Sniper DQ24 Digital PCR
All-in-one Digital PCR System

Innovative VibroJect® Technology

Sniper patented vibration injection technology is a novel droplet generation method enabling droplet generation without reliance on a microfluidic chip.

The vibratory injection technology is an efficient, fast and reliable method for droplet generation. Below the oil surface, the dPCR reaction mixture flows from a micro-needle into the oil phase at a constant speed under the control of a sophisticated syringe pump, while the micro-needle vibrates reciprocally at a constant frequency. Reaction mixture is steadily split into tens of thousands of droplets of uniform volume and distributed in the oil phase.
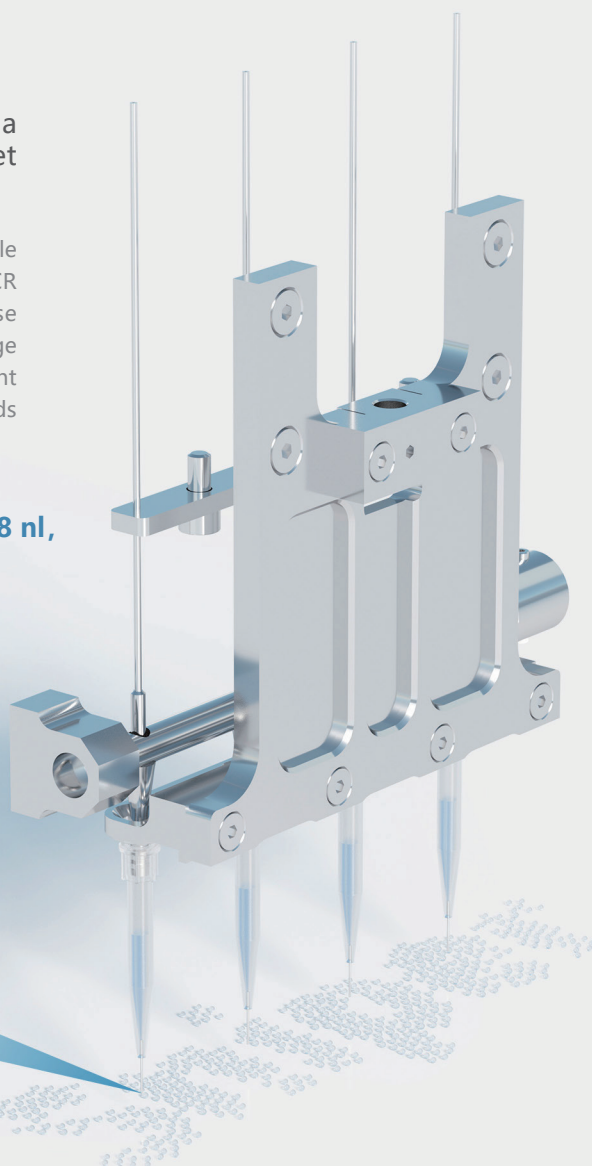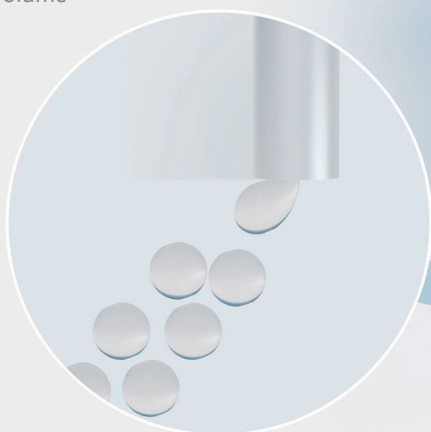
The droplet volume can be stably controlled at 0.8 nl, enabling real absolute quantification of target.
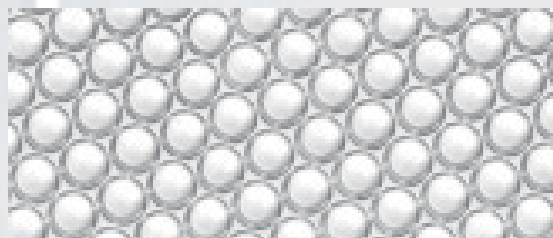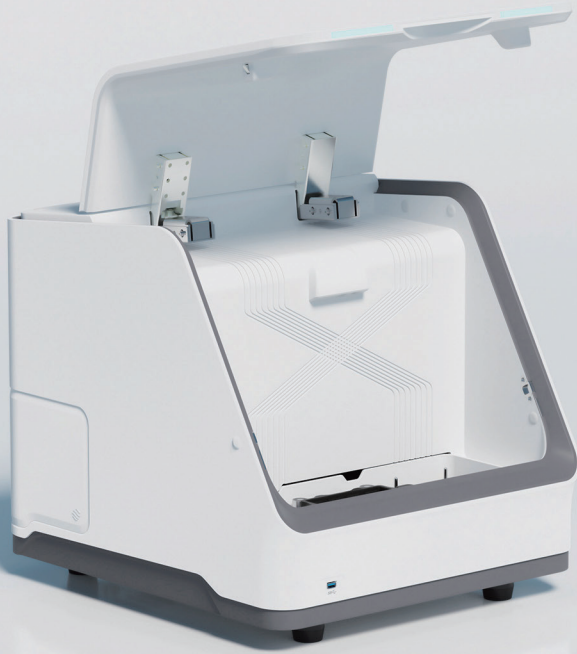
V=Q /2f

