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 ANSI/NCSL Z540-2-1997  
 NIST Technical Note 1297 ISO 9000:2000

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## Digi-Sense™ Data Loggers with TraceableLIVE® Wireless Technology

Get alerts before you lose valuable samples

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For more information, visit [ColeParmer.com/TraceableLIVE](http://ColeParmer.com/TraceableLIVE)

\*Requires a TraceableLIVE subscription.



## C/L® Variable-Speed Compact Pumps

### Pump in even the tightest spaces!

- Pump fluids in either direction—easily switchable reversing motor
- Easy tubing changes—open cover and release occlusion bed in one motion

#### A. C/L Single-Channel Pumps

- Stop/start remotely via contact closure
- MAX button quickly primes or purges tubing
- Pump from 0.002 to 43 mL/min

#### B. C/L Digital Microflex® Pump

- Icon-driven menu allows quick programming and setup
- Flow range of 0.00013 to 43 mL/min
- Copy dispense function for filling and dispensing applications
- Remote control of speed, direction, and start/stop/prime via 25-pin connector on back of drive
- Microflex pump head accepts continuous lengths of tubing for clean flow paths
- Tubing calibration ensures accuracy

**NEW**



**A**



**B**

#### FEATURES

- ✓ Flow range: 0.00013 to 43 mL/min
- ✓ Reversible pumping
- ✓ Remote control capabilities

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Power supplies are:



rpm	Speed control (repeatability)	Number of channels	Number of rollers	Reversible motor	IP rating	Dimensions—¼ DIN (L x W x H)	Power		Catalog number	Price
							VAC, Hz	Amps		
<b>A. C/L single-channel compact pumps</b>										
1.7 to 10	±5%	1	4	Yes	IP22	7" x 3¼" x 3½" (17.8 x 9.5 x 8.9 cm)	90 to 260, 50/60	110 mA at 115 VAC	FN-77122-04	
13 to 80							12 VDC†	—		
50 to 300			3				90 to 260, 50/60	175 mA at 115 VAC	FN-77122-14	
							12 VDC†	—	FN-77122-16	
							90 to 260, 50/60	400 mA at 115 VAC	FN-77122-24	
							12 VDC†	—	FN-77122-26	
<b>B. C/L digital Microflex pump</b>										
0.1 to 300	±0.1%	1	3	Yes	IP33	8½" x 5½" x 6¾" (20.5 x 14 x 15.7 cm)	90 to 260	0.34 at 115 VAC, 0.2 at 230 VAC	FN-77123-00	

†Power supply not included with 12 VDC models.

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

**For A models:**

**FN-77120-03 Brackets** for panel mounting. Set of 2

**FN-77200-07 Replacement power supply**, 100 to 240 VAC, for pump 77122-24

**FN-77120-11 Replacement power supply**, 100 to 240 VAC, for pumps 77122-04, -14

**For B model:**

**FN-07523-92 Foot switch**, momentary start/stop; DB25 male; 6-ft (1.8-m) cable

**FN-07523-95 Cable assembly**, DB25 male connector and 25-ft (7.9-m) cable with stripped wire ends

**FN-07523-97 Handheld remote controller**, DB25 male, route tubing through handle for dispensing applications; 6-ft (1.8-m) cable

**FN-77123-80 Replacement single-channel Microflex pump head**

**FN-07525-90 Replacement power supply**, 90 to 260 VAC

### Microbore Pump Tubing Ordering Information

Tube ID (mm)	Tygon® E-Lab	Silicone (platinum-cured)	Silicone (peroxide-cured)	PharMed® BPT	Tygon E-LFL (long flex life)	Viton®	Puri-Flex™	C-Flex®	Solvent/hydrocarbon
0.19	FN-06460-10	—	FN-07625-10	FN-95809-10	FN-06449-10	—	FN-96418-10	FN-95718-10	FN-95712-10
0.25	FN-06460-12	—	FN-07625-12	FN-95809-12	FN-06449-12	—	FN-96418-12	FN-95718-12	FN-95712-12
0.51	FN-06460-18	FN-95590-18	FN-07625-18	FN-95809-18	FN-06449-18	FN-97632-18	FN-96418-18	FN-95718-18	FN-95712-18
0.89	FN-06460-26	FN-95590-26	FN-07625-26	FN-95809-26	FN-06449-26	FN-97632-26	FN-96418-26	FN-95718-26	FN-95712-26
1.14	FN-06460-30	FN-95590-30	FN-07625-30	FN-95809-30	FN-06449-30	FN-97632-30	FN-96418-30	FN-95718-30	FN-95712-30
1.42	FN-06460-34	FN-95590-34	FN-07625-34	FN-95809-34	FN-06449-34	FN-97632-34	FN-96418-34	FN-95718-34	FN-95712-34
2.06	FN-06460-42	FN-95590-42	FN-07625-42	FN-95809-42	FN-06449-42	FN-97632-42	FN-96418-42	FN-95718-42	FN-95712-42
2.79	FN-06460-48	FN-95590-48	FN-07625-48	FN-95809-48	FN-06449-48	FN-97632-48	FN-96418-48	FN-95718-48	FN-95712-48
Length/pk	30.4 m (100 ft)	15.2 m (50 ft)	15.2 m (50 ft)	30.4 m (100 ft)	30.4 m (100 ft)	15.2 m (50 ft)	15.2 m (50 ft)	15.2 m (50 ft)	15.2 m (50 ft)
Price/pk									

### Flow Rates in mL/min

rpm	Microbore pump tubing size (ID)								
	0.19 mm	0.25 mm	0.51 mm	0.89 mm	1.14 mm	1.42 mm	2.06 mm	2.79 mm	
1.7 to 10	0.002 to 0.013	0.004 to 0.022	0.015 to 0.087	0.041 to 0.25	0.064 to 0.39	0.09 to 0.57	0.18 to 1.05	0.28 to 1.65	
13 to 80	0.017 to 0.10	0.03 to 0.18	0.12 to 0.70	0.33 to 2.0	0.52 to 3.1	0.75 to 4.5	1.4 to 8.5	1.8 to 11.0	
50 to 300	0.06 to 0.39	0.11 to 0.66	0.43 to 2.6	1.2 to 7.5	1.9 to 11.4	2.8 to 17.1	5.3 to 32	7.2 to 43	
0.1 to 300	0.00013 to 0.39	0.0002 to 0.66	0.0009 to 2.6	0.003 to 7.5	0.004 to 11.4	0.006 to 17.1	0.011 to 32	0.014 to 43	

## L/S® Standard Pump Heads

### Ideal for accurate and repeatable fluid transfer applications

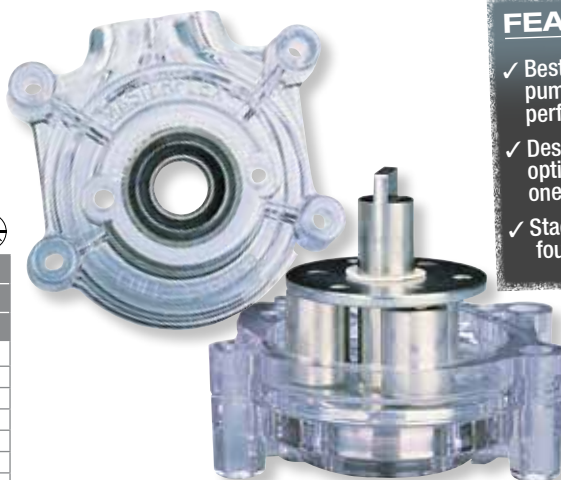
- PC housing allows you to see pump in operation; PPS housing and SS rotors have excellent chemical resistance



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

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

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



### FEATURES

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

### Mounting Hardware

Stack up to four L/S Standard pump heads on one drive. Hardware is stainless steel.

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

## L/S® Easy-Load® II Pump Heads

### Automatic retention holds tubing securely in place

- Reduced pulsation and improved pressure performance and mechanical stability with standard four-roller rotor
- Choice of rotors—economical CRS rotors or SS rotors for better chemical resistance and durability
- Don't let pressure get to you. Choose models with adjustable occlusion—tighten for higher pressure, loosen for longer tubing life
- Models with open-head interlock sensor stop drive motor when pump head is open (when used with sensor-equipped drives)

### FEATURES

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



**What's included:** single-channel mounting hardware and a 15" (38-cm) length of silicone pump tubing. Pump head comes ready to mount to drive.



Pump tubing size accepted	mL per rev	Flow rates in mL/min		Max system pressure† psi (bar)	Fixed occlusion						Adjustable occlusion	
		1 to 100 rpm	6 to 600 rpm		CRS† rotor		SS† rotor		SS† rotor and open-head sensor		SS† rotor	
					Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
<b>A. Easy-Load II pump heads for precision pump tubing (not shown)</b>												
L/S 13	0.06	0.06 to 6	0.36 to 36	40 (2.7)	<a href="#">FN-77200-50</a>		<a href="#">FN-77200-60</a>		<a href="#">FN-77200-30</a>			<a href="#">FN-77201-60</a>
L/S 14	0.21	0.21 to 21	1.3 to 130	40 (2.7)								
L/S 16	0.8	0.8 to 80	4.8 to 480	40 (2.7)								
L/S 25	1.7	1.7 to 170	10 to 1000	35 (2.4)								
L/S 17	2.8	2.8 to 280	17 to 1700	20 (1.4)								
L/S 18	3.8	3.8 to 380	23 to 2300	15 (1.0)								
<b>B. Easy-Load II pump heads for high-performance precision pump tubing</b>												
L/S 15	1.7	1.7 to 170	10 to 1000	40 (2.7)	<a href="#">FN-77200-52</a>		<a href="#">FN-77200-62</a>		<a href="#">FN-77200-32</a>			<a href="#">FN-77201-62</a>
L/S 24	2.8	2.8 to 280	17 to 1700	40 (2.7)								
L/S 35	3.8	3.8 to 380	23 to 2300	35 (2.4)								
L/S 36	4.8	4.8 to 480	29 to 2900	20 (1.4)								
<b>C. Two-channel Easy-Load II pump heads for precision pump tubing</b>												
L/S 13	0.06	0.06 to 6	0.36 to 36	40 (2.7)	<a href="#">FN-77202-50</a>		<a href="#">FN-77202-60</a>		—	—		—
L/S 14	0.21	0.21 to 21	1.3 to 130	40 (2.7)								
L/S 16	0.8	0.8 to 80	4.8 to 480	40 (2.7)								
L/S 25	1.7	1.7 to 170	10 to 1000	35 (2.4)								

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

**Mounting Hardware.** Mount up to four L/S Easy-Load II pump heads on a single drive. Mounting hardware is stainless steel.

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

## L/S® High-Performance Pump Heads

All-new design offers faster tubing changes and improved ergonomics

- Simply close the pump head and tubing occlusion is optimal and automatic
- Flow rates up to 3400 mL/min with L/S high-performance precision tubing
- Reinforced nylon housing and occlusion bed with stainless steel rotor/roller assembly
- Models with open-head interlock sensor stop drive motor when pump head is open (when used with sensor-equipped drives)
- Compatible with all L/S drives that accept two or more pump heads

**NEW**

### FEATURES

- ✓ Pressures up to 150 psi with L/S high-pressure (HP) pump tubing
- ✓ Automatic tubing occlusion—no need to adjust
- ✓ ATEX Zone 2 rated models available



What's included: mounting hardware and 15" (38 cm) of pump tubing.

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ATEX Zone 2 77252-80, 82



Pump tubing size	mL per rev	Flow rates in mL/min		Max system pressure psi (bar)	Catalog number		
		0.02 to 100 rpm	0.1 to 600 rpm		High-Performance pump head with open-head sensor	High-Performance pump head	ATEX-approved High-Performance pump head
<b>High-performance pump heads for Precision pump tubing</b>							
L/S 16	0.9	0.018 to 90	0.09 to 614	40 (2.7)	<a href="#">FN-77252-60</a>	<a href="#">FN-77252-70</a>	<a href="#">FN-77252-80</a>
L/S 25	1.9	0.038 to 187	0.19 to 1278	40 (2.7)			
L/S 17	3.0	0.06 to 307	0.30 to 1883	20 (1.4)			
L/S 18	3.8	0.076 to 377	0.38 to 2812	40 (2.7)			
<b>High-performance pump heads for High-performance precision pump tubing</b>							
L/S 14HP†	0.3	0.006 to 30	Not recommended	150 (10.3)	<a href="#">FN-77252-62</a>	<a href="#">FN-77252-72</a>	<a href="#">FN-77252-82</a>
L/S 16HP†	0.9	0.018 to 90	Not recommended	125 (8.5)			
L/S 15HP†	1.7	0.034 to 170	Not recommended	100 (6.8)			
L/S 24HP†	2.4	0.048 to 240	Not recommended	80 (5.5)			
L/S 15	1.8	0.036 to 180	0.18 to 1100	40 (2.7)			
L/S 24	3.0	0.06 to 300	0.30 to 1800	40 (2.7)			
L/S 35	4.3	0.086 to 430	0.43 to 2600	35 (2.4)			
L/S 36	5.8	0.116 to 580	0.58 to 3400	20 (1.4)			
<b>Price</b>							

L/S 14HP, L/S 15HP, L/S 16HP and L/S 24HP pump tubing is for use only with the L/S High-Performance pump head mounted on any L/S 100 rpm drive capable of running two or more pump heads. **Note:** High-Performance pump heads are not stackable.

## L/S® Easy-Load® 3 Pump Heads

No tools or hardware needed

- Mount and stack heads in seconds with twist-lock mounting feature
- CRS rotor is more economical while SS offers greater durability and chemical resistance
- Mount up to four pump heads without tools or hardware when using mounting plate
- Included mounting plate adapts Easy-Load 3 pump heads to L/S drives

### FEATURES

- ✓ Same side tubing entry/exit for space-limited applications
- ✓ Automatic tubing retention
- ✓ Stack up to four heads



ISO9001:2008 CERTIFIED SUPPLIER



Pump tubing sizes accepted	mL per rev	Flow rates in mL/min		Maximum system pressure† psi (bar)	Catalog number‡	
		1 to 100 rpm	6 to 600 rpm		CRS rotor	SS rotor
<b>Easy-Load 3 pump heads for Precision pump tubing</b>						
L/S 13	0.06	0.06 to 6	0.36 to 36	40 (2.7)	<a href="#">FN-77800-50</a>	<a href="#">FN-77800-60</a>
L/S 14	0.22	0.22 to 22	1.3 to 130	40 (2.7)		
L/S 16	0.8	0.8 to 80	4.8 to 480	40 (2.7)		
L/S 25	1.7	1.7 to 170	10 to 1000	35 (2.4)		
L/S 17	2.8	2.8 to 280	17 to 1700	20 (1.4)		
L/S 18	3.8	3.8 to 380	23 to 2300	15 (1.0)		
<b>Easy-Load 3 pump heads for High-performance precision pump tubing</b>						
L/S 15	1.7	1.7 to 170	10 to 1000	30 (2.0)	<a href="#">FN-77800-52</a>	<a href="#">FN-77800-62</a>
L/S 24	2.8	2.8 to 280	17 to 1700	30 (2.0)		
L/S 35	3.8	3.8 to 380	23 to 2300	25 (1.7)		
L/S 36	4.8	4.8 to 480	29 to 2900	20 (1.4)		
<b>Price</b>						

†Actual performance varies depending on pump tubing formulation—values shown are for firm pump tubing.

‡CRS = cold-rolled steel SS = stainless steel

**FN-77800-00 Replacement mounting kit**, for mounting Easy-Load 3 pump head to Masterflex L/S pump drives. Includes mounting plate and four screws

## L/S® Cytoflow™ Pump Heads

### Ensure maximum protection of live cells and shear-sensitive fluids

- Convex-roller design is gentler on live cells and shear-sensitive fluids—validated by independent test data
- Large-diameter rotor delivers higher flow rates at lower speeds
- Low-speed pumping lets you maintain the consistency and characteristics of shear-sensitive fluids
- 2-roller and 3-roller configurations available—choose 2 rollers for maximum flow rate, 3 rollers for less pulsation
- Compatible with all Masterflex L/S drives that accept two or more pump heads



77253-10



77253-00

Developed specifically for pumping delicate live cells and shear-sensitive fluids, the Masterflex L/S Cytoflow pump head is ideal for use in biopharma and microbiology applications where peristaltic pump operators want to minimize cell hemolysis. The extra-large tubing bed combined with fewer rollers results in high flow rates at low motor speeds, which furthers its cell viability advantages.



Pump tubing size	mL per rev	Flow rates in mL/min		Max system pressure psi (bar)	Catalog number	Price
		0.02 to 100 rpm	0.1 to 600 rpm			
<b>2-roller pump heads for Precision pump tubing</b>						
L/S 16	1.7	0.03 to 170	0.17 to 1000	22 (1.5)	<a href="#">FN-77253-00</a>	
L/S 25	3.9	0.08 to 390	0.39 to 2300	22 (1.5)		
L/S 17	6.1	0.12 to 600	0.61 to 3600	22 (1.5)		
L/S 18	8.6	0.17 to 850	0.86 to 5100	22 (1.5)		
<b>2-roller pump heads for High-Performance Precision pump tubing</b>						
L/S 15	4.0	0.08 to 390	0.40 to 2300	22 (1.5)	<a href="#">FN-77253-02</a>	
L/S 24	6.2	0.12 to 600	0.62 to 3700	22 (1.5)		
L/S 35	9.5	0.19 to 930	0.95 to 5600	22 (1.5)		
L/S 36	12.8	0.26 to 1270	1.3 to 7600	22 (1.5)		
<b>3-roller pump heads for Precision pump tubing</b>						
L/S 16	1.6	0.03 to 160	0.16 to 980	22 (1.5)	<a href="#">FN-77253-10</a>	
L/S 25	3.5	0.07 to 340	0.35 to 2000	22 (1.5)		
L/S 17	5.6	0.11 to 550	0.56 to 3300	22 (1.5)		
L/S 18	7.7	0.15 to 770	0.77 to 4600	22 (1.5)		
<b>3-roller pump heads for High-Performance Precision pump tubing</b>						
L/S 15	3.5	0.07 to 340	0.35 to 2000	22 (1.5)	<a href="#">FN-77253-12</a>	
L/S 24	5.7	0.11 to 570	0.57 to 3400	22 (1.5)		
L/S 35	7.8	0.16 to 780	0.78 to 4600	22 (1.5)		
L/S 36	9.6	0.19 to 950	0.96 to 5700	22 (1.5)		

Find even more online!  
Go to [ColeParmer.com](http://ColeParmer.com) to see full product details.

## Ultrasonic Flow Sensors

### Maintain accurate flow rates without affecting working fluid

- Noninvasive design eliminates contact with working fluid—ideal for applications with strict hygienic standards
- Provides accurate readings not affected by fluid color, tube color, or electromagnetic properties of liquids
- Continuously monitor peristaltic pump flow rates and send data directly to your computer with optional communications package
- Ready to use out of the box—calibrated for use with Masterflex L/S® and I/P® platinum-cured silicone tubing
- Easily adapt your application settings using optional communications package



Clamp-on sensor design makes setup easy—simply place the tubing in the sensor channel and close the lid.

Each sensor comes calibrated to national measurement standards for the appropriately sized Masterflex platinum-cured silicone tubing when water is the working fluid and across the full flow range. Adapt for use with other working fluids or Masterflex tubing materials of the same size with the optional communications package. For best accuracy, the sensor should be calibrated for the specific working fluid.



**What's included:** flow sensor, cable, and calibration certificate.



### Specifications

**Accuracy:** ±2 to 4% after using calibration software  
**Output:** RS-485, 4 to 20 mA, 0 to 20 kHz, or PNP-NPN  
**Enclosure rating:** IP65

For Masterflex tubing size	Max flow rate <sup>†</sup>		Min flow rate		Catalog number	Price
	GPH	mL/min	GPH	mL/min		
<b>Engineered for L/S Precision pump tubing</b>						
13	0.57	36	0.48	30	<a href="#">FN-33501-13</a>	
14	2.06	130	0.48	30	<a href="#">FN-33501-14</a>	
16	7.61	480	0.48	30	<a href="#">FN-33501-16</a>	
25	15.85	1000	0.48	30	<a href="#">FN-33501-25</a>	
17	26.95	1700	0.48	30	<a href="#">FN-33501-17</a>	
18	36.46	2300	0.48	30	<a href="#">FN-33501-18</a>	
<b>Engineered for L/S High-Performance Precision pump tubing</b>						
15	14.4	1100	0.48	30	<a href="#">FN-33501-15</a>	
24	28.53	1800	0.48	30	<a href="#">FN-33501-24</a>	
35	41.21	2600	0.48	30	<a href="#">FN-33501-35</a>	
36	53.89	3400	0.48	30	<a href="#">FN-33501-36</a>	
<b>Engineered for I/P Precision pump tubing</b>						
26	63.4	4000	0.48	30	<a href="#">FN-33501-26</a>	
73	126.8	8000	0.48	30	<a href="#">FN-33501-73</a>	

<sup>†</sup>Higher flow rates can be measured, the stated maximum flow rate is that of the tubing.

**FN-33501-96 Communications package** for Masterflex ultrasonic flow sensors. Includes software for data capture and calibration on USB drive and connector cable



## L/S® Multichannel Pump Heads

### Get low-pulsation synchronous flow in multiple channels without cartridges

- Load the tubing, latch the occlusion bed, and run the pump—two-stop tubing gives you optimal tension with no adjustment
- Stackable two, four, or eight-channel heads for up to 24 channels
- Six roller heads deliver low-pulsation flow; three-roller heads offer higher flow rates
- Heads for L/S precision pump tubing accept two-stop tubing set sizes L/S 13, L/S 14, and L/S 16; heads for L/S high-performance precision pump tubing accept two-stop tubing set sizes L/S 15, L/S 24, and L/S 35
- Compatible with L/S drives that accept two or more pump heads; 1/10 hp min



#### FEATURES

- ✓ Stackable for up to 24 synchronous flow channels
- ✓ Models for L/S two-stop tubing sets available
- ✓ Durable stainless steel and anodized aluminum construction



Stack heads for even more channels!

**What's included:** mounting hardware and hex key tool.

ISO9001:2008  
CERTIFIED SUPPLIER



Number of channels	Number of rollers	Max channels with stacked heads†		Catalog number	Price
		100 rpm drive	600 rpm drive		
<b>A. L/S Multichannel pump heads for precision pump tubing, sizes L/S 13, L/S 14, L/S 16</b>					
4	6	24	12	<a href="#">FN-07535-04</a>	
8				<a href="#">FN-07535-08</a>	
<b>B. L/S Multichannel pump heads for high-performance precision pump tubing, sizes L/S 15, L/S 24, L/S 35</b>					
2	3	12	6	<a href="#">FN-07536-02</a>	
4				<a href="#">FN-07536-04</a>	

†Maximum channel capacity depends on drive torque capability and tubing formulation used.

### L/S Two-Stop Precision Tubing Sets Ordering Information for 07535- and 07536-series pump heads

Pump tubing formulation	L/S Precision pump tubing	L/S High-performance precision pump tubing					
		L/S 13	L/S 14	L/S 16	L/S 15	L/S 24	L/S 35
Tygon® E-LFL	<a href="#">FN-06447-13</a> /pk of 8	<a href="#">FN-06447-14</a> /pk of 8	<a href="#">FN-06447-16</a> /pk of 8	<a href="#">FN-06447-15</a> /pk of 4	<a href="#">FN-06447-24</a> /pk of 4	<a href="#">FN-06447-35</a> /pk of 4	
Silicone (platinum-cured)	<a href="#">FN-06421-13</a> /pk of 8	<a href="#">FN-06421-14</a> /pk of 8	<a href="#">FN-06421-16</a> /pk of 8	<a href="#">FN-06421-15</a> /pk of 4	<a href="#">FN-06421-24</a> /pk of 4	<a href="#">FN-06421-35</a> /pk of 4	
BioPharm Plus Silicone (platinum-cured)	<a href="#">FN-96116-13</a> /pk of 8	<a href="#">FN-96116-14</a> /pk of 8	<a href="#">FN-96116-16</a> /pk of 8	<a href="#">FN-96116-15</a> /pk of 4	<a href="#">FN-96116-24</a> /pk of 4	<a href="#">FN-96116-35</a> /pk of 4	
PharMed® BPT	<a href="#">FN-96114-13</a> /pk of 8	<a href="#">FN-96114-14</a> /pk of 8	<a href="#">FN-96114-16</a> /pk of 8	<a href="#">FN-96114-15</a> /pk of 4	<a href="#">FN-96114-24</a> /pk of 4	<a href="#">FN-96114-35</a> /pk of 4	
Chem-Durance® Bio	<a href="#">FN-96117-13</a> /pk of 8	<a href="#">FN-96117-14</a> /pk of 8	<a href="#">FN-96117-16</a> /pk of 8	<a href="#">FN-96117-15</a> /pk of 4	<a href="#">FN-96117-24</a> /pk of 4	<a href="#">FN-96117-35</a> /pk of 4	
Viton®	<a href="#">FN-96428-13</a> /pk of 8	<a href="#">FN-96428-14</a> /pk of 8	<a href="#">FN-96428-16</a> /pk of 8	<a href="#">FN-96428-15</a> /pk of 4	<a href="#">FN-96428-24</a> /pk of 4	<a href="#">FN-96428-35</a> /pk of 4	

### Flow Rates per Channel in mL/min with L/S Two-Stop Precision Pump Tubing Sets above

Drive rpm	Precision pump tubing			High-performance precision pump tubing		
	L/S 13	L/S 14	L/S 16	L/S 15	L/S 24	L/S 35
1 to 100	0.045 to 4.5	0.16 to 16	0.47 to 47	1.6 to 160	2.8 to 280	3.8 to 380
6 to 600	0.27 to 27	0.96 to 96	2.8 to 280	10 to 1000	17 to 1700	23 to 2300

## Application Solution



**Challenge:** A pharmaceutical manufacturer needed to dispense volumes of 300 mL in 15 seconds or less repeating three times per minute; and 20 mL in 2 seconds or less repeating 20 times per minute. The desired accuracy target for both applications was  $\pm 1.5\%$ . The efficiency of simultaneously pumping multiple channels was critical.

**Solution:** The manufacturer now uses a Masterflex L/S digital drive with an L/S four-channel pump head 07536-04. Size L/S 15 two-stop silicone tubing (06421-15) met the smaller flow requirement, while size L/S 35 two-stop silicone tubing (06421-35) met the larger flow requirement. Careful calibration of the drive, and the synchronous multichannel flow capability of the pump head enabled the manufacturer to meet the accuracy target.

## L/S® Pump Tubing

Ensure optimal performance from your Masterflex pump



### Silicone (platinum-cured)

- Low protein binding, fungus resistant, phthalate and latex-free
- Accommodates a wide temperature range

### Silicone (peroxide-cured)

- Greater physical compression capability
- Economical, longer tubing life

### BioPharm Silicone (platinum-cured)

- Low absorption; excellent biocompatibility
- Very low extractable; weather, ozone, corona, radiation resistant

### BioPharm Plus Silicone (platinum-cured)

- Ultra-smooth—minimizes particle entrapment
- Very low extractable—ideal for lab, biotech, and pharmaceutical

### Puri-Flex™

- Heat sealable, weldable, and economical
- Long pump life when compared to silicone or many other TPE tubings

### C-Flex®

- Heat sealable, weldable, economical
- Better resistance to pH fluctuations

### C-Flex® ULTRA

- Longest life of any C-Flex formulation
- Lowest spallation and reduced residue

### PharMed® BPT

- >10,000 hours of tubing life; sealable, weldable
- Ideal for tissue and cell culture work

Tubing size	L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18
Inner diameter	0.8 mm (0.03")	1.6 mm (0.06")	3.1 mm (0.12")	4.8 mm (0.19")	6.4 mm (0.25")	7.9 mm (0.31")
Hose barb size	1.6 mm (1/16")	1.6 mm (1/16")	3.2 mm (1/8")	4.8 mm (3/16")	6.4 mm (1/4")	9.5 mm (3/8")
Flow range (approximate) <sup>†</sup>	0.06 to 36 mL/min	0.21 to 130 mL/min	0.8 to 480 mL/min	1.7 to 1000 mL/min	2.8 to 1700 mL/min	3.8 to 2300 mL/min

## L/S Precision Pump Tubing

Formulation	Complies with	Qty/pk	●	●	○	○	○	○
Silicone (platinum-cured)	MASTERFLEX USP Class V, EP, FDA, REACH, RoHS, ADFC	7.6 m (25 ft)	<a href="#">FN-96410-13</a>	<a href="#">FN-96410-14</a>	<a href="#">FN-96410-16</a>	<a href="#">FN-96410-25</a>	<a href="#">FN-96410-17</a>	<a href="#">FN-96410-18</a>
Silicone (peroxide-cured)	MASTERFLEX USP Class VI, EP, FDA, 3A, REACH, RoHS, ADFC	7.6 m (25 ft)	<a href="#">FN-96400-13</a>	<a href="#">FN-96400-14</a>	<a href="#">FN-96400-16</a>	<a href="#">FN-96400-25</a>	<a href="#">FN-96400-17</a>	<a href="#">FN-96400-18</a>
BioPharm Silicone (platinum-cured)	MASTERFLEX USP Class VI, EP, FDA, 3A, REACH, RoHS, ADFC	7.6 m (25 ft)	<a href="#">FN-96420-13</a>	<a href="#">FN-96420-14</a>	<a href="#">FN-96420-16</a>	<a href="#">FN-96420-25</a>	<a href="#">FN-96420-17</a>	<a href="#">FN-96420-18</a>
BioPharm Plus Silicone (platinum-cured)	MASTERFLEX USP Class VI, EP, FDA, REACH, RoHS, ADFC	7.6 m (25 ft)	<a href="#">FN-96440-13</a>	<a href="#">FN-96440-14</a>	<a href="#">FN-96440-16</a>	<a href="#">FN-96440-25</a>	<a href="#">FN-96440-17</a>	<a href="#">FN-96440-18</a>
Puri-Flex™	MASTERFLEX USP Class VI, FDA, 3A, REACH, RoHS, ADFC	7.6 m (25 ft)	<a href="#">FN-96419-13</a>	<a href="#">FN-96419-14</a>	<a href="#">FN-96419-16</a>	<a href="#">FN-96419-25</a>	<a href="#">FN-96419-17</a>	<a href="#">FN-96419-18</a>
C-Flex®	MASTERFLEX USP Class VI, EP, REACH, RoHS, ADFC	7.6 m (25 ft)	<a href="#">FN-06424-13</a>	<a href="#">FN-06424-14</a>	<a href="#">FN-06424-16</a>	<a href="#">FN-06424-25</a>	<a href="#">FN-06424-17</a>	<a href="#">FN-06424-18</a>
C-Flex® ULTRA	MASTERFLEX USP Class VI, EP, REACH, RoHS, ADFC	7.6 m (25 ft)	—	<a href="#">FN-06434-14</a>	<a href="#">FN-06434-16</a>	<a href="#">FN-06434-25</a>	<a href="#">FN-06434-17</a>	<a href="#">FN-06434-18</a>
PharMed® BPT	MASTERFLEX USP Class VI, EP, FDA, NSF, REACH, RoHS	7.6 m (25 ft)	<a href="#">FN-06508-13</a>	<a href="#">FN-06508-14</a>	<a href="#">FN-06508-16</a>	<a href="#">FN-06508-25</a>	<a href="#">FN-06508-17</a>	<a href="#">FN-06508-18</a>
PharmaPure®†	MASTERFLEX USP Class VI, EP, FDA, REACH, RoHS	7.6 m (25 ft)	<a href="#">FN-06435-13</a>	<a href="#">FN-06435-14</a>	<a href="#">FN-06435-16</a>	<a href="#">FN-06435-25</a>	<a href="#">FN-06435-17</a>	<a href="#">FN-06435-18</a>
GORE® STA-PURE® Series PCS <sup>‡</sup>	USP Class VI	35.6 cm (14")	—	<a href="#">FN-96211-14</a>	<a href="#">FN-96211-16</a>	<a href="#">FN-96211-25</a>	<a href="#">FN-96211-17</a>	<a href="#">FN-96211-18</a>
GORE® STA-PURE® Series PFL <sup>‡</sup>	USP Class VI	35.6 cm (14")	—	<a href="#">FN-96212-14</a>	<a href="#">FN-96212-16</a>	<a href="#">FN-96212-25</a>	<a href="#">FN-96212-17</a>	<a href="#">FN-96212-18</a>
Chem-Durance® Bio <sup>‡</sup>	MASTERFLEX USP Class VI, FDA, REACH, RoHS	15.2 m (50 ft)	<a href="#">FN-06442-13</a>	<a href="#">FN-06442-14</a>	<a href="#">FN-06442-16</a>	<a href="#">FN-06442-25</a>	<a href="#">FN-06442-17</a>	<a href="#">FN-06442-18</a>
Solve-Flex®†	USP Class VI	3.6 m (12 ft)	—	—	—	—	<a href="#">FN-96446-17</a>	—
Tygon® E-LFL	MASTERFLEX USP Class VI, EP, FDA, EU Food, REACH, RoHS, ADFC	7.6 m (25 ft)	<a href="#">FN-06440-13</a>	<a href="#">FN-06440-14</a>	<a href="#">FN-06440-16</a>	<a href="#">FN-06440-25</a>	<a href="#">FN-06440-17</a>	<a href="#">FN-06440-18</a>
Tygon E-Food (B-44-4X)	MASTERFLEX FDA, EU Food, NSF, 3A, REACH, RoHS, ADFC	15.2 m (50 ft)	<a href="#">FN-06418-13</a>	<a href="#">FN-06418-14</a>	<a href="#">FN-06418-16</a>	<a href="#">FN-06418-25</a>	<a href="#">FN-06418-17</a>	<a href="#">FN-06418-18</a>
Tygon E-Lab (E-3603)	MASTERFLEX USP Class VI, FDA, EU Food, NSF, REACH, RoHS, ADFC	15.2 m (50 ft)	<a href="#">FN-06509-13</a>	<a href="#">FN-06509-14</a>	<a href="#">FN-06509-16</a>	<a href="#">FN-06509-25</a>	<a href="#">FN-06509-17</a>	<a href="#">FN-06509-18</a>
Tygon Fuel & Lubricant (F-4040-A)	MASTERFLEX REACH, RoHS, ADFC	15.2 m (50 ft)	<a href="#">FN-06401-13</a>	<a href="#">FN-06401-14</a>	<a href="#">FN-06401-16</a>	<a href="#">FN-06401-25</a>	<a href="#">FN-06401-17</a>	<a href="#">FN-06401-18</a>
Tygon Chemical <sup>‡</sup> (2001)	MASTERFLEX FDA 21 CFR 175.300, REACH, RoHS, ADFC	15.2 m (50 ft)	<a href="#">FN-06475-13</a>	<a href="#">FN-06475-14</a>	<a href="#">FN-06475-16</a>	<a href="#">FN-06475-25</a>	<a href="#">FN-06475-17</a>	<a href="#">FN-06475-18</a>
Norprene® (A-60 G)	MASTERFLEX NSF, REACH, RoHS	15.2 m (50 ft)	<a href="#">FN-06404-13</a>	<a href="#">FN-06404-14</a>	<a href="#">FN-06404-16</a>	<a href="#">FN-06404-25</a>	<a href="#">FN-06404-17</a>	<a href="#">FN-06404-18</a>
Norprene Food (A 60 F)	MASTERFLEX FDA, 3A, NSF, REACH, RoHS	15.2 m (50 ft)	<a href="#">FN-06402-13</a>	<a href="#">FN-06402-14</a>	<a href="#">FN-06402-16</a>	<a href="#">FN-06402-25</a>	<a href="#">FN-06402-17</a>	<a href="#">FN-06402-18</a>
Viton®	MASTERFLEX FDA, ADFC	7.6 m (25 ft)	<a href="#">FN-96412-13</a>	<a href="#">FN-96412-14</a>	<a href="#">FN-96412-16</a>	<a href="#">FN-96412-25</a>	<a href="#">FN-96412-17</a>	<a href="#">FN-96412-18</a>

<sup>†</sup>Determined under the following conditions: Using a 1 to 600 rpm drive; 0 psi at inlet, 0.5 psi at outlet; water temperature at 22°C (72°F).

## FEATURES

- ✓ Custom extruded to fit Masterflex pumps
- ✓ Engineered for long life in peristaltic pump applications

### PharmaPure®

- Nontoxic and nonhemolytic biocompatible
- Long life even under pressure with VERY low spallation

### Gore® STA-PURE® Series PCS

- Long life—even in pressures up to 100 psi
- Excellent flow stability

### Gore® STA-PURE® Series PFL

- Long life—even in pressures up to 100 psi
- Excellent biocompatibility and flow stability

### Chem-Durance® Bio

- Excellent chemical compatibility and biocompatibility
- Excellent life and durability under pressure

### Solve-Flex®

- Excellent chemical resistance, especially solvents
- Fluoropolymer lined with low spallation

### Tygon® E-LFL

- Longest life of all Tygon formulations
- Broad chemical resistance

### Tygon E-Food (B-44-4X)

- Smooth inner surface unaffected by commercial sanitizers
- Nontoxic; will not affect taste or odor

### Tygon E-Lab (E-3603)

- Ideal for general transfer use
- Nonaging, nonoxidizing, low gas permeability

### Tygon Fuel & Lubricant (F-4040-A)

- Formulated to transport hydrocarbons, petroleum products, and distillates
- Low gas permeability

### Tygon Chemical (2001)

- Excellent chemical resistance
- Plasticizer-free with low gas permeability

### Norprene® (A-60 G)

- Up to 10,000 hours of tubing life
- Excellent choice for pressure/vacuum applications




### Norprene Food (A 60 F)

- Ideal for high-temperature food applications
- Resists heat, ozone, acids, and alkalis

### Viton®

- Perfect for applications where FDA and chemical compatibility is needed
- Resists corrosives, solvents, and oils at elevated temperatures

## L/S High-Performance Precision Pump Tubing

Formulation	Complies with	Qty/pk	Tubing size				
			L/S 15	L/S 24	L/S 35	L/S 36	
			Inner diameter	4.8 mm (0.19")	6.4 mm (0.25")	7.9 mm (0.31")	9.7 mm (0.38")
			Hose barb size	4.8 mm (3/16")	6.4 mm (1/4")	9.5 mm (3/8")	9.5 mm (3/8")
			Flow range (approximate)†	1.7 to 1000 mL/min (1.8 to 1100 mL/min)	2.8 to 1700 mL/min (3.0 to 1800 mL/min)	3.8 to 2300 mL/min (4.3 to 2600 mL/min)	4.8 to 2900 mL/min (5.8 to 3400 mL/min)
							
Silicone (platinum-cured)	USP Class V, EP, FDA, REACH, RoHS, AOCF	7.6 m (25 ft)	<a href="#">FN-96410-15</a>	<a href="#">FN-96410-24</a>	<a href="#">FN-96410-35</a>	<a href="#">FN-96410-36</a>	
Silicone (peroxide-cured)	USP Class VI, EP, FDA, 3A, REACH, RoHS, AOCF	7.6 m (25 ft)	<a href="#">FN-96400-15</a>	<a href="#">FN-96400-24</a>	<a href="#">FN-96400-35</a>	<a href="#">FN-96400-36</a>	
BioPharm Silicone (platinum-cured)	USP Class VI, EP, FDA, 3A, REACH, RoHS, AOCF	7.6 m (25 ft)	<a href="#">FN-96420-15</a>	<a href="#">FN-96420-24</a>	<a href="#">FN-96420-35</a>	<a href="#">FN-96420-36</a>	
BioPharm Plus Silicone (platinum-cured)	USP Class VI, EP, FDA, REACH, RoHS, AOCF	7.6 m (25 ft)	<a href="#">FN-96440-15</a>	<a href="#">FN-96440-24</a>	<a href="#">FN-96440-35</a>	<a href="#">FN-96440-36</a>	
Puri-Flex™	USP Class VI, FDA, 3A, REACH, RoHS, AOCF	7.6 m (25 ft)	<a href="#">FN-96419-15</a>	<a href="#">FN-96419-24</a>	<a href="#">FN-96419-35</a>	<a href="#">FN-96419-36</a>	
C-Flex®	USP Class VI, EP, REACH, RoHS, AOCF	7.6 m (25 ft)	<a href="#">FN-06424-15</a>	<a href="#">FN-06424-24</a>	<a href="#">FN-06424-35</a>	<a href="#">FN-06424-36</a>	
C-Flex® ULTRA	USP Class VI, EP, REACH, RoHS, AOCF	7.6 m (25 ft)	<a href="#">FN-06434-15</a>	<a href="#">FN-06434-24</a>	<a href="#">FN-06434-35</a>	<a href="#">FN-06434-36</a>	
PharMed® BPT	USP Class VI, EP, FDA, NSF, REACH, RoHS	7.6 m (25 ft)	<a href="#">FN-06508-15</a>	<a href="#">FN-06508-24</a>	<a href="#">FN-06508-35</a>	<a href="#">FN-06508-36</a>	
PharmaPure®†	USP Class VI, EP, FDA, REACH, RoHS	7.6 m (25 ft)	<a href="#">FN-06435-15</a>	<a href="#">FN-06435-24</a>	—	—	
GORE® STA-PURE® Series PCS†	USP Class VI	35.6 cm (14")	<a href="#">FN-96211-15</a>	<a href="#">FN-96211-24</a>	<a href="#">FN-96211-35</a>	<a href="#">FN-96211-36</a>	
GORE® STA-PURE® Series PFL†	USP Class VI	35.6 cm (14")	<a href="#">FN-96212-15</a>	<a href="#">FN-96212-24</a>	<a href="#">FN-96212-35</a>	<a href="#">FN-96212-36</a>	
Chem-Durance® Bio†	USP Class VI, FDA, REACH, RoHS	15.2 m (50 ft)	<a href="#">FN-06442-15</a>	<a href="#">FN-06442-24</a>	<a href="#">FN-06442-35</a>	<a href="#">FN-06442-36</a>	
Solve-Flex®†	USP Class VI	3.6 m (12 ft)	—	<a href="#">FN-96446-24</a>	—	—	
Tygon® E-LFL	USP Class VI, EP, FDA, EU Food, REACH, RoHS, AOCF	7.6 m (25 ft)	<a href="#">FN-06440-15</a>	<a href="#">FN-06440-24</a>	<a href="#">FN-06440-35</a>	<a href="#">FN-06440-36</a>	
Tygon E-Food (B-44-4X)	FDA, EU Food, NSF, 3A, REACH, RoHS, AOCF	15.2 m (50 ft)	<a href="#">FN-06418-15</a>	<a href="#">FN-06418-24</a>	<a href="#">FN-06418-35</a>	<a href="#">FN-06418-36</a>	
Tygon E-Lab (E-3603)	USP Class VI, FDA, EU Food, NSF, REACH, RoHS, AOCF	15.2 m (50 ft)	<a href="#">FN-06509-15</a>	<a href="#">FN-06509-24</a>	<a href="#">FN-06509-35</a>	<a href="#">FN-06509-36</a>	
Tygon Fuel & Lubricant (F-4040-A)	REACH, RoHS, AOCF	15.2 m (50 ft)	<a href="#">FN-06401-15</a>	<a href="#">FN-06401-24</a>	<a href="#">FN-06401-35</a>	<a href="#">FN-06401-36</a>	
Tygon Chemical† (2001)	FDA 21 CFR 175.300, REACH, RoHS, AOCF	15.2 m (50 ft)	<a href="#">FN-06475-15</a>	<a href="#">FN-06475-24</a>	—	—	
Norprene® (A-60 G)	NSF, REACH, RoHS	15.2 m (50 ft)	<a href="#">FN-06404-15</a>	<a href="#">FN-06404-24</a>	<a href="#">FN-06404-35</a>	<a href="#">FN-06404-36</a>	
Norprene Food (A 60 F)	FDA, 3A, NSF, REACH, RoHS	15.2 m (50 ft)	<a href="#">FN-06402-15</a>	<a href="#">FN-06402-24</a>	<a href="#">FN-06402-35</a>	<a href="#">FN-06402-36</a>	
Viton®	FDA, AOCF	7.6 m (25 ft)	<a href="#">FN-96412-15</a>	<a href="#">FN-96412-24</a>	<a href="#">FN-96412-35</a>	<a href="#">FN-96412-36</a>	

†Not compatible with Easy-Load 3, Multi-Cartridge, or High-Performance pump heads.

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

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

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

### FEATURES

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



### Flow Rates in mL/min (flow rates in parentheses can only be obtained with the High-Performance pump head—see page 5)

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

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



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

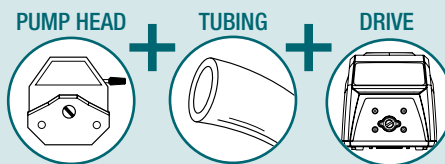
### Accessories

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

- [FN-07528-80 Handheld remote controller](#); for remote control of start/stop, route tubing through handle for dispensing into containers
- [FN-17050-01 NIST-traceable calibration](#) with data for peristaltic pump drive

## Choose a convenient Complete System

One catalog number includes all 3!

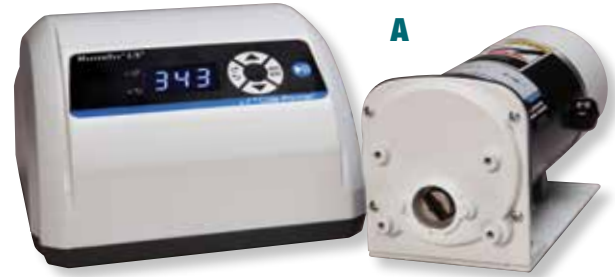


System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	4.8 to 480 mL/min	Easy-Load® 3 77800-60	C-Flex® ULTRA L/S 16 tubing 06434-16 10 ft (3 m)	Precision console drive 07528-10 6 to 600 rpm	90 to 260 VAC, 50/60 Hz	<a href="#">FN-77916-10</a>	
	17 to 1700 mL/min	Easy-Load II 77200-62	C-Flex® ULTRA L/S 24 tubing 06434-24 10 ft (3 m)				<a href="#">FN-77916-20</a>

**L/S® Precision Variable-Speed Modular Drives**

Place where convenient—ideal for limited spaces, hoods, or isolation chambers

- Three-digit LED display shows motor rpm—confirm speed setting at a glance
- Remote control capabilities: speed, direction, and start/stop
- ±0.25% speed control for precise flow regulation—ideal for metering applications



**A. Modular Drives with Benchtop Controller**

- Splash-resistant ABS plastic controller housing is IP33 rated; drive housing is epoxy finished steel, IP33 rated
- Remote control capabilities via a DB9 female connector on back of controller

**B. Washdown Modular Drives with Wall-Mount Controller**

- Wall-mount controller housing is powder-coated aluminum, IP66 / NEMA 4X rated for washdown; powder-coated steel drive housing is IP66 / NEMA 4X rated for washdown
- Remote control capabilities via weather-resistant connection on controller

**FEATURES**

- ✓ Flow rates: 0.06 to 3400 mL/min
- ✓ Easy up-front control of speed, direction, and start/stop
- ✓ Reversible motor—purge tubing before or after pumping; pump fluid in either direction



**B**  
Models 07557-60 and -70 include wall-mount controller



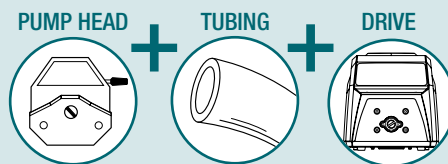
rpm	Speed control (resolution)	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power (50/60 Hz)		Catalog number	Price
						VAC	Amps		
<b>A. Precision modular drives with benchtop controller</b>									
6 to 600	±0.25% (1 rpm at 600 rpm);	2	1/10 hp (75 W)	IP33	Controller: 10½" x 8¼" x 5" Drive: 10¾" x 4¾" x 4½"	90 to 260	2.2 at 115 VAC, 1.1 at 230 VAC	<a href="#">FN-07557-00</a>	
1 to 100	0.1 rpm at 100 rpm)	4							
<b>B. Precision washdown modular drives with washdown wall-mount controller</b>									
6 to 600	±0.25% (1 rpm at 600 rpm);	2	1/10 hp (75 W)	IP66	Controller: 9" x 11¾" x 4½" Drive: 15½" x 7" x 6"	90 to 260	2.2 at 115 VAC, 1.1 at 230 VAC	<a href="#">FN-07557-60</a>	<a href="#">FN-07557-70</a>
1 to 100	0.1 rpm at 100 rpm)	4							

**FN-07557-51** Extension cable, 9 ft (2.7 m); extend distance between motor and controller

**FN-07595-47** Cable assembly, for benchtop modular drives; DB9 male connector and 25 ft (7.9 m) cable with stripped wire terminal ends. Use for remote control

**FN-77300-32** Cable assembly, for washdown modular drives; 18-pin round connector and 25 ft (7.9 m) cable with stripped wire terminal ends. Use for remote control

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



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

System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	4.8 to 480 mL/min	Easy-Load® 3 77800-60	C-Flex® ULTRA L/S 16 tubing 06434-16 10 ft (3 m)	Modular drive 07557-00 6 to 600 rpm	90 to 260 VAC, 50/60 Hz	<a href="#">FN-77913-60</a>	
	17 to 1700 mL/min	Easy-Load II 77200-62	C-Flex ULTRA L/S 24 tubing 06434-24 10 ft (3 m)	Modular drive 07557-00 6 to 600 rpm	90 to 260 VAC, 50/60 Hz	<a href="#">FN-77913-70</a>	
	17 to 1700 mL/min	Easy-Load II 77200-62	C-Flex ULTRA L/S 24 tubing 06434-24 10 ft (3 m)	Modular drive 07557-60 6 to 600 rpm	90 to 260 VAC, 50/60 Hz	<a href="#">FN-77913-80</a>	

## L/S® Variable-Speed Digital Drives Versatile, worry-free operation

- Brushless, maintenance-free motor provides  $\pm 0.1\%$  speed control accuracy with 6000:1 turndown ratio
- Bright graphical LCD offers easy programming, four operating modes, and seven languages
- Get more accurate dispensing with preprogrammed calibration
- Drives accept all L/S pump heads for more pumping versatility
- Models equipped with open-head sensor stop drive motor when pump head is open
- Operate remotely via DB25 female connector

### FEATURES

- ✓ Flow rates: 0.001 to 3400 mL/min
- ✓ Variable speed from 0.02 to 600 rpm
- ✓ Programmable, reversible motor accepts up to four pump heads
- ✓ Ensure dispensing accuracy with antidrip function
- ✓ Hands-free dispensing via time interval dispense cycles

Four operating modes for more functionality: continuous run, time dispense, copy dispense, and volume dispense



**Flow Rates in mL/min** (flow rates in parentheses can only be obtained with the High-Performance pump head—see page 5)

rpm	Precision pump tubing						High-performance precision pump tubing			
	L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18	L/S 15	L/S 24	L/S 35	L/S 36
	Standard†, Easy-Load, Easy-Load II, Easy-Load 3						Multichannel‡, Standard, Easy-Load II, Easy-Load 3, High-Performance			
	Cartridge, Multichannel			Cartridge			Easy-Load			
0.1 to 600	0.006 to 36	0.021 to 130	0.08 to 480	0.17 to 1000	0.28 to 1700	0.38 to 2300	0.17 to 1000 (0.18 to 1100)	0.28 to 1700 (0.30 to 1800)	0.38 to 2300 (0.43 to 2600)	0.48 to 2900 (0.57 to 3400)
0.02 to 100	0.001 to 6	0.004 to 21	0.016 to 80	0.033 to 170	0.057 to 280	0.077 to 380	0.033 to 170 (0.036 to 183)	0.057 to 280 (0.057 to 300)	0.077 to 380 (0.086 to 433)	0.096 to 480 (0.113 to 566)

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

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

ISO 9001:2008  
CERTIFIED SUPPLIER



rpm	Speed control (resolution)	Open-head sensor	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power	Catalog number	Price
0.1 to 600	$\pm 0.1\%$ (0.1 rpm at 600 rpm; 0.01 rpm at 100 rpm)	No	2	1/10 hp (75 W)	IP33	10" x 8.5" x 8.5" (25.4 x 21.6 x 21.6 cm)	90 to 260 VAC, 50/60 Hz	FN-07522-20	
		Yes††						FN-07522-28	
0.02 to 100	$\pm 0.1\%$ (0.1 rpm at 600 rpm; 0.01 rpm at 100 rpm)	No	4	1/10 hp (75 W)	IP33	10" x 8.5" x 8.5" (25.4 x 21.6 x 21.6 cm)	90 to 260 VAC, 50/60 Hz	FN-07522-30	
		Yes††						FN-07522-38	

††These drives accept pump heads with open-head interlock sensor (order on pages 4–5); sensor stops motor when pump head is opened.

**FN-07523-92** Foot switch, momentary start/stop; 6-ft (1.8-m) cable

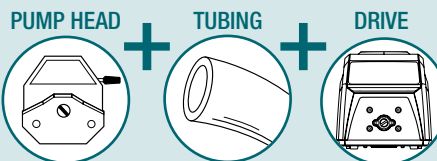
**FN-07523-94** DB25 male connector. Use to create your own cable

**FN-07523-95** Cable assembly, DB25 male connector and 25 ft (7.9 m) cable with stripped wire ends for remote control

**FN-07523-97** Handheld remote controller; route tubing through handle for dispensing into containers

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

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



**Wait! There's More...**

See pages 4–7 for L/S pump heads and pages 8–9 for L/S tubing.

System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	0.08 to 480 mL/min	Easy-Load® 3 77800-60	C-Flex® ULTRA L/S 16 tubing 06434-16 10 ft (3 m)	Digital drive 07522-20 0.1 to 600 rpm	90 to 260 VAC, 50/60 Hz	<a href="#">FN-77921-65</a>	
	0.28 to 1700 mL/min	Easy-Load II 77200-62	C-Flex ULTRA L/S 24 tubing 06434-24 10 ft (3 m)			<a href="#">FN-77921-75</a>	

## L/S® Digital Console Process Drives

### Transfer, dispense, and meter in lab, process and washdown environments

- IP66 and NEMA 4X rated. Sealed housing and sealed keypad are protected from dust, water, and chemicals in the washdown environment—simply hose down to clean.
- Flow rate: 0.001 to 3400 mL/min with L/S tubing depending on drive rpm and tubing size
- Graphical LCD shows six different parameters: motor rpm, flow rate, dispense volume, cumulative volume, dispense interval time, and copy number.
- Brushless, maintenance-free motor with ±0.1% speed control accuracy and a 6000 to 1 turndown ratio
- Dispense by: volume—volume, copy, or time with programmable delay interval.
- Remote control capabilities via waterproof connection
- Models equipped with open-head sensor stop drive motor when pump head is opened—pair with an open-head sensor equipped pump head (see pages 4–5)

#### FEATURES

- ✓ Flow rates: 0.001 to 3400 mL/min
- ✓ IP66 and NEMA 4X rated
- ✓ Programmable, reversible motor accepts two or four pump heads and offers remote functionality



Drive 07575-38 shown with L/S Easy-Load II pump head 77200-32

**What's included:** 6-ft (1.8-m) line cord—features IEC 320/CEE 22 connector coupler; watertight cord connection. Please specify destination country when ordering; drive is shipped with country-specific plug/cord set.

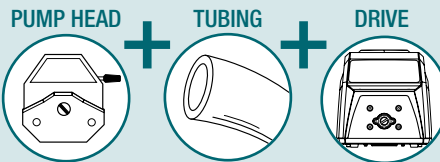


rpm	Speed control (resolution)	Open-head sensor	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power	Catalog number	Price
<b>Digital process drive with 316 stainless steel housing</b>									
0.1 to 600	±0.1%	No	2	1/10 hp (75 W)	IP66	12" x 9" x 9 5/16" (30.5 x 22.9 x 23.6 cm)	90 to 260 VAC, 50/60 Hz	<a href="#">FN-07575-30</a>	
		Yes						<a href="#">FN-07575-38</a>	
0.02 to 100		No	4					<a href="#">FN-07575-35</a>	
<b>Digital process drive with powder-coat steel housing</b>									
0.1 to 600	±0.1%	No	2	1/10 hp (75 W)	IP66	12" x 9" x 9 5/16" (30.5 x 22.9 x 23.6 cm)	90 to 260 VAC, 50/60 Hz	<a href="#">FN-07575-40</a>	
		Yes						<a href="#">FN-07575-48</a>	
0.02 to 100		No	4					<a href="#">FN-07575-45</a>	

[FN-07575-84](#) Washdown foot switch, momentary start/stop; 6-ft (1.8-m) cable

[FN-07575-80](#) Cable assembly for remote control; 31-pin round connector and 25-ft (7.9-m) cable with stripped wire ends

[FN-17050-01](#) NIST-traceable calibration with data for peristaltic pump drive



Choose a convenient Complete System

One catalog number includes all 3!

System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	0.28 to 1700 mL/min	Easy-Load® II 77200-62	C-Flex® ULTRA L/S 24 tubing 06434-24 10 ft (3 m)	Digital console process drive with 316 SS housing 07575-30 0.1 to 600 rpm	90 to 260 VAC, 50/60 Hz	<a href="#">FN-77975-25</a>	
	0.28 to 1700 mL/min	Easy-Load II 77200-62	C-Flex ULTRA L/S 24 tubing 06434-24 10 ft (3 m)	Digital console process drive with powder-coat steel housing 07575-40 0.1 to 600 rpm	90 to 260 VAC, 50/60 Hz	<a href="#">FN-77975-45</a>	

## L/S® Digital Miniflex® Pumps

### Small footprint, yet delivers accurate flow over a wide range

- Flow range of 0.005 to 381 mL/min (depending on tubing size)
- Tubing calibration function ensures accuracy
- Open-head sensor stops drive when pump head is opened
- Remote control via 25-pin connector on back of drive
- Automatic tubing retention makes tube loading quick and easy

Compact, stackable pump with durable ABS housing is easy to wipe down. The Miniflex pump head features a wide occlusion angle that prevents fluid backflow up to the rated pressure of the tubing. Self-lubricating thermoplastic polyester rollers are low friction and long wearing for smooth operation and long life.

#### Flow Rates (mL/min) at 0.1 to 300 rpm

Pump model	Precision pump tubing			
	L/S 13	L/S 14	L/S 16	L/S 25
07525-20	0.005 to 14	0.018 to 55	0.061 to 184	0.127 to 381
07525-40	0.005 to 14	0.018 to 55	0.061 to 184	—

Number of channels	rpm	Speed control (repeatability)	Reversible motor	IP rating	Dimensions (L x W x H)	Power (50/60 Hz)		Catalog number	Price
						VAC	Amps		
1	0.1 to 300	±0.1%	Yes	IP33	9.4" x 5.5" x 6.2" (23.9 x 14.0 x 15.7 cm)	90 to 260	0.34 at 115 VAC, 0.2 at 230 VAC	FN-07525-20	
2								FN-07525-40	

**FN-07523-92** Foot switch, momentary start/stop; DB25 male; 6-ft (1.8-m) cable

**FN-07523-95** Cable assembly, DB25 male connector and 25-ft (7.9-m) cable with stripped wire ends



**NEW**

#### FEATURES

- ✓ Flow rates: 0.005 to 381 mL/min
- ✓ Intuitive icon-driven programming
- ✓ Tubing calibration for accuracy
- ✓ Single- or dual-channel models

Power supplies are:



**FN-07523-97** Handheld remote controller, DB25 male, route tubing through handle for dispensing applications; 6-ft (1.8-m) cable

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

## L/S® Variable-Speed Economy Modular Drives

### Versatile with a wide flow range and simple controls

- Separate motor and controller are connected via a 6-ft (1.9 m) cable—place components where convenient or where space allows
- Single-turn speed control and on/off switch with green power indicator—maintain speed setting while turning pump on and off
- Painted steel housing is IP33 rated for protection from vertically falling water

A perfect upgrade from a fixed-speed drive, these variable-speed drives offer a wider rpm range, ±2% speed regulation, and ETL and CE listings. For added versatility, drives accept all L/S pump heads.

