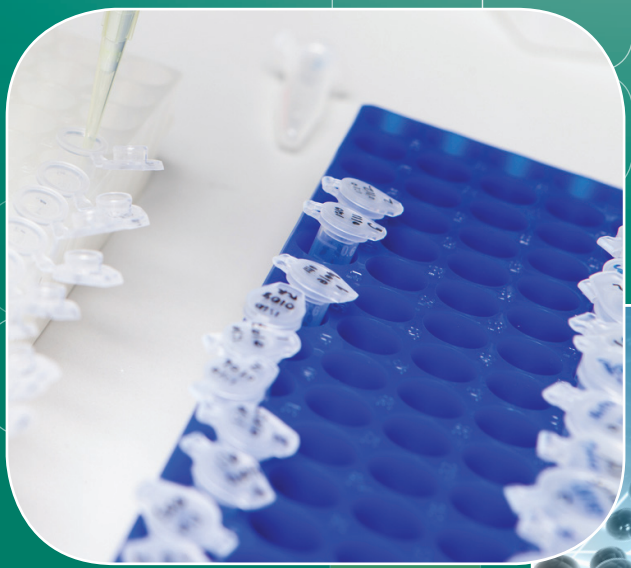
ESCO

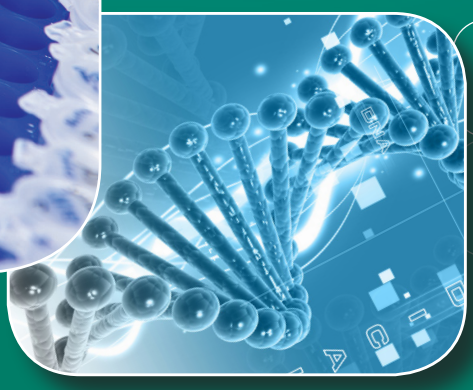
WORLD CLASS. WORLDWIDE.

