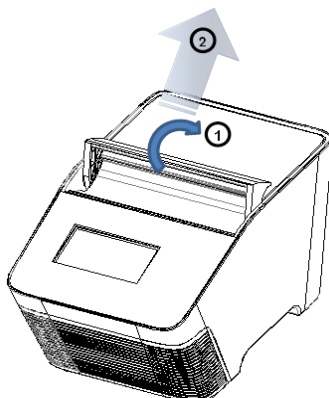


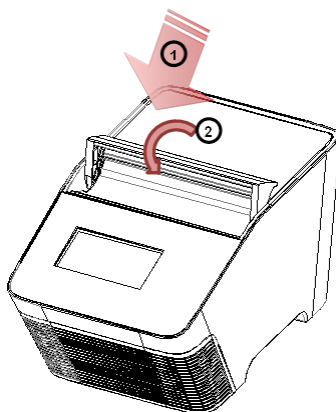
## TurboCycler Lite Quick Operation Guide

### 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.



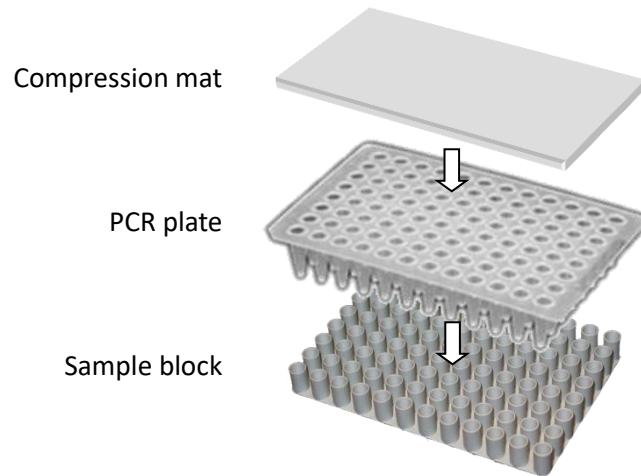
3. Lid heater setting:

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

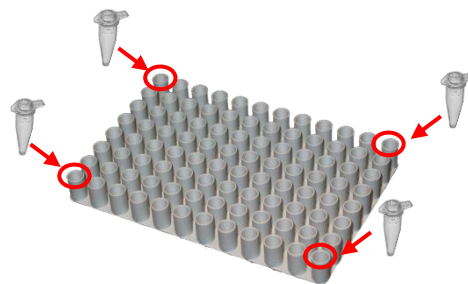
\* Standard accessory shipped with TurboCycler Lite.

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

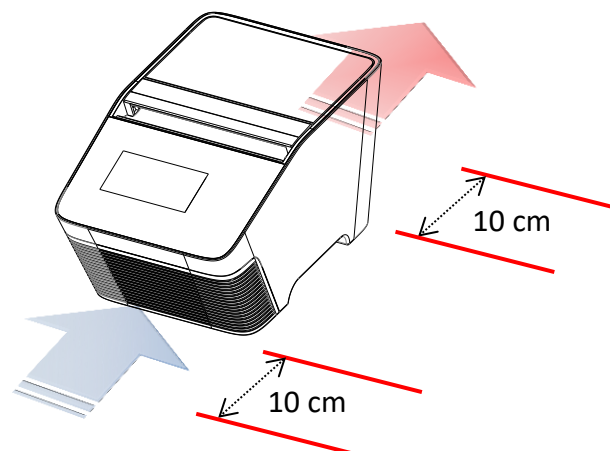
\*\*\* Instructions for applying the compression mat:



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.



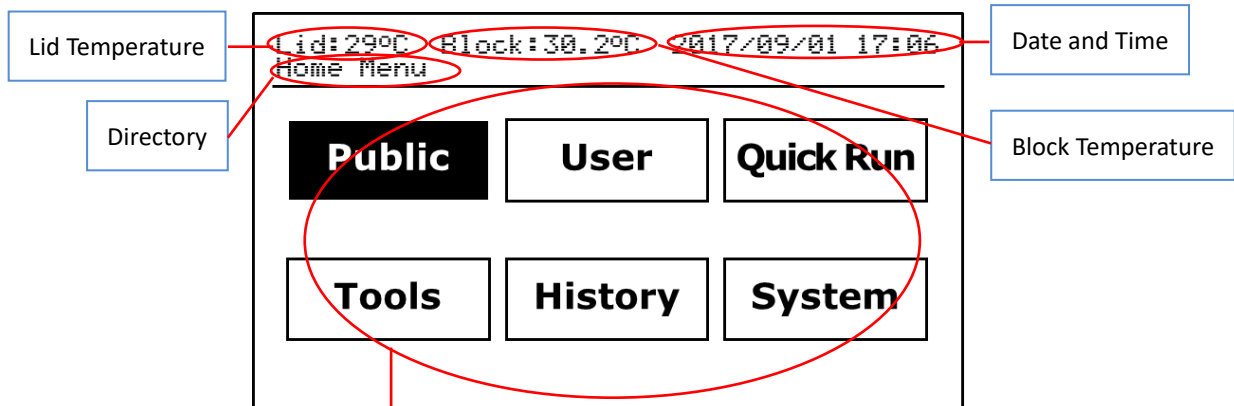
5. Ventilation air flow path:



