Gradient PCR

Optima96

Features

- Six Independent Temperature Blocks with imported TEC modules provide precise Temperature control for PCR optimization
- Excellent gradient temperature accuracy (±0.1°C).
- Independent front and rear air inlet and outlet duct design, which allows instruments to be placed close to each other, saving laboratory space.
- Ultra large fin-type heat sink with intelligent fan speed control technology provides low-noise heat dissipation.
- Segmented heating lid design adapts to all types of PCR tubes, strips and well plates by automatically adjusting the lid height
- The Lid comes with Intelligent auto-heating off function to reduce non-specific amplification by turning off the heating when the temperature of sample blocks is below 30°C.
- Faster Heating and cooling Rates (Maximum heating rate >5°C/s, maximum cooling rate >4°C/s)
- Provides excellent temperature uniformity and the gradient layo ut reduces edge effect
- Comes with USB interface at the front for easy program import & export. Also, Device software can be updated through USB
- Comes with Multiple Accounts and Access rights (Administrator, User Accounts, Visitor Accounts)
- High resolution, 7-inch LCD touchscreen panel for easy operation and monitoring
- Touchdown (TD) PCR Mode and Long Range PCR Modes are available
- Compatible with universial PCR tubes,PCR 8 strips and 96-well plates.

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Temperature Control	
Model	Optima96
Applicable Consumables	0.2mL PCR Tubes, 0.2mL 8-tube Strips, 0.2mL 96-well PCR Plate (non-skirted/semi-skirted)
PCR reaction volume	10-100 µL
Heating lid temperature	30-110°C
Max. block heating Rate	5°C/s
Max. block cooling Rate	4 °C/s
Temperature uniformity	<0.5°C (20s after reaching 95°C)
Sample temperature range	4°C~100°C
Temperature accuracy	±0.25°C (35 °C – 99.9°C)
Technology (heating/Cooling)	Semiconductor Peltier technology, 6 independent blocks
Display resolution	0.1°C

Gradient	
Maximum temperature difference between blocks	25°C (max. 5°C between two adjacent blocks)
Temperature difference between two adjacent blocks	0.1°C~5.0°C
Gradient temperature accuracy	±0.25°C (35°C – 99.9°C)
Gradient temperature uniformity	<0.5°C (20s after reaching 95°C)

Program Function	
LCD display	7" LCD touch screen, real-time display of PCR process, can be used while wearing gloves
Max. number of steps	55
Time increment / decrement	1~120s, for Long Range PCR experiment
Temperature increment / decrement	0.1°C~10.0°C, for Touchdown PCR
Maximum number of cycles	999

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Other Features	
Tm value calculation function	Yes
Automatic pause/power-off protection	Yes
Communication interface	USB 2.0
Storage	External USB Drive and Internal Memory
Program storage capacity	Up to 15,000 programs in the instrument, Unlimited storage with USB flash drive

Power Supply	
Input power	100~240V，50~60Hz
Max. power	750 V A
Max. current	10A
Noise	<45dB

Other Functions	
Specific amplification	The blocks do not start heating until the heating lid temperature reaches the set temperature so as to prevent sample evaporation and improve reaction specificity.
Template	Pre-stored multiple standard experiment templates, simplify the tedious programming steps
Certification	CE, RoHS
Dimensions (L×W×H)	364×243×244mm
Net weight	8.7kg

Temperature Verification System

Ensure Optimal PCR Performance with Four E's Temperature Verification Kit
Achieve reliable and consistent PCR results with our advanced temperature verification system.
Designed to seamlessly integrate with the Four E's Optima96 Gradient PCR thermocycler, this system verifies the temperature accuracy and uniformity by utilizing a precision sensor board with 22 sensors.

Features

- **User-Friendly Software**
  Simplifies the verification process, allowing initiating and monitoring directly from your PC.
- **Quick Verification**
  Entire process takes less than 15 minutes, reducing downtime and maximizing productivity.
- **In-House Solution**
  Convenient for labs undergoing compliance audits, eliminating the need to send thermocyclers to third-party testing agencies.
- **Detailed Reporting**
  Generates a comprehensive PDF report summarizing temperature accuracy and uniformity after each test.
- **Automated Calibration**
  Enables automated calibration of the Optima96 Gradient PCR thermocycler via PC software to ensure optimal performance.
- **Optional ISO Calibration**
  ISO calibration services for the sensor board for enhanced quality assurance.

Temperature Verification System

Specifications	
Measuring Range	0°C-105°C
Sensor Resolution	0.01°C
Temperature Accuracy	±0.1°C
Sensor Uniformity	0.1°C
Number of Sensors	22
Compatibility	Four E's Optima96 Gradient PCR
Cable Connection Type (to Thermocycler)	Female DB9 (Control Unit) to Male DB9 (Thermocycler)
Cable Connection Type (to PC)	USB-B (Control Unit) to USB-A (PC)
Power Supply	USB Power (5V DC 500mA)
Control Unit (W x D x H)	15.8 cm × 13.4 cm × 4.2 cm
Sensor Board (Wx D x H)	12.1 cm × 8.5 cm × 2.8 cm
Control Unit (g)	410 g
Sensor Board (g)	110 g
Relative Humidity	25% - 75% (non-condensing)
Ambient Temperature	15°C - 35°C