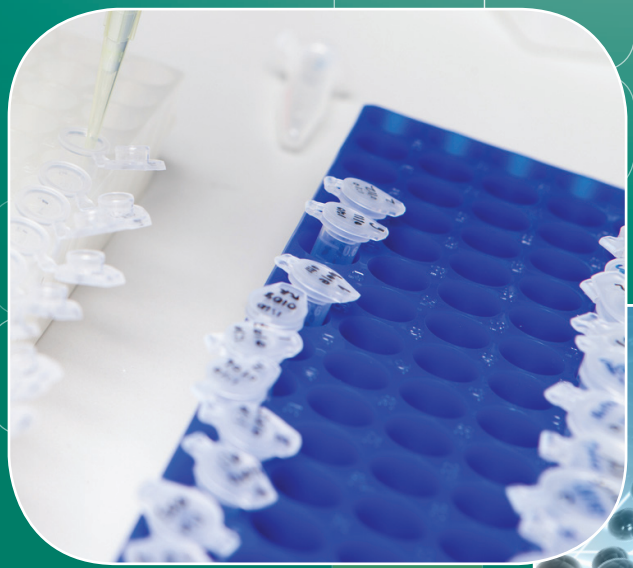
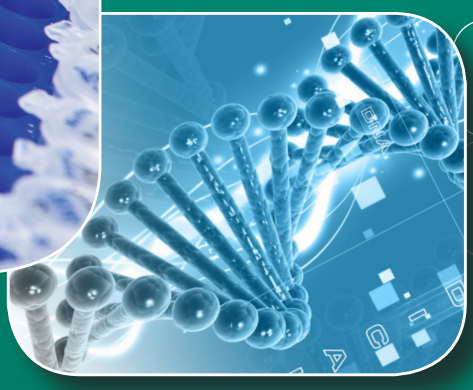
ESCO
WORLD CLASS. WORLDWIDE.

Swift™

Spectrum 48 Real-Time PCR Detection System

The Solution You Can Rely On





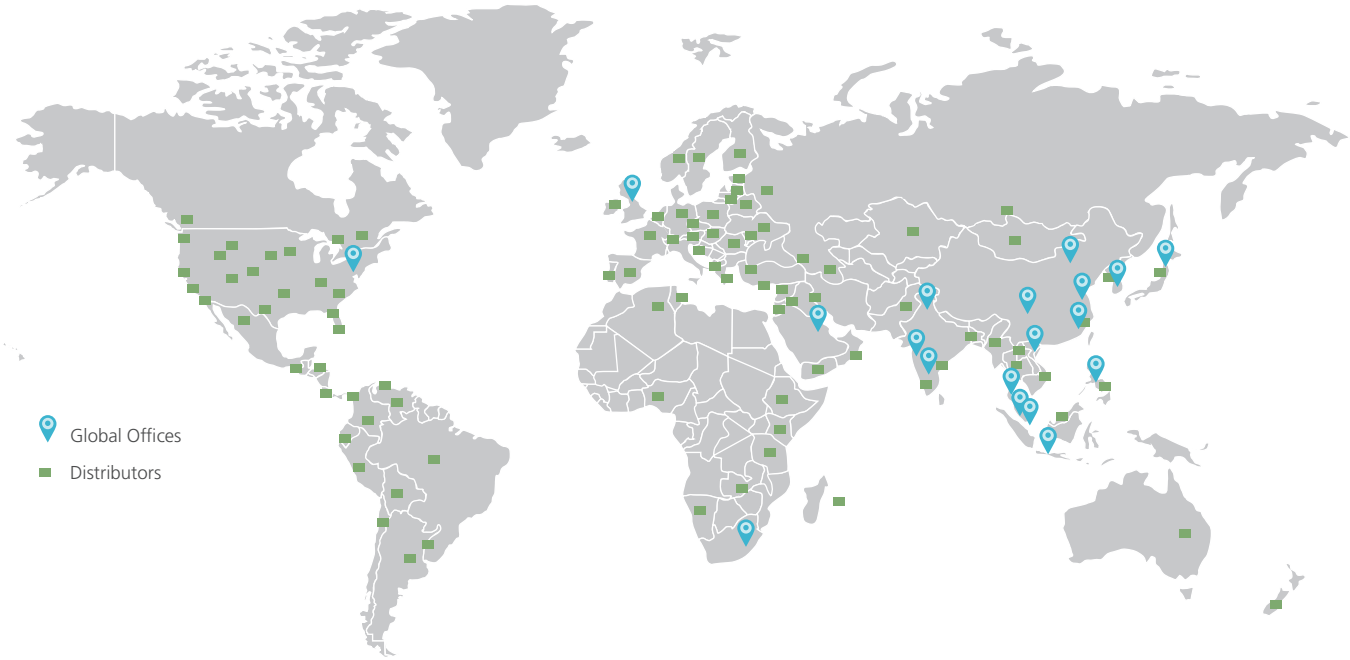
Designed in the USA

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 48 Real-Time PCR Detection System

