

# Cole-Parmer®

## Cole-Parmer® Single-Use Dispensing Pump Powered by i-FILL®

The Cole-Parmer Single-Use Dispensing Pump Powered by i-FILL is a hybrid piston/diaphragm pump that delivers unmatched, repeatable accuracy of small volumes over thousands of dispenses. Designed with the accuracy of a piston pump and the fluid isolation of a diaphragm pump, this hybrid pump is uniquely qualified for filling and transferring high-value, shear-sensitive materials.

The Human-Machine Interface (HMI) touch screen allows operators to store and recall recipes, control access levels, and transfer data via USB. With self-priming operation, the ability to pump dry, and no tubing spallation or occlusion, the i-FILL Micro minimizes waste while delivering gentle, precise dispensing for sensitive formulations.

The single-use pump head kit contains the pump head with diaphragm, discharge tubing with check valve and nozzle, and intake tubing with check valve. These kits come presterilized and meet a Sterility Assurance Level (SAL) of  $10^{-6}$ .

**WARNING:** This product is not approved or intended for, and should not be used for, medical, clinical, surgical, or other patient-oriented applications.



### FEATURES/BENEFITS

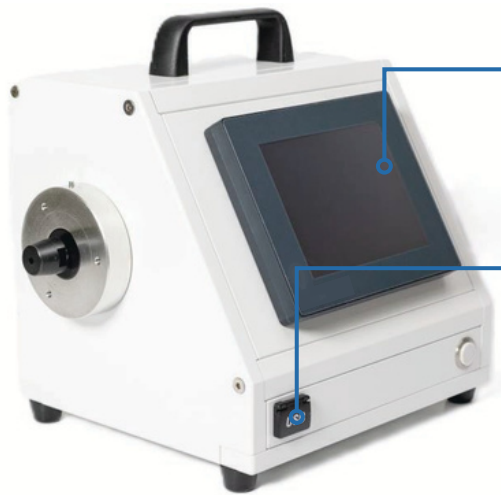
- Self-priming design can pump dry, minimizing product hold-up and shear stress
- Store and reuse fill volumes, flow rates, and operating parameters
- Single-use fluid path assemblies eliminate cleaning and risk of cross contamination
- No tubing spallation or occlusion
- Kits are double-bagged and labelled with lot number and gamma irradiation label

USA	+1.800.323.4340
	+1.847.549.7600
Canada	+1.800.363.5900
China	+86.21.5109.9909
India	+1.800.266.1244

UK	+44 (0) 1480.272279
	+33 (0) 1.87.170142*
	+49 (0) 937.792030*
Italy	+39.02.84349215
All others	+1.847.549.7600

**Cole-Parmer®**  
[coleparmer.com](http://coleparmer.com)

\*Inquiries from Germany and France are now handled in our St. Neots office by native-speaking experts.



## Human Machine Interface (HMI)

The HMI is a touchscreen interface used to control the pump. Fill volumes, flow rates, fill cycles, and more can be controlled from this easy-to-use interface.

## USB Port

This easily accessible USB port allows controlled access to the pump to update firmware and operating parameters. Export recipe details and loaded parameters to an excel file for review and documentation.

## Mounting Plate

Easily mount the i-FILL pump heads using 3 thumb screws. The mounting plate can also be rotated clockwise/ counter-clockwise to switch between priming and dispensing modes.

## Piston

The piston actuates the diaphragm in the pump heads to move fluid through the fluid path.

## 6-Pin Power/COM Plug

This allows the pump to connect to accessories such as the foot switch.

## Main Power Plug

The main power plug accepts the pumps grounded power cord and AC/DC power adapter.



## Discharge Tubing

Features check valve and dispensing nozzle. When dispensing, the discharge tubing is at 12 o'clock.

## Diaphragm

The diaphragm flexes in controlled strokes to draw in and precisely dispense micro-volumes of fluid.

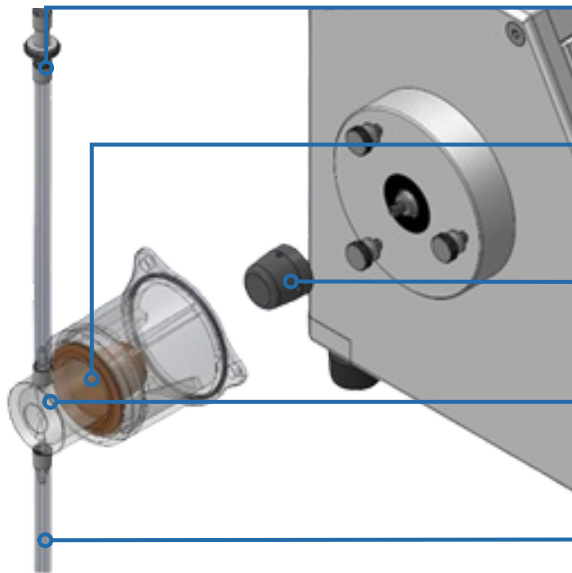
## Piston

## Pump Head

Disposable, single-use pump head provides a sterile, contamination-free fluid path that can be quickly replaced.

## Intake Tubing

Supplies fluid to the pump head and features a check valve. In dispensing mode, the intake tubing is at 6 o'clock.

