

# Droplet Generation System

-- TouchScreen Version with PG-MFC Controller

## Introduction

Droplet generator is the tool for generating micro/sub-micron sized droplets with highly reproducible capacity. Usually, the system requires two or more unmixable liquid phases, referred to as the dispersed phase, sometimes called the droplet phase, and the continuous phase. The size of the generated droplets is mainly controlled by the channels' geometry, the flow rate ratio of two phases, interfacial tension, etc.

PreciGenome Microfluidic Droplet Generation System PG-DG with droplet generator chips can be used for the rapid preparation of water-in-oil or oil-in-water droplets. Compared to conventional methods, it offers the ability to generate droplets with much higher robustness, precision, and repeatability in a cost-effective way. It generates droplets stable, fast and effectively. The droplets are highly uniform in diameter (CV 0.1-5%). The number and diameter of the droplets can be adjusted according to users' requirements.



## System Specifications:

- Pressure sensor accuracy of  $\pm 0.25$  %FSS BFSL (Full-Scale Span Best Fit Straight Line), sensor resolution: 0.0061 %, pressure stability: 0.05 %
- Integrated UI with 10" touch screen
- Droplet generation with pressure or vacuum in one channel
- Air leakage detection with integrated airflow rate monitoring, range of 200sccm
- Liquid flow rate monitoring and control with external flow rate sensor (optional)
- Flow rate repeatability: <1% of the measured value

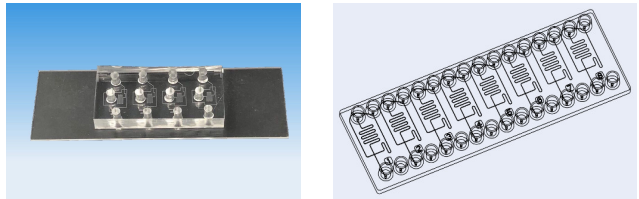
- Highest sensitivity: <math><1\mu\text{l}/\text{min}</math>

## System Contents:

- PG-MF controller 4ch (optional 8 channels), 1 pc
- Reservoir kit 15ml, 2 sets
- Tube racks, 2 pcs
- PDMS chips 3 devices/chip, 1 pc
- Tubing & connectors, 1set
- Liquid flow rate sensor (optional)
- High-speed imaging system with illuminations (optional)

## Microfluidic Droplet Generator Chips

PreciGenome offers a variety of droplet generator chips in different materials to meet most of our customers' application requirements. Three types of materials, including polymers, glass and silicon, are commonly used to fabricate microfluidic chips. Custom design is available upon request.



## Applications

- Cell encapsulation
- Single cell analysis
- Hydrogel, microparticles and polymer synthesis
- Foams
- Drug delivery
- Cell culture
- Digital PCR, DNA/RNA sequencing

Cat. # : PG-DG-8-HSV (High Speed Imaging)  
 PG-DG-8 (TouchScreen 8 Channels)  
 PG-DG-4 (TouchScreen 4 Channels)

[www.precigenome.com/microfluidic-droplet-generator](http://www.precigenome.com/microfluidic-droplet-generator)

# Droplet Generation System

-- Standard Version with Light Version Controller

## Introduction

Droplet generator is the tool for generating micro/sub-micron sized droplets with highly reproducible capacity. Usually, the system requires two or more unmixable liquid phases, referred to as the dispersed phase, sometimes called the droplet phase, and the continuous phase. The size of the generated droplets is mainly controlled by the channels' geometry, the flow rate ratio of two phases, interfacial tension, etc.

PreciGenome Microfluidic Droplet Generation System PG-DG with droplet generator chips can be used for the rapid preparation of water-in-oil or oil-in-water droplets. Compared to conventional methods, it offers the ability to generate droplets with much higher robustness, precision, and repeatability in a cost-effective way. It generates droplets stable, fast and effectively. The droplets are highly uniform in diameter (CV 0.1-5%). The number and diameter of the droplets can be adjusted according to users' requirements.



## System Specifications:

- Pressure sensor accuracy of  $\pm 0.25$  %FSS BFSL (Full-Scale Span Best Fit Straight Line), sensor resolution: 0.0061 %, pressure stability: 0.05 %
- Droplet generation with pressure or vacuum in one channel
- Air leakage detection with integrated airflow rate monitoring, range of 200sccm

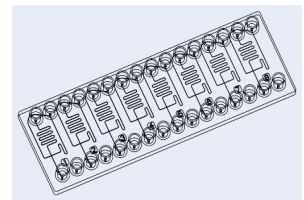
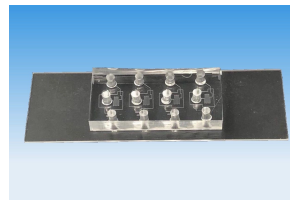
- Software for system operations
- Liquid flow rate monitoring and control with external flow rate sensor (optional)
- Flow rate repeatability: <1% of the measured value
- Highest sensitivity: <1  $\mu$ l/min

## System Contents:

- PG-MF-LT2 light version controller (2 channels), 1 pc
- Reservoir kit (15ml), 2 sets
- Tube racks, 2 pcs
- PDMS chips, 3 devices/chip, 1 pc
- Tubing & connectors, 1 set
- Liquid flow rate sensor (optional)
- High-speed imaging system with illuminations (optional)

## Microfluidic Droplet Generator Chips

PreciGenome offers a variety of droplet generator chips in different materials to meet most of our customers' application requirements. Three types of materials, including polymers, glass and silicon, are commonly used to fabricate microfluidic chips. Custom design is available upon request.



## Applications

- Cell encapsulation
- Single cell analysis
- Hydrogel, microparticles and polymer synthesis
- Foams
- Drug delivery
- Cell culture
- Digital PCR, DNA/RNA sequencing

Cat. # : PG-DG-LT2 (2 Channels)

<https://www.precigenome.com/microfluidic-droplet-generator>