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

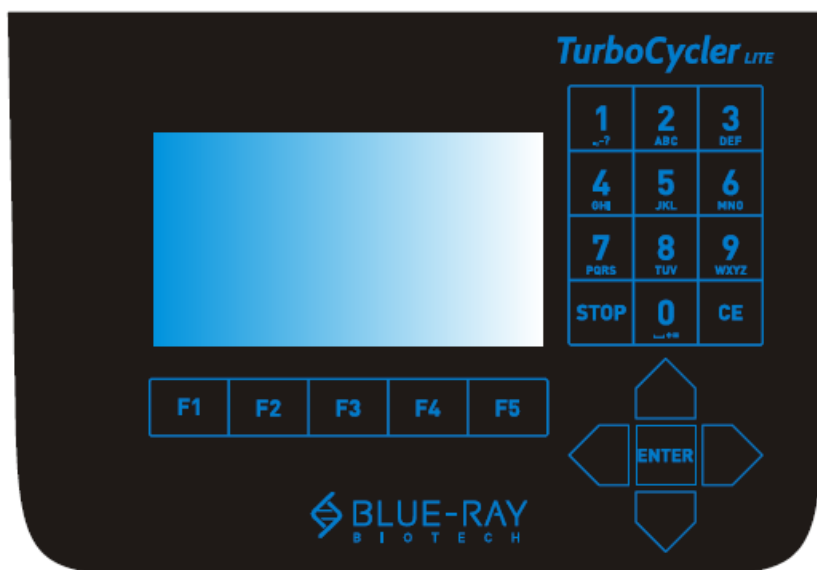
### 1. Home Screen:



The screenshot shows the Home Screen interface. At the top, there is a status bar displaying 'Lid: 29°C', 'Block: 30.2°C', and '2017/09/01 17:06'. Below this is a 'Home Menu' section containing six buttons: 'Public', 'User', 'Quick Run', 'Tools', 'History', and 'System'. Callouts point to 'Lid Temperature' (29°C), 'Block Temperature' (30.2°C), and 'Date and Time' (2017/09/01 17:06). A 'Directory' callout points to the 'Public' button.

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

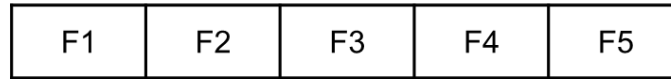
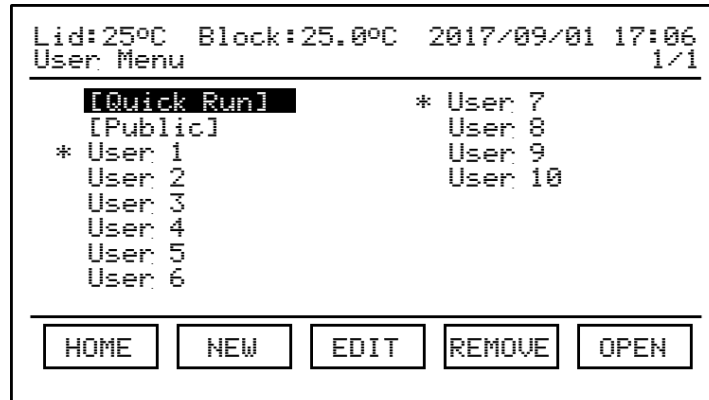
## 2. Keypad



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

### 3. User folder management:

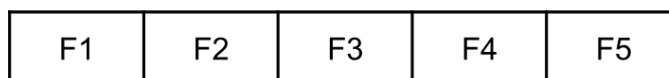
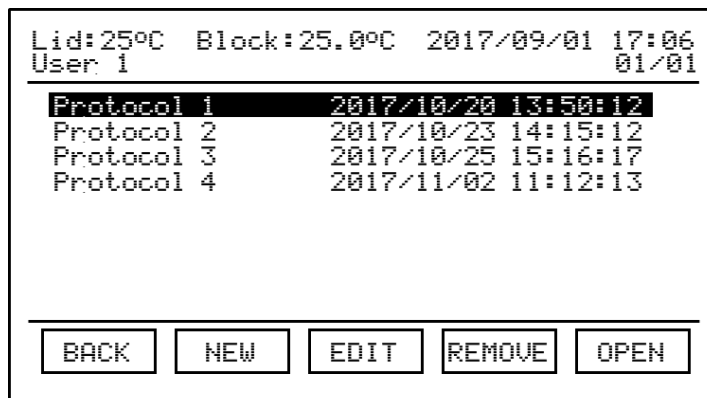
On the main screen, select  to enter the user folder management section.



