i-Labware

more than just equipment

i-Cube Thermoshaker Incubator
E10010

User Guide and Operating Manual

Table of Contents

User / Owner Responsibility

Thank you for purchasing an i-Labware product. We appreciate having you as a customer and wish you many years of safe and satisfied use of your equipment.

PLEASE READ THIS MANUAL BEFORE OPERATING THE EQUIPMENT

The i-Cube Thermoshaker Incubator is for laboratory use only and is designed to function as specified when operated and maintained in accordance with the instructions supplied in this manual.

This equipment must be periodically checked, calibrated, maintained and/or, components repaired and replaced when necessary for equipment to operate reliably. Parts that have failed in whole or in part, exhibit excessive wear, are contaminated or are otherwise unfit for use, should be immediately discarded and replaced. To maintain the warranty, replacement parts must be installed or supplied by i-Labware. Equipment that is not functioning correctly must not be used. This equipment must not be modified by unauthorized personnel or with unauthorized components.

Please keep this manual in a convenient place for future reference.

Receiving

1. Examine shipping carton for signs of external damage.
2. Unpack all items. Retain and store original shipping cartons and materials for use in the event the equipment must be shipped.
3. Inspect the equipment and accessories for any sign of damage that may have occurred during shipping. If damage is discovered, immediately file a damage claim with the carrier. Notify i-Labware or your local i-Labware distributor of the claim, and we will do all we can to assist you.
4. Compare quantities received to quantities shown on the packing list. Report any discrepancies to i-Labware or your local i-Labware distributor immediately.
5. Complete the following information:

Rec'd by:_____ Date: ___/___/___

Serial number verified: _____

Contact Us

i-Labware Pte Ltd
enquiry@i-labware.com
www.i-labware.com

Warnings and Cautions

Do not install, maintain, or operate this equipment without reading, understanding and following the proper i-Labware Pte Ltd instructions. Otherwise, injury or damage or both may result.

This product is meant for use in the laboratory and should be used in accordance with safe laboratory practices.

Repairing or tampering of the equipment components by the user or unauthorized personnel voids all warranties and specifications. The prevention of tampering with the equipment is the sole responsibility of the user or owner. i-Labware assumes no liability for any malfunction, failure, damage or loss to either equipment or life.

Never open the case of the equipment or attempt to modify the product in any way since this can result in damage to the unit.

Do not plug the equipment power cables into an electrical outlet if the power cable is damaged. To prevent electric shock, the 3-pin plug supplied with the equipment's power cable should be plugged into properly grounded electrical outlets. Be sure to grasp the plug, not the cable, when disconnecting equipment from an electric socket.

Warnings and Cautions

Hot surfaces. The equipment may have very hot surfaces. If an operator contacts a hot surface, injury may occur. Use protective clothing to prevent injury. If other equipment comes in contact with a hot surface, damage to the equipment may occur. Ensure the area around this equipment is kept clear to prevent damage from occurring.

Cap the tubes before placing in the blocks. Liquids may spill out if the tube is open when heated. This could result in damage to the block or the equipment.

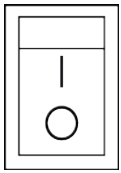
Check the voltage rating before you connect the equipment to an electrical outlet to ensure that the required voltage and frequency match the available power source.

To prevent the risk of fire, electrical shock or malfunction, avoid using the equipment where it will be exposed to:

- Extreme temperatures
- Heat sources such as radiators or stoves
- Corrosive gases or strong magnetic field
- High humidity or moisture
- Excessive dust or sand
- Excessive vibration or shock

Warnings and Cautions

The vent on the equipment is designed for aeration. Do not cover the vent or place the equipment in a closed-in wall unit. Leave a 10.2 cm (4 in) minimum of clearance on all vented sides of the equipment to permit the airflow required for proper ventilation. Restricting airflow can damage the equipment or cause a fire. Do not stack equipment or place equipment so close together that it is subject to re-circulated or preheated air.



The main switch is on the rear of the equipment Switch to "I" to power on the device, and switch to "O" to power off the device.

Power off when the operation is completed. If the equipment is not in use for extended periods, unplug the device from the electrical source and cover the equipment to protect from dust.

If your equipment does not operate normally - in particular, if there are any unusual sounds or smells coming from it - unplug it immediately and contact i-Labware or your local distributor.

