G-STORM™
GSX

PREPARE FOR THE G-STORM™

G-STORM™ GSX

G-STORM™ THE CUTTING-EDGE
THERMAL CYCLER SOLUTION

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THE ENTIRE G-STORM™ RANGE

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G-STORM™
GSX

THE THERMAL CYCLER SOLUTION YOU'VE BEEN WAITING FOR

G-Storm – purpose built for the demands of cutting edge molecular biology, G-Storm is the new benchmark of thermal cycler excellence.

Superb thermal performance characteristics are perfectly balanced with ease of operation ensuring that routine daily use never becomes a chore.

Design and feel of G-Storm is paramount, resulting in a cycler that will deliver the results you demand from a unit that will look great in your laboratory. The colour touch-screen is the heart of G-Storm's control. The user interface is simplicity itself, making programming, file management and cycler control a breeze.

THE NEW BENCHMARK FOR PROGRAMMING AND CONTROL

Colour touch-screen display

The full colour VGA, 8.4 inch TFT touch-screen display presents users with an interface in which programming and control is point and click or drag and drop. Control of G-Storm is via the touch-screen, using a stylus, ball pen, or even your finger! (An optional keyboard and mouse can be attached via the USB port if you prefer). The ability to maneuver the touch-screen angle allows for unprecedented flexibility and user comfort when it comes to programming and control.

G-Storm software – simple yet powerful

If you are new to molecular biology, programming any thermal cycler for the first time can be a daunting prospect. This is not the case with G-Storm's interface! Novices through to experts find the software intuitive and easy to learn yet powerful enough to handle the most complex of protocols. Users have the choice to enter known programs manually or utilise the fabulous Program Wizard. The program wizard function and inbuilt primer algorithms remove the requirement to manually calculate the ideal protocol for your experiment. Simply enter your primer sequences or melting temperatures (TM's) and let the wizard do the rest! Manual programming utilises drag and drop principles, and the icon driven commands enable quick, clear and intuitive protocol inputs. Even utilising G-Storm's gradient function effectively is simple. Optimal conditions from any gradient protocol can be converted straight into a standard protocol with only a single click! No need to re-program or revert back to scraps of paper with hand written temperature gradients!

Within G-Storm's software, administrators may select the operating language of the system, a function which may prove invaluable with more collaborations between labs resulting in a demand for a multilingual cycler. At present, G-Storm may be run in English, French, German, Spanish and Italian languages.

A site license for G-Storm's programming software interface is also provided free of charge for use on PC's, enabling experimental design and programming from your desktop. Protocols can be transferred via memory stick to and from your PC straight onto G-Storm.

G-Storm is changing the way molecular biologists think about using thermal cyclers. With so many features available from one machine combined with incredible ease of use, you will be blown away!

Develop your own network of G-Storm cyclers

G-Storm GSX has the ability to run up to 3 additional GSXs (satellite) units. Alternatively, up to 15 G-Storm GSX or GSXs (satellites) units can be run, programmed and monitored from the G-Storm control software on a single desktop or laptop PC.

G-Storm's "Home Page" is central to the control of the cycler's various functions. Select the various options, including Program Wizard, New Program, Run Program, on the touch-screen and let the software take you through a logical process that enables you to do what you want to do in easy, simple to follow steps.

Multi-Sensor block technology

Each thermal block within G-Storm has 4 independent temperature control sensors and 8 peltier heating units, ensuring that temperature control and uniformity across the block surface is accurate and reproducible time after time, cycle after cycle. With features such as Active Sample Cooling (ASC) ensuring that samples are cooled until heated lid reaches its target temperature and therefore reducing non-specific primer binding and extension, G-Storm is protecting your samples, even before your protocol has begun.

A gradient feature for protocol optimisation is standard on all blocks (48, 96, 96 cobi and 384 well) ensuring that you get the very best data from your starting biological material. The gradient range is user programmable from 4°C to 30°C across the thermal block (gradient can be run within a temperature range of 30°C to 80°C).

The icon driven, drag and drop programming is simplicity itself. Simply select the command that you require, drag it into the program window and enter your parameters when prompted. This method enables both complex and simple protocols to be visualised during programming by selecting the "profile" option.

Advanced motorised lid and block mechanics

Whether for use in robotics or standard lab operation, the benefits of having an automated power lid are clear – plate and tube sealing pressure will be the same time after time, ensuring even more reproducibility of factors within your experimental protocols. The automatic sliding lid opens or closes in just a few seconds with click of an icon or the push of a button. The G-Storm GSX lifting-block, high-pressure lid seals your plates and tubes, ensuring perfect temperature and pressure distribution every time. The automated lid adjusts its height automatically for plates (96 or 384) and tubes (0.2ml or 0.5ml) with sophisticated yet robust pressure sensing technology.

"The G-Storm GSX is everything you demand from a thermal cycler – and more."

The superb "Program Wizard" function uses primer sequences or primer melting temperatures to calculate your protocol for you. By entering this information, product length and any other "special" information, over just five steps, the wizard will present an ideal program based on this information within a few clicks, you are ready to go!

