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# ZRT-100 APC REAL-TIME PCR SYSTEM



## Real-time PCR System

### 1. DESIGN FOR FLEXIBLE USE

- Standard with 10.4" LCD touch screen, functions quickly, accessible through simple, one-touch commands.
- Wizard operation to lock and unlock the transport locker.
- Message alarm indicate the status of the machine.
- USB port update software and firmware.
- Unique power-off protection function can save all the setted configurations for sudden power outages, and allow the experiment continues when power supply is restored.

### 2. FAST AND UNIFORM HEATING SYSTEM

- Concealed lid with constant temperature and isopiestic pressure.
- Electrical controlled elevating & automatic locked platform.
- Thermo block is based on improved heat pipe technology, leading to extraordinary intra-well temperature homogeneity and maximized inter-well, inter-cycle reproducibility.
- Highly efficient PID&DSP control algorithm ensures faster respond and stronger interference resistance, fast and uniform heating and heat sinking.

### 3. SYSTEM CAN BE INSTALLED IN THREE DISTINCT CONFIGURATIONS PROVIDING UNMATCHED FLEXIBILITY AND CONVENIENCE.

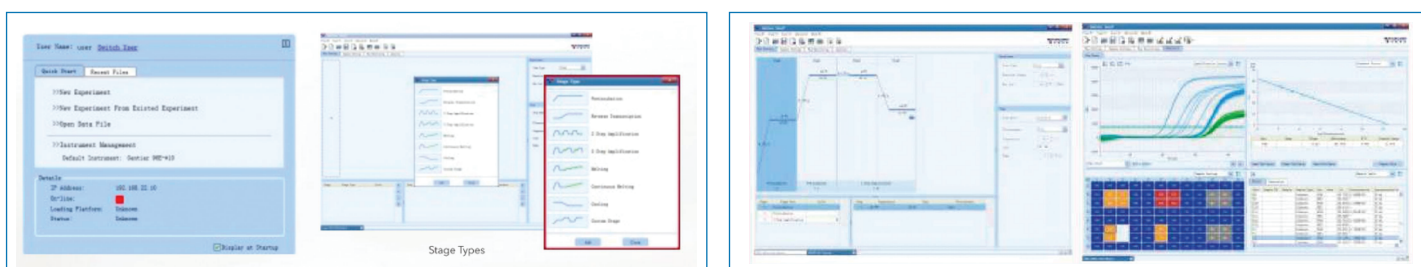
- Co-located configuration (PC control).
- Standalone (PC-free) configuration (Data can be export by USB and analysis on PC).
- Networked configuration (PC software automatically detect all systems in LAN and allow to remote monitoring one of experimental progress and downloading of the completed run file to the PC at your desk, one PC can max control 10 instruments).

#### 4. HIGH SENSITIVE AND PRECISE OPTICAL SYSTEM

- High-sensitivity and wide dynamic range of fluorescence detection system, sample dynamic range could be from 10<sup>1</sup> to 10<sup>10</sup> copies.
- Fast and precise mechanical scanning structure ensures the illumination uniformity of 96 wells, eliminate edge effects, no need for ROX calibration.
- Fluorescence excitation by a high-intensity and long-life LED. Bulb Luminance will not attenuation over time, free maintenance optical system through the entire life.
- Professional design fluorescence filters realize the highly fluorescence transmittance and meanwhile minimize the fluorescence channel crosstalk.

#### 5. EASY-TO-USE SOFTWARE

- Friendly interface and clearly functional modules design, first-time users can easily start a new experiment.
- All experiment data and setting options are shown conveniently on a single interface.
- Instrument Management allow you managing all the Gentiers in the WLAN.
- More than thousands results can be stored in device.
- USB or WLAN easily transfer experiments data anywhere you needed.
- Multi-options for experiments: New, New for Existed, Open data file, Double click data file.
- User can define the experiments name for documentation
- User can define the data storage directory themself
- Pre-installed templates can help user more easier to edit the protocols.



#### 6. RUN MONITORING

- All running information in one screen, intuitively and simply
- User can define each model to see what they like on the screen: Real-time Fluorescence, Heat map, Run info .Sample Setting, Sample info...
- Run the experiment first by device, later edit the sample setting in PC, when PC connected to machine, setting upload to machine automatically.
- After experiment, data download to PC automatically.

## 7. DATA ANALYSIS

- Optional baseline setting: Automatic or Manual.
- Multi-option analytical method for different requirements: Automatic or Manual threshold method, normalization method.
- Reference Dye analysis.
- DATA ANALYSIS-OTHERS

A Statistics analysis: Replicate, Gene types.

A Heating map options: Ct, Concentration, Florescence.

A LIS connectivity, can export csv, Excel and Txt format.

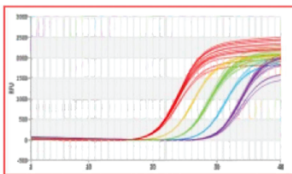
A Row data and results can export in Excel format.

### - REPORT

Unique designed universal report (Research and Clinical) can be customized according to the requirements, report review and print function help clinical documentation as needed.