Swift™

Spectrum 96 Real-Time PCR Detection System

The Solution You Can Rely On





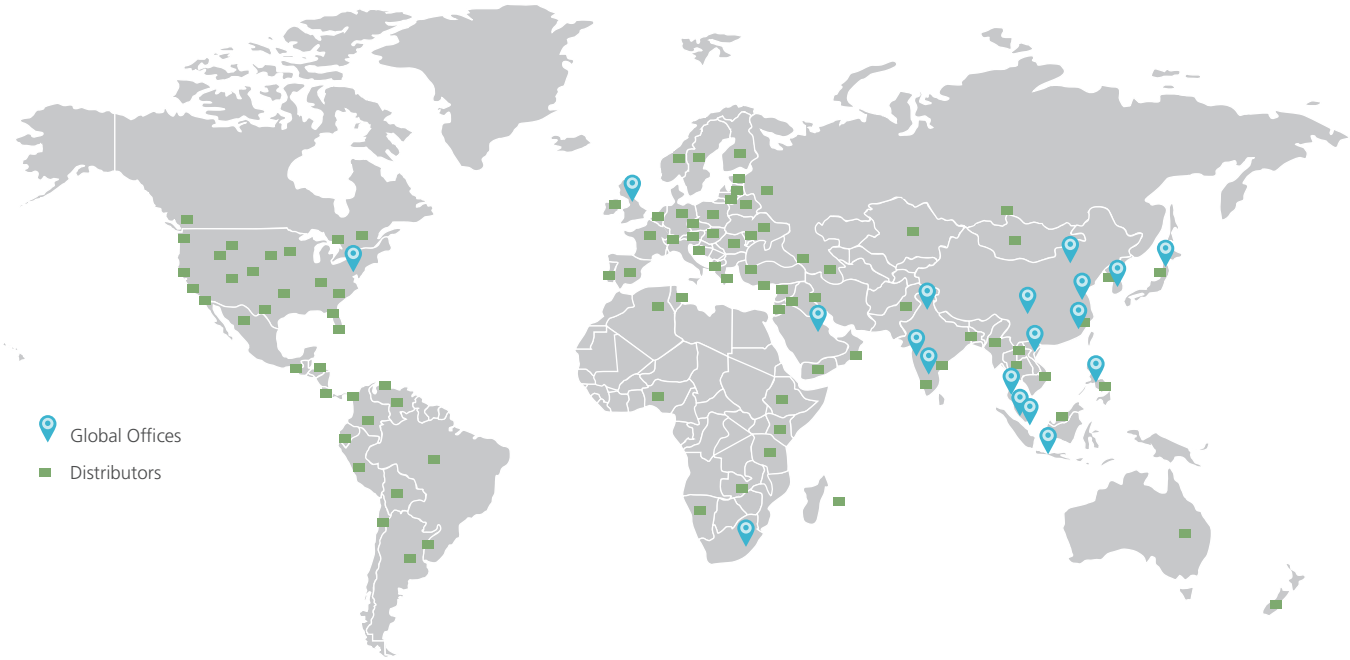
Designed in the USA

WELCOME TO ESCO

Esco's vsion is to provide enabling technologies for scientific discoveries to make human lives healthier and safer.

- A leader in the development of controlled environment, laboratory and pharmaceutical equipment solutions.
- A world leader in biological safety cabinets.
- With offices in 13 countries such as Bahrain, China, India, Japan, Korea, Malaysia, Philippines, Singapore, U.K., U.S., Vietnam, South Africa and Indonesia, and more expansions planned.
- North American facilities in Pennsylvania for sales, service and logistics in the U.S. and Canada.
- More than 600 employees total.
- Distributors in more than 100 countries.
- Products independently tested to international standards.
- Large R&D investments, world-leading technologies.
- State-of-the-art production, vertically integrated manufacturing floor space.
- Worldwide service covering a geographic expanse so broad that the sun never sets on what we do.

GLOBAL NETWORK



PRODUCTS AND APPLICATION

Esco Life Science Tools

Laboratory Equipment

Biosafety and Laminar Flow

- Class II Type A2 Biological Safety Cabinets
- Class II Type B2 Biological Safety Cabinets
- Class III Biological Safety Cabinets
- Horizontal Laminar Flow Clean Benches
- Vertical Laminar Flow Clean Benches
- Laboratory Animal Research Workstations
- PCR Cabinets

Fume Hoods

- Laboratory Fume Hoods
- Ductless Fume Hoods
- Fume Scrubbers
- Exhaust Blowers
- Fume Hood Airflow Monitors

PCR

- PCR Thermal Cyclers
- *Not Available in North America*

Incubators and Ovens

- Forced Convection Laboratory Ovens
- Forced Convection Laboratory Incubators
- Refrigerated Incubators
- CO_2 Incubators
- Remote Monitoring, Data Logging, and Programming Software

Cold Storage

- Ultra-Low Temperature Freezers

Medical Equipment

Assisted Reproductive Technology

- ART Workstations
- CO_2 Incubators with Suppressed O_2
- Multi-room Incubators
- Time Lapse Incubators

Pharmaceutical Equipment

Containment / Compounding Pharmacy

- Downflow Booths
- Powder Weighing Balance Enclosures
- Pharmacy Isolators
- Cytotoxic Safety Cabinets
- Soft Capsule
- Air Showers
- Straddle Units
- Garment Storage Cabinets
- Pass Boxes
- Transfer Hatches

Swift™

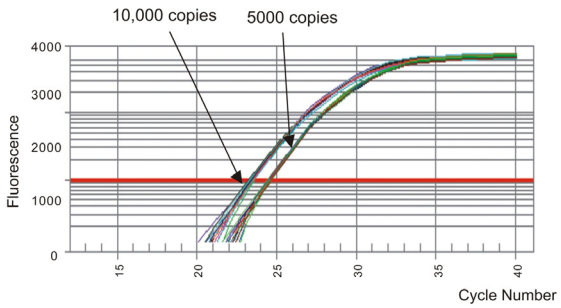
Spectrum 96 Real-Time PCR Detection System

Esco introduces the new Spectrum 96 real time PCR detection system with up to 8 channels to meet all your PCR needs. The advanced top quality peltier, proprietary block dissipation technology, unique bottom detection design and coaxial fiber optic technology provide excellent temperature performance and reliable fluorescence detection results. The Spectrum PC software offers maximum flexibility for data processing of a variety of scientific research and clinical applications, such as gene expression analysis, SNP genotyping, pathogen detection and others.

