XDive® : 5-minute Superfast Real Time PCR Machine

ONSITE GENE

- Developed in collaboration with Prof. Carl Wittwer, co-founder of BioFire and a pioneer of ultrafast PCR.
- Perform 40-cycle real time PCR in approximately 5 minutes.
- Integrated with the Xtractor™ rapid nucleic acid extractor, enabling sample-to-result PCR testing in just 15 minutes.
- Powered by Xfast™ superfast qPCR reagents, compatible with conventional qPCR chemistries.

Key Features of XDive® Superfast Real-Time PCR Machine

Rapid Multi-Mode Temperature Control System

XDive® features both an ultra-fast and a standard temperature control mode, giving users the flexibility to optimize for speed or conventional protocols. In ultra-fast mode, XDive completes 40 cycles of fluorescence-based qPCR in just 5 minutes.

Flexible Application

XDive® supports up to 4 fluorescent channels (customizible to 6 channels) and accommodates 1 to 16 reaction tubes per run, enabling simultaneous detection of up to 64 targets.

Simple Sample Operation

XDive®'s ultra-fast capillary PCR tubes are compatible with user sample handling in conventional qPCR workflows (using a pipettor and a centrifuge).

Accurate Detection Results

XDive® combines high-performance hardware and software with ultra-fast fluorescent qPCR reagents to deliver sensitivity, uniformity, repeatability, and dynamic range on par with conventional qPCR instruments.

Friendly GUI and Analysis Software

The XDive® control software features an intuitive graphic user interface (GUI) that enables instrument operation, thermal cycling setup, real-time data acquisition, analysis, and automated reporting.

Sample-to-answer Option

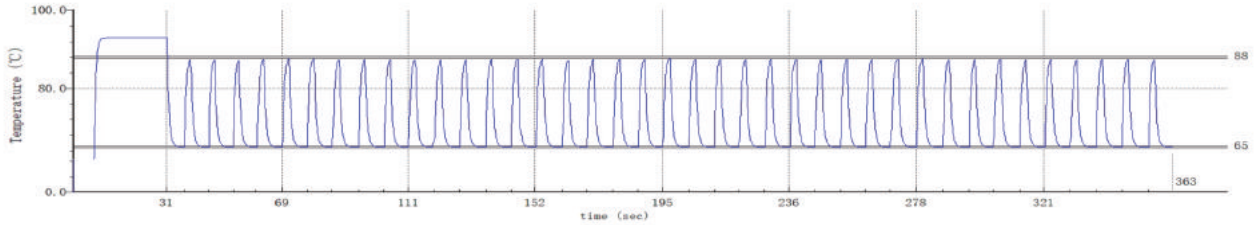
Seamlessly integrates with the Xprep™ Extraction and Reagent Preparation Module, enabling fully automated sample-to-result analysis of up to 16 samples in under 15 minutes.

Specifications of XDive® Superfast Real-Time PCR Machine

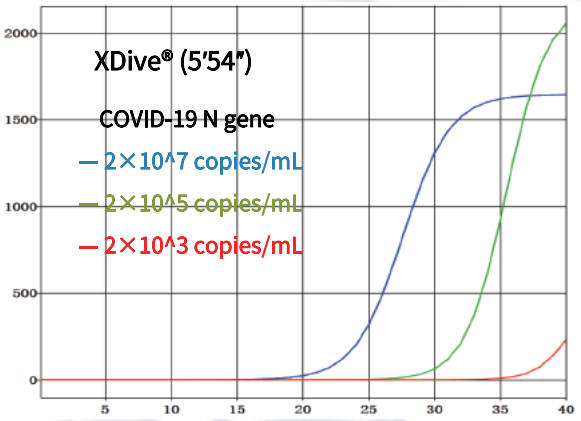
Dynamic Range	9 log Concentrations
Fluorescence Channel	Fam, Hex, Rox, Cy5（expandable to 6 fluorescent channels）
Reaction Wells	1-16
PCR Detection Methods	TaqMan® Probe and other probe-based detection methods
Reaction Volume	5-30 μL
Single-Tube Multiplex	Supports 4 Targets per Reaction (customizable to 6 targets)
Panel Detection	Support up to 64 targets per Reaction over 16 PCR tubes
Thermal Cycling Method	Translational movement of PCR tubes among heating baths
qPCR Time (40 Cycles)	~5 minutes (Superfast mode)
Temperature Ramp Down Rate	67°C/s（Outside PCR Tube），17.5°C/s（Inside PCR Tube）
Temperature Ramp Up Rate	82°C/s（Outside PCR Tube），28.5°C/s（Inside PCR Tube）
Temperature Uniformity	± 0.5°C
Size (mm)	450×342×357 （(L x W x H）
Weight	24.5 kg
Operating System	Win7 and above in an external computer