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



**NEW**

#### FEATURES

- ✓ Flow rates: 0.06 to 3400 mL/min
- ✓ Variable speed—1 to 100 or 6 to 600 rpm
- ✓ Convenient modular design



rpm	Speed control (resolution)	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power (50/60 Hz)		Catalog number	Price
						VAC	Amps		
6 to 600	±2%	2	1/10 hp (75 W)	Controller: IP33 Motor: IP21	Controller: 8" x 6.4" x 3.4" (20.4 x 16.4 x 8.7 cm) Motor: 7.8" x 3.8" x 4.5" (19.8 x 9.7 x 11.5 cm)	90 to 130	2.2 at 115 VAC	FN-07559-00	
						190 to 260	1.2 at 230 VAC	FN-07559-05	
1 to 100	±2%	4	1/10 hp (75 W)	Controller: IP33 Motor: IP21	Controller: 8" x 6.4" x 3.4" (20.4 x 16.4 x 8.7 cm) Motor: 7.8" x 3.8" x 4.5" (19.8 x 9.7 x 11.5 cm)	90 to 130	2.2 at 115 VAC	FN-07559-10	
						190 to 260	1.2 at 230 VAC	FN-07559-15	

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



## I/P® Easy-Load® Pump Heads

### Minimize downtime with faster tubing changes

- Optimize pressure capabilities and tubing life with adjustable occlusion
- Less maintenance and quieter operation with included tang boot
- No more loose pump heads—five-screw mounting for more secure attachment
- Adjust flow rate to your needs—can pump from 0.6 to 13 LPM
- PPS housing with CRS or SS rotor available. CRS rotors have sealed bearings; SS rotors have PTFE-sealed bearings
- Model with open-head interlock sensor stops drive motor when pump head is open (when used with sensor-equipped drives)

**FEATURES**

- ✓ Load tubing without removing pump head from drive
- ✓ Automatic tubing retention
- ✓ Stack up to two pump heads
- ✓ ATEX Zone 2 rated model available



Pump tubing sizes accepted	mL per rev	Flow rates (LPM) at indicated rpm			Maximum system psi (bar)	Catalog number†				
		100	540	20 to 650		White PPS housing			Black PPS housing	ATEX-approved; PPS housing
						CRS rotor	SS rotor	SS rotor and open-head sensor	SS rotor	SS rotor
I/P 26	6.15	0.6	3.2	0.12 to 4	40 (2.7)					
I/P 73	12.3	1.2	6.8	0.2 to 8		<a href="#">FN-77602-00</a>	<a href="#">FN-77602-10</a>	<a href="#">FN-77602-30</a>	<a href="#">FN-77601-60</a>	<a href="#">FN-77602-80</a>
I/P 82	20.0	2.0	11.0	0.4 to 13		20 (1.4)				
<b>Price</b>										

†PPSF = polysulfone PPS = polyphenylene sulfide CRS = cold-rolled steel SS = stainless steel

[FN-77601-96](#) Dual-channel mounting hardware for two pump heads, stainless steel

## I/P® High-Performance Pump Heads

### Get higher flow rates and pressure

- Easily transfer viscous fluids
- Pump up to 19 LPM for higher volume processing
- Durable design for longer life—made of stainless steel rollers, bearings, rotor plates, and rotor shaft. Occlusion bed is made of thermoset polyester
- Compatible with I/P drives that accept two or more pump heads; pump head is not stackable
- Models with open-head interlock sensor stop drive motor when pump head is open (when used with sensor-equipped drives)



Pump tubing sizes accepted	mL per rev	Flow rates (LPM) at 20 to 650 rpm	Maximum system psi (bar)	Catalog number†	
				Polyester and SS housing, SS rotor	ATEX-approved; polyester and SS housing, SS rotor
I/P 70	12.3	0.26 to 8	40 (2.7)		
I/P 88	26.2	0.4 to 17	35 (2.4)	<a href="#">FN-77600-62</a>	<a href="#">FN-77600-82</a>
I/P 89	29.2	0.52 to 19	20 (1.4)		
<b>Price</b>					

†SS = stainless steel

**FEATURES**

- ✓ Easy to load tubing
- ✓ Adjustable tubing retention
- ✓ “C”-shaped design—tubing enters/exits the same side
- ✓ ATEX Zone 2 rated model available

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## I/P® Pump Tubing

Ensure optimal performance from your Masterflex pump



### Silicone (platinum-cured)

- Low protein binding, fungus resistant, phthalate and latex-free
- Accommodates a wide temperature range

### Silicone (peroxide-cured)

- Greater physical compression capability
- Economical, longer tubing life

### BioPharm Silicone (platinum-cured)

- Low absorption; excellent biocompatibility
- Very low extractable; weather, ozone, corona, radiation resistant

### BioPharm Plus Silicone (platinum-cured)

- Ultra-smooth—minimizes particle entrapment
- Very low extractable—ideal for lab, biotech, and pharmaceutical

### Puri-Flex™

- Heat sealable, weldable, and economical
- Long pump life when compared to silicone or many other TPE tubings

### C-Flex®




- Heat sealable, weldable, economical
- Better resistance to pH fluctuations

### C-Flex® ULTRA

- Longest life of any C-Flex formulation
- Lowest spallation and reduced residue

## I/P Precision Pump Tubing

Tubing size	I/P 26	I/P 73	I/P 82
Inner diameter	6.4 mm (0.25")	9.5 mm (0.37")	12.7 mm (0.5")
Hose barb size	6.4 mm (¼")	9.5 mm (⅜")	12.7 mm (½")
Flow range (approximate)†	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

Formulation	Complies with	Qty/pk			
Silicone (platinum cured)	USP Class V, EP, FDA, REACH, RoHS, ADCF	7.6 m (25 ft)	<a href="#">FN-96410-26</a>	<a href="#">FN-96410-73</a>	<a href="#">FN-96410-82</a>
Silicone (peroxide cured)	USP Class VI, EP, FDA, 3A, REACH, RoHS, ADCF	7.6 m (25 ft)	<a href="#">FN-96400-26</a>	<a href="#">FN-96400-73</a>	<a href="#">FN-96400-82</a>
BioPharm Silicone (platinum)	USP Class VI, EP, FDA, 3A, REACH, RoHS, ADCF	7.6 m (25 ft)	<a href="#">FN-96420-26</a>	<a href="#">FN-96420-73</a>	<a href="#">FN-96420-82</a>
BioPharm Plus Silicone (platinum)	USP Class VI, EP, FDA, REACH, RoHS, ADCF	7.6 m (25 ft)	<a href="#">FN-96440-26</a>	<a href="#">FN-96440-73</a>	<a href="#">FN-96440-82</a>
Puri-Flex™	USP Class VI, FDA, 3A, REACH, RoHS, ADCF	7.6 m (25 ft)	<a href="#">FN-96419-26</a>	<a href="#">FN-96419-73</a>	<a href="#">FN-96419-82</a>
C-Flex®	USP Class VI, EP, REACH, RoHS, ADCF	7.6 m (25 ft)	<a href="#">FN-06424-26</a>	<a href="#">FN-06424-73</a>	<a href="#">FN-06424-82</a>
C-Flex® ULTRA	USP Class VI, EP, REACH, RoHS, ADCF	7.6 m (25 ft)	<a href="#">FN-06434-26</a>	<a href="#">FN-06434-73</a>	<a href="#">FN-06434-82</a>
PharMed® BPT	USP Class VI, EP, FDA, NSF, REACH, RoHS	7.6 m (25 ft)	<a href="#">FN-06508-26</a>	<a href="#">FN-06508-73</a>	<a href="#">FN-06508-82</a>
PharmaPure® †	USP Class VI, EP, FDA, REACH, RoHS	7.6 m (25 ft)	<a href="#">FN-06435-26</a>	<a href="#">FN-06435-73</a>	<a href="#">FN-06435-82</a>
GORE® STA-PURE® Series PCS	USP Class VI	0.6 m (2 ft)	<a href="#">FN-96211-26</a>	<a href="#">FN-96211-73</a>	<a href="#">FN-96211-82</a>
GORE® STA-PURE® Series PFL	USP Class VI	0.6 m (2 ft)	<a href="#">FN-96212-26</a>	<a href="#">FN-96212-73</a>	<a href="#">FN-96212-82</a>
Chem-Durance® Bio†	USP Class VI, FDA, REACH, RoHS	15.2 m (50 ft)	<a href="#">FN-06442-26</a>	<a href="#">FN-06442-73</a>	<a href="#">FN-06442-82</a>
Tygon® E-LFL	USP Class VI, EP, FDA, EU Food, REACH, RoHS, ADCF	7.6 m (25 ft)	<a href="#">FN-06440-26</a>	<a href="#">FN-06440-73</a>	<a href="#">FN-06440-82</a>
Tygon E-Food (B-44-4X)	FDA, EU Food, NSF, 3A, REACH, RoHS, ADCF	15.2 m (50 ft)	<a href="#">FN-06418-26</a>	<a href="#">FN-06418-73</a>	<a href="#">FN-06418-82</a>
Tygon E-Lab (E-3603)	USP Class VI, FDA, EU Food, NSF, REACH, RoHS, ADCF	15.2 m (50 ft)	<a href="#">FN-06509-26</a>	<a href="#">FN-06509-73</a>	<a href="#">FN-06509-82</a>
Tygon Fuel & Lubricant (F-4040-A)	REACH, RoHS, ADCF	15.2 m (50 ft)	<a href="#">FN-06401-26</a>	<a href="#">FN-06401-73</a>	<a href="#">FN-06401-82</a>
Tygon Chemical (2001)†	FDA 21 CFR 175.300, REACH, RoHS, ADCF	15.2 m (50 ft)	<a href="#">FN-06475-26</a>	<a href="#">FN-06475-73</a>	<a href="#">FN-06475-82</a>
Norprene® (A 60 G)	NSF, REACH, RoHS	15.2 m (50 ft)	<a href="#">FN-06404-26</a>	<a href="#">FN-06404-73</a>	<a href="#">FN-06404-82</a>
Norprene Food (A 60 F)	FDA, 3A, NSF, REACH, RoHS	15.2 m (50 ft)	<a href="#">FN-06402-26</a>	<a href="#">FN-06402-73</a>	<a href="#">FN-06402-82</a>
Viton®	FDA, ADCF	7.6 m (25 ft)	<a href="#">FN-96412-26</a>	<a href="#">FN-96412-73</a>	—

†Determined under these conditions: Using a 1 to 650 rpm drive; 0 psi at inlet, 0.5 psi at outlet; water temperature at 22°C (72°F). ‡Recommended for use with Easy-Load® pump heads only.

## FEATURES

- ✓ Custom extruded to fit Masterflex pumps
- ✓ Engineered for long life in peristaltic pump applications

### PharMed® BPT

- >10,000 hours of tubing life; sealable, weldable
- Ideal for tissue and cell culture work

### PharmaPure®

- Nontoxic and nonhemolytic biocompatible
- Long life even under pressure with VERY low spallation

### GORE® STA-PURE® Series PCS

- Consistent flow rate
- Long life—even in pressures up to 100 psi

### GORE® STA-PURE® Series PFL

- Long life—even in pressures up to 100 psi
- Excellent biocompatibility and flow stability

### Chem-Durance® Bio

- Excellent chemical compatibility and biocompatibility
- Excellent life and durability under pressure

### Tygon® E-LFL

- Longest life of all Tygon formulations
- Broad chemical resistance

### Tygon E-Food (B-44-4X)

- Smooth inner surface unaffected by commercial sanitizers
- Nontoxic; will not affect taste or odor

### Tygon E-Lab (E-3603)

- Ideal for general transfer use
- Nonaging, nonoxidizing, low gas permeability

### Tygon Fuel & Lubricant (F-4040-A)

- Formulated to transport hydrocarbons, petroleum products, and distillates
- Low gas permeability

### Tygon Chemical (2001)

- Excellent chemical resistance
- Plasticizer-free with low gas permeability

### Norprene® (A-60 G)

- Up to 10,000 hours of tubing life
- Excellent choice for pressure/vacuum applications

### Norprene Food (A 60 F)

- Ideal for high-temperature food applications
- Resists heat, ozone, acids, and alkalis

### Viton®

- Perfect for applications where FDA and chemical compatibility is needed
- Resists corrosives, solvents, and oils at elevated temperatures

## I/P High-Performance Precision Pump Tubing

Tubing size	I/P 70	I/P 88	I/P 89
Inner diameter	9.5 mm (0.37")	12.7 mm (0.5")	15.88 mm (0.62")
Hose barb size	9.5 mm (3/8")	12.7 mm (1/2")	15.88 mm (5/8")
Flow range (approximate)†	0.01 to 8 LPM 0.002 to 2.1 GPM	0.02 to 17 LPM 0.005 to 4.5 GPM	0.03 to 19 LPM 0.007 to 5.0 GPM

Formulation	Complies with	Qty/pk			
Silicone (platinum cured)	USP Class V, EP, FDA, REACH, RoHS, ADFC	3 m (10 ft)	<a href="#">FN-96510-70</a>	<a href="#">FN-96510-88</a>	<a href="#">FN-96510-89</a>
BioPharm Silicone (platinum)	USP Class VI, EP, FDA, 3A, REACH, RoHS, ADFC	3 m (10 ft)	<a href="#">FN-96421-70</a>	<a href="#">FN-96421-88</a>	<a href="#">FN-96421-89</a>
BioPharm Plus Silicone (platinum)	USP Class VI, EP, FDA, REACH, RoHS, ADFC	3 m (10 ft)	<a href="#">FN-96441-70</a>	<a href="#">FN-96441-88</a>	<a href="#">FN-96441-89</a>
Puri-Flex™	USP Class VI, FDA, 3A, REACH, RoHS, ADFC	3 m (10 ft)	<a href="#">FN-96419-70</a>	<a href="#">FN-96419-88</a>	<a href="#">FN-96419-89</a>
C-Flex®	USP Class VI, EP, REACH, RoHS, ADFC	3 m (10 ft)	<a href="#">FN-06424-70</a>	<a href="#">FN-06424-88</a>	<a href="#">FN-06424-89</a>
PharMed® BPT	USP Class VI, EP, FDA, NSF, REACH, RoHS	7.6 m (25 ft)	<a href="#">FN-06508-70</a>	<a href="#">FN-06508-88</a>	—
GORE® STA-PURE® Series PCS††	USP Class VI	0.6 m (2 ft)	—	<a href="#">FN-96211-88</a>	<a href="#">FN-96211-89</a>
GORE® STA-PURE® Series PFL††	USP Class VI	0.6 m (2 ft)	—	<a href="#">FN-96212-88</a>	<a href="#">FN-96212-89</a>
Chem-Durance® Bio	USP Class VI, FDA, REACH, RoHS	7.6 m (25 ft)	<a href="#">FN-06442-70</a> <a href="#">/15.2 m (50 ft)</a>	<a href="#">FN-06442-88</a>	<a href="#">FN-06442-89</a>
Tygon E-LFL	USP Class VI, EP, FDA, EU Food, REACH, RoHS, ADFC	7.6 m (25 ft)	<a href="#">FN-06440-70</a>	<a href="#">FN-06440-88</a>	<a href="#">FN-06440-89</a>
Tygon E-Food (B-44-4X)	FDA, EU Food, NSF, 3A, REACH, RoHS, ADFC	15.2 m (50 ft)	<a href="#">FN-06418-70</a>	<a href="#">FN-06418-88</a>	<a href="#">FN-06418-89</a>
Tygon E-Lab (E-3603)	USP Class VI, FDA, EU Food, NSF, REACH, RoHS, ADFC	15.2 m (50 ft)	<a href="#">FN-06509-70</a>	<a href="#">FN-06509-88</a>	<a href="#">FN-06509-89</a>
Norprene® (A 60 G)	NSF, REACH, RoHS	7.6 m (25 ft)	<a href="#">FN-06404-70</a>	<a href="#">FN-06404-88</a>	<a href="#">FN-06404-89</a>
Norprene Food (A 60 F)	FDA, 3A, NSF, REACH, RoHS	7.6 m (25 ft)	—	<a href="#">FN-06402-88</a>	<a href="#">FN-06402-89</a>

††Recommended for use with Standard and Easy-Load® pump heads only.

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# Custom-Engineered Pumps Designed for You

*When an off-the-shelf pump just won't cut it,  
you need a solution custom-built for your requirements.*

With more than 100 years combined experience, our design engineers will partner with you to create the exact pump you need.

## Product Development Process



### Concept

Complete product specifications developed according to your needs



### Design

Innovative solution created with our advanced systems



### Engineering

Product prototype and fabrication for your approval



### Testing

Tested under actual conditions; products comply with UL, ETL, and CE under ISO:9001 and ISO:13485 standards



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## I/P® Precision Process Drives

### Powerful, low-maintenance drives keep you pumping

- Don't worry about moisture, chemicals, or dust—IP55-rated nonchip epoxy-coated steel housing
- Goes where you need it—compact and light enough to carry with one hand, powerful enough to drive two pump heads
- Get up to speed quickly—easy to adjust speed knob and LED display for improved repeatability

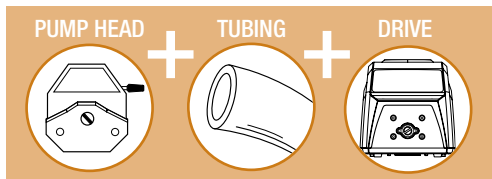


Motor speed (rpm)	Speed control (repeatability)	Pump heads accepted	Motor size	Power (50/60 Hz)		Catalog number	Price
				VAC	Amps		
<b>Variable-speed brushless process drive; 14"L x 10"W x 9"H (35.6 x 25.4 x 22.9 cm)</b>							
33 to 650	±0.25% (2% of max rpm)	2	1/8 hp (0.25 kW)	90 to 260	4.5 at 115 VAC, 2.6 at 230 VAC	<a href="#">FN-77410-10</a>	
<b>Variable-speed brushless process drive with remote input/output; 14"L x 10"W x 9"H (35.6 x 25.4 x 22.9 cm)</b>							
33 to 650	±0.25% (2% of max rpm)	2	1/8 hp (0.25 kW)	90 to 260	4.5 at 115 VAC, 2.6 at 230 VAC	<a href="#">FN-77411-00</a>	

**FEATURES**

- ✓ Flow rates: 0.2 to 19 LPM
- ✓ Accuracy of ±0.25% speed control
- ✓ LED display
- ✓ Reversible motor and remote control capabilities
- ✓ Accept up to 2 pump heads

[FN-07595-43](#) Washdown foot switch for model 77411-00  
[FN-77300-32](#) Remote cable kit. Required for model 77411-00 to operate the remote inputs and outputs



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

System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	0.4 to 8 LPM	Easy-Load® 77602-10	C-Flex® ULTRA I/P 73 tubing 06434-73 10 ft (3 m)	Brushless process drive 77410-10 33 to 650 rpm	90 to 260 VAC, 50/60 Hz	<a href="#">FN-77963-10</a>	
	0.7 to 17 LPM	High-Performance 77600-62	Tygon® E-LFL I/P 88 tubing 06440-88 3 ft (1 m)	Brushless process drive 77410-10 33 to 650 rpm	90 to 260 VAC, 50/60 Hz	<a href="#">FN-77963-20</a>	

## Application Solution



**Challenge:** A research institute needed to produce neutrons for scientific research by striking a liquid mercury target with a stream of protons. To set up neutron production, the research team had to pump mercury from a reservoir into a smaller receptacle quickly and efficiently. Likewise, the researchers required a pumping technology that would not allow the transfer equipment to become contaminated. Due to the hazardous nature of mercury, the pumping operation had to be carried out under a fume hood at a distance from the operator.

**Solution:** The researchers opted to use the Masterflex I/P brushless drive 77411-00 with the Easy-Load pump head 77602-10 (page 15) for its efficient and rapid pumping capabilities. The customer opted to use Tygon E-LFL tubing (page 17); as the only part of the pump system coming into contact with the mercury, it was easy to replace when contaminated, while preserving the integrity of the rest of the system. The I/P process drive also offers remote input/output, making it ideal to position in the fume hood while allowing the researcher to operate the pump from a safe distance away.

## I/P® Digital Console Process Drives

### Maintenance-free drives built for process applications

- Graphical LCD shows four operating modes: continuous run, timed dispense, copy dispense, volume dispense
- Dispense by volume, copy, or time with programmable delay interval
- Models with open-head interlock sensor stop drive motor when pump head is open (when used with sensor-equipped pump head)

**Models 77420-10 and -18** feature a 316 stainless steel housing with an anodized aluminum base. Ideal for pharmaceutical, dairy, biotech, and food and beverage applications.

**Models 77420-20 and -28** feature a powder-coated steel housing with anodized aluminum base. Use in process, manufacturing, and water-treatment applications where stainless steel is not a critical requirement.

**What's included:** 6-ft (1.8-m) line cord with IEC 320/CEE22 socket. Shipped with country-specific plug/cord set; please specify ultimate destination when ordering.



#### FEATURES

- ✓ Flow rates: 0.0006 to 19 LPM
- ✓ Accuracy of ±0.1% speed control
- ✓ Four-line graphical display
- ✓ Reversible motor
- ✓ IP66-rated for easy washdown
- ✓ Accept up to 2 pump heads

77420-10 shown with I/P High-Performance pump head 77600-62



rpm	Speed control (resolution)	Open-head sensor	Pump heads accepted	Motor size	IP rating	Dimensions (L x W x H)	Power	Catalog number	Price
<b>Digital process drive with 316 stainless steel housing</b>									
0.1 to 650	±0.1%	No	2	¾ hp (280 W)	IP66	16 <sup>11</sup> / <sub>16</sub> " x 11 <sup>1</sup> / <sub>8</sub> " x 12 <sup>1</sup> / <sub>8</sub> "	90 to 260 VAC (50/60 Hz)	FN-77420-10	
		Yes†						FN-77420-18	
<b>Digital process drive with powder-coat steel housing</b>									
0.1 to 650	±0.1%	No	2	¾ hp (280 W)	IP66	16 <sup>11</sup> / <sub>16</sub> " x 11 <sup>1</sup> / <sub>8</sub> " x 12 <sup>1</sup> / <sub>8</sub> "	90 to 260 VAC (50/60 Hz)	FN-77420-20	
		Yes†						FN-77420-28	

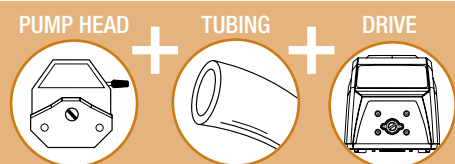
†These drives accept pump heads with open-head interlock sensor (order on page 15); sensor stops motor when pump head is opened.

**FN-07575-84 Washdown foot switch**, momentary start/stop; 6-ft (1.8-m) cable

**FN-07575-80 Cable assembly**, 31-pin round connector and 25-ft (7.9-m) cable with stripped wire ends for remote control

**FN-17050-01 NIST-traceable calibration** for peristaltic pump drive

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



System	Flow range	What's included			Power	Catalog number	Price
		Pump head	Tubing	Drive			
	0.001 to 8.0 LPM	Easy-Load® 77602-10	C-Flex® ULTRA I/P 73 tubing 06434-73 10 ft (3 m)	Digital process drive with 316 SS housing 77420-10 0.1 to 650 rpm	90 to 260 VAC, 50/60 Hz	<a href="#">FN-77964-20</a>	
	0.001 to 8.0 LPM	Easy-Load 77602-10	C-Flex® ULTRA I/P 73 tubing 06434-73 10 ft (3 m)	Digital process drive with powder-coat steel housing 77420-20 0.1 to 650 rpm	90 to 260 VAC, 50/60 Hz	<a href="#">FN-77964-30</a>	

## Reglo Independent Channel Control (ICC) Pumps

### Pump each channel at different speeds and directions!

- Each pump performs the job of up to four separate pumps
- **New!** Additional options in channel and roller configurations allow balanced pulsation control at desired flow rate
- USB interface for quick computer connections using redesigned graphical user-interface

These two-, three- and four-channel peristaltic pumps let you individually control the flow and direction of each channel from the intuitive keypad or via your computer—expanding your benchtop pumping capabilities with a single compact unit! Pump delivers continuous pumping or precision dispensing up to 43 mL/min with the capability of bidirectional flow in each channel. Plus, independent channel calibration minimizes tube-to-tube differences, resulting in high calibration accuracy.

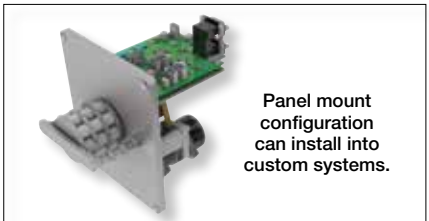


**Specifications** ISO9001:2008 CERTIFIED SUPPLIER CE

**Speed:** 0.1 to 100 rpm    **Accuracy:** ±1%    **Pressure:** up to 14.5 psi (1.0 bar)



Channels	Rollers	Tubing	Power (VAC, Hz)	Catalog number	Price
<b>Benchtop pumps</b>					
2	6	Three-stop	100 to 240, 50/60	<a href="#">FN-78001-58</a>	
	8			<a href="#">FN-78001-60</a>	
	12			<a href="#">FN-78001-62</a>	
3	6	Three-stop	100 to 240, 50/60	<a href="#">FN-78001-68</a>	
	8			<a href="#">FN-78001-70</a>	
	12			<a href="#">FN-78001-72</a>	
4	6	Three-stop	100 to 240, 50/60	<a href="#">FN-78001-78</a>	
	8			<a href="#">FN-78001-80</a>	
	12			<a href="#">FN-78001-82</a>	
<b>Panel-mount pumps</b>					
2	8	Three-stop	100 to 240, 50/60	<a href="#">FN-78001-43</a>	
3	8			<a href="#">FN-78001-45</a>	
4	8			<a href="#">FN-78001-47</a>	
4	12			<a href="#">FN-78001-49</a>	



**Minicartridges**

[FN-78016-98](#) Replacement Click'n'go™ tubing cassette, POM-C

[FN-78016-96](#) Click'n'go™ tubing cassette, PVDF

## Reglo Compact Multichannel Pumps

### No more inconsistent results

- Consistent flow and reduced tubing wear for improved results
- Very small footprint for a stand-alone “smart” pump
- Easy channel changes—Click'n'go™ minicartridges snap in place

**A. Reglo Analog Pumps.** Speed is adjustable in 1% steps (2 to 100%) via 2-digit potentiometer. Control speed remotely. Start/stop pump or change direction via contact closure; monitor speed through frequency output.

**B. Reglo Digital Programmable Pumps.** Continuously pump or dispense in any of four modes—flow rate, time, batches, or drip-free. Pumps feature analog input and output controls, as well as an RS-232 interface for control by a computer. Remote control capable.



ISO9001:2008 CERTIFIED SUPPLIER CE

Channels	Rollers	Speed (rpm)	Tubing	A. Reglo Analog pumps				B. Reglo Digital programmable pumps with calibrating function			
				Flow range per channel (mL/min)	115 VAC, 50/60 Hz		230 VAC, 50/60 Hz		Flow range per channel (mL/min)	115/230 VAC, 50/60 Hz	
					Cat. no.	Price	Cat. no.	Price		Cat. no.	Price
2	6	3.2 to 160	Three-stop	0.005 to 68	<a href="#">FN-78016-00</a>		<a href="#">FN-78016-02</a>		0.003 to 68	<a href="#">FN-78016-42</a>	
	8			0.004 to 57	<a href="#">FN-78016-10</a>		<a href="#">FN-78016-12</a>		0.002 to 57	<a href="#">FN-78017-02</a>	
	12			0.003 to 38	<a href="#">FN-78017-25</a>		<a href="#">FN-78017-27</a>		0.002 to 38	<a href="#">FN-78016-47</a>	
4	6	2.0 to 100	Three-stop	0.003 to 43	<a href="#">FN-78017-30</a>		<a href="#">FN-78017-32</a>		0.002 to 43	<a href="#">FN-78017-42</a>	
	8			0.003 to 35	<a href="#">FN-78016-30</a>		<a href="#">FN-78016-32</a>		0.002 to 35	<a href="#">FN-78017-12</a>	
	12			0.002 to 24	<a href="#">FN-78017-35</a>		<a href="#">FN-78017-37</a>		0.001 to 24	<a href="#">FN-78017-22</a>	

### Minicartridges

Optional adjustable-occlusion minicartridge to manually vary pressure on each channel.

[FN-07624-64](#) Optional adjustable occlusion cassette with pressure lever, POM-C

[FN-07624-96](#) Replacement Click'n'go cassette, PVDF

## IPC Low-Flow High-Accuracy Pumps

### Fewer tubing changes

- Planetary drive for less pulsation and longer tubing life
- Smooth rotation and accurate liquid flow provided by eight SS rotors
- Easy repeatability with four-digit LED
- Simple to use—automatic occlusion cartridges provide reproducible results
- Five modes for pumping or dispensing including flow rate, time, batches, drip-free, and volume
- Control via keypad, computer, or remote control
- IP and IP-N pumps available online



#### Specifications

**Accuracy:** better than  $\pm 1\%$   
**Pressure**  
 Click'n'go cassettes: up to 14.5 psi (1 bar)  
 Pressure lever cassettes: up to 22 psi (1.5 bar)



Choose from 4, 8, 12, 16 and 24 channel configurations for application flexibility.

Flow range per channel (mL/min)	Channels	Rollers	Speed (rpm)	Cassette style	Tubing	115 VAC, 50/60 Hz		230 VAC, 50/60 Hz	
						Catalog number	Price	Catalog number	Price
<b>IPC-N models</b>									
0.0004 to 11	4	8	0.11 to 11.25	Click'n'go	Two-stop	<a href="#">FN-78001-00</a>		<a href="#">FN-78001-06</a>	
	8					<a href="#">FN-78001-10</a>		<a href="#">FN-78001-16</a>	
	12					<a href="#">FN-78001-20</a>		<a href="#">FN-78001-26</a>	
	16					<a href="#">FN-78001-30</a>		<a href="#">FN-78001-36</a>	
	24					<a href="#">FN-78001-40</a>		<a href="#">FN-78001-46</a>	
0.0004 to 11	8	8	0.11 to 11.25	Pressure lever (adjustable occlusion)	Two-stop	<a href="#">FN-78000-11</a>		<a href="#">FN-78000-17</a>	
	16					<a href="#">FN-78000-31</a>		<a href="#">FN-78000-37</a>	
	24					<a href="#">FN-78000-41</a>		<a href="#">FN-78000-47</a>	
<b>IPC models</b>									
0.002 to 44	4	8	0.4 to 45	Click'n'go	Two-stop	<a href="#">FN-78001-02</a>		<a href="#">FN-78001-08</a>	
	8					<a href="#">FN-78001-12</a>		<a href="#">FN-78001-18</a>	
	12					<a href="#">FN-78001-22</a>		<a href="#">FN-78001-28</a>	
	16					<a href="#">FN-78001-32</a>		<a href="#">FN-78001-38</a>	
	24					<a href="#">FN-78001-42</a>		<a href="#">FN-78001-48</a>	
0.002 to 44	4	8	0.4 to 45	Pressure lever (adjustable occlusion)	Two-stop	<a href="#">FN-78000-03</a>		<a href="#">FN-78000-09</a>	
	8					<a href="#">FN-78000-13</a>		<a href="#">FN-78000-19</a>	
	12					<a href="#">FN-78000-23</a>		<a href="#">FN-78000-29</a>	
	16					<a href="#">FN-78000-33</a>		<a href="#">FN-78000-39</a>	
	24					<a href="#">FN-78000-43</a>		<a href="#">FN-78000-49</a>	

Order extra cartridges and adapters for fast tubing changes.

[FN-78001-95](#) Replacement Click'n'go™ cartridge, POM-C

[FN-78001-90](#) Repl. adjust. occlusion cartridge with pressure lever

[FN-07618-71](#) Replacement adapters hold two-stop color-coded tubing in cartridge. Two adapters required per cartridge. Pack of 12

## Reglo Quick™ Pump

### Reduce downtime with easy tubing changeovers

- Wide opening angle makes tube bed easily accessible for quick tubing changes
- Four-roller head achieves flow rates up to 230 mL/min
- Compact design frees valuable space on your benchtop
- Input/output control adds versatility



Head allows alternate placement of tubing.



#### Pump Tubing Flow Range Information

Tubing ID in. (mm)	Wall thickness in. (mm)	Flow rate (mL/min)	
		Min	Max
1/8 (3.2)	1/16 (1.6)	2.1	103
3/16 (4.8)	1/16 (1.6)	4.6	230



Flow range per channel	Channels	Rollers	Speed	Tubing	Power		Catalog number	Price
					115 VAC, 50/60 Hz	230 VAC, 50/60 Hz		
2.1 to 230 mL/min	1	4	3.2 to 160 rpm	Pump			<a href="#">FN-78018-00</a>	
							<a href="#">FN-78018-02</a>	



## 2- and 3-Stop Color-Coded Tubing for Ismatec® Pumps

### Don't confuse your tubing—color-coded stops for easy identification

**STEP 1:** Choose a tubing material & select the catalog number prefix.

Make sure to choose 2-stop or 3-stop tubing based on what your pump uses!

**STEP 3:** Complete your system with extension tubing.

Connect stopped and extension tubing with barbed fittings or splicing.

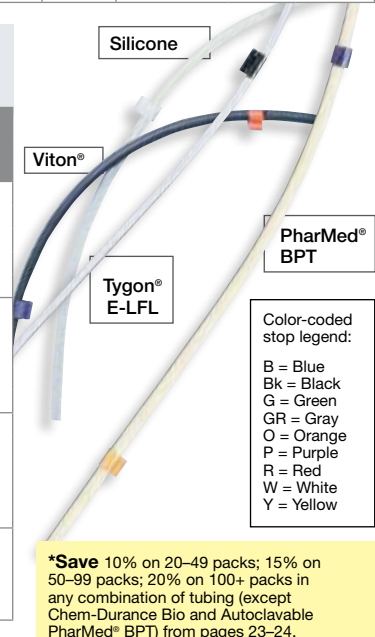
Material	Description	Suffixes for the available sizes	Tubes/ pk (length)	2-Stop Tubing		3-Stop Tubing		Extension Tubing		
				Cat. no. prefix	Price/ pk*	Cat. no. prefix	Price/ pk*	Cat. no. prefix	Length/ pk	Price/ pk*
Tygon® E-LFL	<ul style="list-style-type: none"> <li>Complies with USP Class VI, EP, FDA, EU food, REACH, RoHS, ADFC</li> <li>Longest life of all Tygon formulations</li> <li>Broad chemical resistance</li> </ul>	10, 12, 14, 18, 22, 24, 26, 28, 30, 31, 33, 34, 36, 37, 40, 42, 43, 47, 48	12 (16")	<a href="#">FN-96449-XX</a>		<a href="#">FN-96450-XX</a>		<a href="#">FN-06449-XX</a>	100 ft	
Tygon® E-Food	<ul style="list-style-type: none"> <li>Complies with FDA, EU Food, NSF, 2A, REACH, RoHS, ADFC</li> <li>Smooth inner surface; nontoxic</li> </ul>	10, 12, 18, 26, 30, 34, 42, 48	12 (16")	<a href="#">FN-96457-XX</a>		<a href="#">FN-96458-XX</a>		<a href="#">FN-06457-XX</a>	100 ft	
Tygon® E-Lab	<ul style="list-style-type: none"> <li>Complies with USP Class VI, FDA, EU Food, NSF, REACH, RoHS, ADFC</li> <li>Ideal for general transfer applications</li> <li>Nonaging/nonoxidizing, low gas permeability</li> </ul>	09, 10, 12, 14, 16, 18, 19, 22, 24, 26, 27, 28, 29, 30, 31, 32, 34, 36, 38, 39, 40, 42, 44, 46, 48, 49	12 (16")	<a href="#">FN-96460-XX</a>		<a href="#">FN-96461-XX</a>		<a href="#">FN-06460-XX</a>	100 ft	
Silicone (peroxide cured)	<ul style="list-style-type: none"> <li>Complies with USP Class VI, EP, FDA, 3A, REACH, RoHS, ADFC</li> <li>Greater physical compression capability</li> <li>Economical, long tubing life</li> </ul>	10, 12, 14, 18, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48	6 (16")	<a href="#">FN-07616-XX</a>		<a href="#">FN-07624-XX</a>		<a href="#">FN-07625-XX</a>	50 ft	
Silicone (platinum cured)	<ul style="list-style-type: none"> <li>Complies with USP Class V, EP, FDA, REACH, RoHS, ADFC</li> <li>Low protein binding, fungus-resistant, phthalate and latex free</li> </ul>	22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48	6 (16")	<a href="#">FN-95602-XX</a>		<a href="#">FN-95603-XX</a>		<a href="#">FN-95612-XX</a>	50 ft	
Viton®	<ul style="list-style-type: none"> <li>Complies with FDA, ADFC</li> <li>Resists corrosives, solvents, and oils at elevated temperatures</li> </ul>	18, 22, 24, 26, 30, 34, 38, 42, 46, 48	12 (12")	<a href="#">FN-97628-XX</a>		<a href="#">FN-97629-XX</a>		<a href="#">FN-97632-XX</a>	50 ft	
PharMed® BPT	<ul style="list-style-type: none"> <li>Complies with USP Class VI, EP, FDA, NSF, REACH, RoHS</li> <li>Over 10,000 hours of tubing life, sealable, weldable</li> <li>Ideal for tissue and cell culture work</li> </ul>	10, 12, 14, 18, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48	12 (16")	<a href="#">FN-95723-XX</a>		<a href="#">FN-95714-XX</a>		<a href="#">FN-95809-XX</a>	100 ft	
Autoclavable PharMed® BPT										
PVC Solvent/ hydrocarbon	<ul style="list-style-type: none"> <li>Resistant to ozone and UV light</li> <li>Resists to cracking, swelling, hardening</li> <li>Ideal for fuels, distillates, lubricants, and glycol-based coolants</li> </ul>	10, 12, 14, 18, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48	12 (16")	<a href="#">FN-95606-XX</a>		<a href="#">FN-95605-XX</a>		<a href="#">FN-95712-XX</a>	50 ft	
Chem-Durance® Bio	<ul style="list-style-type: none"> <li>Suitable for acetone, MEK, and other highly aggressive chemicals</li> <li>Long life and outstanding fatigue resistance</li> </ul>	14, 18, 24, 26, 30, 34, 36, 42, 48	6 (16")	<a href="#">FN-96327-XX</a>		<a href="#">FN-96328-XX</a>		None (PharMed BPT recommended for extension tubing; see 95809-XX above)		

**STEP 2:**

Find your desired flow rate and select the catalog number suffix. See page 24 for more.

Flow rate* (mL/min) with Fixed-Speed Pumps								Catalog number suffix	ID (mm)	Color-coded stops
78012-00, 78012-05	78012-20, 78012-25	78012-30, 78012-35	78012-40, 78012-45	78012-50, 78012-55	78012-60, 78012-65	78012-80, 78012-85	78012-90, 78012-95			
0.047	0.14	0.047	0.093	0.056	0.11	0.17	0.056	-10	0.19	O/R
0.081	0.24	0.08	0.16	0.1	0.19	0.29	0.1	-12	0.25	O/B
0.19	0.56	0.19	0.37	0.22	0.43	0.65	0.22	-14	0.38	O/G
0.25	0.75	0.25	0.5	0.29	0.58	0.86	0.29	-16	0.44	G/Y
0.34	1	0.34	0.67	0.38	0.77	1.2	0.38	-18	0.51	O/Y
0.52	1.6	0.52	1	0.6	1.2	1.8	0.6	-22	0.64	O/W
0.73	2.2	0.73	1.5	0.84	1.7	2.5	0.84	-24	0.76	Bk/Bk
1	2.9	1	2	1.1	2.3	3.4	1.1	-26	0.89	O/O
1.3	3.8	1.3	2.5	1.5	2.9	4.4	1.5	-28	1.02	W/W
1.6	4.7	1.6	3.1	1.8	3.6	5.4	1.8	-30	1.14	R/R
2	5.9	2	3.9	2.3	4.6	6.9	2.3	-32	1.3	GR/GR
2.3	6.8	2.3	4.6	2.7	5.4	8	2.7	-34	1.42	Y/Y
2.6	7.7	2.6	5.1	3	6	9.1	3	-36	1.52	Y/B
2.9	8.8	2.9	5.8	3.5	6.9	10	3.5	-38	1.65	B/B
3.5	10	3.5	7	4.2	8.4	13	4.2	-40	1.85	G/G
4.1	12	4.1	8.2	5	10	15	5	-42	2.06	P/P
4.8	14	4.8	9.5	5.8	12	17	5.8	-44	2.29	P/Bk
5.5	16	5.5	11	6.6	13	20	6.6	-46	2.54	P/O
6.2	19	6.2	12	7.4	15	22	7.4	-48	2.79	P/W

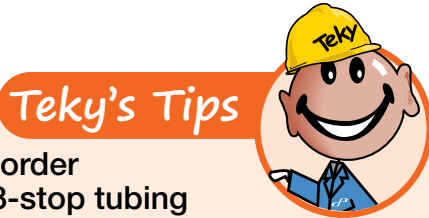
\*Flow ranges (mL/min) are nominal. Actual flow depends on factors such as occlusion, fluid viscosity, temperature, and pressure.



**\*Save 10% on 20–49 packs; 15% on 50–99 packs; 20% on 100+ packs in any combination of tubing (except Chem-Durance Bio and Autoclavable PharMed® BPT) from pages 23–24.**

### STEP 2 (continued): Find your desired flow rate and select the catalog number suffix.

Flow ranges <sup>†</sup> (mL/min) with indicated pump system (page 21 and online)															Catalog number suffix	ID (mm)	Color-coded stops
78016-00, 78016-02	78016-10, 78016-12	78016-30, 78016-32	78016-40, 78016-42	78017-00, 78017-02	78017-10, 78017-12	78017-20, 78017-22	78017-25, 78017-27	78017-30, 78017-32	78017-35, 78017-37	78017-45, 78017-47	78022-40, 78022-42	78022-60, 78022-62					
0.009-0.45	0.008-0.37	0.005-0.23	0.005-0.45	0.004-0.37	0.003-0.23	0.003-0.21	0.007-0.34	0.006-0.28	0.005-0.21	0.004-0.34	0.01-0.98	0.0075-0.75	-10	0.19	O/R		
0.015-0.76	0.013-0.65	0.009-0.41	0.008-0.76	0.007-0.65	0.005-0.41	0.004-0.38	0.012-0.61	0.01-0.48	0.008-0.38	0.007-0.61	0.017-1.7	0.013-1.3	-12	0.25	O/B		
0.035-1.7	0.03-1.5	0.019-0.94	0.017-1.7	0.015-1.5	0.01-0.94	0.009-0.88	0.028-1.4	0.022-1.1	0.018-0.88	0.014-1.4	0.038-3.8	0.031-3.1	-14	0.38	O/G		
0.046-2.3	0.04-2	0.025-1.3	0.023-2.3	0.02-2	0.013-1.3	0.012-1.2	0.038-1.9	0.029-1.4	0.024-1.2	0.019-1.9	0.05-5	0.041-4.1	-16	0.44	G/Y		
0.061-3.1	0.054-2.7	0.034-1.7	0.031-3.1	0.027-2.7	0.017-1.7	0.016-1.6	0.05-2.5	0.038-1.9	0.031-1.6	0.025-2.5	0.067-6.7	0.055-5.5	-18	0.51	O/W		
0.096-4.8	0.084-4.2	0.052-2.6	0.048-4.8	0.042-4.2	0.026-2.6	0.024-2.4	0.077-3.9	0.06-3	0.048-2.4	0.039-3.9	0.1-10	0.085-8.5	-22	0.64	O/Y		
0.13-6.7	0.12-5.8	0.073-3.6	0.067-6.7	0.058-5.8	0.036-3.6	0.33-3.3	0.11-5.3	0.084-4.2	0.067-3.3	0.053-5.3	0.15-15	0.12-12	-24	0.76	Bk/Bk		
0.18-9	0.16-7.9	0.098-4.9	0.09-9	0.079-7.9	0.049-4.9	0.044-4.4	0.14-7.1	0.11-5.7	0.088-4.4	0.071-7.1	0.2-20	0.15-15	-26	0.89	O/O		
0.23-12	0.2-10	0.13-6.3	0.12-12	0.1-10	0.063-6.3	0.056-5.6	0.18-9	0.15-7.3	0.11-5.6	0.09-9	0.26-26	0.2-20	-28	1.02	W/W		
0.29-14	0.25-12	0.16-7.8	0.14-14	0.12-12	0.078-7.8	0.067-6.7	0.22-11	0.18-9	0.13-6.7	0.11-11	0.32-32	0.24-24	-30	1.14	R/R		
0.37-18	0.31-16	0.2-10	0.18-18	0.16-16	0.1-10	0.083-8.3	0.26-13	0.23-11	0.17-8.3	0.13-13	0.4-40	0.29-29	-32	1.3	GR/GR		
0.43-21	0.37-18	0.23-11	0.21-21	0.18-18	0.11-11	0.094-9.4	0.3-15	0.27-13	0.19-9.4	0.15-15	0.47-47	0.33-33	-34	1.42	Y/Y		
0.48-24	0.41-20	0.26-13	0.24-24	0.2-20	0.13-13	0.1-10	0.33-17	0.3-15	0.21-10	0.17-17	0.53-53	0.36-36	-36	1.52	Y/B		
0.56-28	0.47-23	0.29-15	0.28-28	0.23-23	0.15-15	0.12-12	0.37-19	0.35-17	0.23-12	0.19-19	0.61-61	0.41-41	-38	1.65	B/B		
0.67-34	0.56-28	0.35-17	0.34-34	0.28-28	0.17-17	0.13-13	0.43-21	0.42-21	0.27-13	0.21-21	0.73-73	0.47-47	-40	1.85	G/G		
0.79-40	0.66-33	0.41-20	0.4-40	0.33-33	0.2-20	0.15-15	0.49-24	0.5-25	0.3-15	0.24-24	0.87-87	0.53-53	-42	2.06	P/P		
0.92-46	0.76-38	0.48-24	0.46-46	0.38-38	0.24-24	0.17-17	0.55-27	0.58-29	0.34-17	0.27-27	1-100	0.6-60	-44	2.29	P/Bk		
1.1-53	0.88-44	0.55-27	0.53-53	0.44-44	0.27-27	0.19-19	0.62-31	0.66-33	0.39-19	0.31-31	1.2-120	0.68-68	-46	2.54	P/O		
1.2-59	0.99-50	0.62-31	0.59-59	0.5-50	0.31-31	0.21-21	0.69-34	0.74-37	0.43-21	0.34-34	1.3-130	0.75-75	-48	2.79	P/W		



### Teky's Tips

#### How to order 2- and 3-stop tubing

**Step 1:** Choose a tubing material and select the corresponding catalog number prefix from the table on page 23. Make sure to choose 2-stop or 3-stop tubing based on what your pump uses!

**Step 2:** Find your pump system and desired flow rate and select the catalog number suffix from the tables on pages 23–24.

**Step 3:** Complete your system with extension tubing from page 23. You can connect stopped tubing and extension tubing with hose barb fittings or by splicing together.

Flow ranges <sup>†</sup> (mL/min) with indicated pump system (page 22 and online)						Catalog number suffix	ID (mm)	Color-coded stops
IPC-N models	IPC models	78002-34	78002-36	78002-50	78002-90			
0.0007-0.066	0.003-0.26	0.004-0.94	0.004-0.94	0.003-0.67	0.003-0.51	-10	0.19	O/R
0.001-0.1	0.005-0.41	0.008-1.8	0.008-1.8	0.005-1.1	0.004-0.91	-12	0.25	O/B
0.003-0.22	0.009-0.86	0.019-4.5	0.019-4.5	0.011-2.6	0.009-2.1	-14	0.38	O/G
0.003-0.28	0.011-1.1	0.025-6.1	0.025-6.1	0.014-3.5	0.012-2.8	-16	0.44	G/Y
0.004-0.38	0.015-1.5	0.034-8.2	0.034-8.2	0.019-4.6	0.016-3.8	-18	0.51	O/W
0.006-0.58	0.023-2.3	0.053-13	0.053-13	0.03-7.2	0.024-5.8	-22	0.64	O/Y
0.009-0.81	0.032-3.2	0.074-18	0.074-18	0.042-10	0.033-8	-24	0.76	Bk/Bk
0.011-1.1	0.044-4.4	0.1-24	0.1-24	0.057-14	0.044-11	-26	0.89	O/O
0.014-1.4	0.057-5.7	0.13-31	0.13-31	0.073-18	0.056-13	-28	1.02	W/W
0.017-1.7	0.07-7	0.16-38	0.16-38	0.09-22	0.067-16	-30	1.14	R/R
0.022-2.2	0.089-8.9	0.2-47	0.2-47	0.11-27	0.083-20	-32	1.3	GR/GR
0.026-2.6	0.11-11	0.23-55	0.23-55	0.13-32	0.094-23	-34	1.42	Y/Y
0.03-3	0.12-12	0.26-62	0.26-62	0.15-36	0.1-25	-36	1.52	Y/B
0.035-3.5	0.14-14	0.3-71	0.3-71	0.17-42	0.12-28	-38	1.65	B/B
0.43-4.3	0.17-17	0.36-86	0.36-86	0.21-50	0.13-32	-40	1.85	G/G
0.52-5.2	0.21-21	0.43-100	0.43-100	0.25-59	0.15-37	-42	2.06	P/P
0.062-6.2	0.25-25	0.51-120	0.51-120	0.29-69	0.17-41	-44	2.29	P/Bk
0.075-7.5	0.3-30	0.63-150	0.62-150	0.33-79	0.19-46	-46	2.54	P/O
0.088-8.8	0.35-35	0.74-180	0.74-180	0.37-89	0.21-52	-48	2.79	P/W

<sup>†</sup>Flow ranges (mL/min) are nominal. Actual flow depends on factors such as occlusion, fluid viscosity, temperature, and pressure.

## Pump Tubing for Ismatec® Pumps

ID (mm)	OD (mm)	Wall (mm)	Tygon® E-Lab			Silicone (peroxide cured)			Silicone (platinum 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*	Cat.no.	Ft/pk	Price/pk*
0.8	4.0	1.6	FN-06509-13	50		FN-96400-13	25		FN-95802-01	25		FN-06404-13	50		FN-96412-13	25	
1.6	4.8	1.6	FN-06407-72	50		FN-96400-14	25		FN-96410-14	25		FN-06410-01	50		FN-96412-14	25	
3.2	6.4	1.6	FN-06407-76	50		FN-06411-67	25		FN-95802-05	25		FN-06410-02	50		—	—	—
4.8	8.0	1.6	FN-06407-78	50		FN-06411-03	25		FN-95802-09	25		FN-06410-04	50		FN-96412-25	25	
6.4	9.5	1.6	FN-06407-80	50		FN-06411-71	25		FN-95802-12	25		FN-06410-05	50		FN-96412-18	25	
6.4	11.1	2.4	FN-06509-24	50		FN-06411-72	25		FN-95802-13	25		FN-06410-06	50		FN-96412-24	25	
8.0	11.2	1.6	FN-06407-83	50		FN-06411-75	25		FN-95802-15	25		FN-06410-08	50		FN-06434-05	25	
9.5	12.7	1.6	FN-06407-86	50		FN-06411-12	25		FN-95802-18	25		FN-06410-10	50		FN-06434-06	25	
11.1	14.3	1.6	FN-06407-87	50		—	—	—	—	—	—	FN-06410-13	50		—	—	—
12.8	16.0	1.6	FN-06407-90	25		FN-06411-80	25		FN-95802-21	25		FN-06410-14	50		FN-06434-07	25	
16.0	22.4	3.2	—	—	—	FN-06411-58	25		FN-95802-25	25		FN-06410-17	50		FN-06434-08	25	

ID (mm)	Flow ranges (mL/min) with indicated pump system <sup>††</sup> (available online)								
	78025-00, -05	78022-10, -12	78022-20, -22	78022-30, -32	07611-10 <sup>‡</sup>	07611-15 <sup>‡</sup>	78002-20 <sup>‡</sup>	78002-22 <sup>‡</sup>	78002-60 <sup>‡</sup>
0.8	—	—	—	0.25 to 25	—	0.22 to 22	—	0.072 to 17	—
1.6	—	1.7 to 170	1.6 to 160	0.9 to 90	—	0.63 to 63	0.44 to 100	0.026 to 62	0.41 to 99
3.2	—	6.6 to 660	5.9 to 590	3.5 to 350	2.6 to 260	2.4 to 240	1.7 to 400	1.0 to 240	1.5 to 370
4.8	—	15.0 to 1500	13.0 to 1300	7.7 to 770	5.5 to 550	5.3 to 530	3.6 to 860	2.2 to 530	3.4 to 830
6.4	37 to 3700	25.0 to 2500	23.0 to 2300	13.0 to 1300	8.9 to 890	—	6.0 to 1400	3.7 to 880	6.2 to 1500
8.0	—	37.0 to 3700	34.0 to 3400	—	11.1 to 1110	—	8.8 to 2100	—	9.5 to 2300
9.5	80 to 8000	48.0 to 4800	44.0 to 4400	—	—	—	12 to 2800	—	13 to 3000
11.1	—	54.0 to 5400	50.0 to 5000	—	—	—	—	—	15 to 3600
12.8	100 to 10000	—	—	—	—	—	—	—	—
16.0	130 to 13000	—	—	—	—	—	—	—	—

<sup>††</sup>Note: Lower flow rates achievable with digital drives. <sup>‡</sup>Flow rate with Digital Drive 78002-10; lower flow rate achievable with Programmable Drive 78002-00.



## Cole-Parmer® Syringe Pumps

### Ideal for low-flow, low-pressure applications

- Backlit alphanumeric LCD guides you through setup and operating procedures
- Don't lose your settings—nonvolatile memory retains settings even after pump is turned off



Pump continuously and automatically delivers exact quantities of liquid.



#### Specifications

**Accuracy:** ±<1%  
**Reproducibility:** ±0.1%

#### A. Single-Syringe Infusion Pump

automatically selects display units based on syringe used, obtaining precise flow rates down to 0.2 µL/hr. A wide dynamic range (6000:1) provides excellent flexibility.

**B. Multi-Syringe Pumps** achieve flow rates down to 0.001 µL/hr. Easy programming via keypad—infusion/withdrawal pumps sequence operations. Control from a computer with RS-232 interface.†

#### C. Multi-Step Multi-Syringe Pumps

allow flow rates to vary from a slow trickle to a steady stream down to 0.001 µL/hr. Program up to 8 commands and repeat up to 10 times. Pumps allow you to program flow rate hold, pause, and change of direction; each program can be run up to 12 hours. Pumps can also sequence operations. Operate your pump from a computer—great for daisy-chaining pumps!

Description	Number of syringes accepted	Flow rate per syringe	Syringe size accepted	Linear force	Power (VAC, Hz)	Catalog number	Price
<b>A. Single-syringe pump</b>							
Infusion	1	0.2 µL/hr to 500 mL/hr	10 µL to 60 mL	20 lb (9.1 kg)	115, 50/60 230, 50/60	<b>FN-74900-00</b> <b>FN-74900-05</b>	
<b>B. Multi-syringe pumps</b>							
Infusion	2	0.001 µL/hr to 147 mL/min	10 µL to 140 mL	40 lb (18.1 kg)	115, 50/60	<b>FN-74900-10</b>	
	10				230, 50/60	<b>FN-74900-15</b> <b>FN-74900-30</b> <b>FN-74900-35</b>	
Infusion/withdrawal	2	0.001 µL/hr to 147 mL/min	10 µL to 140 mL	40 lb (18.1 kg)	115, 50/60	<b>FN-74900-20</b>	
	10				230, 50/60	<b>FN-74900-25</b> <b>FN-74900-40</b>	
<b>C. Multi-step multi-syringe pumps</b>							
Infusion	2	0.001 µL/hr to 147 mL/min	10 µL to 140 mL	40 lb (18.1 kg)	115, 50/60	<b>FN-74900-60</b>	
	10				230, 50/60	<b>FN-74900-65</b> <b>FN-74900-80</b> <b>FN-74900-85</b>	
Infusion/withdrawal	2	0.001 µL/hr to 147 mL/min	10 µL to 140 mL	40 lb (18.1 kg)	115, 50/60	<b>FN-74901-00</b>	
	10				230, 50/60	<b>FN-74901-05</b> <b>FN-74901-10</b> <b>FN-74901-15</b>	

†Order RS-232 cables separately online or call our Application Specialists.

## Cole-Parmer® High-Pressure Piston Pumps

### Precision pumping for your HPLC application

- Digital stepper motor ensures accuracy at low flow rates
- Self-flush feature washes piston with every stroke
- Interactive keypad controls make programming at the pump easy
- Pressure and leak sensors (except single-head pumps) alert you to malfunctions
- Remotely control pump with a PC via RS-232 and micro USB



**Single-Head Pumps** precisely meter and dispense chemicals, perfect for small-scale laboratory fluid transfers and HPLC applications. Small footprint saves bench and fume hood space. **High-Flow Dual-Head Pumps** are ideally suited to preparative and simulated moving bed chromatography applications and other high throughput processes. **High-Performance Isocratic Pumps** are best suited to semi-prep and other small-scale HPLC separations, and general metering and dispensing applications. **Low-Pulsation Dual-Head Pump** provides virtually pulse-free operation with a low dead-volume pulse dampener, automatic pressure compensation, and advanced linear cam technology.

#### Specifications

**Wetted parts:** synthetic ruby, sapphire, UHMWPE, PTFE  
**Maximum temperature (fluid):** 212°F (100°C)  
**Duty cycle:** continuous  
**Self-priming:** no  
**Power:** 100 to 240 VAC, 50/60 Hz

Description	Single-head pumps			High-flow dual-head pumps			High-performance isocratic pumps		Low-pulsation dual-head pump	
	<b>FN-74931-00</b>	<b>FN-74931-01</b>	<b>FN-74931-20</b>	<b>FN-74931-10</b>	<b>FN-74931-11</b>	<b>FN-74931-12</b>	<b>FN-74931-25</b>	<b>FN-74931-45</b>	<b>FN-74931-30</b>	
Pump head material	PEEK	316 SS	316 SS	PEEK	316 SS	316 SS	316 SS	316 SS	316 SS	
Flow	Range (mL/min)	0 to 10			0 to 100		0 to 300	0 to 100	0 to 10	0 to 12
	Accuracy	±2% of set point			±3% of set point		±3% of set point	±2% of set point	±2% of set point	
	Repeatability	±1%	±0.2%	±0.5%			±0.5%	±0.2%	±0.2%	
Pressure range (psi)	0 to 2000		0 to 6000	0 to 4000		0 to 1000	0 to 4000	0 to 5000	0 to 6000	
Pulse dampener	No		Yes	Yes	No	No	Yes		Yes	
Output	RS-232, micro USB, run/stop		RS-232, micro USB, voltage flow control, run/stop	RS-232, micro USB, voltage flow control, run/stop			RS-232, micro USB, voltage flow control, run/stop		RS-232, micro USB, voltage flow control, run/stop	
Price										

## Cole-Parmer® Digital Gear Drive with Remote Control

### Easier setup and operation

**NEW**

- Graphical LCD shows four operating modes: continuous run, timed dispense, copy dispense, volume dispense
- Get pulse-free flow in combination with Micropump® A-mount head
- Maximize bench space by stacking up to three drives
- Control speed, direction, and more remotely via DB25 female connector on drive



Analog remote control options and simple programming make this drive ideal for automated process applications. Drive features set time interval between dispense cycles for hands-free dispensing. Batch count function counts down and displays batches completed. Cumulative volume function enables you to track total volume dispensed over multiple cycles.

**What's included:** 6-ft (1.8-m) line cord with IEC 320/CEE22 socket. These models are shipped with country specific plug/cord set; please specify ultimate destination when ordering.

**Cole-Parmer®**

- FN-07523-92** Foot switch for momentary start/stop; 6-ft (1.8-m) cable
- FN-07523-94** Male connector, DB25. Use to create your own cable

Motor rpm	Motor hp	Motor type	Power VAC	Power Hz	Catalog number	Price
36 to 3600	1/10	PMDC	90 to 260	50/60	<a href="#">FN-75211-70</a>	



## Micropump® A-Mount Gear Pump Heads

### Achieve leak-free, pulseless flow

Magnetic drive and static seals keep fluids securely inside and potential contaminants out. Chemical resistant materials handle a wide range of materials (due to wetted parts). Pump heads are compact and easy to service. Modular design offers flexibility—configure to your specific needs.

**Cavity-style pump heads** are designed to handle higher inlet pressures. Models without internal bypass are reversible.

**Suction shoe pump heads** provide higher delivery pressures and temperatures, plus increased efficiency.



73011-00

73004-00

### Specifications

<b>Port size:</b> 1/8" NPT(F)	<b>Suction lift</b>	<b>Duty cycle:</b>
<b>Max viscosity:</b>	Cavity style: 24" of H <sub>2</sub> O (at 1750 rpm)	continuous
0.2 to 1500 cp	Suction shoe: 12" of H <sub>2</sub> O (3450 rpm)	

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

Flow rates (mL/min) <sup>†</sup>			Max pressure psi (bar)		Wetted parts			Temperature range	Internal bypass	Max speed (rpm)	Catalog number	Price	Service kits	
mL/rev	at 50 rpm	at 5000 rpm	Diff	System	Body	Gears	Seals						Cat. no.	Price
<b>Cavity-style pump heads</b> reversible units without internal bypass														
0.32	16	1600	80 (5.5)	300 (20.7)	316 SS	PEEK	PTFE	-45 to 170°F (-73 to 77°C)	No	10,000	<a href="#">FN-73011-00</a>	—	—	
			80 (5.5)			PEEK			Yes		<a href="#">FN-73011-02</a>	—	—	
			50 (3.4)			PTFE			Yes		<a href="#">FN-07002-17</a>	<a href="#">FN-07144-38</a>	—	
0.64	32	3200	50 (3.4)	300 (20.7)	316 SS	PTFE	PTFE	-45 to 130°F (-43 to 54°C)	Yes	10,000	<a href="#">FN-07002-23</a>	—	—	
			75 (5.2)			PPS					Yes	<a href="#">FN-07001-80</a>	<a href="#">FN-07001-89</a>	
			80 (5.5)			PEEK					No	<a href="#">FN-73011-08</a>	<a href="#">FN-73011-84</a>	
0.64	32	3200	80 (5.5)	300 (20.7)	316 SS	PTFE	PTFE	-45 to 170°F (-73 to 77°C)	No	10,000	<a href="#">FN-73011-10</a>	—	—	
			80 (5.5)			PEEK			Yes		<a href="#">FN-73011-16</a>	<a href="#">FN-73011-84</a>		
			80 (5.5)			PEEK			Yes		<a href="#">FN-73011-18</a>	—		
0.91	45.5	4550	80 (5.5)	300 (20.7)	316 SS	PTFE	PTFE	-45 to 170°F (-43 to 77°C)	No	10,000	<a href="#">FN-73011-18</a>	—	—	
			80 (5.5)			PEEK			Yes		<a href="#">FN-07001-40</a>	<a href="#">FN-07001-41</a>		
			50 (3.4)			PTFE			Yes					
<b>Suction shoe pump heads</b> provide higher delivery pressures and superior priming performance														
0.017	0.85	85	20 (1.4)	300 (20.7)	316 SS	Graphite	PTFE	-50 to 250°F (-46 to 120°C)	No	8000	<a href="#">FN-07002-25</a>	<a href="#">FN-07144-42</a>	—	
0.042	2.10	210	40 (2.8)						No		8000	<a href="#">FN-07002-26</a>	—	—
0.084	4.20	420	40 (2.8)						No		8000	<a href="#">FN-07002-27</a>	<a href="#">FN-07144-47</a>	—
0.092	4.60	460	75 (5.2)	300 (20.7)	316 SS	PEEK	PTFE	-50 to 250°F (-46 to 120°C)	No	8000	<a href="#">FN-73003-14</a>	—	—	
			75 (5.2)			PPS					Yes	<a href="#">FN-07002-14</a>	<a href="#">FN-07144-34</a>	
0.261	13.05	1305	125 (8.6)	300 (20.7)	316 SS	PEEK	Viton®	-50 to 250°F (-46 to 120°C)	Yes	10,000	<a href="#">FN-73004-00</a>	—	—	
			125 (8.6)			PEEK					Yes	<a href="#">FN-73004-02</a>	—	
0.58	29.00	2900	75 (5.2)	300 (20.7)	316 SS	PPS	Viton	-50 to 250°F (-46 to 120°C)	Yes	10,000	<a href="#">FN-07003-02</a>	<a href="#">FN-07003-12</a>	—	
			75 (5.2)			PPS					Yes	<a href="#">FN-73004-04</a>	—	
1.17	58.50	5850	60 (4.1)	300 (20.7)	316 SS	PEEK	Viton	-50 to 250°F (-46 to 120°C)	Yes	10,000	<a href="#">FN-07003-04</a>	<a href="#">FN-07003-14</a>	—	
			60 (4.1)			PPS					Yes			

Note: Viscosity for all models is dependent on the parameters (flow rate, pressures, etc.) of the specific application.  
†Flow rates based on water at room temperature and no back pressure.



## Standard-Duty Dry Vacuum Piston Pumps

### Great for filtering, aspirating, degassing, and desiccating

- Oil free for life science applications
- Water trap prevents liquid from being drawn into the pump
- Muffler provides quiet operation

Use the convenient gauge and control knob to adjust vacuum level. Single-head models also provide pressure. Avoid using pump with organic, acidic, or basic vapors.

**What's included:** gauge, control knob, water trap, carrying handle, suction cup feet, on/off switch, two 1/4" barbed fittings, and a 6-ft (1.8-m) cord (115 VAC models come with a standard US plug; 230 VAC models come with a European (Schuko) plug).

**Service kits include** all components commonly required for refurbishment.



79204-70

79204-00



230 VAC models only



RUNS DRY

Free-air capacity cfm (L/min)	Ultimate <sup>†</sup> vacuum	Maximum pressure	Wetted parts	Motor hp	Noise rating	Port size (tube ID)	Power (VAC, Hz)	Catalog number	Price	Service kits	
										Catalog number	Price
<b>Single-head pumps</b>											
0.76 (22)	26.0" Hg (100 Torr)	100 psig (6.89 bar)	Aluminum (treated for corrosion resistance), SS, and PTFE	1/8	62 dB(A)	1/4"	115, 60	<a href="#">FN-79204-00</a>		<a href="#">FN-79204-01</a>	
0.67 (19)	27.2" Hg (70 Torr)	50 psig (3.45 bar)					230, 50	<a href="#">FN-79204-05</a>		<a href="#">FN-79204-11</a>	
1.20 (34)	27.2" Hg (70 Torr)	50 psig (3.45 bar)		1/8		1/4"	115, 60	<a href="#">FN-79204-10</a>		<a href="#">FN-79204-15</a>	
0.99 (28)	27.6" Hg (60 Torr)	100 psig (6.89 bar)					230, 50	<a href="#">FN-79204-20</a>		<a href="#">FN-79204-25</a>	
1.60 (45)	27.6" Hg (60 Torr)	100 psig (6.89 bar)		1/4		1/4"	115, 60	<a href="#">FN-79204-20</a>		<a href="#">FN-79204-21</a>	
1.34 (38)	29.8" Hg (5 Torr)	—					230, 50	<a href="#">FN-79204-30</a>		<a href="#">FN-79204-31</a>	
<b>Dual-head pumps</b>											
2.1 (60)	29.8" Hg (5 Torr)	—	Aluminum (treated for corrosion resistance), SS, and PTFE	1/3	58 dB(A)	3/8"	115, 60	<a href="#">FN-79204-30</a>		<a href="#">FN-79204-31</a>	
1.8 (50)	27.6" Hg (60 Torr)	—					230, 50	<a href="#">FN-79204-35</a>			
7.1 (201)	27.6" Hg (60 Torr)	—		1/3		3/8"	115, 60	<a href="#">FN-79204-70</a>			
5.9 (168)	—	—					230, 50	<a href="#">FN-79204-75</a>			

<sup>†</sup>Ultimate total vacuum

[FN-06414-20](#) Tygon® non-DEHP vacuum tubing, 1/4" ID x 5/8" OD. Pack of 10 ft (3.0 m)

## High-Capacity Vacuum/Pressure Pumps

### Won't get overloaded

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

**What's included:** 6-ft (1.8-m), three-wire cord (US standard plug on 115 VAC models). Models 07061-11 and -13 include a filter/muffler.