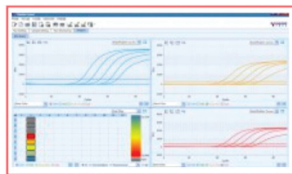
## 8. QUALITY DATA

GRADIENT DILUTED SAMPLES UNIFORMITY



Gradient diluted sample amplification curves.  
Can set different colors for each sample.

MULTIPLEX PCR GRADIENT SAMPLES UNIFORMITY



4 colors multiplex PCR gradient sample test  
HEX channel is used for internal control, isn't shown on this page.  
A good performance even with multiplex PCR.

MTHFR C677T SNP GENOTYPING



MTHFR C677T SNP genotype test with genotyping analysis function.

CA16/EV71/EU UNIFORMITY



Multiplex PCR uniformity with CA16/EV71/EU assay.  
Left and right half are low/high concentration duplicate samples.  
FAM for CA16, Cy5 for EU.

HPV 16+2 UNIFORMITY



HPV high risk genotyping assay  
Multiplex PCR uniformity performance with HPV 16+2 high risk types assay.  
Left and right half are low/high concentration duplicate samples.  
HEX for HPV 16, ROX for HPV 18, FAM for the rest of 16 high risk types.  
Cy5 channel is for internal control, not shown on this page.

SYBR GREEN I MELTING CURVE UNIFORMITY



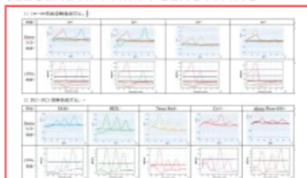
Temperature uniformity of melting curve with SYBR Green I dye.

MTRR A66G, MTHFR A1298C MELTING CURVES SNP ANALYSIS



Multiplex PCR melting curves for SNP analysis.  
FAM channel is for MTRR A66G - ROX channel is for MTHFR A1298C.  
The left melting peak is the wild type, the right melting peak is the mutation.  
And twin-peak means the sample is heterozygote.

SEEGENE HPV HR 14 GENOTYPING



5 colors multiplex melting curves.

**Thermal Block**

Sample Capacity( wells)	96
Reaction Volume	0-100 $\mu$ L
Consumables	0.2ml 96-well Plates (unskirt) ; 0.2ml 8-strip tubes , 0.2ml PCR single tube (Optical flat cap,clear, frosted, white tube)
Temperature Range	0°C-100°C
Heating/Cooling Method	Peltier
Max Heating Rate	6.1°C/sec
Average Heating Rate	4.5°C/sec
Max Cooling Rate	5.0°C/sec
Average Cooling Rate	2.8°C/sec
Temperature Accuracy	$\pm$ 0.1°C
Temperature Uniformity	$\pm$ 0.1°C
Gradient Range	1°C-40°C
Gradient Block	12 row
Special Temperature Protocol	Gradient PCR Long PCR Touch Down PCR

**Heat Lid**

Temperature range	Temperature-110°C
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**Optical System**

Excitation Source	4LEDs
Detector	Photodiode
Detection Position	Excitation and scan at top
Detection Method	6 channels scanning at the same time, no edge effect
Detection Time	7 seconds for 96 wells for all channels

Range of excitation/emission wavelengths(nm)	1.465 /510 (FAM, SYBR Green I, SYTO9, EvaGreen, LC Green) 2.527/ 563 (HEX,VIC,TET,JOE) 3.580 /616 (ROX,Texas Red) 4.632/ 664 (Cy5)
Probe	Taqman Probe, Molecular beacons probe, Scorpion probe
Multiplexing	Up to 4 targets
Fluorescence Linearity	$r \geq 0.990$
Fluorescence Dynamic Range	Adjustable
<b>Performance</b>	
Sample Linearity	$r \geq 0.999$
Sample Repeatability	Ct value CV $\leq 0.5\%$
Sample Dynamic Range	1-10 <sup>10</sup> copies
Data Analysis Modes	Qualitative analysis, Absolute quantification, Relative quantification, Genotyping analysis, Endpoint analysis, Melt curve analysis, High Resolution Melting
Control Modes	1. 10.4" touch screen 2. PC direct control 3. WLAN control (One PC can control max 10 units, and device can be controlled by any PC in the WLAN)
Sample Drawer	Touch screen command
Data Storage	Upload and download through USB disk, 1000 results can be stored in machine
Power Failure Protection	Automatically start running experiments after power supply, no need wait PC software
Customize Report	Templates reserved, report can be customized
Administration Management	Administrator can set function limits for users
Transport Locker	Automatically detect transport locker
Fault Management	Fault report and analysis, solution instruction

LIS connection CSV, Excel, TXT format data output, open port for LIS connection

## Others

PC operating system Win 7, Win 10

Communication Port 1 ethernet and 3 USB

Footprint (WxDxH) 355mm X 480mm X 485mm

Weight 30kg

Power usage AC 100 to 125 V / 200 to 240 V (50/60 Hz).

Power consumption 900VA

Work environment Temperature:10°C 30°C Humid