



TC-PLUS

Thermal Cyclers

Techne is established as one of the leading suppliers of thermal cyclers, with experience in the design and manufacture of thermal cyclers since 1987. The exciting new TC-PLUS range extends the potential applications to both fast and high-throughput PCR.

The TC-PLUS thermal cyclers have all the latest features from a colour touchscreen to fast ramp rates, along with some innovative additions such as an automatic, non-motorised heated lid, TERSTM, thermal energy recovery system (patent pending) and a unique space-saving, stackable design. The TC-PLUS and Satellite units can be combined to form any multi-block format with the Satellites being controllable from either a PC or the TC-PLUS.



Features

- 7 Colour touchscreen for fast program setup
- 7 TERSTM, Thermal Energy Recovery System (patent pending) to reduce operational costs
- 7 Stackable design to save on valuable bench space
- 7 Satellite option which can be controlled by either the TC-PLUS or a PC
- 7 Unique, easy to use CD-type sample drawer mechanism (patent pending) which provides the correct pressure for use with caps: domed or flat, heat OR adhesive seals all without the use of a motor
- 7 Tm calculator, which uses the Nearest Neighbour algorithm
- 7 Fast ramp rate of up to 5°C/sec
- 7 4-year warranty*

Efficient cycling

Historically Techne has provided easily interchangeable thermal blocks and the TC-PLUS units are no exception. The three block options, 96 x 0.2ml, 60 x 0.5ml and 384-well plate blocks all have a gradient option, thus enabling easy optimisation of PCR conditions such as Mg²⁺ and primer concentrations and annealing temperatures. To assist with PCR assay design a Tm calculator which uses the Nearest Neighbour algorithm is included, and combined with the gradient every experiment is guaranteed to be optimised first time, every time. The new block design incorporates the very latest in Peltier design and provides one of the fastest ramp rates available at 5°C/sec. One new feature of the thermal block is the TERSG system, Thermal Energy Recovery System (patent pending) which harnesses the released heat during the cooling phase for use in the next heating phase, thus saving energy and reducing operational costs – a must in today's energy conscious world.



Stacked with new features

The TC-PLUS is easy to program with a large, 5.7" VGA colour touchscreen and graphical displays. At least 1000 programs can be stored on the TC-PLUS, so there is more than enough capacity for everyone in the lab. An easy to access USB port on the front of the cycler makes it quick and easy to transfer protocols between both cyclers and laboratories.



Ready to go networking

The TC-PLUS and Satellite units are designed with a front-loading sample drawer to be space-saving, having the unique ability to stack. Bench space is at a premium in the modern laboratory so a TC-PLUS or a Satellite can be stacked onto another Satellite, with a 4-block system only requiring 0.21m². Each TC-PLUS can directly control up to 3 Satellites or 9 via a USB hub. Additionally the Satellites can also be controlled via a PC using the software supplied with every unit.



PCR enabled

Prevention of sample evaporation, particularly with low volume PCR reactions is critical for achieving the right results every time and vital for preventing false negatives. The unique drawer mechanism (patent pending) utilises the energy of the drawer being pushed closed to lower the heated lid into the correct position. It accommodates all consumable types from 0.5ml microtubes to 384-well plates, sealed with either heat or adhesive seals. For applications requiring lower experimental temperatures than standard PCR the heated lid can be set between 35 and 115°C.



Cool thermal performance

Airflow during the heating and cooling phases is vital to the temperature control of the samples, so for improved performance the venting and airflow is now front to back on the TC-PLUS. This also enables side-by-side positioning to further reduce the bench space required.

* 4-year warranty with blocks having a 4-year or 100,000 cycle warranty – whichever comes first.

Purchase of this instrument conveys a limited non-transferable immunity from suit for the purchaser's own internal research and development and applied fields other than human in vitro diagnostics under non-real time thermal cycler patents of Applied Biosystems LLC.

Technical Information

Sample capacity: 0.2ml	96
Sample capacity: 0.5ml	60
Sample capacity: 384-well	Yes
Block temperature range	0 to 100°C*
Block uniformity (without gradient)	<±0.3°C
Temperature accuracy	<±0.2°C
Gradient range	Across the full temperature range
Maximum gradient	30°C
Minimum gradient	1°C
Pre-run sample cooling	Yes, at 4°C
Temperature set point adjustment	0.1°C
Maximum heating rate	5°C/s
Minimum heating rate	0.1°C/s
Maximum cooling rate	3.0°C/s
Minimum cooling rate	0.1°C/s
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Selectable heated lid temperature	35 to 115°C or off
Pre-heat lid	Yes
Warm up time from ambient	< 2 min
Over-temperature cut-out	Yes
Regulated heated lid pressure	Automatic
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Program interface	5.7" VGA colour touchscreen with graphical display
Maximum number of programs stored	1000
Maximum number of stages per program	99
Maximum number of steps per stage	99
Maximum number of cycles per stage	99
Programmable ramp rate	Yes, 0.1°C/s steps
Maximum hold time	99h 59m 59s
Minimum hold time	0.1s
Gradient calculator	Yes
Incremental/decremental temperature	Yes
Incremental/decremental time	Yes
Pause facility	Yes
Password protection	Yes
Run completion time	Yes
End of program alarm	Yes (can be disabled)
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Auto re-start on power failure	Yes with options of 10min, 30min, 1h or always
Connection to PC control software	Yes
Software updates	Available from www.techne.com
Tm primer calculator	Yes
Dimensions (L x W x H)	375 x 276 x 312mm
Weight	14kg
Voltage	100-230V, 50-60Hz
Power	

*20°C below ambient, all specifications performed at 20°C

Ordering Information

Product Code	Description
FTCPLUS/02	TC-PLUS thermal cycler, 96 x 0.2ml
FTCPLUS/05	TC-PLUS thermal cycler, 60 x 0.5ml
FTCPLUS/384	TC-PLUS thermal cycler, 384-well plates
FTCSAT/02	TC-PLUS satellite thermal cycler, 96 x 0.2ml
FTCSAT/05	TC-PLUS satellite thermal cycler, 60 x 0.5ml
FTCSAT/384	TC-PLUS satellite thermal cycler, 384-well plates
FTCPLUS/02/B	TC-PLUS block, 96 x 0.2ml
FTCPLUS/05/B	TC-PLUS block, 60 x 0.5ml
FTCPLUS/384/B	TC-PLUS block, 384-well plates



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