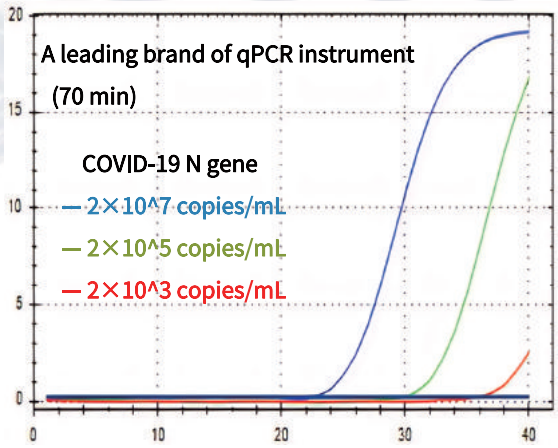
Performance of XDive® Superfast Real-Time PCR Machine

5'32" (40 cycles) , 10 μL reaction volume of in each PCR tube

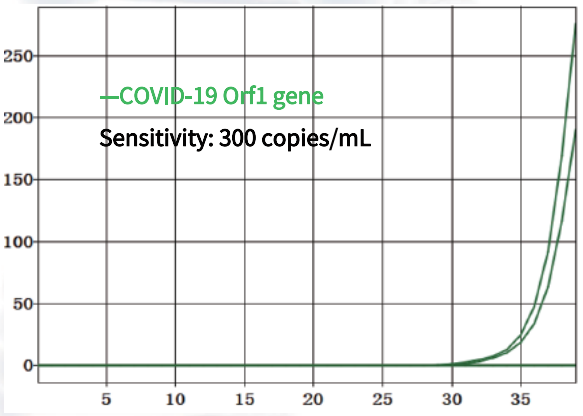


Comparison of amplification performance between XDive® and conventional PCR instrument

