

# PCRmax

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## Alpha Cyclor

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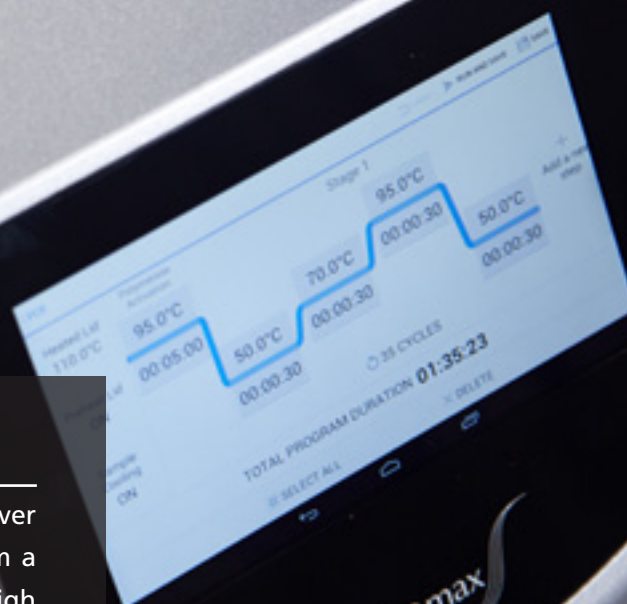
### Endpoint PCR range

Speed. Confidence. Value. Sensitivity. Performance.



## PCRmax Alpha Cyclers

The PCRmax Alpha Cyclers are developed to deliver not only the best quality data you can expect from a thermal cycler but also to innovate and exceed the high standards expected by the community.



## Alpha Cycler AC-1

The single block Alpha Cycler 1 (AC-1) is a compact and feature driven entry level PCR machine with ease of use and performance at its core. Alpha Cycler software has features such as recently used Programs; allowing users to quickly access their most commonly used protocols without the need to navigate through folders to find it, individual user logins; with protected protocols as-well-as allowing users' access to temperature logs after each run to monitor the state of the system.

