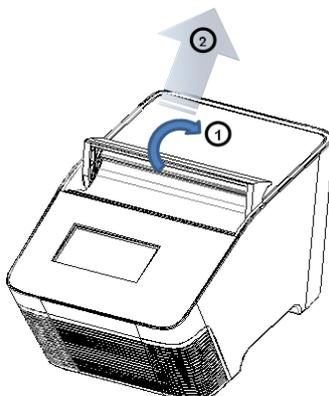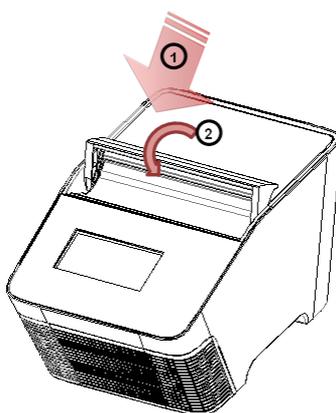# TurboCycler Lite Quick Operation Guide

Hardware operation

1. To open the lid, pull the handle up and lift the lid into the upright position.

2. To close the lid, pull the lid forwards and press down on the handle to lock it in the closed position.


3. Lid heater setting:

| PCR vessels	Compression mat	Lid heater temperature
Regular PCR plate, tube-strips and tubes	Not necessary. Use the 1 mm compression mat* to help maintain seal integrity in case the PCR plate has imperfections on the rim of the well.	105 °C
Low profile PCR plate, tube-strips and tubes	The 5.2 mm compression mat* must be used to ensure sufficient contact pressure from the heated lid.	120 °C

* Standard accessory shipped with TurboCycler Lite.

** For detailed instructions on the lid heater setting, please refer to the TurboCycler Lite Operation Manual System/Lid section.

*** Instructions for applying the compression mat:

Compression mat

PCR plate
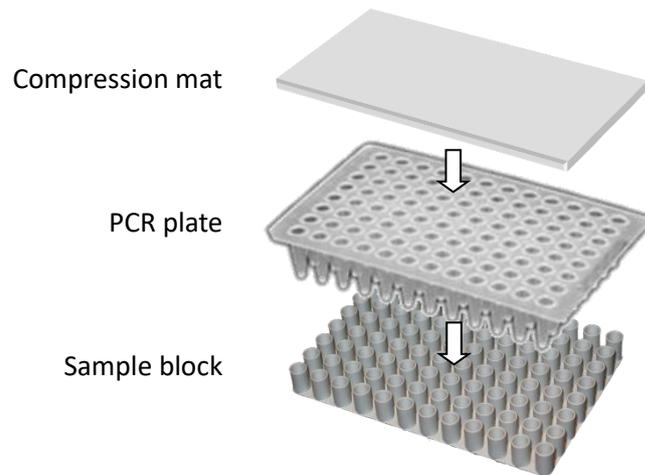
Sample block

4. To prevent deformation of the PCR vessels, and to ensure even distribution of pressure from the lid, when PCR tubes or tube-strips are used, please load extra empty tubes into the 4 corner wells of the sample block. Always make sure that all the sample tubes/ tube–strips are distributed evenly over the sample block.
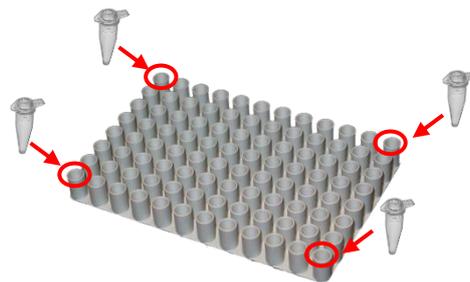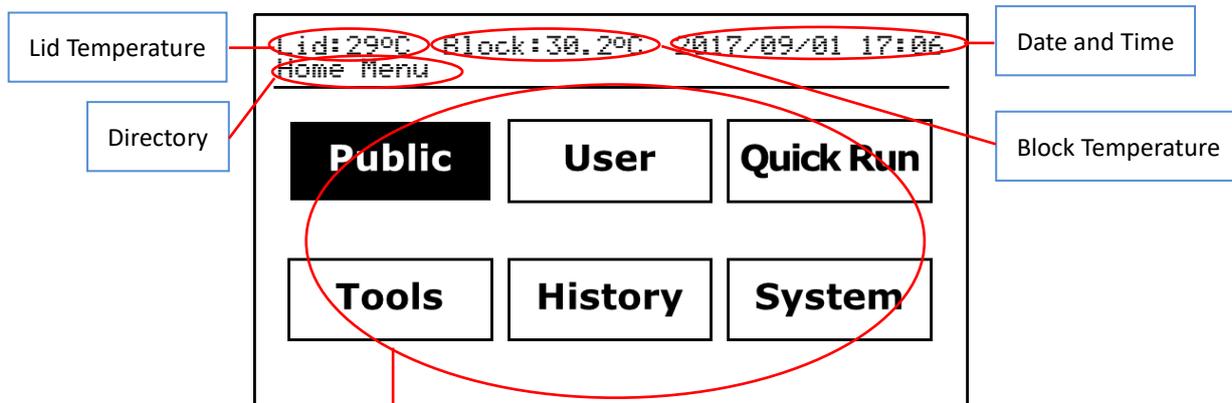

