LABSTAC

OPERATION M

PCR48-16

PREFACE

Thanks for choosing MP-16 Mini Thermal Cycler. This operation manual describes function of the instrument. To ensure that you could operate instrument in correct way, please read the manual carefully before first using it. Please keep this manual properly for later use if you meet any difficulty.

OUT OF BOX AUDIT

At the first time of opening the packing, please check the instrument and appendix with the packing list. If anything does not match with the packing list, please contact with the vendor or the producer

Important note

  1. Important safety operation information

The user needs a complete understanding of how the instrument will work before operating the instrument safely. Before operating the instrument, please read this manual carefully.

  2. Safety tips

The following basic safety precautions must be observed during all handling, maintenance and repair of this instrument. Failure to follow these instructions or the warnings noted elsewhere in this manual may affect the protection provided by the instrument and the intended use of the instrument.

⚠️ This instrument is class I type B common equipment conforming to GB9706.1 standard. This instrument is for indoor use.

⚠️ The operator should not attempt to open or repair the instrument, which would void your warranty and may result in an electric shock. If you need to repair, the company is responsible for maintenance.

⚠️ Before connecting the power supply, make sure that the voltage of the power supply matches the voltage required by the instrument. And make sure that the rated load of the power outlet is not less than the requirements of the A instrument.

⚠️ If the power cord is broken, it must be replaced. Replace with a power cord of the same type and specification. Do not press anything on the power cord when the instrument is in use. Do not place the power cord where people are walking.

⚠️ Always hold the plug when plugging and unplugging the power cord. When inserting the plug, make sure that the plug is fully inserted into the socket. Do not pull the power

cord when pulling out the plug.

⚠ The instrument should be placed in a place with low humidity, low dust and away from water and direct sunlight and strong light source. The room should be well ventilated, free of corrosive gases or strong x magnetic fields, away from heating, stoves and all other heat sources.

Do not place the instrument in a location that is wet or dusty.

A The power should be turned off when the device stops working. When the device is not used for a long time, the power plug should be removed and the device should be covered with a soft cloth or plastic paper to prevent dust from entering.

The instrument should avoid contact with strong acid, alkali and most organic solvents, if accidentally contact, should be removed immediately.

, > Salt solution can slowly corrosion the metal parts, should also avoid contact. > This instrument has no waterproof function, it is forbidden to enter the water. > The instrument is equipped with the corresponding power adapter, if using a different power adapter may cause permanent damage to the instrument.

3. After sales service

Regular cleaning

　　1. Use a neutral soap solution to clean the holes in the base. (Avoid the use of strong bases, strong alcohol and organic solvent solutions)

　　2. There should be no other items under the unit and it's left and right heat dissipation windows. After the machine is used fora period of time, some dust will adhere to the heat dissipation window, which should be cleaned up in time. This is very important;

　　3. The module should be cleaned frequently. Once some reactant residues are accumulated in the module cavity, it will affect the temperature response. It is recommended to wipe it regularly with cotton cloth.

　　4. After sales service

　　(1) Warranty Description

Within one month of delivery, the company is responsible of exchange for breakdown caused by material or manufacture.

Within 12 months of delivery, the company is responsible of free repair for breakdown caused by material or manufacture. Proven with defect under warranty, the company will exchange the instrument or free repair it alternatively.

Repair after warranty will be charged reasonable cost.

　　(2) Warranty Coverage

Breakdown due to improper use, operation in inappropriate conditions, maintain or refitting without authorization are not in warranty coverage.

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01. Introduction

PCR4B-16 Mini thermal cycler is an ultra-light ultra-thin thermal cycle gene amplification instrument. Using 5-inch TFT high- definition true color full touch LCD screen, the whole program displays in real time with curve graph, par-ameter modification intuitive and convenient. Using the latest generation of semiconductor technology, excellent temperature accuracy and uniformity and have extremely high temperature change speed, to ensure high-quality experimental results. Mini portable can be used on-board. This product has the following characteristics:

　• New and unique appearance, the interface operation is simple and convenient, ultra-light ultra-thin, (PCR4B-16 can be used on-board).