Q : Flow rate
f : Vibration frequency
V : Droplet volume

Sample loading and droplet generation are automated, which minimize dead volume to maximize sample utilization.

In term of volume consistency, droplets generated by vibration injection technology are not affected by factors such as composition of reaction mixture, variation between batches of consumables, temperature and air pressure.

Powerful Yet Simple

The DQ24 digital PCR system seamlessly integrates typical dPCR steps of partitioning, PCR amplification and partition analysis into an all-in-one and easy-to-use system, offering walk-away dPCR workflow and powerful multiplexing capability.

All-in-one Design

DQ24 automates a fully integrated dPCR workflow enabling sample-in-result-out detection within 1.5 hours in a stand-alone run model.
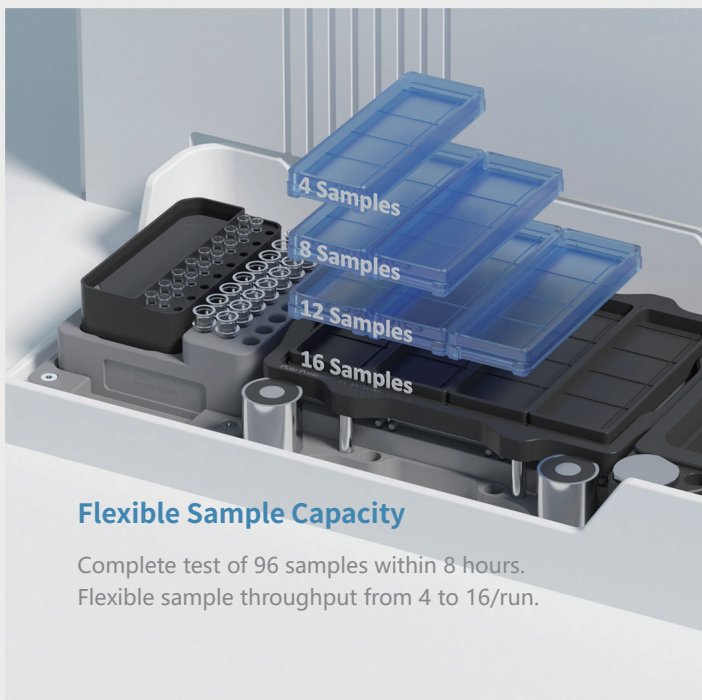
Easy to Use

Fast onboarding powered by simple and rapid run setup within 1 minute, eliminating droplet transferring and operation variations.