Power off when cleaning the instrument. Use a soft, dry cloth to clean the equipment. If necessary, slightly moisten the cloth. Do not use abrasive cleansers, wax, or solvents (such as paint thinner or cleansing alcohol), since these may dull the finish or damage the surface of the equipment. The wells in the heating block should be cleaned periodically with alcohol to ensure good heat transfer between the block and tubes.

General Description

The i-Cube Thermoshaker Incubator is uniquely designed with adjustable mixing speed and integrates 3 functions of mixing, shaking and incubating. Equipped with an intelligent mixer, it can mix various tubes, PCR plates, deep-well plates, micro plates and other laboratory supplies. It is also equipped with a vortexing and heating function for all kinds of tubes and plates to meet the different needs of different users.

Product Features:

1. Small footprint with adjustable mixing speed.
2. Programmable. Efficient shaking and temperature control.
3. Microprocessor controlled incubator. Good linearity of temperature control. Accurate control of the shaking speed.
4. Timer function, with a time range of 0 to 100 hours.
5. Various blocks available. Easy to change.
6. Built-in temperature calibration function and short mixing function.
7. DC brushless motor drive, long life and free of maintenance.
8. Multiple safety protection function. Conforms to CE safety standards. Safe and reliable.

Specifications

Normal Operation Conditions

Ambient Temperature: 5°C ~ 30°C

Relative Humidity: ≤70%

Power Supply: 200-240V ～ 1.5A 50-60Hz

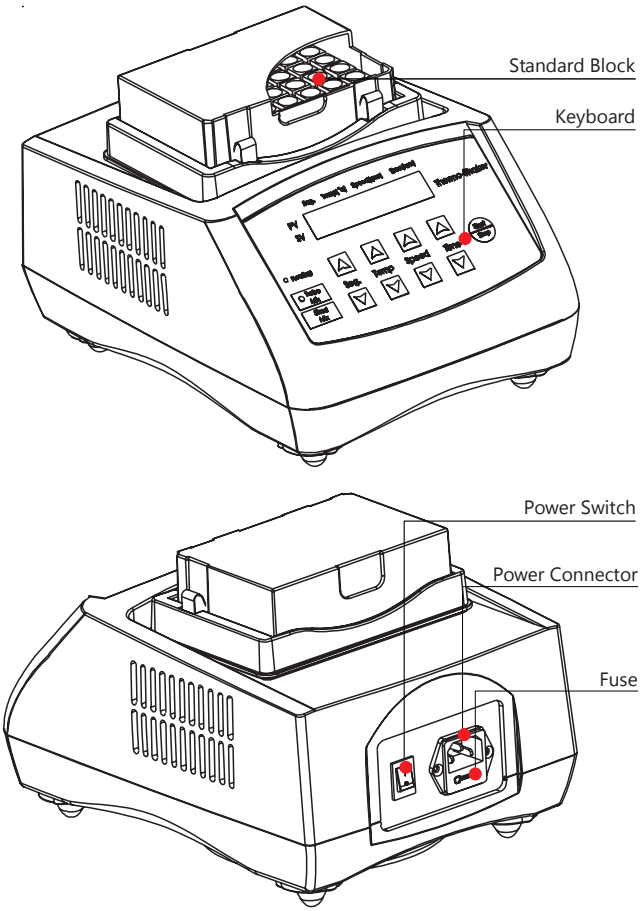
Equipment Specifications

Mixing Rate	300 ~ 2000 rpm
Orbit	3mm horizontal
Temperature Setting Range	5 ~ 100°C
Timing Range	1min ~ 99h59min
Temperature Accuracy	≤ ± 0.5°C
Display Accuracy	0.1°C
Heating Time	≤20 min (RT- 100°C)
Power	90-230V, 200W
Dimension	270 × 190 × 170 mm
Net Weight	6.8 kg

Component Identification

This chapter describes the instrument's mechanical structure, the keyboard and functions of each key, as well as preparations before powering the system. Please read this chapter well before operating the i-Cube Thermoshaker Incubator for the first time.