　• The latest generation of semiconductor technology, excellent augmentation performance, effectively eliminate the edge effect of module heat conduction, the module temperature uniformity is excellent.

　• The bottom shell with one aluminum carved processing, not only exquisite and solid, but also greatly enhance the heat dissipation performance.

　• 5-inch TFT high-definition full-touch color screen, can quickly edit the required files, visual display of temperature curve, convenient and fast setting, accurate display of temperature curve and instrument running process status in real time.

　• User login, authority management, password protection function, ensure data security, administrator can clear users, large data storage, the machine can store more than 100 files.

　• The ingenious elastic hot cover structure design, adapts the test tubes of different heights to ensure the best conditions for the test.

　• Real-time temperature display, more conducive to controlling the sample temperature.

　• The hot covertemperature and hot lid working mode can be set, the hot cover can be switched on and off, and the tube temperature control mode and block temperature control mode can be selected to meet more different experimental requirements.

02.Product Features

1. Normal working conditions
Ambient temperature: 5° C ' 30° C
Relative humidity: ^70%
Power supply: AC100~220V 50Hz

2. Basic parameters and performance

Model	PCR4B-16	Program max. number of cycles	99
Single step time range	I~59m59s(0 is forever)	Time increment/ decrement	~599/+599s
Temperature range	4—99. 9°C	Temp, increase/decrease	-9. 9—+9. 9°C
Sample capacity	16X0. 2ml	Program pause function	Yes
Max. heating rate	5°C/s	16°C Insulation	Forever
Max. cooling rate	4°C/s	LCD	5 inch, 800X480 Pixel
Temp, uniformity	±0. 20°C	Program storage quantity	>100
Temp, accuracy	±0. 10°C	Communication Interface	USB 2.0 (extension)
Temp, display resolution	0. 1°C	Input power	12V, 9. 9A
Temp, control method	Block\Tube	Dimensions I WXDXH)	W. 200XD. 230XH. 85 mm
Hot cover temp, range	30- 110°C	Net weight	3. 2kgs
Max. steps of the program	30		

03.Basic Operating Instructions

Button

Switch

Wind window

LCD screen

Hot cover

power socket
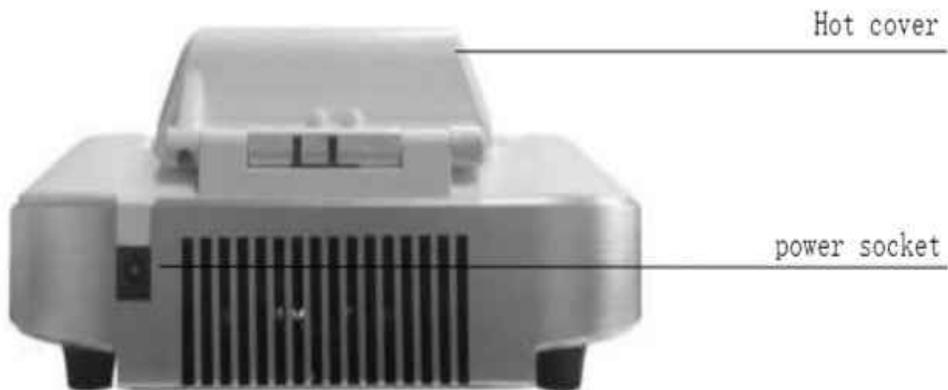
04. Operation Guide

1. Start up

After the instrument is powered on, press the power switch, the LCD screen lights up, and the instrument enters the welcome screen (see Figure 1). In the welcome screen, the LCD screen displays the product name. After the welcome screen, enter the main menu interface (see Figure 2).
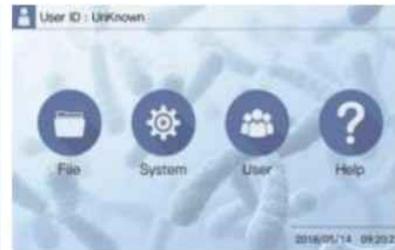
Figure 1   Figure 2

2. Run file operation

The run file is the PCR amplification program. The run file consists of a temperature step and a loop step. Each file can contain up to 30 steps.