Flexible Sample Capacity

Complete test of 96 samples within 8 hours. Flexible sample throughput from 4 to 16/run.

3-6 Detection Channels

Up to 6-color fluorescent detection allows for multiple targets to be detected in a single reaction. Compatible with all fluorescent dyes in qPCR tests.
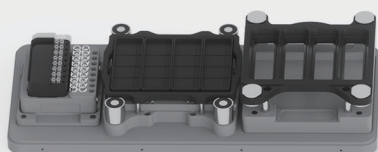
Automated Workflow

Droplet generation, PCR amplification and data analysis are integrated into a single system. The system automatically loads sample from 8-tube strip, allowing truly automated dPCR testing.
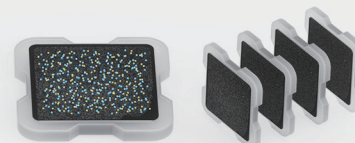

1_{Min} **Hands-on time**

90_{Min} **Automatic operation**

1. Experiment Preparation

Prepare dPCR reaction mixture in 8-tube strip, and load together with other consumables into instrument.
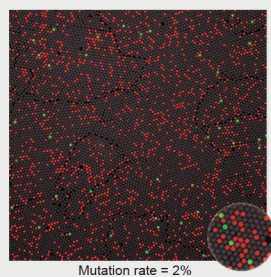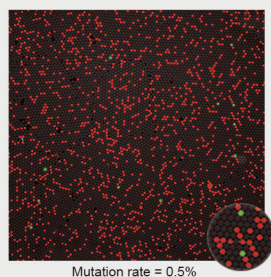
2. Program Setup

Input experiment name, sample name, target name and setup thermal cycling protocol, then press start and walk away.
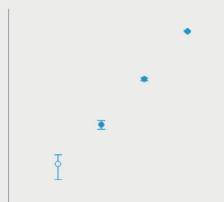
3. Data Analysis

View 1D plot, 2D plot, droplet image and result table on instrument or export data to USB drive for analysis by desktop software on a PC.
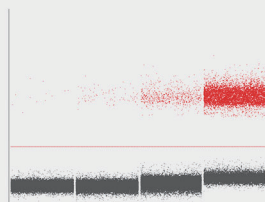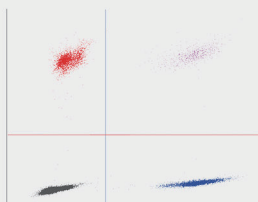
EGFR T790M Test by DQ24

Mutation rate = 0.1%

Mutation rate = 0.5%
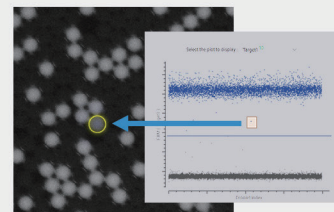
Mutation rate = 2%
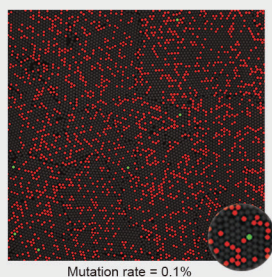
Samples Concentrations

1D Plot

2D Plot

QC Image

Applications

Cell and Gene Therapy
DQ24 dPCR is GMP-ready, providing absolute quantification solution for production and QC environment needs.

Pathogen Detection
DQ24 allows quantitative detection of pathogen DNA/RNA molecules with super sensitivity, enabling quantitative cut-off and dynamic monitoring of target.

Gene Expression Analysis
Reproducible measurement of transcripts of low expression or small sequence difference, such as single cell gene expression or allelic specific expression.
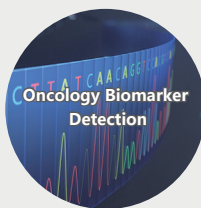
Oncology Biomarker Detection
Quantification detection of ctDNA target in liquid biopsy with unprecedent sensitivity, including mutation, CNV, miRNA, indel, refusion and methylation biomarkers, providing information for cancer progression and treatment response monitoring.