5. Ventilation air flow path:
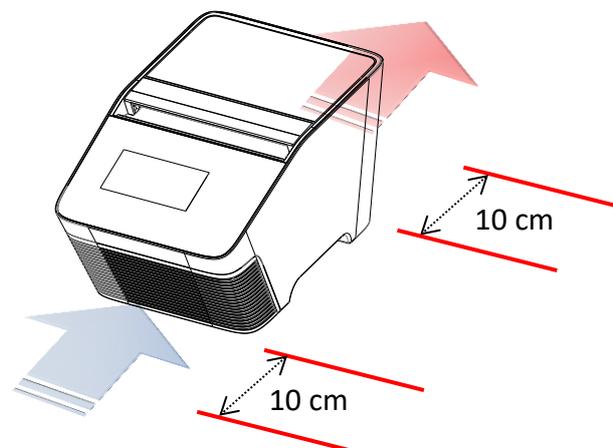
10 cm

10 cm

Please make sure there is no obstruction to the air flow around the unit. There should be at least 10 cm of free space at the front and back of the instrument.

Software operation

1. Home Screen:

Lid Temperature	Date and Time
Directory	Block Temperature

Home function icons	
Public	**Public folder** Shortcut to the Public folder
User	**User folder** For user folder management
Quick Run	**Quick Run** Quick access to the protocol editing and running without the need to create and save a new protocol
Tools	**Tools** Built-in assistant tools
History	**History** Protocol run history logbook
System	**System setting** For system management

2. Keypad
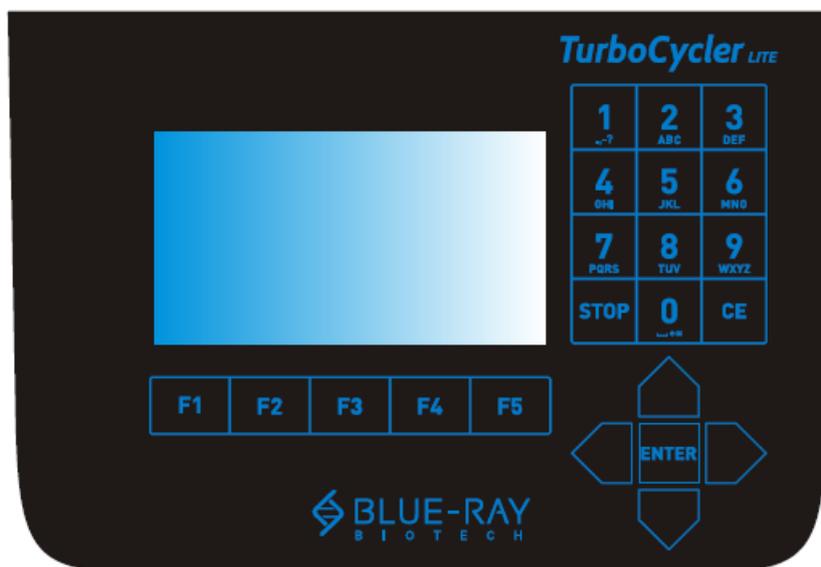
Key	Key Representation
1	1 . , - ? ' # : ; /
2	2 A B C a b c
3	3 D E F d e f
4	4 G H I g h i
5	5 J K L j k l
6	6 M N O m n o
7	7 P Q R S p q r s
8	8 T U V t u v
9	9 W X Y Z w x y z
0	0 ⎯ + = < > & ( ) %
STOP	Stop the protocol running
CE	Cancel input and back space
▲ ▼ ◄ ►	Selection keys
ENTER	Confirm the selection or input
F1 ~ F5	Function keys