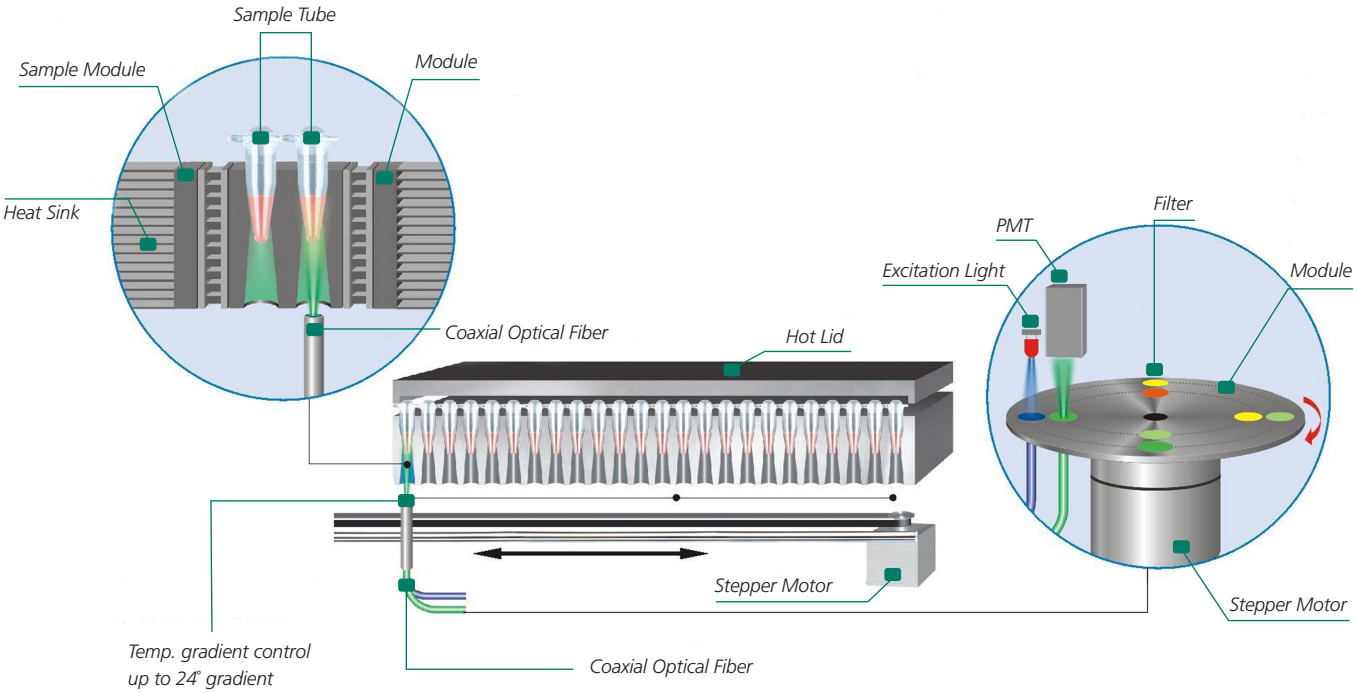
Esco's Spectrum 48 real time PCR detection system is specially designed to simplify and optimize your PCR work. The advanced Ferrotec peltier, proprietary linear block, unique bottom detection design and coaxial fiber optic technology provide excellent temperature performance and reliable fluorescence 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.

