	±1000
	Conductivity	—
	Temperature	0.0 to 100.0°C
Resolution	pH	0.01
	mV	1
	Conductivity	—
	Temperature	0.1°C
Temperature compensation	Auto/manual	Auto/manual
pH calibration	Up to 3 points	—
Datalogging capabilities	None	None
Output	None	None
Display	LCD	LCD
Power	Four AAA batteries (included)	Four AAA batteries (included)
Dimensions	6 1/4" W x 3 3/8" H x 1 1/2" D	6 1/4" W x 3 3/8" H x 1 1/2" D
Price		

Thermo Orion® Star Series™ Meters

Combine simple three-button operation with exceptional performance

The Orion Star meters offer a full complement of GLP-related features including datalogging with time/date stamp, and electrode verification. Download additional methods and software updates via the Web. Meters feature automatic or manual pH calibration, auto-buffer recognition of US/NIST or EURO/DIN buffers, advanced self-tests and self-diagnostics, and RS-232 or optional USB connectivity.

2-Star benchtop pH meter includes: your choice of a Sure-Flow® or Triode™ pH probe with ATC, benchtop electrode stand, Quick-Start guide, and universal AC power supply.

4-Star handheld pH/conductivity meter includes: Triode pH probe with ATC, four-cell conductivity probe (K = 0.475), pH calibration buffers, pH storage solution, 1413 µS/cm conductivity standard, handheld carrying case, Quick-Start guide, and four AA batteries.

4-Star benchtop pH/conductivity meter includes: Triode pH probe with ATC, four-cell conductivity probe (K = 0.475), pH calibration buffers, pH storage solution, 1413 µS/cm conductivity standard, benchtop electrode stand, Quick-Start guide, and universal AC power supply.

Specifications & Ordering Information

Catalog number	SL-58823-24	SL-58823-26	SL-58822-16	SL-58823-16
Description	2-Star benchtop pH meter with Sure-Flow pH electrode	2-Star benchtop pH meter with Triode pH electrode	4-Star handheld pH/conductivity meter	4-Star benchtop pH/conductivity meter
Range	pH	—2.000 to 19.999	—2.000 to 19.999	—2.000 to 19.999
	mV	±1999.9	±1999.9	±1999.9
	Conductivity	—	0 to 3000 mS/cm	0 to 3000 mS/cm
	Temperature	—5 to 105.0°C	—5 to 105.0°C	—5 to 105.0°C
Resolution	pH	0.1/0.01/0.001	0.1/0.01/0.001	0.1/0.01/0.001
	mV	0.1	0.1	0.1
	Conductivity	—	4 sig. digits to 0.001 mS/cm	4 sig. digits to 0.001 mS/cm
	Temperature	0.1°C up to 99.9°C; 1.0° over 99.9°C	0.1°C up to 99.9°C; 1.0° over 99.9°C	0.1°C up to 99.9°C; 1.0° over 99.9°C
Temperature compensation	Auto/manual	Auto/manual	Auto/manual	Auto/manual
pH calibration	Up to 3 points	Up to 3 points	Up to 5 points	Up to 5 points
Buffer recognition	USA, NIST, EURO/DIN, and custom	USA, NIST, EURO/DIN, and custom	USA, NIST, EURO/DIN, and custom	USA, NIST, EURO/DIN, and custom
Datalogging capabilities	50 data points with time/date stamp	50 data points with time/date stamp	200 data points with time/date stamp	200 data points with time/date stamp
Output	RS-232 with optional USB interface cable	RS-232 with optional USB interface cable	Waterproof RS-232 with optional USB interface cable	RS-232 with optional USB interface cable
Display	LCD; single parameter plus temp	LCD; single parameter plus temp	Backlit LCD; dual parameter plus temp	Backlit LCD; dual parameter plus temp
Power	Universal AC power adapter (included) or four AA batteries (not included)	Universal AC power adapter (included) or four AA batteries (not included)	Four AA batteries (included)	Universal AC power adapter (included) or four AA batteries (not included)
Dimensions	9 1/4" L x 6 3/8" W x 3 3/4" H	9 1/4" L x 6 3/8" W x 3 3/4" H	9" L x 3 3/4" W x 1 3/4" H	9 1/4" L x 6 3/8" W x 3 3/4" H
Price				

ISO 9001:2000
CERTIFIED SUPPLIER

UL

SP

Benchtop meters

Handheld meters

3 year warranty



New

Complete line of products online
More extensive offering of "pH Meters"

Accessories

SL-05718-57 Replacement Sure-Flow pH electrode

SL-58823-30 Replacement Triode pH electrode

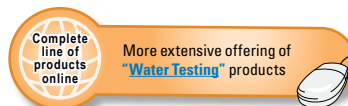
SL-58819-92 Epoxy ATC probe for use with 05718-57

SL-19704-70 Replacement conductivity probe, four-cell, K = 0.475, 5-ft cable

SL-58822-45 Cable adapter from RS-232 to USB

OAKTON® Waterproof Multiparameter PCD 650 Meter

New



Expanded range, resolution, and accuracy, plus increased memory and advanced communications!