FEATURES

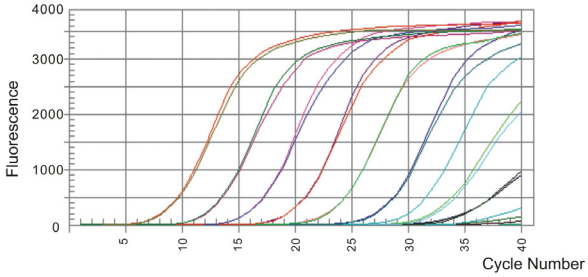
- **With up to 4/8 groups of filters, the instrument covers all wavelengths of commonly used dyes.**
- **Unique bottom detection design with coaxial fiber optics avoids crosstalk among wells, increases the signal- to-noise ratio and ensures reliable results.**
- **Precisely tuned peltier module + proprietary temperature control algorithms = excellent temperature accuracy + industry leading reliability. Temperature accuracy: <±0.1 °C**
- **The unique TAS temperature control technology avoids the edge effect of block heat conduction and therefore guarantees extremely uniform temperature between central and edge wells. Super reproducibility and highest quality results are ensured. Temperature uniformity: <±0.3°C**
- **Proprietary block heat dissipation technology brings on high heating and cooling rate of up to 4.0°C / sec, allowing significantly shorter cycle times.**
- **With a temperature gradient of up to 36 °C programmable over 12 rows, you can determine the optimal temperature in a single experiment, minimizing the use of precious samples and reagents and saving valuable research time.**
- **Automatically temperature control mode (Tube/ Block) switches based on sample volume.**
- **An automatic hot lid with adjustable temperature effectively prevents reagent evaporation.**
- **Optimal results obtained with sample volumes as low as 5 ul, minimizes the use of sample and reagents and saves cost for your laboratory.**
- **Wide block temperature range from 4 °C to 105 °C, with infinity hold function allows PCR products to be stored at 4 °C overnight.**
- **Open platform chemistry and consumables ensure compatibility with commonly used protocols.**
- **Entire micro-plate scan and designated line scan are available for choice. A 96 wells dual-channel scan only takes 5.5s.**
- **RS232 C, USB or blue tooth provide configuration flexibility and enable PC free operation.**
- **Global wide range power supply with PFC function.**

High Precision



SNPs Detection

Wide Detection Range



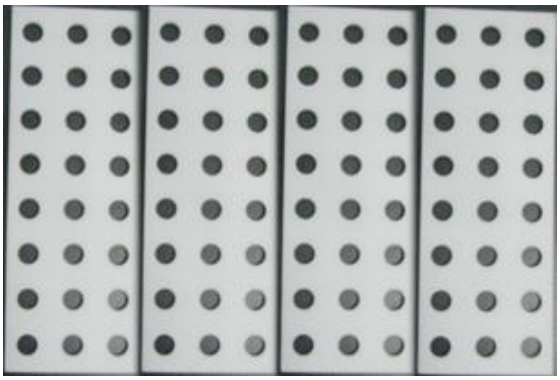
Analysis of SNPs

OUTSTANDING DESIGN, THUS EXCELLENT PERFORMANCE

Specially Designed Peltier Elements for Bottom Detection System

Spectrum is the only real time PCR which use both Peltier technology and bottom detection at the same time. The 96-well block use the unique, proprietary multi-holes peltier module, designed to deliver rapid, controlled temperature changes and allow signal detection from the bottom of the tube, reducing signal scatter through the tube cap, or from fogging of the cap from sample evaporation. Sensitivity is also enhanced because of the shorter light path between the reagent and the detector. It is also possible to divide the block into 4 segments, allowing the simultaneous analysis of up to 4 different sample groups.