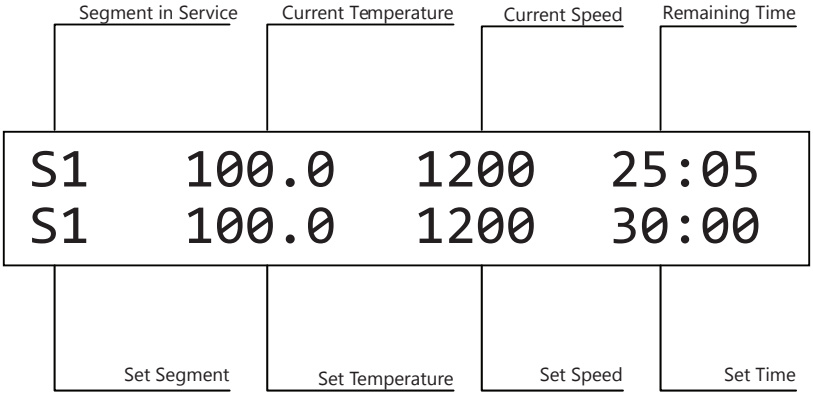
Structure Description



Component Identification

Keyboard and Display Panel

Display Panel



Component Identification

Key Function	
Seg. ▲ ▼	Key for selecting the procedure segment. Five segments S1, S2, S3, S4 or S5 can be selected.
Temp. ▲ ▼	Key for setting the temperature. Press "▲" or "▼" to set the target temperature. Press and hold "▲" or "▼" to set the temperature quickly. Continuously press "▼" until it displays "OFF" on the LCD to shut the thermo function.
Speed ▲ ▼	Key for setting the speed. Press "▲" or "▼" to set the target speed. Press and hold "▲" or "▼" to set the speed quickly. Continuously press "▼" until it displays "OFF" on the LCD to shut the shaking function. The speed setting unit is 1rpm.
Time ▲ ▼	Key for setting timing. Press"▲" or "▼" to set target timing hours. Press "▲" or "▼" continuously to quickly set the timing. Continuously press "▼" till it displays "OFF" on the LCD to shut the timing function.

Component Identification

Key Function	
Short Mix	Key for short mix. The device mixes at the frequency displayed for as long as the “Short Mix” key is held down. The time is counted down in seconds until 999s have expired.
Start/Stop	Key for start or stop. Press the Start/Stop key to start or stop the program. Press briefly to start the program, press and hold to stop the program.
Turbo Mix	Key for Turbo Mix. The indicator light will flicker on and off when the highest set speed changes between 2000rpm and 1600rpm when the Turbo Mix key is pressed. When the highest speed is set at 2000rpm, the light will remain on, and when the highest speed is set at 1600rpm, the light is off.
Heating	Indicator light. The indicator light will flicker during heating or cooling. The indicator light will remain on when it is thermostatic.

Operation Guide

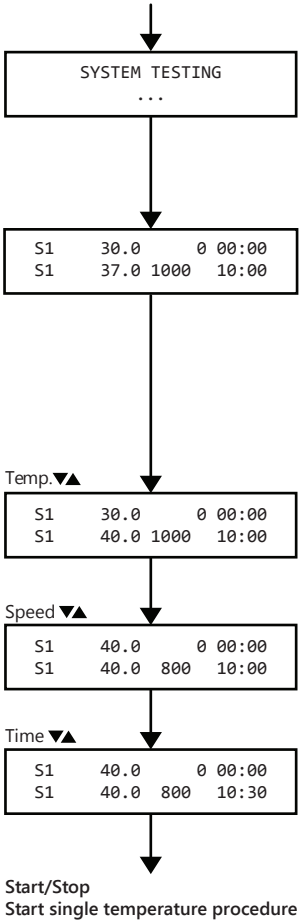
1. Setting Single Temperature, Speed and Time

a) When powered on, the instrument will beep and enter into the initial program as shown on the right.

b) After 6 seconds, the LCD displays the program settings, e.g. as shown on the right chart. “S1” is the segment run in last operation. “30.0” indicates current temperature of the block. “37.0” is the set temperature, “1000” is the set speed, “10:00” is the set time in the previous operation. The temperature unit is °C, speed unit is rpm, and time unit is hour:minute.

c) Press “▲” or “▼” of Temp, to increase or decrease the termperature

Press “▲” or “▼” of Speed or Time to set the shaking speed or time.
Press and hold “▲” or “▼” to increase or decrease the settings quickly.
The instrument will confirm and autosave the set values.