This top-of-the-line waterproof meter offers features that are typically found on much more expensive models. The IP67-rated housing allows use in dirty and wet environments without harm to the meter. Datalog up to 500 points with time-and-date stamp. User-selectable "calibration due" alarms, automatic or manual standards recognition, and single or multiple calibration points provide flexibility in meeting your data quality objectives. Infrared (IrDA) wireless technology lets you easily download data—no need for additional cords. The large backlit LCD shows the measured value, measured units, temperature, time, battery life, and menu options.

Meter only includes: data management software and four AA batteries.

Meter with probes adds: an "All-in-One" pH/ATC electrode, a 4-cell conductivity cell, and a dissolved oxygen probe.

Meter kit further adds: pH calibration buffers, conductivity standards, dissolved oxygen probe replacement membrane kit, probe holder, protective rubber boot, and hard carrying case.



35434-02

Specifications



Model		PCD 650 meter
Parameters		pH/mV/ISE/conductivity/TDS/salinity/resistivity/dissolved oxygen/temperature
Range	pH	-2.000 to 19.900
	mV	±2000
	ISE	0.001 to 19,900 ppm, molar, or mg/L
	Conductivity	0 to 500 mS
	TDS	0 to 200 ppm (TDS factor dependent)
	Salinity	80 ppt
	Resistivity	0 to 20,000 MΩ
	Dissolved oxygen	0 to 600% / 90 mg/L
	Barometric pressure	450 to 825 mm Hg
Resolution	Temperature	14 to 230°F (-10 to 110°C)
	pH	0.1, 0.01, 0.001
	mV	0.1
	ISE	2 or 3 digits
	Conductivity	0.05% full-scale
	TDS	0.05% full-scale
	Salinity	0.05% full-scale
	Resistivity	0.05% full-scale
	Dissolved oxygen	0.1%, 0.01 mg/L
Accuracy	Barometric pressure	1 mm Hg
	Temperature	0.1°F to 199.9°F; 1.0°F from 200 to 230°F (0.1°C)
	pH	±0.002
	mV	±0.2 mV
	ISE	0.5% FS (monovalent); 1% FS (divalent)
	Conductivity	±1% full-scale
	TDS	±1% full-scale
	Salinity	±1% full-scale
	Resistivity	±1% full-scale
Temperature compensation	Dissolved oxygen	±2%, ±0.2 mg/L
	Barometric pressure	±1%
	Temperature	±0.9°F (±0.5°C)
	Temperature compensation	Automatic or manual, 0 to 100°C
	Conductivity temperature compensation	Linear and pure
	pH calibration	Up to 6 points
	pH buffer recognition	USA: 1.68, 4.01, 7.00, 10.01, 12.45; NIST: 1.68, 4.01, 6.86, 9.18, 12.45; DIN: 1.09, 3.06, 4.65, 6.79, 9.23, 12.75, PWB: 4.10, 6.97
	Conductivity standard recognition	Automatic or manual, single or multipoint standard recognition
	Temperature coefficient	0 to 10.0%/°C
Conductivity-to-TDS factor	Conductivity-to-TDS factor	0.4 to 1.0
	Dissolved oxygen salinity correction	0 to 45 ppt
	Datalogging capabilities	500 data sets with GLP
	Output	IRdA/ RS-232C
	Display	Dot-matrix LCD with backlighting
	Power	Four 1.5 V AA batteries (included) or optional universal AC adapter
	Dimensions	3 1/4" W x 7 1/4" H x 2 1/4" D

Ordering Information

Catalog number	Model	Description	Price
SL-35434-02	PCD 650	Meter only	
SL-35434-00		Meter with probes	
SL-35434-70		Meter kit	

SL-35816-71 "All-in-One" pH electrode with built-in ATC; single-junction, epoxy body

SL-35805-23 Submersible pH electrode; single-junction, ABS plastic housing, BNC connector, 10-ft cable

SL-35418-05 ATC probe. Use for temperature compensation with any pH electrode without built-in ATC

SL-35418-83 Optional universal adapter, 110/220 VAC

Cole-Parmer Dye Tracers

- Determine water flow in closed circuits or open channels

Dyes diffuse rapidly in water, producing a vivid, easy-to-see color. Excellent for identifying diffusion and dispersion patterns, rates of flow, discharge locations, seepage areas, sea marking, and more. Dyes are biodegradable and nontoxic.