07061-40

ISO 9001:2008 CERTIFIED SUPPLIER



RUNS DRY

Pump head configuration	Free-air capacity cfm (L/min)	Max vacuum	Max pressure	Wetted parts	Motor hp	Port size	Noise rating	Power (VAC, Hz)	Catalog number	Price
<b>Pump without gauges or regulators</b> (order regulators separately below; order gauges with 1/4" NPT(M) connections online)										
Single	1.1 (31.2)	25.5" Hg	60 psi (4.14 bar)	Aluminum, stainless steel, Nordel®, and Nomex®	1/8	1/4" NPT(F), 3/8" hose barb on gauges	68 dB(A)	115, 60	<a href="#">FN-07061-21</a>	
	1.0 (28.3)	24.0" Hg	60 psi (4.14 bar)					220/240, 50	<a href="#">FN-07061-22</a>	
<b>Pumps with gauges, regulators, and adjustable relief valve</b>										
Single	1.1 (31.2)	25.5" Hg	60 psi (4.14 bar)	Aluminum, stainless steel, Nordel, and Nomex	1/8	1/4" NPT(F), 3/8" hose barb on gauges	68 dB(A)	115, 60	<a href="#">FN-07061-40</a>	
	1.0 (28.3)	24.0" Hg	60 psi (4.14 bar)					220/240, 50	<a href="#">FN-07061-42</a>	
Dual/parallel	2.2 (62.3)	25.5" Hg	60 psi (4.14 bar)	Aluminum, stainless steel, Nordel, and Nomex	1/4	1/4" NPT(F), 3/8" hose barb on gauges	68 dB(A)	115, 60	<a href="#">FN-07061-60</a>	
	1.8 (51.0)	24.0" Hg	60 psi (4.14 bar)					220, 50	<a href="#">FN-07061-05</a>	
<b>Pump with vacuum gauge only</b>										
Dual/series	1.15 (32.5)	29.0" Hg	—	Aluminum, stainless steel, Nordel, and Nomex	1/4	1/4" NPT(F), 3/8" hose barb on gauges	68 dB(A)	115, 60	<a href="#">FN-07061-11</a>	
	0.85 (24.0)	28.0" Hg	—					220, 50	<a href="#">FN-07061-13</a>	

[FN-07061-32](#) Pressure regulator assembly for pumps 07061-21 and -22

[FN-07061-30](#) Vacuum regulator assembly for pumps 07061-21 and -22

[FN-07061-01](#) Service kit for all pumps

[FN-07061-03](#) Service kit for dual-head pumps. Pumps 07061-60, -05, -11, and -13 also require kit 07061-01 above

[FN-07061-06](#) Diaphragm for all models, neoprene/nylon

[FN-07061-04](#) Replacement diaphragm for all models, Nordel/Nomex

## Cole-Parmer® Silicone Tubing

No need to worry about the heat—  
use for applications up to 460°F

### Peroxide Silicone



**Applications:** Pharmaceutical, biotechnology, food and beverage, aerospace, and general lab applications.

**Characteristics:** Peroxide-cured, excellent heat resistance, low compression set, odorless, nontoxic, translucent.

**Certifications:** Elastomer is FDA-compliant (21 CFR 177.2600) and meets USP Class VI requirements. Tubing is manufactured according to GMP.

**Temperature range:** -60 to 460°F (-51 to 238°C)

**Sterilize:** Autoclave or gamma irradiation.

### Platinum Silicone



**Applications:** Pharmaceutical, biotechnology, aerospace, food and beverage, and general lab applications.

**Characteristics:** Platinum-cured, excellent heat resistance, low compression set, odorless, nontoxic, translucent.

**Certifications:** Elastomer is FDA-compliant (21 CFR 177.2600) and meets USP Class VI. Tubing is manufactured according to GMP.

**Temperature range:** -58 to 446°F (-50 to 230°C)

**Sterilize:** Autoclave or gamma irradiation.

**Buy More...Save More!**

**\$** 20% off on 20+  
15% off on 10 to 19  
10% off on 4 to 9 packs



Dimensions: in. (mm)			Max psi at 70°F (21°C)	Peroxide silicone		Platinum silicone	
ID	OD	Wall		Catalog number	Price/25-ft pk	Catalog number	Price/25-ft pk
1/50 (0.5)	1/12 (2.1)	1/32 (0.8)	30	FN-06411-59		FN-95802-00	
1/32 (0.8)	3/32 (2.4)	1/32 (0.8)	30	FN-06411-60		FN-95802-01	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	15	FN-06411-62		FN-95802-02	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	15	FN-06411-63		FN-95802-03	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	10	FN-06411-64		FN-95802-04	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	20	FN-06411-67		FN-95802-05	
1/8 (3.2)	3/8 (9.6)	1/8 (3.2)	25	FN-06411-68		FN-95802-06	
5/32 (4.0)	5/32 (4.0)	1/32 (0.8)	10	FN-06411-65		FN-95802-07	
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	9	FN-06411-66		FN-95802-08	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	13	FN-06411-03		FN-95802-09	
3/16 (4.8)	7/16 (11.2)	1/8 (3.2)	22	FN-06411-69		FN-95802-10	
1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	9	FN-06411-70		FN-95802-11	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	10	FN-06411-71		FN-95802-12	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	17	FN-06411-72		FN-95802-13	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	17	FN-06411-74		FN-95802-14	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	10	FN-06411-75		FN-95802-15	
5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	16	FN-06411-76		FN-95802-16	
5/16 (8.0)	9/16 (14.4)	1/8 (3.2)	20	FN-06411-77		FN-95802-17	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	10	FN-06411-12		FN-95802-18	
3/8 (9.6)	9/16 (14.4)	3/32 (2.4)	12	FN-06411-78		FN-95802-19	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	15	FN-06411-79		FN-95802-20	
1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	9	FN-06411-80		FN-95802-21	
1/2 (12.8)	11/16 (17.6)	3/32 (2.4)	10	FN-06411-19		FN-95802-22	
1/2 (12.8)	3/4 (19.2)	1/8 (3.2)	12	FN-06411-55		FN-95802-23	
5/8 (16.0)	13/16 (20.8)	3/32 (2.4)	10	FN-06411-82		FN-95802-24	
5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	12	FN-06411-58		FN-95802-25	
3/4 (19.2)	1 (25.4)	1/8 (3.2)	9	FN-06411-83		FN-95802-26	

## DON'T RISK IT!

Our chemical compatibility database provides important information on chemical resistance—check it out at [ColeParmer.com/ChemChart](http://ColeParmer.com/ChemChart)



## Dow Corning® Pharma-50 Tubing

No organic additives and low extractables



**Applications:** Pharmaceutical, biotechnology, and ultrapure fluid processing.

**Characteristics:** 50 durometer, translucent platinum-cured silicone tubing with a very low extractable profile. Pharma tubing remains flexible and resilient for long service life. Dow Corning maintains complete traceability from silica to silicone tubing.

**Certifications:** Elastomer exceeds test guidelines for USP Class VI Plastics and the tubing itself meets or exceeds FDA (21 CFR 177.2600), 3A Sanitary Standards and European Pharmacopoeia (EP) requirements. Produced under Bulk Pharmaceutical (BP) and current GMP principles.

**Temperature range:** -60 to 460°F (-51 to 232°C)

**Sterilize:** Autoclave, ethylene oxide, or gamma irradiation.

**Buy More...Save More!**

**\$** 20% off on 20+  
15% off on 10 to 19  
10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/50-ft pk
ID	OD	Wall			
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	21 (1.4)	FN-96105-00	
3/16 (4.8)	3/8 (9.6)	3/32 (2.4)	16 (1.1)	FN-96105-02	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	12 (0.8)	FN-96105-03	
1/4 (6.4)	7/16 (11.1)	3/32 (2.4)	17 (1.2)	FN-96105-04	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	17 (1.2)	FN-96105-05	
5/16 (8.0)	1/2 (14.0)	1/8 (3.0)	16 (1.1)	FN-96105-06	
3/8 (9.6)	9/16 (14.3)	3/32 (2.4)	13 (0.9)	FN-96105-08	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	14 (1.0)	FN-96105-09	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	10 (0.7)	FN-96105-11	
5/8 (16.0)	7/8 (22.2)	1/8 (3.2)	9 (0.6)	FN-96105-12	

## Dow Corning® Pharma-80 Tubing

Economical alternative to reinforced tubing



**Applications:** High-pressure, pharmaceutical, biotech, and ultra-pure fluid processing.

**Characteristics:** 80 durometer, semi-transparent platinum-cured silicone tubing with a very low extractable profile; it contains no phthalates, plasticisers, latex or other organic additives. Pharma tubing is hydrophobic, and remains flexible and resilient for long service life. Dow Corning maintains complete traceability from silica to silicone tubing.

**Certifications:** Elastomer exceeds test guidelines for USP Class VI Plastics; tubing itself meets or exceeds FDA (21 CFR 177.2600), 3A Sanitary Standards, and European Pharmacopoeia (EP) requirements. Pharma tubing is produced under Bulk Pharmaceutical (BP) current GMP principals.

**Temperature range:** -60 to 460°F (-51 to 232°C)

**Sterilize:** Autoclave, ethylene oxide, or gamma irradiation.

**Buy More...Save More!**

**\$** 20% off on 20+  
15% off on 10 to 19  
10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/50-ft pk
ID	OD	Wall			
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	249 (17.2)	FN-96109-00	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	249 (17.2)	FN-96109-01	
3/16 (4.8)	3/8 (9.6)	3/32 (2.4)	260 (17.9)	FN-96109-02	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	249 (17.2)	FN-96109-03	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	249 (17.2)	FN-96109-04	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	260 (17.9)	FN-96109-05	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	241 (16.6)	FN-96109-07	
3/8 (9.6)	9/16 (14.4)	3/32 (2.4)	249 (17.2)	FN-96109-08	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	231 (15.9)	FN-96109-09	
1/2 (12.8)	11/16 (17.6)	3/32 (2.4)	210 (14.5)	FN-96109-10	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	200 (13.8)	FN-96109-11	



## PharMed® BPT Tubing

### Protect your light-sensitive samples



**Applications:** Cell and tissue culture work and pharmaceutical uses. Also good for light-sensitive samples.

**Characteristics:** Nontoxic; nonhemolytic; extremely low permeability; resists acids, alkalis, oxidizing agents, and animal and vegetable oils; heat-sealable, bondable, and formable. Opaque beige.

**Certifications:** Elastomer is FDA-compliant (21 CFR 177.2600) and meets USP Class VI and NSF (Standard 51) requirements. Meets EP requirements. Tubing is manufactured according to GMP.

**Temperature range:** -60 to 275°F (-51 to 135°C)

**Sterilize:** Autoclave, ethylene oxide, or gamma irradiation.

**Buy More...Save More!**  
 20% off on 20+ 15% off on 10 to 19 10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/ 25-ft pk
ID	OD	Wall			
1/50 (0.5)	9/64 (3.7)	1/16 (1.6)	50 (3.4)	FN-96880-00	
1/32 (0.8)	5/32 (4.0)	1/16 (1.6)	40 (2.8)	FN-96880-02	
1/16 (1.6)	3/16 (4.8)	1/16 (1.6)	34 (2.3)	FN-96880-04	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	19 (1.3)	FN-96880-06	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	13 (0.9)	FN-96880-08	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	10 (0.7)	FN-96880-10	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	19 (1.3)	FN-96880-12	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	8 (0.6)	FN-96880-14	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	13 (0.9)	FN-96880-16	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	11 (0.8)	FN-96880-18	
5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	8 (0.6)	FN-96880-20	
3/4 (19.1)	1 (25.4)	1/8 (3.2)	7 (0.5)	FN-96880-22	

### Microbore PharMed BPT Tubing

Dimensions: in. (mm)			Fits needle gauge	Catalog number	Price/ 100-ft pk
ID	OD	Wall			
0.010 (0.25)	0.082 (2.08)	0.036 (0.91)	30	FN-95809-12	
0.020 (0.51)	0.096 (2.44)	0.038 (0.97)	24	FN-95809-18	
0.035 (0.89)	0.111 (2.82)	0.038 (0.97)	20	FN-95809-26	
0.045 (1.14)	0.121 (3.07)	0.038 (0.97)	18	FN-95809-30	
0.051 (1.30)	0.127 (3.23)	0.038 (0.97)	18	FN-95809-32	
0.056 (1.42)	0.132 (3.35)	0.038 (0.97)	17	FN-95809-34	
0.060 (1.52)	0.136 (3.45)	0.038 (0.97)	16	FN-95809-36	
0.073 (1.85)	0.149 (3.78)	0.038 (0.97)	15	FN-95809-40	

## C-Flex® Tubing

### Meets the demands of various industries

– Available in three formulations—standard, clear, and animal-derived component-free (ADCF)

**Applications:** General-purpose lab uses requiring high performance and long life.

**Characteristics:** Exceptional tensile and tear strength, good biocompatibility, excellent chemical resistance, low gas permeability, and a smooth surface. Standard C-Flex is opaque white; C-Flex Clear and C-Flex ADCF are clear.



**Certifications:** Meets USP Class VI. Tubing is manufactured according to GMP.

**Temperature range:** -50 to 275°F (-45 to 135°C)

**Sterilize:** Autoclave, ethylene oxide, or gamma irradiation.

**Buy More...Save More!**  
 20% off on 20+ 15% off on 10 to 19 10% off on 4 to 9 packs

Dimensions in. (mm)			C-Flex			C-Flex Clear			C-Flex ADCF		
ID	OD	Wall	Catalog number	Max psi at 70°F (21°C)	Price/ 25-ft pk	Catalog number	Max psi at 70°F (21°C)	Price/ 25-ft pk	Catalog number	Max psi at 70°F (21°C)	Price/ 50-ft pk
1/50 (0.5)	1/12 (2.1)	1/32 (0.8)	FN-06424-59	30		FN-06422-00	50		—	—	—
1/32 (0.8)	3/32 (2.4)	1/32 (0.8)	FN-06424-60	31		FN-06422-01	51		—	—	—
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	FN-06424-62	15		FN-06422-02	25		—	—	—
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	FN-06424-63	14		FN-06422-03	23		—	—	—
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	FN-06424-64	10		FN-06422-04	17		—	—	—
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	FN-06424-67	21		FN-06422-05	35		FN-06432-50	35	—
5/32 (4.0)	7/32 (5.6)	1/32 (0.8)	FN-06424-65	10		FN-06422-06	17		—	—	—
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	FN-06424-66	9		FN-06422-07	15		—	—	—
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	FN-06424-03	13		FN-06422-08	22		FN-06432-51	22	—
3/16 (4.8)	7/16 (11.2)	1/8 (3.2)	FN-06424-69	22		FN-06422-09	36		—	—	—
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	FN-06424-71	12		FN-06422-10	20		FN-06432-53	20	—
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	FN-06424-72	17		FN-06422-11	28		FN-06432-54	28	—
1/4 (6.4)	1/2 (12.7)	1/8 (3.2)	FN-06424-74	17		FN-06422-12	17		FN-06432-55	28	—
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	FN-06424-75	10		FN-06422-13	28		—	—	—
5/16 (8.0)	1/2 (12.7)	3/32 (2.4)	FN-06424-76	16		FN-06422-14	27		FN-06432-56	27	—
3/8 (9.6)	1/2 (12.7)	1/16 (1.6)	FN-06424-12	10		FN-06422-15	17		FN-06432-57	17	—
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	FN-06424-79	14		FN-06422-16	23		FN-06432-59	23	—
1/2 (12.7)	11/16 (17.6)	3/32 (2.4)	FN-06424-19	10		FN-06422-17	17		FN-06432-60	17	—
1/2 (12.7)	3/4 (19.1)	1/8 (3.2)	FN-06424-81	10		FN-06422-18	17		FN-06432-61	17	—

## Silastic® Laboratory Tubing

### Resists bacteria and fungus growth



**Applications:** Pharmaceutical, biotech, filtration, and environmental analysis.

**Characteristics:** Platinum-cured silicone, nonpyrogenic, bacteria and fungus-resistant, extremely low extractables, and does not impart a taste or odor.

**Certifications:** Exceeds USP Class VI Plastics Test requirements, elastomer and tubing are manufactured under Bulk Pharmaceutical cGMPs in an FDA-registered, ISO-9002-certified facility.

**Temperature range:** -65 to 480°F (-54 to 249°C)

**Sterilize:** Autoclave or radiation.

**Buy More...Save More!**  
 20% off on 20+ 15% off on 10 to 19 10% off on 4 to 9 packs

Dimensions: in. (mm)			Catalog number	Price/ 50-ft pk
ID	OD	Wall		
0.012 (0.3)	0.025 (0.6)	0.0065 (0.2)	FN-96115-00	
0.02 (0.5)	0.037 (0.9)	0.0085 (0.22)	FN-96115-02	
0.025 (0.6)	0.047 (1.2)	0.011 (0.3)	FN-96115-04	
0.03 (0.8)	0.065 (1.7)	0.0175 (0.4)	FN-96115-06	
0.04 (1)	0.085 (2.2)	0.0225 (0.6)	FN-96115-08	
0.058 (1.5)	0.077 (2.0)	0.0095 (0.2)	FN-96115-10	
0.062 (1.6)	0.095 (2.4)	0.0165 (0.4)	FN-96115-12	
0.062 (1.6)	0.125 (3.2)	0.0315 (0.8)	FN-96115-14	
0.078 (2)	0.125 (3.2)	0.0235 (0.6)	FN-96115-16	
0.104 (2.6)	0.192 (4.9)	0.044 (1.1)	FN-96115-18	
0.132 (3.4)	0.183 (4.6)	0.0255 (0.6)	FN-96115-20	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	FN-96115-22	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	FN-96115-24	
3/16 (4.8)	3/8 (9.5)	3/32 (2.4)	FN-96115-26	
1/4 (6.4)	3/8 (9.5)	1/16 (1.6)	FN-96115-28	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	FN-96115-30	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	FN-96115-32	
5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	FN-96115-34	
3/8 (9.5)	1/2 (12.8)	1/16 (1.6)	FN-96115-36	
3/8 (9.5)	9/16 (14.3)	3/32 (2.4)	FN-96115-38	
3/8 (9.5)	5/8 (15.9)	1/8 (3.2)	FN-96115-40	
1/2 (12.8)	11/16 (17.5)	3/32 (2.4)	FN-96115-42	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	FN-96115-44	
5/8 (15.9)	7/8 (22.2)	1/8 (3.2)	FN-96115-46	

## Tygon® Non-DEHP Lab Tubing

Pliable for sharp radius bending



**Formulation:** Tygon E-3603

**Applications:** General lab, food & beverage, biopharm, analytical instruments.

**Characteristics:** Non-DEHP, phthalate free. Long-life, chemical resistant, nonoxidizing; bends to sharp radius curves and easily works with fittings. Transparent.

**Certifications:** FDA-compliant (21 CFR 175.300); meets USP Class VI and NSF 51 requirements.

**Temperature range:** -51 to 165°F (-46 to 74°C)

**Sterilize:** Autoclave or ethylene oxide.

**Buy More...Save More!**

20% off on 20+  
15% off on 10 to 19  
10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/ 50- ft pk
ID	OD	Wall			
1/32 (0.8)	3/32 (2.4)	1/32 (0.8)	69 (4.8)	FN-06407-70	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	36 (2.5)	FN-06407-71	
1/16 (1.6)	3/16 (4.8)	1/16 (1.6)	69 (4.8)	FN-06407-72	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	25 (1.7)	FN-06407-73	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	20 (1.4)	FN-06407-75	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	36 (2.5)	FN-06407-76	
5/32 (4.0)	7/32 (5.6)	1/32 (0.8)	17 (1.2)	FN-06407-77	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	25 (1.7)	FN-06407-78	
3/16 (4.8)	3/8 (9.6)	3/32 (2.4)	36 (2.5)	FN-06407-79	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	20 (1.4)	FN-06407-80	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	28 (1.9)	FN-06407-81	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	35 (2.5)	FN-06407-82	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	17 (1.2)	FN-06407-83	
5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	23 (1.6)	FN-06407-84	
5/16 (8.0)	9/16 (14.4)	1/8 (3.2)	30 (2.1)	FN-06407-85	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	14 (1.0)	FN-06407-86	
3/8 (9.6)	9/16 (14.4)	3/32 (2.4)	20 (1.4)	FN-06407-87	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	25 (1.7)	FN-06407-88	
7/16 (11.2)	9/16 (14.4)	1/16 (1.6)	13 (0.9)	FN-06407-89	
1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	12 (1.8)	FN-06407-90	
1/2 (12.8)	11/16 (1.6)	3/32 (2.4)	15 (1.0)	FN-06407-91	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	20 (1.4)	FN-06407-92	
1/2 (12.8)	13/16 (20.8)	5/32 (4.0)	24 (1.7)	FN-06407-93	
5/8 (16.0)	13/16 (20.8)	3/32 (2.4)	13 (0.9)	FN-06407-94	
5/8 (16.0)	7/16 (11.2)	1/8 (3.2)	17 (1.2)	FN-06407-95	
3/4 (19.1)	1 (25.4)	1/8 (3.2)	14 (1.0)	FN-06407-96	
3/4 (19.1)	1 1/8 (28.6)	3/16 (4.8)	20 (1.4)	FN-06407-97	
1 (25.4)	1 1/4 (31.8)	1/8 (3.2)	12 (0.8)	FN-06407-98	
1 (25.4)	1 1/2 (38.1)	1/4 (6.4)	20 (1.4)	FN-06407-99	

## Tygon® Microbore Autoanalysis Tubing

Clear to easily view sample

**Formulation:** ND-100-80

**Applications:** General laboratory and pharmaceutical use, especially with precision injection or dispensing applications. Also excellent with low-flow peristaltic pump applications.

**Characteristics:** Extremely flexible. Nontoxic; nonpyrogenic; biocompatible. Crystal clear.

**Certifications:** FDA-compliant. Resin meets USP Class VI requirements. Tubing is manufactured according to GMP.

**Temperature range:** -25 to 185°F (-31 to 85°C)

**Sterilize:** Autoclave, ethylene oxide, or gamma irradiation.

**Buy More...Save More!**

20% off on 20+  
15% off on 10 to 19  
10% off on 4 to 9 packs



Dimensions: in. (mm)			Fits needle gauge	Catalog number	Price/ 100-ft
ID	OD	Wall			
0.010 (0.25)	0.030 (0.76)	0.010 (0.25)	30	FN-06419-00	
0.020 (0.51)	0.060 (1.52)	0.020 (0.51)	25	FN-06419-01	
0.030 (0.76)	0.090 (2.29)	0.030 (0.76)	20 to 21	FN-06419-03	
0.040 (1.02)	0.070 (1.78)	0.015 (0.38)	18 to 19	FN-06419-04	
0.050 (1.27)	0.090 (2.29)	0.020 (0.51)	17 to 18	FN-06419-05	

**FN-06418-10 Tygon® microbore tubing assortment pack.** One 100-ft (30.4-m) roll of 06418-01, -02, -03, -04, and -05 (500-ft [152.4-m] total)

## Viton® Tubing

Worry-free acid transfer



**Applications:** Acid and solvent transfer; high-temperature work.

**Characteristics:** Opaque black.

**Certifications:** Tubing is manufactured according to GMP.

**Temperature range:** 8 to 400°F (-13 to 204°C)

**Sterilize:** Not recommended.

**Buy More...Save More!**

20% off on 20+  
15% off on 10 to 19  
10% off on 4 to 9 packs

ISO 9001:2008  
CERTIFIED SUPPLIER

Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/ 25-ft pk
ID	OD	Wall			
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	23 (1.6)	FN-06434-01	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	21 (1.4)	FN-06434-02	
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	19 (1.3)	FN-06434-03	
1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	17 (1.2)	FN-06434-04	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	20 (1.4)	FN-06434-05	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	18 (1.2)	FN-06434-06	
1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	16 (1.1)	FN-06434-07	
5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	17 (1.8)	FN-06434-08	
3/4 (19.1)	1 (25.4)	1/8 (3.2)	15 (1.0)	FN-06434-09	

## Cole-Parmer® Vinyl Tubing

Ideal for general-purpose applications



**Applications:** General-purpose lab use.

**Characteristics:** Fair chemical and abrasion resistance, odorless, nontoxic and transparent.

**Certifications:** Tubing is manufactured according to GMP.

**Temperature range:** -45 to 180°F (-43 to 82°C)

**Sterilize:** Ethylene oxide.

Cole-Parmer®

**Buy More...Save More!**

20% off on 20+ 15% off on 10 to 19 10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Ft/pk	Price/pk
ID	OD	Wall				
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	40 (2.8)	FN-06405-01	50	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	59 (4.0)	FN-06405-02	50	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	51 (3.5)	FN-06405-03	50	
3/16 (4.8)	7/16 (11.2)	1/8 (3.2)	46 (3.2)	FN-06405-04	100	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	51 (3.5)	FN-06405-06	50	
1/4 (6.4)	7/16 (11.2)	3/32 (2.4)	55 (3.8)	FN-06405-07	100	
1/4 (6.4)	1/2 (12.8)	1/8 (3.2)	64 (4.4)	FN-06405-08	50	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	46 (3.2)	FN-06405-09	50	
5/16 (8.0)	1/2 (12.8)	3/32 (2.4)	55 (3.8)	FN-06405-10	100	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	41 (2.8)	FN-06405-12	50	
3/8 (9.6)	9/16 (14.4)	3/32 (2.4)	46 (3.2)	FN-06405-15	100	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	55 (3.8)	FN-06405-16	100	
1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	28 (1.9)	FN-06405-18	50	
1/2 (12.8)	11/16 (17.6)	3/32 (2.4)	36 (2.5)	FN-06405-19	100	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	41 (2.8)	FN-06405-20	50	
5/8 (16.0)	13/16 (20.8)	3/32 (2.4)	32 (2.2)	FN-06405-25	100	
5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	36 (2.5)	FN-06405-27	50	
3/4 (19.1)	1 (25.4)	1/8 (3.2)	32 (2.2)	FN-06405-31	50	
1 (25.4)	1 1/4 (31.8)	1/8 (3.2)	23 (1.6)	FN-06405-36	50	
1 1/4 (31.8)	1 3/4 (44.5)	1/4 (6.4)	41 (2.8)	FN-06405-46	50	

## Platinum-Cured Silicone Spools

Cut tubing to your needs

Reduce unpacking time, save money on shipping, and ensure that you always have enough tubing on hand with bulk tubing.



Dimensions in. (mm)		Length per spool	Catalog number	Price
ID	OD			
1/2 (0.8)	3/2 (2.4)	500 ft (152 m)	FN-98906-00	
1/16 (1.6)	1/8 (3.2)		FN-98906-02	
1/8 (3.2)	1/4 (6.4)	300 ft (91 m)	FN-98906-04	
3/16 (4.8)	5/16 (8.0)		FN-98906-06	
1/4 (6.4)	3/8 (9.6)		FN-98906-08	
3/8 (9.6)	5/8 (16.0)		FN-98906-10	
5/8 (16.0)	7/8 (22.4)		FN-98906-12	





## Cole-Parmer® FEP Tubing

Does not deteriorate with age



**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.

**Certifications:** Resin is FDA-compliant (21 CFR 177.1550). Tubing is manufactured in ISO 9001-2008 approved facility.

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

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

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Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/ 25-ft pk
ID	OD	Wall			
1/32 (0.8)	1/16 (1.6)	1/64 (0.4)	500 (34.5)	FN-06406-60	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	444 (30.6)	FN-06406-62	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	353 (24.3)	FN-06406-63	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	289 (19.9)	FN-06406-64	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	450 (31.0)	FN-06450-05	
5/32 (4.0)	1/4 (6.4)	3/64 (1.2)	329 (22.7)	FN-06450-04	
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	209 (14.4)	FN-06406-66	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	353 (24.3)	FN-06450-06	
1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	150 (10.3)	FN-06406-72	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	288 (19.9)	FN-06450-07	
19/64 (7.5)	3/8 (9.6)	5/128 (1.0)	172 (11.9)	FN-06450-02	
5/16 (8.0)	3/8 (9.6)	1/32 (0.8)	140 (9.7)	FN-06406-74	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	243 (16.8)	FN-06450-08	
3/8 (9.6)	7/16 (11.2)	1/32 (0.8)	110 (7.6)	FN-06406-12	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	210 (14.5)	FN-06450-09	
7/16 (11.1)	1/2 (12.8)	1/32 (0.8)	102 (7.0)	FN-06406-76	
7/16 (11.1)	9/16 (14.3)	1/16 (1.6)	185 (12.8)	FN-06450-14	
1/2 (12.8)	9/16 (14.3)	1/32 (0.8)	88 (6.1)	FN-06406-18	
1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	165 (11.4)	FN-06450-15	
5/8 (16.0)	11/16 (17.5)	1/32 (0.8)	71 (4.9)	FN-06450-00	
5/8 (16.0)	3/4 (19.2)	1/16 (1.6)	135 (9.3)	FN-06450-17	
11/16 (17.5)	3/4 (19.2)	1/32 (0.8)	65 (4.5)	FN-06450-01	
3/4 (19.2)	7/8 (22.2)	1/16 (1.6)	115 (7.9)	FN-06450-19	

## Tygon® Ultra Chemical-Resistant Tubing

Won't allow particulate buildup



**Formulation:** Tygon 2375

**Applications:** For use with highly aggressive chemicals—acids, bases, ketones, salts, and alcohols.

**Characteristics:** Plasticizer free, smoother inner surface (inhibits particulate build-up), hydrophobic, minimal outgassing, safe disposal via incineration, and nontoxic. Transparent.

**Certification:** FDA-(21 CFR 177.1550) and REACH-compliant. Meets NSF 51 Standard.

**Temperature range:** -108 to 130°F (-78 to 54°C)

**Sterilize:** Ethylene oxide or gamma irradiation.

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15% off on 10 to 19  
10% off on 4 to 9 packs

Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/ 50-ft pk
ID	OD	Wall			
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	33 (2.8)	FN-95630-10	
1/16 (1.6)	3/16 (4.8)	1/16 (1.6)	55 (3.8)	FN-95630-11	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	22 (1.5)	FN-95630-12	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	33 (2.8)	FN-95630-13	
5/32 (4.0)	7/32 (5.5)	1/32 (0.8)	16 (1.1)	FN-95630-14	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	22 (1.5)	FN-95630-15	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	19 (1.3)	FN-95630-16	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	16 (1.1)	FN-95630-17	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	14 (1.0)	FN-95630-18	
3/8 (9.6)	5/8 (16.0)	1/8 (3.2)	24 (1.6)	FN-95630-19	
1/2 (12.8)	3/4 (19.1)	1/8 (3.2)	19 (1.3)	FN-95630-20	
5/8 (16.0)	7/8 (22.4)	1/8 (3.2)	16 (1.1)	FN-95630-21	
3/4 (19.1)	1 (25.4)	1/8 (3.2)	14 (1.1)	FN-95630-22	
1 (25.4)	1 1/8 (35.0)	3/16 (4.8)	15 (1.0)	FN-95630-23	

## Cole-Parmer® PTFE Tubing

Won't crack under heat or pressure



**Applications:** Demanding lab, chemical, electrical, mechanical, and pharmaceutical applications. High-purity work. Extreme temperatures.

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

**Certifications:** Resin is FDA-compliant (21 CFR 177.1550).

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

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

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Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/ 25-ft pk
ID	OD	Wall			
1/32 (0.8)	1/16 (1.6)	1/64 (0.4)	370 (25.5)	FN-06407-41	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	370 (25.5)	FN-06605-27	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	294 (20.3)	FN-06605-28	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	240 (16.5)	FN-06605-29	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	375 (25.9)	FN-06605-30	
5/32 (4.0)	1/4 (6.4)	3/64 (1.2)	274 (18.9)	FN-06605-31	
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	175 (12.1)	FN-06605-32	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	294 (20.3)	FN-06605-33	
1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	137 (9.4)	FN-06605-34	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	240 (16.5)	FN-06605-35	
19/64 (7.5)	3/8 (9.6)	1/25 (1.0)	143 (9.9)	FN-06605-36	
5/16 (8.0)	3/8 (9.6)	1/32 (0.8)	113 (7.8)	FN-06605-37	
3/8 (9.6)	7/16 (11.2)	1/32 (0.8)	96 (6.6)	FN-06605-39	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	175 (12.1)	FN-06605-40	
2/5 (10.2)	1/2 (12.8)	1/20 (1.4)	137 (9.4)	FN-06605-41	
7/16 (11.2)	1/2 (12.8)	1/32 (0.8)	83 (5.7)	FN-06605-42	
1/2 (12.8)	9/16 (14.3)	1/32 (0.8)	73 (5.0)	FN-06605-44	
1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	137 (9.4)	FN-06605-45	
3/8 (9.6)	5/8 (16.0)	1/32 (0.8)	66 (4.6)	FN-06605-46	
5/8 (16.0)	1 1/16 (17.5)	1/32 (0.8)	59 (4.1)	FN-06605-48	
5/8 (16.0)	3/4 (19.2)	1/16 (1.6)	113 (7.8)	FN-06605-49	
3/4 (19.2)	7/8 (22.2)	1/16 (1.6)	96 (6.6)	FN-06605-51	

## Cole-Parmer® PFA Tubing

Withstands highly corrosive materials



**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.

**Certifications:** Resin is FDA-compliant (21 CFR 177.1550). Tubing is manufactured in ISO 9001-2008 approved facility.

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

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

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Dimensions: in. (mm)			Max psi at 70°F (bar at 21°C)	Catalog number	Price/ 25-ft pk
ID	OD	Wall			
1/32 (0.8)	1/16 (1.6)	1/64 (0.4)	600 (41.4)	FN-06371-00	
1/16 (1.6)	1/8 (3.2)	1/32 (0.8)	592 (40.8)	FN-06375-01	
3/32 (2.4)	5/32 (4.0)	1/32 (0.8)	471 (32.5)	FN-06371-01	
1/8 (3.2)	3/16 (4.8)	1/32 (0.8)	385 (26.5)	FN-06371-02	
1/8 (3.2)	1/4 (6.4)	1/16 (1.6)	600 (41.4)	FN-06371-21	
5/32 (4.0)	1/4 (6.4)	3/64 (1.2)	421 (29.0)	FN-06375-02	
3/16 (4.8)	1/4 (6.4)	1/32 (0.8)	280 (19.3)	FN-06371-03	
3/16 (4.8)	5/16 (8.0)	1/16 (1.6)	471 (32.5)	FN-06371-22	
1/4 (6.4)	5/16 (8.0)	1/32 (0.8)	220 (15.2)	FN-06371-04	
1/4 (6.4)	3/8 (9.6)	1/16 (1.6)	388 (26.8)	FN-06375-05	
19/64 (7.5)	3/8 (9.6)	5/128 (1.0)	229 (15.8)	FN-06371-23	
5/16 (8.0)	3/8 (9.6)	1/32 (0.8)	180 (12.4)	FN-06371-05	
5/16 (8.0)	7/16 (11.2)	1/16 (1.6)	324 (22.3)	FN-06371-24	
3/8 (9.6)	1/2 (12.8)	1/16 (1.6)	283 (19.5)	FN-06375-07	
2/5 (10.2)	1/2 (12.8)	1/20 (1.4)	220 (9.5)	FN-06371-25	
7/16 (11.2)	1/2 (12.8)	1/32 (0.8)	133 (9.2)	FN-06371-07	
1/2 (12.8)	5/8 (16.0)	1/16 (1.6)	220 (15.2)	FN-06371-26	
5/8 (16.0)	3/4 (19.0)	1/16 (1.6)	150 (10.3)	FN-06375-08	
11/16 (17.5)	3/4 (19.0)	1/32 (0.8)	87 (6.0)	FN-06371-28	
3/4 (19.0)	7/8 (22.2)	1/16 (1.6)	153 (10.5)	FN-06371-29	

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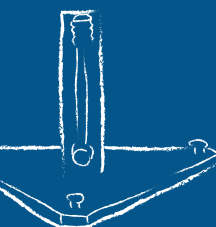
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## Tubing Accessories

### Handheld Tubing Cutter

Steel blade coated with PTFE resin produces clean, straight cuts through tubing up to 1<sup>1</sup>/<sub>4</sub>" OD (cuts polyethylene tubing up to 1<sup>1</sup>/<sub>2</sub>" OD).

Order carrying pouch and replacement blade separately below.



**FN-06438-90** Handheld tubing cutter

**FN-06438-81** Tubing cutter pouch

**FN-06438-92** Replacement blade for handheld tubing cutter 06438-90

### Stainless Steel Hose Clamps



SS strap and screw housing with a steel screw. Band-type worm drive.

Clamp diameter		Catalog number	Price/pk of 10*
Min	Max		
7/32"	5/8"	<b>FN-06403-11</b>	
11/16"	1 1/4"	<b>FN-06403-12</b>	
13/16"	1 3/4"	<b>FN-06403-13</b>	
1 1/16"	2"	<b>FN-06403-14</b>	
1 5/16"	2 1/4"	<b>FN-06403-15</b>	
2"	2 3/4"	<b>FN-06403-16</b>	
2 3/4"	3 1/2"	<b>FN-06403-21</b>	
3 1/2"	4 3/8"	<b>FN-06403-22</b>	
4 3/8"	5 1/8"	<b>FN-06403-23</b>	
5 1/8"	5 7/8"	<b>FN-06403-24</b>	
5 1/2"	6 1/4"	<b>FN-06403-25</b>	

\*Discounts: Save 10% on 5-24 pks, 15% on 25-99 pks, and 20% on 100+ pks.

### Benchtop Tubing Cutter

Steel blade makes right-angle cuts in plastic tubing 1/16" to 5/8" OD.



**FN-06438-10** Benchtop cutter

**FN-06438-11** Replacement blade

### Plastic Clamp Ties



Perfect for flexible fuel line, water line, and vacuum line applications. Special curved clamp tie head ensures a tight seal. Ties measure 8" L x 0.18" W; maximum diameter of 1 3/4". Black resin resists UV degradation.

**FN-95615-00** Clamp ties, white. 100/pk

**FN-95615-10** Clamp ties, black. 100/pk

## Cole-Parmer® Plastic Hose Clamps and Kits

Reusable white acetal copolymer clamps will not rust or corrode. Recommended for continuous use from ambient temperature to 200°F (93°C). Clamps are nonconducting and stable in a wide variety of chemicals.

Once set, clamps stay put. To use, just position clamp on hose or tubing bundle and press the jaws together with a pair of pliers. Order clamps individually or in a handy kit.



Inside diameter				Catalog number	Qty/pk	Price/pk**
Decimal inches		Millimeters				
Min	Max	Min	Max			
0.228	0.256	5.8	6.5	<b>FN-06832-01</b>	100	
0.269	0.291	6.8	7.4	<b>FN-95614-00</b>	100	
0.307	0.342	7.8	8.7	<b>FN-06832-03</b>	100	
0.351	0.394	8.9	10.0	<b>FN-06832-02</b>	100	
0.387	0.440	9.8	11.2	<b>FN-95614-01</b>	100	
0.404	0.452	10.3	11.5	<b>FN-06832-04</b>	100	
0.449	0.511	11.4	13.0	<b>FN-06832-06</b>	100	
0.513	0.586	13.0	14.9	<b>FN-06832-08</b>	100	
0.569	0.650	14.5	16.5	<b>FN-06832-10</b>	100	
0.616	0.707	15.7	18.0	<b>FN-06832-12</b>	100	
0.702	0.801	17.8	20.4	<b>FN-06832-14</b>	100	
0.759	0.848	19.3	21.5	<b>FN-06832-16</b>	100	
0.779	0.899	19.8	22.8	<b>FN-06832-18</b>	100	
0.859	0.989	21.8	25.1	<b>FN-06832-20</b>	100	
0.928	1.072	23.6	27.2	<b>FN-06832-22</b>	100	
0.985	1.135	25.0	28.8	<b>FN-06832-24</b>	100	
1.123	1.296	28.5	32.9	<b>FN-06832-28</b>	50	
1.218	1.405	30.9	35.7	<b>FN-06832-32</b>	50	

\*\*Discounts: Save 10% on 4-19 pks, 15% on 20-79 pks, and 20% on 80+ pks.

**FN-06832-99** White acetal copolymer hose-clamp kit includes 170 assorted clamps from 0.228" to 1.405" ID.

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# Cole-Parmer® Premium Luer Fittings

## Premium luer fittings for critical applications

- Manufactured from 100% virgin raw materials in a Class 100,000 environment
- Full material traceability on all items

These luer fittings are ideal for a variety of applications, including syringes or small tubing. Manufactured in compliance with ISO 594-1 standards, these fittings are inspected to be free from contaminants, and are fully traceable. All parts meet tight dimensional tolerances for increased reliability and process purity. Choose from a range of sizes, 1/16" to 1/4", with a variety of connection options. **Pack of 25.**



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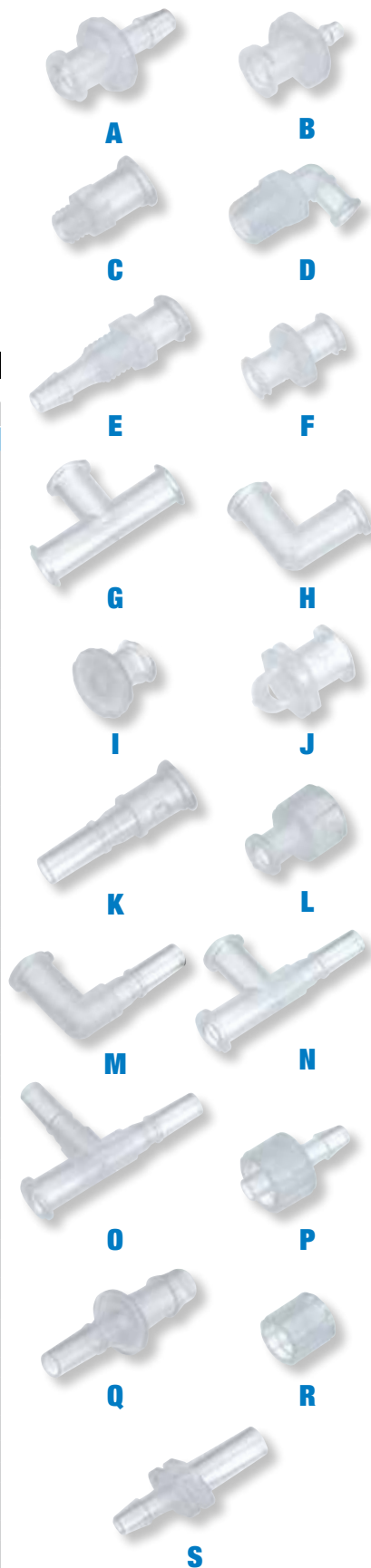
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Key	Description	Polypropylene		Polycarbonate		Nylon	
		Cat. no.	Price/pk	Cat. no.	Price/pk	Cat. no.	Price/pk
<b>Female luer x hose barb adapters</b>							
A	Female luer x 1/16" hose barb	<a href="#">FN-45508-00</a>		<a href="#">FN-45501-00</a>		<a href="#">FN-45502-00</a>	
	Female luer x 3/32" hose barb	<a href="#">FN-45508-02</a>		<a href="#">FN-45501-02</a>		<a href="#">FN-45502-02</a>	
	Female luer x 1/8" hose barb	<a href="#">FN-30800-08</a>		<a href="#">FN-45501-04</a>		<a href="#">FN-45502-04</a>	
	Female luer x 5/32" hose barb	<a href="#">FN-45508-06</a>		<a href="#">FN-45501-06</a>		<a href="#">FN-45502-06</a>	
	Female luer x 3/16" hose barb	<a href="#">FN-45508-08</a>		<a href="#">FN-45501-08</a>		<a href="#">FN-45502-08</a>	
	Female luer x 1/4" hose barb	<a href="#">FN-30800-06</a>		<a href="#">FN-45501-20</a>		<a href="#">FN-45502-20</a>	
<b>Female luer x hose barb adapters (smooth bore)</b>							
B	Female luer x 1/16" hose barb (smooth bore)	<a href="#">FN-45508-50</a>		<a href="#">FN-45501-50</a>		<a href="#">FN-45502-50</a>	
	Female luer x 3/32" hose barb (smooth bore)	<a href="#">FN-45508-52</a>		<a href="#">FN-45501-52</a>		<a href="#">FN-45502-52</a>	
	Female luer x 1/8" hose barb (smooth bore)	<a href="#">FN-45508-54</a>		<a href="#">FN-45501-54</a>		<a href="#">FN-45502-54</a>	
<b>Female luer x thread adapters</b>							
C	Female luer x 10-32 special tapered thread	<a href="#">FN-45508-70</a>		<a href="#">FN-45501-70</a>		<a href="#">FN-45502-70</a>	
	Female luer x 10-32 UNF thread	<a href="#">FN-45508-60</a>		<a href="#">FN-45501-60</a>		<a href="#">FN-45502-60</a>	
	Female luer x 1/4-28 UNF thread	<a href="#">FN-45508-66</a>		<a href="#">FN-45501-66</a>		<a href="#">FN-45502-66</a>	
	Female luer x 1/4-28 UNF bottom sealing thread	<a href="#">FN-45508-76</a>		—	—	<a href="#">FN-45505-76</a>	
	Female luer x 1/8-27 NPT thread	<a href="#">FN-30800-00</a>		—	—	<a href="#">FN-45505-78</a>	
D	Female luer x 1/8-27 NPT thread elbow	<a href="#">FN-45518-80</a>		—	—	<a href="#">FN-45505-80</a>	
<b>Female luer bulkhead x hose barb adapters</b>							
E	Female luer x 1/4-28 UNF thread to 1/16" hose barb	<a href="#">FN-45508-30</a>		<a href="#">FN-45501-30</a>		<a href="#">FN-45502-30</a>	
	Female luer x 1/4-28 UNF thread to 3/32" hose barb	<a href="#">FN-45508-32</a>		<a href="#">FN-45501-32</a>		<a href="#">FN-45502-32</a>	
	Female luer x 1/4-28 UNF thread to 1/8" hose barb	<a href="#">FN-45508-34</a>		<a href="#">FN-45501-34</a>		<a href="#">FN-45502-34</a>	
<b>Female adapters</b>							
F	Female luer x female luer	<a href="#">FN-45508-22</a>		<a href="#">FN-45501-22</a>		<a href="#">FN-45502-22</a>	
G	Female tee	<a href="#">FN-45508-56</a>		<a href="#">FN-45501-56</a>		<a href="#">FN-45502-56</a>	
H	Female elbow	<a href="#">FN-45508-26</a>		<a href="#">FN-45501-26</a>		<a href="#">FN-45502-26</a>	
I	Female luer x cap	<a href="#">FN-30800-12</a>		<a href="#">FN-45501-28</a>		<a href="#">FN-45502-28</a>	
J	Female luer x cap with tether loop	<a href="#">FN-45508-64</a>		<a href="#">FN-45501-64</a>		<a href="#">FN-45502-64</a>	
<b>Male x female adapters</b>							
K	Male luer x female luer coupler	<a href="#">FN-45508-82</a>		<a href="#">FN-45501-82</a>		<a href="#">FN-45502-82</a>	
L	Male luer x female luer coupler with lock ring	<a href="#">FN-45508-80</a>		<a href="#">FN-45501-80</a>		<a href="#">FN-45502-80</a>	
M	Male luer x female luer elbow	<a href="#">FN-45508-84</a>		<a href="#">FN-45501-84</a>		<a href="#">FN-45502-84</a>	
N	Male x female x female tee	<a href="#">FN-45508-85</a>		<a href="#">FN-45501-85</a>		<a href="#">FN-45502-85</a>	
O	Male x male x female tee	<a href="#">FN-45508-75</a>		<a href="#">FN-45501-75</a>		<a href="#">FN-45502-75</a>	
<b>Male luer lock x hose barb adapters</b>							
P	Male luer lock x 1/16" hose barb	<a href="#">FN-45518-00</a>		<a href="#">FN-45504-00</a>		<a href="#">FN-45505-00</a>	
	Male luer lock x 3/32" hose barb	<a href="#">FN-45518-02</a>		<a href="#">FN-45504-02</a>		<a href="#">FN-45505-02</a>	
	Male luer lock x 1/8" hose barb	<a href="#">FN-30800-24</a>		<a href="#">FN-45504-04</a>		<a href="#">FN-45505-04</a>	
	Male luer lock x 5/32" hose barb	<a href="#">FN-45518-06</a>		<a href="#">FN-45504-06</a>		<a href="#">FN-45505-06</a>	
	Male luer lock x 3/16" hose barb	<a href="#">FN-45518-08</a>		<a href="#">FN-45504-08</a>		<a href="#">FN-45505-08</a>	
	Male luer lock x 1/4" hose barb	<a href="#">FN-30800-22</a>		<a href="#">FN-45504-19</a>		<a href="#">FN-45505-19</a>	
<b>Male luer x hose barb adapters (for use with separate rotating lock ring "R")</b>							
Q	Male luer x 1/16" hose barb	<a href="#">FN-45518-40</a>		<a href="#">FN-45504-40</a>		<a href="#">FN-45505-40</a>	
	Male luer x 3/32" hose barb	<a href="#">FN-45518-42</a>		<a href="#">FN-45504-42</a>		<a href="#">FN-45505-42</a>	
	Male luer x 1/8" hose barb	<a href="#">FN-45518-44</a>		<a href="#">FN-45504-44</a>		<a href="#">FN-45505-44</a>	
	Male luer x 5/32" hose barb	<a href="#">FN-45518-46</a>		<a href="#">FN-45504-46</a>		<a href="#">FN-45505-46</a>	
	Male luer x 3/16" hose barb	<a href="#">FN-45518-48</a>		<a href="#">FN-45504-48</a>		<a href="#">FN-45505-48</a>	
	Male luer x 1/4" hose barb	<a href="#">FN-45518-50</a>		<a href="#">FN-45504-50</a>		<a href="#">FN-45505-50</a>	
R	Snap luer lock ring	<a href="#">FN-45518-74</a>		<a href="#">FN-45504-74</a>		<a href="#">FN-45505-74</a>	
<b>Male slip luer x hose barb adapters (no lock ring)</b>							
S	Male luer x 1/16" hose barb	<a href="#">FN-45518-22</a>		<a href="#">FN-45504-22</a>		<a href="#">FN-45505-22</a>	
	Male luer x 3/32" hose barb	<a href="#">FN-45518-24</a>		<a href="#">FN-45504-24</a>		<a href="#">FN-45505-24</a>	
	Male luer x 1/8" hose barb	<a href="#">FN-45518-26</a>		<a href="#">FN-45504-26</a>		<a href="#">FN-45505-26</a>	
	Male luer x 5/32" hose barb	<a href="#">FN-45518-28</a>		<a href="#">FN-45504-28</a>		<a href="#">FN-45505-28</a>	
	Male luer x 3/16" hose barb	<a href="#">FN-45518-52</a>		<a href="#">FN-45504-52</a>		<a href="#">FN-45505-52</a>	
	Male luer x 1/4" hose barb	<a href="#">FN-45518-54</a>		<a href="#">FN-45504-54</a>		<a href="#">FN-45505-54</a>	



Fluid Handling

Fittings

# Cole-Parmer® Barbed Fittings

## No tools needed for assembly

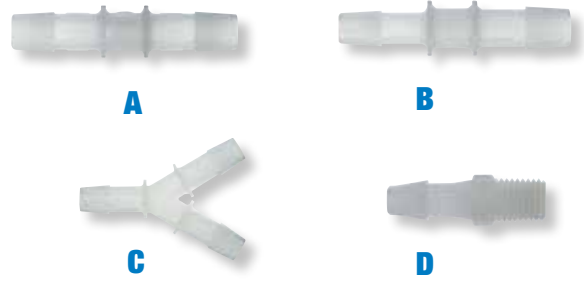
Combine these fittings with our flexible tubing for use in your low-pressure applications (less than 30 psi).

**High-Density Polyethylene (HDPE).** Very good chemical resistance. Temp range: -65 to 150°F (-53 to 65°C). Sterilize by ethylene oxide.

**Nylon.** Good chemical resistance. Temp range: -50 to 250°F (-46 to 121°C). Sterilize by ethylene oxide.

**Polypropylene (PP).** Very good chemical resistance. Temp range: 9 to 180°F (-13 to 66°C). Sterilize by ethylene oxide or gamma irradiation.

**PVDF.** Excellent chemical resistance. Temp range: -80 to 265°F (-62 to 129°C). Sterilize by ethylene oxide or autoclave.



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certificate  
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for these fittings



Tubing ID	HDPE			Nylon			Polypropylene			PVDF		
	Catalog number	Qty/pk	Price/pk	Catalog number	Qty/pk	Price/pk	Catalog number	Qty/pk	Price/pk	Catalog number	Qty/pk	Price/pk
<b>A. Straight connectors</b>												
1/16"	<a href="#">FN-40622-47</a>	10		<a href="#">FN-40622-48</a>	10		<a href="#">FN-50622-49</a>	10		<a href="#">FN-40703-00</a>	10	
3/32"	<a href="#">FN-40622-44</a>	10		<a href="#">FN-40622-45</a>	10		<a href="#">FN-50622-46</a>	10		<a href="#">FN-40703-01</a>	10	
1/8"	<a href="#">FN-40622-53</a>	10		<a href="#">FN-40622-54</a>	10		<a href="#">FN-51518-05</a>	10		<a href="#">FN-40703-02</a>	10	
3/16"	<a href="#">FN-30622-55</a>	10		<a href="#">FN-30622-56</a>	10		<a href="#">FN-40622-57</a>	10		<a href="#">FN-30703-04</a>	10	
1/4"	<a href="#">FN-30621-85</a>	10		<a href="#">FN-30621-86</a>	10		<a href="#">FN-40610-00</a>	10		<a href="#">FN-30703-05</a>	10	
3/8"	<a href="#">FN-30621-89</a>	10		<a href="#">FN-30621-90</a>	10		<a href="#">FN-40610-02</a>	10		<a href="#">FN-30703-07</a>	10	
1/2"	<a href="#">FN-30621-92</a>	10		<a href="#">FN-30621-93</a>	10		<a href="#">FN-40610-03</a>	10		<a href="#">FN-30703-08</a>	10	
5/8"	<a href="#">FN-30621-79</a>	10		<a href="#">FN-30621-80</a>	10		<a href="#">FN-40610-04</a>	10		<a href="#">FN-30703-09</a>	10	
3/4"	<a href="#">FN-30621-81</a>	10		<a href="#">FN-30621-82</a>	10		<a href="#">FN-40610-05</a>	5		<a href="#">FN-30703-10</a>	5	
1"	<a href="#">FN-30621-83</a>	10		<a href="#">FN-30621-84</a>	10		<a href="#">FN-40610-06</a>	5		<a href="#">FN-30703-11</a>	5	
<b>B. Reducing connectors</b>												
1/8" x 1/16"	<a href="#">FN-41518-29</a>	10		<a href="#">FN-40622-22</a>	25		<a href="#">FN-50622-23</a>	25		<a href="#">FN-40703-41</a>	10	
1/4" x 1/8"	<a href="#">FN-30622-27</a>	10		<a href="#">FN-30622-28</a>	10		<a href="#">FN-41518-36</a>	10		<a href="#">FN-30703-50</a>	10	
1/4" x 3/16"	<a href="#">FN-30622-29</a>	10		<a href="#">FN-30622-30</a>	10		<a href="#">FN-40622-32</a>	10		<a href="#">FN-30703-52</a>	10	
3/8" x 1/4"	<a href="#">FN-30622-35</a>	10		<a href="#">FN-30703-99</a>	10		<a href="#">FN-40610-08</a>	10		<a href="#">FN-30703-54</a>	10	
1/2" x 1/4"	<a href="#">FN-30622-38</a>	10		<a href="#">FN-30622-39</a>	10		<a href="#">FN-40610-10</a>	10		<a href="#">FN-30703-56</a>	10	
1/2" x 3/8"	<a href="#">FN-30622-42</a>	10		<a href="#">FN-30622-43</a>	10		<a href="#">FN-40610-12</a>	10		<a href="#">FN-30703-58</a>	10	
5/8" x 1/4"	<a href="#">FN-30621-96</a>	10		<a href="#">FN-30621-97</a>	10		<a href="#">FN-40610-13</a>	10		<a href="#">FN-30703-59</a>	10	
5/8" x 1/2"	<a href="#">FN-30622-03</a>	10		<a href="#">FN-30622-04</a>	10		<a href="#">FN-40610-16</a>	10		<a href="#">FN-30703-62</a>	10	
3/4" x 1/2"	<a href="#">FN-30622-09</a>	5		<a href="#">FN-30622-10</a>	5		<a href="#">FN-40610-18</a>	5		<a href="#">FN-30703-64</a>	5	
1" x 1/2"	<a href="#">FN-30622-15</a>	5		<a href="#">FN-30622-16</a>	5		<a href="#">FN-40610-20</a>	5		<a href="#">FN-30703-66</a>	5	
1" x 3/4"	<a href="#">FN-30622-13</a>	5		<a href="#">FN-30622-14</a>	5		<a href="#">FN-40610-22</a>	5		<a href="#">FN-30703-68</a>	5	
<b>C. Y connectors</b>												
1/16"	<a href="#">FN-30726-01</a>	10		<a href="#">FN-30726-21</a>	10		<a href="#">FN-40726-41</a>	10		<a href="#">FN-30703-90</a>	10	
3/32"	<a href="#">FN-30726-02</a>	10		<a href="#">FN-30726-22</a>	10		<a href="#">FN-40726-42</a>	10		<a href="#">FN-30703-91</a>	10	
1/8"	<a href="#">FN-30726-03</a>	10		<a href="#">FN-30726-23</a>	10		<a href="#">FN-40726-43</a>	10		<a href="#">FN-30703-92</a>	10	
3/16"	<a href="#">FN-30726-04</a>	10		<a href="#">FN-30726-24</a>	10		<a href="#">FN-40726-44</a>	10		<a href="#">FN-30726-64</a>	10	
1/4"	<a href="#">FN-30726-05</a>	10		<a href="#">FN-30726-25</a>	10		<a href="#">FN-40726-45</a>	10		<a href="#">FN-30726-65</a>	10	
3/8"	<a href="#">FN-30726-06</a>	10		<a href="#">FN-30726-26</a>	10		<a href="#">FN-40726-46</a>	10		<a href="#">FN-30703-93</a>	10	
1/2"	<a href="#">FN-30726-07</a>	10		<a href="#">FN-30726-27</a>	10		<a href="#">FN-40726-47</a>	10		<a href="#">FN-30703-94</a>	10	
5/8"	<a href="#">FN-30726-08</a>	10		<a href="#">FN-30726-28</a>	10		<a href="#">FN-40726-48</a>	10		<a href="#">FN-30726-68</a>	10	
<b>D. NPT male threaded adapters, NPT(M) x tubing ID</b>												
1/8" x 1/8"	<a href="#">FN-30621-26</a>	10		<a href="#">FN-30621-27</a>	10		<a href="#">FN-40621-28</a>	25		<a href="#">FN-30704-07</a>	10	
1/8" x 1/4"	<a href="#">FN-30621-31</a>	10		<a href="#">FN-30621-32</a>	10		<a href="#">FN-40610-36</a>	10		<a href="#">FN-30704-09</a>	10	
1/4" x 1/8"	<a href="#">FN-30621-42</a>	10		<a href="#">FN-30621-44</a>	10		<a href="#">FN-40621-45</a>	10		<a href="#">FN-30621-43</a>	10	
1/4" x 1/4"	<a href="#">FN-30621-46</a>	10		<a href="#">FN-30621-47</a>	10		<a href="#">FN-40610-38</a>	10		<a href="#">FN-30704-11</a>	10	
3/8" x 1/4"	<a href="#">FN-30621-56</a>	10		<a href="#">FN-30621-57</a>	10		<a href="#">FN-40610-41</a>	10		<a href="#">FN-30704-14</a>	10	
3/8" x 3/8"	<a href="#">FN-30621-62</a>	10		<a href="#">FN-30621-63</a>	10		<a href="#">FN-40610-42</a>	10		<a href="#">FN-30704-15</a>	10	
1/2" x 1/4"	<a href="#">FN-30621-73</a>	10		<a href="#">FN-30621-74</a>	10		<a href="#">FN-40610-44</a>	10		<a href="#">FN-30704-17</a>	10	
1/2" x 3/8"	<a href="#">FN-30621-75</a>	10		<a href="#">FN-30621-76</a>	10		<a href="#">FN-40610-45</a>	10		<a href="#">FN-30704-18</a>	10	
1/2" x 1/2"	<a href="#">FN-30621-77</a>	10		<a href="#">FN-30621-78</a>	10		<a href="#">FN-40610-46</a>	10		<a href="#">FN-30704-19</a>	10	
3/4" x 1/2"	<a href="#">FN-30621-20</a>	10		<a href="#">FN-30621-21</a>	10		<a href="#">FN-40610-50</a>	5		<a href="#">FN-30704-23</a>	5	
3/4" x 3/4"	<a href="#">FN-30621-12</a>	10		<a href="#">FN-30621-13</a>	10		<a href="#">FN-40610-51</a>	5		<a href="#">FN-30704-24</a>	5	
1" x 1"	<a href="#">FN-31517-18</a>	10		<a href="#">FN-30401-34</a>	10		<a href="#">FN-40610-53</a>	5		<a href="#">FN-30704-26</a>	5	



## Free Certificate of Compliance

Cole-Parmer will provide a certificate of resin or elastomer compliance FREE at your request with each order of fittings, gaskets, or tubing. Certificates list your company's PO number, order reference number, catalog number, formulation, compound number, lot number (where applicable), and the regulations and agencies the fitting, tubing, or gasket complies with, including FDA, USP, USDA, National Formulary, NSF International, GMP, and 3A. Look for the blue "check" icon throughout this catalog to identify when a certificate of compliance is available.



# CPC™ Plastic Quick-Disconnect Fittings

## Fittings connect in a snap

- Acetal fittings are ideal for use with corrosive fluids
- Polycarbonate and polysulfone materials meet USP Class VI requirements

Simply press the thumb latch to disconnect coupling halves. Polycarbonate and polysulfone materials meet USP Class VI requirements and pass all physicochemical, cytotoxicity, leachables, and extractables tests. Order complete couplings or separate bodies and inserts from the tables below.

**Note:** Standard bodies and inserts fit together; won't work with large bodies and inserts and vice versa.



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### Specifications

Body material	Acetal	Polycarbonate (PC)	Polysulfone (PSF)
Temperature range	-40 to 180°F (-40 to 82°C)	-40 to 250°F (-40 to 121°C)	-40 to 300°F (-40 to 148°C)
Max pressure	120 psi	125 psi†	120 psi
Max vacuum	28" Hg	25" Hg	25" Hg
Sterilization	Autoclave or EtO	Autoclave, EtO, or gamma irradiation	Autoclave, EtO, or gamma irradiation

†Max pressure for 1/2" polycarbonate fittings is 60 psi.