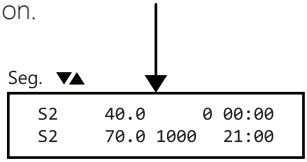


After finishing setting program S1, press “Start/Stop” to run S1.
When the program has finished running, an alarm will beep five times. The shaking will stop and the temperature will be maintained at the set value.

Operation Guide

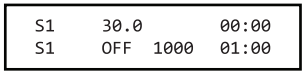
NOTE: Pressing "▲" or "▼" of Temp will autostart the instrument to the last set temperature. Else press "Start/Stop" to start operation.

d) Press "▲" or "▼" of Seg. to select a Segment. Set the segment's values according to c). A total of five segments can be programmed



2. How to shut off the Temperature, Speed and Timing Function

a) Press "▲" or "▼" of Seg. to select segment S1, S2, S3, S4 or S5.

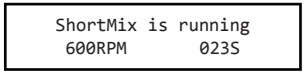


b) Press "▼" of Temp. until it displays "OFF" on the LCD to shut the thermo function. Similarly press "▼" of Speed or Time until it displays "OFF" on the LCD to shut the shaking or timing function.

NOTE:
1) If the time is set to "OFF", the LCD will display "∞" and the program will run continuously until the instrument is turned off.
2) When the device is in operation, "ON" is displayed.

3. Short Mix

Press "Short Mix" and the instrument starts to shake. Release "Short Mix" and the shaking stops. During a short mix, the LCD will display as shown on the right chart. "600RPM" is the shaking speed. "023S" is the time in operation. The time is counted down in seconds until 999 seconds have expired.



NOTE: The maximum short mix speed can be set as per requirement of a given segment.

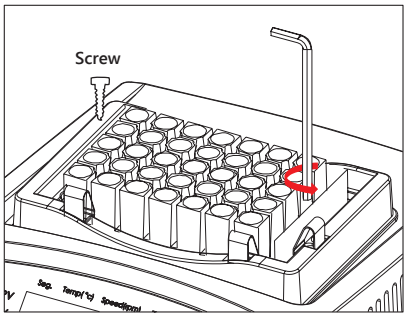
Operation Guide

4. Temperature Calibration

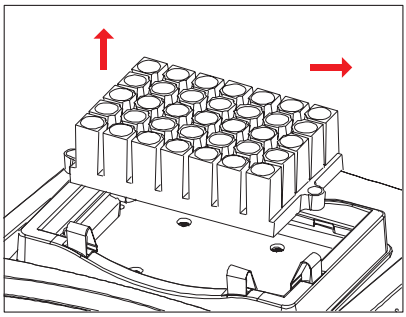
The temperature of the instrument has been factory calibrated before being shipped out. If there is a discrepancy between the actual temperature and the displayed temperature, please contact i-Labware or your local i-Labware distributor.

5. Block Replacement

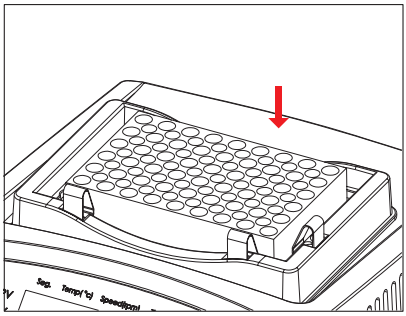
a) Open the cover. Remove the three screws which hold the block to the heating board.



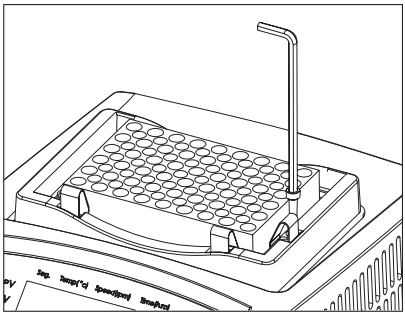
b) Pull out the block from the main engine.



c) Take another model block and place it onto the on the main engine taking care to align the block installment holes with the main engine installment holes.



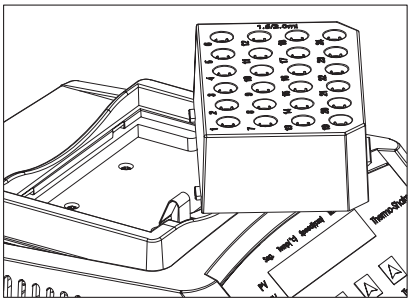
d) Fasten the three screws to firmly hold the metal block in place.