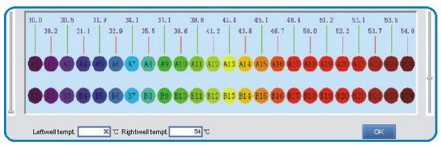
FEATURES

- **With up to 4 groups of filters, the instrument covers most of 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 Ferrotec peltier module + proprietary temperature control algorithms = excellent temperature accuracy + industry leading reliability. Temperature accuracy: <±0.1 °C**
- **The unique sandwich-design block, with peltier elements closely fit both sides of the linear sample block, delivers rapid, controlled temperature changes and reduces vertical temperature gradients. Super reproducibility and highest quality results are ensured. Temperature uniformity: <±0.3 °C**
- **With a temperature gradient of up to 24 °C programmable over 24 rows, you can determine the optimal temperature in a single experiment, minimizing the use of precious samples and reagents and saving valuable research time.**
- **Volume sensor software automatically adjusts ramp rates to accommodate differences in sample volumes.**
- **An automatic hot lid with adjustable temperature effectively prevents reagent evaporation.**
- **Wide block temperature range from 4 °C to 99.9 °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.**
- **The block can be divided into maximum 4 segments, allowing the analysis of up to 4 different sample groups.**
- **The overheating protection function sounds an audible warning at excessive ambient temperature and automatically shuts down the instrument when ambient temperature reaches 40 °C.**
- **Global wide range power supply with PFC function improves thermal efficiency and reduces power consumption by 30%.**

OUTSTANDING DESIGN, THUS EXCELLENT PERFORMANCE

- **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.**
- **Photomultiplier tube (PMT) is used as detection sensors, covering up to 4 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.**





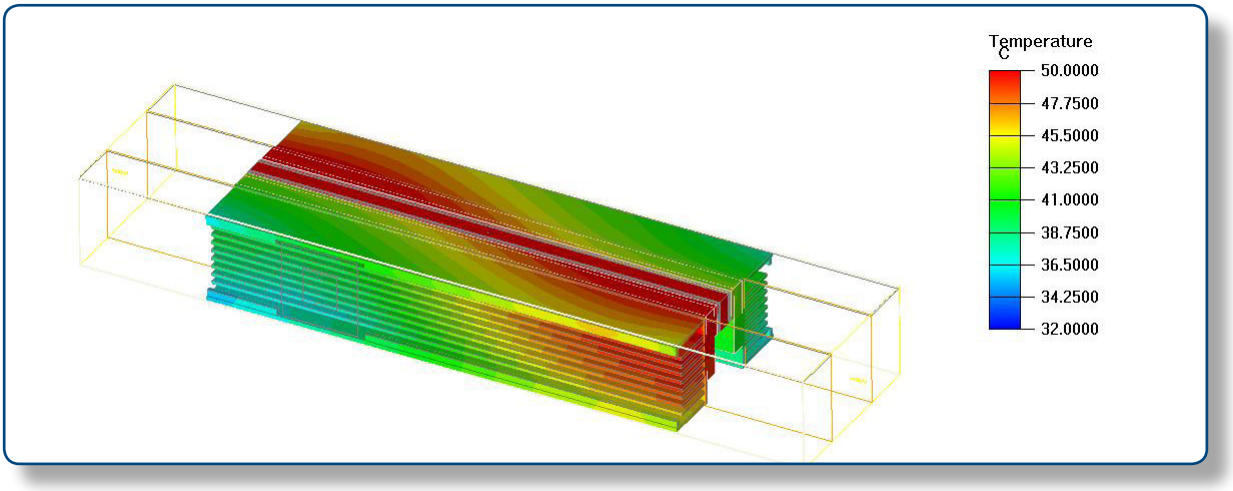
PROPRIETARY SANDWICH DESIGN BLOCK

Unlike conventional 12 x 8, 96 well block designs, Spectrum 48 real time PCR uses a unique 48 well linear block to deliver rapid, controlled temperature changes and reduced vertical temperature gradients.

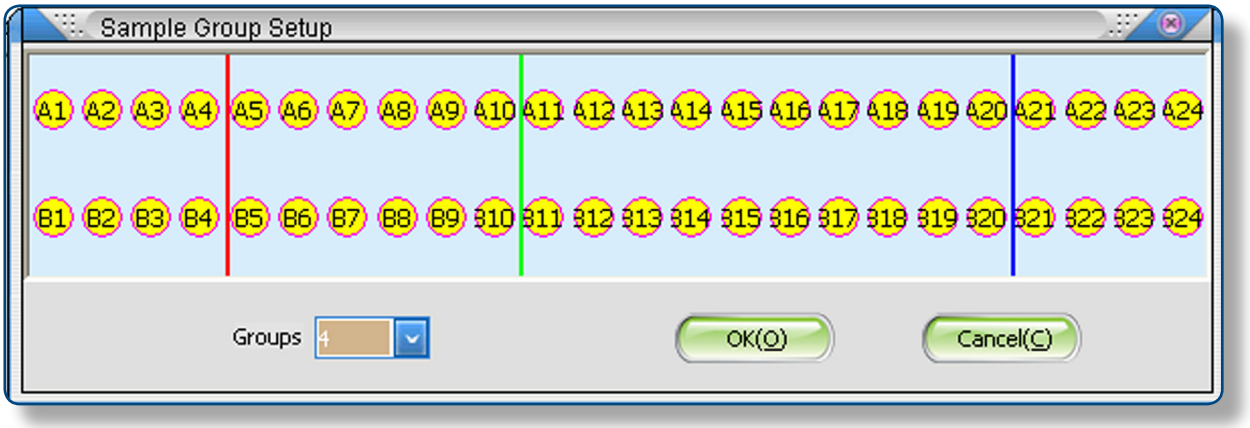
The Peltier elements are manufactured by the world's top Peltier manufacturer. The heating/cooling elements are positioned along the two sides of the block, guaranteeing rapid, even, heating and cooling rates of 4°C/sec, as well as exceptional