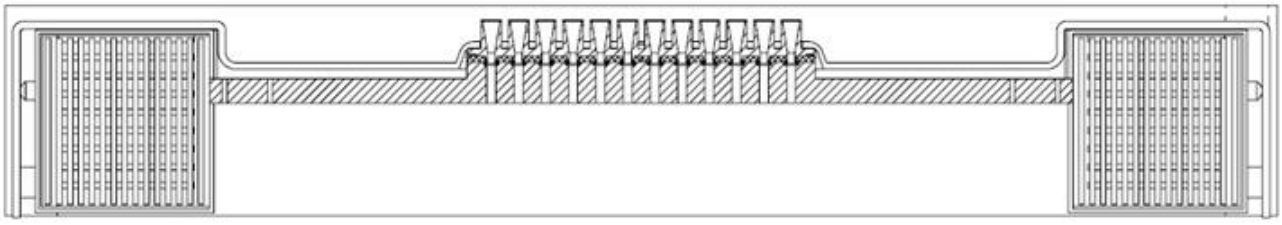
Stepper Motors Movement



Stepper Motors Movement

Proprietary FastCool™ Block Heat Dissipation Technology

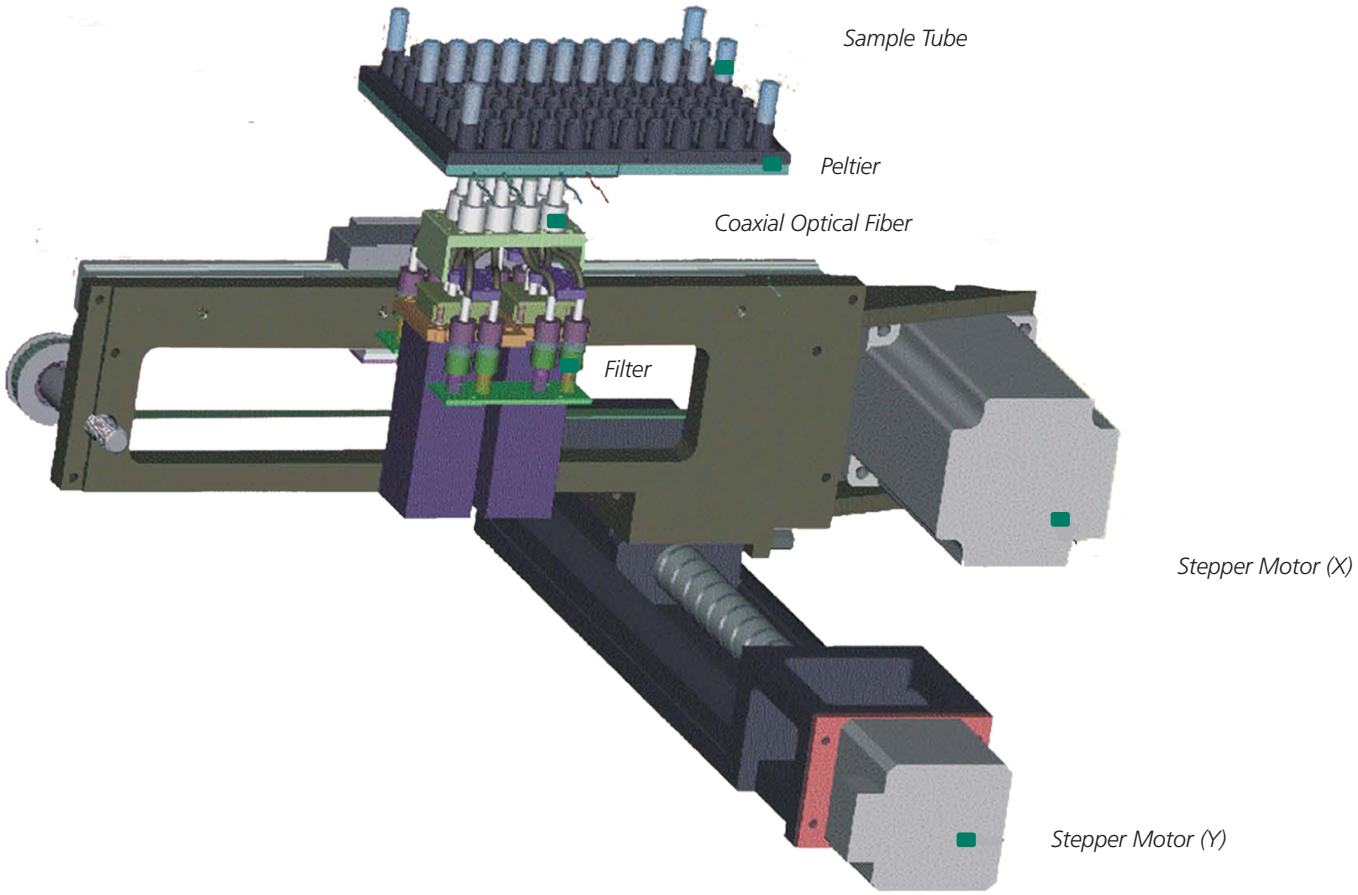
Unlike conventional peltier based cyclers which use heat sinks to remove the heat, Spectrum real time PCR uses heat pipes in addition to active fan-based heat sinks to provide fast, even heat dissipation and minimize the footprint of the cycler to save limited bench top space in the lab. Heat pipes have a much higher effective thermal conductivity than solid materials, thus can quickly transfer heat from block to heat sink and dissipate the heat, providing high block heating and cooling rates of 4°C/sec. Fast cycling is not dependent on the use of specific reagents and reduces the cycle run producing a result in around 1 hr.



