

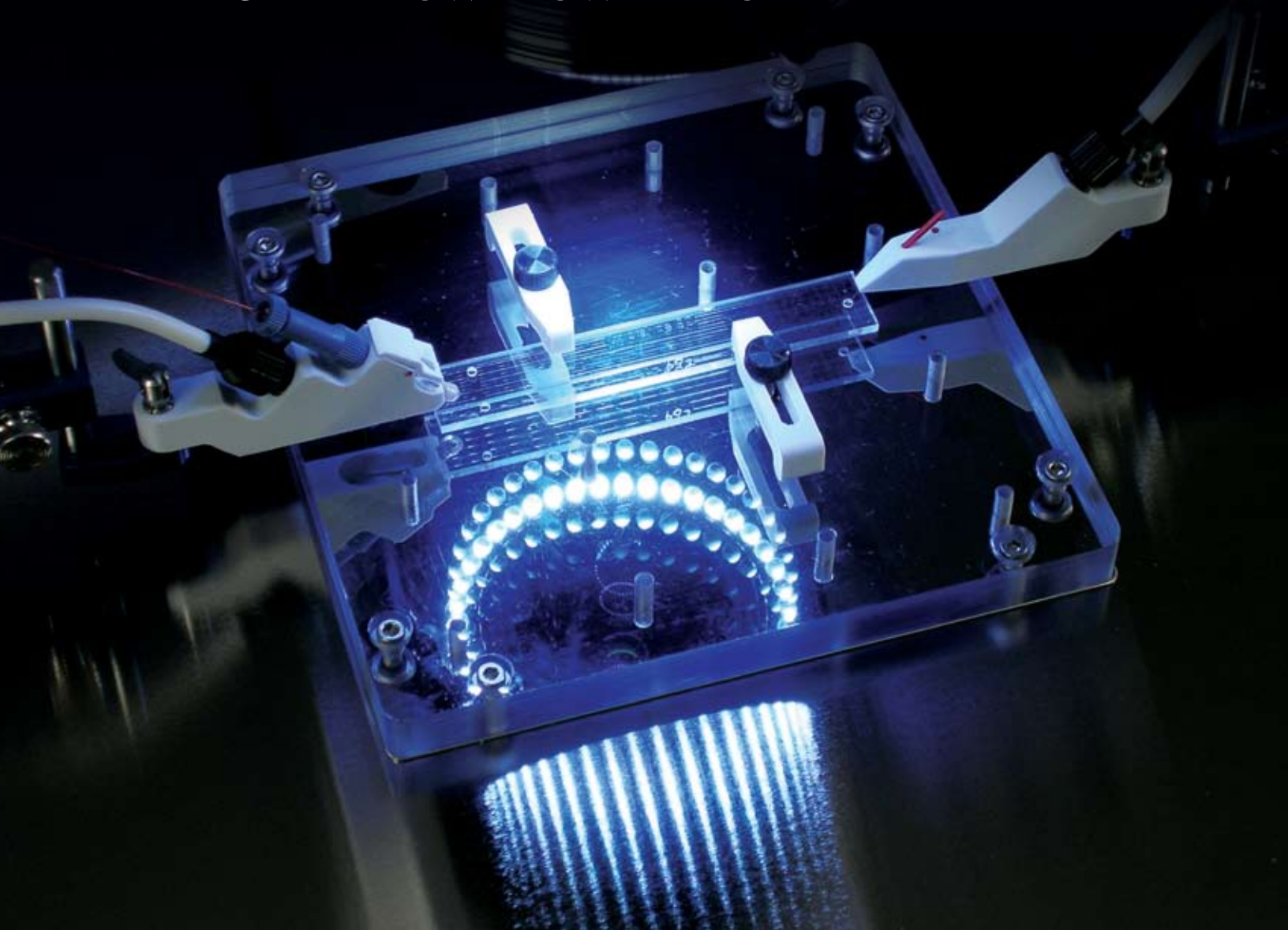


**Cole-Parmer®**

**MICROFLUIDICS**

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**HIGH-PRECISION  
INSTRUMENTS FOR  
ULTRA-LOW FLOW RATES**



# Microfluidics

## INCREASED ACCURACY MEANS REDUCED COST

The use of microfluidics—the precise control of microliter ( $\mu\text{L}$ ) and nanoliter ( $\text{nL}$ ) volumes of fluids—was once limited to medical research and biopharmaceuticals. Today its applications span many new industries as companies, in an effort to reduce R&D overhead, begin to miniaturize process systems for evaluation in the lab before scaling up to pilot plant production. No matter what your reason for working with low flow rates, Cole-Parmer wants to be your microfluidic system provider. Let us help you develop your unique system from the ground up with quality, microflow instrumentation.