temperature accuracy and uniformity. The block design eliminates temperature overshoots and undershoots, increasing the efficiency of the reaction, resulting in high template yields and low copy number detection. Fast cycling is not dependant on the use of specific reagents and reduces the cycle run producing a result in around 1Hr.

The block allows 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.



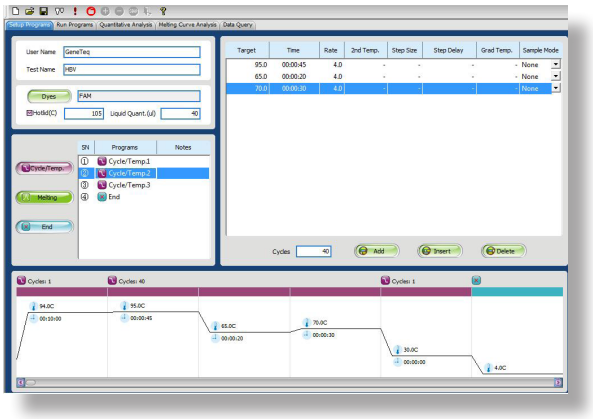
Sandwich Design Linear Block



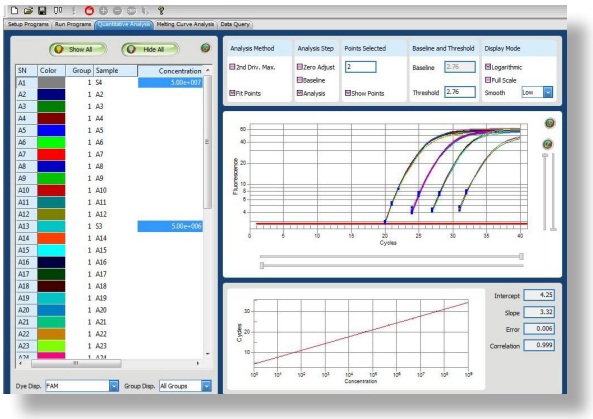
Sample Grouping

POWERFUL SOFTWARE, SIMPLE TO OPERATE

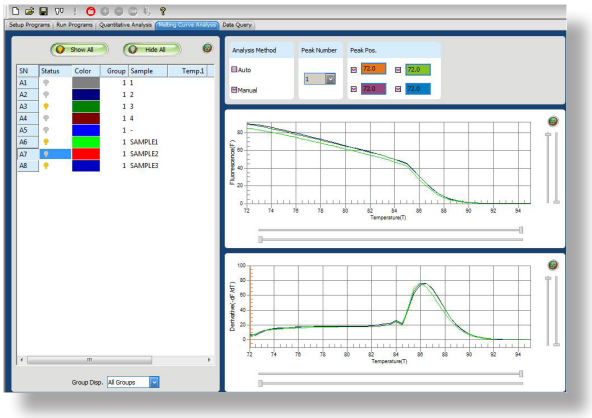
Spectrum PC software's simple intuitive navigation makes it easy to set up sample data, PCR protocols and get excellent real time PCR results. Real-time amplification can be monitored and data file will be automatically saved when a run is finished. Data files can also be exported to Excel for further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