### Complete Couplings

Key	Catalog number	Size	Material	Length	Qty/pk	Price/pk
A	FN-06360-90	1/4" tubing ID	Acetal	—	10	
	FN-31305-00		PC	—	10	
	FN-06360-91		Acetal	—	10	
	FN-31305-05	3/8" tubing ID	PC	—	10	
	FN-31306-05		PSF	—	10	

### Standard Bodies and Caps

Key	Catalog number	Size	Material	Length	Qty/pk	Price/pk
<b>Barbed bodies</b>						
B	FN-06360-94	1/4" tubing ID	Acetal	1.31" (33.3 mm)	10	
	FN-31311-11		PC		5	
	FN-31311-21		PSF		5	
	FN-06360-95	3/8" tubing ID	Acetal	1.31" (33.3 mm)	10	
	FN-31311-12		PC		5	
FN-31311-22	PSF	5				
<b>Hose barb coupling bodies with lock</b>						
C	FN-31311-16	1/4" tubing ID	PC	1.31" (33.3 mm)	5	
	FN-31311-26		PSF		5	
	FN-31311-17	3/8" tubing ID	PC	1.31" (33.3 mm)	5	
	FN-31311-27		PSF		5	
<b>BSP straight-through bodies</b>						
D	FN-06360-01	1/4" BSP	Acetal	1.31" (33.3 mm)	10	
	FN-06360-02	3/8" BSP			10	
<b>NPT(M) bodies</b>						
E	FN-06360-00	1/4" NPT	Acetal	1.31" (33.3 mm)	10	
	FN-06360-96	3/8" NPT			10	
<b>Compression coupling bodies</b>						
F	FN-06360-06	1/4" OD	Acetal	1.31" (33.3 mm)	10	
	FN-06360-08	3/8" OD			10	
<b>Sealing caps</b>						
G	FN-31311-64	1/4"	PC	1.31" (33.3 mm)	5	
	FN-31311-74	1/4"	PSF		5	
<b>Sealing caps with lock</b>						
H	FN-31311-67	1/4"	PC	1.31" (33.3 mm)	5	
	FN-31311-77	1/4"	PSF		5	

### Standard Inserts and Plugs

Key	Catalog number	Size	Material	Length	Qty/pk	Price/pk
<b>Barbed inserts</b>						
I	FN-06360-92	1/4" tubing ID	Acetal	1.28" (32.5 mm)	10	
	FN-31311-61		PC		5	
	FN-31311-71		PSF		5	
	FN-06360-93	3/8" tubing ID	Acetal	1.28" (32.5 mm)	10	
	FN-31311-62		PC		5	
	FN-31311-72		PSF		5	
<b>BSP straight-through inserts</b>						
J	FN-06360-27	1/4" BSP	Acetal	1.28" (32.5 mm)	10	
	FN-06360-97	3/8" BSP			10	
<b>NPT(M) inserts</b>						
K	FN-06360-16	1/4" NPT	Acetal	1.28" (32.5 mm)	10	
	FN-06360-18	3/8" NPT			10	
<b>Compression coupling inserts</b>						
L	FN-06360-21	1/4" OD	Acetal	1.28" (32.5 mm)	10	
	FN-06360-24	3/8" OD			10	
<b>Sealing caps</b>						
M	FN-06360-31	1/4" OD	Acetal	1.28" (32.5 mm)	10	
	FN-06360-34	3/8" OD			10	
<b>Plugs with lock</b>						
N	FN-31311-68	1/4"	PC	1.20" (30.5 mm)	5	
	FN-31311-78	1/4"	PSF		5	

### Large Bodies and Inserts (use these bodies and inserts together)

Key	Catalog number	Size	Material	Length	Qty/pk	Price/pk
<b>Barbed bodies</b>						
O	FN-31311-13	1/2" tubing ID	PC	1.96" (49.8 mm)	5	
	FN-31311-23		PSF		5	
<b>Hose barb coupling bodies with lock</b>						
P	FN-31311-18	3/8" tubing ID	PC	1.96" (49.8 mm)	5	
	FN-31311-28		PSF		5	
<b>Barbed inserts</b>						
Q	FN-31311-63	1/2" tubing ID	PC	1.90" (48.3 mm)	5	
	FN-31311-73		PSF		1.40" (35.6 mm)	5

# CPC™ High-Flow Quick-Disconnect Couplings

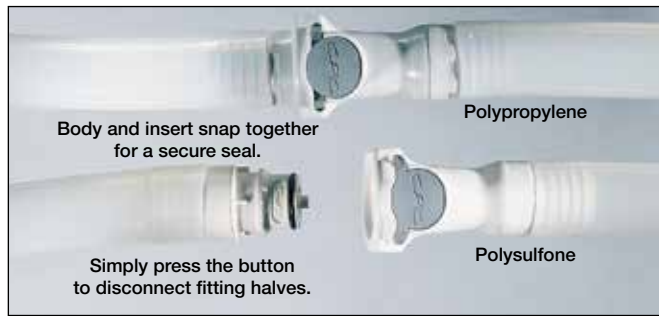
## No more leaks—valved couplings automatically shut off flow

A complete quick-disconnect fitting consists of a body and an insert (order fitting halves separately). Plug insert into coupling body to connect—fitting halves lock into place immediately. To disconnect, simply press the button on the coupling body.

Valved models have a spring-operated 316 SS valve that seals the flow path when fitting halves are disengaged. All fitting bodies have 316 SS latch springs and EPDM seals.

### Specifications

	Polypropylene	Polysulfone
Body material	Polypropylene	Polysulfone
Temperature range	32 to 160°F (0 to 71°C)	-40 to 280°F (-40 to 137°C)
Max pressure	60 psi	125 psi
Max vacuum	27.5" Hg	27.5" Hg
Sterilization	EtO or gamma	Autoclave, EtO, or gamma



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A. 31303-00



D. 31303-30



B. 31303-10



E. 31303-40



C. 31303-20



F. 31303-50

### Quick-Disconnect Bodies (Female Coupling Halves)

#### A. Threaded Adapter Bodies

Flow size	NPT(M)	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
3/8"	3/8"	<a href="#">FN-31303-00</a>		<a href="#">FN-31307-00</a>	
3/8"	1/2"	<a href="#">FN-31303-01</a>		<a href="#">FN-31307-01</a>	
3/8"	3/4"	<a href="#">FN-31303-02</a>		<a href="#">FN-31307-02</a>	
<b>Straight-through fittings</b>					
3/8"	3/8"	<a href="#">FN-31303-05</a>		<a href="#">FN-31307-05</a>	
3/8"	1/2"	<a href="#">FN-31303-06</a>		<a href="#">FN-31307-06</a>	
3/8"	3/4"	<a href="#">FN-31303-07</a>		<a href="#">FN-31307-07</a>	

#### B. Hose Barb Bodies

Flow size	Tube ID	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
3/8"	3/8"	<a href="#">FN-31303-10</a>		<a href="#">FN-31307-10</a>	
3/8"	1/2"	<a href="#">FN-31303-11</a>		<a href="#">FN-31307-11</a>	
3/8"	5/8"	<a href="#">FN-31303-12</a>		<a href="#">FN-31307-12</a>	
3/8"	3/4"	<a href="#">FN-31303-13</a>		<a href="#">FN-31307-13</a>	
<b>Straight-through fittings</b>					
3/8"	3/8"	<a href="#">FN-31303-15</a>		<a href="#">FN-31307-15</a>	
3/8"	1/2"	<a href="#">FN-31303-16</a>		<a href="#">FN-31307-16</a>	
3/8"	5/8"	<a href="#">FN-31303-17</a>		<a href="#">FN-31307-17</a>	
3/8"	3/4"	<a href="#">FN-31303-18</a>		<a href="#">FN-31307-18</a>	

#### C. Bulkhead Panel Mount Hose Barb Bodies

Flow size	Tube ID	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
3/8"	3/8"	<a href="#">FN-31303-20</a>		<a href="#">FN-31307-20</a>	
3/8"	1/2"	<a href="#">FN-31303-21</a>		<a href="#">FN-31307-21</a>	
3/8"	5/8"	<a href="#">FN-31303-22</a>		<a href="#">FN-31307-22</a>	
3/8"	3/4"	<a href="#">FN-31303-23</a>		<a href="#">FN-31307-23</a>	
<b>Straight-through fittings</b>					
3/8"	3/8"	<a href="#">FN-31303-25</a>		<a href="#">FN-31307-25</a>	
3/8"	1/2"	<a href="#">FN-31303-26</a>		<a href="#">FN-31307-26</a>	
3/8"	5/8"	<a href="#">FN-31303-27</a>		<a href="#">FN-31307-27</a>	
3/8"	3/4"	<a href="#">FN-31303-28</a>		<a href="#">FN-31307-28</a>	

### Quick-Disconnect Inserts (Male Coupling Halves)

#### D. Male Threaded Inserts

Flow size	NPT(M)	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
3/8"	3/8"	<a href="#">FN-31303-35</a>		<a href="#">FN-31307-35</a>	
3/8"	1/2"	<a href="#">FN-31303-36</a>		<a href="#">FN-31307-36</a>	
3/8"	3/4"	<a href="#">FN-31303-37</a>		<a href="#">FN-31307-37</a>	
<b>Straight-through fittings</b>					
3/8"	3/8"	<a href="#">FN-31303-30</a>		<a href="#">FN-31307-30</a>	
3/8"	1/2"	<a href="#">FN-31303-31</a>		<a href="#">FN-31307-31</a>	
3/8"	3/4"	<a href="#">FN-31303-32</a>		<a href="#">FN-31307-32</a>	

#### E. Hose Barb Inserts

Flow size	Tube ID	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
3/8"	3/8"	<a href="#">FN-31303-45</a>		<a href="#">FN-31307-45</a>	
3/8"	1/2"	<a href="#">FN-31303-46</a>		<a href="#">FN-31307-46</a>	
3/8"	5/8"	<a href="#">FN-31303-47</a>		<a href="#">FN-31307-47</a>	
3/8"	3/4"	<a href="#">FN-31303-48</a>		<a href="#">FN-31307-48</a>	
<b>Straight-through fittings</b>					
3/8"	3/8"	<a href="#">FN-31303-40</a>		<a href="#">FN-31307-40</a>	
3/8"	1/2"	<a href="#">FN-31303-41</a>		<a href="#">FN-31307-41</a>	
3/8"	5/8"	<a href="#">FN-31303-42</a>		<a href="#">FN-31307-42</a>	
3/8"	3/4"	<a href="#">FN-31303-43</a>		<a href="#">FN-31307-43</a>	

#### F. Elbow Hose Barb Inserts

Flow size	Tube ID	Polypropylene		Polysulfone	
		Catalog number	Price/pk of 1	Catalog number	Price/pk of 1
<b>Valved fittings</b>					
3/8"	3/8"	<a href="#">FN-31303-55</a>		<a href="#">FN-31307-55</a>	
3/8"	1/2"	<a href="#">FN-31303-56</a>		<a href="#">FN-31307-56</a>	
<b>Straight-through fittings</b>					
3/8"	3/8"	<a href="#">FN-31303-50</a>		<a href="#">FN-31307-50</a>	
3/8"	1/2"	<a href="#">FN-31303-51</a>		<a href="#">FN-31307-51</a>	

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



# Cole-Parmer® Polypropylene (PP) and PVDF Sanitary Clamp Fittings

## Maintain sanitary conditions in your processes

- Meet USP Class VI for pharmaceutical use and FDA, USDA, and 3A standards for food contact
- All fittings are compatible with Tri-Clamp® fittings
- Excellent chemical resistance; low leachable characteristics

**Note:** Though both materials may be autoclaved, PVDF tolerates high temperatures better than PP does and will perform more consistently after repeated autoclaving.



Fluid Handling

Fittings

### Specifications

Clamp size	Inner dimension (based on SS tube ID)
3/4" mini	9/16"
1" maxi	7/8"
1" ladish†	7/8"
1 1/2"	1 3/8"
2"	1 7/8"
2 1/2"	2 3/8"
3"	2 7/8"

†Choose 1" ladish fittings for a direct match with 1" stainless steel sanitary connections.

#### Chemical resistance

PP: very good PVDF: excellent

#### Temperature range

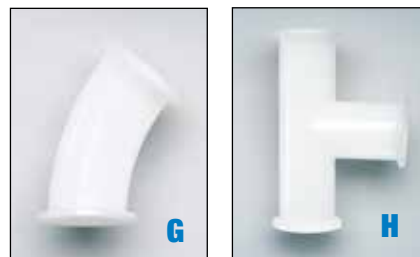
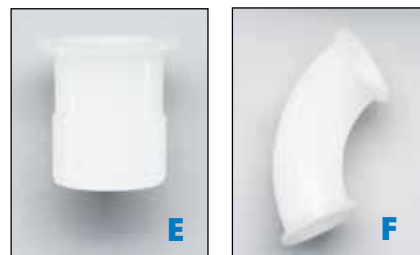
PP: 15 to 180°F (–9 to 82°C)

PVDF: –40 to 280°F (–40 to 138°C)

#### Max pressure

In ambient conditions, using plastic true union style clamp  
PP: 125 psi PVDF: 150 psi

#### Sterilization: EtO or autoclave



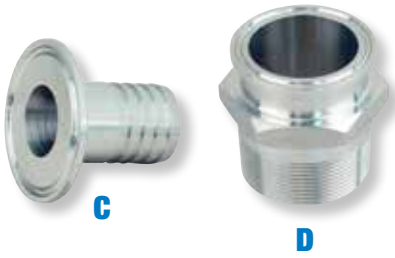
Clamp size	PP		PVDF	
	Cat. no.	Price	Cat. no.	Price
<b>A. Eccentric reducers</b>				
1 1/2" x 3/4" mini	<a href="#">FN-31805-01</a>		<a href="#">FN-31808-01</a>	
<b>B. Concentric reducers</b>				
1" ladish x 3/4" mini	<a href="#">FN-31805-05</a>		<a href="#">FN-31808-05</a>	
1 1/2" x 3/4" mini	<a href="#">FN-31805-06</a>		<a href="#">FN-31808-06</a>	
1 1/2" x 1" ladish	<a href="#">FN-31805-10</a>		<a href="#">FN-31808-10</a>	
2" x 1" ladish	<a href="#">FN-31805-11</a>		<a href="#">FN-31808-11</a>	
2" x 1 1/2"	<a href="#">FN-31805-14</a>		<a href="#">FN-31808-14</a>	
<b>C. Barbed adapters, clamp x tubing ID</b>				
3/4" mini x 1/8"	<a href="#">FN-31805-24</a>		<a href="#">FN-31808-24</a>	
3/4" mini x 1/4"	<a href="#">FN-31805-25</a>		<a href="#">FN-31808-25</a>	
3/4" mini x 3/8"	<a href="#">FN-31805-26</a>		<a href="#">FN-31808-26</a>	
3/4" mini x 1/2"	<a href="#">FN-31805-27</a>		<a href="#">FN-31808-27</a>	
3/4" mini x 5/8"	<a href="#">FN-31805-28</a>		<a href="#">FN-31808-28</a>	
3/4" mini x 3/4"	<a href="#">FN-31805-29</a>		<a href="#">FN-31808-29</a>	
1" ladish x 1/8"	<a href="#">FN-31805-30</a>		<a href="#">FN-31808-30</a>	
1" ladish x 1/4"	<a href="#">FN-31805-31</a>		<a href="#">FN-31808-31</a>	
1" ladish x 3/8"	<a href="#">FN-31805-32</a>		<a href="#">FN-31808-32</a>	
1" ladish x 1/2"	<a href="#">FN-31805-33</a>		<a href="#">FN-31808-33</a>	
1" ladish x 3/4"	<a href="#">FN-31805-34</a>		<a href="#">FN-31808-34</a>	
1" ladish x 1"	<a href="#">FN-31805-35</a>		<a href="#">FN-31808-35</a>	
1 1/2" x 1"	<a href="#">FN-31805-41</a>		<a href="#">FN-31808-41</a>	
2" x 1"	<a href="#">FN-31805-47</a>		<a href="#">FN-31808-47</a>	
<b>D. Pipe thread adapters, clamp x NPT(M)</b>				
1" ladish x 1/8"	<a href="#">FN-31805-56</a>		<a href="#">FN-31808-56</a>	
1" ladish x 1/4"	<a href="#">FN-31805-57</a>		<a href="#">FN-31808-57</a>	
1" ladish x 3/8"	<a href="#">FN-31805-58</a>		<a href="#">FN-31808-58</a>	
1" ladish x 1/2"	<a href="#">FN-31805-59</a>		<a href="#">FN-31808-59</a>	
1" ladish x 3/4"	<a href="#">FN-31805-60</a>		<a href="#">FN-31808-60</a>	
1" ladish x 1"	<a href="#">FN-31805-61</a>		<a href="#">FN-31808-61</a>	
1" ladish x 1 1/4"	<a href="#">FN-31805-62</a>		<a href="#">FN-31808-62</a>	
1" ladish x 1 1/2"	<a href="#">FN-31805-63</a>		<a href="#">FN-31808-63</a>	
1 1/2" x 3/4"	<a href="#">FN-31805-68</a>		<a href="#">FN-31808-68</a>	
1 1/2" x 1"	<a href="#">FN-31805-69</a>		<a href="#">FN-31808-69</a>	
1 1/2" x 1 1/4"	<a href="#">FN-31805-70</a>		<a href="#">FN-31808-70</a>	
1 1/2" x 1 1/2"	<a href="#">FN-31805-71</a>		<a href="#">FN-31808-71</a>	
2" x 1"	<a href="#">FN-31805-77</a>		<a href="#">FN-31808-77</a>	
2" x 1 1/4"	<a href="#">FN-31805-78</a>		<a href="#">FN-31808-78</a>	
2" x 1 1/2"	<a href="#">FN-31805-79</a>		<a href="#">FN-31808-79</a>	
2" x 2"	<a href="#">FN-31805-80</a>		<a href="#">FN-31808-80</a>	
<b>E. Pipe thread adapters, clamp x NPT(F)</b>				
1" ladish x 3/4"	<a href="#">FN-31806-04</a>		<a href="#">FN-31809-04</a>	
1" ladish x 1"	<a href="#">FN-31806-05</a>		<a href="#">FN-31809-05</a>	
1 1/2" x 1 1/2"	<a href="#">FN-31806-15</a>		<a href="#">FN-31809-15</a>	
<b>F. 90° elbows</b>				
3/4" mini	<a href="#">FN-31806-41</a>		<a href="#">FN-31809-41</a>	
1" ladish	<a href="#">FN-31806-42</a>		<a href="#">FN-31809-42</a>	
1 1/2"	<a href="#">FN-31806-43</a>		<a href="#">FN-31809-43</a>	
2"	<a href="#">FN-31806-44</a>		<a href="#">FN-31809-44</a>	
<b>G. 45° elbows</b>				
3/4" mini	<a href="#">FN-31806-51</a>		<a href="#">FN-31809-51</a>	
1" ladish	<a href="#">FN-31806-52</a>		<a href="#">FN-31809-52</a>	
1 1/2"	<a href="#">FN-31806-53</a>		<a href="#">FN-31809-53</a>	
2"	<a href="#">FN-31806-54</a>		<a href="#">FN-31809-54</a>	
<b>H. Standard tees</b>				
3/4" mini	<a href="#">FN-31806-61</a>		<a href="#">FN-31809-61</a>	
1" ladish	<a href="#">FN-31806-62</a>		<a href="#">FN-31809-62</a>	
1 1/2"	<a href="#">FN-31806-63</a>		<a href="#">FN-31809-63</a>	
2"	<a href="#">FN-31806-64</a>		<a href="#">FN-31809-64</a>	
<b>I. Clamps</b>				
3/4" mini	—	—	<a href="#">FN-31811-00</a>	
1" and 1 1/2"	—	—	<a href="#">FN-31811-01</a>	
2"	—	—	<a href="#">FN-31811-02</a>	
2 1/2"	—	—	<a href="#">FN-31811-03</a>	

### J. Nylon Clamps

Clamp size	Catalog number	Price
1/2" to 3/4"	<a href="#">FN-30508-21</a>	
1" to 1 1/2"	<a href="#">FN-30508-23</a>	
2"	<a href="#">FN-30508-25</a>	
3"	<a href="#">FN-30508-27</a>	
4"	<a href="#">FN-30508-29</a>	

### Gaskets (not shown)

Gasket size	Catalog number	Price
<b>Platinum-cured silicone</b>		
3/4" mini	<a href="#">FN-30548-00</a>	
1" ladish	<a href="#">FN-30548-02</a>	
1 1/2"	<a href="#">FN-30548-04</a>	
2"	<a href="#">FN-30548-06</a>	
2 1/2"	<a href="#">FN-30548-08</a>	
<b>Viton®</b>		
3/4" mini	<a href="#">FN-30548-20</a>	
1" ladish	<a href="#">FN-30548-22</a>	
1 1/2"	<a href="#">FN-30548-24</a>	
2"	<a href="#">FN-30548-26</a>	
2 1/2"	<a href="#">FN-30548-28</a>	
<b>Buna N</b>		
3/4" mini	<a href="#">FN-30548-40</a>	
1" ladish	<a href="#">FN-30548-42</a>	
1 1/2"	<a href="#">FN-30548-44</a>	
2"	<a href="#">FN-30548-46</a>	
2 1/2"	<a href="#">FN-30548-48</a>	
<b>EPDM</b>		
3/4" mini	<a href="#">FN-30548-60</a>	
1" ladish	<a href="#">FN-30548-62</a>	
1 1/2"	<a href="#">FN-30548-64</a>	
2"	<a href="#">FN-30548-66</a>	
2 1/2"	<a href="#">FN-30548-68</a>	
<b>PTFE</b>		
3/4" mini	<a href="#">FN-30548-80</a>	
1" ladish	<a href="#">FN-30548-82</a>	
1 1/2"	<a href="#">FN-30548-84</a>	
2"	<a href="#">FN-30548-86</a>	
2 1/2"	<a href="#">FN-30548-88</a>	



## Cole-Parmer® 316L and 304 Stainless Steel Sanitary Clamp Couplings

Meet FDA requirements and 3A Sanitary Standards



All couplings are compatible with standard 304L fittings clamps.

**316L Stainless Steel Couplings** are ideal for the pharmaceutical industry; they offer great chemical compatibility for use with corrosive acids and bases.

**304 Stainless Steel Couplings** are ideal for the food, beverage, and dairy industries; they offer good chemical compatibility and are cost effective.



Key	Clamp size	316L stainless steel		304 stainless steel	
		Catalog number	Price	Catalog number	Price
<b>Concentric reducers</b>					
A	1" x ¾"	<a href="#">FN-30700-50</a>		—	—
	1½" x 1"	<a href="#">FN-30700-51</a>		<a href="#">FN-30700-95</a>	—
	2" x 1"	<a href="#">FN-30700-52</a>		<a href="#">FN-30700-96</a>	—
	2" x 1½"	<a href="#">FN-30700-53</a>		<a href="#">FN-30700-97</a>	—
<b>Eccentric reducers</b>					
B	1" x ¾"	<a href="#">FN-30700-54</a>		—	—
	1½" x 1"	<a href="#">FN-30700-55</a>		<a href="#">FN-30700-98</a>	—
	2" x 1"	<a href="#">FN-30700-56</a>		<a href="#">FN-30700-99</a>	—
	2" x 1½"	<a href="#">FN-30700-57</a>		<a href="#">FN-30701-00</a>	—
<b>Barbed adapters</b>					
C	¾" x 1/8"	<a href="#">FN-30700-58</a>		—	—
	¾" x ¼"	<a href="#">FN-30700-59</a>		—	—
	¾" x 3/8"	<a href="#">FN-30700-60</a>		—	—
	¾" x ½"	<a href="#">FN-30700-61</a>		—	—
	¾" x ¾"	<a href="#">FN-30700-62</a>		—	—
	1" x 1"	<a href="#">FN-30700-63</a>		<a href="#">FN-30800-50</a>	—
	1½" x 1½"	<a href="#">FN-30700-64</a>		<a href="#">FN-30800-51</a>	—
	2" x 2"	<a href="#">FN-30700-65</a>		<a href="#">FN-30800-52</a>	—
<b>Threaded adapters, clamp x NPT(M)</b>					
D	¾" x 1/8"	<a href="#">FN-30700-66</a>		—	—
	¾" x ¼"	<a href="#">FN-30700-67</a>		—	—
	¾" x 3/8"	<a href="#">FN-30700-68</a>		—	—
	¾" x ½"	<a href="#">FN-30700-69</a>		—	—
	¾" x ¾"	<a href="#">FN-30700-70</a>		—	—
	1" x ¾"	<a href="#">FN-30700-71</a>		<a href="#">FN-30800-53</a>	—
	1" x 1"	<a href="#">FN-30700-72</a>		<a href="#">FN-30800-54</a>	—
	1" x 1½"	<a href="#">FN-30700-74</a>		<a href="#">FN-30800-55</a>	—
	1" x 2"	<a href="#">FN-30700-75</a>		<a href="#">FN-30800-56</a>	—
	1½" x ¾"	<a href="#">FN-30700-76</a>		<a href="#">FN-30800-57</a>	—
	1½" x 1"	<a href="#">FN-30700-77</a>		<a href="#">FN-30800-58</a>	—
	1½" x 1¼"	<a href="#">FN-30700-78</a>		<a href="#">FN-30800-59</a>	—
	1½" x 1½"	<a href="#">FN-30700-79</a>		<a href="#">FN-30800-60</a>	—
	1½" x 2"	—	—	<a href="#">FN-30800-61</a>	—
<b>90° elbows</b>					
E	¾"	<a href="#">FN-30700-80</a>		—	—
	1"	<a href="#">FN-30700-81</a>		<a href="#">FN-30800-62</a>	—
	1½"	<a href="#">FN-30700-82</a>		<a href="#">FN-30800-63</a>	—
	2"	<a href="#">FN-30700-83</a>		<a href="#">FN-30800-64</a>	—
<b>45° elbows</b>					
F	¾"	<a href="#">FN-30700-84</a>		—	—
	1"	<a href="#">FN-30700-85</a>		<a href="#">FN-30800-65</a>	—
	1½"	<a href="#">FN-30700-86</a>		<a href="#">FN-30800-66</a>	—
	2"	<a href="#">FN-30700-87</a>		<a href="#">FN-30800-67</a>	—
<b>Tees</b>					
G	¾"	<a href="#">FN-30700-88</a>		—	—
	1"	<a href="#">FN-30700-89</a>		<a href="#">FN-30800-68</a>	—
	1½"	<a href="#">FN-30700-90</a>		<a href="#">FN-30800-69</a>	—
	2"	<a href="#">FN-30700-91</a>		<a href="#">FN-30800-70</a>	—
<b>Crosses</b>					
H	1"	<a href="#">FN-30700-92</a>		<a href="#">FN-30800-71</a>	—
	1½"	<a href="#">FN-30700-93</a>		<a href="#">FN-30800-72</a>	—
	2"	<a href="#">FN-30700-94</a>		<a href="#">FN-30800-73</a>	—
<b>Clamps</b>					
I	½" to ¾"	—	—	<a href="#">FN-30800-74</a>	—
	1" to 1½"	—	—	<a href="#">FN-30800-75</a>	—
	2"	—	—	<a href="#">FN-30800-76</a>	—
	2½"	—	—	<a href="#">FN-30800-77</a>	—
	3"	—	—	<a href="#">FN-30800-78</a>	—
	4"	—	—	<a href="#">FN-30800-80</a>	—





# Cole-Parmer® Syringe Filters



Get easy, reliable filtration—just slip on and twist

- Easy identification—membrane type and pore size printed on each filter
- Filter more confidently—filters are 100% integrity tested and manufactured in accordance with ISO 9002 standards
- Get a secure fit—bidirectional membrane support and luer lock inlet/outlet
- Sterile filters are sterilized by gamma irradiation and certified nonpyrogenic, noncytotoxic, and blister packed

## Glass Prefilters with Final Filter

- Save time—borosilicate glass fiber prefilter and cellulose filter in one
- Prefilter extends life of final filter by removing particulates from sample
- Reduces retention volume and sample loss



Membrane Type	Dia	Pore size	Housing	Retention volume	Qty/ bx	Catalog number	Price/ bx
<b>Nonsterile filters</b>							
Cellulose acetate	26 mm	0.20 µm	Acrylic	0.23 mL	100	FN-02915-90	
		0.45 µm				FN-02915-92	
		0.80 µm				FN-02915-94	
<b>Sterile filter</b>							
Cellulose acetate	26 mm	0.20 µm	Acrylic	0.23 mL	50	FN-02915-40	

## Cellulose Acetate Filters

- Low protein binding—ideal for biological solutions
- Use for sterilization and clarification of aqueous solutions



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

## Nylon Filters

- Low levels of extractables with no wetting agents
- Hydrophilic nylon for good chemical resistance—ideal for aqueous and most organics



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

## Choose the Right Filter!

Membrane type	Applications
Glass prefilter	One-step prefiltration and filtration. Choose the final membrane to meet your application needs. High particle loading capacity.
Cellulose acetate	Sterilization and clarification of aqueous solutions. Low protein binding.
Nylon	Filtration of organic and aqueous solutions. Low extractables.
PTFE	Sterilization of gases and alcohols; cleaning acids, alkalies, and organic solvents; venting purposes. For aggressive chemicals.
Nitrocellulose	High protein retention; microbiological analysis, waste water treatment; sterilization of aqueous solutions.

## Specifications

Membrane dia	Housing type	Sample volume	Retention volume†	Pressure limit at 25°C	Max temp	Effective filtration area
15 mm	PP	≤5 mL	10 µL	87 psi	127°C	1.7 cm²
25 mm	PP	≤100 mL	0.1 mL	87 psi	127°C	4.8 cm²
26 mm	Acrylic	≤100 mL	0.1 mL	87 psi	50°C	5.3 cm²
50 mm	PP	≤2 L	0.5 mL	60 psi	134°C	20 cm²

†Varies for glass prefilters; see glass prefilter table at left.

## PTFE Filters

- Ideal for aggressive chemicals—organic solvents, concentrated acids and bases, propellants and more
- Use for gas/air filtration
- 50-mm membranes have stepped hose barb connectors for ¼" to ½" ID tubing



Pore size	Membrane dia	Housing	Color	Qty/bx	Cat. no.	Price/bx
<b>Nonsterile filters</b>						
0.20 µm	15 mm	PP	Natural	100	FN-29550-08	
0.45 µm					FN-29550-10	
0.20 µm	25 mm	PP	Natural	100	FN-02915-20	
0.45 µm					FN-02915-22	
0.20 µm	50 mm	PP	Natural	20	FN-02915-28	
0.45 µm					FN-02915-30	
<b>Sterile filters</b>						
0.20 µm	25 mm	PP	Natural	50	FN-02915-08	
0.50 µm					FN-02915-06	

## Nitrocellulose Filters

- Good for macromolecules—highest protein retention
- Get fast flow rates with aqueous solutions
- Ideal for microbiological analysis, waste water treatment, and sterilization of aqueous solutions



Pore size	Membrane dia	Housing	Color	Qty/bx	Cat. no.	Price/bx
<b>Nonsterile filter</b>						
0.20 µm	26 mm	Acrylic	Blue	100	FN-02915-56	
<b>Sterile filters</b>						
0.20 µm	26 mm	Acrylic	Blue	50	FN-02915-52	
0.45 µm					FN-02915-53	

# Cole-Parmer® Acrylic Variable-Area Flowmeters for Bench or Panel Mount

## Don't sacrifice durability for precision

- Easily and precisely control flow of your application via manual valve
- Durable acrylic bodies with integral metering tubes for accurate readings
- Stand up to even aggressive plant environments
- Versatile—easy panel installation or move from bench to bench with optional tripod base 32462-50 (order separately at [ColeParmer.com](http://ColeParmer.com))



### Specifications

**Accuracy:**  
2" and 50-mm models: ±5% FS  
4" and 100-mm models: ±3% FS  
5" and 127-mm models: ±2% FS

**Media type:** liquids or gases

**Max pressure:** 100 psi (6.9 bar)

**Max operating temp:** 150°F (65°C)

**Connections:**  
2", 4", 50-mm, and 100-mm models: 1/8" NPT(F)<sup>†</sup>  
5" and 127-mm models: 1" NPT(F)

### Materials of construction

Part	2" and 50 mm	4" and 100 mm	5" and 127 mm
Body	Acrylic		
Fittings	Brass		PVC
O-rings	Buna N		
Float	Black glass (BG), Aluminum (AL)	316 Stainless steel (SS)	

### Flowmeters with Valves; English-Unit Scale

Float <sup>‡</sup>	For liquid applications			For air applications		
	Flow range	Cat. no.	Price	Flow range	Cat. no.	Price
<b>Flowmeters with 2" scale</b>						
BG	0.2–2 GPH	<a href="#">FN-32460-00</a>	—	0.1–1 scfh	<a href="#">FN-32460-10</a>	—
SS	0.4–5 GPH	<a href="#">FN-32460-02</a>	—	0.2–2 scfh	<a href="#">FN-32460-12</a>	—
BG	1–10 GPH	<a href="#">FN-32460-04</a>	—	0.4–5 scfh	<a href="#">FN-32460-14</a>	—
SS	2–20 GPH	<a href="#">FN-32460-06</a>	—	0.5–10 scfh	<a href="#">FN-32460-16</a>	—
SS	4–40 GPH	<a href="#">FN-32460-08</a>	—	2–20 scfh	<a href="#">FN-32460-18</a>	—
SS	—	—	—	3–30 scfh	<a href="#">FN-32460-20</a>	—
BG	—	—	—	4–50 scfh	<a href="#">FN-32460-22</a>	—
SS	—	—	—	10–100 scfh	<a href="#">FN-32460-24</a>	—
SS	—	—	—	20–200 scfh	<a href="#">FN-32460-26</a>	—
<b>Flowmeters with 4" scale</b>						
SS	1–10 GPH	<a href="#">FN-32461-00</a>	—	0.4–5 scfh	<a href="#">FN-32461-10</a>	—
SS	2–25 GPH	<a href="#">FN-32461-02</a>	—	1–10 scfh	<a href="#">FN-32461-12</a>	—
SS	4–50 GPH	<a href="#">FN-32461-04</a>	—	2–20 scfh	<a href="#">FN-32461-14</a>	—
SS	6–60 GPH	<a href="#">FN-32461-06</a>	—	4–40 scfh	<a href="#">FN-32461-16</a>	—
SS	0.2–2.5 GPM	<a href="#">FN-32461-07<sup>†</sup></a>	—	10–100 scfh	<a href="#">FN-32461-18</a>	—
SS	0.4–5 GPM	<a href="#">FN-32461-08<sup>†</sup></a>	—	14–150 scfh	<a href="#">FN-32461-20</a>	—
SS	—	—	—	20–200 scfh	<a href="#">FN-32461-22</a>	—
AL	—	—	—	0.5–5 scfm	<a href="#">FN-32461-24<sup>†</sup></a>	—
SS	—	—	—	1–10 scfm	<a href="#">FN-32461-26<sup>†</sup></a>	—
<b>Flowmeters with 5" scale</b>						
SS	1–10 GPM	<a href="#">FN-32466-50</a>	—	3–25 scfm	<a href="#">FN-32466-60</a>	—
SS	2–20 GPM	<a href="#">FN-32466-52</a>	—	4–50 scfm	<a href="#">FN-32466-62</a>	—

<sup>†</sup>These models have dual scale: GPM/GPH, scfm/scfh, LPM/LPH; they also have 1/4" NPT(F) connections and use optional tripod base 32462-60 sold separately online.  
<sup>‡</sup>Float material key: BG = black glass, SS = stainless steel, AL = aluminum.

### Flowmeters without Valves; English-Unit Scales

Float <sup>‡</sup>	For liquid applications			For air applications		
	Flow range	Cat. no.	Price	Flow range	Cat. no.	Price
<b>Flowmeters with 4" scale</b>						
SS	1–10 GPH	<a href="#">FN-32458-00</a>	—	0.4–5 scfh	<a href="#">FN-32458-10</a>	—
SS	—	—	—	0.5–5 scfm	<a href="#">FN-32458-24<sup>†</sup></a>	—
SS	—	—	—	1–10 scfm	<a href="#">FN-32458-26<sup>†</sup></a>	—
<b>Flowmeters with 5" scale</b>						
SS	0.4–5 GPM	<a href="#">FN-32462-00</a>	—	3–25 scfm	<a href="#">FN-32458-10</a>	—
SS	2–20 GPM	<a href="#">FN-32462-04</a>	—	10–100 scfm	<a href="#">FN-32458-14</a>	—

### Flowmeters with Valves; Metric-Unit Scales

Float <sup>‡</sup>	For liquid applications			For air applications		
	Flow range (mL/min)	Catalog number	Price	Flow range (LPM)	Catalog number	Price
<b>Flowmeters with 50-mm scale</b>						
BG	5 to 50	<a href="#">FN-32460-30</a>	—	0.04 to 0.5	<a href="#">FN-32460-40</a>	—
SS	10 to 100	<a href="#">FN-32460-32</a>	—	0.1 to 1	<a href="#">FN-32460-42</a>	—
SS	20 to 240	<a href="#">FN-32460-34</a>	—	0.4 to 5	<a href="#">FN-32460-44</a>	—
SS	—	—	—	1 to 10	<a href="#">FN-32460-46</a>	—
AL	—	—	—	2 to 25	<a href="#">FN-32460-48</a>	—
SS	—	—	—	4 to 50	<a href="#">FN-32460-50</a>	—
SS	—	—	—	10 to 100	<a href="#">FN-32460-52</a>	—
<b>Flowmeters with 100-mm scale</b>						
SS	4 to 50	<a href="#">FN-32461-30</a>	—	0.4 to 5	<a href="#">FN-32461-50</a>	—
SS	10 to 120	<a href="#">FN-32461-32</a>	—	1 to 10	<a href="#">FN-32461-52</a>	—
BG	25 to 225	<a href="#">FN-32461-34</a>	—	2 to 20	<a href="#">FN-32461-54</a>	—
SS	40 to 400	<a href="#">FN-32461-36</a>	—	3 to 30	<a href="#">FN-32461-56</a>	—
SS	40 to 660	<a href="#">FN-32461-38</a>	—	4 to 50	<a href="#">FN-32461-58</a>	—
SS	100 to 1500	<a href="#">FN-32461-40</a>	—	10 to 100	<a href="#">FN-32461-60</a>	—
SS	200 to 3000	<a href="#">FN-32461-42</a>	—	14 to 140	<a href="#">FN-32461-62<sup>†</sup></a>	—
SS	0.8 to 9 LPM	<a href="#">FN-32461-44<sup>†</sup></a>	—	30 to 280	<a href="#">FN-32461-64<sup>†</sup></a>	—
SS	1.5 to 20 LPM	<a href="#">FN-32461-46<sup>†</sup></a>	—	—	—	—
<b>Flowmeters with 127-mm scale</b>						
SS	4 to 36 LPM	<a href="#">FN-32466-54</a>	—	100 to 700	<a href="#">FN-32466-66</a>	—
SS	—	—	—	400 to 3400	<a href="#">FN-32466-70</a>	—

### Flowmeters without Valves; Metric-Unit Scales

Float <sup>‡</sup>	For liquid applications			For air applications		
	Flow range (mL/min)	Catalog number	Price	Flow range (LPM)	Catalog number	Price
<b>Flowmeters with 50-mm scale</b>						
BG	5 to 50	<a href="#">FN-32457-30</a>	—	0.04 to 0.5	<a href="#">FN-32457-40</a>	—
BG	10 to 100	<a href="#">FN-32457-32</a>	—	0.1 to 1	<a href="#">FN-32457-42</a>	—
SS	20 to 240	<a href="#">FN-32457-34</a>	—	0.4 to 5	<a href="#">FN-32457-44</a>	—
SS	—	—	—	1 to 10	<a href="#">FN-32457-46</a>	—
<b>Flowmeters with 100-mm scale</b>						
BG	4 to 50	<a href="#">FN-32458-30</a>	—	0.4 to 5	<a href="#">FN-32458-50</a>	—
SS	10 to 120	<a href="#">FN-32458-32</a>	—	1 to 10	<a href="#">FN-32458-52</a>	—
BG	25 to 225	<a href="#">FN-32458-34</a>	—	2 to 20	<a href="#">FN-32458-54</a>	—
SS	40 to 400	<a href="#">FN-32458-36</a>	—	3 to 30	<a href="#">FN-32458-56</a>	—
SS	40 to 660	<a href="#">FN-32458-38</a>	—	4 to 50	<a href="#">FN-32458-58</a>	—
SS	100 to 1500	<a href="#">FN-32458-40</a>	—	10 to 100	<a href="#">FN-32458-60</a>	—
SS	200 to 3000	<a href="#">FN-32458-42</a>	—	14 to 140	<a href="#">FN-32458-62<sup>†</sup></a>	—
SS	0.8 to 9 LPM	<a href="#">FN-32458-44<sup>†</sup></a>	—	30 to 280	<a href="#">FN-32458-64<sup>†</sup></a>	—
SS	1.5 to 20 LPM	<a href="#">FN-32458-46<sup>†</sup></a>	—	80 to 560	<a href="#">FN-32458-65<sup>†</sup></a>	—
<b>Flowmeters with 127-mm scale</b>						
SS	1 to 15 LPM	<a href="#">FN-32462-20</a>	—	100 to 700	<a href="#">FN-32462-30</a>	—
SS	4 to 36 LPM	<a href="#">FN-32462-22</a>	—	100 to 1400	<a href="#">FN-32462-32</a>	—
SS	5 to 75 LPM	<a href="#">FN-32462-24</a>	—	400 to 3000	<a href="#">FN-32462-34</a>	—



# Cole-Parmer® Flowmeters and Proportional Controllers for Gases

## Measure 130 standard gases—user selectable from display

- Accuracy of  $\pm 0.8\%$  of reading  $+0.2\%$  full-scale; repeatability of  $\pm 0.2\%$
- 100 to 1 turndown with ranges of 1 SCCM full-scale up to 1000 SLPM
- Models with 4 to 20 mA output or totalizer are available

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:** 120/230 VAC power adapter with communications cable 32929-89 and NIST-traceable calibration report supplied by the manufacturer.



Flow controller  
32907-51



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



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

**Max particulate size:**

- Up to 1 LPM: 20  $\mu\text{m}$
- >1 LPM to 1000 LPM: 50  $\mu\text{m}$

**Accuracy:**  $\pm 0.8\%$  of reading,  $+0.2\%$  full-scale

**Repeatability:**  $\pm 0.2\%$

**Response time:**

- Flowmeters: 10 msec
- Flow controllers: 50 msec

**Operating temperature:**

- 14 to 122°F (–10 to 50°C)

**Max pressure:** 145 psig (9.9 bar)

**Pressure drop:** 0.8 to 3.2 psig (flowmeter)

**Output signal:** 0 to 5 VDC, RS-232

**Input signal:** 0 to 5 VDC and RS-232

**Wetted materials:**

- Flowmeters: 302 and 303 SS, Viton®, silicone RTV, and glass-reinforced nylon, aluminum
- Flow controllers: 302, 303; Viton, silicone RTV, glass-reinforced nylon, aluminum, brass, 410 SS, silicon, glass

**Power:**

- Flowmeters: 7 to 30 VDC at 30 mA
- Flow controllers  
Models  $\leq 10$  LPM: 12 to 30 VDC at 250 mA  
Models  $\leq 50$  LPM: 24 to 30 VDC at 750 mA

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

**Connections:**

- $\leq 10$  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)

Flow range	Mass flowmeters		Mass flow controllers		Set point modules <sup>†</sup>	
	Catalog number	Price	Catalog number	Price	Catalog number	Price
0.01 to 1 mL/min	<a href="#">FN-32908-51</a>		<a href="#">FN-32907-51</a>		<a href="#">FN-32907-83</a>	
0.05 to 5 mL/min	<a href="#">FN-32908-53</a>		<a href="#">FN-32907-53</a>		<a href="#">FN-32907-85</a>	
0.1 to 10 mL/min	<a href="#">FN-32908-55</a>		<a href="#">FN-32907-55</a>		<a href="#">FN-32907-87</a>	
0.5 to 50 mL/min	<a href="#">FN-32908-57</a>		<a href="#">FN-32907-57</a>		<a href="#">FN-32907-89</a>	
1 to 100 mL/min	<a href="#">FN-32908-59</a>		<a href="#">FN-32907-59</a>		<a href="#">FN-32907-91</a>	
2 to 200 mL/min	<a href="#">FN-32908-61</a>		<a href="#">FN-32907-61</a>		<a href="#">FN-32907-93</a>	
5 to 500 mL/min	<a href="#">FN-32908-63</a>		<a href="#">FN-32907-63</a>		<a href="#">FN-32907-97</a>	
0.01 to 1 LPM	<a href="#">FN-32908-67</a>		<a href="#">FN-32907-67</a>		<a href="#">FN-32907-83</a>	
0.05 to 5 LPM	<a href="#">FN-32908-69</a>		<a href="#">FN-32907-69</a>		<a href="#">FN-32907-85</a>	
0.1 to 10 LPM	<a href="#">FN-32908-71</a>		<a href="#">FN-32907-71</a>		<a href="#">FN-32907-87</a>	
0.5 to 50 LPM	<a href="#">FN-32908-73</a>		<a href="#">FN-32907-73</a>		<a href="#">FN-32907-89</a>	
1 to 100 LPM	<a href="#">FN-32908-75</a>		<a href="#">FN-32907-75</a>		<a href="#">FN-32907-91</a>	
2.5 to 250 LPM	<a href="#">FN-32908-77</a>		<a href="#">FN-32907-77</a>		<a href="#">FN-32907-95</a>	
5 to 500 LPM	<a href="#">FN-32908-79</a>		<a href="#">FN-32907-79</a>		<a href="#">FN-32907-97</a>	
10 to 1000 LPM	<a href="#">FN-32908-81</a>		<a href="#">FN-32907-81</a>		<a href="#">FN-32907-99</a>	

<sup>†</sup>May be ordered as an option.

[FN-17080-10](#) NIST-traceable recalibration

[FN-32929-50](#) Battery pack, for portable operation of mass or volumetric flowmeter only

[FN-32929-89](#) Replacement communication cable, 8-DIN to stripped ends

## Ashcroft® Digital Pressure Gauges with Backlight

### Simple three-button programming

- Easy-to-read, 5-digit display with backlight and 20-segment bar graph
- Stainless steel sensor; IP67-rated case
- Features tare, min/max memory, and nine engineering plus one custom engineering units



#### Specifications

<b>Accuracy:</b> ±0.5% full-scale	<b>Wetted materials:</b> 17-4 ph and 316L stainless steel
<b>Dial size:</b> 2½" (64 mm)	<b>Lens:</b> polycarbonate
<b>Operating temp:</b> –4 to 140°F (–20 to 60°C)	<b>Process connection:</b> ¼" NPT(M)
<b>Units of measure:</b> psi, " Hg, cm Hg, mm Hg, kPa, mPa, bar, kg/cm², ft H₂O, and user-defined unit	<b>Power:</b> two AA batteries (included)

Range	Resolution	Catalog number	Price
0 to 30" Hg	0.01" Hg	<a href="#">FN-68334-01</a>	
30" Hg to 30 psi	0.01" Hg	<a href="#">FN-68334-03</a>	
30" Hg to 100 psi	0.01" Hg	<a href="#">FN-68334-07</a>	
0 to 15 psi	0.001 psi	<a href="#">FN-68334-09</a>	
0 to 30 psi	0.001 psi	<a href="#">FN-68334-11</a>	
0 to 60 psi	0.001 psi	<a href="#">FN-68334-13</a>	
0 to 100 psi	0.01 psi	<a href="#">FN-68334-15</a>	
0 to 200 psi	0.01 psi	<a href="#">FN-68334-17</a>	
0 to 300 psi	0.01 psi	<a href="#">FN-68334-19</a>	
0 to 500 psi	0.01 psi	<a href="#">FN-68334-21</a>	
0 to 1000 psi	0.1 psi	<a href="#">FN-68334-25</a>	
0 to 5000 psi	0.1 psi	<a href="#">FN-68334-27</a>	
0 to 10,000 psi	1 psi	<a href="#">FN-68334-31</a>	

[FN-09376-01](#) Batteries, AA. Pk of 4

[FN-17040-12](#) NIST-traceable calibration with data

## WIKA® 3A Sanitary Gauges

### Get better readings

- Glycerin fill reduces fluctuations
- Manufactured for clean-in-place (CIP) applications
- All-welded gauge assembly contains an external flush diaphragm
- Assembly meets the criteria set forth by 3A standards



#### Specifications

<b>Accuracy:</b> ±3-2-3% of span	<b>Wetted materials:</b> 316L SS	<b>Process connection:</b> ¾" Tri-Clamp®
<b>Operating temp:</b> 50 to 257°F (10 to 125°C)	<b>Lens:</b> polycarbonate	<b>Casing:</b> 304 SS
		<b>Dial size:</b> 2½" (64 mm)

Range	Resolution	Catalog number	Price
30 psi	0.5 psi	<a href="#">FN-68056-72</a>	
60 psi	1 psi	<a href="#">FN-68056-74</a>	
100 psi	2 psi	<a href="#">FN-68056-76</a>	
160 psi	2 psi	<a href="#">FN-68056-78</a>	

[FN-17040-10](#) NIST-traceable calibration with data

## Handheld Differential Pressure Meters

### Intrinsically safe models for hazardous use

- Select one of nine units
- Feature zero, hold, maximum, minimum, and out-of-range, functions
- Smooth fluctuating pressure readings with filter function
- Displays average of last sixteen pressure readings



#### Specifications

<b>Accuracy:</b> ±0.2% full scale	<b>Process connections:</b> ⅛" BSP
<b>Operating temperature:</b> 32 to 122°F (0 to 50°C)	<b>Units of measure:</b> psi, " H₂O, cm H₂O, " Hg, mm Hg, mbar, torr, kPa, and kg/cm²
<b>Temperature range (compensated):</b> 68 to 86°F (20 to 30°C)	<b>Power:</b> one 9 V battery (included)
<b>Media compatibility:</b> clean, noncorrosive, inert gases	<b>Approval (intrinsically safe models):</b> EEx Ia IIC T4

Range	Resolution	Catalog number	Price
<b>Intrinsically safe differential pressure gauges</b>			
–5 to 5 psid	0.001 psi	<a href="#">FN-68600-06</a>	
–30 to 30 psid	0.01 psi	<a href="#">FN-68600-02</a>	
–100 to 100 psid	0.1 psi	<a href="#">FN-68600-04</a>	
<b>Non-intrinsically safe differential pressure gauges</b>			
–5 to 5 psid	0.001 psi	<a href="#">FN-68600-10</a>	
–30 to 30 psid	0.01 psi	<a href="#">FN-68600-12</a>	
–100 to 100 psid	0.1 psi	<a href="#">FN-68600-14</a>	

[FN-95616-00](#) PVC tubing, 4 mm ID x 6 mm OD. Pack of 25 ft.

[FN-17090-31](#) NIST-traceable calibration with data

## Cole-Parmer® Sealed SS Pressure Transducers

### No epoxies to cause signal instability or drift

- Stainless steel (SS) diaphragm and polysilicon strain gauge are bonded by vapor deposition



#### Specifications

<b>Temp range (compensated):</b> –4 to 176°F (–20 to 80°C)
<b>Process connection:</b> ¼" NPT(M)
<b>Power:</b> 9 to 30 VDC
<b>Output:</b> 4 to 20 mA (call for models with 1 to 5 V output)
<b>Wetted materials:</b> PH 17-4 SS
<b>Dimensions (L x dia):</b> 2¾" x 1½" (7 x 3.8 cm)



Range	Catalog number	Price
<b>Vacuum and compound transducers; ±0.4% accuracy (BFSL)</b>		
30" Hg to 0 psi	<a href="#">FN-07356-10</a>	
30" Hg to 30 psi	<a href="#">FN-07356-11</a>	
<b>Pressure transducers; ±0.4% accuracy (BFSL)</b>		
0 to 30 psi	<a href="#">FN-07356-51</a>	
0 to 60 psi	<a href="#">FN-07356-52</a>	
0 to 100 psi	<a href="#">FN-07356-53</a>	
0 to 300 psi	<a href="#">FN-07356-54</a>	
0 to 750 psi	<a href="#">FN-07356-55</a>	
0 to 1000 psi	<a href="#">FN-07356-56</a>	
<b>Pressure transducers; ±0.25% accuracy (BFSL); with NIST-traceable calibration report</b>		
0 to 100 psi	<a href="#">FN-68001-04</a>	
0 to 200 psi	<a href="#">FN-68001-05</a>	



## Cole-Parmer® Two- and Three-Way Direct Lift Solenoid Valves

Ideal with high-purity or corrosive fluids—made of inert PTFE

- Minimize trapped liquids with minimal dead volume
- Mount almost anywhere—lightweight and compact

Models with a 1/16" orifice have mounting holes at the bottom only and models with a 5/32" orifice have mounting holes at the top and bottom. Optional mounting clip 01540-50 can be used to mount valves with a 1/16" orifice in any position.



Mounting clip 01540-50



Mounting flange 01540-55



### Specifications

**Vacuum rating:** 26" Hg    **Maximum fluid temperature:** 158°F (70°C)    **Lead wire length:** 15" (38 cm)

Ports NPT(F)	Orifice	Max psi	Response time	Watts	12 VDC		24 VDC	
					Catalog number	Price	Catalog number	Price
<b>Two-way solenoid valves; normally closed</b>								
1/4-28	1/16"	30	20 ms	4.0	<a href="#">FN-01540-01</a>		<a href="#">FN-01540-02</a>	
1/4-28	1/16"	60	25 ms	8.0	<a href="#">FN-01540-03</a>		<a href="#">FN-01540-04</a>	
1/8	5/32"	18	30 ms	8.0	<a href="#">FN-01540-07</a>		<a href="#">FN-01540-08</a>	
<b>Two-way solenoid valves; normally open</b>								
1/4-28	1/16"	30	20 ms	4.0	<a href="#">FN-01540-09</a>		<a href="#">FN-01540-10</a>	
<b>Three-way solenoid valves</b>								
1/4-28	1/16"	30	20 ms	4.0	<a href="#">FN-01540-11</a>		<a href="#">FN-01540-12</a>	
1/4-28	1/16"	60	25 ms	8.0	<a href="#">FN-01540-13</a>		<a href="#">FN-01540-14</a>	
1/8	5/32"	18	30 ms	8.0	<a href="#">FN-01540-17</a>		<a href="#">FN-01540-18</a>	

[FN-01540-50](#) Mounting clip for two- and three-way valves

[FN-01540-55](#) Mounting flange for two- and three-way valves

**Can't choose?**

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

 Katie, 5 years of experience

Call: 1-800-323-4340    E-mail: sales@coleparmer.com

## Miniature Check Valves

Install in any position—use with liquids and gases



Breaking pressure is 0.18 psi, closing pressure is 0.014 psi. Maximum temperature (at maximum psi) is 250°F (121°C) for "A" and "C"; 200°F (93°C) for "B."

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

Tubing ID	C <sub>v</sub>	Working pressure	Catalog number	Price
<b>A. Nylon body and fluorosilicone diaphragm</b>				
1/8"	0.12	3 to 5 psi (0.2 to 0.3 bar)	<a href="#">FN-98553-00</a>	
3/16"	0.13		<a href="#">FN-98553-01</a>	
1/4"	0.13		<a href="#">FN-98553-02</a>	
<b>B. PP body and Viton® diaphragm</b>				
1/8"	0.11	3 to 5 psi (0.2 to 0.3 bar)	<a href="#">FN-98553-10</a>	
3/16"	0.12		<a href="#">FN-98553-11</a>	
1/4"	0.12		<a href="#">FN-98553-12</a>	
5/16"	0.13		<a href="#">FN-98553-13</a>	
<b>C. PVDF body and Viton diaphragm</b>				
3/16"	0.12	3 to 5 psi (0.2 to 0.3 bar)	<a href="#">FN-98553-21</a>	
1/4"	0.12		<a href="#">FN-98553-22</a>	
3/8"	0.12		<a href="#">FN-98553-34</a>	

## Cole-Parmer® Solenoid-Operated 2- and 3-Way Pinch Valves

No contamination of valve

- Control flow in your tubing without direct contact between the fluid and the valve
- Fast response time
- Low-power consumption and high-cycle life
- Excellent for sanitary and pharmaceutical applications



**What's included:** 15" 26-gauge PTFE-coated lead wires. Two-way valves include a 12" length of silicone tubing; three-way valves include two 6" (15.2 cm) lengths of tubing with a "Y" connector.



Tubing size (ID x OD)	Max pressure	Watts	12 VDC		24 VDC	
			Cat. no.	Price	Cat. no.	Price
<b>Two-way pinch valves; normally closed</b>						
1/32" x 3/32"	15 psi (1 bar)	2.6	<a href="#">FN-98302-00</a>		<a href="#">FN-98302-10</a>	
1/16" x 1/8"	15 psi (1 bar)	2.6	<a href="#">FN-98302-02</a>		<a href="#">FN-98302-12</a>	
1/8" x 1/4"	20 psi (1.4 bar)	4.0	<a href="#">FN-98302-06</a>		<a href="#">FN-98302-16</a>	
<b>Two-way pinch valves; normally open</b>						
1/32" x 3/32"	15 psi (1 bar)	2.6	<a href="#">FN-98302-20</a>		<a href="#">FN-98302-30</a>	
1/16" x 1/8"	15 psi (1 bar)	2.6	<a href="#">FN-98302-22</a>		<a href="#">FN-98302-32</a>	
1/8" x 1/4"	20 psi (1.4 bar)	4.0	<a href="#">FN-98302-26</a>		<a href="#">FN-98302-36</a>	
<b>Three-way pinch valves; one normally open, one normally closed</b>						
1/32" x 3/32"	15 psi (1 bar)	2.6	<a href="#">FN-98302-40</a>		<a href="#">FN-98302-48</a>	
1/16" x 1/8"	15 psi (1 bar)	2.6	<a href="#">FN-98302-42</a>		<a href="#">FN-98302-50</a>	
1/8" x 1/4"	20 psi (1.4 bar)	4.0	<a href="#">FN-98302-46</a>		<a href="#">FN-98302-54</a>	

[FN-01540-50](#) Mounting clip for 2- and 3-way valves

[FN-01540-55](#) Mounting flange for 2- and 3-way valves

## Oakton® CTSTestr™ 50 Pocket Testers

**NEW**

Get benchtop accuracy in the field

- Measure conductivity, TDS, and salinity with ±1% FS accuracy
- Save money—replaceable sensor lets you use tester body over and over again
- Set up and calibrate quickly with easy-to-navigate interface
- Selectable TDS factor adds versatility
- Leakproof, stabilizing cap—use to calibrate, stand upright, and store sensor
- Waterproof IP67 rated and factory calibrated



**OAKTON®**

ISO9001:2008 CERTIFIED SUPPLIER CE IP 67

Model	CTSTestr 50P (pin-style sensor)	CTSTestr 50C (cup-style sensor)
<b>Catalog number</b>	<a href="#">FN-35634-55</a>	<a href="#">FN-35634-65</a>
Range	Conductivity	0.0 to 200.0 µS, 200 to 2000 µS; 2.00 to 20.00 mS
	TDS	0.0 to 100.0 ppm, 100 to 1000 ppm; 0.10 to 10.00 ppt (TDS factor 0.5)
	Salinity	0.00 to 10.00 ppt
	Temperature	32 to 140°F (0 to 60°C)
Accuracy	±1% full-scale (conductivity, TDS, and salinity)	
Calibration	Up to 3 points (conductivity and TDS); 1 point (salinity)	
TDS factor	0.40 to 1.00 (selectable)	
Temperature compensation	Automatic	
Power	Four AAA 1.5 V batteries (included)	
<b>Price</b>		

## Oakton® Waterproof EcoTestr™ CTS Pocket Meter

Better results—easier and faster

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

**NEW**



**OAKTON®**

ISO9001:2008 CERTIFIED SUPPLIER CE IP 67

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

## Oakton® Waterproof CON 150 Meter

Get more for your money

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



**Meter includes:** conductivity cell (K = 1.0), Grip-Clip holder, and two AA batteries.  
**Kit adds:** two calibration standards and hard carrying case.

**OAKTON®**

ISO9001:2008 CERTIFIED SUPPLIER TUV GS CE IP 67

Description	CON 150 meter with probe	CON 150 meter kit
<b>Catalog number</b>	<a href="#">FN-35607-32</a>	<a href="#">FN-35607-90</a>
<b>Precalibrated catalog number</b>	<a href="#">FN-35607-34</a>	<a href="#">FN-35607-91</a>
Range	Conductivity	0 to 200 mS
	TDS	0 to 200 ppt
	Temperature	–17.0 to 230.0°F (–10.0 to 110.0°C)
Resolution	Conductivity	0.01 µS to 0.1 mS
	TDS	0.01 ppm to 0.1 ppt
	Temperature	0.1°F/°C
Accuracy	Conductivity	±1% full-scale
	TDS	±1% full-scale
	Temperature	±0.9°F (±0.5°C)
Calibration	Conductivity	Auto/manual; 1 point/range
	TDS	Auto/manual; 1 point/range
	Temperature	Offset 0.1 increments
Temperature compensation	Automatic or manual from –10 to 110°C	
Conductivity-to-TDS factor	0.4 to 1.0	
Data logging	Stores up to 150 data sets	
Power	Two AA batteries (included); universal power adapter (optional)	
<b>Price</b>		
<b>Precalibrated price</b>		

### Accessories

- [FN-35608-55](#) Conductivity cell, K = 0.1
- [FN-35608-50](#) Replacement conductivity cell, K = 1.0
- [FN-35608-51](#) Conductivity cell, K = 10
- [FN-35614-51](#) Hard carrying case
- [FN-35420-72](#) Optional power adapter, 110/220 VAC
- [FN-17090-30](#) NIST-traceable calibration with data for conductivity meter



## MYRON L 4PII and 6Psi Waterproof Multiparameter Meters

### Don't lose your data

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



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



Description		4PII	6Psi
Catalog number		<a href="#">FN-19401-12</a>	<a href="#">FN-19401-22</a>
Range	Conductivity	0 to 9.99, 10 to 99.99, 100 to 999.9, 1000 to 9999 $\mu\text{S}$ ; 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 k $\Omega$ ; 1 to 30 M $\Omega$	
	pH	—	
	ORP	—	
	Chlorine	—	
Resolution	Temperature	32 to 160°F (0 to 71°C)	
	Conductivity	0.01, 0.1, 1 $\mu\text{S}$ ; 0.01 mS	
	TDS	0.01, 0.1, 1 ppm; 0.01 ppt	
	Resistivity	0.01, 0.1 k $\Omega$ ; 0.01 M $\Omega$	
	pH	—	
	ORP	—	
	Chlorine	—	
	Temperature	0.1°F (0.1°C)	
	Conductivity	±1% of reading	
	TDS	±1% of reading	
Accuracy	Resistivity	±1% of reading	
	pH	—	
	ORP	—	
	Chlorine	—	
	Temperature	±0.2°F (±0.1°C)	
	Temperature compensation	Automatic from 0 to 71°C; adjustable from 0 to 9.99% per °C	
Power/battery life	One 9 V battery (included)/>100 hours (5000 readings)		
Price			

#### Accessories

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

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

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

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

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

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

### Trust your standards—high accuracy

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



#### A. Batch-Tested Bottles, 16-oz

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

#### B. Individually Tested Bottles, 16-oz

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

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

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



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

†Assortment has one 100-mL vial each of 10, 100, 1000, 1413, 10,000, and 100,000  $\mu\text{S}$ .

# OAKTON®

## Test with Confidence

From pocket-sized testers to research-grade bench meters, find the water quality instrument you need.

### Value.

Features you want at an affordable price

### Quality.

Accurate, reliable results in a durable, easy-to-use design

### Selection.

Choose from meters that take you from the lab to the field, including handheld and benchtop models



Not sure what to choose?

