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PCR Instrumentation

Our performance, accuracy and simplicity define our status as the reliable choice for modern researchers

Thermo currently offer one of the most extensive ranges of authorised PCR machines. From the low throughput PCR Sprint to our sophisticated robot compatible MultiBlock System, our range is designed to provide value for money features that meet the demands of modern researchers.

Thermo has been manufacturing thermal cyclers since 1986. During this period, we have continually improved every aspect of thermal cycling from speed to temperature uniformity, reliability to flexibility. With this experience and our program of reviewing and implementing innovative design features, we have become a leading supplier of thermal cycling equipment world-wide.

- Designed to offer performance, accuracy and simplicity
- User-friendly software interfaces
- Outstanding block performance
- Robot compatibility
- Unique Active Tube Temperature control
- Flexible sample format
- Licensed thermal cycling





▲ **MBS[®] Robotic Satellite Thermal Cycler**

- Robot compatible MBS satellite thermal cycler
- Unique CD drawer mechanism provides superior robot compatibility
- Two block options: Gradient 96 well and standard 384 well



▲ **MBS Satellite Thermal Cycler**

- Flexible, computer-controlled PCR system that allows you to perform anything from a few to thousands of PCRs on the one system
- Start-up kits available
- Full traceability of achieved PCR parameters
- Multiple satellite block options: 0.5ml and 0.2ml standard and gradient 96 well blocks, as well as a 384 well block



▲ **Px2 Thermal Cycler**

- Advanced personal thermal cycler capable of performing anything from simple to the most sophisticated PCR protocols
- Accurate temperature control
- Multiple interchangeable block options: 0.5ml and 0.2ml standard and gradient 96 well blocks, 384 well and *in situ* blocks



◀ **NEW**

PxE Thermal Cycler *NEW*
The new PxE Thermal Cycler PCR – nothing more, nothing less
All the essential features required for accurate thermal cycling

- Robust unit providing many of the features evident on more sophisticated machines at a lower cost
- Two fixed block options: 0.2ml and 0.5ml standard 96 well blocks



▲ **PCR Sprint Thermal Cycler**

- Affordable, low throughput personal thermal cycler
- Small footprint
- Two interchangeable block options: 24 x 0.2ml tubes and 20 x 0.5ml tubes

Instrument Selection Chart					
	PCR Sprint	PxE	Px2	MBS	MBS [®]
Active tube control	●		●	●	
Gradient block option			●	●	●
96 well block option		●	●	●	●
384 well block option			●	●	●
<i>in situ</i> flat block option			●		
Interchangeable blocks	●		●		
Computer controlled user interface				●	●
Traceable PCR runs				●	●
Robot compatible					●
Price	1	2	3	4	5

PCR Instrumentation

09 10

Thermo
ELECTRON CORPORATION

Temperature Control Options

Temperature Control (Fig.1)

The key to the design of any thermal cycler is uniform and accurate temperature control. Thermo's thermal cyclers can use up to five control modes for monitoring temperature during PCR reactions: Active Tube Control, Simulated Tube Control, Simulated Plate Control, Simulated Slide Control and Block Control.

Temperature Uniformity (Fig.2)

It is paramount for reproducible results to attain a uniform temperature across the block. In Thermo thermal cyclers this is monitored across the entire block during each stage of the thermal cycling protocol. Every instrument is calibrated using equipment traceable to the UK National Physical Laboratory standards. A dynamic uniformity test is conducted as part of Thermo's Quality Assurance procedure to ensure they meet this specification prior to dispatch.

Temperature Gradients (Fig.3)

By using our gradient blocks, it is quick and easy to optimise primer to template annealing temperatures. Multiple annealing temperatures can be assessed in one experiment by defining a temperature gradient of up to 15°C across the block. The optimised temperature can then be transferred directly to standard cycling due to our innovative software and block design.

Active Tube Control (Fig.4)

Thermo's unique method of choice for monitoring and controlling any thermal cycling reaction is to measure the actual temperature of the reaction mix during PCR. When this method is employed, the machine actively compensates for differences in the programmed temperature and the actual temperature achieved in the reaction mix by adjusting the block temperature. This method of temperature control ensures that the programmed temperatures and dwell times are accurately achieved, resulting in optimal PCR performance.