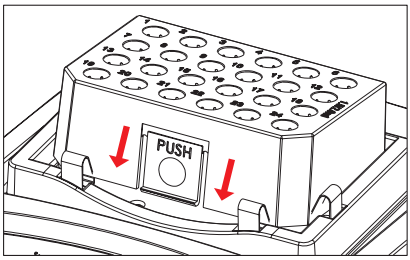
Operation Guide

6. Tube Stand Replacement

a) Remove the block as described in section "Block Replacement". Push the two bulges at rear of the stand corresponding to the hollows of the base frame.

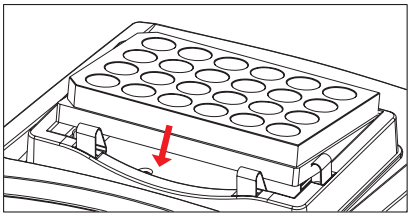


b) Push and press the front part of the stand until the "PUSH" trip locks in the base frame.



7. Plate Replacement

Press one of the long sides of the plate into the base frame. Press the other side as shown by the arrowhead in the diagram on the right until the spring locks the plate. Make sure the plate is well secured before proceeding.



Troubleshooting

No.	Issue	Possible Cause	Solution
1	No signals on the display panel when the power is turned on.	No power	Check the power connection
		Broken fuse	Exchange fuse (250V 3A Φ5x20)
		Others	Contact your local i-Labware distributor
2	The actual and displayed temperatures are different.	Broken sensor	Contact your local i-Labware distributor
3	"Open" is shown in the temperature display with beeping of alarm.	Temperature sensor is divided or ambient temperature below 0°C	Contact your local i-Labware distributor
4	"SHORT" is shown in the temperature display with beeping of alarm.	Temperature sensor is short or ambient temperature below 0°C	Contact your local i-Labware distributor
5	No heating	Broken sensor	Contact your local i-Labware distributor
6	Keys on the keyboard not functioning	Broken keys	Contact your local i-Labware distributor

Interchangeable Heating Block Modules

Cat. No.	Description	Max. Temperature
E10010-A	96 x 0.2ml PCR plate	100°C
E10010-B	54 x 0.5ml	100°C
E10010-C	35 x 1.5ml	100°C
E10010-D	35 x 2.0ml	100°C
E10010-E	20 x 0.5ml + 15 x 1.5ml	100°C
E10010-F	24 x dia. ≤ Φ12mm	100°C
E10010-G	32 x 0.2ml + 25 x 1.5ml	100°C
E10010-H	32 x 0.2ml + 10 x 0.5ml + 15 x 1.5ml	100°C
E10010-I	103 x 67 x 30 mm (water bath block)	100°C
E10010-J	96 x 0.2ml plate (flat bottom)	100°C
E10010-K	24 x 5ml (max. speed to 600rpm)	100°C
E10010-L	12 x 15ml (max. speed to 600rpm)	100°C
E10010-M	6 x 50ml (max. speed to 600rpm)	100°C
E10010-N	Customized	100°C
E10010-O	96 x 0.2ml tube stand	/
E10010-P	24 x 0.5ml tube stand	/
E10010-Q	24 x 1.5/2.0ml tube stand	/

i-Labware Warranty

i-Labware warrants products manufactured and supplied by it against defects in materials and workmanship when used normally for a period of 12 months after delivery. This warranty does not apply: (a) to consumable parts, such as protective coatings that are designed to diminish over time, unless failure has occurred due to a defect in materials or workmanship; (b) to cosmetic damage, including but not limited to scratches, dents and broken plastic on ports (c) to damage caused by use with another product (d) to damage caused by accident, abuse, misuse, fire, earthquake or other external cause (e) to damage caused by improper use of the i-Labware product, operating in inappropriate conditions (f) to damage caused by refitting without authorization (g) to an i-Labware product that has been modified to alter functionality or capability without the written permission of i-Labware (h) to defects caused by normal wear and tear or otherwise due to the normal aging of the i-Labware product, or (i) if any serial number has been removed or defaced from the i-Labware product.

Contact Us

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