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

## Oakton® Waterproof pHTestr® 30 Pocket Meter

Save money—replace electrode instead of meter

- IP67-rated housing floats in water and won't roll off table
- Resistant to most chemicals with Valox® sensor housing
- Features ±0.01 pH accuracy—suitable for most ASTM and EPA test procedures
- Automatic buffer recognition for calibration up to three points
- Don't let temperature interfere—automatic temperature compensation minimizes impact

Double-junction electrode sensor handles wastewater and solutions containing sulfides, heavy metals, and Tris buffers. Electrode sensor features a clog-resistant Kynar® PVDF junction and a recessed, glass pH bulb to prevent breakage.

pHTestr 30 offers dual pH and 0.1-resolution temperature display. Temperature display units in selectable °F or °C.

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



Model		pHTestr 30
Catalog number		<a href="#">FN-35634-30</a>
Range	pH	-1.00 to 15.00 pH
	Temperature	32 to 122°F (0 to 50°C)
Resolution	pH	0.01 pH
	Temperature	0.1°F/°C
Accuracy	pH	±0.01 pH
	Temperature	±0.9°F (0.5°C)
Temperature compensation		Automatic, 32 to 122°F (0 to 50°C)
Calibration		Up to three pH points
Buffer recognition		4.01, 7.00, 10.01 USA 4.01, 6.86, 9.18 NIST
Power		Four 1.5 V button cell batteries (included)
Price		



OAKTON®

## Oakton® Waterproof EcoTestr™ pH2+ Pocket Meter

Better results—easier and faster

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



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

**NEW**







## Oakton® pHTestr® 50 Pocket Tester

**NEW**

Bring the performance of your lab instruments into the field

- High  $\pm 0.01$  pH accuracy—suitable for most ASTM and EPA test procedures
- Clog-resistant, double-junction pH electrode sensor is dependable and long-lasting!
- Use with confidence—even with demanding samples containing sulfides, heavy metals, organics, Tris buffer, or protein solutions
- Save money—replaceable sensor module lets you use tester body over and over again
- Set up and calibrate quickly with easy-to-navigate interface
- Don't let temperature interfere—automatic temperature compensation minimizes impact
- Recessed, glass pH bulb protects against breakage
- Leakproof, stabilizing cap—use to calibrate, stand upright, and store sensor
- Waterproof, IP67-rated housing resists most chemicals



Model		pHTestr 50
Catalog number		<b>FN-35634-15</b>
Range	pH	-1.00 to 15.00 pH
	Temperature	32 to 140°F (0 to 60°C)
Resolution	pH	0.01 pH
	Temperature	0.1°F/°C
Accuracy	pH	$\pm 0.01$ pH
	Temperature	$\pm 0.9^\circ\text{F}$ (0.5°C) + 1 LSD from 32 to 122°F (0 to 50°C); $\pm 1.8^\circ\text{F}$ (1.0°C) + 1 LSD from 122 to 140°F (50 to 60°C)
Temperature compensation		Automatic, 32 to 140°F (0 to 60°C)
Calibration		Up to 3 points
Buffer recognition		USA 4.01, 7.00, 10.01; NIST 4.01, 6.86, 9.18
Power		Four AAA 1.5 V batteries (included)
Price		

**FN-35634-17** Replacement sensor

## Oakton® PCTSTestr™ 50 Multiparameter Pocket Tester

One tester measures it all!

**NEW**

- Versatile tester combines up to five measurements in one pocket-sized meter
- Parameters include pH, conductivity, TDS, salinity, and temperature
- Compatible with a wide range of samples with long-life pH electrode and stainless steel pin-style conductivity sensor
- Features up to 3-point pH calibration with NIST or USA autobuffer recognition, user-adjustable temperature coefficient, and self-adjusting TDS and salinity factor
- Leakproof cap functions as a sample/calibration cup, hydrating cup and as a stabilizing base to stand the meter upright
- Easy-to-replace sensor module lets you use tester body over and over again



Model		PCTSTestr 50
Catalog number		<b>FN-35634-35</b>
Range	pH	-1.00 to 15.00 pH
	Conductivity	0.0 to 200.0 $\mu\text{S}$ , 200 to 2000 $\mu\text{S}$ ; 2.00 to 20.00 mS
	TDS	0.0 to 100.0 ppm, 100 to 1000 ppm; 0.10 to 10.00 ppt (TDS factor 0.5)
	Salinity	0.00 to 10.00 ppt
	Temperature	32 to 140°F (0 to 60°C)
Resolution	pH	0.01 pH
	Conductivity	0.1 $\mu\text{S}$ , 1 $\mu\text{S}$ ; 0.01 mS
	TDS	0.1 ppm, 1 ppm; 0.01 ppt
	Salinity	0.10 ppt
	Temperature	0.1°F/°C
Accuracy	pH	$\pm 0.01$ pH
	Conductivity	$\pm 1\%$ full-scale
	TDS	$\pm 1\%$ full-scale
	Salinity	$\pm 1\%$ full-scale
	Temperature	$\pm 0.9^\circ\text{F}$ (0.5°C) from 32 to 122°F (0 to 50°C); $\pm 1.8^\circ\text{F}$ (1.0°C) from 122 to 140°F (50 to 60°C)
Temperature compensation		Automatic, 32 to 144°F (0 to 60°C)
Calibration		3 points (pH, conductivity, TDS); 1 point (salinity)
Buffer recognition		USA 4.01, 7.00, 10.01; NIST 4.01, 6.86, 9.18
Power		Four AAA 1.5 V batteries (included)
Price		

**FN-35634-37** Replacement sensor

## Oakton® pH Buffer and pH Solution Packs

Maintain accuracy and your budget

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

Description	Qty/pk	Catalog number	Price/pk
pH buffer pack	3 bottles	<b>FN-05942-10</b>	
pH solution pack	5 bottles	<b>FN-05942-15</b>	



## Oakton® pH 5+ and pH 6+ Meters

### Get high accuracy at low prices

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



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

**Meter with probe adds:** pH electrode 59001-65.

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

**Save time, save money!**

**Choose Precalibrated**  
Includes a data-rich, ISO 17025-compliant certificate!

Precalibrated by **INNOCAL**  
INNOVATIVE CALIBRATION SOLUTIONS



### Specifications

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

**Temp compensation:** automatic with ATC probe, 0 to 100°C  
**Power:** four AAA batteries (included)

Model	Description	Meter		Precalibrated	
		Catalog number	Price	Catalog number	Price
pH 5+	Meter only	<a href="#">FN-35613-50</a>		<a href="#">FN-35613-51</a>	
pH 6+		<a href="#">FN-35613-20</a>		<a href="#">FN-35613-41</a>	
pH 5+	Meter with probe	<a href="#">FN-35613-52</a>		<a href="#">FN-35613-53</a>	
pH 6+		<a href="#">FN-35613-22</a>		<a href="#">FN-35613-42</a>	
pH 5+	Meter kit	<a href="#">FN-35613-54</a>		<a href="#">FN-35613-55</a>	
pH 6+		<a href="#">FN-35613-24</a>		<a href="#">FN-35613-44</a>	

### Accessories

- [FN-59001-65](#) Replacement pH electrode; single-junction, gel-filled. Epoxy body, BNC connector
- [FN-35811-71](#) "All-in-one" combination pH probe with built-in ATC; single-junction sealed, epoxy body, BNC connector
- [FN-35811-72](#) "All-in-one" combination pH probe with built-in ATC; double-junction sealed, epoxy body, BNC connector
- [FN-35613-05](#) Replacement ATC probe, stainless steel
- [FN-09376-00](#) Replacement batteries, AAA. Pack of 12

## Oakton® Waterproof pH 150 Meter

### Get more for your money!

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



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

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

**Meter only includes:** Grip-Clip holder and two AA batteries.  
**Meter with probe adds:** "All-in-One" pH electrode (35808-71).  
**Meter kit further adds:** pH buffers, storage solution, rinse solution, and hard carrying case.



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

- [FN-35808-71](#) Replacement "All-in-One" combination pH electrode with built-in ATC; single-junction, epoxy body, BNC connector
- [FN-35618-05](#) ATC probe. Use with any standard pH electrode for temperature compensation
- [FN-35614-50](#) Replacement Grip-Clip, holder attaches probe to side of container for hands-free measurement
- [FN-35614-51](#) Hard carrying case, for 150/450 meters
- [FN-35420-72](#) Optional power adapter, 110/220 VAC
- [FN-09376-01](#) Replacement batteries, AA. Pack of 4
- [FN-17106-20](#) NIST-traceable calibration with data for pH meter



# Oakton® Benchtop pH 700 and Ion 700 Meters

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

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

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

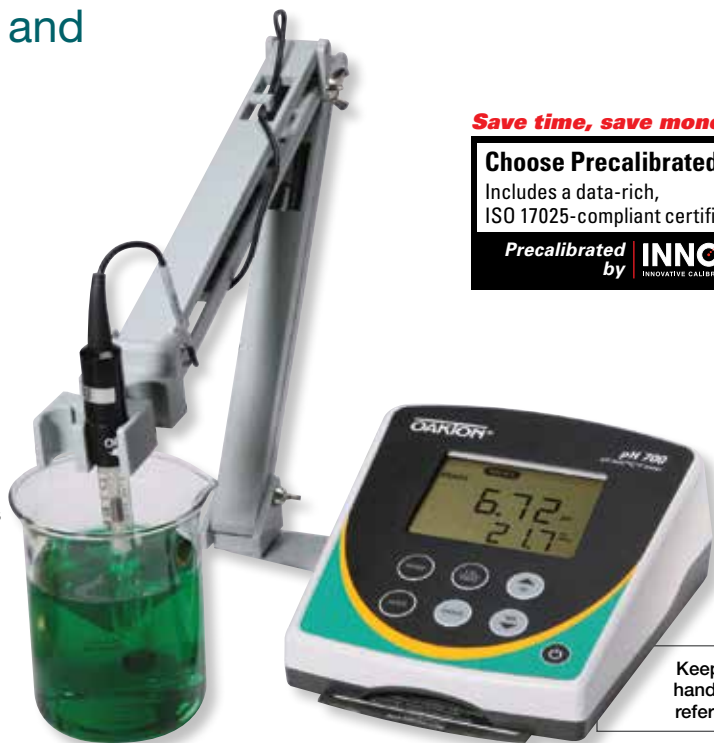
Meters feature Auto-Hold, selectable °F or °C measurement, and easy recall of electrode slope or offset.

**Save time, save money!**

**Choose Precalibrated**

Includes a data-rich, ISO 17025-compliant certificate!

Precalibrated by **INNOCAL**  
INNOVATIVE CALIBRATION SOLUTIONS



Keep procedures handy with quick-reference pull out

### Search

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

**OAKTON**

ISO9001:2008  
CERTIFIED SUPPLIER

CE

Meter only

### Specifications

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

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

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

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

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

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

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

[FN-35420-54](#) **Replacement electrode arm**

[FN-17106-20](#) **NIST-traceable calibration** with data for pH/ion meter

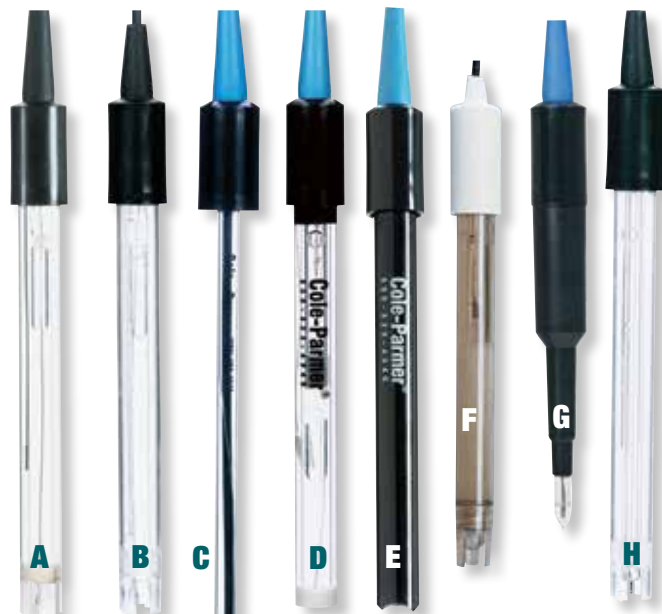
## Cole-Parmer® Epoxy-Body Combination pH and ORP Electrodes

### Get fast, stable readings

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

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

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



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

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

**FN-05992-48 Reference fill solution**, 4 M KCl. Two 125-mL bottles

**FN-05983-25 Adapter**, BNC to US standard plug meter

**FN-05992-47 Reference fill solution**, 3.8 M KCl with AgCl. Two 125-mL bottles

## Thermo Scientific™ Orion™ ROSS™ Triode™ pH Electrodes

### Be more accurate with automatic temperature compensation (ATC)

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

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

**What's included:** 3.3-ft (1-m) cable, BNC pH connector, and a MiniDIN ATC connector for use with Orion Star Series™ pH meters.



Key	Description	ATC connector	Catalog number	Price
A	Glass body, refillable	MiniDIN for Star Series pH meters	FN-05718-28	
B	Epoxy body, refillable	MiniDIN for Star Series pH meters	FN-05718-34	
C	Epoxy body, gel-filled	MiniDIN for Star Series pH meters	FN-05718-44	

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





## Oakton® pH Buffer Solutions

Keep your readings accurate with these quality buffers

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



Save by ordering larger sizes or by the case!

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



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

Feel more confident about accuracies

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

**NEW**



pH	500-mL bottles		1-L bottles		4-L bottles	
	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
<b>Colorless buffers</b>						
4.01	<b>FN-00651-00</b>		<b>FN-00651-30</b>		<b>FN-00651-70</b>	
7.00	<b>FN-00651-02</b>		<b>FN-00651-32</b>		<b>FN-00651-72</b>	
10.00	<b>FN-00651-04</b>		<b>FN-00651-34</b>		<b>FN-00651-74</b>	
<b>Color-coded buffers</b>						
4.01 (red)	<b>FN-00651-06</b>		<b>FN-00651-36</b>		<b>FN-00651-76</b>	
7.00 (yellow)	<b>FN-00651-08</b>		<b>FN-00651-38</b>		<b>FN-00651-78</b>	
10.00 (blue)	<b>FN-00651-10</b>		<b>FN-00651-40</b>		<b>FN-00651-80</b>	

## Oakton® pH/mV Simulator

Ensure proper calibration

- pH buffer and mV value simulation allows for easy meter checks
- Push-button operation
- Select from USA or NIST buffers and mV output

Additional features include 1 ΩG high-impedance test, BNC connector, and low-battery indicator.



Accuracy	Power	Catalog number	Price
pH: 0.05; mV:2	Four AAA batteries (included)	<b>FN-35652-00</b>	

## Oakton® High-Accuracy pH Buffers

Trust your buffers—high accuracy

**NEW**

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



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

## Oakton® Electrode Cleaning and Storage Solutions

Clean electrodes make clean measurements

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



Solution type	Catalog number	Price/ea	Catalog number	Price/cs
Cleaning	<b>FN-00653-06</b>		<b>FN-35655-06</b>	
Storage	<b>FN-00653-04</b>		<b>FN-35655-04</b>	

## Oakton® pH Buffer Pouches

Accuracy even on the go!

- Single-use pouch—just tear, dip, calibrate
- Standardized to NIST-traceable pH references



pH	Catalog number	Price/pk of 20 pouches
4.01	<b>FN-35653-01</b>	
7.00	<b>FN-35653-02</b>	
10.00	<b>FN-35653-03</b>	
Rinse solution	<b>FN-35653-00</b>	

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

## Cole-Parmer® Dye Tracers

### Know your water flow

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



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

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

## Hach® Water Quality Test Strips

### Results in less than a minute!

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



Testing parameter	Testing range	Qty	Catalog number	Price
5-in-1: Free and total chlorine; total hardness; total alkalinity; pH	0 to 10 ppm; 0 to 25 gpg; 0 to 240 ppm; 6.2 to 8.4 pH	50	<a href="#">FN-05546-02</a>	
Alkalinity	0 to 240 ppm	50	<a href="#">FN-05546-04</a>	
Ammonia (nitrogen)	0 to 6 ppm	25	<a href="#">FN-05546-06</a>	
Arsenic (low level)	0 to 500 ppb	100	<a href="#">FN-05546-08</a>	
Arsenic (dual range)	0 to 500 ppb; 0 to 4000 ppb	100	<a href="#">FN-05546-12</a>	
Chloride (low level)	30 to 600 ppm	40	<a href="#">FN-05546-16</a>	
Chloride	300 to 6000 ppm	40	<a href="#">FN-05546-18</a>	
Free and total chlorine	0 to 10 ppm	250 <sup>†</sup>	<a href="#">FN-05546-20</a>	
Free and total chlorine	1 to 10 ppm	50	<a href="#">FN-05546-22</a>	
Free chlorine	0 to 600 ppm	100	<a href="#">FN-05546-24</a>	
Free and total copper	0 to 3 ppm	25	<a href="#">FN-05546-26</a>	
Total hardness, as CaCO <sub>3</sub>	0 to 425 ppm	250 <sup>†</sup>	<a href="#">FN-05546-28</a>	
Total hardness, as CaCO <sub>3</sub>	1 to 425 ppm	50	<a href="#">FN-05546-30</a>	
Total dissolved iron	0 to 5 ppm	25	<a href="#">FN-05546-32</a>	
Nitrate and nitrite	0 to 50 ppm; 0 to 3 ppm	25	<a href="#">FN-05546-36</a>	
pH (midrange)	4 to 9 pH	50	<a href="#">FN-05546-40</a>	
pH (full range)	0 to 14 pH	100	<a href="#">FN-05546-42</a>	
Phosphorous, o-phosphate	0 to 50 ppm	50	<a href="#">FN-05546-44</a>	

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

## EM Quant® Water Test Strips

### Don't risk water quality—perfect for quick spot checks

- Simply dip and read against included color chart—get results in minutes



Testing parameter	Graduations	Catalog number	Qty/pk	Price/pk
Ammonium <sup>†</sup>	0, 10, 30, 60, 100, 200, 400 ppm	<a href="#">FN-99572-01</a>	50	
Chloride	0, 500, 1000, 1500, 2000, 3000 ppm	<a href="#">FN-99572-03</a>	100	
Copper	10 to 300 ppm	<a href="#">FN-99572-14</a>	100	
Cyanide <sup>†</sup>	0, 1, 3, 10, 30 ppm	<a href="#">FN-99572-04</a>	100	
Lead <sup>†</sup>	0, 20, 40, 100, 200, 500 ppm	<a href="#">FN-99572-06</a>	100	
Nickel	0, 10, 25, 100, 250, 500 ppm	<a href="#">FN-99572-07</a>	100	
Nitrate	10 to 500 ppm	<a href="#">FN-99572-13</a>	100	
pH	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 pH	<a href="#">FN-99572-08</a>	6 pks of 100	
Total hardness	0, 50, 70, 125, 250, 370 ppm	<a href="#">FN-99572-10</a>	100	
Total hardness	90, 180, 270, 360, 450 ppm	<a href="#">FN-99572-11</a>	100	

<sup>†</sup>Kit includes reagent(s) to facilitate test.

Find even more online!  
Go to [ColeParmer.com](http://ColeParmer.com) to see full product details.



## Cole-Parmer® Symmetry® PT Toploading Balances

### Large weighing surface allows placement of a variety of samples

- Weighing modes include parts counting, percent weighing, checkweighing, animal/dynamic weighing and density determination
- USB and RS-232 interfaces offer connection to a computer or printer for GLP/GMP-compliant outputs
- Sealed keypad, splashproof design, and removable stainless steel weighing pan
- An oversized backlit LCD provides clear visibility of weighing results
- Digital filters compensate for vibration, drafts or temperature changes
- Fast stabilization and response time



**What's included:** AC power adapter. The 210-g and 410-g models also include a draft shield.



#### Specifications

**Calibration:** Internal or external with calibration mass

**Weighing units:** g, ct, oz, dwt, mg, grains, oz, ozt, dwt, custom

**Power:** 115/220 VAC power adapter and built-in rechargeable battery pack (battery function not available on models 10001-06, -07, -13)

Capacity	Readability	Repeatability	Linearity	Pan size	Catalog number	Price
<b>Internal calibration</b>						
210 g	0.001 g	±0.002 g	±0.002 g	5 1/8" x 5 1/8" (13 x 13 cm)	<a href="#">FN-10001-10</a>	
410 g	0.001 g	±0.002 g	±0.002 g		<a href="#">FN-10001-11</a>	
2200 g	0.01 g	±0.02 g	±0.02 g	7 1/2" x 6 1/4"	<a href="#">FN-10001-12</a>	
4200 g	0.01 g	±0.02 g	±0.02 g	(19 x 16 cm)	<a href="#">FN-10001-13</a>	
<b>External calibration</b>						
210 g	0.001 g	±0.002 g	±0.002 g	5 1/8" x 5 1/8" (13 x 13 cm)	<a href="#">FN-10001-02</a>	
410 g	0.001 g	±0.002 g	±0.002 g		<a href="#">FN-10001-03</a>	
2200 g	0.01 g	±0.02 g	±0.02 g		<a href="#">FN-10001-04</a>	
4200 g	0.01 g	±0.02 g	±0.02 g	7 1/2" x 6 1/4"	<a href="#">FN-10001-05</a>	
5000 g	0.1 g	±0.2 g	±0.4 g	(19 x 16 cm)	<a href="#">FN-10001-06</a>	
15000 g	0.1 g	±0.2 g	±0.4 g		<a href="#">FN-10001-07</a>	

#### Accessories

[FN-11120-78](#) Compact thermal printer

[FN-10000-47](#) Kensington™ type security lock and cable

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

## Cole-Parmer® Symmetry® PA Analytical Balances

### Discover Symmetry—affordable, advanced, accurate

- Three-door glass draft shield provides easy access inside the weighing chamber
- Oversized backlit LCD provides clear visibility of weighing results
- Sealed keypad, splashproof design, and removable stainless steel weighing pan offer safeguards in a messy lab environment
- Weighing modes include parts counting, percent weighing and checkweighing
- USB and RS-232 interfaces offer connection to a computer or printer for GLP/GMP-compliant output
- Digital filters compensate for vibration, drafts or temperature changes
- Selectable multi-language display and output
- Fast stabilization and response time



**What's included:** AC power adapter and draft shield.



#### Specifications

**Calibration:** Internal or external with calibration mass

**Weighing units:** g, ct, oz, dwt, mg, grains, oz, ozt, dwt, custom  
**Power:** 115/220 VAC power adapter

Capacity	Readability	Repeatability	Linearity	Pan size	Catalog number	Price
<b>Internal calibration</b>						
120 g	0.0001 g	±0.0002 g	±0.0002 g	3 1/2" dia (9 cm)	<a href="#">FN-10001-08</a>	
220 g	0.0001 g	±0.0002 g	±0.0002 g		<a href="#">FN-10001-09</a>	
<b>External calibration</b>						
120 g	0.0001 g	±0.0002 g	±0.0002 g	3 1/2" dia (9 cm)	<a href="#">FN-10001-00</a>	
220 g	0.0001 g	±0.0002 g	±0.0002 g		<a href="#">FN-10001-01</a>	

#### Accessories

[FN-11120-78](#) Compact thermal printer

[FN-10000-47](#) Kensington™ type security lock and cable

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

**NEW**

# Better weighing with just a touch

## Cole-Parmer® Symmetry® Touch-Screen Toploading and Analytical Balances

- 5" color capacitive touch-screen display provides clear visibility to weighing results and menu options
- Go touchless—IR proximity sensors offer programmable touch-free control
- Customize the menu screen to match your everyday needs
- Advanced PT-T and PA-T models add a diagnostic GLP function, internal calibration, and Wi-Fi interface
- Adjust filter settings depending on the working environment
- Statistics working mode quickly analyzes data from series of measurements
- USB, RS-232, Ethernet, and Wi-Fi† interfaces offer secure connection with peripheral devices
- Industry-leading 5-year unlimited warranty

Symmetry®



Intuitive operation with large touch-screen display and personal setup



Two programmable IR proximity sensors perform common functions—touch-free



### Specifications

#### Calibration:

BT-T and BA-T Balances: external with calibration mass  
PT-T and PA-T Balances: internal and external with calibration mass

**Weighing units:** g, mg, kg, ct, lb, oz, ozt, dwt, th, tls, tlt, tlc, mom, gr, N, ti, baht, tola, msg, custom

#### Output:

BT-T and BA-T Balances: RS-232 (2), USB A, USB B, Ethernet  
PT-T and PA-T Balances: RS-232 (2), USB (2), Ethernet, Wi-Fi

**Power:** 100 to 240 VAC (universal power adapter included)

### BT-T and BA-T Balances

Capacity	Readability	Repeatability	Linearity	Pan size	Cat. no.	Price
<b>BT-T toploading balances</b>						
200 g	0.001 g	±0.001 g	±0.002 g	5 1/16" x 5 1/16" (12.8 x 12.8 cm)	FN-10100-67	
400 g					FN-10100-68	
500 g					FN-10100-69	
800 g					FN-10100-70	
2000 g	0.01 g	±0.01 g	±0.02 g	7 1/16" x 7 1/16" (19.5 x 19.5 cm)	FN-10100-71	
4000 g					FN-10100-72	
6000 g					FN-10100-73	
10,000 g	0.1 g	±0.1 g	±0.3 g	7 1/16" x 7 1/16" (19.5 x 19.5 cm)	FN-10100-74	
20,000 g		±0.08 g			FN-10100-75	
<b>BA-T analytical balances</b>						
60 g	0.0001 g	±0.0001 g	±0.0002 g	3 1/16" (10 cm)	FN-10100-61	
120 g					FN-10100-63	
210 g					FN-10100-65	

### Advanced PT-T and PA-T Balances

Capacity	Readability	Repeatability	Linearity	Pan size	Cat. no.	Price
<b>PT-T toploading balances</b>						
350 g	0.001 g	±0.001 g	±0.002 g	5" x 5" (12.8 x 12.8 cm)	FN-10100-33	
750 g	0.001 g	±0.001 g	±0.002 g		FN-10100-34	
800 g	0.01 g	±0.01 g	±0.02 g	7 1/16" x 7 1/16"	FN-10100-35	
2000 g	0.01 g	±0.01 g	±0.02 g	(19.5 x 19.5 cm)	FN-10100-36	
4500 g	0.01 g	±0.01 g	±0.02 g	7 1/16" x 7 1/16"	FN-10100-37	
6000 g	0.01 g	±0.015 g	±0.03 g	(19.5 x 19.5 cm)	FN-10100-38	
<b>PA-T analytical balances</b>						
82/220 g	0.00001/ 0.0001 g	±0.0001 g	±0.0002 g	3 1/2" (9 cm)	FN-10100-31	
120 g	0.0001 g	±0.0001 g	±0.0002 g	3 1/16" (10 cm)	FN-10100-30	
220 g	0.0001 g	±0.0001 g	±0.0002 g	3 1/16" (10 cm)	FN-10100-32	

†Wi-Fi interface is included with PT-T and PA-T models only.





## METTLER TOLEDO NewClassic MS-TS Toploading and Analytical Balances

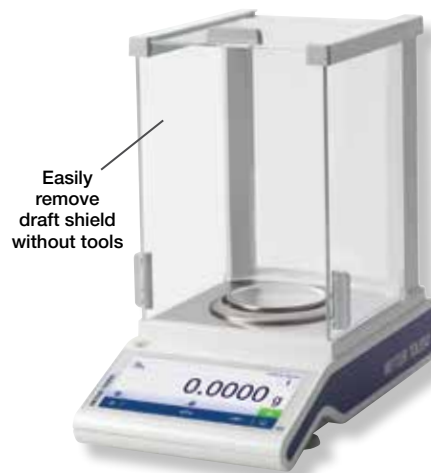
### Get consistent results, faster

- Advanced MonoBloc™ weighing technology provides fast and accurate results
- Operate the extra-large, color touch screen while wearing cotton, silicone, or rubber gloves
- Unbalanced alert and onscreen help keep you level
- Stay within range with MinWeigh function
- ISOLog function maintains a record of all weighing relevant changes to the balance's settings
- Connect directly to a PC or printer via RS-232 or USB slot allowing convenient transfer of data

High-capacity toploading balances above 12,200 grams have a high-contrast display (HCD) with tactile buttons. These balances do not include the touch screen, LevelControl, MinWeigh, pass codes, or ISOLog features.



Capacity	Readability	Repeatability	Linearity	Pan size (L x W)	120 VAC	
					Catalog number	Price
<b>NewClassic MS-TS precision toploading balances</b>						
320 g	0.001 g	±0.001 g	±0.002 g	5" x 5" (12.7 x 12.7 cm)	<a href="#">FN-11335-47</a>	
420 g	0.001 g	±0.001 g	±0.002 g		<a href="#">FN-11335-48</a>	
620 g	0.001 g	±0.001 g	±0.002 g		<a href="#">FN-11335-49</a>	
1020 g	0.001 g	±0.001 g	±0.002 g		<a href="#">FN-11335-50</a>	
1620 g	0.01 g	±0.01 g	±0.02 g	6 5/8" x 7 7/8" (17 x 20 cm)	<a href="#">FN-11335-51</a>	
3200 g	0.01 g	±0.01 g	±0.02 g		<a href="#">FN-11335-52</a>	
4200 g	0.01 g	±0.01 g	±0.02 g		<a href="#">FN-11335-53</a>	
820/4200 g	0.01/0.1g	±0.01/0.06 g	±0.8 g		<a href="#">FN-11335-54</a>	
6200 g	0.01 g	±0.01 g	±0.02 g	7 1/2" x 8 7/8" (19 x 22.6 cm)	<a href="#">FN-11335-55</a>	
1220/6200 g	0.01/0.1g	±0.01/0.06 g	±0.8 g		<a href="#">FN-11335-56</a>	
12,200 g	0.01 g	±0.01 g	±0.025 g		<a href="#">FN-11334-58</a>	
8200 g	0.1 g	±0.1 g	±0.2 g		<a href="#">FN-11335-57</a>	
12,200 g	0.1 g	±0.1 g	±0.2 g	13 7/8" x 9 5/8" (35.1 x 24.5 cm)	<a href="#">FN-11334-71</a>	
16,200 g	0.1 g	±0.1 g	±0.2 g		<a href="#">FN-11334-72</a>	
32,200 g	0.1 g	±0.1 g	±0.3 g		<a href="#">FN-11334-73</a>	
32,200 g	1 g	±0.5 g	±1 g		<a href="#">FN-11334-74</a>	
<b>NewClassic MS-TS analytical balances</b>						
120 g	0.1 mg	±0.1 mg	±0.2 mg	3 1/2" (9 cm) dia	<a href="#">FN-11335-44</a>	
220 g					<a href="#">FN-11335-45</a>	
320 g					<a href="#">FN-11335-46</a>	

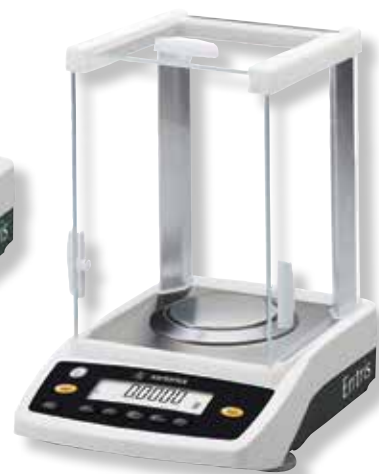


Easily remove draft shield without tools

## Sartorius Entris® Toploading and Analytical Balances

### Go beyond basic—get affordability, reliability, and quality

- Backlit high-contrast display delivers excellent viewability in any lighting condition
- Below balance, counting, percent, animal weighing, and density determination functions
- Document critical weights in GLP mode via RS-232 communication with PC or printer



Capacity	Readability	Repeatability	Linearity	Pan size	100 to 240 VAC	
					Catalog number	Price
<b>Toploading balances</b>						
150 g	0.001 g	±0.001 g	±0.002 g	4 1/2" dia (11.5 cm)	<a href="#">FN-11955-23</a>	
320 g					<a href="#">FN-11955-24</a>	
620 g					<a href="#">FN-11955-26</a>	
820 g	0.01 g	±0.01 g	±0.03 g	6" dia (15 cm)	<a href="#">FN-11955-27</a>	
2200 g					<a href="#">FN-11955-28</a>	
3200 g					<a href="#">FN-11955-29</a>	
4200 g	0.01 g	±0.01 g	±0.03 g	7" x 7" (18 x 18 cm)	<a href="#">FN-11955-31</a>	
5200 g					<a href="#">FN-11955-34</a>	
<b>Analytical balances</b>						
60 g	0.1 mg	±0.1 mg	±0.2 mg	3 1/2" dia (8.9 cm)	<a href="#">FN-11955-19</a>	
120 g					<a href="#">FN-11955-21</a>	
220 g					<a href="#">FN-11955-22</a>	

#### Accessories

- [FN-11800-65](#) Standard compact printer
- [FN-11800-75](#) Optional external rechargeable battery kit
- [FN-11800-98](#) Density weighing kit
- [FN-11800-97](#) USB to RS-232 cable
- [FN-11200-50](#) Kensington™-type security lock and cable
- [FN-17101-52](#) NIST-traceable calibration with data for balances

## Cole-Parmer® StableTemp® Digital Utility Water Baths

Get digital accuracy at an analog price

- Recall settings at the touch of a button
- Know when process is complete with built-in timer

Dual thermostat baths provide  $\pm 0.1^\circ\text{C}$  precision and overtemperature safety feature prevents overheating. Seamless tank eliminates rusting and is easy to clean.



**StableTemp**

ISO9001:2008 CERTIFIED SUPPLIER

### Specifications

**Temperature range:**  $5^\circ\text{C}$  above ambient to  $100^\circ\text{C}$   
**Temperature stability:**  $\pm 0.1^\circ\text{C}$   
**Wetted materials:** 304 SS  
**Temperature uniformity:**  $\pm 0.2^\circ\text{C}$   
**High-temperature cutoff:** yes

Bath capacity	Opening (L x W)	Working depth	120 VAC, 60 Hz		240 VAC, 50 Hz	
			Cat. no.	Price	Cat. no.	Price
2 L	3 $\frac{1}{8}$ " x 4 $\frac{1}{16}$ "	5 $\frac{1}{2}$ "	FN-14576-00		FN-14576-02	
5 L	5" x 10 $\frac{3}{16}$ "	5 $\frac{1}{2}$ "	FN-14576-04		FN-14576-06	
10 L	10 $\frac{5}{8}$ " x 11 $\frac{5}{8}$ "	5 $\frac{1}{2}$ "	FN-14576-08		FN-14576-10	
20 L	9 $\frac{1}{2}$ " x 17 $\frac{1}{2}$ "	5"	FN-14576-12		FN-14576-14	
28 L	9 $\frac{1}{2}$ " x 17 $\frac{1}{2}$ "	7"	FN-14576-16		FN-14576-18	

## Cole-Parmer® Polystat® Cooling/Heating Recirculators

Save time with quick ramp up and cool-down

- Don't lose valuable bench space—powerful unit in a compact design
- Internal circulating tank design was built to minimize fluid evaporation
- Easy cooling for smaller instruments, jacketed reactors, and rotary evaporators
- Reliable, robust system maintains temperature to  $\pm 0.1^\circ\text{C}$  and pumps to 21 L/min
- Includes funnel and 8- and 12-mm hose barb fittings



**polystat**®

UL US CE

### Specifications

**Internal reservoir capacity:** 2.8      **Temperature stability:**  $\pm 0.1^\circ$

Cooling capacity at $20^\circ\text{C}$	Temperature range	115 VAC, 60 Hz		230 VAC, 50 Hz	
		Catalog number	Price	Catalog number	Price
<b>Force pump;</b> 17 L/min flow rate; 4.4 psi (300 mbar) max pressure					
250 W	-10 to $80^\circ\text{C}$	FN-13042-01		FN-13042-03	
500 W	-10 to $80^\circ\text{C}$	FN-13042-17		FN-13042-19	
<b>Force/suction pump;</b> 21 L/min flow rate; 11 psi (805 mbar) max pressure					
250 W	-10 to $80^\circ\text{C}$	FN-13042-05		FN-13042-07	
500 W	-10 to $80^\circ\text{C}$	FN-13042-21		FN-13042-23	

Equipment & Instrumentation

Baths & Circulators

## Cole-Parmer® Polystat® Cooling/Heating Circulating Baths

Get excellent cooling across range of temperatures

- Two-speed pump with up to 21 L/min flow
- Maximize bench space with compact size
- Protect samples and bath with high-temperature and low-level cut offs

**Standard Digital Controller Baths** feature five programmable set points, adjustable high-temperature cutoff, user-settable Min/Max temperature limits, and an adjustable pump nozzle. **Advanced Digital Controller Baths** offer all the features of the Standard Digital models (except adjustable pump nozzle) plus five programmable set points, a two-stage (force/suction) pump for greater circulation capacity, and a USB port.

**What's included:** lid, 6-ft (1.8-m) power cord with plug, M16 x 1 pump connection and 8- and 12-mm hose barb fittings with clamps for external circulation.



### Specifications

**Wetted materials:** stainless steel, polymers      **Low-level cutoff:** yes

**polystat**®

ISO9001:2008 CERTIFIED SUPPLIER

UL US CE

Bath capacity	Temperature range	Stability	Cooling capacity at $20^\circ\text{C}$	Pump type	Max pump pressure psi (mbar)	Max pump flow (L/min)	Working area (W x L x D)	Power (VAC, Hz)	Catalog number	Price
<b>Standard digital controller baths</b>										
6.5 L	-20 to $100^\circ\text{C}$	$\pm 0.05^\circ\text{C}$	250 W	Force	4.4 (310)	17	5 $\frac{5}{16}$ " x 4 $\frac{1}{16}$ " x 5 $\frac{1}{8}$ " (13.5 x 12.2 x 15 cm)	115, 60 230, 50	FN-12122-02 FN-12122-04	
8.6 L	-28 to $100^\circ\text{C}$	$\pm 0.05^\circ\text{C}$	500 W	Force	4.4 (310)	17	6 $\frac{1}{16}$ " x 7 $\frac{3}{16}$ " x 5 $\frac{1}{8}$ " (17.3 x 18.3 x 15 cm)	115, 60 230, 50	FN-12122-32 FN-12122-34	
8.6 L	-28 to $150^\circ\text{C}$	$\pm 0.05^\circ\text{C}$	500 W	Force	4.4 (310)	17	6 $\frac{1}{16}$ " x 7 $\frac{3}{16}$ " x 5 $\frac{1}{8}$ " (17.3 x 18.3 x 15 cm)	115, 60 230, 50	FN-12122-36 FN-12122-38	
<b>Advanced digital controller baths</b>										
6.5 L	-20 to $100^\circ\text{C}$	$\pm 0.025^\circ\text{C}$	250 W	Force/suction	11.7 (750)	21	5 $\frac{5}{16}$ " x 4 $\frac{1}{16}$ " x 5 $\frac{1}{8}$ " (13.5 x 12.2 x 15 cm)	115, 60 230, 50	FN-12122-12 FN-12122-14	
6.5 L	-20 to $100^\circ\text{C}$	$\pm 0.025^\circ\text{C}$	250 W	Force/suction	11.7 (750)	21	5 $\frac{5}{16}$ " x 4 $\frac{1}{16}$ " x 5 $\frac{1}{8}$ " (13.5 x 12.2 x 15 cm)	115, 60 230, 50	FN-12122-26 FN-12122-28	
8.6 L	-28 to $200^\circ\text{C}$	$\pm 0.025^\circ\text{C}$	500 W	Force/suction	11.7 (750)	21	6 $\frac{1}{16}$ " x 7 $\frac{3}{16}$ " x 5 $\frac{1}{8}$ " (17.3 x 18.3 x 15 cm)	115, 60 230, 50	FN-12122-42 FN-12122-44	
8.6 L	-35 to $200^\circ\text{C}$	$\pm 0.025^\circ\text{C}$	800 W	Force/suction	11.7 (750)	21	6 $\frac{1}{16}$ " x 7 $\frac{3}{16}$ " x 5 $\frac{1}{8}$ " (17.3 x 18.3 x 15 cm)	115, 60† 230, 50†	FN-12122-56 FN-12122-58	

†Requires 20 amp current.



## Techne® Immersion Circulators

### Remain in control with higher stability

**Analog Circulator** features proportional temperature control, ±0.01°C stability, overtemperature indicator light, pressure pump, and rugged construction.

**Basic Digital Circulator** offers precise PID temperature control at a competitive price. Unit also features digital LED display, ±0.01°C stability, overtemperature indicator light, pressure pump, and low-liquid level cutoff.

**Standard Digital Circulator** provides high ±0.005°C temperature stability, plus RS-232 interface capability. Bidirectional RS-232 lets you control bath remotely and download data to a computer for further analysis. Unit also features digital LED display, overtemperature indicator light, pressure pump, and low-liquid level cutoff.

**What's included:** 7½-ft (2.3-m) cord with three-prong plug (European plug on 240 VAC model) and a thermometer holder.



Standard digital circulator 01262-13



Analog circulator 01262-01



### Specifications

**Wetted materials:** 316 stainless steel and PPS (polyphenylene sulfide)  
**Immersion depth:** 4" to 5" (10.2 to 12.7 cm)

Controller type	Temperature range	Stability	Pump type	Max pump pressure psi (mbar)	Max flow (L/min)	Low-level cutoff	Power (VAC, Hz)	Catalog number	Price
Analog	Ambient +5 to 95°C	±0.01°C	Force	2.1 (145)	10	No	120, 50/60	<a href="#">FN-01262-01</a>	
							240, 50/60	<a href="#">FN-01262-03</a>	
Basic digital	Ambient +5 to 120°C	±0.01°C	Force	2.1 (145)	10	Yes	120, 50/60	<a href="#">FN-01262-05</a>	
							240, 50/60	<a href="#">FN-01262-07</a>	
Standard digital	Ambient +5 to 200°C	±0.005°C	Force	2.1 (145)	10	Yes	120, 50/60	<a href="#">FN-01262-13</a>	
							240, 50/60	<a href="#">FN-01262-15</a>	

## Stuart® Shaking Water Bath

### Customize to your needs with platforms and racks

- No need for tricky fittings—strong magnets make changing platforms easy
- Analog controls and digital temperature display simplify operation
- Overtemperature and low-level cutoffs improve safety

Versatile water bath can be a linear (reciprocating) or orbital shaker, or use as a static bath, depending on the platform you choose. The two shaking platforms come with high-tension springs which accommodate most bottle and flask sizes; with capacity of 8 x 250 mL, 6 x 500 mL, or 4 x 1000 mL Erlenmeyer flasks. For tubes and smaller vessels, order an optional stainless steel rack.



### REQUIRED System Components

- 1) Water bath
- 2) Platform
- OPTIONAL
- 3) Racks



### Specifications

**Temperature range:** ambient +5°C to 95°C† **Wetted materials:** 304 stainless steel  
**Temperature stability:** ±0.25°C

Bath capacity	Bath opening (L x W)	Working depth	Shaking speed	Stroke length/orbit size	Power		Catalog number	Price
					VAC	Hz		
24 L	12" x 19½" (30 x 50 cm)	7⅞" (20 cm)	20 to 150 rpm	¾" (20 mm)	120	60	<a href="#">FN-12152-00</a>	
					220	60	<a href="#">FN-12152-01</a>	
					230	50	<a href="#">FN-12152-02</a>	

†An accessory bath cover is required to reach temperatures above 90°C.

### Accessories

[FN-12152-99](#) Hinged polycarbonate bath cover reduces heat loss and evaporation

### Platforms (one required)

Description	Catalog number	Price
Reciprocating shaking action	<a href="#">FN-12152-90</a>	
Orbital shaking action	<a href="#">FN-12152-91</a>	
Perforated, for use as a nonshaking bath	<a href="#">FN-12152-92</a>	

### Optional Tube Racks

Accommodates	Catalog number	Price
Centrifuge tubes, 25 x 50 mL	<a href="#">FN-12152-93</a>	
Microcentrifuge tubes, 143 x 1.5 mL	<a href="#">FN-12152-94</a>	
Culture tubes, 120 x 13 mm dia	<a href="#">FN-12152-95</a>	
Culture tubes, 72 x 16 mm dia	<a href="#">FN-12152-96</a>	
Culture tubes, 56 x 15 mL	<a href="#">FN-12152-97</a>	
Culture tubes, 30 x 26 mm dia	<a href="#">FN-12152-98</a>	

## Cole-Parmer® LabGEN® 125 and 700 Homogenizer Systems

Process almost any sample, large or small!

- Process samples from 0.05 mL to 10 L
- Variable-speed motor performs at 5000 to 30,000 rpm
- Homogenize tissue samples quickly and efficiently—without worrying about cross-contamination
- Versatile—use as a handheld unit or mount to the optional stand for hands-free operation

**LabGEN 125 Homogenizer** is ergonomically designed to reduce hand strain during extended periods of operation. **LabGEN 125 Homogenizing Kits** contain everything you need to get started, including 12 plastic tip probes, tip adapter, and a storage case.

**LabGEN 700 Homogenizer** is a versatile heavy-duty unit that can handle virtually any homogenizing task—dispersion, tissue processing, cell disruption, and preparing emulsions. Process samples from 0.05 mL to 10 L at speeds up to 30,000 rpm.



### REQUIRED System Components

- 1) Homogenizer
  - 2) Rotor-stator generator OR
  - 3) Plastic tip probes and required tip adaptor 04727-88
- OPTIONAL**
- 4) Stand and Motor support rod



### 1. Homogenizers

Description	Sample volume	Plastic tip probes included	Power	Motor	Catalog number	Price
LabGEN 125 homogenizer	0.05 to 100 mL	—	115 VAC, 50/60 Hz	125 W	<a href="#">FN-04727-01</a>	
			220 VAC, 50/60 Hz		<a href="#">FN-04727-02</a>	
LabGEN 125 homogenizer kits (include LabGEN 125 homogenizer, 12 plastic tip probes, tip adapter 04727-88, and storage case)	0.25 to 30 mL	12 hard tissue	115 VAC, 50/60 Hz	125 W	<a href="#">FN-04727-11</a>	
			220 VAC, 50/60 Hz		<a href="#">FN-04727-12</a>	
		12 soft tissue	115 VAC, 50/60 Hz	<a href="#">FN-04727-13</a>		
			220 VAC, 50/60 Hz	<a href="#">FN-04727-14</a>		
LabGEN 700 homogenizer	0.05 mL to 10 L	—	115 VAC, 50/60 Hz	700 W	<a href="#">FN-04727-03</a>	
			220 VAC, 50/60 Hz		<a href="#">FN-04727-04</a>	

### 2. Stainless Steel Rotor-Stator Generators

Dispersion type	Sample volume	Diameter	Length	Catalog number	Price
Fine	0.05 to 5 mL	5-mm	75	<a href="#">FN-04727-60</a>	
		5-mm		<a href="#">FN-04727-62</a>	
Coarse					
Fine	0.25 to 30 mL	7-mm	95	<a href="#">FN-04727-68</a>	
Fine	1.5 to 100 mL	10-mm	95	<a href="#">FN-04727-77</a>	
Fine	1.5 to 100 mL	10-mm	195	<a href="#">FN-04727-81</a>	

### 3. Plastic Tip Probes

Sample volume	Tissue type	Tip size (L x dia)	Cat. no.	Qty/pk	Price/pk
0.25 to 30 mL	Hard	110 x 7 mm	<a href="#">FN-04727-84</a>	25	
			<a href="#">FN-04727-85</a>	50	

[FN-04727-88](#) Tip adapter, required for use with plastic tip probes

### 4. Optional Stand

[FN-04727-89](#) Homogenizer stand with support rod

## Cole-Parmer® LabGEN® 7 Homogenizers

Don't be tied to a stand—unit can be mounted or handheld

- No more wasted time—processes 0.25- to 30-mL samples in less than one minute
- No more hand stress—lightweight unit is easy to clean and disassemble
- Powerful, yet quiet—variable speed from 5000 to 35,000 rpm

The LabGEN 7 homogenizer operates with a powerful 125-watt motor; ideal for most tissue samples. The portable LabGEN 7b is powered by a rechargeable battery for freedom of movement and to process soft tissues.

**What's included:** 7-mm generator probe and tool kit.



Description	Probe included (L x dia)	Power	Catalog number	Price
LabGEN 7	3 1/8" x 7/64" (85 x 7 mm)	115 VAC	<a href="#">FN-04727-06</a>	
		220 VAC	<a href="#">FN-04727-07</a>	
Portable LabGEN 7b	3 1/8" x 7/64" (85 x 7 mm)	115 VAC	<a href="#">FN-04727-08</a>	
		220 VAC	<a href="#">FN-04727-09</a>	



04727-06



### Accessories

[FN-04727-16](#) Homogenizer stand

[FN-04727-17](#) Spare rechargeable battery for LabGEN 7b



## H-B Instrument DURAC® Specific Gravity Glass Hydrometers

- Temperature standard is 60°F (15.6°C)
- Plain form hydrometers are individually serialized for easy identification
- Ensure accuracy with multi-language statement of accuracy supplied by manufacturer
- All hydrometers are 100% nonmercury

**Precision Hydrometers, plain form**, have 0.0005 divisions and feature metal ballast.

**ASTM Hydrometers, plain form**, are designed to conform to the accuracy requirements of ASTM, and have their scales affixed using a clear epoxy for increased durability. Feature metal ballast.

**Precision Hydrometers, combined form**, fuse together a hydrometer and thermometer into one convenient unit. These thermohydrometers have an organic performance liquid that is 100% mercury free and feature wax paraffin and steel shot ballast.



## For Liquids Lighter than Water

### General-Purpose Hydrometers, plain form

Range	Divisions	Length	Catalog number	Price
0.600 to 0.670	0.001	165 mm	<a href="#">FN-08298-46</a>	
0.640 to 0.710	0.001	165 mm	<a href="#">FN-08298-47</a>	
0.650 to 1.000	0.005	300 mm	<a href="#">FN-08299-09</a>	
0.690 to 0.800	0.002	165 mm	<a href="#">FN-08298-11</a>	
0.700 to 0.770	0.001	165 mm	<a href="#">FN-08298-17</a>	
0.700 to 0.810	0.001	300 mm	<a href="#">FN-08298-27</a>	
0.760 to 0.830	0.001	165 mm	<a href="#">FN-08298-19</a>	
0.790 to 0.900	0.002	165 mm	<a href="#">FN-08298-13</a>	
0.800 to 0.910	0.001	300 mm	<a href="#">FN-08298-29</a>	
0.820 to 0.890	0.001	165 mm	<a href="#">FN-08298-21</a>	
0.880 to 0.950	0.001	165 mm	<a href="#">FN-08298-23</a>	
0.890 to 1.000	0.002	165 mm	<a href="#">FN-08298-15</a>	
0.900 to 1.000	0.001	300 mm	<a href="#">FN-08298-31</a>	
0.940 to 1.010	0.001	165 mm	<a href="#">FN-08298-25</a>	

### Precision Hydrometers, plain form

Range	Divisions	Length	Catalog number	Price
0.600 to 0.670	0.0005	325 mm	<a href="#">FN-08298-51</a>	
0.640 to 0.710	0.0005	325 mm	<a href="#">FN-08298-53</a>	
0.700 to 0.770	0.0005	325 mm	<a href="#">FN-08298-55</a>	
0.760 to 0.830	0.0005	325 mm	<a href="#">FN-08298-57</a>	
0.820 to 0.890	0.0005	325 mm	<a href="#">FN-08298-59</a>	
0.880 to 0.950	0.0005	325 mm	<a href="#">FN-08298-61</a>	
0.940 to 1.010	0.0005	325 mm	<a href="#">FN-08298-63</a>	

### ASTM Hydrometers, plain form

ASTM no.	Range	Divisions	Length	Catalog number	Price
82H	0.650 to 0.700	0.0005	330 mm	<a href="#">FN-08297-81</a>	
83H	0.700 to 0.750	0.0005	330 mm	<a href="#">FN-08297-83</a>	
84H	0.750 to 0.800	0.0005	330 mm	<a href="#">FN-08297-85</a>	
85H	0.800 to 0.850	0.0005	330 mm	<a href="#">FN-08297-87</a>	
86H	0.850 to 0.900	0.0005	330 mm	<a href="#">FN-08297-89</a>	
87H	0.900 to 0.950	0.0005	330 mm	<a href="#">FN-08297-91</a>	
88H	0.950 to 1.000	0.0005	330 mm	<a href="#">FN-08297-93</a>	
89H	1.000 to 1.050	0.0005	330 mm	<a href="#">FN-08297-95</a>	
102H	0.650 to 0.700	0.001	260 mm	<a href="#">FN-08297-97</a>	
103H	0.700 to 0.750	0.001	260 mm	<a href="#">FN-08297-99</a>	
104H	0.750 to 0.800	0.001	260 mm	<a href="#">FN-08298-01</a>	
105H	0.800 to 0.850	0.001	260 mm	<a href="#">FN-08298-03</a>	
106H	0.850 to 0.900	0.001	260 mm	<a href="#">FN-08298-05</a>	
107H	0.900 to 0.950	0.001	260 mm	<a href="#">FN-08298-07</a>	
108H	0.950 to 1.000	0.001	260 mm	<a href="#">FN-08298-09</a>	

### Precision Hydrometers, combined form

Range	Divisions	Temperature range	Divisions	Length	Catalog number	Price
0.700 to 0.810	0.001	0 to 150°F	2°F	381 mm	<a href="#">FN-08297-57</a>	
0.800 to 0.910	0.001	0 to 150°F	2°F	381 mm	<a href="#">FN-08297-59</a>	
0.900 to 1.000	0.001	0 to 150°F	2°F	381 mm	<a href="#">FN-08297-61</a>	

## For Liquids Heavier than Water

### General-Purpose Hydrometers, plain form

Range	Divisions	Length	Catalog number	Price
1.000 to 1.070	0.001	165 mm	<a href="#">FN-08298-60</a>	
1.000 to 1.220	0.002	300 mm	<a href="#">FN-08298-84</a>	
1.000 to 1.250	0.005	165 mm	<a href="#">FN-08298-50</a>	
1.000 to 1.600	0.005	300 mm	<a href="#">FN-08298-80</a>	
1.000 to 2.000	0.01	300 mm	<a href="#">FN-08298-94</a>	
1.060 to 1.130	0.001	165 mm	<a href="#">FN-08298-62</a>	
1.120 to 1.190	0.001	165 mm	<a href="#">FN-08298-64</a>	
1.180 to 1.250	0.001	165 mm	<a href="#">FN-08298-66</a>	
1.200 to 1.420	0.002	300 mm	<a href="#">FN-08298-86</a>	
1.200 to 1.450	0.005	165 mm	<a href="#">FN-08298-52</a>	
1.240 to 1.310	0.001	165 mm	<a href="#">FN-08298-68</a>	
1.300 to 1.370	0.001	165 mm	<a href="#">FN-08298-70</a>	
1.360 to 1.430	0.001	165 mm	<a href="#">FN-08298-48</a>	
1.400 to 1.620	0.002	300 mm	<a href="#">FN-08298-88</a>	
1.400 to 1.650	0.005	165 mm	<a href="#">FN-08298-54</a>	
1.420 to 1.490	0.001	165 mm	<a href="#">FN-08298-72</a>	
1.480 to 1.550	0.001	165 mm	<a href="#">FN-08298-74</a>	
1.540 to 1.610	0.001	165 mm	<a href="#">FN-08298-76</a>	
1.500 to 2.000	0.005	300 mm	<a href="#">FN-08298-82</a>	
1.600 to 1.670	0.001	165 mm	<a href="#">FN-08298-78</a>	
1.600 to 1.820	0.002	300 mm	<a href="#">FN-08298-90</a>	
1.600 to 1.850	0.005	165 mm	<a href="#">FN-08298-56</a>	
1.660 to 1.730	0.001	165 mm	<a href="#">FN-08298-49</a>	
1.720 to 1.790	0.001	165 mm	<a href="#">FN-08294-91</a>	
1.780 to 1.850	0.001	165 mm	<a href="#">FN-08294-93</a>	
1.800 to 2.000	0.002	300 mm	<a href="#">FN-08298-92</a>	
1.800 to 2.000	0.001	165 mm	<a href="#">FN-08298-58</a>	
1.840 to 1.920	0.001	165 mm	<a href="#">FN-08294-95</a>	
1.900 to 1.970	0.001	165 mm	<a href="#">FN-08298-96</a>	
1.970 to 2.040	0.001	165 mm	<a href="#">FN-08298-97</a>	

### Precision Hydrometers, plain form

Range	Divisions	Length	Catalog number	Price
1.000 to 1.070	0.0005	325 mm	<a href="#">FN-08298-65</a>	
1.060 to 1.130	0.0005	325 mm	<a href="#">FN-08298-67</a>	
1.120 to 1.190	0.0005	325 mm	<a href="#">FN-08298-69</a>	
1.180 to 1.250	0.0005	325 mm	<a href="#">FN-08298-71</a>	
1.240 to 1.310	0.0005	325 mm	<a href="#">FN-08298-73</a>	
1.300 to 1.370	0.0005	325 mm	<a href="#">FN-08298-75</a>	
1.360 to 1.430	0.0005	325 mm	<a href="#">FN-08298-77</a>	
1.420 to 1.490	0.0005	325 mm	<a href="#">FN-08298-79</a>	
1.480 to 1.550	0.0005	325 mm	<a href="#">FN-08298-81</a>	
1.540 to 1.610	0.0005	325 mm	<a href="#">FN-08298-83</a>	
1.600 to 1.670	0.0005	325 mm	<a href="#">FN-08298-85</a>	
1.660 to 1.730	0.0005	325 mm	<a href="#">FN-08299-01</a>	
1.720 to 1.790	0.0005	325 mm	<a href="#">FN-08298-87</a>	
1.780 to 1.850	0.0005	325 mm	<a href="#">FN-08298-89</a>	
1.840 to 1.920	0.0005	325 mm	<a href="#">FN-08299-03</a>	

### ASTM Hydrometers, plain form

ASTM no.	Range	Divisions	Length	Catalog number	Price
125H	1.000 to 1.050	0.001	260 mm	<a href="#">FN-08297-80</a>	
126H	1.050 to 1.100	0.001	260 mm	<a href="#">FN-08297-82</a>	
127H	1.100 to 1.150	0.001	260 mm	<a href="#">FN-08297-84</a>	
128H	1.150 to 1.200	0.001	260 mm	<a href="#">FN-08297-86</a>	
129H	1.200 to 1.250	0.001	260 mm	<a href="#">FN-08297-88</a>	
130H	1.250 to 1.300	0.001	260 mm	<a href="#">FN-08297-90</a>	
131H	1.300 to 1.350	0.001	260 mm	<a href="#">FN-08297-92</a>	
133H	1.400 to 1.450	0.001	260 mm	<a href="#">FN-08297-94</a>	

### Precision Hydrometers, combined form

Range	Divisions	Temperature range	Divisions	Length	Catalog number	Price
1.000 to 1.220	0.002	0 to 150°F	2°F	381 mm	<a href="#">FN-08297-63</a>	
1.200 to 1.420	0.002	0 to 150°F	2°F	381 mm	<a href="#">FN-08297-65</a>	
1.400 to 1.620	0.002	0 to 150°F	2°F	381 mm	<a href="#">FN-08297-67</a>	
1.600 to 1.820	0.002	0 to 150°F	2°F	381 mm	<a href="#">FN-08297-69</a>	
1.800 to 2.000	0.002	0 to 150°F	2°F	381 mm	<a href="#">FN-08299-07</a>	

## For Liquids Considerably Heavier than Water

### General-Purpose Hydrometers, plain form

Range	Divisions	Length	Catalog number	Price
2.000 to 3.000	0.01	300 mm	<a href="#">FN-08298-98</a>	

# Cole-Parmer® Digital Batch Mixer

## Tackle volumes up to 55 gallons

**NEW**

- Touch-screen control—use a gloved hand or pencil tip
- Two-speed transmission provides smooth, quiet operation
- Through shaft offers flexibility of easy impeller positioning and range of vessel sizes
- PC/PLC connectivity helps you automate your process
- Automatic data logging eliminates manual data recording and errors

Designed for both large-scale laboratory applications and small-scale industrial use, this digital batch mixer is the first of its kind. Laboratory workers will save time with the efficiency of using one mixer equipped with both the control of a lab mixer and the power of a batch mixer. Industrial users will appreciate the ability to select time and speed, and view parameters in real time with the digital touch-screen display.

This portable batch mixer delivers enough power to mix up to 55 gallons (200 L) and viscosity up to 180,000 cps. An enclosed fan-cooled brushless DC motor maintains a constant power transfer to the shaft at speeds up to 1500 rpm. The RS-232 and USB interfaces record date, time, speed, and torque data. Other functions include alarms, timers, torque zero, torque min/max setting, and clockwise and counterclockwise rotation.

Safety features include a shaft/check guard, chemical-resistant housing, and overload, overheat and vibration protection. A safety screen protects the display from splashes.

### Specifications

**Speed:** 50 to 1500 rpm  
**Max volume:** 55 gal (200 L)  
**Max torque:** 4248 in-oz (3000 N-cm)

**Connectivity ports:** USB, DB9, isolated analog 4 to 20 mA  
**Rotation direction:** clockwise and counterclockwise  
**Ambient temperature operation:** 41 to 104°F (5 to 40°C)

**What's included:** chuck (accepts up to 5/8" dia shafts), chuck key, shaft guard, installed screen protector, memory stick, mounting bolts, and power cord.