Simulated Tube/Plate and Slide Control (Fig.5)

When there is a requirement to use every position within a block, we recommend that Simulated Control be used. We have developed advanced software algorithms (Simulated Tube, Plate and Slide Controls) that achieve temperature accuracy similar to Active Tube Control for tube, 96 / 384 well plate and slide formats. The software constantly calculates the sample temperature, factors in the sample volume and then adjusts the block temperature to ensure that the sample reaches the programmed temperature.

Block Control (Fig.6)

Our thermal cyclers can also use Block Control, which is the sole control method used on some thermal cyclers. Block Control is best used for prolonged static incubations. If Block Control is used during short incubation periods, such as during a PCR reaction, the reaction mix is at the set temperature for a considerably shorter time than that programmed, which could lead to a reduced yield of PCR product.

MultiBlock System (MBS)



► Benefits

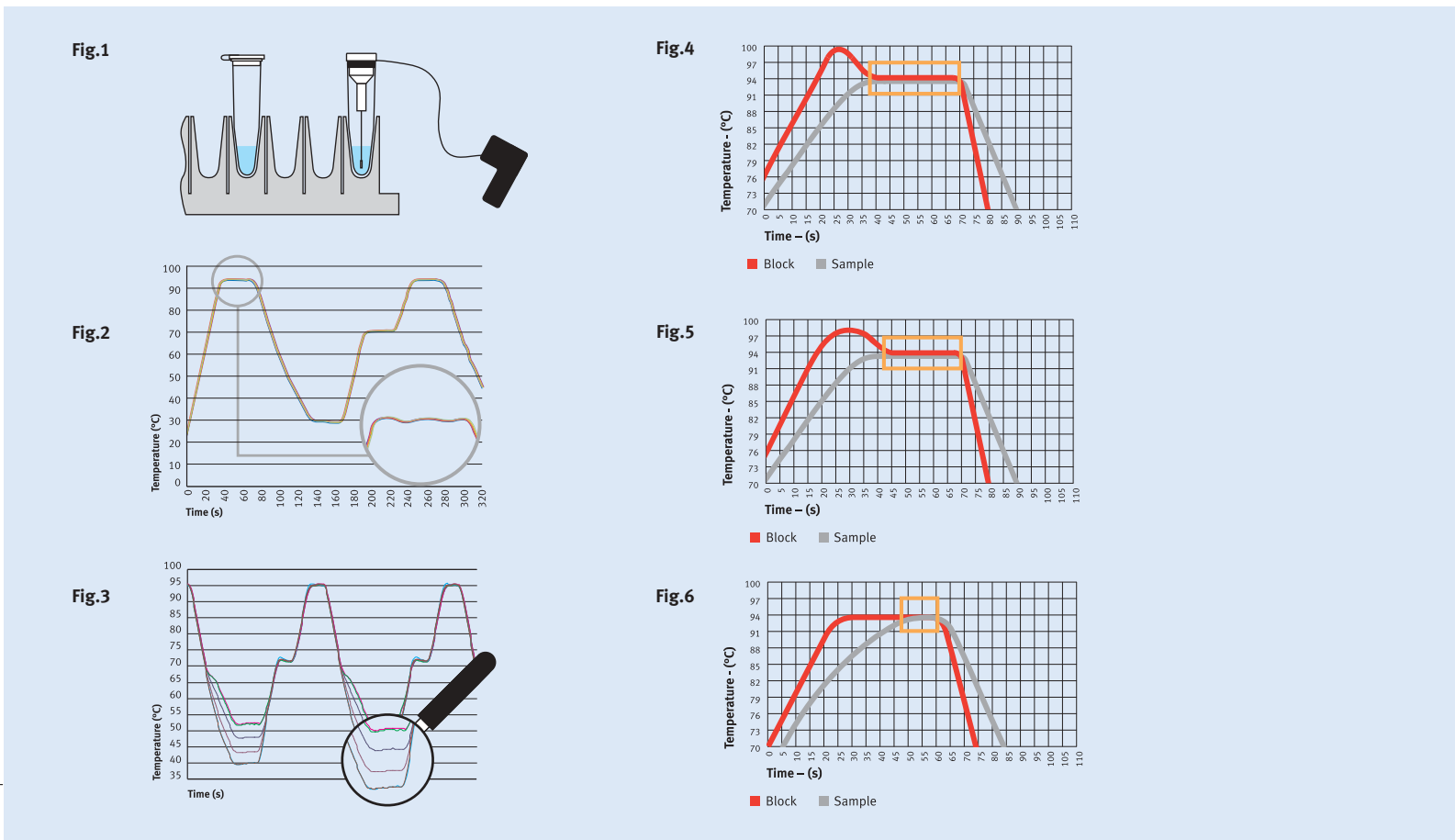
- Computer-controlled network of thermal cycling blocks for flexible system approach to PCR
- Capacity for 1 to 30 blocks networked to one PC for flexible throughput
- Multiple block options for flexibility of consumable format and easy protocol optimisation
- Accurate temperature control for optimal PCR performance and reproducibility
- Software interface for enhanced graphics and user friendliness
- Software features for traceability in line with GLP
- Robot-compatible version (MBS[®]) for automated sample handling
- Satellite blocks available separately for flexible addition to system
- Start-up kits available for low cost access to the technology