Stepper Motors Movement

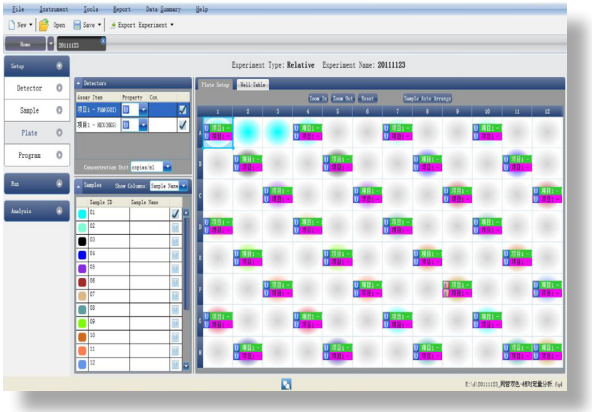
AccuFluore ™ Detection System

- **The LED in AccuFluore system provides a wide range of stable excitation, allowing more dye flexibility. It has a longer lifespan in contrast to halogen lamps and no calibration is required.**
- **One/Two Photomultiplier tubes (PMT) are used as detection sensors, covering up to 4/8 channels. The PMT, manufactured by the world's top PMT manufacturer, is almost noise free, with superior sensitivity and reproducibility. Its high signal to noise ratio allows even single molecule detection. Over a linear dynamic range the system detects over 10 levels of magnitude.**
- **The coaxial fiber optic system makes sure the same amount of excitation light is received by each well and uniform signal measurement is obtained from each well, so no additional signal correction and calibrations are needed. Besides, unlike normal CCD which detects the signals from all wells at a time, the coaxial fiber optic system allows signals detection from the bottom of the tubes one by one, avoiding crosstalk among wells.**
- **With the AccuFluore detection system, the Spectrum 96 is a multi channel instrument with up to 4/8 usable channels. The excitation wavelength range is from 300nm to 800nm and the emission wavelengths are between 500nm and 800nm. Up to 6 channels are fixed for the most current commercially available dyes, and optional 7th and 8th channels are available if required.**