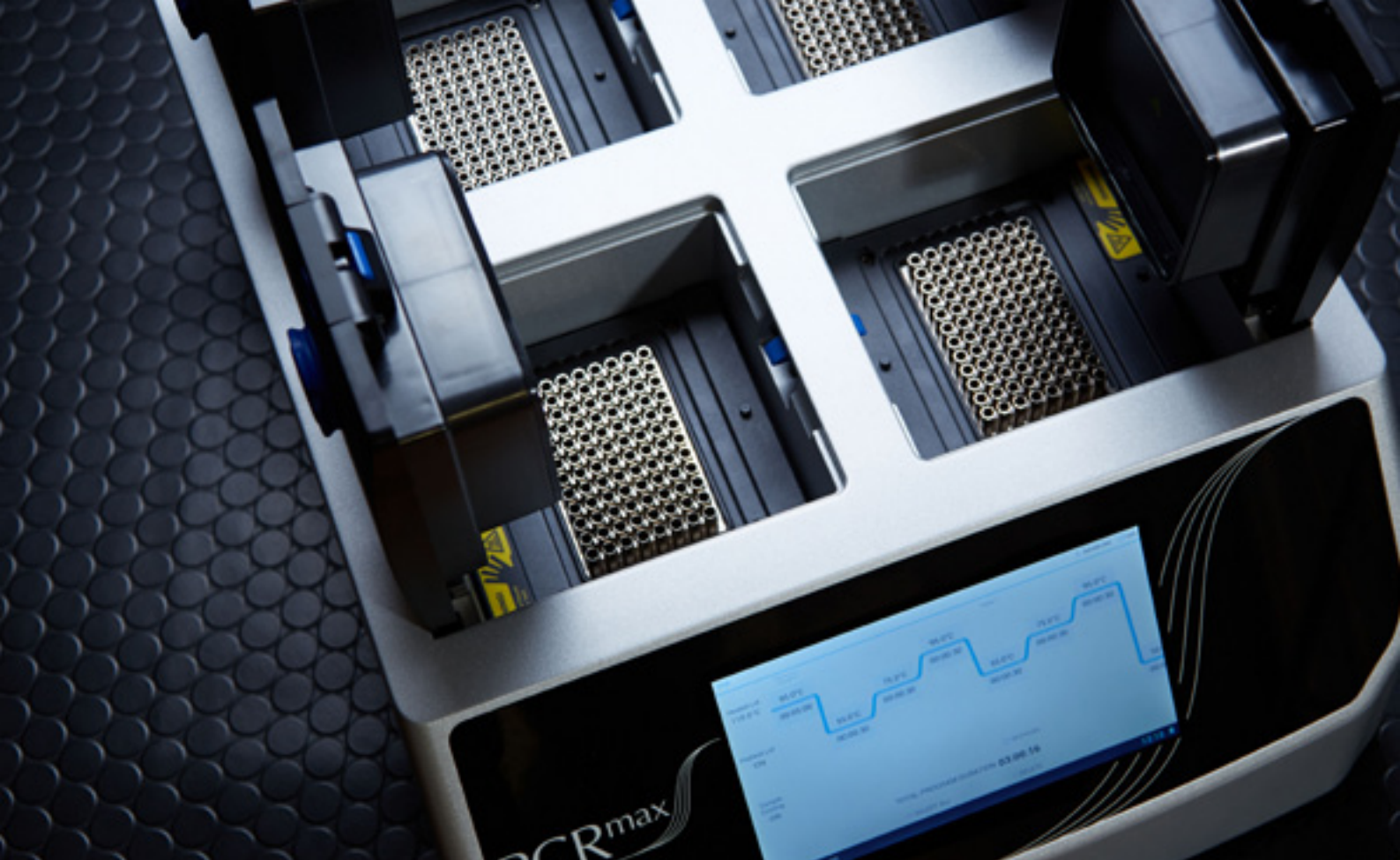


# Speed. Confidence. Value. Sensitivity. Performance.

## AC-1 Key features

- Active Sample cooling - For sharper amplification and minimal non-specific amplification
- Program Wizard - Generate a protocol specific to your sequence, template source and amplicon length in seconds
- Report generated on run conditions and state following completion of protocol
- Gradient - Allowing for simplified temperature optimisation, no matter the block chosen
- 96/384 well formats - Flexibility for any scale and user needs
- USB connectivity - To retrieve system information and easily transfer protocols between systems
- Android driven 7" tablet interface - Quad core speed and excellent connectivity and feel





## Alpha Cyclers AC-4

The Alpha Cyclers 4 (AC-4) is the only true fully independently controllable multi-block thermal cycler available today. The system can be specified in any combination of 96 and 384 well formats across its four bays. Alpha Cyclers software allows the user to quickly access their most commonly used protocols without the need to navigate through folders to find it, individual user logins; with protected protocols as-well-as allowing users' access to temperature logs after each run to monitor the state of the system.



## AC-4 Key features

- Scalable - Chose from any combination of 96 or 384 well blocks
- Compact - Save precious labspace by condensing four truly independent blocks into one chassis with no networking issues or connectivity concerns
- Active Sample cooling - For sharper amplification and minimal non-specific amplification
- Program Wizard - Generate a protocol specific to your sequence, template source and amplicon length in seconds
- Gradient - Allowing for simplified temperature optimisation, no matter the block chosen
- Report generated on run conditions and state following completion of protocol
- USB connectivity - To retrieve system information and easily transfer protocols between systems
- Android driven 10" tablet interface - Quad core speed and excellent connectivity and feel

## Interface

The Alpha Cycler interface is Android based and runs through a large 7" (AC-1) or 10" (AC-4) HD touchscreen for responsive control of the software. Providing a familiar premium experience on all instruments in the range. Whether you process a few samples a week or require multi-block instrumentation for high throughput, the interface offers the same look and feel no matter the task.



Program Wizard

## Program Wizard

The Alpha Cycler systems also contain a novel Program wizard which allows users to define a protocol based specifically off their primer sequence and template source. Primer sequences or Tms are inputted, amplicon length and source defined and the on board algorithm generates an optimised protocol for your assay.