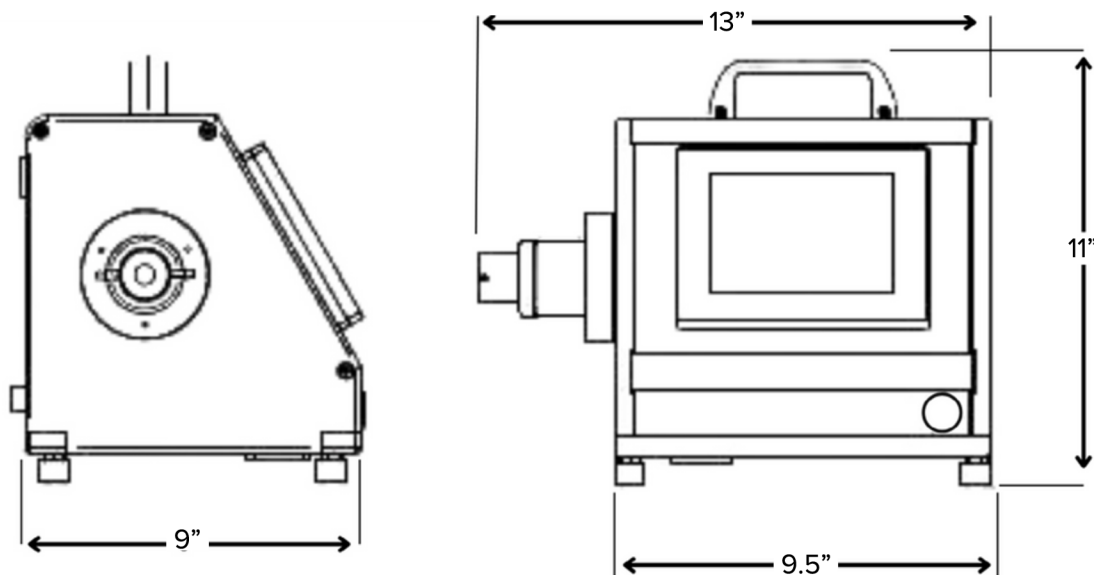


## Technical Specifications

Specifications	Dispensing Drive	
Interface	3" x 5" Touch Screen Color Digital Display	
Communication	USB	
Operating Conditions	0 to 50 °C (32 to 122 °F), 5–85% RH, Noncondensing	
Storage Conditions	–45 to 65 °C (–49 to 149 °F)	
Dimensions (Drive Only)	11" H x 9.5" W x 9" D (28 x 24 x 23 cm)	
Dimensions (with 10 mL Kit)	11" H x 13" W x 9" D (28 x 33 x 23 cm)	
Net Weight	19.5 lb (8.8 kg)	
Power Requirements	100-240 VAC, 50/60 Hz	
Drive Standards	CE	
Specifications	1 mL Kit	10 mL Kit
Flow Range	0.1 to 14.3 mL/min	3 to 148 mL/min
Fill Volume Range	350 µL to 1.1 mL	500 µL to 19 mL
Maximum Index Position	18 mm	46 mm
Fill Volume Accuracy	±2%	±1%
Tubing Dimensions	1/8" ID x 1/4" OD (3.2 x 6.4 mm)	
Sterilization	Gamma Irradiated 25-44 kGy	
Packaging	Double-Bagged	
Certifications	USP <665> Extractables and Leachables*	

\* This component has been evaluated in accordance with USP <665> and classified as a low-risk plastic component based on its process contact, exposure duration, and application. Testing has been performed consistent with USP <665> general chemistry requirements for low-risk materials.

### PUMP DIMENSIONS



## Pump Kit Contact Materials of Construction

Component	Material
Pump Head	Zylar (copolymerized styrene, butadiene, and methyl methacrylate)
Diaphragm	FDA Red Silicone
Tubing	Platinum-Cured Silicone
Check Valve	White and Clear MABS With Silicone Diaphragm
Nozzle	Polypropylene

## Flow Data

1 mL Kit			10 mL Kit		
Index Speed	Index Position	Flow Rate (mL/min)	Index Speed	Index Position	Flow Rate (mL/min)
4000	18	14.3	4000	46	148
	14	9.9		40	139
	10	5.4		30	105
	6	2.6		20	74
	4	1.1		10	29
	2.5	0.1		5	6
1000	18	14.3	1000	46	142
	14	9.9		40	126
	10	6.2		30	104
	6	2.5		20	76
	4	0.7		10	29
	2.5	0.1		5	6
500	18	11.5	500	46	92
	14	8.9		40	75
	10	6		30	85
	6	2.7		20	58
	4	1.1		10	28
	2.5	0.1		5	6
100	18	3.4	100	46	22
	14	2.7		40	22
	10	2.2		30	20
	6	1.2		20	15
	4	0.6		10	9
	2.5	0.1		5	3

All settings were tested with water at about room temperature 23.8 °C (75 °F). All settings are approximate.

## Fill Volume Data

At Index Speed: 3000 and Acceleration/Deceleration: 150		
Fill Volume	1 mL Kit Approximate Index Position	10 mL Kit Approximate Index Position
25 µL	2 mm	Use 1 mL Kit
50 µL	3 mm	Use 1 mL Kit
100 µL	4 mm	Use 1 mL Kit
1 mL	15 mm	6 mm
5 mL	Use 10 mL Kit	17 mm
10 mL	Use 10 mL Kit	28 mm
15 mL	Use 10 mL Kit	37 mm

## Ordering Table

Pump and Pump Kits	
Description	Item Number
Single-Use Dispensing Pump Powered by i-FILL	<a href="#">91400-81</a>
Pump Kit, 1 mL	<a href="#">91400-82</a>
Pump Kit, 10 mL	<a href="#">91400-83</a>
Accessories and Replacement Parts	
Description	Item Number
Angled Stand	<a href="#">91400-86</a>
Foot Switch	<a href="#">91400-87</a>