1) File library

Click the " File " icon in the main interface to enter the file library interface. The left column shows the file list, the right side shows the specific file information and file preview of the selected file, and the bottom is the function button. When a file is selected, the file can be edited, deleted, and renamed (see Figure 3). Insert the U disk before powering on, the interface displays USB Storage, after selecting the file, press this key to export the file to the U disk, please restart the instrument after the operation.

Figure 3

2) Create a new file

a) Click "New" to enter the new editing interface. Above the temperature curve is the temperature, below is the time, click on the temperature or time to set its parameters by the number keys (see Figure 4). Click the "+Step" button and the "+Cycle" button to add temperature steps and cycle steps. (The maximum number of steps is no more than 30).

Figure 4

b) After parameter setting is completed, click the "Save" button, enter the file name, and click "OK" to return to the file library interface. At this time, the file creation is completed (see figure 5).。

Figure 5

3) Edit file

a) Select the file to be edited in the file library, click the " Edit " button to enter the editing interface, the temperature above the temperature curve is the temperature, the bottom is the time, click the temperature or time to set its parameters by the number keys (see Figure 6). Click the "+Step" button and the "+Cycle" button to add temperature steps and cycle steps. (The maximum number of steps is no more than 30).

Figure 6

b)Select a certain temperature step and click the "Option" button to set detailed parameters for the temperature step, including "Temp", "Time", "+Temp/c" and "+Time/c".After setting, click "OK" to return to the editing interface (see figure 7).Click "Return" to Return to the file library interface, and file editing is completed.

Figure 7

4) Running file
a)Select the file to be run in the file library, click "Run" to enter the running interface, click "Lid Off' or "Lid On' to switch the hot cover. The list on the right side of the graph shows the hot lid and module temperature, the current step time, and the total time. Click "Run" and the file will start running (see Figure 8).

Figure 8

b)When the file is running at a certain step, the temperature curve will flash to indicate that it is running.During the operation, click "Stop", Stop the operation, and click "Run" to continue the operation; Click "Skip" to Skip the next operation; Click "Pause" to Pause the operation.
c)After the running file time is over, enter the cryostat state, and Total time displays complete. Click "stop" to stop running

3. User Management

a) Click the "User" icon in the main interface to enter the user list of the user management interface (see Figure 9).
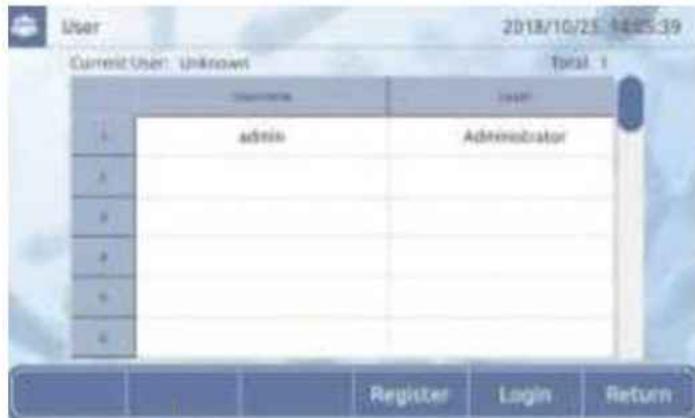
Figure 9

b) Click "Register" to enter the registration interface, enter the user name, password and other information, click "Ok" to complete the registration.

c) Click "Login" to enter the login interface, enter the corresponding information, and complete the login.

Note: Log in as "Admin" can delete other users.

4. System settings

Click the "System" icon in the main interface to enter the system settings interface

Figure 10

5.Help

(see Figure 10). Afterthe setting is completed, click "Ok" to save the settings; click "Return" to return to the main interface.

Click the "Help" icon in the main interface to enter the help interface (see Figure 11). Insert the U disk before powering on, the interface displays the Import File button, click this button to switch to the import interface, select the file in the import interface and click the Import button to import the file to the current user. Refresh is used to refresh the file library. Restart the instrument afterthe operation.