3. User folder management:

On the main screen, select [User] to enter the user folder management section.

```
Lid:25ºC  Block:25.0ºC  2017/09/01 17:06
User Menu                              1/1

        [Quick Run]        * User 7
        [Public]             User 8
    * User 1                 User 9
      User 2                 User 10
      User 3
      User 4
      User 5
      User 6

   ┌──────┐ ┌──────┐ ┌──────┐ ┌───────┐ ┌──────┐
   │ HOME │ │ NEW  │ │ EDIT │ │REMOVE │ │ OPEN │
   └──────┘ └──────┘ └──────┘ └───────┘ └──────┘
```

F1	F2	F3	F4	F5
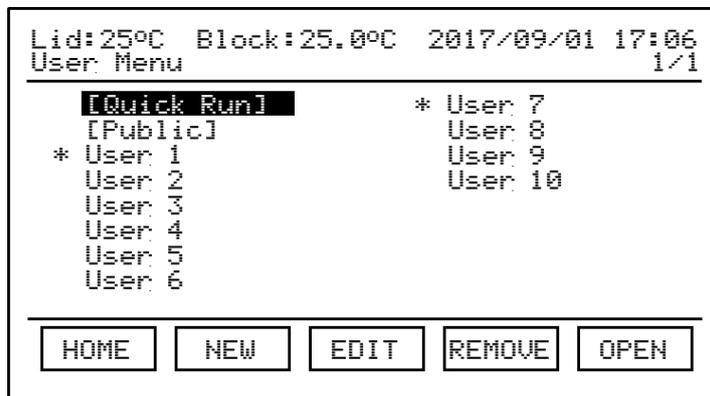
User folder management		
F1	HOME	Return to main menu
F2	NEW	Create a new user folder
F3	EDIT	Edit the selected user folder name
F4	REMOVE	Remove the selected user folder
F5	OPEN	Open the selected user folder

4. Protocol management:

Open the selected user folder. The protocol file list will be displayed.

```
Lid:25ºC  Block:25.0ºC  2017/09/01 17:06
User 1                           01/01
Protocol 1        2017/10/20 13:50:12
Protocol 2        2017/10/23 14:15:12
Protocol 3        2017/10/25 15:16:17
Protocol 4        2017/11/02 11:12:13



  BACK     NEW     EDIT   REMOVE   OPEN
```

| F1 | F2 | F3 | F4 | F5 |
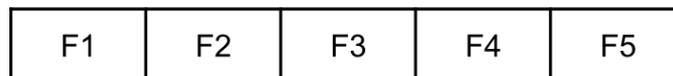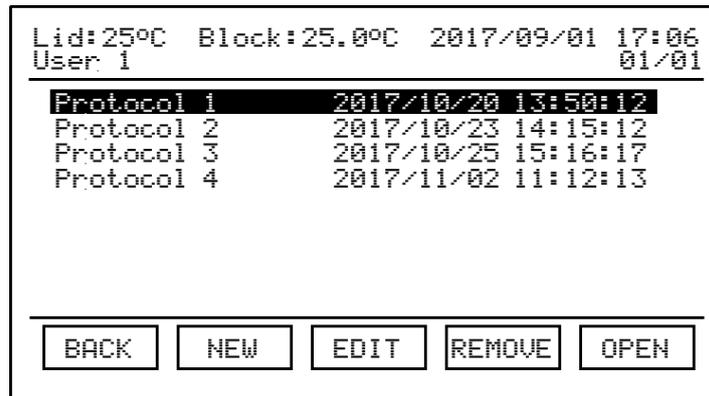
Protocol management		
F1	BACK	Return to user folder list
F2	NEW	Create a new protocol file
F3	EDIT	Edit the selected protocol file name
F4	REMOVE	Remove the selected protocol file
F5	OPEN	Open the selected protocol file