Description	Power	Catalog number	Price
Cole-Parmer digital batch mixer	120 VAC, 60 Hz	<a href="#">FN-50009-00</a>	

- [FN-50019-94](#) Stainless steel plate mount
- [FN-50019-96](#) Stainless steel multiposition C-clamp set
- [FN-50019-97](#) Replacement stainless steel chuck with key, 16-mm shaft diameter
- [FN-50019-98](#) Replacement chuck shaft guard



Ideal for Lab or Industrial use



## Stir-Pak® Heavy-Duty Mixer Systems

### Easily customize to your needs

- Simple controls—speed adjustment knob and separate “forward/off/reverse” switch
- Don't limit your mixing angle—mixer head adjusts from 0 to 30° for proper propeller placement

**Complete systems include:** speed controller, mixer head, shaft, propeller, clamp and stand.



1. Speed controller			2. Mixer heads					Complete systems			
Power (VAC, Hz)	Catalog number	Price	Description	Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price	Catalog number	Price
115, 50/60	<a href="#">FN-50007-00</a>		High torque, low speed; with keyless chuck	2 to 180	1/5	340	115, 50/60	<a href="#">FN-50007-10</a>		<a href="#">FN-50007-12</a>	
230, 50/60	<a href="#">FN-50007-05</a>			9 to 900	1/5	70	230, 50/60	<a href="#">FN-50007-15</a>		<a href="#">FN-50007-17</a>	
115, 50/60	<a href="#">FN-50007-00</a>			High speed, low torque; with adjustable through-shaft collet	23 to 2300	1/10	45	115, 50/60	<a href="#">FN-50007-20</a>		<a href="#">FN-50007-22</a>
230, 50/60	<a href="#">FN-50007-05</a>		60 to 6000		1/10	17	230, 50/60	<a href="#">FN-50007-25</a>		<a href="#">FN-50007-27</a>	
115, 50/60	<a href="#">FN-50007-00</a>		115, 50/60		<a href="#">FN-50007-30</a>		<a href="#">FN-50007-32</a>				
230, 50/60	<a href="#">FN-50007-05</a>		230, 50/60		<a href="#">FN-50007-35</a>		<a href="#">FN-50007-37</a>				
115, 50/60	<a href="#">FN-50007-00</a>		115, 50/60		<a href="#">FN-50007-40</a>		<a href="#">FN-50007-42</a>				
230, 50/60	<a href="#">FN-50007-05</a>		230, 50/60	<a href="#">FN-50007-45</a>		<a href="#">FN-50007-47</a>					



## ServoDyne™ Electronic Mixers

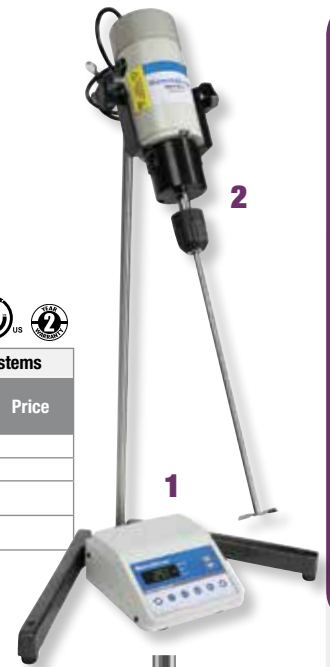
### Get more precise mixing

- Monitor and control speed, torque, and batch time through digital controller or a computer interface
- Provide precise control of mixing speed within ±0.2% despite changes in viscosity, temperature, or line voltage
- Rotate mixer head from 0° to 30° for proper positioning of shaft and propeller
- Optical shaft encoder relays the exact motor rotation speed data to the electronic mixer controller

**Complete systems include:** speed controller, mixer head, shaft, propeller, clamp and stand.



1. Controller (115 VAC)		2. Mixer heads (115 VAC)					Complete systems			
Catalog number	Price	Description	Speed (rpm)	hp	Max torque (in-oz)		Catalog number	Price	Catalog number	Price
					Continuous	Intermittent				
<a href="#">FN-50008-00</a>		High torque, low speed; with keyless chuck	3 to 180	1/5	340	510	<a href="#">FN-50008-10</a>		<a href="#">FN-50008-12</a>	
			20 to 900	1/5	70	105	<a href="#">FN-50008-20</a>		<a href="#">FN-50008-22</a>	
		High speed, low torque; with adjustable through-shaft collet	60 to 2300	1/10	45	65	<a href="#">FN-50008-30</a>		<a href="#">FN-50008-32</a>	
			150 to 6000	1/10	17	25	<a href="#">FN-50008-40</a>		<a href="#">FN-50008-42</a>	



## IKA® RW 20 Digital Dual-Range Mixer

### Two speed ranges for a variety of applications

- No difficult controls—easy-to-use knob and LED display for accurate setting
- No need to move mixer head to reposition propeller—through-shaft design allows for easy movement
- Maintenance-free motor for continuous duty

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

**Complete system includes:** mixer, chuck (accepts up to 3/8" [10 mm] dia shafts), 6 1/4" L x 1/2" dia (159 mm L x 10 mm dia) mounting rod, four-blade propeller mixer stand, and clamp.



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



## Real-Torque Digital™ Brushless Mixers

### Get precise speeds with user-friendly keypad

- Won't let speed change even as viscosity changes
- Maintenance-free, nonventilated motor for continuous use
- Set torque reading at zero via torque tare function
- Easily alter shaft length with through-shaft design

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

**What's included:** calibration certificate, stainless steel chuck and key (accepts up to 3/8" [9.5 mm] dia shafts), chuck guard, 5"L x 1/2" dia (127 mm L x 13 mm dia) mounting rod, and 6-ft (1.8-m) cord with three-prong plug.



Speed range (torque)		Motor	Power (50/60 Hz)	Catalog number	Price
Low speed	High speed				
12 to 360 rpm (800 in-oz)	360 to 1800 rpm (160 in-oz)	1/8 hp	115 VAC	<a href="#">FN-50800-00</a>	
			230 VAC	<a href="#">FN-50800-05</a>	
20 to 600 rpm (480 in-oz)	600 to 3000 rpm (96 in-oz)	1/8 hp	115 VAC	<a href="#">FN-50800-10</a>	
			230 VAC	<a href="#">FN-50800-15</a>	
40 to 1200 rpm (240 in-oz)	1200 to 6000 rpm (48 in-oz)	1/8 hp	115 VAC	<a href="#">FN-50800-20</a>	
			230 VAC	<a href="#">FN-50800-25</a>	



Equipment & Instrumentation

Mixers

## IKA® EUROSTAR Digital Constant-Speed Mixers

### Speed won't change even as viscosity does

- Automatic adjustment to desired speed with unique continuous speed comparison
- No need to move mixer head to remove samples—through-shaft design for impeller adjustments
- Worry-free operation—maintenance-free motor with overload protection
- Handle even large samples—up to 26.4 gallons (100 liters)

**EUROSTAR 60 Digital Mixer** (50704-20 and -25) handles volumes up to 10.6 gallons (40 liters) and viscosities up to 50,000 cps.

**EUROSTAR 100 Digital Mixer** (50704-30 and -35) will mix volumes up to 26.4 gallons (100 liters) and viscosities up to 70,000 cps.

**What's included:** chuck (accepts up to 3/8" [10 mm] dia shaft) and 6 1/4"L x 1/2" dia (159 mm x 13 mm) mounting rod.



Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price
<b>Eurostar 60 digital mixer</b>					
30 to 2000	3/16	85	115, 50/60	<a href="#">FN-50704-20</a>	
			230, 50/60	<a href="#">FN-50704-25</a>	
<b>Eurostar 100 digital mixer</b>					
30 to 1300	1/8	142	115, 50/60	<a href="#">FN-50704-30</a>	
			230, 50/60	<a href="#">FN-50704-35</a>	

## IKA® EUROSTAR Digital Mixers

### Mix viscous samples up to 30,000 cps

- Speed won't change even as viscosity changes
- Won't overheat—thermal overload shut-off for safety
- Maintenance-free design for continuous duty

**EUROSTAR 20 Digital Mixer** handles volumes up to 4 gallons (15 liters) and viscosities up to 10,000 cps.

**EUROSTAR 40 Digital Mixer** will mix volumes up to 6.6 gallons (25 liters) and viscosities up to 30,000 cps.

**What's included:** chuck (accepts up to 3/8" [10 mm] dia shaft) and 6 1/4"L x 1/2" dia (159 mm x 13 mm) mounting rod.



Speed (rpm)	hp	Max torque (in-oz)	Power (VAC, Hz)	Catalog number	Price
<b>Eurostar 20 digital mixer</b>					
30 to 2000	1/16	28.3	115, 50/60	<a href="#">FN-50702-30</a>	
			230, 50/60	<a href="#">FN-50702-35</a>	
<b>Eurostar 40 digital mixer</b>					
30 to 2000	1/8	56.6	115, 50/60	<a href="#">FN-50702-40</a>	
			230, 50/60	<a href="#">FN-50702-45</a>	



## Accessories for Laboratory Mixers

**A. Shafts.** All 3/8" (10 mm) dia shafts are machined on one end to accept a 5/16" (8 mm) bore dia propeller.

Key	Shaft dimensions, dia x L, in. (mm)	Catalog number	Price
<b>A</b>	5/16 x 12 (8 x 305)	<a href="#">FN-04552-20</a>	
	5/16 x 18 (8 x 457)	<a href="#">FN-04552-30</a>	
	3/8 x 12 (10 x 305)	<a href="#">FN-04552-25</a>	
	3/8 x 18 (10 x 457)	<a href="#">FN-04552-35</a>	
	3/8 x 24 (10 x 610)	<a href="#">FN-04552-00</a>	
	3/8 x 30 (10 x 762)	<a href="#">FN-04552-05</a>	

**B. Turbine Propellers** are for airless mixing in deep containers.

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

**D. Folding Propeller** is for use in narrow-mouth vessels. Folded diameter is 1 1/16" (18 mm).

Key	Description	Bore dia in. (mm)	Overall dia in. (mm)	Catalog number	Price
<b>B</b>	Turbine style	3/8 (9.5)	2 (51)	<a href="#">FN-04552-15</a>	
		5/16 (8)	2 (51)	<a href="#">FN-04552-10</a>	
		3/16 (8)	1 (25)	<a href="#">FN-04552-40</a>	
<b>C</b>	Marine style	5/16 (8)	1 1/2 (38)	<a href="#">FN-04552-45</a>	
		3/16 (8)	2 (51)	<a href="#">FN-04552-50</a>	
		3/8 (9.5)	2 (51)	<a href="#">FN-04552-55</a>	
		5/16 (8)	3 (76)	<a href="#">FN-04552-60</a>	
		5/16 (8)	2 (51) open	<a href="#">FN-04543-00</a>	
<b>D</b>	Folding style	5/16 (8)	2 (51) open	<a href="#">FN-04543-00</a>	

**E-G. Clamps** ensure a sturdy connection between mixer and stands.

Key	Catalog number	Price
<b>E</b>	<a href="#">FN-08041-22</a>	
<b>F</b>	<a href="#">FN-04340-50</a>	
<b>G</b>	<a href="#">FN-04560-24</a>	

**H. Stand.** Corrosion resistant, electropolished cast steel base; 303 SS support rod. Both legs accept an extra support rod.

**I. Mixer Stand** has a cast-iron base and a stainless steel rod.

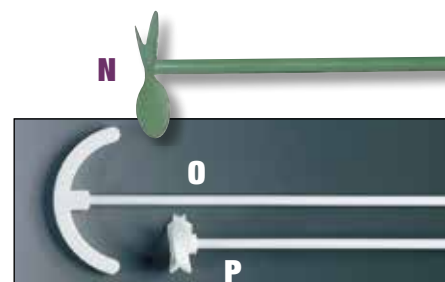
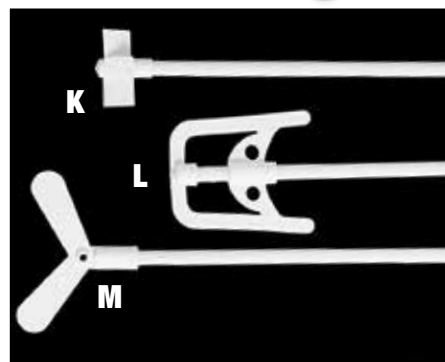
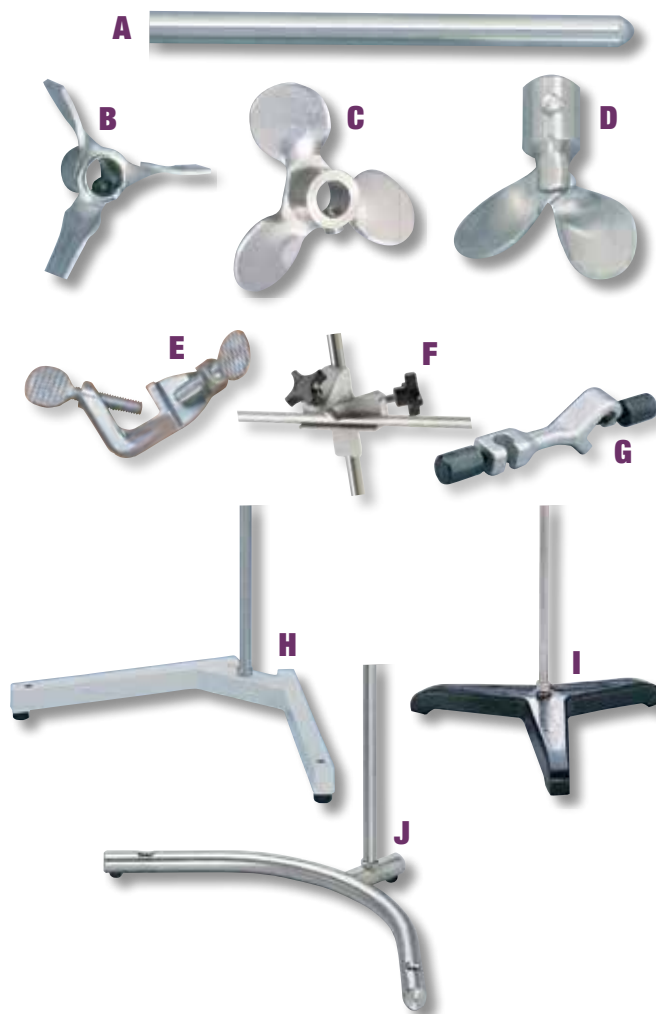
**J. 316 SS Mixer Stand** accepts extra screw-in support rods in both legs.

Key	Dimensions H x dia, in. (mm)	Stand		Extra support rod	
		Cat. no.	Price	Cat. no.	Price
<b>H</b>	29 x 5/8 (737 x 16)	<a href="#">FN-04552-80</a>		<a href="#">FN-04552-85</a>	
<b>I</b>	24 x 5/8 (610 x 16)	<a href="#">FN-04546-00</a>		—	—
<b>J</b>	29 x 5/8 (737 x 16)	<a href="#">FN-04344-00</a>		<a href="#">FN-04344-10</a>	

### K-P. Plastic Mixing Paddle Assemblies

Use these plastic paddle assemblies for mixing most acids and corrosive solutions. Plastic-coated steel assemblies provide better chemical resistance than stainless steel alone.

Material	Shaft, dia x L, in. (mm)	Max paddle dia, in. (mm)	Catalog number	Price
<b>K. Fixed, dual-blade paddle assembly</b> —for mixing medium-viscosity liquids				
Polypropylene	5/16 x 13 1/16 (8 x 350)	1 5/8 (41)	<a href="#">FN-06367-10</a>	
<b>L. A-shaped, blade paddle assembly</b> —for mixing highly viscous liquids				
Polypropylene	5/16 x 13 1/16 (8 x 350)	2 5/8 (67)	<a href="#">FN-06367-20</a>	
<b>M. Swing-out, dual-blade paddle assembly</b> —for use in narrow-necked vessels				
Polypropylene	5/16 x 13 1/16 (8 x 350)	2 3/8 (60)	<a href="#">FN-06367-40</a>	
	5/16 x 13 1/16 (8 x 350)	4 (102)	<a href="#">FN-06367-60</a>	
<b>N. Three-blade paddle assembly</b> —for general-purpose mixing				
PTFE	5/16 x 12 (8 x 305)	2 (51)	<a href="#">FN-04449-06</a>	
PTFE	5/16 x 18 (8 x 457)	2 (51)	<a href="#">FN-04449-10</a>	
<b>O. Anchor-style paddle assembly</b> —for mixing medium- to high-viscosity liquids				
PTFE	3/8 x 22 (10 x 559)	4 (102)	<a href="#">FN-06367-70</a>	
<b>P. Four-blade paddle assembly</b> —for mixing low- to medium-viscosity liquids				
PTFE	3/8 x 22 1/2 (10 x 562)	2 3/8 (60)	<a href="#">FN-06367-80</a>	



## Yamato® Programmable Mechanical Convection Ovens

### Accurately heat your samples

- Oven calibration functions are ideal for validation work
- Self-diagnostic function alerts you to sensor or heater malfunctions
- Easily read “set” and actual temperature on LED display

These ovens feature excellent uniformity, autotune, calibration offset, and zero-span calibration. Self-diagnostic functions alert you both visually and audibly if sensor or heater malfunctions; heater circuit automatically turns off. Input up to 15-segment/30-step programs including automatic start, automatic stop, and ramp-and-soak modes through the keypad.

**What's included:** two stainless steel shelves (33959-07 includes four stainless steel shelves) and a 6-ft (1.8-m) power cord with US standard plug on 115 VAC models (no plug on 220 VAC model).



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#### Specifications

**Temperature uniformity:** ±2.5°C at 210°C  
**Resolution:** 1°C  
**Temperature display:** 4-digit LED  
**Timer:** 1 minute to 99 hours, 59 minutes

Capacity cu ft (L)	Temperature range	Rise time (minutes)	Shelf positions	Dimensions (W x H x D), in. (cm)		Power (VAC, Hz)	Shpg wt lb (kg)	Catalog number	Price
				Chamber	Overall				
3.2 (90)	Ambient +10°C to 260°C	90	11	17¾ x 17¾ x 17¾ (45 x 45 x 45)	22 x 32¼ x 23¾ (56 x 82 x 60)	115, 50/60	195 (89)	<a href="#">FN-33959-05</a>	
5.3 (150)		90	13	23½ x 20 x 20 (60 x 51 x 51)	28 x 35 x 25½ (71 x 89 x 65)	115, 50/60	245 (112)	<a href="#">FN-33959-06</a>	
10.7 (303)		60	29	23½ x 39½ x 20 (60 x 100 x 51)	28 x 64 x 25½ (71 x 162 x 65)	220, 50/60	356 (162)	<a href="#">FN-33959-07</a>	

[FN-17002-30](#) NIST-traceable calibration with data for ovens

## Lab Companion® Vacuum Ovens

### Get better control of your application

- Heat-tempered full-view window allows continuous monitoring of chamber
- User-friendly digital control panel simplifies operation

Separate vacuum and vent ports allow greater control of vacuum rates. Vacuum levels are maintained by a tightly sealed door gasket and push-button latch. Block heaters and anodized aluminum plate shelves provide uniform heating throughout the oven chamber.

**What's included:** two or three aluminum plate shelves and power cord.



#### Specifications

**Temperature range:** 5° above ambient to 250°C  
**Resolution:** 1°C  
**Temperature control accuracy:** ±2°C at 100°C  
**Temperature display:** digital LED  
**Vacuum range:** 0 to 0.1 Mpa  
**Vacuum display:** analog gauge  
**Timer:** 1 min to 99 hr, 59 min with delayed on/off

Capacity cu ft (L)	Temperature uniformity	Rise time to 100°C (minutes)	Shelves positions	Dimensions (W x H x D), in. (cm)		Power (VAC, Hz)	Shpg wt lb (kg)	Catalog number	Price
				Chamber	Overall				
1 (28.3)	±2°C at 100°C	70 min	2	12 x 12 x 12	27 x 19½ x 18	120, 50/60	139 (63)	<a href="#">FN-52402-95</a>	
				(30 x 30 x 30)	(68 x 49 x 46)	230, 50/60	139 (63)	<a href="#">FN-52402-97</a>	
2.3 (65.1)	±2°C at 100°C	85 min	3	15¾ x 15¾ x 16	31¾ x 23½ x 22	120, 50/60	227 (103)	<a href="#">FN-52402-96</a>	
				(40 x 40 x 41)	(80 x 60 x 56)	230, 50/60	227 (103)	<a href="#">FN-52402-98</a>	

[FN-17002-30](#) NIST-traceable calibration with data for ovens



## Can't choose?

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

1-800-323-4340 sales@coleparmer.com [ColeParmer.com](#)

Katie, 5 years of experience



## Cole-Parmer® StableTemp™ Mechanical Convection Ovens

### Dry samples faster

- Get greater drying efficiency with fast heat-up and uniform temperature
- Forced-air convection with a noiseless fan ensures good mixing and strong dispersion
- Corrosion-resistant Incoloy® sheath heating element and stainless steel interior
- Foamed silicone rubber door gasket creates a tight seal for excellent insulation

Ovens are programmable for delayed start and stop. Timer offers you the convenience of unattended operation. The dual-wall door opens 180° for greater access to the chamber.

**What's included:** two stainless steel wire shelves and power cord.



**StableTemp**



#### Specifications

<b>Temperature range:</b> ambient +10°C to 250°C	<b>Temperature display:</b> digital LED
<b>Resolution:</b> 1°C	<b>Interface:</b> RS-232 with controlling software
<b>Temperature control accuracy:</b> ±1°C at 100°C	<b>Timer:</b> 1 min to 99 hrs, 59 min

Capacity cu ft (L)	Temperature uniformity	Rise time (minutes)	Shelf positions	Dimensions (W x H x D), in. (cm)		Shpg wt lb (kg)	115 VAC, 60 Hz		230 VAC, 50/60 Hz	
				Chamber	Overall		Cat. no.	Price	Cat. no.	Price
2.1 (59.5)	±1°C at 100°C	15 to 100°C	8	15¾ x 16½ x 14¼ (40 x 42 x 36)	22¾ x 30 x 25¼ (58 x 76 x 64)	138 (63)	<a href="#">FN-52412-77</a>		<a href="#">FN-52412-80</a>	
3.6 (101.9)			12	19 x 20½ x 16 (48 x 52 x 41)	26 x 34¼ x 27¼ (66 x 87 x 70)	166 (76)	<a href="#">FN-52412-78</a>		<a href="#">FN-52412-81</a>	
5.3 (150.1)			16	22 x 23½ x 18 (56 x 60 x 46)	28¾ x 38¼ x 29¼ (73 x 97 x 74)	210 (96)	<a href="#">FN-52412-79</a>		<a href="#">FN-52412-82</a>	

#### Accessories

[FN-79510-04](#) Wire shelf for 2.1 cu ft units

[FN-79510-12](#) Wire shelf for 3.6 cu ft units

[FN-79510-20](#) Wire shelf for 5.3 cu ft units

[FN-17002-30](#) NIST-traceable calibration with data for ovens

## SalvisLab Thermocenter Mechanical Convection Ovens

### Get the ultimate in efficiency

- All-new SalvisTEQ touch screen controller continually monitors what it has done, where it is, and where it wants to go!

Short heating and precise temperature control make these ovens ideal for a variety of heating and drying tasks. High-quality insulation and airtight design prevent heat loss. The intuitive SalvisTEQ controller features real-time temperature monitoring during the heat-up phase, set point temperature, gradient and actual temperature.

Oversized heat ring and adjustable-speed fan ensure excellent uniformity. Other features include programmable timer, real-time clock, alarms, self-diagnostics, and USB connection. Stainless steel interior and shelves resist aggressive substances.

**Ovens with Door-Mounted Components** feature all control and operation components in the door; simply remove four screws and the door comes off for routine maintenance.

**Ovens with Rear-Mounted Components** have a fan outlet designed to ensure excellent airflow. Internal chamber has rounded corners making clean up a breeze.



Capacity cu ft (L)	Max temperature	Temperature uniformity	Rise time (minutes)	Shelf positions	Dimensions (W x H x D), in. (cm)		Power (VAC, Hz)	Shpg wt lb (kg)	Catalog number	Price
					Chamber	Overall				
<b>Ovens with door-mounted components; include one shelf</b>										
1.4 (40)	200°C	±1.5°C at 150°C	24	8	13¾ x 14¾ x 13 (34 x 37 x 33)	18¼ x 19¼ x 20¾ (46 x 49 x 53)	115, 50/60 220, 50/60	99 (45)	<a href="#">FN-52403-01</a> <a href="#">FN-52403-06</a>	
3.5 (100)	200°C	±1.7°C at 150°C	35	8	17¾ x 19¾ x 18½ (45 x 50 x 46)	22¾ x 24¾ x 25¾ (57 x 62 x 66)	115, 50/60 220, 50/60	132 (60)	<a href="#">FN-52403-11</a> <a href="#">FN-52403-16</a>	
<b>Ovens with rear-mounted components; include two shelves</b>										
5.6 (160)	275°C	±1.8°C at 150°C	30	8	21 x 22¾ x 18¾ (54 x 58 x 48)	31½ x 28¾ x 26¾ (80 x 72 x 68)	115, 50/60 220, 50/60	209 (95)	<a href="#">FN-52403-21</a> <a href="#">FN-52403-26</a>	
8.4 (240)	275°C	±2.1°C at 150°C	30	8	24¾ x 26¾ x 20¼ (63 x 68 x 52)	35 x 32¼ x 28¾ (89 x 82 x 72)	115, 50/60 220, 50/60	242 (110)	<a href="#">FN-52403-31</a> <a href="#">FN-52403-36</a>	
14.1 (400)	275°C	±2.5°C at 150°C	40	10	28½ x 30¾ x 27¾ (73 x 78 x 70)	37¾ x 36¼ x 35¾ (99 x 92 x 90)	115, 50/60 220, 50/60	341 (155)	<a href="#">FN-52403-41</a> <a href="#">FN-52403-46</a>	

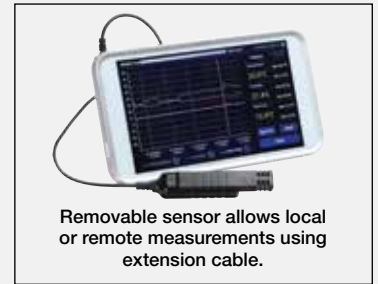
## Digi-Sense™ Temperature/Humidity Touch-Screen Recorder

Virtually unlimited data logging with 8 GB of on-board memory

- Use right out of the box with resident self-booting software—no installation necessary!
- Quickly download data in .csv format via included USB cable
- Convenient wall-mount or desktop operation

This tablet-based instrument measures, displays, and logs temperature, relative humidity, and dew point conditions. Measured values are simultaneously displayed both graphically and digitally on a high-resolution, color display. Easily program sample frequency, sample size, alarm settings, start mode, and units of measure through the intuitive touch-screen menu. Monitor conditions related to pharmaceutical, food, and chemical processing and storage; also ideal for use in greenhouses, museums, and labs.

**What's included:** tablet with built-in stand, temperature/RH sensor, 6-ft (1.8-m) sensor extension cable, USB cable, wall-mounting bracket, power supply, and NIST-traceable calibration with data supplied by InnoCal.



Removable sensor allows local or remote measurements using extension cable.

### Specifications

<b>Memory:</b> 8 GB	<b>Dimensions (W x H x D):</b> 7 <sup>5</sup> / <sub>8</sub> " x 4 <sup>1</sup> / <sub>4</sub> " x 5 <sup>1</sup> / <sub>8</sub> " (19.3 x 10.8 x 1.6 cm)
<b>Sampling rate:</b> 1 second to 24 hours	<b>Power:</b> 110 VAC; 2500 mAH rechargeable battery backup
<b>Display:</b> 6" x 3 <sup>1</sup> / <sub>2</sub> " (15.2 x 8.9 cm) color LCD, with 1024 x 600 resolution	

Parameters	Range	Resolution	Accuracy	Catalog number	Price
Temperature	14 to 176°F (-10 to 80°C)	0.1°F (0.1°C)	±0.9°F (0.5°C)	<a href="#">FN-20250-40</a>	
Humidity	0 to 100% RH, noncondensing	0.1%	±2.0% at 25°C, 20% to 80% RH; ±2.5% for remaining		



### Accessories

[FN-20250-47](#) Additional extension cable for sensor, 6 ft (1.8 m)

## Digi-Sense™ Temperature and Temp/RH USB Data Loggers

Use just about anywhere—portable or mountable design

- Store, download, and analyze up to 32,000 data points with included software for analysis, graphing, printing
- Select your sample rate and level alarms with user-definable settings
- Choose your start-up mode: immediate, manual, or real-time

**Temperature Data Logger (20250-41)** records up to 32,000 temperature data points from its internal temperature sensor. **Temperature/RH Data Loggers (20250-42, -43)** record 16,000 temperature and 16,000 RH data points from its internal sensors. The 20250-43 features a high-contrast LCD that shows measured temperature in °F or °C as set by the user. **Temperature Type K Data Logger (20250-44)** records remote high temperatures as measured by a 38" (97 cm) thermocouple probe.

**What's included:** software, mounting clip and hardware, protective plastic cover, and battery. Model 20250-44 also includes a type K thermocouple.



20250-41



20250-43



Description	Temperature	Temperature/RH	Temperature/RH with LCD	Temperature, type K
<b>Catalog number</b>	<a href="#">FN-20250-41</a>	<a href="#">FN-20250-42</a>	<a href="#">FN-20250-43</a>	<a href="#">FN-20250-44</a>
Range	-40 to 158°F (-40 to 70°C)	-40 to 158°F (-40 to 70°C), 0 to 100% RH (non condensing)	-40 to 158°F (-40 to 70°C), 0 to 100% RH (non condensing)	-328 to 2498°F (-200 to 1370°C)
Resolution	0.1°F (0.1°C)	0.1°F (0.1°C)	0.1°F (0.1°C)	0.1°F (0.1°C)
Accuracy	±2°F (±1°C)	±2°F (±1°C); ±3% RH	±2°F (±1°C); ±3% RH	±2°F (±1°C)
Memory	32,000 data points	32,000 data points (16,000 per channel)	32,000 data points (16,000 per channel)	32,000 data points
Reading rate	1 reading every 2 seconds to 1 reading every 24 hours; user selectable			
Power	3.6 V lithium battery, user replaceable; 1-year battery life typical			
<b>Price</b>				

[FN-17002-20](#) NIST-traceable calibration with data for temperature data logger

[FN-17030-20](#) NIST-traceable calibration with data for temperature/RH data logger



## Honeywell® DR4500A 12" Recorders

### No need to order multiple chart types

- One pen creates chart, data, and up to four traces as data is collected—eliminates offset errors due to multiple pen design
- Configurable to your changing needs—options available at ColeParmer.com
- Don't have multiple power supplies—excitation voltage for up to two transmitters
- Configurable alarms and password protection for added protection
- Meet NEMA 3 requirements



80663-00  
"One-pen"  
printhead produces  
up to four traces  
and prints  
alphanumeric  
chart data

#### Specifications

##### Input ranges

DC voltage: 0 to 50 mV, 1 to 5 V  
Current: 4 to 20 mA  
Thermocouples: J, K, T, E, R, S, B, NNM, NIC, W5  
RTD: 100 Ω Pt, 500 Ω Pt

**Accuracy:** ±0.1% of span

**Chart size:** 12" diameter

**Chart speed:** 6 to 744 hr/revolution

**Power:** 102 to 132/204 to 264 VAC, 50/60 Hz

**Panel cut-out dimensions (W x H):** 12¾" x 12¾" (32.2 x 32.2 cm)

Number of channels	Catalog number	Price
One	<a href="#">FN-80663-00</a>	
Two	<a href="#">FN-80663-10</a>	
Three	<a href="#">FN-80663-20</a>	
Four	<a href="#">FN-80663-30</a>	

[FN-80663-90](#) Replacement thermal paper. Pack of 100 sheets

[FN-80663-92](#) Replacement thermal pen

[FN-17100-00](#) NIST-traceable calibration with data for recorders

## Honeywell® DR4300 10" Recorders

### Be certain of your readings—universal input and self-test built-in

- Configurable to your application
- Meet NEMA 3 requirements



**Basic Recorders** are fully programmable in the field via DIP switches. Select pre-configured input type, range, and chart speed.

#### Digital Display

**Recorders** let you view results on their bright, vacuum fluorescent display. Configure recorder via integral keypad; choose from a wider selection of input types, ranges, and chart speeds.

#### Specifications

##### Input ranges

DC voltage: 0 to 10 mV, 0 to 100 mV, 0 to 200 mV; 0 to 1 V, 0 to 2 V, 0 to 5 V, 1 to 5 V, 0 to 10 V  
Current: 0 to 20 mA, 4 to 20 mA  
Thermocouples: J, K, T, E, R, S, B, NNM, NIC, W5  
RTD: 100 Ω Pt

##### Accuracy

Basic recorder: ±0.35% of span  
Recorder with display: ±0.10% of span (field calibrated)

**Panel cut-out dimensions (W x H):** 12¾" x 12¾" (32.3 x 32.3 cm)

**Chart size:** 10" diameter

##### Chart speed

Basic recorder: 24 hrs, 7 days  
Recorder with display: 1 to 744 hours

**Power:** 100 to 240 VAC, 50/60 Hz

Model	Number of channels	Catalog number	Price
Basic recorder	One	<a href="#">FN-80661-00</a>	
	Two	<a href="#">FN-80661-10</a>	
Recorder with digital display	One	<a href="#">FN-80661-20</a>	
	Two	<a href="#">FN-80661-30</a>	

[FN-80661-92](#) Replacement pen, for channel one; purple. Pack of 6

[FN-80661-90](#) Replacement pen, for channel two; red. Pack of 6

[FN-80661-80](#) Replacement chart paper, 7-day, 100 divisions. Pack of 100 sheets

[FN-17100-00](#) NIST-traceable recalibration with data for recorders

## Cole-Parmer® Disposable Temperature Recorders

### Save money while knowing temperature of samples

- Simple to use—just pull out tab to start recorder
- Unique identifier and tamper-evident seal makes sure data is not corrupt
- Water and shock resistant



#### Specifications

**Range:** –20 to 100°F (–28 to 38°C)

**Chart:** pressure-sensitive 36" strip chart

##### Accuracy:

Temperature: ±2°F (±1°C)  
Time: ±20 seconds per month average

**Power:** one AA alkaline battery (included)

##### Dimensions (W x H x D):

4" x 5½" x 2½"  
(10.2 x 14.0 x 6.4 cm)

Create a permanent record of temperature conditions during shipment.



Chart speed	Catalog number	Price
5 days	<a href="#">FN-80150-40</a>	
10 days	<a href="#">FN-80150-50</a>	
20 days	<a href="#">FN-80150-60</a>	
30 days	<a href="#">FN-80150-70</a>	

## Cole-Parmer® Orbital Shakers

Designed for problem-free continuous use

- Smooth, uniform circular motion—perfect for both multiwell plates and large flasks
- Fit into environmental chambers and incubators for culturing and aeration applications
- Easily set and read speed and time on the digital display



Cole-Parmer®

**Compact Shaker** is ideal for smaller sample sizes of 0.5 to 5 mL in multiwell plates, dishes, and petri dishes. Included flat platform holds up to four standard-sized microwell plates on a nonslip rubber mat. Or order the optional expansion platform to double the plate capacity to eight plates. Choose the optional cradle-type platform with adjustable rubber bars to securely hold four 250-mL flasks or any combination of vessel sizes for maximum flexibility.

**Large-Capacity Shaker** includes a cradle-type platform with four adjustable rubber bars to hold a variety of bottles and flasks; accommodates twelve 250-mL, nine 500-mL, six 1000-mL, or two 2000-mL Erlenmeyer flasks. A larger cradle platform with six bars is available. Or order the optional flat platform for processing up to twelve standard microwell plates simultaneously.

### Specifications

**Speed range:** 30 to 300 rpm    **Timer:** 1 to 999 minutes  
**Orbit size:** 5/8" (16 mm) dia



Platform dimensions	Max load	Overall dimensions (W x H x D)	Power		Catalog number	Price
			VAC	Hz		
<b>Compact shaker</b>						
8 <sup>21</sup> / <sub>32</sub> " x 8 <sup>21</sup> / <sub>32</sub> " (22 x 22 cm)	6.6 lb (3 kg)	9 <sup>1</sup> / <sub>2</sub> " x 5 <sup>1</sup> / <sub>2</sub> " x 11 <sup>7</sup> / <sub>8</sub> " (24 x 14 x 30 cm)	120	60	<a href="#">FN-51700-13</a>	
			230	50	<a href="#">FN-51700-14</a>	
<b>Large-capacity shaker</b>						
13 <sup>3</sup> / <sub>16</sub> " x 13 <sup>3</sup> / <sub>16</sub> " (33.5 x 33.5 cm)	22 lb (10 kg)	14 <sup>1</sup> / <sub>8</sub> " x 10 <sup>5</sup> / <sub>8</sub> " x 16 <sup>1</sup> / <sub>2</sub> " (36 x 27 x 42 cm)	120	60	<a href="#">FN-51700-15</a>	
			230	50	<a href="#">FN-51700-16</a>	

### For Compact Shaker

[FN-51700-97](#) Cradle platform with four rubber securing bars

[FN-51700-98](#) Expansion platform with nonslip rubber mat. Holds 8 microwell plates

[FN-51700-99](#) Plastic cover

### For Large-Capacity Shaker

[FN-51700-95](#) Cradle platform with six rubber securing bars, measures 20" x 20" (51 x 51 cm). Max speed is 150 rpm

[FN-51700-96](#) Flat platform with nonslip rubber mat. Holds 12 microwell plates

## Cole-Parmer® Vortex Shaker

Adjustable speed for more control

- Use at 200 rpm for more gentle mixing, all the way up to 2500 rpm for vigorous agitation
- Heavy die-cast body won't dance across your bench
- Choose between "touch" on or continuous modes



**What's included:**  
standard rubber cup.

Cole-Parmer®



Orbit size	Speed range	Power		Catalog number	Price
		VAC	Hz		
5/32" (4.2 mm) dia	200 to 2500 rpm	90 to 240	50/60	<a href="#">FN-04750-51</a>	

[FN-04729-07](#) Accessory pack includes heads for standard microplate, beaker or flask (up to 500 mL), 8 x 0.2-/0.5-mL microtubes, 16 x 1.5-mL microcentrifuge tubes, and customizable blank foam

## Cole-Parmer® Tube Roller Shakers

Get complete mixing

- Rocking and rolling action is ideal when minimum aeration is needed—like viscous substances or liquid-solid suspensions
- Solid construction—use in cold rooms or incubators
- Expand your capacity with optional stacking kit

The 6-roller units offer a space-saving design perfect for incubator use while the larger 9-roller units offer high throughput. Both accommodate most tube and bottle sizes.



Cole-Parmer®



Speed range	Number of rollers	120 VAC, 60 Hz		230 VAC, 50 Hz	
		Catalog number	Price	Catalog number	Price
<b>Analog tube roller shakers</b>					
Fixed at 33 rpm	6	<a href="#">FN-04750-22</a>		<a href="#">FN-04750-20</a>	
	9	<a href="#">FN-04750-30</a>		<a href="#">FN-04750-28</a>	
<b>Digital tube roller shakers with built-in timer</b>					
Adjustable from 5 to 60 rpm	6	<a href="#">FN-04750-26</a>		<a href="#">FN-04750-24</a>	
	9	<a href="#">FN-04750-34</a>		<a href="#">FN-04750-32</a>	

[FN-04653-09](#) Stacking kit includes four blocks. One kit will stack two shakers; order two kits to stack three shakers



# W. S. Tyler® Ro-Tap® E, Ro-Tap®, and Ro-Tap II® Sieve Shakers

Get reproducible hand-sieving without the hand shaking

– Set the time and walk away—99-minute digital timer with 0.1-second accuracy

**Ro-Tap® E Sieve Shakers** for 8" dia sieves are stand-alone benchtop units that are virtually maintenance-free, offer quiet operation and can be operated directly on a laboratory countertop. Options include automatic controlled amplitude, and in fine and coarse analysis settings.

**Ro-Tap Sieve Shakers** for 8" dia sieves hold up to six full-height or 13 half-height sieves with top cover and receiving pan. Shakers for 12" dia sieves hold up to four full-height or ten half-height sieves with top cover and receiving pan.

**Ro-Tap II Sieve Shakers** double your shaking capacity while maintaining the accuracy of a single mechanical shaker. Dual-capacity shakers hold up to 12 full-height sieves or 26 half-height sieves.



Ro-Tap shaker  
59986-60



Ro-Tap E  
shaker  
59996-68



Ro-Tap II  
dual-capacity  
shaker  
59986-50

**ISO9001:2008**  
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rpm	Power (VAC/Hz)	Dimensions (W x H x D)	Shpg wt lb (kg)	Catalog number	Price
<b>Ro-Tap E shakers for 8" dia sieves</b>					
1750	110/60	18" x 18" x 30"	80 (36)	<a href="#">FN-59996-68</a>	
1450	220/50	(45.7 x 45.7 x 76.2 cm)		<a href="#">FN-59996-70</a>	
<b>Ro-Tap shakers for 8" dia sieves</b>					
1750	110/60	28" x 25" x 21"	226 (102)	<a href="#">FN-59986-60</a>	
1450	220/50	(71.1 x 63.5 x 53.3 cm)	170 (77.2)	<a href="#">FN-59986-62</a>	
<b>Ro-Tap shakers for 12" dia sieves</b>					
1750	110/60	28" x 25" x 21"	180 (81.7)	<a href="#">FN-59996-60</a>	
1450	220/50	(71.1 x 63.5 x 53.3 cm)	225 (102)	<a href="#">FN-59996-62</a>	
<b>Ro-Tap II shakers for 8" dia sieves</b>					
1750	110/60	30" x 26" x 27"	230 (104)	<a href="#">FN-59986-50</a>	
1450	220/50	(76.2 x 66.0 x 68.6 cm)	220 (99.8)	<a href="#">FN-59986-52</a>	

## Cole-Parmer® Brass and Stainless Steel Testing Sieves

Meet ASTM E11 specifications for compliance

These 8" diameter testing sieves are serialized and come with test sieve certificate. For our full selection of sieves, including 12" diameter sieves and sieves with NIST-traceable calibration report, go to [www.coleparmer.com/sieves](http://www.coleparmer.com/sieves).



**Cole-Parmer®**

**ISO9001:2008**  
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Sieve opening (mm)	US standard	Tyler standard	Brass frame/brass wire				SS frame/SS wire				Brass frame/SS mesh			
			Full height†		Half height†		Full height†		Half height†		Full height†		Half height†	
			Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
2.36	No. 8	8 mesh	<a href="#">FN-59980-00</a>		<a href="#">FN-59981-00</a>		<a href="#">FN-59984-00</a>		<a href="#">FN-59985-00</a>		<a href="#">FN-59940-00</a>		<a href="#">FN-59941-00</a>	
2.00	No. 10	9 mesh	<a href="#">FN-59980-01</a>		<a href="#">FN-59981-01</a>		<a href="#">FN-59984-01</a>		<a href="#">FN-59985-01</a>		<a href="#">FN-59940-01</a>		<a href="#">FN-59941-01</a>	
1.70	No. 12	10 mesh	<a href="#">FN-59980-02</a>		<a href="#">FN-59981-02</a>		<a href="#">FN-59984-02</a>		<a href="#">FN-59985-02</a>		<a href="#">FN-59940-02</a>		<a href="#">FN-59941-02</a>	
1.40	No. 14	12 mesh	<a href="#">FN-59980-03</a>		<a href="#">FN-59981-03</a>		<a href="#">FN-59984-03</a>		<a href="#">FN-59985-03</a>		<a href="#">FN-59940-03</a>		<a href="#">FN-59941-03</a>	
1.18	No. 16	14 mesh	<a href="#">FN-59980-04</a>		<a href="#">FN-59981-04</a>		<a href="#">FN-59984-04</a>		<a href="#">FN-59985-04</a>		<a href="#">FN-59940-04</a>		<a href="#">FN-59941-04</a>	
1.00	No. 18	16 mesh	<a href="#">FN-59980-05</a>		<a href="#">FN-59981-05</a>		<a href="#">FN-59984-05</a>		<a href="#">FN-59985-05</a>		<a href="#">FN-59940-05</a>		<a href="#">FN-59941-05</a>	
0.850	No. 20	20 mesh	<a href="#">FN-59980-06</a>		<a href="#">FN-59981-06</a>		<a href="#">FN-59984-06</a>		<a href="#">FN-59985-06</a>		<a href="#">FN-59940-06</a>		<a href="#">FN-59941-06</a>	
0.710	No. 25	24 mesh	<a href="#">FN-59980-07</a>		<a href="#">FN-59981-07</a>		<a href="#">FN-59984-07</a>		<a href="#">FN-59985-07</a>		<a href="#">FN-59940-07</a>		<a href="#">FN-59941-07</a>	
0.600	No. 30	28 mesh	<a href="#">FN-59980-08</a>		<a href="#">FN-59981-08</a>		<a href="#">FN-59984-08</a>		<a href="#">FN-59985-08</a>		<a href="#">FN-59940-08</a>		<a href="#">FN-59941-08</a>	
0.500	No. 35	32 mesh	<a href="#">FN-59980-09</a>		<a href="#">FN-59981-09</a>		<a href="#">FN-59984-09</a>		<a href="#">FN-59985-09</a>		<a href="#">FN-59940-09</a>		<a href="#">FN-59941-09</a>	
0.425	No. 40	35 mesh	<a href="#">FN-59980-10</a>		<a href="#">FN-59981-10</a>		<a href="#">FN-59984-10</a>		<a href="#">FN-59985-10</a>		<a href="#">FN-59940-10</a>		<a href="#">FN-59941-10</a>	
0.355	No. 45	42 mesh	<a href="#">FN-59980-11</a>		<a href="#">FN-59981-11</a>		<a href="#">FN-59984-11</a>		<a href="#">FN-59985-11</a>		<a href="#">FN-59940-11</a>		<a href="#">FN-59941-11</a>	
0.300	No. 50	48 mesh	<a href="#">FN-59980-12</a>		<a href="#">FN-59981-12</a>		<a href="#">FN-59984-12</a>		<a href="#">FN-59985-12</a>		<a href="#">FN-59940-12</a>		<a href="#">FN-59941-12</a>	
0.250	No. 60	60 mesh	<a href="#">FN-59980-13</a>		<a href="#">FN-59981-13</a>		<a href="#">FN-59984-13</a>		<a href="#">FN-59985-13</a>		<a href="#">FN-59940-13</a>		<a href="#">FN-59941-13</a>	
0.212	No. 70	65 mesh	<a href="#">FN-59980-14</a>		<a href="#">FN-59981-14</a>		<a href="#">FN-59984-14</a>		<a href="#">FN-59985-14</a>		<a href="#">FN-59940-14</a>		<a href="#">FN-59941-14</a>	
0.180	No. 80	80 mesh	<a href="#">FN-59980-15</a>		<a href="#">FN-59981-15</a>		<a href="#">FN-59984-15</a>		<a href="#">FN-59985-15</a>		<a href="#">FN-59940-15</a>		<a href="#">FN-59941-15</a>	
0.150	No. 100	100 mesh	<a href="#">FN-59980-16</a>		<a href="#">FN-59981-16</a>		<a href="#">FN-59984-16</a>		<a href="#">FN-59985-16</a>		<a href="#">FN-59940-16</a>		<a href="#">FN-59941-16</a>	
0.125	No. 120	115 mesh	<a href="#">FN-59980-17</a>		<a href="#">FN-59981-17</a>		<a href="#">FN-59984-17</a>		<a href="#">FN-59985-17</a>		<a href="#">FN-59940-17</a>		<a href="#">FN-59941-17</a>	
0.106	No. 140	150 mesh	<a href="#">FN-59980-18</a>		<a href="#">FN-59981-18</a>		<a href="#">FN-59984-18</a>		<a href="#">FN-59985-18</a>		<a href="#">FN-59940-18</a>		<a href="#">FN-59941-18</a>	
0.090	No. 170	170 mesh	<a href="#">FN-59980-19</a>		<a href="#">FN-59981-19</a>		<a href="#">FN-59984-19</a>		<a href="#">FN-59985-19</a>		<a href="#">FN-59940-19</a>		<a href="#">FN-59941-19</a>	
0.075	No. 200	200 mesh	<a href="#">FN-59980-20</a>		<a href="#">FN-59981-20</a>		<a href="#">FN-59984-20</a>		<a href="#">FN-59985-20</a>		<a href="#">FN-59940-20</a>		<a href="#">FN-59941-20</a>	
0.063	No. 230	250 mesh	<a href="#">FN-59980-21</a>		<a href="#">FN-59981-21</a>		<a href="#">FN-59984-21</a>		<a href="#">FN-59985-21</a>		<a href="#">FN-59940-21</a>		<a href="#">FN-59941-21</a>	
0.053	No. 270	270 mesh	<a href="#">FN-59980-22</a>		<a href="#">FN-59981-22</a>		<a href="#">FN-59984-22</a>		<a href="#">FN-59985-22</a>		<a href="#">FN-59940-22</a>		<a href="#">FN-59941-22</a>	
0.045	No. 325	325 mesh	<a href="#">FN-59980-23</a>		<a href="#">FN-59981-23</a>		<a href="#">FN-59984-23</a>		<a href="#">FN-59985-23</a>		<a href="#">FN-59940-23</a>		<a href="#">FN-59941-23</a>	
0.038	No. 400	400 mesh	<a href="#">FN-59980-24</a>		<a href="#">FN-59981-24</a>		<a href="#">FN-59984-24</a>		<a href="#">FN-59985-24</a>		<a href="#">FN-59940-24</a>		<a href="#">FN-59941-24</a>	

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

Equipment & Instrumentation

Sieves

## Cole-Parmer® UV/Visible Spectrophotometers

Save time—store and recall 200 test methods

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

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



Cole-Parmer®

ISO9001:2008  
CERTIFIED SUPPLIER

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

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

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

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

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

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

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

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

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

## Cole-Parmer® Scanning UV/Visible Spectrophotometers

Analyze samples more accurately and reliably

- Program up to 30 methods, ideal for GLP verification protocols
- Get graphic display of sophisticated methods for DNA, protein, kinetics, and more
- Preprogrammed methods include DNA/protein ratios, or specify your own parameters with up to 10 wavelengths
- Position up to 8 cuvettes with pathlengths to 100 nm



Cole-Parmer®

These economical units allow you to study reaction kinetics up to 12 hours with sampling intervals down to 0.5 seconds; use post-run rescaling and curve/segment targeting to refine rate calculations. Scan speed is adjustable from 75 to 1000 nm/min. Use date/time stamping for documentation. Transfer data directly to printer using parallel port or interface with computer using RS-232 port.

Double-beamed models feature two detectors measuring sample and reference respectively and simultaneously for optimal accuracy.

**What's included:** manual 10-mm cell changer (standard 4-cell for single beam; 1-cell for double beam), four glass and two silica 10-mm cuvettes, dust cover, and power cord.

ISO9001:2008  
CERTIFIED SUPPLIER

Beam type	Single		Double	
<b>Catalog number</b>	<a href="#">FN-83057-30</a>	<a href="#">FN-83057-35</a>	<a href="#">FN-83057-80</a>	<a href="#">FN-83057-85</a>
Bandwidth	4 nm		1.8 nm	
Wavelength range	190 to 1100 nm		190 to 1100 nm	
Wavelength accuracy	±0.8 nm		±0.3 nm	
Wavelength repeatability	±0.5 nm		±0.2 nm	
Photometric ranges	Transmittance	0 to 200% T		
	Absorbance	-0.3 to 3 A		
	Concentration	0 to 9999 C		
Input/output	USB/RS-232 and parallel port for printer			
Power (VAC, Hz)	115, 60	230, 50	115, 60	230, 50
<b>Price</b>				

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



## Cole-Parmer® Stirrers, Hot Plates, and Stirring Hot Plates

Reduce clutter in your workspace with space-saving design

- Heat one large vessel or several small ones—easily accommodate four 250-mL beakers
- Be safe—flashing light warns when top plate is hot (above 50°C), even when unplugged
- Unique housing allows legs of a support stand to slide underneath
- Conveniently store unit on its side—minimize storage space needed
- Choose ceramic top for better chemical resistance and higher temperatures



04801-54



04801-65

**Analog Stirrers** feature powerful magnets and motor to support speeds up to 2000 rpm and large-volume mixing up to 15 L (4 gal.).

**Advanced Analog Hot Plates and Stirring Hot Plates** feature an innovative LED temperature indicator scale, which lights up in colored increments as the top plate heats up, and shows you when the plate has reached its temperature set point. Use with the optional digital temperature controller to accurately regulate sample temperature.

**Advanced Digital Stirring Hot Plates** feature an LED display of surface temperature, ensuring high repeatability and accuracy. Compatible with the optional digital temperature controller for precise sample temperatures.

**Optional Digital Temperature Controller** can be used in two different modes: as a precise temperature controller from 20 to 200°C or as a digital thermometer from -4 to 325°C. With digital setting and display of temperature, the temperature controller is accurate to ±0.5°C.



04801-64



Top plate		Temperature range	Stirring		Power		Catalog number	Price
Dimensions	Material		Speed range	Max capacity†	VAC	Hz		
<b>Analog stirrers</b>								
6" x 6" (15 x 15 cm)	Ceramic	—	100 to 2000 rpm	15 L	120	60	<a href="#">FN-04801-50</a>	
					230	50	<a href="#">FN-04801-52</a>	
	Stainless steel				120	60	<a href="#">FN-04801-54</a>	
					230	50	<a href="#">FN-04801-56</a>	
<b>Advanced analog hot plates</b>								
6" x 6" (15 x 15 cm)	Ceramic	Ambient to 842°F (450°C)	—	—	120	60	<a href="#">FN-04801-20</a>	
		Ambient to 617°F (325°C)			230	50	<a href="#">FN-04801-22</a>	
	Coated aluminum	Ambient to 617°F (325°C)			120	60	<a href="#">FN-04801-24</a>	
		Ambient to 617°F (325°C)			230	50	<a href="#">FN-04801-26</a>	
<b>Advanced analog stirring hot plates</b>								
6" x 6" (15 x 15 cm)	Ceramic	Ambient to 842°F (450°C)	100 to 2000 rpm	15 L	120	60	<a href="#">FN-04801-60</a>	
		Ambient to 617°F (325°C)			230	50	<a href="#">FN-04801-62</a>	
	Coated aluminum	Ambient to 617°F (325°C)			120	60	<a href="#">FN-04801-65</a>	
		Ambient to 617°F (325°C)			230	50	<a href="#">FN-04801-67</a>	
<b>Advanced digital stirring hot plates</b>								
6" x 6" (15 x 15 cm)	Ceramic	Ambient to 842°F (450°C)	100 to 2000 rpm	15 L	120	60	<a href="#">FN-04801-64</a>	
		Ambient to 617°F (325°C)			230	50	<a href="#">FN-04801-66</a>	
	Coated aluminum	Ambient to 617°F (325°C)			120	60	<a href="#">FN-04801-68</a>	
		Ambient to 617°F (325°C)			230	50	<a href="#">FN-04801-70</a>	

†Based on water contained in a 20-L glass flat-bottom flask.



Optional digital temperature controller 04801-80

**Accessories**

[FN-04801-80](#) Digital temperature controller for advanced models

Equipment & Instrumentation

Stirrers & Hot Plates

## Cole-Parmer® Slim-Line® Stir Bars

Get complete mixing

- Slimmer profile and larger length to diameter ratio



Size		With spinning ring		Without spinning ring	
Length	Diameter†	Cat. no.	Price	Cat. no.	Price
1" (25.4 mm)	5/16" (7.9 mm)	<a href="#">FN-04775-45</a>		<a href="#">FN-04775-40</a>	
1 1/2" (38.1 mm)		<a href="#">FN-04775-55</a>		<a href="#">FN-04775-50</a>	
2" (50.8 mm)		<a href="#">FN-04775-65</a>		<a href="#">FN-04775-60</a>	

†Diameter given does not include the diameter of the spinning ring.

## Cole-Parmer® StableTemp™ Stirrers and Stirring Hot Plates

### Precision control ensures accurate, repeatable results

- Stay safe—hot surface warning until plate cools below 50°C
- Don't worry about spills—raised display diverts liquids away from critical components
- Optional temperature probe maintains your sample at the set temperature
- Keep samples in place—optional rod and clamps secure containers to the top plate
- Optional splash guard protects you and your sample from mishaps



Advanced stirring hot plate

### Advanced Stirrer and Stirring Hot Plate

- Greater accuracy and repeatability for advanced applications
- Set ramp/dwell programs and save settings for quick repeat
- Always know your status—view actual and set values simultaneously
- Protect you and your sample with overtemperature protection

**What's included:** PTFE-coated stir bar and detachable power cord with plug (EU plug for 230 VAC models). Advanced stirring hot plate also includes a temperature probe kit.

StableTemp



Top plate		Heating		Stirring		Power		Catalog number	Price
Dimensions	Material	Temperature range	Max load	Speed range	Max capacity	VAC	Hz		
<b>Stirrers</b>									
4 1/4" x 4 1/4" (10.8 x 10.8 cm)	Ceramic	—	25 lb (11.4 kg)	50 to 1500 rpm	1 L	100 to 120 230	50/60 50/60	<a href="#">FN-03406-01</a>	
7 1/4" x 7 1/4" (18.4 x 18.4 cm)	Ceramic	—	25 lb (11.4 kg)	50 to 1500 rpm	4 L	100 to 120 230	50/60 50/60	<a href="#">FN-03406-11</a>	
10 1/4" x 10 1/4" (26 x 26 cm)	Ceramic	—	25 lb (11.4 kg)	50 to 1500 rpm	6 L	100 to 120 230	50/60 50/60	<a href="#">FN-03406-31</a>	<a href="#">FN-03406-36</a>
<b>Stirring hot plates</b>									
4 1/4" x 4 1/4" (10.8 x 10.8 cm)	Ceramic	86 to 1004°F (30 to 540°C)	25 lb (11.4 kg)	50 to 1500 rpm	1 L	100 to 120 230	50/60 50/60	<a href="#">FN-03407-01</a>	<a href="#">FN-03407-06</a>
7 1/4" x 7 1/4" (18.4 x 18.4 cm)	Ceramic	86 to 1004°F (30 to 540°C)	25 lb (11.4 kg)	50 to 1500 rpm	4 L	100 to 120 230	50/60 50/60	<a href="#">FN-03407-11</a>	<a href="#">FN-03407-16</a>
10 1/4" x 10 1/4" (26 x 26 cm)	Ceramic	86 to 752°F (30 to 400°C)	25 lb (11.4 kg)	50 to 1500 rpm	6 L	100 to 120 230	50/60 50/60	<a href="#">FN-03407-31</a>	<a href="#">FN-03407-36</a>
<b>Advanced stirrer and stirring hot plate</b>									
7 1/4" x 7 1/4" (18.4 x 18.4 cm)	Ceramic	—	25 lb (11.4 kg)	50 to 1500 rpm	4 L	100 to 120 230	50/60 50/60	<a href="#">FN-03406-41</a>	<a href="#">FN-03406-46</a>
7 1/4" x 7 1/4" (18.4 x 18.4 cm)	Ceramic	86 to 842°F (30 to 450°C)	25 lb (11.4 kg)	50 to 1500 rpm	4 L	100 to 120 230	50/60 50/60	<a href="#">FN-03407-41</a>	<a href="#">FN-03407-46</a>

<sup>†</sup>Based on water contained in a 20-L glass flat-bottom flask.



Stirrer

[FN-04600-88](#) Transparent splash shield for 4 1/4" x 4 1/4" units

[FN-04600-89](#) Transparent splash shield for 7 1/4" x 7 1/4" units

[FN-04600-90](#) Transparent splash shield for 10 1/4" x 10 1/4" units

[FN-04600-91](#) External temperature probe, 100 Ω Pt, stainless steel, 32 to 752°F (0 to 400°C)

[FN-04600-92](#) External temperature probe, 1000 Ω Pt, stainless steel, 32 to 752°F (0 to 400°C)

[FN-04600-93](#) External temperature probe, 1000 Ω Pt, Hastelloy®, 32 to 752°F (0 to 400°C)

[FN-04600-98](#) Support rod for securing sample containers

[FN-04600-99](#) Clamp and holder for securing sample containers

## Corning® Digital Stirrers and Stirring Hot Plates

### Maintain constant speed and temperature

- Conserve lab space—fits inside a hood or cabinet
- Get uniform heating, easy cleaning, and scratch-resistance
- Temperature display is adjustable in 5° increments and indicates when set temperature is reached
- Glass ceramic top holds up to 25 lbs



Top plate dimensions	Temp range	Stirring speed range	Power		Catalog number	Price
			VAC	Hz		
<b>Stirrers</b>						
5" x 7" (12.7 x 17.8 cm)	—	60 to 1150 rpm	120	60	<a href="#">FN-84302-40</a>	
			220	50	<a href="#">FN-84302-45</a>	
10" x 10" (25.4 x 25.4 cm)	—	60 to 1150 rpm	120	60	<a href="#">FN-84302-50</a>	
			220	50	<a href="#">FN-84302-55</a>	
<b>Stirring hot plates</b>						
5" x 7" (12.7 x 17.8 cm)	41 to 1022°F (5 to 550°C)	60 to 1150 rpm	120	60	<a href="#">FN-84303-40</a>	
			220	50	<a href="#">FN-84303-45</a>	
10" x 10" (25.4 x 25.4 cm)	41 to 1022°F (5 to 550°C)	60 to 1150 rpm	120	60	<a href="#">FN-84303-50</a>	
			220	50	<a href="#">FN-84303-55</a>	

[FN-17002-27](#) NIST-traceable calibration with data for stirrers and hot plates

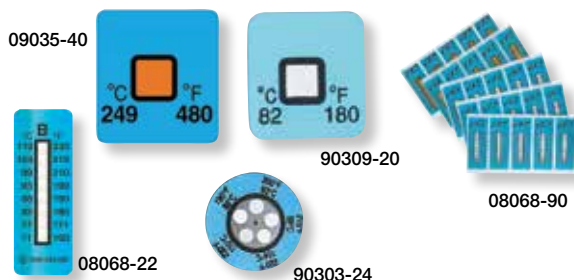




# Digi-Sense® Irreversible High-Temperature Labels

## Save time and money due to costly recalls

– Use as a quick inspection tool that the product is in usable condition during the shipping and receiving process



Self-adhesive labels are made up of a series of temperature-sensitive elements sealed between heat-resistant substrates with transparent windows. Each element changes color distinctly as its rated temperature is met or exceeded. The changes to the label are irreversible, providing a temperature history of the surface being monitored. The labels will not delaminate when removed, allowing them to be attached to an inspection report to serve as a permanent record. Ideal for use in the food, automotive, molding and metal working industries. Accuracy is ±1°C from 29 to 99°C, ±1.5°C from 100 to 154°C, and ±1% + 1°C from 160 to 280°C. Shelf life: one year after date of purchase.