Food Safety Inspection
Genetically modified organisms(GMO) test, foodborne microbes detection, meat species identification, etc.

Environment Monitoring
Microbiome monitoring in environment samples like wastewater, soil or air. Environmental DNA (eDNA) analysis for biodiversity or invasive species inspection.

Specifications

Dimensions （L×W×H)	495mm×560mm×520mm	Dynamic range	5 orders of magnitude
Weight	Approx. 60Kg	Sample illumination	LED
Work environment	Temperature 10-30℃，humidity ≤ 80%	Touch screen	17.3" LCD
Power input	100-240VAC~50/60Hz，7.3A	Temperature range	3-99℃
Anti-pollution	FFU, UV lamp	Thermal accuracy	±0.5℃
Droplet produce method	VibroJect ™	Fluorescent chemistry	Dye/Probe
Starting sample size	≥ 20μL	Export format	.png/.pdf/.csv
Capacity	Up to 16 samples per run	Data quality control	QC image, review droplets to avoid false positives
Droplets per 20μl sample	~23000		

Worldwide Independent Patent

ALL-in-one Digital PCR Device
CE approval

ALL-in-one Digital PCR Device
FDA approval

DQ24-Sight Software compliance with FDA21 CFR Part 11
Electronic records and electronic signatures have the same effect as written records and handwritten signatures, and software information security has been effectively guaranteed. DQ24-Sight Software Regulatory Edition provides tools for regulatory requirements Installation quantification/operational quantification (IQ/OQ) service

ISO 13485

Ordering Information

RM001001A	All-in-one Digital PCR Device（Sniper DQ24）	Touch Screen 17.3" LCD，3 Fluorescence Channels: FAM、VIC、ROX
RM001002A	5 Fluorescence Channels	Upgrade Pack: FAM、VIC、ROX、CY5、CY5.5
RM001003A	6 Fluorescence Channels	Upgrade Pack: FAM、VIC、ROX、CY5、CY5.5、Atto425
RW001096A	Sniper DQ24 Consumables	96 Tests/Set
RW006096A	Sniper DQ24 Consumables (Automatic Oil Feeding)	96 Tests/Set
RT002096A	2×dPCR EvaGreen Master Mix（Rox）	96 Tests/Set (Dye Method)
RT001096A	2×dPCR Probe Master Mix（Rox）	96 Tests/ Set (Probe Method)
RT008096A	2×dPCR Probe Master Mix（Cy5.5）	96 Tests/ Set (Probe Method)
RT017096A	2×dPCR Probe Master Mix Plus（Cy5.5）	96 Tests/ Set (Probe Method)
RT003096A	2×One-step RT-dPCR Probe Super Mix（Rox）	96 Tests/ Set (One-step Method)
RT018096A	5×One-step RT-dPCR Probe Super Mix（Cy5.5）	96 Tests/ Set (One-step Method)
DT002016C	BCR-ABL1(p210) %IS Kit （CE-IVD）	16 Tests (Digital PCR Method)
DT002048C	BCR-ABL1(p210) %IS Kit （CE-IVD）	48 Tests (Digital PCR Method)
RS00101A	Sight Software, Regulatory Edition	Compliant with FDA 21 CFR Part 11

Company Introduction

Founded in 2018, Sniper Medical Technologies Co., Ltd. is committed to providing fast, sensitive, accurate and intelligent molecular diagnostic solutions to health care via continuous technological innovation.

Based on Sniper patented VibroJect® technology, we launched the all-in-one automation digital PCR system, enabling droplet generation without reliance on any microfluidic chip, providing the real walk-away dPCR operation as well as accessibility and affordability.

With our experience and efforts in engineering and industrialization, we have established precision machining shop, R&D center, molecular biology laboratory and GMP plant, as well as the ability to innovate, develop, manufacture and provide total solutions for medical devices.