96-deep well plate gradient pcr thermal cycler with peltier module

The 96-deep well plate gradient pcr thermal cycler combines innovative modular design and advanced temperature control technology to support diversified reaction volumes and gradient temperature settings to meet the needs of scientific research and clinical needs for accurate and efficient DNA amplification.

96-deep well plate gradient PCR thermal cycler with excellent temperature uniformity and accuracy, to help users optimize PCR conditions, improve the success rate of experiments and data reproducibility.

Main Features of 96-Deep Well Plate Gradient PCR Thermal Cycler

1. innovative design without edge effect: the module structure is scientific, preventing the temperature deviation caused by evaporation of the edge holes of the deep-well plate, and ensuring the balanced reaction of each well sample.
2. Composite cooling system: combining liquid cooling and air cooling technology to achieve rapid and uniform temperature control, improve temperature accuracy and uniformity.

3. Compact and space-saving layout: the instrument adopts special air inlet and outlet design, supporting vertical stacking and close horizontal placement, improving the utilization of laboratory space.
4. Intelligent thermal cover temperature control: the module automatically enters the low temperature (about 8 °C) preheating state during the process of thermal cover warming, effectively inhibiting non-specific amplification.
5. electric automatic in and out of the compartment: one-key operation in and out of the compartment, to ensure that the hot cover and the reaction consumables are closely adhered to, to improve the sealing and heating efficiency.
6. simple and easy to use interface: built-in commonly used reaction temperature presets, users can easily edit and manage the PCR program to improve operational efficiency.
7. support for large-volume reaction: reaction volume up to 120 microliters, suitable for a variety of experimental needs.
8. rich gradient selection: 12 independent temperature gradient channels, easy to optimize PCR conditions in parallel with multiple parameters.
9. high-throughput deep-well plate compatibility: adapted to the standard 96-well deep-well plate, to meet the needs of high-throughput experiments.
10. the use of high-efficiency Peltier refrigeration technology: fast response, energy saving and environmental protection, to ensure stable and accurate temperature control.

Advantage

1. more stable and reliable experimental data: no edge effect design and excellent temperature uniformity significantly improve data reproducibility.
2. fast temperature control response: the combination of composite cooling system and Peltier technology, to achieve accurate and rapid temperature conversion, shorten the experimental cycle.
3. high degree of automation: motorized in and out of the compartment and intelligent thermal cover to reduce manual errors and improve the safety and efficiency of the experiment.
4. wide range of application: support large volume and gradient reaction, suitable for a variety of samples and types of experiments.
5. saving experimental space: compact module structure, flexible stacking design, for laboratory space management convenience.
6. effective inhibition of non-specific amplification: intelligent temperature control hot cover design to reduce the risk of false positives, to ensure the specificity of amplification.
7. user-friendly interface: convenient program editing and storage, support the rapid setting of complex experimental programs.

Working Principle

96-deep well plate gradient PCR thermal cycler utilizes Peltier semiconductor refrigeration elements to achieve precise heating and cooling, combined with liquid cooling system to enhance the heat exchange efficiency, and air-cooling technology to assist in maintaining uniform temperature distribution. The instrument is equipped with multiple high sensitivity temperature sensors to monitor the sample temperature in real time, which are fed back to the control system to dynamically adjust the heating and cooling rate. 12 temperature gradients are independently controlled through different zones, allowing users to test multiple annealing temperatures at the same time, which makes it easy to optimize the PCR conditions.

Motorized inlet and outlet ensures precise positioning and fast loading and unloading of the reaction plate. Meanwhile, the hot cover adopts intelligent temperature control, cooling down the temperature to protect the sample during the warming phase, avoiding non-specific binding of primers and improving the accuracy of amplification. The whole cycling process realizes automation and high-precision temperature change, guaranteeing efficient amplification of DNA templates.

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Model	**TC20**
Block	96 x 0.2 ml reaction tubes. 1 x 96-well reaction plate
Cooling module	peltier

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Model	**TC20**
Maximum reaction volume	120ul
Recommended reaction volume	10ul to 100ul
Temperature Control Range	4°C to 99.9°C
Maximum heating and cooling rate	4°C per second
Temperature accuracy	±0.3°C, at 95°C
Temperature resolution	0.1°C
Temperature uniformity	±0.3°C
Heated lid temperature	40°C to 110°C
Gradient range	30°C to 99.95°C
Gradient differential	1°C to 36°C
Temperature gradient	12-row temperature gradient

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Model	**TC20**
Temperature control method	Tube mode, Block mode
Number of stored programs	more than 2000
Display	7-inch full-color LCD touchscreen
Power supply	100Vac to 240Vac, 50-60Hz, 500W
Dimensions	312x780x450mm
Weight	18kg