THERMAL CYCLERS
Standard TC1000-S - Code ZMC017

THERMAL CYCLERS
Gradient model TC1000-G - Code ZMC018

The thermal cycler is an essential laboratory instrument for molecular biology in applications such as sequencing, gene cloning, gene expression, mutagenesis, and it is also used in areas such as drug development, agriculture, food industry, etc.
DLAD thermal cyclers have an elegant design, excellent precision, reproducible results and precise PCR optimization.

Features

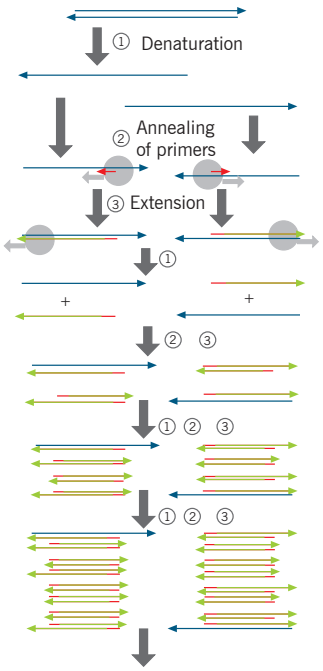
- High performance Peltier and independent heating segments improving temperature control
- Auxiliary heating mechanism diminishes the “edge effect” and enhance the temperature uniformity
- Wide touchdown PCR temperature range (-9.9℃~+9.9℃) and long PCR time range (-9min 59s~+9min 59s)
- Gradient temperature setting optimizes temperature easily in the single run
- Color touch screen with user friendly interface helps to edit programs easily
- Wide options of consumables: common PCR tubes, 8-tube PCR strips and 96-well PCR plates can be used
- File customization, multi-file storage
- Power failure protection function, automatic program recovery
- Hot lid auto-off function: If module temperature is lower than 30℃, the hot lid function will automatically turn off

PCR diagram

The most common protocol of PCR consists of a series of 20-30 cycles, in each one of them the new copies of DNA are multiplied exponentially. Each cycle is divided into 3 steps at different temperatures:

- Denaturation: separation of the two DNA strands by submitting the sample to high temperatures of about 95 ºC. This way, each strand is free for joining the primers and the DNA polymerase.
- Annealing of primers: each primer will join its complementary sequence, thus acting as limits of the DNA region that is going to be amplified. For this annealing, temperature must go down to 50-60 ºC depending on primer composition.
- Extension: DNA polymerase begins synthesizing the new DNA strand, starting from the primers. The optimum temperature for annealing depends on the polymerase used and is usually between 75-80 ºC.

The application of PCR combined with other techniques as agarose gel electrophoresis or hybridization with specific probes (Southern blot), are practically unlimited and very different, reaching diverse fields as basic research, Medicine, forensic and police investigations, Paleontology or Archeology.



Exponential amplification of product

Technical specifiacions

Code	ZFD017	ZFD018
Model	TC1000-S	TC1000-G
Sample capacity	96 × 0.2mL PCR tube	96 × 0.2mL PCR tube
	12 × 0.2mL PCR-8 strips	12 × 0.2mL PCR-8 strips
	96-well PCR microplate	96-well PCR microplate
Heating temperature range (℃)	4-105	4-105
Lid temperature range (℃)	30-110	30-110
Temperature Display accuracy (℃)	± 0.1	± 0.1
Temperature Display accuracy at 55℃ (℃)	± 0.3	± 0.3
Temperature uniformity at 55℃ (℃)	<0.3	<0.3
Max. heating/cooling rate	5 ℃/sec	5 ℃/sec
Gradient temperature setting range (℃)	-	30-99
Gradient range (℃)	-	1-42
Adapter block material	Aluminum	Aluminum
Display	7” LCD 800x480, touch screen	7” LCD 800x480, touch screen
User defined file system	Max. 30 segments 99 cycles	Max. 30 segments 99 cycles
	Storage for over 200 files	Storage for over 200 files
Power off protection	Yes	Yes
Power supply	100-120 V/200-240V, 50/60 Hz	100-120 V/200-240V, 50/60 Hz
Dimensions (WxDxH)	280x370x250 mm	280x370x250 mm
Weight	11 kg	11 kg