Use an ultraviolet lamp to trace fluorescent red or yellow/green dyes where normal visual detection is difficult. Minimum detectable concentration of all dyes in clear water is 1 ppm.

Specifications & Ordering Information

Description	Max. gallons of water to obtain 1 ppm	Application	Fluorescent red dye			Fluorescent yellow/green dye			Blue dye		
			Cat. no.	Size	Price	Cat. no.	Size	Price	Cat. no.	Size	Price
Tablets	60	Plumbing, storm and sanitary drain analysis	SL-00295-16	200 tablets		SL-00295-17	200 tablets		SL-00295-18	200 tablets	
Liquid concentrate	100,000	Metered systems	SL-00298-06	Gallon		SL-00298-07	Gallon		SL-00298-08	Gallon	

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





35635-00



Meter comes in hard carrying case.

OAKTON® T-100 Waterproof Turbidity Meter

Waterproof and dustproof with IP67-rated housing that floats!

- Four-point, push-button calibration for full-range accuracy
- Auto-ranging from 0 to 1000 nephelometric turbidity units

The Oakton T-100 turbidity meter is easy to calibrate—meter automatically prompts you to the next calibration standard. The large custom LCD displays reading and units of measure. Other features include auto-off, diagnostic error messages, and auto-ranging function. Power-saving function lets you take over 1000 readings on a single set of AAA batteries. Sealed optical system with infrared light source delivers high accuracy across entire range.

What's included: meter, four primary standards (0.02, 20.0, 100, and 800 NTU), three empty cuvettes with lightshield caps, silicone oil, lint-free cloth, four AAA batteries, and hard carrying case.

Specifications & Ordering Information

ISO9001:2000
CERTIFIED SUPPLIER



2 year
warranty

Range: 0 to 19.99; 20.0 to 99.9; 100 to 1000 NTU

Resolution: 0.01, 0.1, 1

Accuracy: ±2% of reading from 0 to 500 NTU; ±3% of reading 500 to 1000 NTU

Light source: infrared LED

Sample volume: 10 mL

Sample cell size: 25 mm dia x 50 mm H

Response time: less than 6 seconds

Operating ambient: 32 to 122°F (0 to 50°C)

Display: 14 segment LCD

Datalogging capabilities: none

Output: none

Dimensions: 6½"L x 2¾"W x 2"H

Catalog number	Description	Power	Price
SL-35635-00	Oakton T-100 waterproof turbidity meter	Four AAA batteries	

Accessories

SL-35635-50 Replacement calibration set. Includes one each of primary calibration cuvettes filled with 0.02, 20.0, 100, and 800 NTU standard

SL-35653-55 Cuvettes. Pack of 3

SL-09376-00 Replacement batteries, 1.5 V AAA. Pack of 12

Standard Solutions, Calibration Sets, and Turbidity Kits

Ensure accurate readings by calibrating your turbidimeter

Primary Standard Solutions can be used to calibrate nephelometers or turbidimeters. EPA-approved polymeric standards outlast Formazin standards. Suspended polymeric particles virtually never settle or clump. Solutions are guaranteed to maintain NTU values within ±1% for one year. Available in one-liter bottles.



Catalog number	NTU value	Price
SL-08391-03	1.0	
SL-08391-04	10.0	
SL-08391-05	40.0	



Standard solutions
08391-03 and -04

Turbidity Kits are designed especially for your Cole-Parmer®, Hach, LaMotte®, or HF turbidimeter. Kits include a 250-mL bottle of primary standard, a secondary standard-filled cuvette for each of the NTU values listed below, and two empty glass cuvettes.

Catalog number	NTU values	Use with meter	Price
SL-08391-14	0.5, 5.0, 40	Cole-Parmer	
SL-08391-17	0.5, 5.0, 40	LaMotte	
SL-08391-60	0, 20, 100, 800	Hach 2100P	



More extensive offering of
"Turbidity" products



Turbidity kit 08391-17

Calibration Sets

SL-08391-26 Linear calibration set. Includes 125 mL each of 0.20, 0.40, 0.60, 0.80, and 1.0 NTU primary standard solutions

SL-08391-27 Linear calibration set. Includes 125 mL each of 2.00, 4.00, 6.00, 8.00, and 10.00 NTU solutions



Calibration set
08391-26

Hach StablCal® Turbidity Standard Solutions offer a guaranteed stability of at least one year. Standards are referenced in U.S. EPA-accepted Hach method 8195 and meet NPDES and NPDWR[†] compliance reporting requirements. Available in 500-mL bottles.

Catalog number	NTU value	Price
SL-99512-54	< 0.1	
SL-99512-56	20	
SL-99512-58	200	
SL-99512-60	800	
SL-99512-62	1000	



Hach standard
solutions

[†]NPDWR=National Primary Drinking Water Regulations, NPDES=National Pollutant Discharge Elimination System

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951

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