three-block real-time fluorescence quantitative pcr

The three-slot real-time fluorescence quantitative PCR instrument is a highly integrated molecular testing equipment, equipped with three independently operated 32-well modules, which can be used to carry out three different experiments at the same time and improve the efficiency of laboratory work.

Three-slot Real-time Fluorescence Quantitative PCR Instrument

This advanced qPCR instrument is ideal for clinical diagnosis, scientific research, and teaching, providing high flexibility and efficiency for a wide range of applications.

Main Features

1. **Three Independent Modules:** Three groups of 32-well modules, each supporting separate programs for true multi-tasking—one machine, three uses.
2. **Highly Flexible Channel Configuration:** Channel filters are freely matched and expandable to 21 channels for diverse experimental needs.

3. **Overhead Fluorescence Detection (T-Optical):** Optimized for white PCR tubes; shields background interference to enhance signal sensitivity and signal-to-noise ratio.
4. **Synchronous Fluorescence Acquisition:** All wells acquire signals simultaneously, eliminating time resolution errors.
5. **Adjustable Display:** Flexible screen angle for improved comfort and visibility.
6. **Multiple Data Analysis Modes:** Supports absolute/relative quantification, genotyping, positive/negative determination, melting curve analysis, optional protein melting, and high-resolution melting (HRM) analysis.
7. **Advanced Optical Imaging:** SSLPI static fluorescence imaging with a compact, stable system for stronger signals.
8. **Power Failure Protection & Stand-alone Operation:** Ensures experimental safety and continuity, supports offline independent operation without a computer.

Advantages

1. **Efficient Multi-tasking:** Independent modules boost sample throughput and experimental flexibility.
2. **Multi-channel Support:** Flexible filter combinations for multi-target, multi-color fluorescence detection.
3. **Accurate & Stable Signal Acquisition:** Synchronized detection enhances reliability and reduces errors.

4. **Optimized Operating Experience:** Adjustable screen and touch interface for user comfort.
5. **Rich Analysis Tools:** Comprehensive analysis modes for mainstream qPCR applications in research and clinical settings.
6. **Stable & Durable:** Power failure protection and stand-alone operation safeguard experiments and reduce environmental dependency.

Working Principle

Utilizes high-efficiency semiconductor refrigeration for rapid, uniform temperature control during amplification. T-Optical top excitation and SSLPI static fluorescence CCD imaging ensure highly sensitive, synchronous signal acquisition for all wells—avoiding errors from mechanical scanning. Multi-group filter system enables precise multi-channel, multi-color detection. Control system supports power failure protection and independent offline operation for robust safety and stability.

three-block real-time fluorescence quantitative pcr

Model	**TC300**
Block	3 sets of 32 wells x 0.1 ml
Sample capacity	5ul to 100ul
Supported tube types	white 0.1 ml PCR tubes, 8-strip tubes with optical flat caps
Control method	Controlled by computer software or via the instrument built-in touchscreen
Optical system	SSLP short optical path static fluorescence CCD imaging technology
Display	10.1" full-color TFT LCD touchscreen display, adjustable within 90 degrees
Temperature Control Range	0°C to 105°C
Heating rate	8°C per second
Cooling rate	6°C per second
Temperature uniformity	±0.2°C, at 90°C
Temperature accuracy	±0.1°C, at 90°C

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Model	**TC300**
Temperature resolution	0.1°C
Gradient range	30°C to 100°C
Light source	long-life LED
Detector	high-sensitivity CCD
Dynamic detection range	1 to ten billion
Sensitivity	⩾1 copy
Detectable fluorophore dyes	F1: FAM|SYBR Green F2: VIC|HEX|JOE|CY3|TET(customizable) F3: ROX|TEXAS-RED|TAMRA(customizable) F4: CY5|Quasar 670 F5: CY5.5 customizable
Fluorescence excitation wavelength	400nm to 800nm

three-block real-time fluorescence quantitative pcr

Model	**TC300**
Fluorescence detection wavelength	500nm to 800nm
Data export formats	TXT, PDF, Word, Excel
Power-off protection	yes
Communication interfaces	Ethernet, USB 2.0, supports data export via USB flash drive, wifi
Power supply	100Vac to 240Vac, 50-60Hz, 1200W
Dimensions	375x268x400mm
Weight	16kg