"The thermal cycler solution for cutting-edge molecular biologists."

FINALLY, A CYCLER THAT MAKES THINGS EASY!

G-Storm is probably the easiest to use cycler yet offers probably the most advanced on-line monitoring available anywhere. The status of the cycler is always visible with actual temperatures displayed graphically in real-time. When running a network of multiple machines, it is simply a matter of clicking on the cycler that you want to view (Cyclers have default serial names, but these can be changed by the administrator to whatever you wish). Lab books and GLP reporting provide additional data vital for accreditation or validation, whilst the cycler reservation function simply makes it easier to get your work done!

Easy to operate and maintain

Internal performance protocols ensure that G-Storm GSX is operating as it should and provide peace of mind that your experimental data is sound and accurate.

Thermal blocks within G-Storm exchange in seconds without tools or the need for a specialist engineer, such a feature reduces any potential downtime to an absolute minimum. The USB port accepts memory sticks for program transfer / export and even operating software upgrades from the web or e-mailed directly to your from your local service team.

GSX and GSXs (satellite) Systems

GSX
Touch-screen and operating software included

Run as an independent unit
Operate up to 3 x G-Storm GSXs (satellites) from 1 x G-Storm GSX

GSXs
*   Units can be operated from G-Storm GSX **OR** from your PC
*   Run up to 3 x G-Storm GSXs (satellites) from 1 x G-Storm GSX as a mini-network

PC Control
Run up to 15 units of either model type from a single PC (using USB Hubs)

Robotics and automation – who knows what the future holds?
With an easy to access thermal block and a fully automated motorised high-pressure lid, G-Storm is the perfect cycler to integrate into any robotic system that you are considering now, or in the future.

Quality assured

*   NIST/UKAS traceable calibration procedures
*   Password control – allows access to various reports
*   Administrator, User and guest levels enable programs to be written, edited, protected and run according to status
*   Power failure options – continue or halt
*   Barcode reading option
*   Encrypted GLP documentation produced with every program run.

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G-STORM™ GSX TECHNICAL SPECIFICATIONS

Thermal Blocks

Block materials	Modular anodised aluminium blocks with 4 thermistor sensors
Traceability	NIST traceable temperature calibration
Blocks available	48 Well gradient block for 48 x 0.2ml tubes
	96 well gradient block: for 96 well plates or 96x 0.2 ml tubes
	96 well gradient combi block: 96 x 0.2 ml tubes or 48 x 0.5 ml tubes
	384 well gradient block high throughput block: for 384 well plates

Thermal block characteristics

Temperature range	4°C - 99°C
Temperature control	Calculated mode with plate and tube control algorithms
Volume range	5-100µl
Block Accuracy	+/- 0.4°C (20-99°C)
Block Homogeneity	+/- 0.4°C
Ramp Rate (heating)	Up to $3°CS^{-1}$
Ramp Rate (cooling)	Up to $3°CS^{-1}$
Gradient temperature range	30°C – 80°C (All Blocks)
Max/min gradient span	30°C / 4°C
Sample-overshoot	<1°C

Automated high pressure heated lid

Lid temperature range	80°C - 120°C, (selectable with 1°C increments)
Lid pressure range	0-300N with manual or automatic pressure set. Suitable for use with all commercially available seals

User Interface

Screen type	8.4 inch TFT colour VGA touch-screen with angle adjust (Stylus supplied. Suitable for ball-pen or finger use)
Data input	Touch-screen, external keyboard and mouse (USB) (Optional), barcode scanner (USB) (Optional)
Temperature display	Real-time graphical display of actual block temperatures
Communication	2x USB

User and file management

User levels	3: administrator, user (with administrator selectable restricted rights) and guest
File protection	via restricted access
File organisation	Windows Explorer, user-defined folders and subfolders
Program storage	Circa 500 (internal memory or USB stick).

Reports and validation

Reports	Encrypted GLP report, LabBook report
Validation	Automatic internal validation prior to each program start

Networking

Networking	PC controlled cycler network up to 15 units (contact GRI if more are required)
	GSX:GSXs (Satellite) system network up to 4 units

Power and dimensions

Electronic power supply	100V to 240V (frequency 48 to 62Hz)
Dimensions (LxWxH)	620mm x 333mm x 215mm
Weight	18kg approx.
Operating conditions	10°C - 30°C, 0- 95% relative humidity
Regulatory	CE compliant
Warranty	2 years

Optional accessories

Barcode scanner	Barcode documentation via handheld barcode scanner
Data input	External keyboard and mouse (USB)
Memory	USB Memory Stick

CONTACT DETAILS

GRI Ltd
Gene House
Queenborough Lane
Rayne, Braintree
Essex CM77 6TZ

Tel: +44 (0)1376 332 900

Email: g-storm@gri.co.uk
Web: www.g-stormcycler.com

GRI France
4, Impasse de la Croix
Blanche, 95370 Montigny
Les Cormeilles
France

Tél: +33 (0)1 39 97 71 49

Your local distributor

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