

TGrade Lite Dry Bath Incubator

User's Manual



Catalog number	Product Name
OSE-DB-05	TGrade Lite Dry Bath Incubator(Heating)
OSE-DB-06	TGrade Lite Dry Bath Incubator(Cooling)

Precautions for use



Read this manual carefully before using this product.



This instrument is a product for indoor use.



Please read the user's manual carefully before operating the instrument to avoid personal injury. It can only be operated by professionals.



Operators who are not from TIANGEN Company should not try to disassemble the machine to repair the instrument which is to prevent losing the warranty qualification or being shocked. If repair is needed, please contact the maintenance personnel of TIANGEN or its agent.



Please place the instrument in an environment that is cool, dry and dust free. Avoid keeping the instrument close to a water source or in direct sunlight. Keep the interior of the instrument ventilated and dry, and avoid corrosive gas, liquid, or interference of magnetic field on the instrument.



The power switch is on the right side of the back of the instrument. Press "I" to turn on the power, and press "O" to turn off the power. When turning on the instrument, please pay attention and turn on the power adapter before turning the power to "I".

Product introduction

TGrade Lite Dry Bath Incubator is a single-stage program-controlled dry bath incubator. The heating dry bath incubator can be maintained at the specified temperature from room temperature to 105°C. There are 4 shortcut temperature keys, which are 42°C, 56°C, 65°C and 95°C, and the temperature can be quickly set with one key. The cooling dry bath incubator can be maintained at the specified temperature from -10°C to 105°C (to achieve -10°C, the ambient temperature needs to be below 15°C). There are 4 shortcut temperature keys, which are 4°C, 16°C, 56°C and 95°C, and the temperature can be quickly set with one key.

The TGrade Lite Dry Bath Incubator can hold a 96-well PCR plate aluminum block and a variety of aluminum blocks with optional well sizes to match different test tubes: 0.2 ml, 0.5 ml, 1.5 ml, 2 ml, 15 ml and 50 ml.

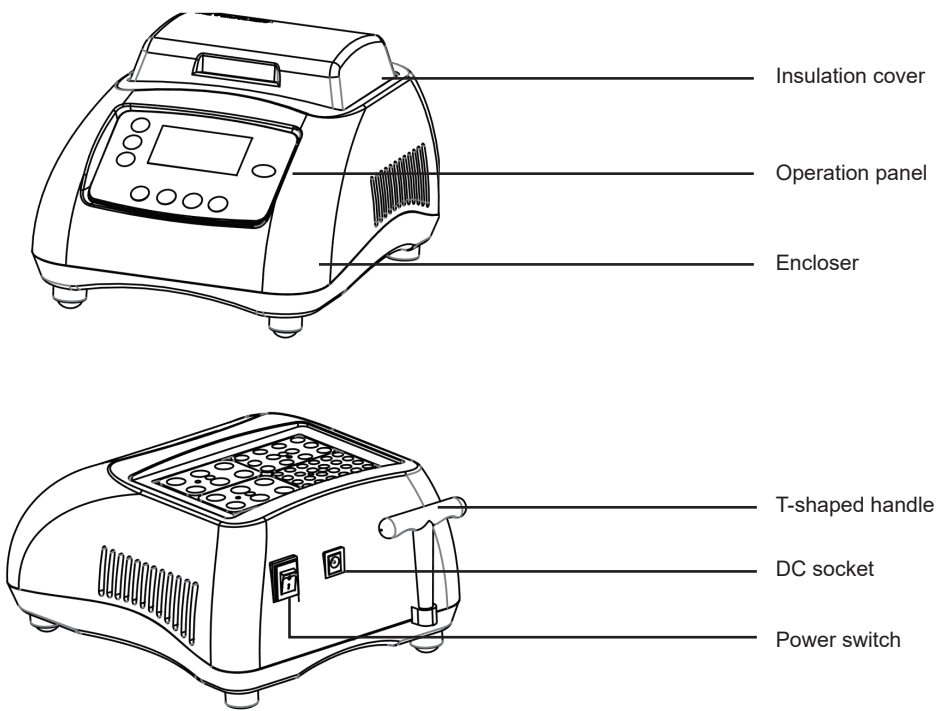
Warranty

The warranty period of the TGrade Lite (main unit) is 12 months. Damage caused by improper operation or unauthorized modification by using spare parts or accessories not provided by TIANGEN is not covered by the warranty. The warranty also does not cover the damage caused by normal spoilage, radioactive contamination or improper cleaning.

