

Roche



Roche Digital LightCycler® System

A technological guide to the powerful new addition to our Polymerase Chain Reaction (PCR) ecosystem

Digital 
LightCycler®

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

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



Partitioning engine

Height 25cm **Width** 25cm **Depth** 30cm

Touch-screen operation

Stand-alone to accommodate multi-room configuration

Partitioning fluid

Inert non-volatile silicone fluid increases reliability and replicability and minimises the chance of amplicon contamination

Three unique nanowell plates

Standard SBS/ 96 MWP (Multi-Well Plate) format
Height 128mm **Width** 85mm
Eight sample lanes per plate



20,000 partitions
High sensitivity

166x87x160µm, ~45µL

Cell-free DNA
Oncology
Rare mutation detection



28,000 partitions
Universal

121x62x128µm, ~30µL

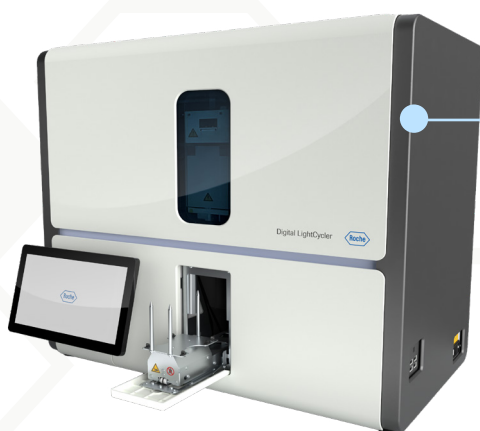
Gene expression
Transplant rejection



100,000 partitions
High resolution

54x27x75µm, ~15µL

Copy Number Variation (CNV)
Non Invasive Prenatal Testing (NIPT)
Human genetic disease



Analyser

Height 90cm **Width** 90cm **Depth** 60cm

Fully integrated thermal cycling and partitioning imaging
Image capture within sealed nanowell plate

Six optical channel detection for multiplexing capabilities

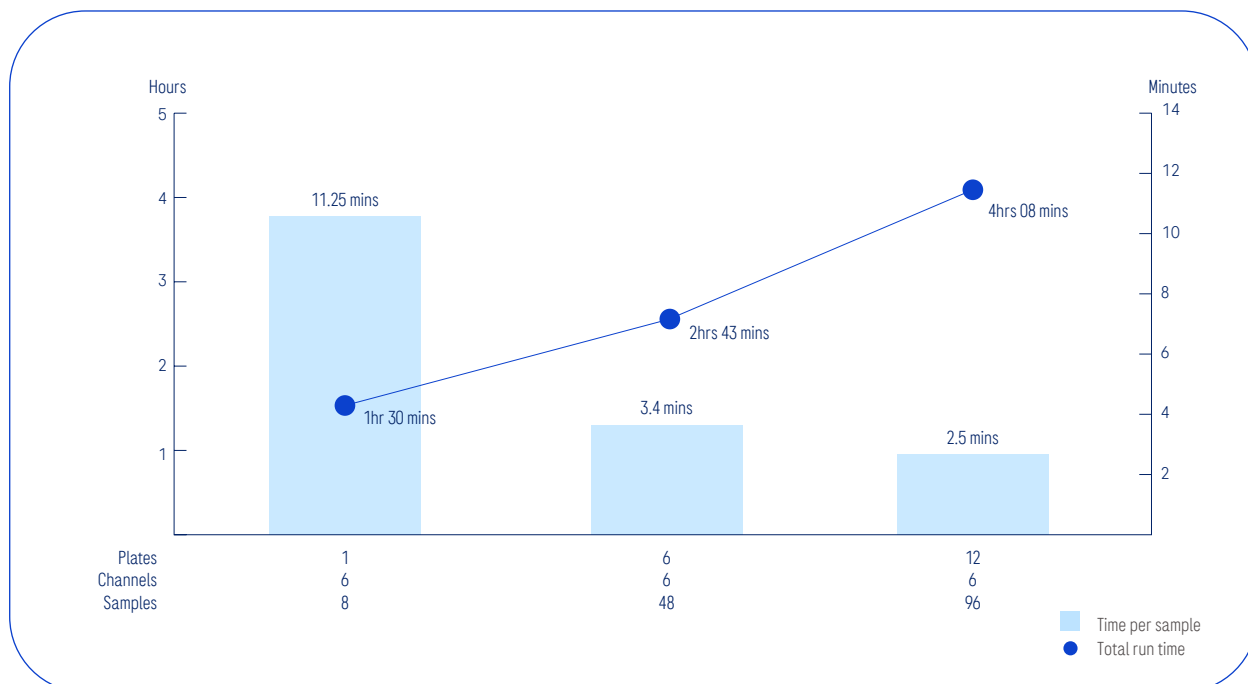
Flexible batch size (increments of eight up to 96 samples per run)

12-plate capacity

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

Run times*

Designed to use less overall time when there are fewer plates in the analyser, the Digital LightCycler® System is also capable of processing large numbers of samples in an extremely fast average time per sample.



Volumes†

With average lost volumes of 10% on the 20,000 and 28,000 partition plates and just 5% on the 100,000 plate during research, the maximum waste volume is also extremely low.



Compatible optical dyes



Performance data

- Quantification precision*** <=5% for optimal sample input and <=10% for low sample input
- Quantification accuracy** +/-10% to the reference standard for optimal sample input and +/-20% for low sample input
- Linearity and dynamic range** At least 4-log of linear range with deviation from linear fit <0.2 on a log scale
- CNV assay performance** Discriminate 10% difference in Copy Number (CN) on high resolution plate (100,000)
- Rare mutation assay performance** Limit of Detection (LoD) of 0.1% MAF on universal plate (28,000)
- Indel assay performance** LoD of 0.2% MAF on high sensitivity plate (20,000)

* Roche data on file: DH_02365.01_031B_DigitalLightCycler_Reagent_Feasibility_Report_v3, Document Number: 000000000001200000501942

Roche data on file: DH-02365.01-500E_DigitalLightCycler_System_Performance_report

Roche data on file: DHF_DigitalLightCycler_Reagent_Feasibility_Report

Roche data on file: DH-02365.01-008B_DigitalLightCycler_System_Feasibility_Report

† Assuming the Primer/Probe is at 5x (usually higher at 10x and 20x), master mix at 5x, restriction enzyme volume very small (neglected here)

* Quantified by the Coefficients of Variation (CV) of technical replicates



©2022 Roche Diagnostics Limited. All rights reserved.
LIGHTCYCLER is a trademark of Roche. All other trademarks and brand names are the property of their respective owners.

Roche Diagnostics Limited

Charles Avenue, Burgess Hill, West Sussex, RH15 9RY

Company Registration Number: 571546

Date of Preparation: October 2022

Document number: MC-IE-01780

For healthcare professional use in the UK and Ireland only. Not for distribution.

diagnostics.roche.com

Digital  **LightCycler**[®]