Flexible Network of Thermal Cycling Blocks

The MultiBlock System (MBS) comprises a central computer with sophisticated software, which can be networked to up to 30 individual satellite blocks. The choice of the number and type of each block is completely flexible, giving you the freedom to customise your PCR system. Satellite blocks are available in 0.2ml (gradient and standard), 0.5ml (gradient and standard) and 384 well formats, all of which can be added singularly providing further flexibility.

Accurate Temperature Control

Optimal PCR performance can be obtained in our blocks because of their accurate and reproducible temperature control. Our Active or Simulated temperature control methods account for



the thermal lag that occurs when heat is transferred from our eight peltier devices to the sample mix. Both of these temperature control options monitor and efficiently adjust the heating or cooling of the peltiers in the PCR block. While Simulated Control is adequate for many applications, Active Tube Control is superior because the change in block temperature is based on the temperature of the sample itself. This ensures that both set temperatures and desired dwell times are accurately achieved.

User-Friendly Software

The MBS controlling software has been specially designed for ease of use. This is most evident when the graphical options for editing and running protocols are viewed. It is further demonstrated when control

of the blocks is considered. With a few simple mouse clicks, you can program a block and start a protocol. Furthermore, you can either control and program all blocks in unison or program each block independently.

Following the start of a run, the graphical display provides clear second-by-second information about block temperature and experimental parameters. In addition, information about all blocks networked to the system is available in graphical and tabular format, so you can immediately identify which blocks are active and what protocols are running on those blocks.

Printable Programs and Run Logs

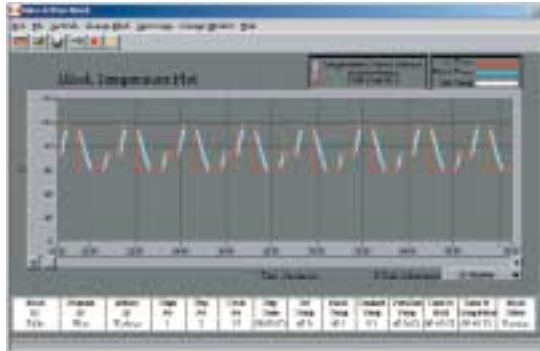
Computer control provides users with more benefits than simply a graphical interface and large data storage

capabilities. The MBS software permits efficient management of results data much more effectively than thermal cyclers with onboard software. With computer control, you can store unlimited numbers of programs in the familiar Windows® file structure, as well as retrospectively view program results data (run logs) in graphical and text-based format. Furthermore, both programs and run logs can be printed for hard copy storage in a lab book. These features combined provide traceability that is in line with many GLP procedures.

Gradient Capability

If transferring a PCR protocols from an alternative instrument manufacturer, or just starting with a new primer set, our gradient blocks easily facilitate protocol optimisation.

MultiBlock System (MBS)



View active block: Both real time temperature plots from active blocks and archive logged temperature plot data can be viewed



Edit a program: Editing, saving and downloading programs is easy with the MBS software

In order to reduce the cost of entry into this advanced technology we are pleased to introduce special start up kits – please enquire



These blocks can be programmed with a protocol containing a simultaneous range of annealing temperatures. The optimal annealing temperature can subsequently be determined by onboard gradient calculation software. Once optimised, our outstanding well-to-well uniformity ($\pm 0.3^{\circ}\text{C}$ within 30 sec) ensures reproducible results when conditions are transferred to standard protocols. Thermal gradient blocks are available in 0.2ml and 0.5ml formats.

