

Mondrian™ SP System



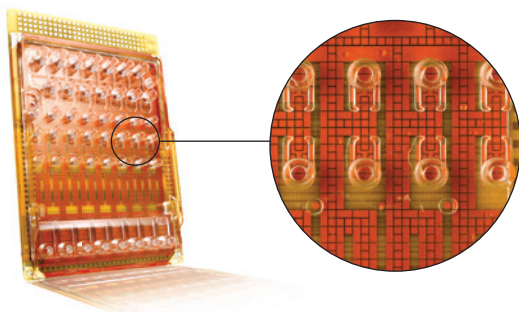
Plug & Play.

Digital microfluidics for NGS sample preparation

Mondrian™ SP System

The Mondrian SP System from NuGEN is an innovative new benchtop workstation for NGS sample preparation that utilizes digital microfluidics for liquid handling. The system provides Plug & Play automation with a simple user interface and load and go cartridge operation to significantly reduce the hands-on time for genomic sample preparation.

Load. Select. Go. It's that simple with the Mondrian SP System.



Mondrian SP Cartridge is totally self contained.



Small footprint of 15.7" (H) x 21.6" (D) x 8.8" (W) makes it perfect for any lab environment



Reagent kits are optimized and quality controlled for guaranteed performance

Mondrian SP System Components

Mondrian SP Cartridges

Reagent workflows are enabled on the disposable Mondrian SP Cartridges in convenient 8 sample batch size. Closed cartridges reduce the risk of environmental or carryover contamination. Electrical manipulation of discrete aqueous droplets enables the movement of droplets simultaneously and independently, allowing complex reactions to be conducted quickly and reliably.

Mondrian SP Workstation

Compact benchtop Mondrian SP Workstation is operated via a menu driven, touchscreen interface, and offers true Plug & Play automation. With few moving parts, the instrument is highly reliable and requires minimal maintenance.

Mondrian SP Reagent Kits

For guaranteed performance and reliability, Mondrian SP reagent kits are optimized and quality controlled for use with the Mondrian SP System. Cartridges are loaded with reagents and samples prior to initiating protocols, allowing for load and go operation. Each Mondrian SP reagent kit is used with one of the preloaded sample preparation protocols. New protocols can be easily downloaded from the NuGEN website and transferred to the Mondrian SP Workstation via a USB drive.

Load. Select. Go. It's that simple.

1

LOAD.

Dispense samples and matched Mondrian SP reagents into designated ports in the Mondrian SP Cartridge using a multichannel pipette, and insert the Mondrian SP Cartridge into the Mondrian SP Workstation.



2

SELECT.

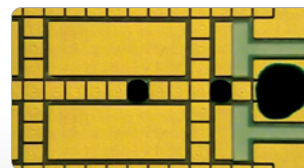
Use the touchscreen on the Mondrian SP Workstation to select desired protocol, then press Run. The touchscreen keyboard allows entry of optional information, such as run number, operator name and experimental notes.



3

GO.

Through the use of digital microfluidics, sample and reagent droplets are transported, mixed and incubated according to protocol specifications. Processed samples are transported to droplet collection ports for easy retrieval.



Digital Microfluidics

Digital Microfluidics describes the movement of nanoliter droplets within the Mondrian SP Cartridge controlled by the application of electrical voltage. When voltage is applied between a droplet and a hydrophobic surface, the resulting change in surface hydrophobicity will cause the droplet to spread out on the surface, a phenomenon known as 'electrowetting' (**Figure B below**). When the electrical charge is removed, the droplet returns to its original shape (**Figure A below**). The application of electrical signals to an array of insulated electrodes on a surface can be used to control the size, position and movement of each droplet. Droplets are transferred between adjacent electrodes by removing voltage from one electrode and applying it to the next one.

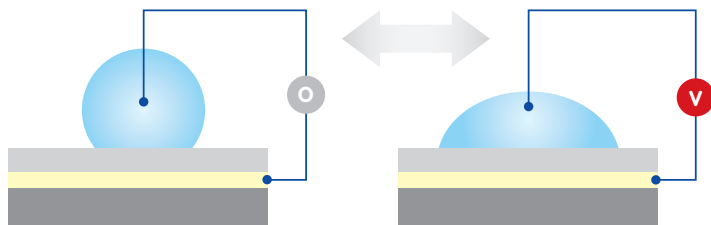


FIGURE A

FIGURE B

Mondrian SP System Benefits

- **Increase lab productivity**
Reduce the amount of hands-on time required for manual sample preparation methods and maximize labor efficiencies
- **Streamline and simplify NGS workflows**
A range of methods and matched reagent kits for multiple applications simplifies the management of complex NGS sample preparation workflows
- **Reduce data variability**
Improve reproducibility through elimination of operator induced variability

Features	Benefits
Small footprint and only 25 lbs in weight	Fits easily into any lab space No special equipment required
Plug & Play user installation	Easy implementation with minimal user training
Protocols provided by NuGEN updated via USB transfer	No user programming required
Cartridges and workstation use digital microfluidics (no pumps, valves or tubes)	Highly reliable operation with minimal downtime or maintenance
Multiple NGS applications	Simplified workflow
Fully automated sample preparation	Increased lab productivity Improved reproducibility
Mondrian SP reagent kits & cartridges	QC tested & optimized to work with the Mondrian SP System
Completely supported & documented protocols including user guides	Assurance of NuGEN technical support

Product Name	Part No.	No. of Reactions
Mondrian™ SP System Products		
Mondrian SP Workstation	8000	
Mondrian SP Universal Cartridge	8010-08	8
Mondrian SP Universal Cartridge	8010-32	32
Ovation® SP Ultralow Library System	8030-32	32
Ovation SP Ultralow DR Multiplex System 1-8	8033-32	32
Ovation SP Ultralow DR Multiplex System 9-16	8034-32	32



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Mondrian SP Workstation and Universal Cartridges manufactured for NuGEN Technologies by Advanced Liquid Logic®

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