

portable fluorescence quantitative pcr with four channel

Portable fluorescence quantitative pcr is a combination of high performance and convenient operation of molecular testing equipment, designed for field testing and mobile laboratory.

Portable Fluorescence Quantitative PCR Instrument

This portable fluorescence qPCR instrument supports both stand-alone independent operation and remote centralized management of up to 30 devices via computer, improving laboratory automation and management efficiency.

Main Features

1. **Multi-mode Operation:** Built-in 7-inch HD true-color touch screen for stand-alone use; Ethernet and USB2.0 interfaces for remote control of up to 30 instruments via computer.
2. **High-Throughput Detection:** 16-hole design with four-channel fluorescence detection enables rapid, simultaneous multi-target analysis.



3. **Advanced Imaging Technology:** SSLP short-range static fluorescence CCD imaging ensures simultaneous and accurate signal collection from all sample wells—no need for sequential scanning.
4. **Automatic Hot Cap Lock:** Intelligent pressure adjustment and automatic locking prevent sample evaporation, ensuring stable reactions.
5. **Top Fluorescence Detection:** Top excitation/detection mode, compatible with white PCR tubes, provides higher signal sensitivity.

Advantages

1. **Portable & Flexible:** Compact, lightweight, easy to carry—ideal for field detection in clinical, environmental, and research scenarios.
2. **Efficient Batch Detection:** 16-hole multi-channel design speeds up throughput for rapid multi-sample screening.
3. **Accurate Data Acquisition:** Static CCD imaging reduces noise, improves signal accuracy and experiment repeatability.
4. **Remote Centralized Management:** Computer remote control of multiple devices enables unified lab management and data analysis.
5. **User-Friendly:** Intuitive touch screen interface; easy operation for users of all levels.

Working Principle

The instrument utilizes semiconductor refrigeration for precise temperature control. A built-in optical system excites fluorescent dyes in samples, while SSLP CCD imaging captures signals from all wells simultaneously, avoiding scanning delays and errors. The automatic locking thermal cap system ensures uniform reaction temperature and prevents evaporation. Data is analyzed in real time via built-in or remote software, enabling quantitative detection of target genes.

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| Model | TC100 |
|----------------------|---|
| Block | 16 wells x 0.1 ml |
| Sample capacity | 10ul to 100ul |
| Supported tube types | White 0.1 ml PCR tubes, 8-strip tubes, supplied with optical flat caps |
| Control method | Equipped with an integrated touchscreen for standalone operation. can also be controlled via computer |
| Optical system | SSLP short optical path static fluorescence CCD imaging technology |
| Display | 7" TFT high-definition true color full-touch LCD screen |

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|---------------------------|---|
| Model | TC100 |
| PC connectivity, optional | Easily enables one computer to remotely control and manage up to 30 units |
| Temperature Control Range | 4°C to 100°C |
| Heating rate | 5°C per second |
| Cooling rate | 4°C per second |
| Temperature uniformity | ±0.25°C, at 90°C |
| Temperature accuracy | ±0.1°C, at 90°C |
| Temperature resolution | 0.1°C |
| Heated Lid Temperature | 30°C to 112°C, adjustable |
| Light source | long-life LED |
| Detector | high-sensitivity CCD |
| Dynamic detection range | 1 to ten billion |

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| Model | TC100 |
| 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 |
| Fluorescence excitation wavelength | 400nm to 800nm |
| Fluorescence detection wavelength | 500nm to 800nm |
| Data export formats | TXT, PDF, Word, Excel |
| Communication interfaces | Ethernet, USB 2.0, supports data export via USB flash drive |
| Power supply | 100Vac to 240Vac, 50-60Hz, 160W |
| Dimensions | 305x180x186mm |
| Weight | 3.6kg |

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