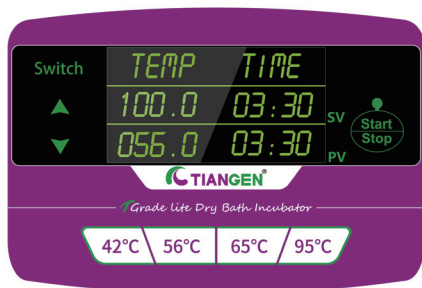
Packaging composition

Product name	QTY	Unit
Main unit of TGrade Lite Dry Bath Incubator	1	Set
T-shaped handle	1	Piece
Insulation cover	1	Piece
Power line	1	Piece
Power adapter	1	Piece
User's manual	1	Piece
Certificate of qualification	1	Piece
Warranty card	1	Piece

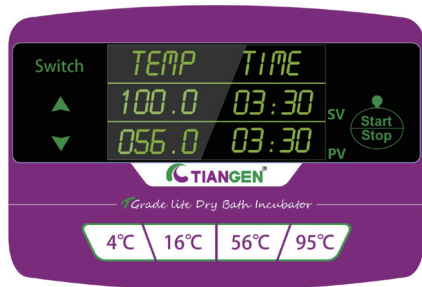
Schematic diagram of instrument



Operation panel



TGrade Lite Dry Bath Incubator (Heating)



TGrade Lite Dry Bath Incubator (Cooling)

Operation key description

SV	Display the set temperature and time
PV	Display the current temperature and time
Switch	Press the Switch key once. The Set temperature will flash, and the ▲▼ key can be used to set the temperature; Press the Switch key twice. The Set time will flash, and the ▲▼ key can be used to set the time.
Temperature shortcut key	Press the temperature shortcut key. The Set temperature displays as the shortcut temperature and the Set time displays as "--:--".
Start/Stop	Press the Start/Stop key to start the program, and hold the same key to end the program.

Display



Technical parameters

Model	OSE-DB-05	OSE-DB-06
Range of temperature setting	5°C-105°C	-10°C-105°C
Range of temperature control	Room temperature +5°C-105°C	Room temperature -25°C-105°C
Shortcut key temperature	42°C, 56°C, 65°C, 95°C	4°C, 16°C, 56°C, 95°C
Range of time setting	1 min-99 hr 59 min or ∞	
Heat-up time	≤ 15 min (from room temperature to 105°C)	
Cool-off time	≤ 30 min (from 105°C to room temperature)	≤ 15 min (from 105°C to room temperature)
Temperature stability at 105°C	<±0.5°C	
Temperature uniformity	<±0.3°C (across similar blocks at 40 °C)	
Input power	24 V, 5 A	
Product weight	1.1 kg	1.9 kg

Operation guide

1. After turning on the power switch, the display screen will display "TIANGEN". The instrument will enter initialization with the sound of a "tick", and then enter the operation interface after approximately 3 seconds.
2. If the temperature you need is the shortcut key temperature, you can directly press the corresponding shortcut key. At this time, the set temperature is displayed as the shortcut key temperature, and the time is displayed as "-:-" (representing ∞); if you want to change the time, press the "Switch" key twice. The "-:-" cursor will blink, and press the ▲ ▼ keys to adjust the time.
3. If you need a temperature other than the shortcut key temperature, press the "Switch" key. When the setting temperature cursor flashes, press the "▲ ▼" keys to adjust the temperature. If you press the "Switch" key again, the setting time cursor will flash and you can press the "▲ ▼" keys to adjust the time.
4. After the program setting is completed, press the "Start/Stop" key to run the program. When the temperature reaches the set temperature, the countdown starts.
5. When the temperature rises, the indicator light on the "Start/Stop" key flashes. When the temperature rises to the target temperature, the indicator light stays on.
6. When the countdown is over, the instrument will buzz five times, and "OVER" is displayed. Press any key to return to the program interface, and the instrument can be set and run again.
7. To terminate the program, press and hold the "Start/Stop" key.

Maintenance and service

For the TGrade Lite Dry Bath Incubator, the deep well on the module should be cleaned regularly with a clean soft cloth dipped with a small amount of absolute alcohol. This will ensure that the test tube has sufficient contact with the well wall, good heat conduction, and it avoids contamination.

If there is any stain on the surface of the instrument, it can be wiped with a soft cloth dipped with cleansing cream.

Before cleaning the instrument, the power of the instrument must be turned off. During cleaning, do not pour the cleaning solution into the well of the module. Do not use corrosive detergent to clean the module and instrument.

Fault analysis and handling

Fault phenomenon	Cause analysis	Solution
OLED display cannot light up	Power is not connected Power switch failure	Check the power supply and re-plug the power line. Exchange the switch.
	Controller damage	Contact TIANGEN's after-sales personnel or local dealers.
"Error" appears in the temperature display window, and there is an alarm sound of "beep".	Sensor short circuit at modules	Contact TIANGEN's after-sales personnel or local dealers.
Unresponsive keys	Key damage	Contact TIANGEN's after-sales personnel or local dealers.
The temperature display is seriously inconsistent with the actual temperature.	Temperature sensor damage	Contact TIANGEN's after-sales personnel or local dealers.
	Solid state relay damage	
	Heating pipe damage	

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