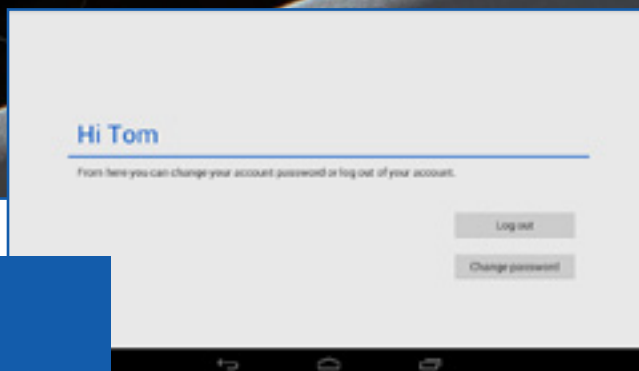
- Let the Alpha Cycler's Program wizard optimise your reaction for you.
- Simply input the forward and reverse primer sequences, define the amplicon length and source of the template and the built in and validated algorithms will define a bespoke protocol for your target.
- Program Wizard is an excellent way to transition over to the Alpha Cycler range and a quick way to optimise your new assays.
- Program wizard even allows for high specificity touch down PCR and will accommodate for GC/AT imbalances in your target sequence to get optimal Tms and hold times.

## Program storage

On the home screen of all Alpha cycles is the recent Programs list allowing users to access and run their most commonly used Programs in two taps of the screen. No need at all to access the systems memory or hunt through files, just select, confirm and run.

File Manager	PROGRAMS	REPORTS
	<b>2 Step Template</b> Last used 16/04/2015 12:49:01 Used once	<b>3 Step Template</b> Last used 16/04/2015 12:48:43 Used once
	<b>Ligation 15C</b> Last used 16/04/2015 12:49:22 Used once	<b>RT PCR Template</b> Last used 16/04/2015 12:49:47 Used once
		<b>Ice Bucket</b> Last used 16/04/2015 12:50:26 Used once

Program manager



Personalised login



AC-4 Multi-Block control

## Reporting

What do you want to know from your PCR machine? When its done, when its going to finish and is there a problem. All of these things will be reported out of the Alpha Cyclers to your mobile (Android, iOS or Windows) or hand held device simply by scanning the QR code displayed on the Alpha Cyclers, allowing users to monitor there run without needing to be connected to a network and conveniently though there own mobile device.

### Further monitoring/reports

- Temperature logs of every run
- Completion status
- Full screen timer to easily check remaining time

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## USB Connectivity

Both Alpha Cyclers can retain approximately 1000 reports for reviewing at a later date. Alternatively the unit has USB ports for connection to flash drive or PC, so the files can be more permanently stored as a long term record. The USB can also be used to store and transport protocols between systems.







## Gradient Technology

All Alpha Cycler block formats, 96 or 384 well, run gradients across the 12 or 16 columns respectively. Allowing for a much finer optimisation of your temperatures and by extension more specific PCR product amplification. Each block also contains 6 individual heat sources (peltier elements) which are monitored and controlled by the system for improved accuracy of gradient and fixed hold temperatures.

With the Alpha cycles gradient converter you can in one click adjust the gradient step to the specific temperature of the column that gave the best results: no need to re-write the protocol just convert the gradient to the optimised temperature.

## Active Sample Cooling

Active Sample Cooling (ASC) is an approach which the Alpha Cycler takes to reduce non-specific amplification in your PCR reactions.

Active sample cooling can all but stop the formation of primer dimers early in cycling. When even a very small number of primer dimers occur early in a reaction these will often be preferentially amplified over your target as PCR will preferentially amplify these shorter fragments over the longer target amplicon, wasting components needed to generate your target thereby reducing your yields.

ASC works by simply chilling the block to 4 degrees and holding it there until the heated lid gets to temperature. Other systems often allow the heated lid to pollute your samples with heat allowing the primer dimers to form early in cycling and these can amplify through the remaining cycles giving the characteristic fuzzy bands at the bottom of your gel.