### One-Temperature Point—Square Labels

Temperature point		Dimensions (W x H)		Catalog number	Price/pk of 50
°F	°C	in.	mm		
84	29	1/2 x 1/2	13 x 13	<a href="#">FN-08068-31†</a>	
93	34			<a href="#">FN-08068-32†</a>	
99	37			<a href="#">FN-08068-33†</a>	
104	40	1/2 x 1/2	13 x 13	<a href="#">FN-08068-34†</a>	
108	42			<a href="#">FN-08068-35†</a>	
111	44			<a href="#">FN-08068-36†</a>	
115	46	1/2 x 1/2	13 x 13	<a href="#">FN-90309-00†</a>	
120	49			<a href="#">FN-09035-26</a>	
129	54			<a href="#">FN-09035-27</a>	
140	60	1/2 x 1/2	13 x 13	<a href="#">FN-90309-05</a>	
149	65			<a href="#">FN-09035-28</a>	
160	71			<a href="#">FN-90309-10</a>	
171	77	1/2 x 1/2	13 x 13	<a href="#">FN-90309-15</a>	
180	82			<a href="#">FN-90309-20</a>	
190	88			<a href="#">FN-90309-25</a>	
199	93	1/2 x 1/2	13 x 13	<a href="#">FN-09035-29</a>	
210	99			<a href="#">FN-90309-30</a>	
219	104			<a href="#">FN-09035-30</a>	
230	110	1/2 x 1/2	13 x 13	<a href="#">FN-90309-35</a>	
241	116			<a href="#">FN-09035-31</a>	
250	121			<a href="#">FN-90309-40</a>	
261	127	1/2 x 1/2	13 x 13	<a href="#">FN-90309-45</a>	
280	138			<a href="#">FN-09035-32</a>	
300	149			<a href="#">FN-09035-33</a>	
320	160	1/2 x 1/2	13 x 13	<a href="#">FN-90309-50</a>	
340	171			<a href="#">FN-09035-34</a>	
360	182			<a href="#">FN-09035-35</a>	
380	193	1/2 x 1/2	13 x 13	<a href="#">FN-09035-36</a>	
399	204			<a href="#">FN-09035-37</a>	
421	216			<a href="#">FN-09035-38</a>	
450	232	1/2 x 1/2	13 x 13	<a href="#">FN-09035-39</a>	
480	249			<a href="#">FN-09035-40</a>	
500	260			<a href="#">FN-09035-41</a>	
536	280	1/2 x 1/2	13 x 13	<a href="#">FN-09035-42</a>	
554	290			<a href="#">FN-09035-43</a>	



### Multi-Temperature Points

Temperature points		Dimensions (W x H)	Catalog number	Price/pk
°F	°C			
<b>Four-temperature points—micro horizontal labels (pack of 10)</b>				
104, 108, 111, 115	—	5/32" x 1/2"	<a href="#">FN-08068-41†</a>	
120, 129, 140, 149	—		<a href="#">FN-08068-42†</a>	
160, 171, 180, 190	—		<a href="#">FN-08068-43</a>	
199, 210, 219, 230	—	5/32" x 1/2"	<a href="#">FN-08068-44</a>	
241, 250, 261, 270	—		<a href="#">FN-08068-45</a>	
280, 289, 300, 309	—		<a href="#">FN-08068-46</a>	
320, 331, 340, 351	—	<a href="#">FN-08068-47</a>		
<b>Four-temperature points—horizontal labels (pack of 10)</b>				
99, 111, 120, 129	37, 44, 49, 54	7/8" x 1/4"	<a href="#">FN-90308-40†</a>	
140, 149, 160, 171	60, 65, 71, 77		<a href="#">FN-90308-45</a>	
180, 190, 199, 210	82, 88, 93, 99	7/8" x 1/4"	<a href="#">FN-90308-50</a>	
219, 230, 241, 250	104, 110, 116, 121		<a href="#">FN-90308-55</a>	
261, 270, 280, 289	127, 132, 138, 143	7/8" x 1/4"	<a href="#">FN-90308-60</a>	
300, 309, 320, 331	149, 154, 160, 166		<a href="#">FN-90308-65</a>	
340, 351, 361, 370	171, 177, 182, 188	7/8" x 1/4"	<a href="#">FN-90308-70</a>	
379, 390, 399, 410	193, 199, 204, 210		<a href="#">FN-90308-75</a>	
<b>Five-temperature points—round labels (pack of 25)</b>				
105, 110, 115, 120, 130	40, 43, 46, 49, 54	5/8" dia	<a href="#">FN-90303-20†</a>	
140, 150, 160, 170, 180	60, 65, 71, 77, 82		<a href="#">FN-90303-22</a>	
190, 200, 210, 220, 230	88, 93, 99, 104, 110		<a href="#">FN-90303-24</a>	
240, 250, 260, 270, 280	116, 121, 127, 132, 138	5/8" dia	<a href="#">FN-90303-26</a>	
290, 300, 310, 320, 330	143, 149, 154, 160, 166		<a href="#">FN-90303-28</a>	
340, 350, 360, 370, 380	171, 177, 182, 188, 193	5/8" dia	<a href="#">FN-90303-30</a>	
390, 399, 410, 421, 435	199, 204, 210, 216, 224		<a href="#">FN-08068-21</a>	
450, 466, 480, 489, 500	232, 241, 249, 254, 260	<a href="#">FN-08068-23</a>		
<b>Five-temperature points—vertical labels (pack of 10)</b>				
99, 104, 109, 111, 115	37, 40, 42, 44, 46	3/4" x 1 1/2"	<a href="#">FN-09035-09†</a>	
120, 129, 140, 149, 160	49, 54, 60, 65, 71		<a href="#">FN-09035-10</a>	
171, 180, 190, 199, 210	77, 82, 88, 93, 99		<a href="#">FN-09035-19</a>	
219, 230, 241, 250, 261	104, 110, 116, 121, 127	3/4" x 1 1/2"	<a href="#">FN-09035-20</a>	
270, 280, 289, 300, 309	132, 138, 142, 149, 154		<a href="#">FN-09035-21</a>	
320, 331, 340, 351, 360	160, 166, 171, 177, 182	3/4" x 1 1/2"	<a href="#">FN-09035-22</a>	
370, 379, 390, 399, 410	188, 193, 199, 204, 210		<a href="#">FN-09035-23</a>	
421, 435, 450, 466, 480	216, 224, 232, 241, 249	3/4" x 1 1/2"	<a href="#">FN-09035-24</a>	
480, 489, 500, 536, 554	249, 254, 260, 280, 290		<a href="#">FN-09035-25</a>	
<b>Six-temperature points—horizontal labels (pack of 10)</b>				
84, 91, 93, 99, 104, 108	29, 33, 34, 37, 40, 42	1/2" x 1 1/4"	<a href="#">FN-90308-91†</a>	
111, 115, 120, 129, 140, 144	44, 46, 49, 54, 60, 62		<a href="#">FN-90308-92†</a>	
149, 160, 171, 180, 190, 199	65, 71, 77, 82, 88, 93	1/2" x 1 1/4"	<a href="#">FN-90308-93</a>	
210, 219, 230, 241, 250, 261	99, 104, 110, 116, 121, 127		<a href="#">FN-90308-94</a>	
270, 280, 289, 300, 309, 320	132, 138, 143, 149, 154, 160	1/2" x 1 1/4"	<a href="#">FN-90308-95</a>	
331, 340, 351, 360, 370, 379	166, 171, 177, 182, 188, 193		<a href="#">FN-90308-96</a>	
390, 399, 410, 421, 435, 450	199, 204, 210, 216, 224, 232	1/2" x 1 1/4"	<a href="#">FN-90308-97</a>	
460, 480, 489, 500, 536, 554	240, 249, 254, 260, 280, 290		<a href="#">FN-90308-98</a>	
<b>Eight-temperature points—vertical labels (pack of 25)</b>				
100, 105, 110, 115, 120, 130, 140, 150	37, 40, 43, 46, 49, 54, 60, 65	3/4" x 2"	<a href="#">FN-08068-20†</a>	
160, 170, 180, 190, 200, 210, 220, 230	71, 77, 82, 88, 93, 99, 104, 110		<a href="#">FN-08068-22</a>	
240, 250, 260, 270, 280, 290, 300, 310	116, 121, 127, 132, 138, 143, 149, 154	3/4" x 2"	<a href="#">FN-08068-24</a>	
320, 330, 340, 350, 360, 370, 380, 390	160, 166, 171, 177, 182, 188, 193, 199		<a href="#">FN-08068-26</a>	
<b>Nine-temperature points—vertical label (pack of 25)</b>				
400, 410, 420, 435, 450, 465, 480, 490, 500	204, 210, 216, 224, 232, 240, 249, 254, 260	3/4" x 2"	<a href="#">FN-08068-28</a>	
<b>Eight- and nine-point label kit (pack of 25)</b>				
Five labels of each of the eight- and nine-point labels above			<a href="#">FN-08068-90†</a>	
<b>Ten-temperature points—horizontal labels (pack of 10)</b>				
104, 108, 111, 115, 120, 129, 140, 144, 149, 160	40, 42, 44, 46, 49, 54, 60, 62, 65, 71	3/4" x 2"	<a href="#">FN-09035-00†</a>	
171, 180, 190, 199, 210, 219, 230, 241, 250, 261	77, 82, 88, 93, 99, 104, 110, 116, 121, 127		<a href="#">FN-09035-06</a>	
270, 280, 289, 300, 309, 320, 331, 340, 351, 360	132, 138, 143, 149, 154, 160, 166, 171, 177, 182	3/4" x 2"	<a href="#">FN-09035-07</a>	
370, 379, 390, 399, 410, 421, 435, 450, 466, 480	188, 193, 199, 204, 210, 216, 224, 232, 241, 249		<a href="#">FN-09035-08</a>	

†Note: Express shipping by air is required to prevent activation while in transit.

Equipment & Instrumentation

Temperature

# Digi-Sense® Traceable® General-Purpose and Refrigerator/Freezer Thermometers

## Get multiple readings simultaneously

- Simultaneously view high, low, and current temperature
- Keep samples safe—programmable alarm alerts when temperature deviates from set point
- Monitor conditions—Min/Max feature stores the highest and lowest readings until cleared
- Get more done—monitor multiple applications with dual-probe units
- Versatile units are mountable on wall or benchtop



**Standard Refrigerator/Freezer Thermometers** provide accurate readings even when door is opened, as temperature sensor is enclosed within a glycol-filled bottle.

**Advanced Thermometers** feature high accuracy, one-button field calibration, and date/time stamp. Unit displays the exact time and date when the thermometer alarms are triggered. RTD thermometers provide greater accuracy and a unique Min/Max feature that displays temperatures for previous 24 hours (each hour) or previous 31 days (for each day).

**Data Logging Thermometers** record up to 525,600 data points to be transferred to a computer using a USB flash drive. The alarm tracking feature stores up to 10 unique alarm events. “Memory lock” option does not allow the internal memory to be cleared, and logging capacity increases to 1 million data points.

**What's included:** one AA battery and NIST-traceable calibration report.



Application	Sensor type	Range	Resolution	Accuracy	Power	Catalog number	Price
<b>A. Standard thermistor models</b>							
Refrigerator/freezer	One bottle probe	-58 to 158°F (-50 to 70°C)	1°	±1°C	One AA battery (included)	<a href="#">FN-94460-72</a>	
Refrigerator/freezer	One 5-mL bottle probe					<a href="#">FN-94460-71</a>	
General purpose	One wire probe					<a href="#">FN-94460-70</a>	
<b>B. Advanced thermistor models with improved accuracy (not shown)</b>							
Refrigerator/freezer	Two bottle probes	-58 to 158°F (-50 to 70°C)	0.01°	±0.30°C	One AA battery (included)	<a href="#">FN-94460-92</a>	
General purpose	Two wire probes					<a href="#">FN-94460-91</a>	
General purpose	One solid SS probe					<a href="#">FN-94460-98</a>	
General purpose	Two solid SS probe					<a href="#">FN-94460-99</a>	
<b>C. Advanced thermistor models with improved accuracy and data logging (not shown)</b>							
Refrigerator/freezer	One bottle probe	-58 to 158°F (-50 to 70°C)	0.01°	±0.25°C	One AA battery (included)	<a href="#">FN-94460-07</a>	
Refrigerator/freezer	Two bottle probes					<a href="#">FN-94460-09</a>	
General purpose	One wire probe					<a href="#">FN-94460-11</a>	
General purpose	Two wire probes					<a href="#">FN-94460-14</a>	
General purpose and refrigerator/freezer	One wire and one bottle probe					<a href="#">FN-94460-18</a>	
General purpose	One solid SS probe					<a href="#">FN-94460-16</a>	
General purpose	Two solid SS probes					<a href="#">FN-94460-17</a>	
<b>D. Advanced thermistor models with improved accuracy and “memory lock” data logging</b>							
Refrigerator/freezer	One bottle probe	-58 to 158°F (-50 to 70°C)	0.01°	±0.25°C	One AA battery (included)	<a href="#">FN-94460-37</a>	
Refrigerator/freezer	Two bottle probes					<a href="#">FN-94460-39</a>	
General purpose	One wire probe					<a href="#">FN-94460-41</a>	
General purpose	Two wire probes					<a href="#">FN-94460-43</a>	
General purpose and refrigerator/freezer	One wire and one bottle probe					<a href="#">FN-94460-47</a>	
General purpose	One solid SS probe					<a href="#">FN-94460-44</a>	
General purpose	Two solid SS probes					<a href="#">FN-94460-46</a>	
<b>E. Advanced RTD high-accuracy models</b>							
Refrigerator/freezer	One bottle probe	-58 to 158°F (-50 to 70°C)	0.01°	±0.1°C	One AA battery (included)	<a href="#">FN-37803-88</a>	
General purpose	One wire probe					<a href="#">FN-37804-03</a>	
General purpose	One wire probe	-148 to 158°F (-100 to 70°C)				<a href="#">FN-37804-05</a>	
General purpose	One solid SS probe	-148 to 199.99°F (-100 to 199.99°C)				<a href="#">FN-37804-04</a>	



## Digi-Sense® Traceable® Mini Thermometers with Remote Probe

### Easily read temperature from a distance

– 304 stainless steel penetration stem



**A. Standard Remote Probe Thermometer** has a 3-ft flexible cord and °F/°C switchable ranges. Magnetic back allows for placement on metal surfaces such as freezers, incubators, or water baths. Includes flip-open stand, and spring fastener for clipping onto any edge.

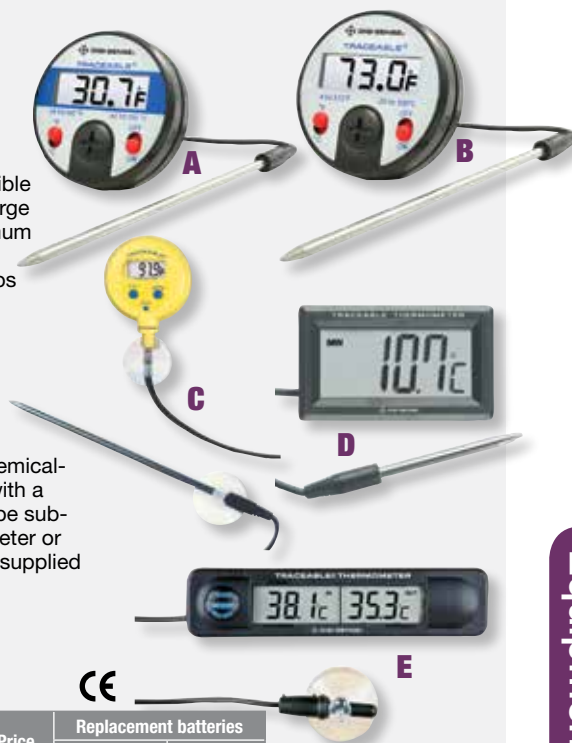
**B. Deluxe Remote Probe Thermometer** features a 3-ft flexible cord, °F/°C switchable ranges, display updates every second, high/low alarm, Min/Max memory, and Hold function. Magnetic back allows for placement on metal surfaces; freezers, incubators or water baths. Includes a flip-open stand, and spring fastener for clipping on to any edge.

**C. Waterproof Remote Probe Thermometer** has a 10-ft flexible cord, °F/°C switchable ranges, a display that updates every second, and Min/Max memory. Perfect for wet areas—case is water/shockproof and probe is impervious to acid and solvents. Supplied with suction cups, magnet, and self-adhesive hook and loop tabs to attach to any surface.

**D. Panel-Mount Remote Probe Thermometer** features a 10-ft flexible cord, °F/°C switchable ranges, a large easy-view LCD, and records minimum and maximum readings over time. Versatile panel-mount module snaps into place or can be used as a stand-alone unit.

**E. Stick-Style Remote Probe Thermometers** have a 3-ft flexible cord, Min/Max memory, and simultaneous display of probe and ambient temperatures. Meter is chemical-resistant and shockproof; comes with a remote sensor and cable that can be submerged. Use as a pocket thermometer or mount for continuous use with the supplied self-adhesive hook and loop tabs.

**What's included:** battery and NIST-traceable calibration report.



Key letter	Range	Resolution	Accuracy	Probe	Catalog number	Price	Replacement batteries	
							Cat. no.	Price
A	-58 to 500°F (-50 to 250°C)	0.1°F (0.1°C)	±1°C between -20 to 100°C, otherwise ±1.5° outside range	5½" L x 0.14" dia	<a href="#">FN-90205-20</a>		<a href="#">FN-09376-14</a>	/ea
B	-58 to 572°F (-50 to 300°C)	0.1°F (0.1°C)	±1°C between -20 to 100°C, otherwise ±1.5° outside range	5½" L x 0.14" dia	<a href="#">FN-90205-21</a>		<a href="#">FN-09376-14</a>	/ea
C	-58 to 572°F (-50 to 300°C)	0.1° from -19 to 199.9°; 1° outside this range	±2.0°F (±1°C)	5" L x 0.14" dia	<a href="#">FN-90205-22</a>		<a href="#">FN-09377-16</a>	/pk of 6
D	-58 to 572°F (-50 to 300°C)	0.1° from -20 to 200°; 1° outside this range	±1°C between -20 to 100°C, otherwise ±1.5° outside range	2¾" L x 0.14" dia	<a href="#">FN-90205-26</a>		<a href="#">FN-09376-14</a>	/ea
E	-58 to 158°F (-50 to 70°C)	0.1°F	±1.0°F	0.20" dia	<a href="#">FN-90205-24</a>		<a href="#">FN-09376-14</a>	/ea
		0.1°C	±1.0°C					

**Accessories**

[FN-17003-00](#)  
NIST-traceable recalibration with data for pocket thermometers

## Fluke® Thermocouple Thermometers

### Don't settle for an inferior meter

- Rugged design with splash- and dust-resistant housing
- Store, download, and recall up to 500 data points with data logging models
- Readout in °F, °C, or Kelvin (K)

Dual backlit display provides readout of channel temperature, differential temperature (dual-input models), and minimum/maximum/average readings with time stamp.

**What's included:** one type K bead thermocouple per input channel and protective holster.



Fluke model	Type	Range	Resolution	Accuracy	Power	Catalog number	Price
<b>Thermocouple thermometers</b>							
51-II	Single input; J, K, T, and E	J: -346 to 2192°F (-210 to 1200°C) K: -328 to 2501°F (-200 to 1372°C) T: -418 to 752°F (-250 to 400°C)	Below 1000°: 0.1°F/°C; Above 1000°: 1°F/°C	Above -148°F (-100°C) J, K, T, E, and N: ±0.05% of rdg plus 0.5°F (0.3°C)	Three AA batteries (not included)	<a href="#">FN-91500-04</a>	
52-II	Dual input; J, K, T, and E	E: -238 to 1832°F (-150 to 1000°C)				<a href="#">FN-91500-06</a>	
<b>Thermocouple thermometers with data logging capabilities</b>							
53-II-B	Single input; J, K, T, E, N, R and S	J: -346 to 2192°F (-210 to 1200°C) K: -328 to 2501°F (-200 to 1372°C) T: -418 to 752°F (-250 to 400°C) E: -238 to 1832°F (-150 to 1000°C)	Below 1000°: 0.1°F/°C; Above 1000°: 1°F/°C	Above -148°F (-100°C) J, K, T, E, and N: ±0.05% of rdg plus 0.5°F (0.3°C)	Three AA batteries (not included)	<a href="#">FN-91500-08</a>	
54-II-B	Dual input; J, K, T, E, N, R and S	N: -328 to 2372°F (-200 to 1300°C) R and S: 32 to 3216°F (0 to 1767°C)				<a href="#">FN-91500-10</a>	



## Digi-Sense® Data Logging Refrigerator/Freezer Thermometers with TraceableLIVE® Wireless Technology

Get alerts before you lose valuable samples

- Remotely monitor your critical environments 24/7 via Wi-Fi†
- View current conditions anywhere—cloud-based interface sends email, text, and push notifications
- Securely connect to data via smartphone, tablet, or PC
- No software required—web, Android™, Apple® iOS data visibility
- Models with bottle probes are temperature-buffered to protect sensor from rapid changes when refrigerator door is opened.
- Use included hook-and-loop fastener and magnetic strip for surface mounting, or use the built-in stand on a shelf

Digi-Sense data loggers with TraceableLIVE wireless technology provide a simple, efficient, and reliable way to ensure your critical samples are not compromised due to parameter variations. This latest technology is ideal for monitoring a process in real time, any time. Plus you get the value, accuracy, and peace of mind of NIST-traceable calibration at a noncalibrated price.

TraceableLIVE allows you to view current conditions from anywhere with a cloud-based interface. Once setup is complete, you can view conditions in real time; set alarm parameters; view data logging history; generate data reports in real time; get email, text and push notifications; and receive alerts for temperature alarm, connectivity interruption and low battery.

†Requires a low-cost TraceableLIVE subscription.



### Specifications

<b>Display:</b> dual-line LCD	<b>Max stored alarms:</b> 100
<b>Sample rate:</b> 12 sec	<b>Power:</b> four AAA alkaline batteries (included)
<b>Max storage:</b> 672 records (7 days if set to 15-minute intervals)	



Sensor type	Range	Resolution	Accuracy	Catalog number	Price
2 Bottle probes				<a href="#">FN-99460-00</a>	
1 Bottle and 1 bullet probe				<a href="#">FN-99460-05</a>	
2 Bullet probes	–58 to 140°F (–50 to 60°C)	0.01°	±0.45°F (±0.25°C)	<a href="#">FN-99460-10</a>	
2 Stainless steel probes				<a href="#">FN-99460-15</a>	

## Digi-Sense® Precalibrated Infrared Thermometers

Save money and prevent breakdowns—easily locate hot and cold spots

- Reliable measurements—guaranteed! Precalibrated to NIST-traceable standards
- Get easy readings from a distance—just aim, pull trigger and read!
- Continuous scanning via trigger lock



**General-Purpose IR models** feature Min/Max and Hold functions, °F/°C units, single targeting laser, and large backlit LCD for easy reading. Models 20250-05 and -06 also offer adjustable emissivity and temperature alarm with indicator.

**Professional IR models** provide high distance-to-sight ratio and enhanced temperature range in a heavy-duty housing. Get a more precise measurement area with dual targeting lasers and external type K thermocouple (one included). Min/Max/Avg and Hold, temperature differential, high/low alarms, adjustable emissivity, data logging, and more!



Description	General-purpose infrared thermometers			Professional infrared thermometers	
	<a href="#">FN-20250-04</a>	<a href="#">FN-20250-05</a>	<a href="#">FN-20250-06</a>	<a href="#">FN-20250-07</a>	<a href="#">FN-20250-08</a>
Range (IR)	–4 to 630°F (–20 to 332°C)	–31 to 1000°F (–35 to 537°C)	–31 to 1472°F (–35 to 800°C)	–58 to 3002°F (–50 to 1650°C)	–58 to 3362°F (–50 to 1850°C)
Resolution	0.1°F/C	0.1°F/C below 1000°, 1°F/C		0.1°F/C below 1000°, 1°F/C above 1000°	
Response time	Less than 1 sec	Less than 300 ms		Less than 150 ms	
Distance-to-sight ratio	10:1	12:1	20:1	30:1	50:1
Emissivity	0.95 fixed	0.10 to 1.0 adjustable		0.10 to 1.0 adjustable	
Laser sighting		Single Class II laser		Dual Class II laser	
Temperature alarm	No	Yes		Yes	
USB interface		No		Yes (cable and software included)	
Data logging		No		Yes, 100 internal readings	
Power		One 9 V battery		One 9 V battery	
Price					



## Digi-Sense® General-Purpose Thermocouple Probes

Probes with handles feature a strain relief spring that protects the cable connection against damage due to repeated flexing and tugging. ABS handles provide a lightweight design for ease of use along with durability. Feature color-coded ANSI miniconnectors: type J-black, type K-yellow, type T-blue, and type E-purple.



Type	Sheath material	Dimensions†	Temperature range °F (°C)††	Accuracy	Catalog number	Price*	Photo
<b>Compact probes with PVC handle (grounded).</b> Use with liquids, gases, and semisolids.							
J	316 SS	Sheath: 4.5"L x 0.125" dia Handle: 1.5"L, Cable: 5-ft coiled cord. Miniconnector	-310 to 700 (-190 to 311)	±7.9°F (±4.4°C), or ±0.4% of rdg above 32°F (0°C); ±2.0% of rdg below 32°F (0°C)	<a href="#">FN-08439-60</a>		
K			-418 to 700 (-250 to 311)		<a href="#">FN-08439-62</a>		
T			-418 to 700 (-250 to 311)		<a href="#">FN-08439-64</a>		
<b>Compact PFA-coated probes with PVC handle (grounded).</b> Use with corrosive chemicals and strong acids.							
J	316 SS with PFA coating	Sheath: 4.5"L x 0.145" dia, Handle: 1.5"L, Cable: 5-ft coiled cord. Miniconnector	-310 to 400 (-190 to 204)	±7.9°F (±4.4°C), or ±0.4% of rdg above 32°F (0°C); ±2.0% of rdg below 32°F (0°C)	<a href="#">FN-08441-10</a>		
K			-418 to 400 (-250 to 204)		<a href="#">FN-08441-12</a>		
T			-418 to 400 (-250 to 204)		<a href="#">FN-08441-14</a>		
<b>Standard probes with ABS handle (grounded).</b> Use with liquids, gases, and semisolids.							
J	316 SS	Sheath: 5"L x 0.156" dia, Tip: 0.093" dia, Handle: 5.5"L, Cable: 5-ft coiled cord. Miniconnector	-310 to 1400 (-190 to 760)	±7.9°F (±4.4°C), or ±0.4% of rdg above 32°F (0°C); ±2.0% of rdg below 32°F (0°C)	<a href="#">FN-08517-55</a>		
K			-418 to 1650 (-250 to 899)		<a href="#">FN-08516-55</a>		
T			-418 to 752 (-250 to 400)		<a href="#">FN-08500-55</a>		
E			-418 to 1600 (-250 to 871)		<a href="#">FN-08512-55</a>		
<b>Extra-long stainless steel probes with ABS handle (grounded).</b> Use with liquids, gases and semisolids.							
J	316 SS	Sheath: 10"L x 0.188" dia, Tip: 0.5" dia, Handle: 5.5"L, Cable: 5-ft coiled cord. Miniconnector	-310 to 1400 (-190 to 760)	±7.9°F (±4.4°C), or ±0.4% of rdg above 32°F (0°C); ±2.0% of rdg below 32°F (0°C)	<a href="#">FN-93756-00</a>		
K			-418 to 1650 (-250 to 899)		<a href="#">FN-93756-20</a>		
T			-418 to 752 (-250 to 400)		<a href="#">FN-93756-40</a>		
<b>Extra-long PFA-coated probes with ABS handle (grounded).</b> Use with corrosive chemicals and strong acids.							
J	316 SS with PFA coating	Sheath: 10"L x 0.145" dia, Handle: 5.5"L, Cable: 5-ft coiled cord. Miniconnector	-310 to 400 (-190 to 204)	±7.9°F (±4.4°C), or ±0.4% of rdg above 32°F (0°C); ±2.0% of rdg below 32°F (0°C)	<a href="#">FN-93812-00</a>		
K			-418 to 400 (-250 to 204)		<a href="#">FN-93812-02</a>		
T			-418 to 400 (-250 to 204)		<a href="#">FN-93812-04</a>		
<b>Small-diameter probes with ABS handle (grounded).</b> Use with liquids, gases, and semisolids.							
J	316 SS	Sheath: 4"L x 0.063" dia, Handle: 5.5"L, Cable: 5-ft coiled cord. Miniconnector	-310 to 1300 (-190 to 704)	±7.9°F (±4.4°C), or ±0.4% of rdg above 32°F (0°C); ±2.0% of rdg below 32°F (0°C)	<a href="#">FN-08505-55</a>		
K			-418 to 1500 (-250 to 816)		<a href="#">FN-08505-56</a>		
T			-418 to 650 (-250 to 343)		<a href="#">FN-08505-57</a>		
<b>Stainless steel probes with stainless steel handle (grounded).</b> Designed for heavy duty, industrial, or food applications. Use with liquids, gases, and semisolids.							
J	316 SS	Sheath: 8"L x 0.125" dia, Handle: 4.5"L, Cable: 4-ft SS-armored cable. Miniconnector	-310 to 1400 (-190 to 760)	±5.9°F (±3.3°C), or ±0.4% of rdg above 32°F (0°C); ±2.0% of rdg below 32°F (0°C)	<a href="#">FN-93600-02</a>		
K			-418 to 1650 (-250 to 899)		<a href="#">FN-93600-22</a>		
T			-418 to 752 (-250 to 400)		<a href="#">FN-93600-42</a>		
<b>Small-diameter probes with miniature stainless steel handle (grounded).</b> Use with liquids, gases, and semisolids. Ideal for checking food temperatures.							
J	316 SS	Sheath: 8"L x 0.063" dia, Handle: 1.5"L, Cable: 5-ft coiled cord. Miniconnector	-310 to 1300 (-190 to 704)	±7.9°F (±4.4°C), or ±0.4% of rdg above 32°F (0°C); ±2.0% of rdg below 32°F (0°C)	<a href="#">FN-08505-61</a>		
K			-418 to 1500 (-250 to 816)		<a href="#">FN-08505-62</a>		
T			-418 to 650 (-250 to 343)		<a href="#">FN-08505-63</a>		
<b>Straight-shaft microprobes with miniature stainless steel handle (grounded).</b> Use with liquids, gases, and semisolids. Ideal for checking food temperatures							
J	316 SS	Sheath: 4"L x 0.063" dia, Tip: 0.020" dia, Handle: 1.5"L, Cable: 4-ft FEP-insulated. Miniconnector	-310 to 750 (-190 to 399)	±5.9°F (±3.3°C), or ±0.4% of rdg above 32°F (0°C); ±2.0% of rdg below 32°F (0°C)	<a href="#">FN-08116-60</a>		
K			-418 to 800 (-250 to 427)		<a href="#">FN-08117-60</a>		
T			-418 to 450 (-250 to 232)		<a href="#">FN-08113-60</a>		

††Temperature range is for the probe tip only. The handle material may be affected if the probe is rated higher than the handle depending on exposure time, application, and handle material. ABS handles are rated to 220°F (104°C); PVC handles are rated to 200°F (93°C); Stainless steel handles are rated to 450°F (232°C).

†Overall probe sheath lengths may vary up to ±0.25".

\*Discounts: Save 10% on 6-10 probes of any assortment, 15% on 11-24 probes, and 20% on 25-50 probes.

## Digi-Sense™ Traceable® General-Purpose Timers

Track time, maintain accuracy, and save money

### A. Four-Channel Large-Display Clock/Timer

- Easy monitoring of four experiments simultaneously
- Channels feature distinct alarms that sound for one minute
- Set up to 100 hours in count up or countdown modes
- Time of day in 12- or 24-hour format

**What's included:** magnetic clip, stand, and button cell battery.

### B. 100-Hour, Triple-Display Clock/Timer

- Know which channel is done with unique tones
- Use as digital clock, timer, or stopwatch
- Easily recall previous time set via memory
- Alarm condition indicated by flashing LCD

**What's included:** one AAA battery and NIST-traceable calibration report.

### C. Jumbo Digit Dual-Channel Clock/Timer

- See time easily—tilts for better viewing
- Use both channels for simultaneous countdown, or time of day with count up timer
- Choose 12- or 14-hour display format
- Alarm sounds at end of cycle and shows elapsed time

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

### D. Flashing LED Big-Digit Timer

- Never wonder about remaining time again
- Easily view 1" H display across the room
- LED flashes green for last 10 seconds of timer, flashes red when alarm sounds
- Don't annoy others—adjust alarm volume to high, low, or off
- Store three countdown times for easy recall

**What's included:** magnetic back, flip-open easel stand, spring fastener for clipping, an opening for a lanyard, two AAA batteries, and NIST-traceable calibration report.

### E. Triple-Display Clock/Timer

- Get timing faster—recall all channels' settings instantly
- Use as a countdown timer, count up stopwatch, or clock
- Count up to 24 hours, count down to 20 hours
- Displays time elapsed since alarm

**What's included:** magnetic clip and one AAA battery.

### F. Dual-Channel Flashing LED Big-Digit Timer

- Flashing red LED when time is up
- View two timers, each with a distinctive alarm
- Alerts to end time with flashing green LED for the last ten seconds
- Adjust the alarm to the right volume—high, low, and off
- Store three countdown times in memory for easy recall

**What's included:** two AAA batteries and NIST-traceable calibration report.



A



B



C



D



E



F



Key	A	B	C	D	E	F
Number of channels	Four	Three	Two	One	Three	Two
Timing capacity	100 hours	100 hours	24 hours	100 min	24 hr up/20 hr down	100 hours
Resolution	1 sec	1 sec	1 sec	1 sec	1 sec	1 sec
Accuracy	±0.01%	±0.001%	±0.01%	±0.01%	±0.01%	±0.01%
Count direction	Up/down	Up/down	Up/down	Down	Up/down	Up/down
Display	LCD, ¾"H	LCD, ¾"H	Dual LCD, 1"H	LCD, 1"H	Triple LCD, 7/16"H	LCD, 5/8"H
Clock	Yes	Yes	Yes	No	Yes	No
Alarm	1 min beep	1 min beep and visual	1 min beep	1 min beep and visual	1 min beep	1 min beep and visual
Battery included	One 1.5 V button cell	One AAA battery	One AAA battery	Two AAA battery	One AAA battery	Two AAA battery
Catalog number (timer)	<a href="#">FN-08649-10</a>	<a href="#">FN-94411-10</a>	<a href="#">FN-94440-10</a>	<a href="#">FN-94461-15</a>	<a href="#">FN-94440-00</a>	<a href="#">FN-94461-16</a>
Price/ea*						
Catalog number (battery)	<a href="#">FN-09377-16</a>	<a href="#">FN-09376-00</a>	<a href="#">FN-09376-00</a>	<a href="#">FN-09376-00</a>	<a href="#">FN-09376-00</a>	<a href="#">FN-09376-00</a>
Price/pk	/pk of 6	/pk of 12	/pk of 12	/pk of 12	/pk of 12	/pk of 12

\*Discounts: Save 10% on 10–24 timers and 20% on 25+ timers.



# Cole-Parmer® Ultrasonic Cleaners

## Quicker cleaning and degassing of samples

- High-frequency sound waves provide greater cleaning and reliability
- Gentle cleaning with 40 kHz sound waves won't damage delicate items
- Durable, leakproof design for worry-free cleaning

### Basic Ultrasonic Cleaners

- Set timer and don't worry—control cleaning cycles up to 60 minutes
- Get better cleaning with optional heater models—heat to 156°F (69°C) with overtemperature protection

### Advanced Ultrasonic Cleaners

- Easily control your precise applications—feature digital timer, power tracking, sleep, and degas mode
- Worry-free processes—set timer for up to 90 minutes, unit automatically compensates for heavier loads
- Get deeper cleaning with optional heater option



08895-43



Capacity gal. (L)	Tank dimensions (L x W x H)	Power (50/60 Hz)	Basic cleaner with mechanical timer			Basic cleaner with mechanical timer and heater			Advanced cleaner with digital timer, power tracking, and degas			Advanced cleaner with digital timer, power tracking, high/low power, degas and heater		
			Amps	Cat. no.	Price	Amps	Cat. no.	Price	Amps	Cat. no.	Price	Amps	Cat. no.	Price
½ (1.9) <sup>†</sup>	6" x 5½" x 4" (15.2 x 14 x 10.2 cm)	115 VAC	0.8	<a href="#">FN-08895-21</a>		1.2	<a href="#">FN-08895-23</a>		0.8	<a href="#">FN-08895-25</a>		1.3	<a href="#">FN-08895-27</a>	
		230 VAC	0.4	<a href="#">FN-08895-29</a>		0.7	<a href="#">FN-08895-31</a>		0.4	<a href="#">FN-08895-33</a>		0.7	<a href="#">FN-08895-35</a>	
¾ (2.8) <sup>†</sup>	9½" x 5½" x 4" (24.1 x 14 x 10.2 cm)	115 VAC	1.1	<a href="#">FN-08895-37</a>		2	<a href="#">FN-08895-39</a>		1.1	<a href="#">FN-08895-41</a>		2	<a href="#">FN-08895-43</a>	
		230 VAC	0.6	<a href="#">FN-08895-45</a>		1.1	<a href="#">FN-08895-47</a>		0.6	<a href="#">FN-08895-49</a>		1.1	<a href="#">FN-08895-51</a>	
1½ (5.7) <sup>‡</sup>	11½" x 6" x 6" (29.2 x 15.2 x 15.2 cm)	115 VAC	1.1	<a href="#">FN-08895-53</a>		2.9	<a href="#">FN-08895-55</a>		1.1	<a href="#">FN-08895-57</a>		2.9	<a href="#">FN-08895-59</a>	
		230 VAC	0.6	<a href="#">FN-08895-61</a>		1.5	<a href="#">FN-08895-63</a>		0.6	<a href="#">FN-08895-65</a>		1.6	<a href="#">FN-08895-67</a>	
2½ (9.5) <sup>‡</sup>	11½" x 9½" x 6" (29.2 x 24.1 x 15.2 cm)	115 VAC	1.5	<a href="#">FN-08895-69</a>		4	<a href="#">FN-08895-71</a>		1.5	<a href="#">FN-08895-73</a>		4.1	<a href="#">FN-08895-75</a>	
		230 VAC	0.8	<a href="#">FN-08895-77</a>		2.1	<a href="#">FN-08895-79</a>		0.8	<a href="#">FN-08895-81</a>		2.1	<a href="#">FN-08895-83</a>	
5½ (20.8) <sup>‡</sup>	19½" x 11" x 6" (49.5 x 27.9 x 15.2 cm)	115 VAC	2.7	<a href="#">FN-08895-85</a>		7.7	<a href="#">FN-08895-87</a>		2.7	<a href="#">FN-08895-89</a>		7.8	<a href="#">FN-08895-91</a>	
		230 VAC	1.4	<a href="#">FN-08895-93</a>		4	<a href="#">FN-08895-95</a>		1.4	<a href="#">FN-08895-97</a>		4	<a href="#">FN-08895-99</a>	

<sup>†</sup>The ½- and ¾-gallon cleaners have a pour spout.

<sup>‡</sup>The 1½-, 2½-, and 5½-gallon cleaners have a built-in pour drain.

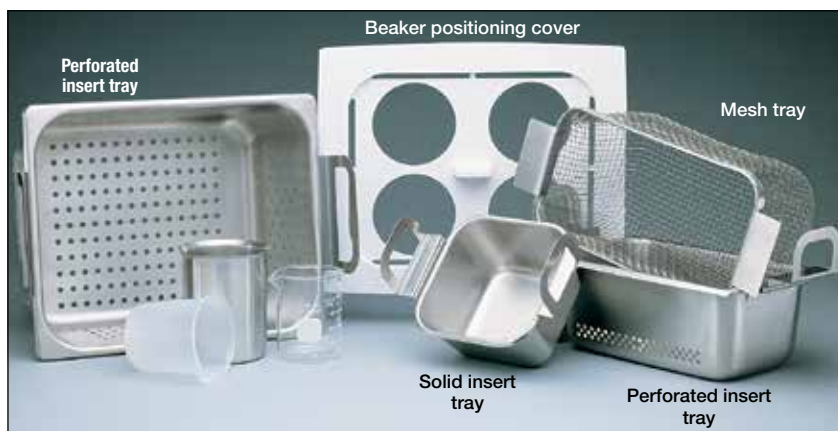
## Accessories for Ultrasonic Cleaners

### Achieve optimal cleaning results!

Ultrasonic activity is greatest about an inch from the bottom of the tank, so suspending your items provides the best cleaning possible and helps prevent damage to the transducers.

**Insert Trays** are constructed of 304 stainless steel. Use the solid trays to support items that require indirect cleaning. Use perforated or mesh trays to support items in the tank for direct cleaning.

**Beaker Positioning Covers** are ideal for cleaning small objects or for indirect cleaning. Covers come with a beaker suspension ring.



Compatible ultrasonic cleaners	Solid insert trays		Perforated insert trays		Mesh insert trays		Beaker positioning covers			
	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Beakers held	Material	Cat. no.	Price
08895-21 to -35 series	<a href="#">FN-08850-41</a>		<a href="#">FN-08850-42</a>		<a href="#">FN-08850-45</a>		One 600 mL	Polypropylene	<a href="#">FN-08890-50</a>	
08895-37 to -51 series	<a href="#">FN-08851-41</a>		<a href="#">FN-08851-42</a>		<a href="#">FN-08851-45</a>		Two 600 mL	Polypropylene	<a href="#">FN-08891-50</a>	
08895-53 to -67 series	<a href="#">FN-08852-41</a>		<a href="#">FN-08852-42</a>		<a href="#">FN-08852-45</a>		Three 250 mL	Polypropylene	<a href="#">FN-08892-50</a>	
08895-69 to -83 series	<a href="#">FN-08853-41</a>		<a href="#">FN-08853-42</a>		—	—	Four 600 mL	Polypropylene	<a href="#">FN-08893-50</a>	
08895-85 to -99 series	<a href="#">FN-08854-41</a>		<a href="#">FN-08854-42</a>		—	—	Six 600 mL	304 stainless steel	<a href="#">FN-08894-50</a>	

# Cole-Parmer® Rotational Viscometers

## Include 316 stainless steel spindles for better resistance

- Select from 10 language options
- Ensure accurate readings by calibrating your viscometer to a known standard

Determine the dynamic viscosity of samples in applications such as food (sauces, juices, and syrups), adhesives, petroleum products, biofuels, paints, pharmaceuticals, chemicals, and more! Over/under range alarm sounds when your sample is too high/low for the spindle selected. All models feature 10 language options (English, French, German, Italian, Japanese, Spanish, Portuguese, Dutch, Polish, and Catalan), push-button control with easy-to-use menu system, motor self-test, user calibration to a known standard, and universal power supply.

**Basic Viscometers** are an economical choice for fast, accurate viscosity readings. Feature a 4-line display that shows selected speed, selected spindle, viscosity, and % of full scale.

**Basic Viscometers with USB Output** include software to download data through the USB output to your PC for analysis. Store up to 10 user programs for repeated tests. Display selected speed, selected spindle, viscosity, % torque, shear rate, and shear stress on the 5-line display. Enter the sample density, and the unit calculates and displays kinematic viscosity (cSt) as well.

**Advanced Viscometers with Temperature Probe** have three times the speed selections and double the speed range of the basic models. Monitor and display temperature with the included RTD temperature probe. Program features include time to torque, time to stop, ramp, and multistep.

**Programmable Viscometers** feature 2600 speed selections and the highest speed range, up to 250 rpm. Monitor and display temperature with the included RTD temperature probe. Control the viscometer through a PC using the included software; also includes curves, graphs, and database references.

Optional low viscosity adapters allow measurement down to 1 cp when used with low range viscometers and 3.2 cp when used with medium range viscometers. Model 98965-54 includes a water jacket for attachments to an external circulating bath (not included; go to [www.coleparmer.com](http://www.coleparmer.com) for our full selection).

**What's included:** 316 stainless steel spindles (four spindles for the low range and six for the other ranges), spindle protector, stand, carrying case, and universal power supply. Models 98965-43 through -48 also include data logging software; USB cable. Models 98965-49 through -51 also include control software, data logging software, and USB cable.



Viscosity range	Rotational speed range	Number of selectable speeds	Output	Catalog number	Price
<b>Basic viscometers</b>					
20 to 2,000,000 cp (low)	0.3 to 100 rpm	18	None	<a href="#">FN-98965-40</a> <a href="#">FN-98965-41</a> <a href="#">FN-98965-42</a>	
100 to 13,000,000 cp (medium)					
200 to 106,000,000 cp (high)					
<b>Basic viscometers with data logging software and USB cable</b>					
20 to 2,000,000 cp (low)	0.3 to 100 rpm	18	USB	<a href="#">FN-98965-43</a> <a href="#">FN-98965-44</a> <a href="#">FN-98965-45</a>	
100 to 13,000,000 cp (medium)					
200 to 106,000,000 cp (high)					
<b>Advanced viscometers with temperature probe, data logging software, and USB cable</b>					
20 to 6,000,000 cp (low)	0.01 to 200 rpm	54	USB	<a href="#">FN-98965-46</a> <a href="#">FN-98965-47</a> <a href="#">FN-98965-48</a>	
100 to 40,000,000 cp (medium)					
200 to 106,000,000 cp (high)					
<b>Programmable viscometers with temperature probe, control software, data logging software, and USB cable</b>					
20 to 6,000,000 cp (low)	0.01 to 250 rpm	2600	USB	<a href="#">FN-98965-49</a> <a href="#">FN-98965-50</a> <a href="#">FN-98965-51</a>	
100 to 40,000,000 cp (medium)					
200 to 106,000,000 cp (high)					

[FN-98965-54](#) Low-viscosity adapter with water jacket

[FN-98965-55](#) Low-viscosity adapter

[FN-17107-01](#) NIST-traceable calibration with data for viscometers

### Specifications

**Accuracy:** ±1% full-scale

**Resolution**

<10,000 cp: 0.1 cp

≥10,000 cp: 1 cp

**Reproducibility:** ±0.2%

**Temperature probe (indicated models):**

100 Ω Pt RTD; 32 to 212°F (0 to 100°C)

**Power:** 100 to 240 VAC, 50/60 Hz

### Search

For our full selection of viscometer accessories, go to...

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



## Masterflex® E/S® Portable Sampling Pumps

### E/S Portable Sampling Drive

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



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

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

### E/S Composite Sampler

- Program to meet EPA requirements—sample size and time, delayed start, remote contact closure, momentary and maintained sampling
- Flow rate is 435 to 1650 mL/min depending on tubing size, lift height
- Includes Masterflex Easy-Load pump head, 9-liter HDPE carboy, 12 VDC rechargeable battery, 115/230 VAC power converter and 25 ft (7.6 m) of L/S® 24 peroxide-cured silicone tubing
- Rechargeable battery for field applications



Composite sampler



Power supplies are:



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

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

- [FN-07516-12](#) Easy-Load pump head, for use with L/S sizes 15 and 24 tubing
- [FN-07015-20](#) Standard pump head, for use with L/S size 15
- [FN-07024-20](#) Standard pump head, for use with L/S size 24
- [FN-07571-50](#) Automotive power adapter, 25-ft (7.6 m) cable
- [FN-07580-50](#) Carrying strap, optional
- [FN-77390-00](#) PTFE tubing pump head, optional
- [FN-77390-50](#) PTFE tubing set. 2-mm ID, 4-mm OD. Set of 2
- [FN-77390-60](#) PTFE tubing set. 4-mm ID, 6-mm OD. Set of 2

### Masterflex High-Performance Precision Pump Tubing

Tubing type	Tubing	Qty/pk	Catalog number	Price/pk
Silicone (peroxide-cured)	L/S 15	25 ft (7.6 m)	<a href="#">FN-96400-15</a>	
	L/S 24		<a href="#">FN-96400-24</a>	
Tygon® E-Lab	L/S 15	50 ft (15.2 m)	<a href="#">FN-06509-15</a>	
	L/S 24		<a href="#">FN-06509-24</a>	
Tygon E-LFL	L/S 15	25 ft (7.6 m)	<a href="#">FN-06440-15</a>	
	L/S 24		<a href="#">FN-06440-24</a>	

## Sludge Judge® Sludge Samplers

### No more straining

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



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

Description	Length	Catalog number	Price
<b>Sludge Judge sampler, ¾" (1.9 cm) diameter</b>			
Sludge Judge; top, middle, bottom sections	3 x 5 ft (1.5 m)	<a href="#">FN-05465-70</a>	
Replacement bottom section with valve	5 ft (1.5 m)	<a href="#">FN-05465-72</a>	
Replacement middle section/extension section	5 ft (1.5 m)	<a href="#">FN-05465-74</a>	
Replacement top section with nylon rope	5 ft (1.5 m)	<a href="#">FN-05465-76</a>	
<b>Sludge Judge II sampler, 1¼" (3.2 cm) diameter</b>			
Sludge Judge II; top, middle, bottom sections	3 x 5 ft (1.5 m)	<a href="#">FN-05465-30</a>	
Replacement bottom section with valve	5 ft (1.5 m)	<a href="#">FN-05465-31</a>	
Replacement middle section/extension section	5 ft (1.5 m)	<a href="#">FN-05465-32</a>	
Replacement top section with nylon rope	5 ft (1.5 m)	<a href="#">FN-05465-33</a>	
<b>Sludge Judge Ultra sampler, ¾" (1.9 cm) diameter, UV resistant</b>			
Sludge Judge Ultra; top, middle, bottom sections	3 x 5 ft (1.5 m)	<a href="#">FN-05465-40</a>	
Replacement bottom section with valve	5 ft (1.5 m)	<a href="#">FN-05465-41</a>	
Replacement middle section/extension section	5 ft (1.5 m)	<a href="#">FN-05465-42</a>	
Replacement top section with nylon rope	5 ft (1.5 m)	<a href="#">FN-05465-43</a>	

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

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

## Scienceware® Dippers with Replaceable Cup

### Easily pour from either side

- Long handles for easy sampling



Screw-on cups let you easily take multiple samples.

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



**Buy More... Save More!**

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

Capacity mL (oz)	Dipper dia	Handle length	Qty/pk	Catalog number	Price/pk
<b>Dippers with replaceable cup</b>					
500 (16)	3 7/8" (9.8 cm)	36" (0.9 m)	1	<a href="#">FN-06282-00</a>	
		72" (1.8 m)		<a href="#">FN-06282-05</a>	
<b>Extra/replacement screw-on PP cup</b>					
500 (16)	3 7/8" (9.8 cm)	—	1	<a href="#">FN-06282-50</a>	

## WHIRL-PAK® Sterile Sampling Bags, LDPE

Keep samples safe—easy-seal bags hold solids and liquids

- Quick and easy sealing—flip bag around wire/tape and bend to seal
- No more poking—puncture-proof tabs keep wire intact even after extensive use

**Sampling Bags** are available with or without a white labeling area.

**"Speci-Sponge" Bags** are designed to sample surfaces and equipment for *Listeria*, *Salmonella*, and other food-borne pathogens; contain a 1½" x 3" (3.8 x 7.6 cm) sponge that is free of bactericides and noninhibitory; with white labeling area.

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

**High-Temperature Bag** is for hot fill samples with a temperature up to 215°F (102°C). The FDA-compliant film is a blend of low-density polyethylene and nylon that will hold liquids, solids, sauces, gravies, and other samples having a high temperature. Bag is self standing and does not need a rack or special holder to keep it upright, making sample collection safe and easy. With white labeling area. **Caution:** Do not put bag in boiling water.



**Buy More... Save More!**  
20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

**STERILE**

Capacity oz (mL)	Size (W x L)	Thickness (mil)	Catalog number	Qty/pk	Price/pk
<b>Sampling bags without white labeling area</b>					
4 (118)	3" x 7¼" (7.6 x 18.4 cm)	2.25	<a href="#">FN-06499-10</a>	500	
18 (532)	4½" x 9" (11.4 x 22.9 cm)	2.5	<a href="#">FN-06499-20</a>	500	
24 (710)	6" x 9" (15.2 x 22.9 cm)	3.0	<a href="#">FN-06499-30</a>	500	
36 (1065)	5" x 15" (12.7 x 38.1 cm)	3.0	<a href="#">FN-06499-40</a>	500	
42 (1242)	6" x 15" (15.2 x 38.1 cm)	3.0	<a href="#">FN-06499-50</a>	500	
69 (2041)	7½" x 15" (19.1 x 38.1 cm)	3.0	<a href="#">FN-06499-54</a>	500	
<b>Standup sampling bags with white labeling area</b>					
4 (118)	3" x 7¼" (7.6 x 18.4 cm)	2.5	<a href="#">FN-06499-16</a>	500	
18 (532)	4½" x 9" (11.4 x 22.9 cm)	3.0	<a href="#">FN-06499-21</a>	500	
24 (710)	6" x 9" (15.2 x 22.9 cm)	3.0	<a href="#">FN-06499-31</a>	500	
27 (798)	5" x 12" (12.7 x 30.5 cm)	3.0	<a href="#">FN-06499-32</a>	250	
36 (1065)	5" x 15" (12.7 x 38.1 cm)	4.0	<a href="#">FN-06499-33</a>	250	
42 (1242)	6" x 15" (15.2 x 38.1 cm)	4.0	<a href="#">FN-06499-34</a>	250	
69 (2041)	7½" x 15" (19.1 x 38.1 cm)	4.0	<a href="#">FN-06499-35</a>	250	
<b>Sampling bags with white labeling area</b>					
2 (58)	3" x 5" (7.6 x 12.7 cm)	2.5	<a href="#">FN-06499-60</a>	500	
4 (118)	3" x 7¼" (7.6 x 18.4 cm)	2.25	<a href="#">FN-06499-70</a>	500	
7 (207)	3¾" x 7" (9.5 x 17.8 cm)	2.5	<a href="#">FN-06499-72</a>	500	
13 (384)	5¼" x 7½" (13.3 x 19.1 cm)	2.5	<a href="#">FN-06499-74</a>	500	
18 (532)	4½" x 9" (11.4 x 22.9 cm)	2.5	<a href="#">FN-06499-80</a>	500	
24 (710)	6" x 9" (15.2 x 22.9 cm)	3.0	<a href="#">FN-06499-85</a>	500	
27 (798)	5" x 12" (12.7 x 30.5 cm)	3.0	<a href="#">FN-06499-87</a>	500	
69 (2041)	7½" x 15" (19.1 x 38.1 cm)	3.0	<a href="#">FN-06499-89</a>	500	
92 (2721)	10" x 15" (25.4 x 38.1 cm)	4.0	<a href="#">FN-06499-94</a>	250	
123 (3637)	10" x 20" (25.4 x 50.8 cm)	4.0	<a href="#">FN-06499-98</a>	250	
184 (5441)	15" x 20" (38.1 x 50.8 cm)	4.0	<a href="#">FN-06499-99</a>	100	
<b>"Speci-Sponge" bags for surface sampling with sponge</b>					
18 (532)	4½" x 9" (11.4 x 22.9 cm)	2.5	<a href="#">FN-06499-13</a>	100	
55 (1627)	7½" x 11¾" (19.1 x 29.8 cm)	4.0	<a href="#">FN-06499-14</a>	100	
18 (532)	4" x 9" (10.2 x 22.9 cm)	2.5	<a href="#">FN-06499-52†</a>	100	
<b>Sodium thiosulfate bags for water sampling with tablet</b>					
3¾ (100)	3" x 7¼" (7.6 x 18.4 cm)	2.5	<a href="#">FN-06499-90</a>	100	
10½ (300)	4½" x 9" (11.4 x 22.9 cm)	2.5	<a href="#">FN-06499-95</a>	100	
<b>High-temperature bag</b>					
18 (532)	4½" x 9" (11.4 x 22.9 cm)	3.0	<a href="#">FN-06498-16</a>	500	

†Model 06499-52 has a sterile glove.

### Accessories

**FN-66203-10 Carrying rack** for 2- and 4-oz bags. Double-grid design keeps bags upright and has 15 compartments. Vinyl coated, autoclavable

**FN-66203-00 Carrying rack** for 18-oz bags. Double-grid design keeps bags upright. Rack has 20 compartments. Vinyl coated, autoclavable

**FN-06498-12 Water scoop**, 18" (45.7 cm) L coated handle. Two alligator clips hold a variety of bag sizes



Standup bags stay upright



Water scoop holds bag open for easy filling



Rack



## Disposable Griffin Low-Form Beakers, PP

Molded-in graduations won't wear off

- No need to convert volumes—graduated in mL and oz
- Won't stick together—stacking rib for easier separation
- Autoclavable



**Buy More...Save More!**  
20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Capacity mL (oz)	Graduations (mL)	Catalog number	Qty/pk	Price/pk
15 (0.5)	5	FN-06006-12	100	
15 (0.5)	5	FN-06006-15	1000	
30 (1)	5	FN-06006-22	100	
30 (1)	5	FN-06006-25	1000	
50 (1.7)	5	FN-06006-32	100	
50 (1.7)	5	FN-06006-35	1000	
100 (3.5)	5	FN-06006-42	100	
100 (3.5)	5	FN-06006-45	1000	
150 (5)	5	FN-06006-52	100	
150 (5)	5	FN-06006-55	1000	
250 (8)	10	FN-06006-63	50	
250 (8)	10	FN-06006-65	500	
400 (13)	25	FN-06006-72	50	
400 (13)	25	FN-06006-75	500	
600 (20)	25	FN-06006-83	25	
600 (20)	25	FN-06006-85	500	

## DON'T RISK IT!

Our chemical compatibility database provides important information on chemical resistance—check it out at [ColeParmer.com/ChemChart](http://ColeParmer.com/ChemChart)



## PYREX® Brand 1003 Heavy-Duty Griffin Beakers

Get the best strength even under harsh conditions

- Measure initial quantity and how much is used—double metric scale on 250- to 4000-mL sizes
- Know your solution—extra-large marking spot for easier identification
- Reference: ASTM E-960



**Buy More...Save More!**  
15% off on 10+ packs or cases 10% off on 5 to 9 packs or cases

Capacity mL (oz)	Graduation range (mL)	Graduation interval (mL)	Catalog number	Qty	Price
150 (5)	20 to 140	20	FN-34512-06	12/pk	
150 (5)	20 to 140	20	FN-34512-26	48/cs	
250 (8)	25 to 200	25	FN-34512-07	12/pk	
250 (8)	25 to 200	25	FN-34512-27	48/cs	
400 (13)	25 to 325	25	FN-34512-08	12/pk	
400 (13)	25 to 325	25	FN-34512-28	48/cs	
600 (20)	50 to 500	50	FN-34512-09	6/pk	
600 (20)	50 to 500	50	FN-34512-29	36/cs	
1000 (32)	50 to 1000	50	FN-34512-11	6/pk	
1000 (32)	50 to 1000	50	FN-34512-31	24/cs	
2000 (64)	200 to 1800	200	FN-34512-13	4/pk	
2000 (64)	200 to 1800	200	FN-34512-33	8/pk	
4000 (128)	500 to 3500	250	FN-34512-15	1/pk	
4000 (128)	500 to 3500	250	FN-34512-35	4/pk	

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

Easy pouring from three sides

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



**Buy More...Save More!**  
20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Capacity mL (oz)	Graduations (mL)	Cat. no.	Qty/pk	Price/pk
50 (1.5)	10	FN-06020-01		
100 (3.5)	10	FN-06020-03	100	
250 (8)	20	FN-06020-05		
400 (13)	40	FN-06020-07		
800 (26)	50	FN-06020-09	100	
1000 (32)	50	FN-06020-11		
Five of each above	—	FN-06010-07	30	

## PYREX® Brand 1000 Griffin Low-Form Beakers

Stand up to thermal shock

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



**Buy More...Save More!**  
15% off on 10+ packs or cases 10% off on 5 to 9 packs or cases

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

## Graduated Sample Containers, PP

Graduated for easier sampling

- Durable design—translucent, unbreakable, and chemical resistant
- Sterile containers are individually wrapped



Buy More...Save More!

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



Capacity mL (oz)	Description	Catalog number	Qty/pk	Price/pk
118 (4)	Sterile, no tab	<a href="#">FN-06049-40</a>	100	
118 (4)	Nonsterile with white tab	<a href="#">FN-06049-50</a>	500	

## Sample Bottles, HDPE

Store samples without breaking your budget

- Provide good chemical resistance for a wide range of uses
- Bottles are made of HDPE; included cap is made of polypropylene and lined with polyethylene foam
- Easy mailing with optional mailing tube (sold separately)



Buy More...Save More!

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

Capacity mL (oz)	Qty/pk	Catalog number	Price/pk
180 (6)	300	<a href="#">FN-06043-01</a>	
250 (8)	329	<a href="#">FN-06049-01</a>	
500 (16)	198	<a href="#">FN-06050-05</a>	

[FN-06049-30](#) Mailing tubes for bottle 06049-01. Carton of 240

## Thermo Scientific™ Nalgene™ Economy Wide-Mouth Bottles, HDPE

Rugged design fits all your needs

- Leakproof, PP enclosure

Buy More...Save More!

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



Capacity mL (oz)	Cap size	Catalog number	Qty/pk	Price/pk	Catalog number	Qty/cs	Price/cs
30 (1)	28 mm	<a href="#">FN-06035-31</a>			<a href="#">FN-06035-33</a>		
60 (2)	28 mm	<a href="#">FN-06035-35</a>	12		<a href="#">FN-06035-37</a>	72	
125 (4)	38 mm	<a href="#">FN-06035-39</a>			<a href="#">FN-06035-41</a>		
250 (8)	43 mm	<a href="#">FN-06035-43</a>	12		<a href="#">FN-06035-45</a>	72	
500 (16)	53 mm	<a href="#">FN-06035-47</a>	6		<a href="#">FN-06035-49</a>	48	
1000 (32)	63 mm	<a href="#">FN-06035-51</a>	6		<a href="#">FN-06035-53</a>	24	

## Thermo Scientific™ Nalgene™ Wide-Mouth Bottles, HDPE

Safely transport samples—leakproof lids for worry-free shipping

- Wide-mouth design for easier filling with dry or liquid samples
- Easy viewing of samples with translucent HDPE design
- Leakproof lids are made of polypropylene



Buy More...Save More!

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

Capacity mL (oz)	Cap size	Qty/pk	Catalog number	Price/pk
30 (1)	28 mm		<a href="#">FN-06047-10</a>	
60 (2)	28 mm	12	<a href="#">FN-06047-20</a>	
125 (4)	38 mm		<a href="#">FN-06047-30</a>	
250 (8)	43 mm	12	<a href="#">FN-06047-40</a>	
500 (16)	53 mm		<a href="#">FN-06047-50</a>	
1000 (32)	63 mm	6	<a href="#">FN-06047-60</a>	
1500 (50)	63 mm		<a href="#">FN-06047-65</a>	

## Thermo Scientific™ Nalgene™ Heavy-Duty Bottles, PP

Withstand repeated full vacuum applications

- Use under repeated full vacuum for 24 hours at 68°F (20°C)
- PP closure with thermoplastic elastomer (TPE) gasket
- Autoclavable



Buy More...Save More!

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

Capacity, mL (oz)	Cap size	Catalog number	Qty/pk	Price/pk
250 (8)		<a href="#">FN-06257-05</a>	6	
1000 (32)	53B	<a href="#">FN-06257-10</a>	6	
2000 (64)		<a href="#">FN-06257-20</a>	2	
4000 (128)	83B	<a href="#">FN-06257-00</a>	1	
5000 (160)		<a href="#">FN-06257-30</a>		

## Caring for Your Plasticware

**Washing Plastics with a Mild Detergent** is sufficient for most general applications. Be sure to rinse with tap water, then rinse again with distilled water. Most plastics, particularly the polyolefins (PPCO, PP, PMP, LDPE, and HDPE), have nonwetting surfaces that resist attack and are easy to clean. Do not use abrasive cleaners or scouring pads on plastic labware. Do not use strong alkaline cleaning agents with polycarbonate (PC).



## Cole-Parmer® Wide-Mouth Bottles, LDPE, HDPE, PP

Wide-mouth opening provides easier filling and sampling

- Offered in pack quantities or bulk pack quantities to meet your specific requirements
- Reliable and sturdy
- Choose from three materials; all include a leakproof PP closure

**HDPE Bottles** are manufactured with FDA-compliant 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.**



Buy More...Save More!

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



Capacity mL (oz)	Cap size	Catalog number	Qty/ pk	Price/ pk	Catalog number	Qty/ cs	Price/ cs
<b>HDPE</b>							
60 (2)	22 mm	<a href="#">FN-06045-18</a>	12		<a href="#">FN-06045-23</a>	72	
125 (4)	28 mm	<a href="#">FN-06045-24</a>	12		<a href="#">FN-06045-25</a>	72	
250 (8)	28 mm	<a href="#">FN-06045-26</a>	12		<a href="#">FN-06045-27</a>	72	
500 (16)	28 mm	<a href="#">FN-06045-28</a>	12		<a href="#">FN-06045-29</a>	48	
1000 (32)	28 mm	<a href="#">FN-06045-44</a>	6		<a href="#">FN-06045-31</a>	24	
2000 (64)	45 mm	<a href="#">FN-06045-46</a>	1		<a href="#">FN-06045-33</a>	6	
<b>LDPE</b>							
60 (2)	22 mm	<a href="#">FN-06045-02</a>	12		<a href="#">FN-06045-03</a>	72	
125 (4)	28 mm	<a href="#">FN-06045-04</a>	12		<a href="#">FN-06045-05</a>	72	
250 (8)	28 mm	<a href="#">FN-06045-06</a>	12		<a href="#">FN-06045-07</a>	72	
500 (16)	28 mm	<a href="#">FN-06045-08</a>	12		<a href="#">FN-06045-09</a>	48	
1000 (32)	28 mm	<a href="#">FN-06045-14</a>	6		<a href="#">FN-06045-11</a>	6	
<b>PP</b>							
30 (1)	22 mm	<a href="#">FN-06045-48</a>	12		<a href="#">FN-06045-41</a>	72	
60 (2)	22 mm	<a href="#">FN-06045-56</a>	12		<a href="#">FN-06045-43</a>	72	
125 (4)	28 mm	<a href="#">FN-06045-58</a>	12		<a href="#">FN-06045-45</a>	72	
250 (8)	28 mm	<a href="#">FN-06045-62</a>	12		<a href="#">FN-06045-47</a>	72	
500 (16)	28 mm	<a href="#">FN-06045-66</a>	12		<a href="#">FN-06045-49</a>	48	
1000 (32)	28 mm	<a href="#">FN-06045-68</a>	6		<a href="#">FN-06045-51</a>	24	
2000 (64)	45 mm	<a href="#">FN-06045-74</a>	1		<a href="#">FN-06045-53</a>	6	

## Collapsible Containers, LDPE

Won't take up extra space—easily expand when filled

- Stack neatly when empty, just unscrew cap and fill to expand
- Include polypropylene caps



Buy More...Save More!