## COLE-PARMER OFFERS PUMPS WITH ACCURATE FLOW RATES DOWN TO 1 NANOLITER PER MINUTE FOR GREATER PROCESS FLEXIBILITY

- Cole-Parmer offers four syringe pumps that easily achieve flow rates in the nanoliter-per-minute range
- Ideal for intracellular injection, micro delivery of biochemical agents or dyes, and cell separation
- Select the unit with the features that best suit your application



## WE PROVIDE INSTRUMENTS TO PUMP MULTIPLE CHANNELS AT THE SAME LOW FLOW RATE TO OPTIMIZE PRODUCTION

- Cole-Parmer offers a peristaltic pump that can accommodate 24 channels at a minimum flow rate of  $0.7 \mu\text{L}/\text{min}$  per channel
- Eight stainless steel rollers provide extremely low pulsation with excellent reproducibility

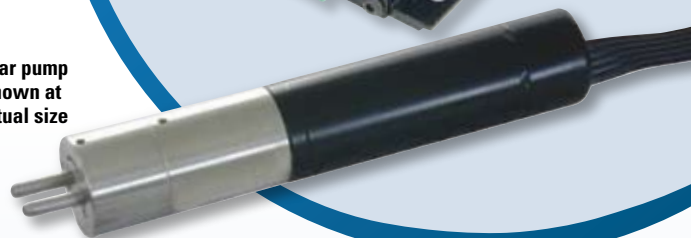


# Microfluidics

## SCALE DOWN PROCESS NEEDS WITH PUMPS ENGINEERED TO PRODUCE $\mu\text{L}/\text{MIN}$ FLOW RATES AT PRESSURES OVER 100 PSI

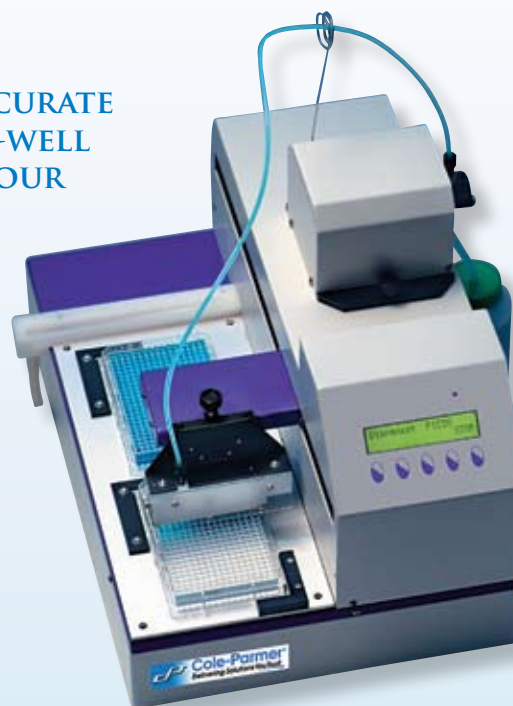
- Select from a micro-annular gear pump smaller than your finger, or a high-pressure piston pump
- Conserve liquids by dispensing in 0.25- $\mu\text{L}$  droplets with the unique toothed rotor pump design

Gear pump shown at actual size



## WHEN YOUR PROTOCOL DEMANDS ACCURATE DISPENSING AT 5 $\mu\text{L}$ PER WELL ON A 96-WELL MICROPLATE, OUR PUMPS WILL MEET YOUR APPLICATION SPECIFICATIONS

- Cole-Parmer offers a microplate dispensing system that will provide the necessary accuracy while filling all 96 wells in under 20 seconds
- Capable of filling 384-well microplates at the same precise volume resulting in thousands of dollars in savings



## OUR ADVANCED MICROPOSITIONERS ENSURE QUICK AND ACCURATE RESULTS

- These test stations from Cole-Parmer allow precise placement of microliter droplets for viewing in a microscope
- Predefined systems contain microfluidic chips and micropositioners to reduce nondestructive testing time and provide greater flexibility







### In the U.S.

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Phone: 847-549-7600  
Fax: 847-247-2929  
[www.coleparmer.com](http://www.coleparmer.com)

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Call toll-free 800-363-5900  
Phone: 514-355-6100  
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[www.coleparmer.ca](http://www.coleparmer.ca)

### In India

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[www.coleparmer.in](http://www.coleparmer.in)

### In the United Kingdom

Free phone: 0500-345-300  
Phone: 020-8574-7556  
Fax: 020-8574-7543  
[www.coleparmer.co.uk](http://www.coleparmer.co.uk)

### International customers

Call 847-549-7600 to reach our International Sales Department or contact your local dealer.



**FREE TECHNICAL APPLICATIONS ASSISTANCE!**

## COLE-PARMER PROVIDES UNIQUE AND INNOVATIVE TUBING OPTIONS THAT MEET USP CLASS VI REQUIREMENTS AND DELIVER FLOW RATES OF 1 mL/MIN AND BELOW

- Cole-Parmer stocks seven tubing formulations—including PTFE, PEEK, Tygon®, silicone, and C-FLEX®—to meet your system purity concerns. Autoanalysis tubing is available in sizes as small as 0.05-mm ID.
- To connect your microfluidic components, Cole-Parmer offers a complete selection of sanitary fittings, valves, and filter elements. Materials of construction include stainless steel, PTFE, PEEK, and more.
- Free certificate of tubing compliance is available upon request



## OUR HIGH-PRECISION FLOW SENSORS ENSURE THE AMOUNT OF FLUID BEING DELIVERED IS EXACTLY WHAT THE PROCESS REQUIRES

- Our new flowmeters are accurate to nL/min flow rates
- Product line includes straight-through designs with excellent chemical compatibility for your HPLC system or “lab-on-a-chip” applications



**NO MATTER WHAT YOUR MICROFLUIDIC NEEDS, COLE-PARMER HAS THE SOLUTION YOU CAN TRUST.**

Contact our Application Specialists at 800-323-4340 or click the link below.