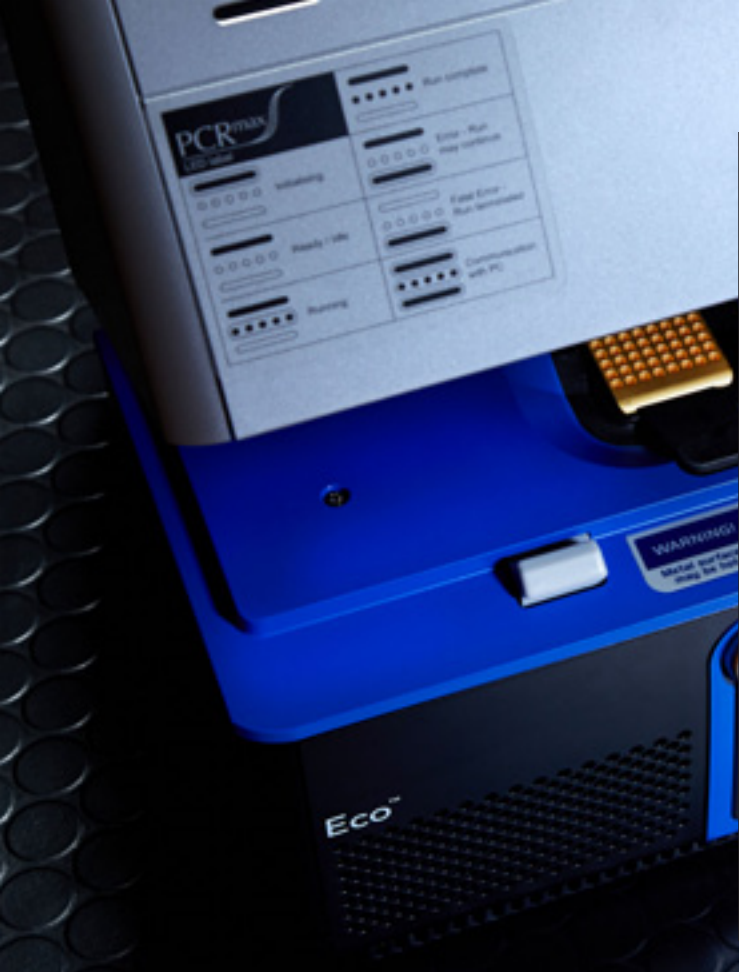
## Speed. Confidence. Value. **Sensitivity.** Performance.



### Also available Gamma Cooling Block

- Maximum temperature range 0°C to 40°C \*
- Count up and count down timer
- Temperature displayed in °C or °F
- Buzzer indicates reaching the set temperature and the end of the elapsed time
- Holds 2 aluminium insert blocks

\* Please note the primary design of PCRmax Gamma is to maintain biological samples safely between 4 and 37°C. PCRmax Gamma will achieve any temperature between 4 and 37°C within 30 minutes in an ambient temperature of 20°C. PCRmax Gamma will also reach 0°C or 40°C, but this may take several hours. Reaching 0°C can be speeded up by pre-cooling the aluminium blocks before use.



## Also available

### PCRmax Eco 48 Real time qPCR system

The PCRmax Eco 48 real time PCR system is a high specification, economically priced real time thermal cycler that accommodates a unique 48-well polypropylene PCR plate utilising the same geometry as standard 384-well plates, but only 1/8 of the size. This enables users to dramatically reduce the qPCR reagent volumes compared to traditional 96-well instruments, saving users precious sample, whilst still producing a strong fluorescence signal. Minimizing the plate size also significantly improves thermal uniformity. A minimum volume of 5µl is validated, resulting in a more efficient use of expensive and 'hard to acquire' template DNA samples.