5. Protocol editing:

a. Refer to "**Section 4. Protocol management**" to open the protocol.

```
Lid:25ºC  Block:25.0ºC  2017/09/01 17:06
User 1>Protocol 1                      1/1

Cyc  |01                    |01  |01
Temp |85.0  55.0  72.0  |72.0 |04.0
Time |00:30 00:30 00:30|07:00|  ∞     END

      BACK    INS.   OPTION  REMOVE  SAVE
```

F1	F2	F3	F4	F5
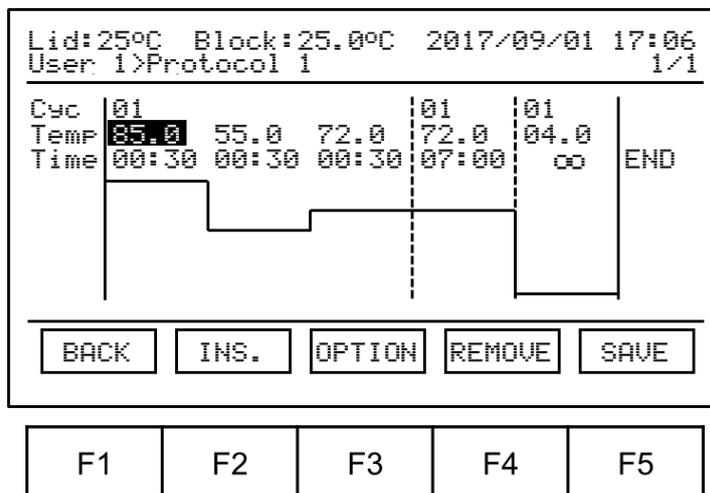
Protocol editing		
F1	BACK	Return to protocol list
F2	INS.	Duplicate the selected stage or step
F3	OPTION	Edit the advanced step options
F4	REMOVE	Remove the selected stage or step
F5	SAVE	Save the edited protocol
	RUN	Run the protocol

b. Use the ◄ ► keys to select the step segment; use the ▲ ▼ keys to select the field you want to modify. The selected area will be highlighted.

c. Use the alpha-numeric keypad to input the setting value for the selected field.

d. Tap SAVE to save the changes.

6. **Running a protocol:**

    a.   Refer to "**Section 4. Protocol management**" to open the protocol.

    b.   Tap **F5** [RUN] to initiate the run.

    c.   Specify the lid heater temperature.

```
Lid:29ºC  Block:30.2ºC  2017/09/01 17:06
[Public]>22
_____

        Lid : OFF ºC (35~120, 0:OFF)

   Volume : 020 ul (10~100, 0:Block Mode)



 ┌───────┐ ┌───────┐ ┌───────┐ ┌───────┐ ┌───────┐
 │ BACK  │ │  OFF  │ │ 105ºC │ │ 120ºC │ │  OK   │
 └───────┘ └───────┘ └───────┘ └───────┘ └───────┘
```

F1	F2	F3	F4	F5

    d.   Key in the sample volume.

```
Lid:29ºC  Block:30.2ºC  2017/09/01 17:06
[Public]>22
_____

        Lid : OFF ºC (35~120, 0:OFF)

   Volume : 020 ul (10~100, 0:Block Mode)



 ┌───────┐                             ┌───────┐
 │ BACK  │                             │  OK   │
 └───────┘                             └───────┘
```

F1	F2	F3	F4	F5

    e.   Tap **F5** [OK] to start the run.

7. **Tools:**

Dry Bath	Use the TurboCycler Lite as a dry bath
Tm Calculator	Calculate the Tm for the input primer
OD Convertor	Calculate the nucleic acid concentration from an OD measurement
Copy Number Convertor	Convert the DNA concentration to a copy number
Mastermix Preparation Wizard	Calculate the volume of the reagents needed to make the mastermix

8. **System:**

Administrator	System Administration
Ramping Rate	Change the system ramp rate
Key Beep	Turn the system keypad buzzer on/off
Date & Time	Change the system date and time

Note:

1. The content of this document is subject to change without prior notice. Please visit Blue-Ray Biotech's website at www.blue-raybio.com for updated information.

2. If you have any questions about the operation of the TurboCycler Lite, please contact sales@blue-raybio.com for assistance.