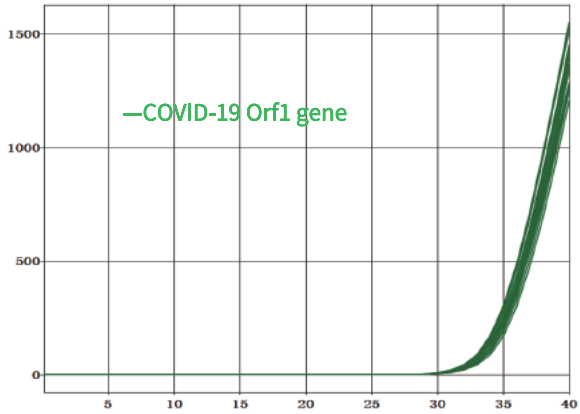




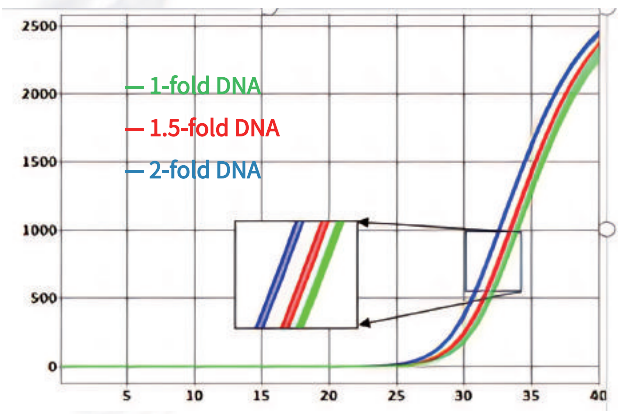
High Sensitivity



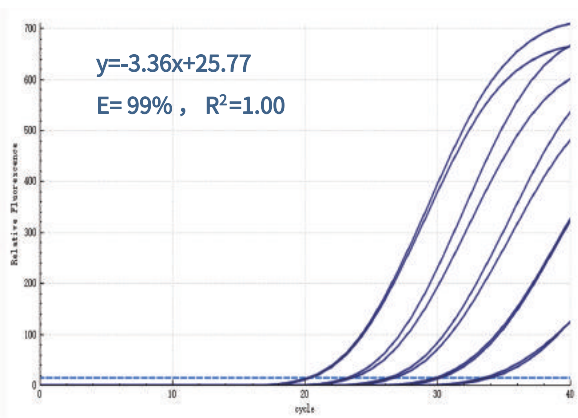
Excellent well-to-well Uniformity



Sensitive Template Discrimination



Good Absolute Quantification



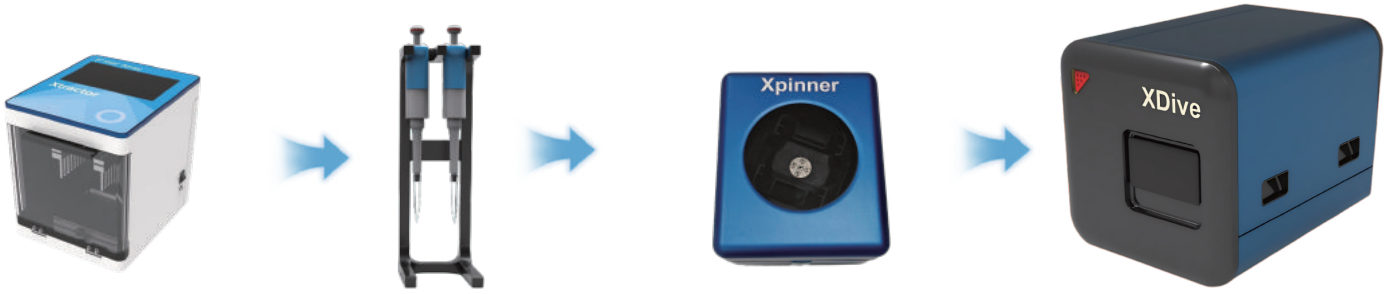
Highlights of XDive® Superfast Real-Time PCR Machine

- The XDive® system enables ultra-fast amplification, completing 40-cycle qPCR reactions in approximately 5 minutes and RT-qPCR reactions in around 7 minutes, with DNA and RNA detection sensitivity comparable to that of conventional qPCR instruments.*

  ** Total amplification time is primarily dependent on PCR protocol settings. The stated 5-minute runtime refers to a 40-cycle single-channel qPCR configuration with 10-20ul reaction volume.*

- Supports simultaneous processing of 1 to 16 samples per run and 5-30 µL amplification reaction systems.
- Supports single-tube quadruplex amplification and panel detection of up to 64 targets.
- Compatible with the ultra-fast, fully automated Xtractor™ nucleic acid extraction instrument and rapid extraction reagents.
- Superfast sample-to-answer Option via integration of XDive with Xprep™ Extraction and Reagent Preparation Module for fully automated sample-to-result analysis of up to 16 samples in under 15 minutes.
- Patents granted in major regions, including the United States, China, the European Union, Japan, Australia, India, and Singapore.
- Certified by TÜV for IEC 61010 product safety and IEC 61326-2-6:2020 electromagnetic compatibility.
- The supporting reagent kits—including the COVID-19 RT-qPCR Kit, SalivaDirect™ COVID-19 RT-qPCR Kit, and Monkeypox qPCR Kit—have received Emergency Use Authorization (EUA) from the FDA.
- The production facilities are ISO 13485 certified, ensuring compliance with international standards for medical device quality management systems.

Workflow of XDive® Superfast Real-Time PCR Machine



Superfast Nucleic Acid Extraction on Xtractor™

Preparing PCR mix

Loading PCR tubes on a centrifuge

SuperFast PCR

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