Space Saving Design

MBS satellite blocks can be positioned in any arrangement: next to each other or at opposite ends of the laboratory. This gives you the freedom to design a network that makes the most of your laboratory space. The MBS does not require any bulky power supply units to operate. Slots in the lid and block surround maintain the airflow in the MBS blocks. This means that the instruments can be placed up against one another and still be adequately cooled. In addition, the block orientation (portrait) makes the MBS an extremely narrow unit, making the most of limited bench space.

Outstanding Uniformity

The MBS exhibits an excellent block uniformity, of $\pm 0.3^{\circ}\text{C}$ across the block within 30 seconds of reaching the target temperature (measured at 72°C). This block uniformity ensures that you

obtain reproducible and consistent results, irrespective of the position of the samples within the block.

Adjustable Heated Lid Design

Our heated lid design is simple to operate. In one action, the lid is closed and the heated plate lowered to the correct height. Increased pressure and temperature have been incorporated to ensure ultimate flexibility in choice of sample format and sealing options.

Reliability Assured

Each networked MBS block is independently controlled and has individual Mains power supply. If the MBS software is switched off or if the computer crashes or is switched off, the satellite units continue the existing run to completion. The built-in diagnostics and calibration check facility ensure the continued reliability of the MBS.

Start-Up Kits Available

Start-up kits are available to users in two formats: a one-block option and a two-block option. Both formats include a PC with PCR authorised software and full configuration. For users who require more blocks or for those who have a system and whose lab has exceeded capacity, the ability to add single economically priced satellite blocks further enhances the system's value. Whether running a few samples or thousands, the MBS system offers value for money.

MultiBlock System – Robotic Compatible Version (MBS^R)

► **Benefits**

- **Robot-compatible version of the MBS for automated sample handling**
- **Networkable with standard MBS units for flexible system approach**
- **Stackable design for maximum use of available space**

The MBS Robotic Thermal Cycling System – MBS^R

A robot compatible solution for high throughput PCR applications

The MBS^R offers many of the features evident in the standard MBS plus the additional benefit of being robot compatible.

This compatibility is achieved through the unique CD drawer block ejection mechanism, which makes integration with plate handling robots simple and fast. These features, combined with the stackable design, position the MBS^R as the preferred choice for the modern high throughput laboratory.



MultiBlock System Specification		
Performance*	MBS	MBS ^R
Heated lid temperature	95°C - 120°C	105°C
Dimension of modules (w x d x h)	200 x 300 x 290mm	342 x 545 x 246mm
Power	550W	550W
Weight	8.4kg	20.6kg
Block temperature range	4°C - 99°C	15°C - 99°C
Block heating rate	Up to 3°C/sec	Up to 3°C/sec
Block cooling rate	Up to 2°C/sec	Up to 2°C/sec
Block uniformity	±0.3°C within 30sec	±0.3°C within 30sec
Precise control	0.1°C	0.1°C
Software		
Number of programs	Unlimited	
Maximum number of program stages	35	
Maximum number of steps per stage	44	
Gradient software	Yes	
Maximum programmed dwell time	18 hours	
Pause facility	Yes	
Temperature ramping	Yes	
Time increment/decrement	Yes	
Temp increment/decrement	Yes	
Auto restart facility	Yes	
Run "end time" calculation	Yes	
File protection	Yes	
Program naming	Yes	
Ability to edit during cycling	Yes	

* MultiBlock performance measurements are traceable to the UK National Physical Laboratory, the equivalent of U.S.Nist and comparable standards laboratories worldwide.

► **See section 11 for Thermo's automated workstations**



The MBS^R integrated with the Thermo CRS plate handling robot.

MultiBlock System – Robotic Compatible Version (MBS^R)



MultiBlock System Ordering Information				
Product	Block Capacity	Gradient Facility	Temperature Control Available	Catalogue Number
MBS				
0.5ml standard block	48 x 0.5ml tubes 96 x 0.3ml tubes 1 plate 0.3ml x 96 well	N/A	Active tube control Simulated tube control Simulated plate control Block control	HBMS05
0.2ml standard block	96 x 0.2ml tubes 1 plate 0.2ml x 96 well	N/A	Active tube control Simulated tube control Simulated plate control Block control	HBMS02
0.5ml gradient block	48 x 0.5ml tubes 96 x 0.3ml tubes 1 plate 0.3ml x 96 well	Up to 15°C spread	Active tube control Simulated tube control Simulated plate control Block control	HBMSG05
0.2ml gradient block	96 x 0.2ml tubes 1 plate 0.2ml x 96 well	Up to 15°C spread	Active tube control Simulated tube control Simulated plate control Block control	HBMSG02
384 well block	1 plate 0.04ml x 384 well	N/A	Simulated plate control Block control	HBMS384
Robotic MBS^R				
0.2ml gradient block MBS ^R	96 x 0.2ml tubes 1 plate 0.2ml x 96 well	Up to 15°C spread	Simulated plate control Block control	HBMS96R
384 well block MBS ^R	1 plate 0.04ml x 384 well	N/A	Simulated plate control Block control	HBMS384R
Accessories				
MBS computer	N/A	N/A	N/A	HBMSCOM
MBS software	N/A	N/A	N/A	HBMBSSW
Tube thermistor	0.2ml	N/A	N/A	HBPXTM02
Tube thermistor	0.5ml	N/A	N/A	HBPXTM05