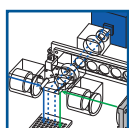
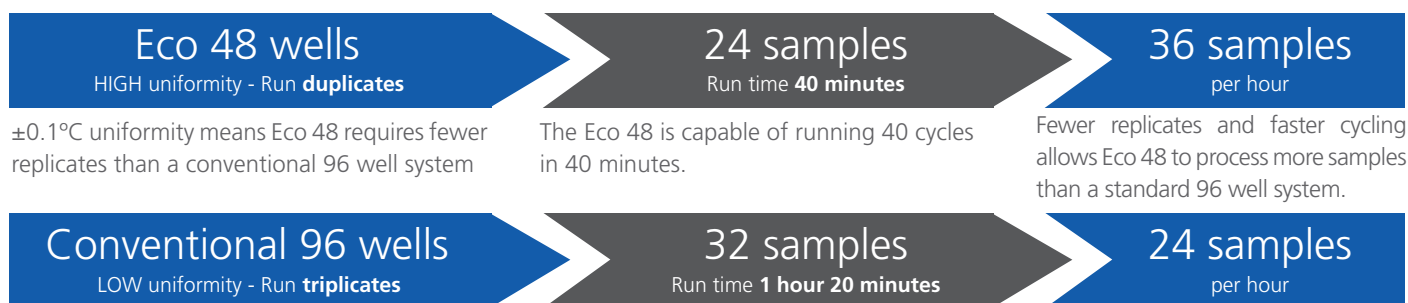
The Eco 48 Real-time system offers the qPCR capabilities of larger instruments in a compact, accurate footprint. Innovative features include a precise thermal system for unrivalled temperature control, an advanced optical system for highly sensitive fluorescence detection, a 48-well plate for flexible sample throughput, and intuitive, icon-driven software for error-free instrument operation.

## Key features

- MIQE compliant.
- HRM functionality is provided as standard and can discriminate class IV SNP 99.9% of the time.
- The Eco 48 can utilise four colours for easy multiplexing.
- Industry leading  $\pm 0.1^\circ\text{C}$  temperature uniformity (recorded at  $95^\circ\text{C}$  no settle time).
- High uniformity provides high quality data.
- Fast cycling enables several experiments per day, all at an economical price.
- Fastest block-based real-time PCR system with the ability to run 40 cycles in 20 minutes (or less when optimised).
- The PCRmax Eco 48 is an open platform that can utilise any chemistry, dye or PCR reagent.
- Calibrated for SYBR®, FAM™, HEX™, VIC™, ROX™ and Cy®5 fluorescent dyes.
- Easy to use software, streamlined for novices and experts.
- No need to run triplicates, to compensate for poor thermal uniformity of block.

## Do more, with less

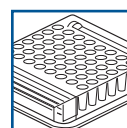
Results from multiple instruments can be combined together



Sensitive optical system delivers precise detection for a range of fluorophores



Convenient 48-well format meets the throughput needs of most researchers



Unique thermal system provides unmatched temperature control for accurate results



## Technical Specification



Unit	AC-1	AC-4
Format:	Single block	Quad block
Block Options:	96 or 384 well format	96 or 384 well format (All 96 or all 384, 96 and 3 x 384)
Maximum heating rate:	3.4°C per second	3.4°C per second
Block temperature range:	10°C to 100°C (4°C final hold)	10°C to 100°C (4°C final hold)
Block uniformity at 55°C:	± 0.3°C	± 0.3°C
Temperature accuracy at 55°C:	± 0.25°C	± 0.25°C
Gradient:	Yes (on all formats)	Yes (on all formats)
Maximum Gradient:	29°C	29°C
Minimum Gradient:	1°C	1°C
Maximum number of programs stored:	1000	1000
Maximum fan noise:	50dB	50dB single block running 55-58db four blocks running
Peltier element type:	6	6
Adjustable heated lid temperature:	35°C to 115°C or off	35°C to 115°C or off
Heated lid pressure:	Adjustable	Adjustable
Software platform:	Android	Android
Program interface:	7" inch 1080p HD	10" inch 1080p HD
Data transfer:	USB port	USB port
Auto re-start on power failure:	Yes	Yes
Dimensions (L x W x H) in mm:	430 x 260 x 200	700 x 535 x 200
Weight:	11.8kg	45kg
Voltage:	100-230, 50-60Hz	100-230, 50-60Hz
Power:	450W	450W
Electricity (standard 30 cycle program)	0.3 kWh	0.3 kWh



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