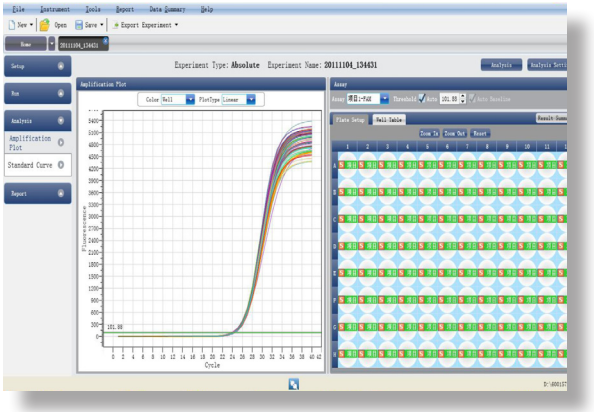


POWERFUL SOFTWARE, SIMPLE TO OPERATE

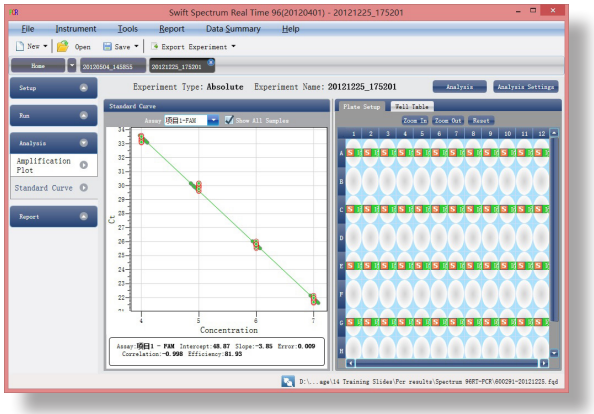
Spectrum PC software's simple intuitive navigation makes it easy to set up sample data, PCR protocols and get excellent real time PCR results. Real-time amplification can be monitored and data file will be automatically saved when a run is finished. Data files can also be exported to Excel for further analysis. The software has built-in data analysis methods, including Absolute Quantification, Standard Curve, Relative Quantification, Melting Curve and SNP Genotyping.



