



40K
partitions

High resolution

Samples are subdivided into more than 40,000 partitions per reaction. Single molecule analysis of these partitions provide higher sensitivity and better accuracy for quantification of DNA/RNA over a wider dynamic range of concentrations.

6

detection channels

High multiplex

Absolute quantification of up to 6 targets can be achieved without the need for references and standards. Better quality data can now be attained using fewer reactions and at lower costs. It is now possible to perform high multiplexed digital PCR.

96

reactions

High throughput

Sample throughput is not compromised. Run up to 96 reactions at once to analyze hundreds of different targets in a single digital PCR run while generating millions of data points. Such performance opens up more applications for digital PCR like never before.

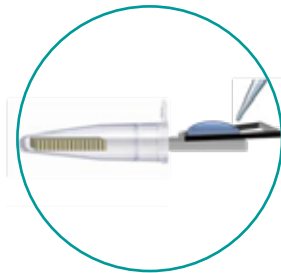
CLARITY*plus*TM

Digital PCR System

TUBE-STRIPS

The tube-strips are the workhorse of the entire system. These are no ordinary tube-strips. Embedded inside each tube is a high density chip. When the sample is added inside each tube, it gets delivered over the top surface of the chip. Capillary forces then draw the sample into the chip, resulting in the sample being rapidly subdivided into more than 40,000 partitions per chip. Up to 8 samples can be loaded in a single tube-strip. There is no complex microfluidics involved. Analysis can be done on a single chip with 40,000 partitions, or several chips can be combined to yield more than 320,000 partitions in each tube-strip! The partitions remained inside the tube throughout the digital PCR process. Such incredible performance and unprecedented flexibility

Side view of a tube with the chip embedded within. Each chip can yield more than 40,000 partitions



Features

- More than 40,000 partitions per chip, or 320,000 per strip
- Stable partitions
- Minimal sample loss
- Closed tube



WORKFLOW



Load and partition

Using the Auto Loader, 8 samples at a time are loaded and pushed into the chips. Each is then subdivided into more than 40,000 high density partitions. There is minimal sample loss and no dead volume.

Seal

The Sealing Enhancer increases the separation between adjacent partitions. Addition of the Sealing Fluid seals and discretizes the partitions.

Thermal cycle

Tube-strips are placed onto a deep 96-well thermal cycler for amplification. Up to 12 tube-strips (or 96 reactions) can be run each time. There is also the flexibility to run fewer strips.

Detect

After amplification, tube-strips are placed into the Reader for endpoint signal readout. Multiplexed analysis is achieved with the 6 detection channels that can detect several targets in each chip.

Quantify

Powered by AI, the software uses a proprietary method to identify every single partition from each chip. Following that, it classifies each partition into positive and negative based on their intensities. With that information and using Poisson statistics, highly multiplex absolute quantification is achieved on the Clarity Plus.

CLARITY PLUS™ SYSTEM SPECIFICATIONS

Reaction volume	15 µl
Partitions per reaction	40,000 – 45,000
Reactions per strip	8
Tube capacity	0.2 ml
Thermal cycling	Deep well thermal cycler for 0.2 ml tubes with adjustable ramp rate
Chemistries	TaqMan® and SYBR® Green/EvaGreen®
Light source	High power LED
Detector	CMOS
Detection mode	End point
Detection channels	6-colors: FAM™, HEX™, ATTO™ 550, Texas Red®, Cy5™, and Cy5.5™

ORDERING INFORMATION

Cat. No.	Product
20002	Clarity Plus™ Digital PCR System
20011	Clarity™ 40K Consumables Package (96 reactions)
12013	Clarity™ Digital PCR Probe Mastermix (5 ml)
12014	Clarity™ Digital PCR Mastermix (5 ml)