Px2 Thermal Cycler

► Benefits

- **Accurate temperature control for optimal PCR performance**
- **Gradient capability for rapid protocol optimisation**
- **Outstanding well-to-well uniformity for reproducible PCR performance**
- **High definition 1/4 VGA display for enhanced user-friendliness**
- **Keypad with functional softkeys for improved software navigation**
- **Software designed for easy editing and protocol manipulation**
- **Multiple interchangeable block options for flexible choice of consumable type**
- **Adjustable heated lid for flexible choice of consumable type**

Advanced Personal Thermal Cycler

Designed to offer performance, accuracy and simplicity in thermal cycling, the Px2 incorporates a number of customer driven features built upon the foundation of previous models such as the successful PCR Express.

The combination of quality engineering, accurate temperature control

and user-friendly software ensures that the Px2 is an excellent choice for scientists using PCR as an integral technique in their laboratories.

Accurate Temperature Control

Optimal PCR performance can be obtained in our blocks because of their accurate and reproducible temperature control. Our Active or Simulated temperature control methods account for the thermal lag that occurs when heat is transferred from our eight peltier devices to the sample mix. Both of these temperature control options monitor and efficiently adjust the heating or cooling of the peltiers in the PCR block. While Simulated Control is adequate for many applications, Active Tube Control is superior because the change in block temperature is based on the temperature of the sample itself. This ensures that both set temperatures and desired dwell times are accurately achieved.

Gradient Capability

If transferring a PCR protocol from an alternative instrument manufacturer, or just starting with a new primer set, our gradient blocks easily facilitate protocol optimisation. These blocks can be programmed with a protocol

containing a simultaneous range of annealing temperatures. The optimal annealing temperature can subsequently be determined by onboard gradient calculation software. Once optimised, our outstanding well-to-well uniformity ($\pm 0.3^{\circ}\text{C}$ within 30 sec) ensures reproducible results when conditions are transferred to standard protocols. Thermal gradient blocks are available in 0.2ml and 0.5ml formats.

High Definition 1/4 VGA Display

Control of the Px2 centres on the large, high definition, 1/4 VGA display. The screen is designed to improve user-friendliness by providing detailed information about the status of the system, in graphical or text format, with a minimal amount of user intervention.



Px2



Keypad with Functional Softkeys

Programming and navigation through the various screens of the Px2 is made easy with the intuitive keypad design and softkeys.

User-Friendly Software

Day-to-day use of the Px2 is made even easier by the integration of user-friendly software. Running, editing and general protocol manipulation can be performed with limited keystrokes and minimal scrolling between screens.

Multiple Interchangeable Block Options

The Px2 provides excellent flexibility in sample format for multi-user labs. Six interchangeable block options, including a flat block for *in situ* applications and a 384 well option for high sample throughput, ensure that you have a range of choices. Should your requirements change, it is possible to purchase additional blocks rather than a complete thermal cycler.

Adjustable Heated Lid Design

Our heated lid design is simple to operate. In one action, the lid is closed and the heated plate lowered to the

correct height. Increased pressure and temperature have been incorporated to ensure ultimate flexibility in choice of consumable format and sealing options.

Variable Speed Fan

To cut down on lab noise, we have introduced a variable speed fan. The fan is designed to efficiently dissipate excess heat but only activates when needed.