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

Capacity, L (gallon)	Cap size	Qty/pk	Catalog number	Price/pk
1 (¼)	38 mm	12	<a href="#">FN-06100-10</a>	
4 (1)			<a href="#">FN-06100-20</a>	
10 (2½)	38 mm	10	<a href="#">FN-06100-30</a>	
19 (5)			<a href="#">FN-06100-40</a>	

## PYREX® Brand 1395 Media Bottles

Permanent white graduations won't wear off

- Use for mixing or storing of your solutions—full capacity indicated by bead line on 100-mL to 2-L sizes
- Linerless, autoclavable polypropylene screw cap included on each bottle
- Color code your samples with optional color-coded PP caps



**Caution:** Bottles larger than 2 liters should not be used under vacuum pressure, as breakage may occur. Do not tighten caps immediately after autoclaving.

Buy More...Save More!

- \$ 15% off on 10+ packs or cases
- 10% off on 5 to 9 packs or cases

Capacity mL (oz)	Graduation range (mL)	Thread size	Neck ID	Catalog number	Qty/ cs	Price/ cs
25 (¾)	10 to 25	GL25	14.5 mm	<a href="#">FN-34514-20</a>	10	
50 (1¾)	20 to 50	GL32	16.5 mm	<a href="#">FN-34514-21</a>	10	
100 (3)	40 to 80	GL45	29 mm	<a href="#">FN-34514-22</a>	10	
250 (8)	50 to 200	GL45	29 mm	<a href="#">FN-34514-23</a>	10	
500 (16)	100 to 400	GL45	29 mm	<a href="#">FN-34514-24</a>	10	
1000 (32)	100 to 900	GL45	29 mm	<a href="#">FN-34514-25</a>	10	
2000 (64)	400 to 1800	GL45	29 mm	<a href="#">FN-34514-26</a>	4	
5000 (160)	500 to 4500	GL45	29 mm	<a href="#">FN-34514-28</a>	1	
10,000 (320)	2000 to 9000	GL45	29 mm	<a href="#">FN-34514-30</a>	1	

[FN-34514-50](#) Polypropylene cap, orange, GL45. Cs of 20

[FN-34514-53](#) Polypropylene cap, green, GL45. Cs of 20

[FN-34514-54](#) Polypropylene cap, gray membrane, GL45. Cs of 10

[FN-34514-55](#) Polypropylene cap, red high-temp. GL45. Cs of 10

[FN-34514-60](#) Pouring ring, clear, low temperature. Cs of 50

[FN-34514-65](#) Pouring ring, red, high temperature. Cs of 50

## Scienceware® Wash Bottles, LDPE

No leaking while dispensing

- One-piece polyallomer (PA) cap/delivery tube eliminates leaks
- Precise delivery with needle-thin stream



Buy More...Save More!

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

Capacity mL (oz)	Catalog number	Qty/ pk	Price/ pk
125 (4)	<a href="#">FN-06053-21</a>	12	
250 (8)	<a href="#">FN-06053-41</a>		
500 (16)	<a href="#">FN-06053-61</a>		
1000 (32)	<a href="#">FN-06053-81</a>		

## Cole-Parmer® Precleaned EPA Sample Containers

No contaminants—precleaned and ready to use

- Include certificate of conformance to EPA specifications
- Identify samples easier with included labels (unattached)

**A-D. Glass Bottles, Jars, and Jugs** are processed and certified to meet the requirements of the current US EPA “Specifications and Guidance for Contaminant-Free Sample Containers” document for semi-volatile organics, pesticides, PCBs, metals, cyanide, fluoride, nitrate and nitrite analyses. Include PTFE-lined caps.

**E. Glass Septa Jars** are processed and certified to meet the requirements of the current US EPA “Specifications and Guidance for Contaminant-Free Sample Containers” document for purgeable volatile organic analysis. Include PTFE-lined silicone septa bonded to open-top caps.



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

## DON'T RISK IT!

Our chemical compatibility database provides important information on chemical resistance—check it out at [ColeParmer.com/ChemChart](http://ColeParmer.com/ChemChart)



## Qorpak® Precleaned Glass Sample Bottles

Save time—no need to prewash bottles

- Vacuum and ionization process removes contaminants such as dirt, dust, carton lint, oil, aerosols, and fine glass particles
- Individually sealed for long-term storage with no contamination
- Bottles come with PTFE-lined caps; jars are available with PTFE-lined or pulp/vinyl-lined caps
- Clear wide-mouth square glass bottles have French square design for a more efficient use of shelf space while making the container easier to grip when pouring



### Buy More...Save More!

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

Capacity mL (oz)	Neck size (mm)	Catalog number	Qty/ cs	Price/ cs
<b>A. Clear narrow-mouth bottles</b>				
30 (1)	20	<a href="#">FN-34606-00</a>	48	
60 (2)	20	<a href="#">FN-34606-10</a>		
120 (4)	22	<a href="#">FN-34606-20</a>	24	
240 (8)	24	<a href="#">FN-34606-30</a>		
480 (16)	28	<a href="#">FN-34606-40</a>	12	
960 (32)	33	<a href="#">FN-34606-50</a>		
<b>B. Clear wide-mouth square glass bottles</b>				
15 (½)	20	<a href="#">FN-34610-00</a>	48	
30 (1)	24	<a href="#">FN-34610-10</a>		
60 (2)	28	<a href="#">FN-34610-20</a>		
120 (4)	33	<a href="#">FN-34610-30</a>	24	
240 (8)	43	<a href="#">FN-34610-40</a>		
480 (16)	48	<a href="#">FN-34610-50</a>		
960 (32)†	58	<a href="#">FN-34610-60</a>	12	
<b>C. Amber narrow-mouth glass bottles</b>				
60 (2)	20	<a href="#">FN-34607-00</a>	24	
120 (4)	22	<a href="#">FN-34607-10</a>		
240 (8)	24	<a href="#">FN-34607-20</a>		
480 (16)	28	<a href="#">FN-34607-30</a>	12	
960 (32)	33	<a href="#">FN-34607-40</a>		
<b>D. Amber wide-mouth glass bottles</b>				
30 (1)	28	<a href="#">FN-34609-00</a>	24	
60 (2)	33	<a href="#">FN-34609-10</a>		
120 (4)	38	<a href="#">FN-34609-20</a>		
240 (8)	45	<a href="#">FN-34609-30</a>		
480 (16)	53	<a href="#">FN-34609-40</a>	12	
960 (32)	53	<a href="#">FN-34609-50</a>		
<b>E. Clear wide-mouth glass jars with PTFE lined caps</b>				
30 (1)	43	<a href="#">FN-34608-00</a>	48	
60 (2)	53	<a href="#">FN-34608-10</a>		
120 (4)	58	<a href="#">FN-34608-20</a>	24	
270 (9)	70	<a href="#">FN-34608-30</a>		
480 (16)	89	<a href="#">FN-34608-40</a>	12	
960 (32)	89	<a href="#">FN-34608-50</a>		
<b>F. Clear wide-mouth glass jars with pulp/vinyl lined caps (not shown)</b>				
30 (1)	43	<a href="#">FN-34608-05</a>	48	
60 (2)	53	<a href="#">FN-34608-15</a>		
120 (4)	58	<a href="#">FN-34608-25</a>	24	
270 (9)	70	<a href="#">FN-34608-35</a>		
480 (16)	89	<a href="#">FN-34608-45</a>	12	
960 (32)	89	<a href="#">FN-34608-55</a>		

†Graduated in mL and oz.





## Solid-Design Cable Ties, Nylon

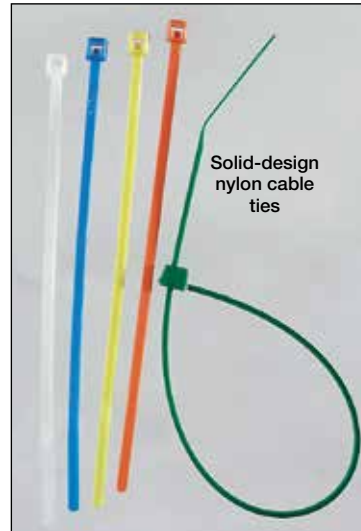
### Won't corrode or stretch—made from injection-molded plastic

- Simply bend tip and pull through locking mechanism to secure
- Won't lose tension—even in vibrating, oily, or wet environments
- Withstand temperatures to 185°F (85°C), with melting point of 495°F (257°C)

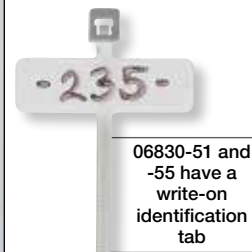
Black ties are UV and weather resistant from -40 to 221°F (-40 to 105°C). UL-component recognized and self-extinguishing as per UL 94 Flam. class: V-2. Meet military specification MS3367.



Length	Bundle diameter	Color	Catalog number	Qty/pk	Price/pk
<b>Miniature, 18-lb tensile strength</b>					
4" (10.2 cm)	7/8" (2.2 cm)	White	FN-06830-66	100	
			FN-06830-52	1000	
			FN-06830-51†	1000	
4" (10.2 cm)	7/8" (2.2 cm)	Black	FN-06830-68	100	
			FN-06830-11	100	
4" (10.2 cm)	7/8" (2.2 cm)	Red	FN-06830-61	1000	
			FN-06830-12	100	
4" (10.2 cm)	7/8" (2.2 cm)	Blue	FN-06830-62	1000	
			FN-06830-63	1000	
4" (10.2 cm)	7/8" (2.2 cm)	Green	FN-06830-63	1000	
4" (10.2 cm)	7/8" (2.2 cm)	Yellow	FN-06830-64	1000	
4" (10.2 cm)	7/8" (2.2 cm)	Orange	FN-06830-65	1000	
<b>Intermediate, 40-lb tensile strength</b>					
5 1/2" (14.0 cm)	1 1/4" (3.2 cm)	White	FN-06830-54	1000	
5 1/2" (14.0 cm)	1 1/4" (3.2 cm)	Black	FN-06830-78	100	
8" (20.3 cm)	2 1/8" (5.4 cm)	White	FN-06830-30	1000	
			FN-06830-89	100	
8" (20.3 cm)	2 1/8" (5.4 cm)	Black	FN-06830-88	1000	
			FN-06830-31	1000	
8" (20.3 cm)	2 1/8" (5.4 cm)	Red	FN-06830-31	1000	
			FN-06830-32	1000	
8" (20.3 cm)	2 1/8" (5.4 cm)	Blue	FN-06830-32	1000	
			FN-06830-33	1000	
8" (20.3 cm)	2 1/8" (5.4 cm)	Green	FN-06830-33	1000	
			FN-06830-19	100	
8" (20.3 cm)	2 1/8" (5.4 cm)	Yellow	FN-06830-19	100	
			FN-06830-34	1000	
8" (20.3 cm)	2 1/8" (5.4 cm)	Orange	FN-06830-41	1000	



Solid-design nylon cable ties



06830-51 and -55 have a write-on identification tab



Length	Bundle diameter	Color	Catalog number	Qty/pk	Price/pk
<b>Standard, 50-lb tensile strength</b>					
7 1/2" (19.1 cm)	1 3/4" (4.4 cm)	White	FN-06830-43	100	
			FN-06830-56	1000	
			FN-06830-55†	1000	
11" (27.9 cm)	3" (7.6 cm)	White	FN-06830-47	100	
			FN-06830-46	1000	
11" (27.9 cm)	3" (7.6 cm)	Black	FN-06830-49	100	
			FN-06830-48	1000	
15" (38.1 cm)	4" (10.2 cm)	White	FN-06830-58	100	
15" (38.1 cm)	4" (10.2 cm)	Black	FN-06830-29	100	
<b>Heavy duty, 120-lb tensile strength</b>					
14 1/2" (36.8 cm)	4" (10.2 cm)	White	FN-06830-36	50	
			FN-06830-91	100	
24" (61.0 cm)	7" (17.8 cm)	White	FN-06830-38	50	
28" (71.1 cm)	8" (20.3 cm)	White	FN-06830-39	50	
<b>Extra heavy duty, 175-lb tensile strength</b>					
34" (86.4 cm)	10" (25.4 cm)	White	FN-06830-42	50	

†Ties 06830-51 and -55 have a textured, write-on identification tab.

## Autoclavable Solid-Design Cable Ties, PP

### Keep items bundled during autoclaving

Polypropylene (PP) cable ties resist a number of chemicals and are UV-resistant. Sold in packs of 1000.

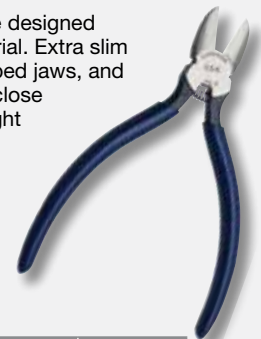


Length	Bundle dia	Tensile strength	Color	Catalog number	Price/pk of 1000
4" (10.2 cm)	3/4" (1.9 cm)	11 lb	Natural	FN-06830-85	
8" (20.3 cm)	1 3/4" (4.4 cm)	25 lb	Black	FN-06830-95	

## Crescent® Plastic-Cutting Diagonal Pliers

### Get close and accurate cutting

These solid-joint diagonal pliers are designed specifically for cutting plastic material. Extra slim design, ground-flat back, oval-shaped jaws, and flush ground cutting edges permit close trimming and accurate cutting in tight areas. Vinyl cushion grips and coil springs provide user comfort and reduce fatigue. Pliers measure 6" (15.2 cm) L; nose measures 27/32" (21 mm) L x 47/64" (19 mm) W.



Description	Catalog number	Price
Plastic-cutting diagonal pliers	FN-97109-25	

## Thermo Scientific™ Nalgene™ Round Carboys, LDPE

### No more leaks

- Leakproof, polypropylene cap for no worry transport
- Make transport easy with easy-grip handles
- Withstand corrosive materials
- Maintain adequate levels of solution—larger than 10-L carboys indicate 1-gallon and 5-liter increments
- Dispense easily with spigot models



**Buy More...Save More!**  
20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Liters (gallons)	Cap size	Catalog number	Qty/pk	Price/pk
<b>Carboys with shoulder handles</b>				
10 (2½)	83B	<a href="#">FN-06031-32</a>	1	
15 (4)	83B	<a href="#">FN-06031-42</a>		
20 (5)	83B	<a href="#">FN-06031-52</a>		
25 (6½)	83B	<a href="#">FN-06031-62</a>		
50 (13)	83B	<a href="#">FN-06031-72</a>		
<b>Wide-mouth carboys with shoulder handles</b>				
10 (2½)	100 mm	<a href="#">FN-06056-22</a>	1	
15 (4)	100 mm	<a href="#">FN-06056-32</a>		
20 (5)	100 mm	<a href="#">FN-06056-52</a>		
<b>Carboy with spigot and shoulder handles</b>				
4 (1)	38-430	<a href="#">FN-06065-10</a>	1	
10 (2½)	83B	<a href="#">FN-06065-22</a>		
20 (5)	83B	<a href="#">FN-06065-32</a>		
25 (6½)	83B	<a href="#">FN-06065-52</a>		
50 (13)	83B	<a href="#">FN-06065-62</a>		
<b>Carboys with ½" OD tubulation and shoulder handles</b>				
10 (2½)	83B	<a href="#">FN-06080-42</a>	1	
20 (5¼)	83B	<a href="#">FN-06080-52</a>		

#### Accessories

- [FN-06258-30](#) Replacement cap, PP, 83B. Pack of 2
- [FN-63000-16](#) Replacement cap, PP, 100 mm. Pack of 12
- [FN-63000-18](#) Replacement cap, PP, 38-430. Pack of 12
- [FN-06070-22](#) Replacement spigot, PP

## Cole-Parmer® Economical Heavy-Duty Carboys with Shoulder Handle, PP

### Sturdy, octagonal design for added rigidity

- Easier filling and pouring with offset neck
- Leakproof spigot models have tube fitting for easier filling of containers
- Polypropylene closure reduces evaporation
- Autoclavable



**Cole-Parmer®**

**Buy More...Save More!**  
20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Liters (gallons)	Cap size	Catalog number	Qty/pk	Price/pk
<b>Heavy-duty carboys with shoulder handle</b>				
5 (1¼)	45 mm	<a href="#">FN-62507-00</a>	1	
10 (2½)	90 mm	<a href="#">FN-62507-10</a>	1	
20 (5¼)	90 mm	<a href="#">FN-62507-20</a>	1	
<b>Heavy-duty carboys with shoulder handle and spigot</b>				
5 (1¼)	45 mm	<a href="#">FN-62507-05</a>	1	
10 (2½)	90 mm	<a href="#">FN-62507-15</a>	1	
20 (5¼)	90 mm	<a href="#">FN-62507-25</a>	1	

## Thermo Scientific™ Nalgene™ FDA-Compliant Carboys, PP

### Get a better grip with two-handle construction

- Dispense solutions more quickly with optional spigot models—accept ¼", ½", or ⅝" ID tubing
- Leakproof polypropylene (PP) cap
- Autoclavable



**Buy More...Save More!**  
20% off on 120+ 15% off on 30 to 119 10% off on 6 to 29 packs or cases

Liters (gallons)	Cap size	Catalog number	Qty/pk	Price/pk
<b>FDA-compliant carboys, USP Class VI</b>				
10 (2½)	83B	<a href="#">FN-06063-12</a>	1	
20 (5)	83B	<a href="#">FN-06063-22</a>		
50 (13)	83B	<a href="#">FN-06063-32</a>		
<b>FDA-compliant carboys with spigot, USP Class VI</b>				
10 (2½)	83B	<a href="#">FN-06064-50</a>	1	
20 (5)	83B	<a href="#">FN-06064-60</a>		
50 (13)	83B	<a href="#">FN-06064-70</a>		

## Cole-Parmer® Jiffy-Jack® Lab Jacks

### Safely position sample or equipment

- Easily position equipment or sample with a twist of the knob
- Rugged construction stands up to heavy loads
- Add optional support rod for probes, clamps, or other items



Model 08057-20 supports up to 132 lb (60 kg).

Top plate dimensions	Open height	Closed height	Max support static load	Catalog number	Price
<b>Plastic lab jack</b>					
8" x 8" (20.3 x 20.3 cm)	12" (30.5 cm)	3" (7.6 cm)	15 lb (6 kg)	<a href="#">FN-08055-50</a>	
<b>Aluminum lab jacks</b>					
4" x 4" (10.2 x 10.2 cm)	5" (12.7 cm)	2½" (6.4 cm)	66 lb (30 kg)	<a href="#">FN-08057-10</a>	
6" x 6" (15.2 x 15.2 cm)	9¾" (24.8 cm)	3" (7.6 cm)	132 lb (60 kg)	<a href="#">FN-08057-20</a>	
8" x 8" (20.3 x 20.3 cm)	13" (33.0 cm)	3½" (8.9 cm)	176 lb (80 kg)	<a href="#">FN-08057-30</a>	
10" x 10" (25.4 x 25.4 cm)	13" (33.0 cm)	3½" (8.9 cm)	198 lb (90 kg)	<a href="#">FN-08057-40</a>	
<b>Stainless steel heavy-duty lab jacks</b>					
3" x 3" (7.6 x 7.6 cm)	5" (12.7 cm)	2½" (6.4 cm)	20 lb (9.0 kg)	<a href="#">FN-08057-12</a>	
4" x 4" (10.2 x 10.2 cm)	5" (12.7 cm)	2½" (6.4 cm)	30 lb (13.6 kg)	<a href="#">FN-08057-14</a>	
6" x 6" (15.2 x 15.2 cm)	9¾" (24.8 cm)	3" (7.6 cm)	35 lb (15.8 kg)	<a href="#">FN-08057-16</a>	
8" x 8" (20.3 x 20.3 cm)	13" (33.0 cm)	3½" (8.9 cm)	55 lb (25.0 kg)	<a href="#">FN-08057-18</a>	
10" x 10" (25.4 x 25.4 cm)	13" (33.0 cm)	3½" (8.9 cm)	80 lb (36.3 kg)	<a href="#">FN-08057-22</a>	
12" x 12" (30.5 x 30.5 cm)	19½" (49.5 cm)	4" (10.2 cm)	150 lb (68.0 kg)	<a href="#">FN-08057-24</a>	
16" x 16" (40.6 x 40.6 cm)	19½" (49.5 cm)	4" (10.2 cm)	180 lb (81.6 kg)	<a href="#">FN-08057-26</a>	

[FN-08057-50](#) Ratchet tool adds extra leverage to models 08057-24 and -26

[FN-08057-52](#) Support rod kit allows you to mount a 17" (43.2 cm) L vertical support rod to models 08057-16, -18, -22, -24, and -26

## Keck® Connectors, Clamps, and Clips

### Keep connections together

#### A. Keck Original Standard Taper Clips

Economical standard taper clips securely hold conical joints under pressure without damaging glass. The polyoxymethylene (POM) acetal resin clips are safe to 302°F (150°C). Resistant to concentrated alkalis and dilute acids (not resistant to halogen gases and concentrated acids).



Plastic taper clips are easy to attach and remove.

Joint size no.	Color	Qty/pk	Catalog number	Price/pk
10	Green	12	<a href="#">FN-06839-90</a>	
12	Violet		<a href="#">FN-06839-95</a>	
14	Yellow		<a href="#">FN-06840-05</a>	
19	Blue	12	<a href="#">FN-06840-10</a>	
24	Green		<a href="#">FN-06840-15</a>	
29	Red		<a href="#">FN-06840-20</a>	
34	Orange	12	<a href="#">FN-06840-25</a>	
40	Yellow		<a href="#">FN-06840-30</a>	
45	Brown		<a href="#">FN-06840-35</a>	

[FN-06840-00](#) Standard taper clip assortment pack. Six each of sizes 14, 19, 24, and 29 (24 total)

[FN-06840-50](#) Standard taper clip assortment pack. Three each of all nine sizes in table above (27 total)

#### B. Keck Metal Standard Taper Clips

Durable nickel-plated steel taper clips securely hold conical joints under pressure. Clips offer superior chemical and temperature resistance—withstanding temperatures to 932°F (500°C).



Joint size no.	Qty/pk	Cat. no.	Price/pk
14	6	<a href="#">FN-06836-05</a>	
19		<a href="#">FN-06836-10</a>	
24		<a href="#">FN-06836-15</a>	
29		<a href="#">FN-06836-20</a>	

#### C. Keck Ball-Joint Clips

Secure ball and socket joints—no locking screw required. Polyoxymethylene (POM) acetal resin clips are safe to 302°F (150°C). Resistant to concentrated alkalis and dilute acids (not resistant to halogen gases or concentrated acids).



Joint size no.	Color	Qty/pk	Catalog number	Price/pk
13	Violet	12	<a href="#">FN-06838-10</a>	
19	Blue		<a href="#">FN-06838-15</a>	
29	Red		<a href="#">FN-06838-20</a>	
35	Orange		<a href="#">FN-06838-25</a>	

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## Cole-Parmer® Cleaning Products

Easily clean glass, metal, plastic, rubber, and other hard materials

- Safe and effective cleaning products
- Highly concentrated, aqueous solutions are free-rinsing
- Meet USDA guidelines for incidental contact with food processing systems
- Do not contain CFCs, phosphates, silicates, halogens, or phenols



Cleaner	Type	Cleaning applications	Dilution	pH	Packaging	Cat. no.	Price/ea	Cat. no.	Qty/cs	Price/cs
Micro-90®	Ionic, nonionic, USDA authorized	Manual or ultrasonic; removes most biological materials; cleans glass, most metals, plastic, and rubber†	1:100 to 2:100	9.5	0.26 gal. (1 L)	<a href="#">FN-18100-05</a>	—	<a href="#">FN-18100-04</a>	12	—
					1 gal. (4 L)	—	<a href="#">FN-18100-11</a>	4	—	
					5 gal. (18.9 L)	—	<a href="#">FN-18100-20</a>	1	—	
					55-gal. drum (208 L)	<a href="#">FN-18100-30</a>	—	—	—	
Zymit®	Enzymatic, USDA authorized	Machine, manual, or ultrasonic; dissolves protein and starch-based soils; may use for delicate materials	1:100	7.5	0.26 gal. (1 L)	<a href="#">FN-18101-30</a>	—	<a href="#">FN-18101-20</a>	12	—
LF2100™	Low-sudsing, anionic, nonionic, amphoteric, USDA authorized	Automatic washers, high-pressure and high agitation applications†	1:100	9.7	0.26 gal. (1 L)	<a href="#">FN-18102-00</a>	—	<a href="#">FN-18102-10</a>	12	—
					5.3 gal. (20 L)	<a href="#">FN-18102-30</a>	—	—	—	
Surface-Cleanse/930®	Nonionic, USDA authorized	Cleans grease, petroleum, oils from glass, aluminum, lead, zinc, and plastic without surface damage	1:200	7.0	0.26 gal. (1 L)	<a href="#">FN-18103-00</a>	—	<a href="#">FN-18103-10</a>	12	—
					5.3 gal. (20 L)	<a href="#">FN-18103-30</a>	—	—	—	
Micro-A07®	Citric acid, nonionic, USDA authorized	Removes millstone, hard water scale, rust, mineral deposits, and other inorganic soils from filter membranes, labware, and industrial equipment	1:100 to 2:100	2.5	0.26 gal. (1 L)	<a href="#">FN-18104-00</a>	—	<a href="#">FN-18104-01</a>	12	—
					5.3 gal. (20 L)	<a href="#">FN-18104-30</a>	—	—	—	

†Do not use on zinc, magnesium, or aluminum.

## DisCide® ULTRA Disinfecting Towelettes and Sprays

No wasting time—works in just one minute!

- No mixing or measuring—solutions are ready to use
- Eliminate separate towel requirements with towelettes



Description	Packaging	Qty/cs	Catalog number	Price
Towelettes, 6" x 6¾" (15.2 x 17.1 cm)	Canister of 160	12	<a href="#">FN-86306-03</a>	—
Towelettes, 10½" x 10½" (26.7 x 26.7 cm)	Canister of 60	12	<a href="#">FN-86306-05</a>	—
Spray bottle	1 quart bottle	12	<a href="#">FN-86306-13</a>	—
Refill bottle	1 gallon bottle	4	<a href="#">FN-86306-15</a>	—

## Bacdown® Hand Soap

Won't dry your skin

- Formulated specifically for those washing frequently to minimize dry, chapped skin
- Protects against gram-negative and gram-positive bacteria as well as yeast and fungi



Packaging	Catalog number	Price/ea	Catalog number	Qty/cs	Price/cs
16 oz (500 mL)	<a href="#">FN-86115-02</a>	—	<a href="#">FN-86115-00</a>	12	—
0.26 gal. (1 L)	<a href="#">FN-86115-06</a>	—	<a href="#">FN-86115-04</a>	12	—
1.32 gal. (5 L)	<a href="#">FN-86115-10</a>	—	—	—	—

## CONFLIKT® Detergent Disinfectant

No need to dilute—ready to use

- Don't worry about contaminants—easily and effectively decontaminates surfaces
- Ammonium-based detergent disinfects and cleans hard surfaces

This prediluted detergent is effective against a wide range of viruses, bacteria, pathogenic fungi, mold, and mildew. USDA approved and EPA registered. Comes in a 32-oz spray bottle and a 1-gal. refill.



Packaging	Catalog number	Price/ea	Catalog number	Qty/cs	Price/cs
32 oz (946 mL)	<a href="#">FN-86115-40</a>	—	<a href="#">FN-86115-38</a>	6	—
1 gal. (3.7 L)	<a href="#">FN-86115-44</a>	—	<a href="#">FN-86115-42</a>	4	—



## Storage Dewars

### Get maximum holding times with superior construction

- Maximum insulation with sealed vacuum space between inner and outer shells and advanced insulation
- Durable, lightweight aluminum construction
- Reduce liquid nitrogen loss with necktube core design
- Move larger capacity Dewars easily with optional roller base



Capacity (L)	Neck ID	Static holding time†	Evaporation (L/day)†	Outer dim. (H x dia)	Catalog number	Price
4	1 3/16" (3.0 cm)	10 days	0.40	17" x 7 7/8" (43.2 x 19.4 cm)	<a href="#">FN-03773-51</a>	
5	5 5/8" (14.3 cm)	6 days	0.77	17 1/2" x 7 7/8" (43.2 x 19.4 cm)	<a href="#">FN-03773-53</a>	
10	2" (5.1 cm)	45 days	0.22	23 1/2" x 11 3/8" (59.7 x 28.9 cm)	<a href="#">FN-03773-55</a>	
25	2 1/2" (6.4 cm)	109 days	0.23	25 1/8" x 15 5/8" (65.5 x 39.7 cm)	<a href="#">FN-03773-57</a>	
35	2 1/2" (6.4 cm)	152 days	0.23	26 5/8" x 18 1/8" (66.8 x 47.8 cm)	<a href="#">FN-03773-59</a>	
50	2 1/2" (6.4 cm)	122 days	0.41	32 3/8" x 18 1/8" (82.2 x 47.8 cm)	<a href="#">FN-03773-61</a>	

†Static holding times and evaporation rates are nominal.

[FN-03773-63 Dipper](#) removes 12 mL of liquid nitrogen from 10-, 25-, 35-, and 50-liter Dewars without tipping the flask

[FN-03773-70 Tipping stand](#) supports the weight of the Dewar while you safely tip the unit. For model 03773-57 only

## Insulated Containers

### Store samples properly

**A. Tabletop Ice Storage Chest** has dry ice sublimation rate less than 2.5 lb per day at full 50 lb capacity. Chest is constructed from rugged polyethylene; molded bottom won't scratch tabletop.



**B**

**B. Insulated Field Carrier** has efficient, 2 1/4"-thick polyurethane foam insulation core and rugged, double-wall polyethylene construction. Includes carrying handle, hinged lid, and adjustable latches.

**C. Large-Capacity Dry Ice Storage Chests** contain extra-thick foam plastic insulation core. It takes six days for 90 lb of dry ice to sublimate to 5 lb in model 03721-02; 10 days for 155 lb in model 03721-00; and 15 days for 215 lb in model 03720-00.



Key letter	Capacity		Inside dimensions (L x W x H)		Catalog number	Price
	cu ft	lb	in.	cm		
<b>A</b>	—	—	11 1/2 x 9 3/4 x 9 3/4	29.2 x 24.8 x 23.5	<a href="#">FN-03719-00</a>	
<b>B</b>	—	—	16 5/8 x 10 1/4 x 10 3/4	42.2 x 26.0 x 27.3	<a href="#">FN-03720-00</a>	
<b>C</b>	1.6	90	15 1/4 x 14 x 15 1/4	38.7 x 35.6 x 38.7	<a href="#">FN-03721-02</a>	
	2.5	155	17 3/8 x 16 7/8 x 16 1/2	44.1 x 42.8 x 41.9	<a href="#">FN-03721-00</a>	
	5	215	21 x 13 1/2 x 24	53.3 x 34.3 x 61.0	<a href="#">FN-03720-00</a>	

[FN-03721-10 Dolly](#) for 03721-00 and -02 containers

[FN-03720-10 Dolly](#) for 03720-00 container

## Lab-Grade Dewar Flasks

### Move samples with less spillage

- Weighted base reduces spillage
- Dewars feature low heat conductivity, high vacuum and vented polyethylene stopper for minimal evaporation



Volume (mL)	Dimensions† (in., cm)			Catalog number	Price
	ID	OD	Depth		
350	2 3/16 (7.2)	3 3/8 (8.6)	4 7/8 (12.4)	6 3/16 (15.7)	<a href="#">FN-03766-10</a>
665			7 1/8 (19.5)	9 1/2 (24.1)	<a href="#">FN-03766-20</a>
1000	2 3/16 (7.2)	3 3/8 (8.6)	11 7/8 (30.1)	13 3/16 (33.8)	<a href="#">FN-03766-30</a>
1900	4 1/16 (11.9)	5 7/8 (14.9)	7 1/2 (19.1)	9 3/8 (25.1)	<a href="#">FN-03767-10</a>
4300	5 5/8 (14.3)	7 (17.8)	12 (30.5)	14 3/8 (36.6)	<a href="#">FN-03767-20</a>

†All dimensions are ±0.2".

## Argos Technologies® Magne-Box™ Cryo-Boxes

### Magnetic closure keeps your samples secure



- Clear lids with colored inserts and numbered grids for easy sample identification
- Polycarbonate design for use from –196 to 121°C
- Slot openings on the bottom of boxes allow for drainage
- Fits in standard-size freezer rack
- Available with 25-, 81-, and 100-place divisions to accommodate 2-mL cryovials; 81-tall boxes accommodate 4- to 5-mL cryovials

**MAGNE-BOX™**



No. of tubes	Color	Dimensions (inches)	Catalog number	Qty/pk	Price/pk
25	Orange	3 x 3 x 2 1/16	<a href="#">FN-04200-03</a>	8	
81	Assorted (purple, green, blue, orange)	5 1/4 x 5 1/4 x 2 1/8	<a href="#">FN-04200-04</a>	4	
81-tall	Blue	5 1/4 x 5 1/4 x 3 3/4	<a href="#">FN-04200-05</a>	4	
100	Green	5 1/4 x 5 1/4 x 2 1/16	<a href="#">FN-04200-06</a>	4	

## Cole-Parmer® Serialized Class A Graduated Glass Cylinders

Feel more confident about your aliquots—meet ISO 9000 requirements

- Easy-to-read single white metric scale
- Autoclavable

Choose cylinders with a report of traceability to NIST standards or with a report of calibration and traceability. Models with report of calibration and traceability feature fused-in serial numbers. All cylinders 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.



34300-27 calibrated "To Contain"

34300-15 calibrated "To Deliver"

Capacity (mL)	Graduations (mL)	Tolerance (mL)	With report of traceability			With reports of calibration and traceability		
			Cat. no.	Qty/pk	Price/pk	Cat. no.	Qty/pk	Price/pk
<b>Cylinders calibrated "To Contain"</b>								
10	0.1	±0.10	<a href="#">FN-34300-17</a>	1		—	1	—
25	0.2	±0.17	<a href="#">FN-34300-19</a>			<a href="#">FN-34300-20</a>		
50	1	±0.25	<a href="#">FN-34300-21</a>			<a href="#">FN-34300-22</a>		
100	1	±0.40	<a href="#">FN-34300-23</a>			<a href="#">FN-34300-24</a>		
250	2	±0.80	<a href="#">FN-34300-25</a>	1		<a href="#">FN-34300-26</a>	1	
500	5	±1.30	<a href="#">FN-34300-27</a>			<a href="#">FN-34300-28</a>		
1000	10	±3.0	<a href="#">FN-34300-29</a>			<a href="#">FN-34300-30</a>		
2000	20	±5.0	<a href="#">FN-34300-31</a>			<a href="#">FN-34300-32</a>		
<b>Cylinders calibrated "To Deliver"</b>								
10	0.1	±0.10	<a href="#">FN-34300-01</a>	1		—	1	—
25	0.2	±0.17	<a href="#">FN-34300-03</a>			<a href="#">FN-34300-04</a>		
50	1	±0.25	<a href="#">FN-34300-05</a>			<a href="#">FN-34300-06</a>		
100	1	±0.40	<a href="#">FN-34300-07</a>			<a href="#">FN-34300-08</a>		
250	2	±0.80	<a href="#">FN-34300-09</a>	1		<a href="#">FN-34300-10</a>	1	
500	5	±1.3	<a href="#">FN-34300-11</a>			<a href="#">FN-34300-12</a>		
1000	10	±3.0	<a href="#">FN-34300-15</a>			<a href="#">FN-34300-16</a>		
2000	20	±5.0	<a href="#">FN-34300-13</a>			<a href="#">FN-34300-14</a>		

## PYREX® Brand 5580 Volumetric Flasks

Easy and accurate dilutions—sharp line for precise volume

- Durable construction for repeated use
- Class A glassware
- Snap caps included on 10- to 2000-mL sizes



Buy More...Save More!

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

Capacity (mL)	Tolerance (±mL)	Catalog number	Qty/pk	Price/pk	Catalog number	Qty/cs	Price/cs
1	0.01	<a href="#">FN-34560-01</a>	6	—	<a href="#">FN-34560-21</a>	12	
2	0.015	<a href="#">FN-34560-02</a>	6		<a href="#">FN-34560-22</a>	12	
10	0.02	—	—		<a href="#">FN-34560-24</a>	12	
25	0.03	<a href="#">FN-34560-05</a>	6		<a href="#">FN-34560-25</a>	12	
50	0.05	<a href="#">FN-34560-06</a>	6		<a href="#">FN-34560-26</a>	12	
100	0.08	<a href="#">FN-34560-07</a>	6		<a href="#">FN-34560-27</a>	12	
200	0.10	<a href="#">FN-34560-08</a>	6		<a href="#">FN-34560-28</a>	12	
250	0.12	<a href="#">FN-34560-09</a>	6		<a href="#">FN-34560-29</a>	12	
500	0.20	<a href="#">FN-34560-10</a>	6		<a href="#">FN-34560-30</a>	12	
1000	0.30	<a href="#">FN-34560-11</a>	1		<a href="#">FN-34560-31</a>	6	
2000	0.50	<a href="#">FN-34560-12</a>	1		<a href="#">FN-34560-32</a>	4	

## PYREX® Brand 5340 Filtering Flasks

Get maximum performance and durability

- Heavy-wall flasks have maximum mechanical strength
- Graduated for approximate measurements
- Use 10 mm OD tubing for flasks to 1000 mL; 12.5 mm OD for 2000- and 4000-mL sizes
- Case quantities also available



Buy More...Save More!

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

Capacity (mL)	Stopper no.	Graduation range (mL)	Grad. (mL)	Catalog number	Qty/pk	Price/pk
250	6	75 to 250	25	<a href="#">FN-34557-01</a>	6	
500	7	150 to 500	50	<a href="#">FN-34557-02</a>	6	
1000	8	300 to 1000	50	<a href="#">FN-34557-03</a>	6	
2000	9	600 to 2000	200	<a href="#">FN-34557-04</a>	1	
4000	12	1500 to 4000	500	<a href="#">FN-34557-05</a>	1	

### Accessories

[FN-06414-30](#) Tygon® vacuum tubing, 3/8" ID (for 10-mm tubulation). 10 ft (3 m)

[FN-06414-40](#) Tygon vacuum tubing, 1/2" ID (for 12.5-mm tubulation). 10 ft (3 m)



## Disposable Transfer Pipettes

### Easily draw and deliver solutions

- Deliver repeatable, uniform drops
- Eliminate cross-contamination with these low-cost, disposable LDPE pipettes



Key	Description	Graduations		Bulb draw	Total capacity	Drops per mL	Length in. (mm)	Qty/pk	Catalog number	Price/pk
		Increments	Maximum							
<b>A</b>	Small bulb, graduated	0.1 mL	0.3 mL	0.8 mL	1.5 mL	21	4 <sup>5</sup> / <sub>8</sub> (117)	500	<a href="#">FN-06226-37</a>	
<b>B</b>	Small bulb, graduated	0.25 mL	1 mL	2.2 mL	3.9 mL	25	5 <sup>1</sup> / <sub>2</sub> (140)	500	<a href="#">FN-06226-41</a>	
<b>C</b>	Large capacity, thin stem	—	—	3.3 mL	4.6 mL	25	6 <sup>1</sup> / <sub>8</sub> (156)	500	<a href="#">FN-06226-65</a>	
<b>D</b>	Large capacity, fine tip	—	—	3.5 mL	5.8 mL	50	6 <sup>1</sup> / <sub>4</sub> (159)	500	<a href="#">FN-06226-67</a>	
<b>E</b>	Large capacity, graduated	0.25 mL	1 mL	3.4 mL	5.8 mL	25	6 <sup>1</sup> / <sub>8</sub> (156)	500	<a href="#">FN-06226-61</a>	
<b>F</b>	Large capacity, extra-long stem	—	—	2.3 mL	6.0 mL	25	9 (229)	400	<a href="#">FN-06226-69</a>	
<b>G</b>	Large capacity, graduated	0.5 mL	3.0 mL	3.2 mL	7.5 mL	20	6 <sup>1</sup> / <sub>8</sub> (156)	500	<a href="#">FN-06226-63</a>	
<b>H</b>	Jumbo bulb, long stem	—	—	8.0 mL	15.0 mL	19	6 <sup>1</sup> / <sub>8</sub> (156)	250	<a href="#">FN-06226-51</a>	

## Cole-Parmer® Single-Channel Pipettors

### Don't sacrifice performance for price

- Ergonomic, lightweight design with soft plunger movement minimizes hand fatigue

Pipettors feature streamlined, low-pressure tip ejector for easy access to narrow containers. They facilitate last drop dispensing and reverse pipetting technique with two-stage plunger operation for blow-out. Easy to calibrate and disassemble for routine servicing or autoclaving.

Adjustable-volume pipettors feature quick, easy click-stop, digital volume settings. Individually calibrated in accordance with DIN 12650 Standards and supplied with a computer-generated calibration document supplied by the manufacturer and calibration tool.



#### Specifications

- Tip ejector:** tip ejector with blow-out step
- Autoclavable:** autoclavable tip cone and lower section assembly

Volume	Increments	Accuracy	Reproducibility	Catalog number	Price
<b>Fixed-volume pipettors</b>					
100 µL	—	±0.3%	±0.2%	<a href="#">FN-21600-00</a>	
200 µL				<a href="#">FN-21600-02</a>	
500 µL				<a href="#">FN-21600-04</a>	
1000 µL				<a href="#">FN-21600-06</a>	
5000 µL				<a href="#">FN-21600-08</a>	
<b>Adjustable-volume pipettors</b>					
0.1 to 10 µL	0.1 µL	±2.5%	1.33%	<a href="#">FN-21600-10</a>	
5 to 50 µL	1.0 µL	±1.3%	0.7%	<a href="#">FN-21600-12</a>	
20 to 100 µL	1.0 µL	±1.1%	0.4%	<a href="#">FN-21600-14</a>	
40 to 200 µL	1.0 µL	±0.9%	0.3%	<a href="#">FN-21600-16</a>	
200 to 1000 µL	10.0 µL	±0.8%	0.2%	<a href="#">FN-21600-18</a>	
1 to 5 mL	100.0 µL	±0.6%	0.2%	<a href="#">FN-21600-20</a>	

#### Tips, Polypropylene

Volume (µL)	Qty/pk	Catalog number	Price/pk
0.2 to 10	Bag of 1000	<a href="#">FN-25711-06</a>	
0 to 200	Bag of 1000	<a href="#">FN-25711-12</a>	
	10 racks of 96	<a href="#">FN-25711-14</a>	
50 to 1000	Bag of 1000	<a href="#">FN-18889-08</a>	
1000 to 5000	Bag of 1000	<a href="#">FN-25711-70</a>	
	Bag of 500	<a href="#">FN-25711-71</a>	
	Bag of 250	<a href="#">FN-25711-72</a>	

## Cole-Parmer® Single-Channel Electronic Pipettors

### Save time on routine tasks

- Program up to six presets with function, volume, speed, and number of dispenses
- Nine pipetting functions cover common and specialized pipetting applications
- Adjust brightness and background on large color display to suit any lighting condition



**What's included:** rechargeable battery, USB power cord, and two AC adapters (US and Euro).



#### Specifications

- Tip ejector:** yes, soft touch
- Autoclavable:** tip cone

Volume (µL)	Increments	Accuracy†	Reproducibility†	Catalog number	Price
0.2 to 10	0.01 µL	±1.0%	≤0.4%	<a href="#">FN-24500-01</a>	
5 to 100	0.1 µL	±0.6%	≤0.2%	<a href="#">FN-24500-02</a>	
20 to 300	0.5 µL	±0.5%	≤0.2%	<a href="#">FN-24500-03</a>	
50 to 1200	1 µL	±0.4%	≤0.2%	<a href="#">FN-24500-04</a>	
500 to 5000	5 µL	±0.5%	≤0.2%	<a href="#">FN-24500-05</a>	
1000 to 10,000	10 µL	±0.4%	≤0.2%	<a href="#">FN-24500-06</a>	

†Accuracy and reproducibility at full-scale volume.

#### Tips, Polypropylene

Volume (µL)	Pack description	Catalog number	Price
0.1 to 10	Bag of 1000	<a href="#">FN-25711-49</a>	
	10 racks of 96	<a href="#">FN-25711-51</a>	
	10 racks of 96, sterile	<a href="#">FN-25711-53</a>	
	10 racks of 96, sterile, filtered	<a href="#">FN-25711-55</a>	
	10 racks of 96, sterile, filtered	<a href="#">FN-25711-57</a>	
1 to 200	Bag of 1000	<a href="#">FN-25711-59</a>	
	10 racks of 96, sterile	<a href="#">FN-25711-61</a>	
	10 racks of 96, sterile, filtered	<a href="#">FN-25711-65</a>	
1000 to 5000	Bag of 500	<a href="#">FN-25711-71</a>	
	Bag of 500	<a href="#">FN-25711-73</a>	
1000 to 10,000	Bag of 1000	<a href="#">FN-25711-66</a>	
	10 racks of 96	<a href="#">FN-25711-67</a>	
	10 racks of 96, sterile	<a href="#">FN-25711-68</a>	
	10 racks of 96, sterile, filtered	<a href="#">FN-25711-69</a>	
	10 racks of 96, sterile, filtered	<a href="#">FN-25711-71</a>	

## Cole-Parmer® Nitrile Gloves

Don't lose your grip

- Soft feel with textured fingertips for better grip
- Powder-free
- Ambidextrous



Size	Length	Thickness	Qty	Catalog number	Price
Small	9½" (24 cm)	4.0 mil	1 box of 100	<a href="#">FN-15954-42</a>	
Medium				<a href="#">FN-15954-43</a>	
Large				<a href="#">FN-15954-44</a>	
X-large	9½" (24 cm)	4.0 mil	10 boxes of 100 (1000 total)	<a href="#">FN-15954-45</a>	
Small				<a href="#">FN-15954-24</a>	
Medium				<a href="#">FN-15954-25</a>	
Large				<a href="#">FN-15954-26</a>	
X-large				<a href="#">FN-15954-46</a>	

## Cryo-Glove® Cryogenic Gloves

Keep hands from freezing

- Protect as low as -256°F (-160°C)
- Maximum protection while remaining flexible

**Water-Resistant Gloves** provide protection in closed systems. A stay-dry lining keeps you warm and comfortable. **Waterproof Gloves** have a nylon exterior and a seamless waterproof lining. Gloves keep you dry and wick moisture away from your hands.

**Cryo-Industrial® Gloves** feature a rugged, abrasion-resistant outer shell that protects the glove and provides an excellent grip for heavy-duty applications. Waterproof liner protects against cryogenic splashes while the inner lining wicks moisture from your hands for enhanced comfort.

**Note:** Do not immerse gloves in liquid nitrogen.



Description	Size	Length	Catalog number	Price per pair
<b>Water-resistant Cryo-Glove gloves</b>				
Wrist	Medium	12" (30 cm)	<a href="#">FN-09113-02</a>	
	Large		<a href="#">FN-09113-04</a>	
Mid-arm	Medium	15" (38 cm)	<a href="#">FN-09113-12</a>	
	Large		<a href="#">FN-09113-14</a>	
	X-large		<a href="#">FN-09113-16</a>	
Elbow	Medium	19" (48 cm)	<a href="#">FN-09113-22</a>	
	Large		<a href="#">FN-09113-24</a>	
	X-large		<a href="#">FN-09113-26</a>	
<b>Waterproof Cryo-Glove gloves</b>				
Mid-arm	Medium	15" (38 cm)	<a href="#">FN-09113-30</a>	
	Large		<a href="#">FN-09113-32</a>	
	X-large		<a href="#">FN-09113-34</a>	
Elbow	Medium	19" (48 cm)	<a href="#">FN-09113-35</a>	
	Large		<a href="#">FN-09113-37</a>	
	X-large		<a href="#">FN-09113-39</a>	
<b>Cryo-Industrial heavy-duty gloves</b>				
Mid-arm	Medium	15" (38 cm)	<a href="#">FN-09113-62</a>	
	Large		<a href="#">FN-09113-64</a>	
	X-large		<a href="#">FN-09113-66</a>	

## Ansell TNT™ Blue Disposable Nitrile Gloves

Durable and comfortable

- Static dissipative to eliminate static electricity
- Textured fingertips for better gripping
- Powder-free
- Ambidextrous

**Compliance:** FDA regulations for food contact.



Size	Length	Thickness	Qty/ bx	Catalog number	Price per box	
					1 bx	10 bx
Small	9½" (24 cm)	5 mil	100	<a href="#">FN-81601-04</a>		
Medium				<a href="#">FN-81601-05</a>		
Large				<a href="#">FN-81601-06</a>		
X-large				<a href="#">FN-81601-07</a>		

## Ansell Touch N Tuff™ Nitrile Gloves

Keep dexterity without sacrificing safety

- Thin formulation, yet resists punctures and tears
- No fillers—gloves are 100% nitrile
- Ambidextrous

**Compliance:** FDA regulations for food contact



Size	Length	Thickness	Qty/ bx	Catalog number	Price per box	
					1 bx	10 bx
<b>Powdered gloves</b>						
Small	9½" (24 cm)	4 mil	100	<a href="#">FN-81602-40</a>		
Medium				<a href="#">FN-81602-50</a>		
Large				<a href="#">FN-81602-60</a>		
X-large				<a href="#">FN-81602-70</a>		
<b>Powder-free gloves</b>						
Small	9½" (24 cm)	4 mil	100	<a href="#">FN-81602-45</a>		
Medium				<a href="#">FN-81602-55</a>		
Large				<a href="#">FN-81602-65</a>		
X-large				<a href="#">FN-81602-75</a>		

## Microflex® MidKnight™ Black Nitrile Gloves

Won't show stains

- Fully textured for consistently reliable gripping
- Power free
- Ambidextrous



Size	Length	Thickness	Qty/case	Catalog number	Price per case
Small	9½" (24 cm)	5.5 mil	1000	<a href="#">FN-86445-15</a>	
Medium				<a href="#">FN-86445-16</a>	
Large				<a href="#">FN-86445-17</a>	
X-large				<a href="#">FN-86445-18</a>	





## Scienceware® Sterile Sampling Scoops, PS

No need to presterilize

- Come sterilized in individual polyethylene bags
- Ideal for single use



**STERILE**

Capacity mL (oz)	Scoop (L x W)		Handle length		Catalog number	Qty/ cs	Price/ cs
	in.	cm	in.	cm			
60 (2)	3 x 1	7.6 x 2.5	4	10.2	<b>FN-06260-10</b>	100	
120 (4)	3½ x 1	8.9 x 2.5			<b>FN-06260-20</b>		

## Scienceware® Lab Spoon/Spatula, 304 ss

Easier sampling from large containers

- Total length of 12" (31 cm)



**Buy More...Save More!**

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

Spoon capacity	Spoon end	Spatula end	Catalog number	Qty/ pk	Price/ pk
5 mL (0.18 oz)	1½" (3.8 cm) W	1¾/16" (3 cm) W	<b>FN-01019-14</b>	1	

## Lab Spatulas, Nickel/Stainless Steel

Get precise sampling of powders or salts

- Easy-to-clean finish
- Choose the right end style for your needs



**Buy More...Save More!**

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

End styles	Overall length		Qty/ pk	Catalog number	Price/ pk
	in.	cm			
<b>A.</b> Spooned <sup>†</sup> /flat	5¾	14.6	3	<b>FN-06369-09<sup>†</sup></b>	
<b>B.</b> V-shaped/sharpened bent tip	6¼	15.9	3	<b>FN-06369-08</b>	
<b>C.</b> Spooned <sup>†</sup> /plastisol handle	6½	16.5	3	<b>FN-06369-03<sup>†</sup></b>	
<b>D.</b> Tapered/rounded	8	20.3	3	<b>FN-06369-06</b>	
<b>E.</b> Rounded/rounded	8¼	21.0	3	<b>FN-06369-05</b>	
<b>F.</b> Tapered/rounded	7½	18.1	3	<b>FN-06369-07</b>	
<b>G.</b> Squared/rounded	7½	19.1	3	<b>FN-06369-18</b>	
<b>H.</b> Spooned/squared	8¾	22.5	3	<b>FN-06369-16</b>	

<sup>†</sup>Hayman type end

## Smart Spatula™ Disposable Spatulas, PP

Reduce cross-contamination

- Each spatula has scoop and spatula ends for better sampling
- Flexible design will not shatter even if exposed to liquid nitrogen
- Autoclavable



**STERILE**

Description	Overall length		Catalog number	Qty/pk	Price/pk
	in.	cm			
<b>A.</b> Blue	8¾	22.2	<b>FN-06265-18</b>	300	
<b>B.</b> Opaque	8¾	22.2	<b>FN-06265-12</b>	300	
<b>C.</b> Opaque, antistatic	5½	14.0	<b>FN-06265-14</b>	300	
<b>D.</b> Green, large	12¼	31.1	<b>FN-06265-16</b>	150	
<b>E.</b> Opaque, sterile	8¾	22.2	<b>FN-06265-20</b>	100	

## Scienceware® Sterile Sampling Spatula, PS

Get more volume per scoop

- Designed to hold twice the volume of standard spatulas
- Break up caked material easily with sturdy edge
- Individually sterilized and bagged



**STERILE**

Overall length	Catalog number	Qty/cs	Price/cs
9" (22.9 cm)	<b>FN-06262-00</b>	100	

## Cole-Parmer® Double-Ended Spoon Set, 304 ss

Sample from both ends

- Minimize discomfort—solid rounded shafts for more comfortable handling

Set contains three spoons: a 5¾" (14.9 cm) long spoon with 0.5 mL and 2.0 mL bowls, an 8¼" (21 cm) long spoon with 1.6 mL and 5.0 mL bowls, and an 11½" (30.2 cm) long spoon with 2.0 mL and 8.0 mL bowls.

Set contains three spoon sizes



**Cole-Parmer®**

**Buy More...Save More!**

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

Qty/set	Catalog number	Price/set*
Three spoons	<b>FN-06261-00</b>	

\*One set qualifies as one pack for discount savings.

## BD™ Disposable Syringes

### Luer-Lok™ tips allow for easy connection of syringe filters

Use these latex-free, disposable polycarbonate syringes for your general-purpose applications. Available in either Luer-Lok or slip-tip versions. Autoclavable.



Capacity	Graduations	Type	Qty	Catalog number	Price
<b>Sterilized syringes, individually wrapped</b>					
1 mL	1/100 mL	Luer-Lok	100/bx	<a href="#">FN-07940-00</a>	
3 mL	1/10 mL	Luer-Lok	200/bx	<a href="#">FN-07940-02</a>	
		Slip tip		<a href="#">FN-07940-04</a>	
5 mL	1/5 mL	Luer-Lok	100/bx	<a href="#">FN-07940-06</a>	
		Slip tip	125/bx	<a href="#">FN-07940-08</a>	
10 mL	1/5 mL	Luer-Lok	100/bx	<a href="#">FN-07940-12</a>	
		Slip tip		<a href="#">FN-07940-14</a>	
60 mL	1 mL, 2 oz in 1/4 oz	Luer-Lok	40/bx	<a href="#">FN-07940-30</a>	
		Slip tip		<a href="#">FN-07940-28</a>	
<b>Nonsterilized syringes</b>					
1 mL	1/100 mL	Slip tip	100/pk	<a href="#">FN-07944-00</a>	
3mL	1/10 mL	Luer-Lok	100/pk	<a href="#">FN-07944-02</a>	
		Slip tip		<a href="#">FN-07944-04</a>	
5 mL	1/5 mL	Luer-Lok	100/pk	<a href="#">FN-07944-06</a>	
		Slip tip		<a href="#">FN-07944-08</a>	
10 mL	1/5 mL	Luer-Lok	50/pk	<a href="#">FN-07944-12</a>	
		Slip tip		<a href="#">FN-07944-14</a>	
20mL	1 mL, 3/4 oz in 1/8 oz	Luer-Lok	25/pk	<a href="#">FN-07944-16</a>	
		Slip tip		<a href="#">FN-07944-18</a>	

Capacity	Graduations	Type	Qty	Catalog number	Price
<b>Nonsterilized syringes (cont.)</b>					
30 mL	1 mL, 1 oz in 1/8 oz	Luer-Lok	25/pk	<a href="#">FN-07944-24</a>	
		Slip tip		<a href="#">FN-07944-22</a>	
60 mL	1 mL, 2 oz in 1/4 oz	Luer-Lok	25/pk	<a href="#">FN-07944-28</a>	
		Slip tip		<a href="#">FN-07944-30</a>	
<b>Nonsterilized syringes, bulk pack</b>					
1 mL	1/100 mL	Slip tip	3000/cs	<a href="#">FN-07945-00</a>	
3 mL	1/10 mL	Luer-Lok	1600/cs	<a href="#">FN-07945-02</a>	
		Slip tip		<a href="#">FN-07945-04</a>	
5 mL	1/5 mL	Luer-Lok	1400/cs	<a href="#">FN-07945-06</a>	
		Slip tip		<a href="#">FN-07945-08</a>	
10 mL	1/5 mL	Luer-Lok	850/cs	<a href="#">FN-07945-12</a>	
		Slip tip		<a href="#">FN-07945-14</a>	
20 mL	1 mL, 3/4 oz in 1/8 oz	Luer-Lok	325/cs	<a href="#">FN-07945-16</a>	
		Slip tip		<a href="#">FN-07945-18</a>	
30 mL	1 mL, 1 oz in 1/8 oz	Luer-Lok	225/cs	<a href="#">FN-07945-24</a>	
		Slip tip		<a href="#">FN-07945-22</a>	
60 mL	1 mL, 2 oz in 1/4 oz	Luer-Lok	125/cs	<a href="#">FN-07945-28</a>	
		Slip tip		<a href="#">FN-07945-30</a>	

**Warning**—These products are not approved or intended for, and should not be used for, medical, clinical, surgical or other patient oriented applications.

## Hamilton Standard Microliter® Syringes

### Provide precise liquid delivery—from 10 to 500 µL

**Syringes with Cemented and Removable needles** include a 304 stainless steel needle with a noncoring beveled tip—ideal for septum penetration in all chromatographic techniques. If you use large numbers of syringes, choose one of our convenient “economy packs” containing six 10-µL syringes with cemented or removable needles. Each pack is in a protective storage container and includes a set of adhesive-backed numbers for syringe identification.

**Syringes with Luer Tip Connections** do not include a needle; order needles separately; see [www.coleparmer.com](http://www.coleparmer.com).



Syringes		Needles		Catalog number	Price/ea	Economy packs	
Capacity	Type	Gauge‡	Tip type			Catalog number	Price/pk of 6
10 µL	Cemented needle	26s	Noncoring beveled	<a href="#">FN-07938-00</a>		<a href="#">FN-07938-30</a>	
	Removable needle			<a href="#">FN-07938-10</a>		<a href="#">FN-07938-40</a>	
25 µL	Cemented needle	22s	Noncoring beveled	<a href="#">FN-07938-01</a>		—	—
	Removable needle			<a href="#">FN-07938-11</a>		—	—
	Luer tip†			<a href="#">FN-07938-21</a>		—	—
50 µL	Cemented needle	22s	Noncoring beveled	<a href="#">FN-07938-02</a>		—	—
	Removable needle			<a href="#">FN-07938-12</a>		—	—
	Luer tip†			<a href="#">FN-07938-22</a>		—	—
100 µL	Cemented needle	22s	Noncoring beveled	<a href="#">FN-07938-03</a>		—	—
	Removable needle			<a href="#">FN-07938-13</a>		—	—
	Luer tip†			<a href="#">FN-07938-23</a>		—	—
250 µL	Cemented needle	22s	Noncoring beveled	<a href="#">FN-07938-04</a>		—	—
	Removable needle			<a href="#">FN-07938-14</a>		—	—
	Luer tip†			<a href="#">FN-07938-24</a>		—	—
500 µL	Cemented needle	22s	Noncoring beveled	<a href="#">FN-07938-05</a>		—	—
	Removable needle			<a href="#">FN-07938-15</a>		—	—
	Luer tip†			<a href="#">FN-07938-25</a>		—	—

†Luer tip syringes do not include a needle; order separately. ‡An “s” denotes “small bore”—reduces dead volume and provides impedance to improve transfer accuracy.



# General-Purpose Tweezers and Forceps, Stainless Steel (SS) and Plastic

Get a more precise grip

Buy More...Save More!

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

**SS Tweezers,**  
straight tips and finger serrations.



Length	Catalog number	Qty/ pk	Price/pk
7"	<b>FN-07288-04</b>	12	

**SS Straight: Thick, Flat Strong Tips,**  
serrated tips and grips. Style OOD.



Length	Catalog number	Qty/ pk	Price/pk
4 3/4"	<b>FN-07287-03</b>	1	

**SS Self-Locking Tweezers,**  
straight narrow tips.



Length	Catalog number	Qty/ pk	Price/pk
4 1/4"	<b>FN-07288-01</b>	12	

**SS Tweezers,**  
smooth spade tips.



Length	Catalog number	Qty/ pk	Price/pk
4 1/4"	<b>FN-07288-07</b>	12	

**SS Solder Utility Tweezers,**  
curved tips and finger serrations.



Length	Catalog number	Qty/ pk	Price/pk
7"	<b>FN-07288-03</b>	12	

**SS Tweezers,**  
curved serrated tips.



Length	Catalog number	Qty/ pk	Price/pk
4 1/4"	<b>FN-07288-05</b>	12	

**SS Forceps,**  
straight serrated tips.



Length	Catalog number	Qty/ pk	Price/pk
6"	<b>FN-07288-12</b>	1	
12"	<b>FN-07288-14</b>	1	

**SS Forceps,**  
plastic-coated rounded tips.



Length	Catalog number	Qty/ pk	Price/pk
12"	<b>FN-07288-10</b>	1	

**PTFE-Covered Nickel-Plated Forged Steel Forceps** are heat and chemical resistant. **Autoclavable.**



Length	Catalog number	Qty/ pk	Price/pk*
4 1/4"	<b>FN-06440-00</b>	2	

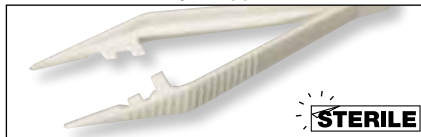
\*Quantity discount does not apply.

**Reinforced Nylon Forceps** have corrugated handles, serrated blades, and rounded tips. **Autoclavable.** Sterile—individually wrapped.



Sterile	Length	Catalog number	Qty/ pk	Price/pk
No	4 7/8"	<b>FN-06443-15</b>	100	
Yes	4 7/8"	<b>FN-06443-26</b>	100	

**Nylon Forceps** feature corrugated handles and serrated blades. **Autoclavable.** Sterile—individually wrapped.



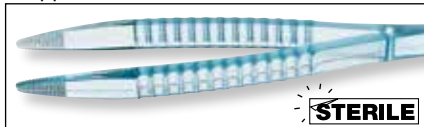
Sterile	Length	Catalog number	Qty/ pk	Price/pk
No	4 1/4"	<b>FN-06443-25</b>	100	
Yes	4 1/4"	<b>FN-06443-27</b>	70	

**PA (Polyamide) Tweezers,**  
rounded tips.



Length	Catalog number	Qty/ pk	Price/pk
7"	<b>FN-06446-20</b>	1	

**Polystyrene Disposable Sterile Forceps** feature corrugated handles and rounded serrated tips. Sterile—come individually wrapped.



Length	Catalog number	Qty/ pk	Price/pk*
4 7/8"	<b>FN-06443-20</b>	100	

**Plastic Curved: Smooth Rounded Tips 2AB**



Length	Catalog number	Qty/ pk	Price/pk
4 1/2"	<b>FN-07290-06</b>	12	

**Plastic Curved: Very Fine and Smooth Tips 7-STD**



Length	Catalog number	Qty/ pk	Price/pk
4 1/2"	<b>FN-07290-08</b>	12	

\*Quantity discount does not apply.

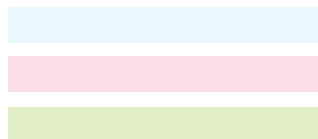


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