

real-time fluorescence qpcr with 12-column gradient function

Real-time fluorescence qpcr through the semiconductor temperature rise and fall technology, to achieve rapid and stable temperature change, suitable for gene expression, mutation detection and pathogen quantification and other experiments.

Real-time Fluorescence Quantitative PCR Instrument

The real-time fluorescence qPCR instrument is equipped with a large touch screen and powerful software, designed to meet the diverse needs of scientific research and clinical applications in real-time fluorescence quantitative PCR.

Main Features

1. **Fast & Accurate Temperature Control:** Semiconductor system supports temperature changes at 6 °C/sec; cycle life up to 1 million times—stable and durable.
2. **Top Fluorescence Detection:** Top excitation and detection compatible with white PCR tubes; effectively shields background light for improved sensitivity and signal-to-noise ratio.



3. **Synchronized Multi-well Acquisition:** Simultaneous fluorescence signal collection from all wells in the same channel; eliminates delay errors from sequential detection.
4. **Large Full-color Touch Screen:** 10-inch HD true-color touch screen enables independent running, monitoring, and analysis without a computer.
5. **Advanced CCD Imaging:** SSLP short-range static CCD imaging provides high signal stability and avoids fiber clogging/wear.
6. **Maintenance-free LED Light Source:** Long-life LEDs require no frequent replacement or calibration; stable, reliable detection.
7. **Gradient Temperature Optimization:** 12-column gradient function streamlines amplification condition screening.
8. **Powerful Analysis Software:** Built-in qPCR analysis software supports remote operation/data analysis; free lifetime upgrades.
9. **Centralized Multi-device Control:** Optional software enables one computer to manage multiple PCR instruments.
10. **Large-capacity Program Storage:** Stores up to 15,000 programs; unlimited import via USB drive.
11. **Multi-interface Support:** Ethernet and USB2.0 interfaces for easy data export and remote management.

Advantages

1. **Fast Reaction & High Efficiency:** Rapid temperature cycling shortens PCR cycles and increases throughput.
2. **Sensitive & Stable Detection:** Static CCD imaging and top detection enhance signal quality and reduce errors.
3. **Convenient Independent Operation:** Large touch screen for stand-alone use in varied environments.
4. **Low Maintenance Costs:** Maintenance-free LED and non-mechanical optics reduce upkeep and cost.
5. **Intelligent Data Management:** Extensive program storage and remote management for efficient lab operations.

Working Principle

Utilizes high-efficiency semiconductor Peltier elements for precise temperature control, with multi-point sensors for real-time feedback. Top fluorescence excitation and static CCD imaging enable simultaneous signal capture from all wells, avoiding mechanical delay and optical errors. Long-life LED provides stable excitation; built-in software analyzes data, generates amplification curves, and calculates quantitative results for accurate gene detection.