Px2 Thermal Cycler Specification			
Performance*		Programming (all unit variants)	
Temperature control available	Active Tube Control	Number of programs	99
	Stimulated Plate Control	Number of directories	10
	Stimulated Tube Control	Max number of program stages	10
	Simulated Slide Control	Max number of steps per stage	10
	Block Control	Maximum programmed dwell time	9hrs, 59min, 59sec
Block temperature range	4°C - 99°C	Pause facility	Yes
Block heating rate	Up to 3°C/sec	Temperature ramping	Yes
Block cooling rate	UP to 2°C/sec	Time increment/decrement	Yes
Block uniformity	±0.3°C within 30 sec	Temperature increment/decrement	Yes
Display resolution	1/4 VGA (320 x 240 resolution)	Auto restart facility	Yes
Block formats available	0.2ml (gradient and standard)	Run "end time" calculation	Yes
	0.5ml (gradient and standard)	Program naming	Yes
	384 well		
	<i>in situ</i> flat block		
Dimensions (w x d x h)	240mm x 390mm x 280mm		
Power	550W		
Weight	9kg		

* Px2 performance measurements are traceable to the UK National Physical Laboratory, the equipment of US NIST and comparable standards laboratories worldwide.

Px2 Ordering Information

Product	Catalogue Number
Px2 chassis	HBPX2
0.2ml gradient block*	HBPXBG02**
0.5ml gradient block*	HBPXBG05**
Flat block*	HBPXBF05**
384 block*	HBPXB384**
Tube thermistor 0.2ml	HBPXTT02
Tube thermistor 0.5ml	HBPXTT05

* Block only, requires a chassis
 ** Compatible with the popular PCR Express



PxE Thermal Cycler

NEW



► Benefits

- **Accurate temperature control for excellent PCR performance**
- **96 well format for flexible sample throughput**
- **Custom designed software for simple running of PCR protocols**
- **Low cost for affordable personal cycling**
- **Compact design for economy of space**
- **Automatic self-checks for guaranteed instrument performance**
- **Backed by Thermo's quality guarantee for peace of mind**

Essential PCR Machine

The PxE thermal cycler has been developed to provide all of the fundamental features for value for money thermal cycling. Focusing only on those features essential for PCR, the unit retains a high level of accuracy and performance that is synonymous with other products in the range. The combination of robustness, affordability and features evident in more sophisticated machines defines its status as a core indispensable tool for the researcher and student alike.

Accurate Temperature Control

Two versions of simulated temperature control are available on the PxE, one for use with plates and a second for use with tubes. These methods ensure excellent PCR performance by adjusting heating and cooling of the PCR block. Controlling thermal transfer in this way allows you to accurately achieve set protocol parameters because variations in consumable type and sample load are accounted for. If you have optimised protocols on old thermal cyclers, block control is also available.

96 Well Format

The PxE thermal cycler is available in a choice of two block formats, providing great flexibility in the choice of consumable format and throughput. The 0.2ml block has a 96 tube capacity and accommodates tubes, plates or strips. The 0.5ml holds 48 samples in 0.5ml tubes and 96 samples in 0.3ml tubes, plates or strips.

Custom Designed Software

Simple running and editing of PCR protocols is a key consideration in the PxE. The unit's custom designed software ensures that even researchers with no experience of our user interface find the unit easy to program.

Low Cost

Focusing on all that is essential in a thermal cycler has allowed Thermo to produce an affordable instrument without compromising quality or PCR performance.

Compact Design

With bench space at a premium in many laboratories, the small footprint of the PxE is desirable for many users. The compact design is also functionally relevant because it facilitates airflow around the unit to improve heat dissipation, thus enhancing protocol run times. Additionally, as the airflow is vented through the lid, the clearance requirement around the unit is reduced.

Automatic Self-Checks

Consistent performance of the PxE is assured every time the unit is powered up. Self-checks are run automatically to stringently test the performance of the unit prior to use with valuable samples. This action ensures that the instrument adheres strictly to the published specification.

Quality Guaranteed

Each PxE instrument undergoes a strict test procedure and is subsequently awarded a certificate of conformity and quality guarantee. This document provides assurance that the instrument meets or exceeds its published specification prior to dispatch from the factory.