User folder management		
F1	<input type="button" value="HOME"/>	Return to main menu
F2	<input type="button" value="NEW"/>	Create a new user folder
F3	<input type="button" value="EDIT"/>	Edit the selected user folder name
F4	<input type="button" value="REMOVE"/>	Remove the selected user folder
F5	<input type="button" value="OPEN"/>	Open the selected user folder

**4. Protocol management:**

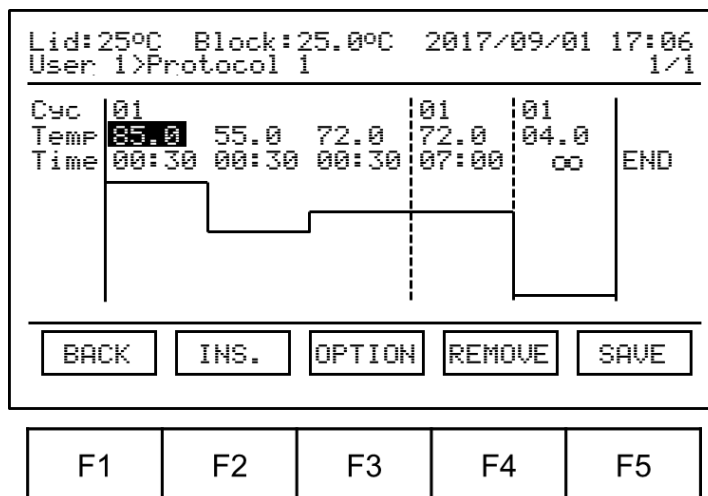
Open the selected user folder. The protocol file list will be displayed.



Protocol management		
F1	<input type="button" value="BACK"/>	Return to user folder list
F2	<input type="button" value="NEW"/>	Create a new protocol file
F3	<input type="button" value="EDIT"/>	Edit the selected protocol file name
F4	<input type="button" value="REMOVE"/>	Remove the selected protocol file
F5	<input type="button" value="OPEN"/>	Open the selected protocol file

**5. Protocol editing:**

- a. Refer to “**Section 4. Protocol management**” to open the protocol.



Protocol editing		
F1	<input type="button" value="BACK"/>	Return to protocol list
F2	<input type="button" value="INS."/>	Duplicate the selected stage or step
F3	<input type="button" value="OPTION"/>	Edit the advanced step options
F4	<input type="button" value="REMOVE"/>	Remove the selected stage or step
F5	<input type="button" value="SAVE"/>	Save the edited protocol
	<input type="button" value="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  to save the changes.

**6. Running a protocol:**

- a. Refer to “Section 4. Protocol management” to open the protocol.
- b. Tap **F5**  to initiate the run.
- c. Specify the lid heater temperature.

Lid:29°C Block:30.2°C 2017/09/01 17:06 [Public]>22				
Lid : <b>OFF</b> °C (35~120, 0:OFF) Volume : 020 ul (10~100, 0:Block Mode)				
<input type="button" value="BACK"/>	<input type="button" value="OFF"/>	<input type="button" value="105°C"/>	<input type="button" value="120°C"/>	<input type="button" value="OK"/>

F1	F2	F3	F4	F5
----	----	----	----	----

- d. Key in the sample volume.

Lid:29°C Block:30.2°C 2017/09/01 17:06 [Public]>22				
Lid : OFF °C (35~120, 0:OFF) Volume : <b>020</b> ul (10~100, 0:Block Mode)				
<input type="button" value="BACK"/>		<input type="button" value="OK"/>		

F1	F2	F3	F4	F5
----	----	----	----	----

- e. Tap **F5**  to start the run.



**7. Tools:**

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

**8. System:**

<b>Administrator</b>	System Administration
<b>Ramping Rate</b>	Change the system ramp rate
<b>Key Beep</b>	Turn the system keypad buzzer on/off
<b>Date &amp; Time</b>	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](http://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](mailto:sales@blue-raybio.com) for assistance.