Figure 11

05. Fault Analysis And Processing

Serial No.	Error message	Possible causes and corresponding countermeasures
1	Display Error Open:x Short:x	Sensor open or short circuit, return to factory maintenance
2	The display is not lit, abnormal	Hardware failure, return to factory maintenance
3	Touch failure	Hardware failure, return to factory maintenance
4	Power adapter indicator is not lit	Power adapter is bad or the host is faulty, return to factory for repair
5	Module is not heated	Hardware failure, return to factory maintenance
6	Module temperature is too high / too low	Hardware failure, return to factory maintenance
7	Hot cover is not heated	Hardware failure, return to factory maintenance
8	Hot cover temperature is too high	Hardware failure, return to factory maintenance
9	Fan can not rotate	Hardware failure, return to factory maintenance

Appendix A Wiring Diagram of PCR4B-16

(Below diagram is just for reference. It is subject to change without prior notice.）
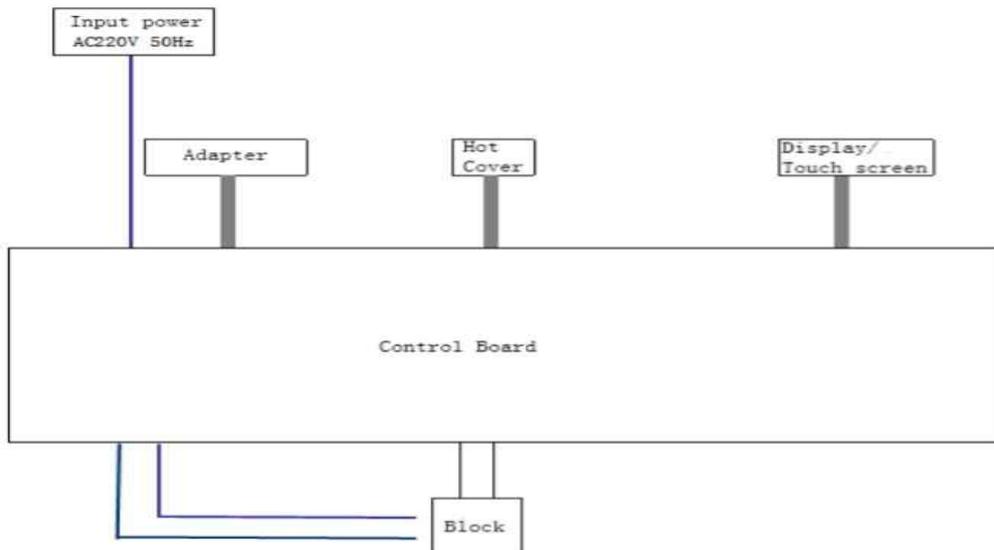
Annex B Mini Thermal Cycler Packing List

No.	Name	Type	Unit	Qty	Remarks
1	Mini Thermal Cycler	PCR4B-16	Set	1	
2	Power Adapter		EA	1	
3	Performance Test Statement		EA	1	
4	Operation Manual		EA	1	
5	Warranty card		EA	1	
Charger: (Sign/Stamp)			Packing Date:		

Annex C Performance Test Statement

Name	Mini Thermal Cycler		Type	PCR4B-16
Test Date			Production No.	MU-E123-91018
No.	Test Content	Test Methods	Standard	Conclusion
1	Basic Function	Visual Inspection	Valid	☐ Qualified
2	Appearance	Visual Inspection	Valid	☐ Qualified
3	Outer Marks	Visual Inspection	Valid	☐ Qualified
4	Continuous WorkTest	Experiment	72 Trouble Free	☐ Qualified
Test Results:				
Tester:		Confirmer:		

Annex D PCR4B-16 Mini Thermal Cycler Warranty Card

Product name	MINI THERMAL CYCLER
Model number	PCR4B-16
Serial number	
Purchase date	

Buyer Company	
Buyer Name	
Address	
Telephone	
Fax	
Zip Code	
E-mail	

Warranty Description

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Within 12 months of delivery, the company is responsible of free repair for breakdown caused by material or manufacture. Proven with defect under warranty, the company will exchange the instrument or free repair it alternatively.

Warranty Coverage

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Repair after warranty will be charged reasonable cost.

Repair Record

Date	Repair Record	Repaired by

LABSTAC

Email: contact@labstac.com
Website: www.labstac.com