PxE Thermal Cycler NEW



PxE Thermal Cycler Specification	
Performance*	
Temperature control available	Stimulated Tube Control Stimulated Plate Control Block control
Block temperature range	4°C - 99°C
Block heating range	Up to 3°C/sec
Block cooling rate	Up to 2°C/sec
Block uniformity	±0.5°C within 30 sec
Block options	96 x 0.5ml (standard) 96 x 0.2ml (standard)
Dimensions (w x d x h)	244mm x 405mm x 285mm
Weight	7.2kg
Programming (all unit variants)	
Number of programs	99
Number of directories	6
Max number of program stages	10
Max number of steps per stage	10
Ability to edit during cycling	Yes
Auto restart during power failure	Yes
Pause facility	Yes
Temperature ramping	Yes
Time increment/decrement	Yes
Temperature increment/decrement	Yes
Auto restart facility	Yes
Run "end time" calculation	Yes
Program naming	Yes

* PxE performance measurements are traceable to the UK National Physical Laboratory, the equivalent of U.S.Nist and comparable standards laboratories worldwide.

PxE Ordering Information	
Description	Catalogue Number
0.2ml fixed block 96 well thermal cycler (96 well block – holds 96 tubes or 1 x 96 well plate)	HBPXE02
0.5ml fixed block 96 well thermal cycler (96 well block – holds 48 x 0.3ml tubes, 1 x 96 well plate)	HBPXE05



PCR Sprint Thermal Cycler

► Benefits

- **20 or 24 well capacity for users with a low throughput requirement**
- **Small footprint for maximum use of available space**
- **0.2ml or 0.5ml block formats for flexible choice of sample format**
- **Auto-adjustable heated lid for ease of use**

Personal Thermal Cycler for Users with Low Throughput Requirements

The PCR Sprint thermal cycler is a low throughput personal cycler ideal for users who perform small amounts of PCRs on a regular basis. The unit offers two main choices of sample block format. Both formats perform similarly to more sophisticated and expensive machines, making the PCR Sprint an affordable choice for many users.

Accurate Temperature Control

Optimal PCR performance can be obtained in our blocks because of their accurate and reproducible temperature control. Our Active or Simulated temperature control methods account for the thermal lag that occurs when heat is transferred from our peltier devices to the sample mix. Both of these temperature control options monitor and efficiently adjust the heating or cooling of the peltiers in the PCR block. While Simulated Control is adequate for many applications, Active Tube Control is superior because the change in block temperature is based on the the temperature of the sample itself. This ensures that both set temperatures and desired dwell times are accurately achieved.

Auto-Adjustable Heated Lid

The auto-adjustable heated lid enables you to undertake oil free thermal cycling without having to set the lid height to suit the tube type in use.

Multiple Block Options

The PCR Sprint has two block options: a 0.2ml block, which has space for 24 tubes, and a 0.5ml block, which has space for 20 tubes. The block can be interchanged if necessary by using the thumbscrews evident on the block surround.

User-Friendly Software

The proven user interface allows even the most sophisticated programs to be created and stored with ease. Advanced edit features enable time and temperature increments and decrements to be programmed easily. Up to 60 programs can be stored under user-defined names within six sub-directories. The sub-directory structure allows multiple users to store programs within their own storage space.

Small Footprint

The PCR Sprint is compact by design, which makes the unit an ideal personal thermal cycler.



PCR Sprint Thermal Cycler



PCR Sprint Specification	
Performance*	
Temperature control available	Active Tube Control Simulated Tube Control Block Control
Block temperature range	4°C - 99°C
Block heating rate	Up to 3°C/ sec
Block cooling rate	Up to 2°C/ sec
Block uniformity	±0.5°C within 15sec
Heated lid temperature range	95°C - 120°C
Standard accessories	Tube thermistor for 0.2ml or 0.5ml block
Interchangeable block modules	0.5ml 0.2ml
Dimensions (w x d x h)	180mm x 300mm x 230mm
Power	250W
Weight	7.5kg
Programming (all unit variants)	
Number of programs	60
Number of directories	6
Maximum number of program stages	5
Maximum number of steps per stage	5
Maximum programmed dwell time	9 hr 59 min 59 sec
Pause facility	Yes
Temperature ramping	Yes
Time increment/decrement	Yes
Temperature increment/decrement	Yes
Auto restart facility	Yes
Run "end time" calculation	Yes
Program naming	Yes

* PCR Sprint performance measurements are traceable to the UK National Physical Laboratory, the equivalent of U.S.NIST and comparable standards laboratories worldwide.

PCR Sprint Ordering Information		
Product	Capacity	Catalogue Number
0.5ml PCR Sprint	20 x 0.5ml tubes	HBSP05
0.2ml PCR Sprint	24 x 0.2ml tubes	HBSP02
0.5ml replacement block	20 x 0.5ml tubes	HBSPB05
0.2ml replacement block	24 x 0.2ml tubes	HBSPB02



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