

# Roche Digital LightCycler® System

Simplified workflow: Helping you unleash the true power of digital PCR



## It's time for a leap forward in digital PCR technology.

The Digital LightCycler® System from Roche is a digital PCR system that combines sensitivity, precision, flexibility, and integration in one powerful clinical research tool. It was designed to help laboratories push forward the boundaries of clinical research and has the potential to advance global medical knowledge.

# 365 - The Unique Combination Changing the Future of Digital PCR

The Digital LightCycler® System features a number of one-of-a-kind technical advancements that together make it a powerful clinical research tool¹-4.



Different nanowell plate configurations.

- 20,000 partition (45 µL) High Sensitivity Plate
- 28,000 partition (30 µL) Universal Plate
- 100,000 partition (15 μL)
   High Resolution Plate



Advanced optical channels (+1 control), which enables a high degree of multiplexing for DNA or RNA targets.



Times concentrated DNA & RNA master mixes where 4 parts of sample to 1 of master mix means up to 2/3 of the total reaction volume can come from the extracted sample.

# These 3 key features allow the Digital LightCycler® System to elevate clinical research through advances in 4 key areas



#### **Sensitivity**

The 20,000 partition plate is capable of detecting indels down to <0.2% allele fraction while the 28,000 partition plate can detect rare mutations down to <0.1% allele fraction.<sup>5</sup>



#### **Precision**

The 100,000 partition plate offers laboratories the ability to discriminate small differences between samples, excellent cluster tightness and clarity of results, and absolute quantification. Quick, clear, reproducible results may provide greater confidence with shorter turnaround times for publishable scientific research and the potential for the development of clinically viable assays.



#### **Flexibility**

The features on the Digital LightCycler® System make it a powerful research tool in digital PCR: Address multiple challenges at once with its 3 nanowell plates, choose batch size increments of between 8 and 96 samples per run, increase resolution by combining lanes for results of a single sample, enable high multiplexing with a 6 optical channel analyzer, and simplify your workflow with sample tracking and automated data analysis.



#### Integration

The Digital LightCycler® System brings reliable confidence in results by combining its 3 nanowell plate configurations, 6 advanced optical channels, and 5x concentrated master mixes with other powerful features—a closed system to minimize the chance of amplicon contamination, LIS connectivity, and absolute quantification without the need for standard curves.

<sup>1.</sup> https://www.bio-rad.com/en-us/life-science/digital-pcr/qx-one-droplet-digital-pcr-ddpcr-system (last accessed on 06/17/2022)

 $<sup>2. \</sup> https://www.qiagen.com/us/products/instruments-and-automation/pcr-instruments/qiacuity-digital-pcr-system/ \ \ (last accessed on 06/17/2022)$ 

<sup>3.</sup> https://www.stillatechnologies.com/6-color-dpcr/ (last accessed on 06/17/2022)

<sup>4.</sup> https://www.thermofisher.com/order/catalog/product/4489084 (last accessed on 06/17/2022)

 $<sup>5.\</sup> Roche \ Data \ on \ File. \ DH\_02365.01\_031B\_Digital\_LightCycler\_Reagent\_Feasibility\_Report\_v3, Document \ Number: 000000000001200000501942.$ 

### Sophisticated instrumentation, simplified workflow

Whether developing assays or running clinical tests, the Digital LightCycler® System offers a simplified workflow.

#### Development workflow

#### Diagnostics workflow



#### Create/receive orders

Create orders manually, import order-lists, or receive orders from the LIS. The system automatically sets up a layout and creates sample orders.



#### Select plate type

Scan 2D barcode of selected nanowell-plate type. Sample set-up report will be generated and printed.



#### Sample preparation

Prepare reaction mixtures using 5x Roche RNA & DNA Master Reagents, combined with assay-specific primers and probes, and mixed with samples and controls.



#### Pipetting and partitioning

Pipette reaction mixtures into nanowell plate lanes then transfer the plates to partitioning engine, where reaction mixtures are distributed into nanowells. Monitor via touchscreen. 5 mins per plate.



#### Load analyzer

Load plates onto analyzer via plate drawer. Select run profile and detection channels.



#### Load analyzer

Load plates onto analyzer via plate drawer. Check and visually validate sample set-up.



#### Run

Run analyzer.



#### Raw data export

Raw data is automatically or manually exported to chosen location or USB attached to analyzer .



#### **Approve results**

Access and approve results, via 1 or 2 step approval, send directly to LIS, or create reports/export raw data for diagnostics runs.



#### **Development software**

Import raw data into project files, input sample set-up, undertake clustering/thresholding and select analysis (with settings for absolute quantification/CNV/insertion-deletion assays).



#### **Analysis package**

Create analysis package (containing 1 or more target-specific tests), save, and import into analyzer database for use in customized workflows.

Choose the Digital LightCycler® System and unleash the true power of digital PCR.



## Digital PCR Materials

Roche Material Number	Description
09274804001	Digital LightCycler Analyzer
09224777001	Digital LightCycler Partitioning Engine
09033696001	Digital LightCycler Universal Plate
09033718001	Digital LightCycler HiSens Plate
09033700001	Digital LightCycler HiRes Plate
09393544001	Digital LightCycler MasterMix 5x DNA
08897115001	Digital LightCycler MasterMix 5x RNA
08861536001	Digital LightCycler Partitioning fluid

#### sequencing.roche.com

Published by: **Roche Sequencing and Life Science**915 Hague Road
Indianapolis, IN 46256 USA

https://go.roche.com/dpcr