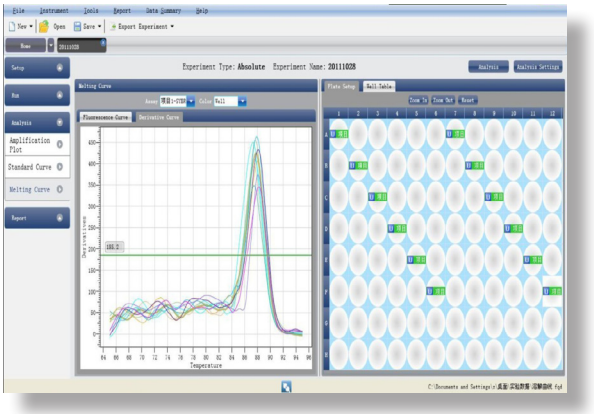
Well and Dye Setting



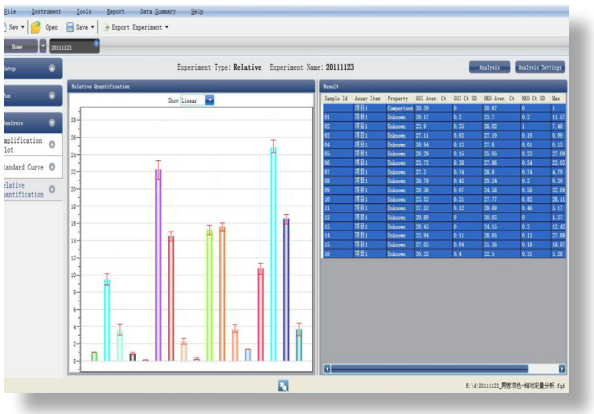
Quantitative Analysis



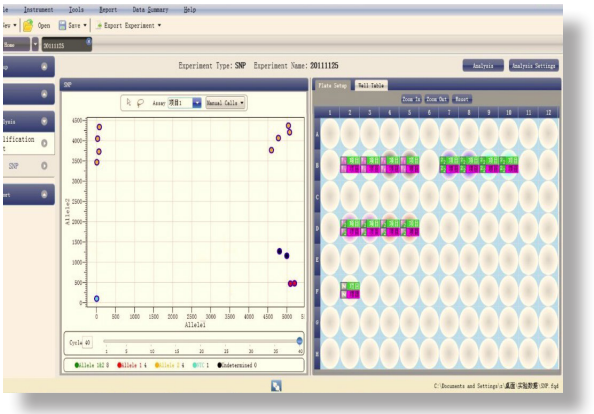
Standard Curve



Melting Curve



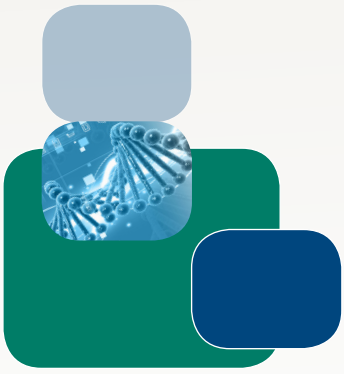
Relative Quantification Analysis



SNP Interface

Spectrum ™ 96 Real Time PCR Detection System Specifications		
Model	SPT-RT-96	SPT96-8
Sample Capacity	96 x 0.2mL PCR tubes (Bottom Transparent), 12 x 8 strips, 96-Well PCR plate (full-skirted)	
Optical module		
Excitation	LEDs	
Detection	1 photo-multiplier tube for 4 channels	2 photo-multiplier tubes for up to 8 channels
Excitation Wavelength	300-800nm	
Emission Wavelength	500-800nm	
Channel And Fluorescence	F1:FAM, SYBER Green I; F2:VIC, HEX, TET, JOE; F3:CY3, NED,TAMRA; F4:ROX TEXAS-RED	F1:FAM, SYBER Green I; F2:VIC, HEX, TET, JOE F3:CY3, NED,TAMRA; F4:ROX TEXAS-RED F5:CY5; F6:LightCycler Red F7 and F8 for customized purpose
Thermal Cycler		
Max Block Heating/ Cooling Rate*	4.0°C /sec	
Gradient Block	Over 12 Rows	
Gradient Range	1°C- 36°C	
Temperature Accuracy	±0.1°C	
Temperature Uniformity	±0.3°C	
Temperature Range	4°C- 105°C	
Hot Lid Temperature Range	30°C ~ 110°C (Adjustable, Default 105°C, Automatic Hot-lid)	
Temperature Control Mode	Block or Tube	
Spectrum PC software		
Operation System	Windows 2000/XP, Excel 2000/2002/2003, Access 2000/2002/2003	
PC Configuration	Memory: 512M, Hard Disk: 10GB, CPU: Pentium 4, Virtual Memory:>=1000MB	
Multiplex Analysis	Up to 4 targets per well	Up to 8 targets per well
Scan Mode	Entire plate or designated line	
Scan Time	5.5s (F1/F2 full 96-well plate scan)	
Data Analysis Methods	Absolute Quantification, Standard Curve, Relative Quantification, Melting Curve, SNP Genotyping	
Complete System		
Sample Volume	5-100uL	
Interface	1 X RS232C, 1 X USB, 1X Blue Tooth for PC control	
Dimensions (W x D x H)	395mm X430mm X352mm (15.5" X 16.9" X 13.9")	
Net Weight	28 kg (62 lb)	
Power Supply, Consumption	100-240V, 50/ 60Hz; 600W	
Electrical Approvals	CE	
Warranty	2 years	

**Measurements on the block.*



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