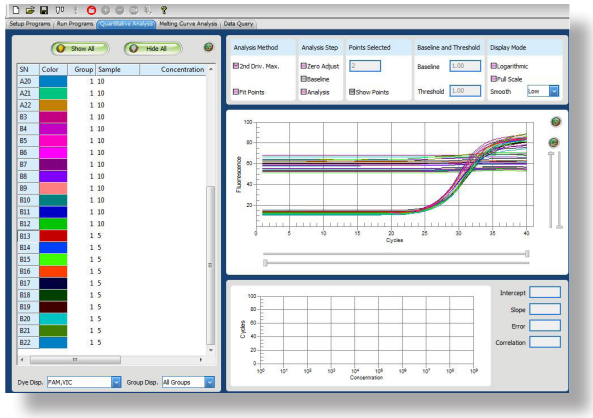
Protocol Setup



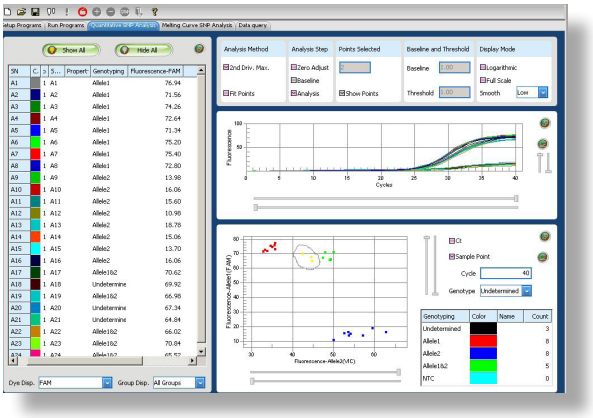
Quantification and Standard Curve



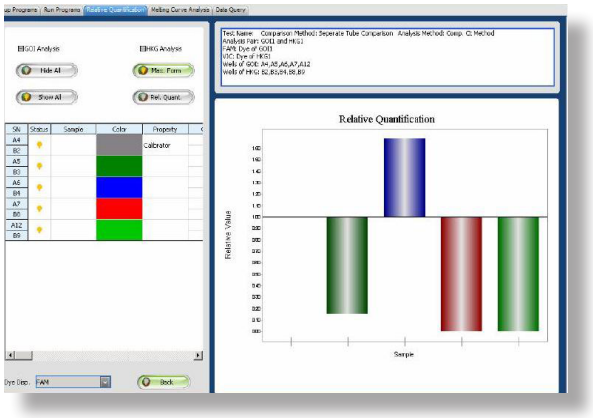
Melting Curve Analysis



Multiplex Analysis



SNP Genotyping Analysis



Relative Quantification

Spectrum™ 48 Real Time PCR Detection System Specifications	
Module Code	SPT48
Sample Capacity	48× 0.2mL PCR tubes(Bottom Transparent), 6 x 8 strips,
Optical module	
Excitation	LEDs
Detection	1 photo-multiplier tube for 4 channels
Excitation Wavelength	450-590nm
Emission Wavelength	500-630nm
Channel And Fluorescence	F1:FAM, SYBER Green I F2:VIC, HEX F3:JOE, Cy3, TAMRA F4:ROX, TEXAS-RED
Thermal Cycler	
Max Block Heating Rate*	4.0°C /sec
Max Block Cooling Rate*	4.0°C /sec
Gradient Block	Over 24 Rows
Gradient Range	1°C- 24°C
Temperature Accuracy	±0.1°C
Temperature Uniformity	±0.3°C
Temperature Range	4°C- 99.9°C
Hot Lid Temperature Range	80°C –110°C (Adjustable, Default 105°C, Automatic Hot-lid)
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
Data Analysis Methods	Absolute Quantification, Standard Curve, Relative Quantification, Melting Curve, SNP Genotyping
Complete System	
Sample Volume	5-100uL (10-40uL recommended)
Interface	RS232C for PC control
Dimensions (W × D × H)	450mm X520mm X320mm (17.7" X 20.5" X 12.6")
Net Weight	25 kg (55 lb) (without computer)
Power Supply, Consumption	100-240V, 50/ 60Hz; 650W
Electrical Approvals	CE
Warranty	2 years

**Measurements on the block.*

The Esco Group of Companies is a global life sciences tools provider with sales in over 100 countries. The group is active in lab equipment, pharma equipment and medical devices. Manufacturing facilities are located in Asia and Europe. R&D is conducted worldwide spanning the US, Europe and Asia. Sales, service and marketing subsidiaries are located in 12 major markets including the US, UK, Singapore, Japan, China and India. Regional distribution centers are located in the US, UK, and Singapore.

www.escoglobal.com.

Life Science • Chemical Research • Assisted Reproductive Technology (ART) • Pharmaceutical Equipment • General Equipment

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