



QIAGEN Supplementary Protocol:

Evaluating temperature accuracy of the BioRobot® EZ1 workstation

This protocol is designed to evaluate the temperature accuracy of the BioRobot EZ1 workstation. The protocol heats water to 60°C. Temperature accuracy should be within defined specifications of $\pm 3^\circ\text{C}$.

IMPORTANT: Please read the *BioRobot EZ1 User Manual*, paying careful attention to the safety information, before beginning this procedure.

Equipment and reagents to be supplied by user

- EZ1 Card (any EZ1 Card can be used)
- Calibrated thermometer with an accuracy of at least 1°C and capable of measuring the temperature in the testing hole of the heating block
- Deionized water
- Disposable gloves

Important points before starting

- The BioRobot EZ1 should be positioned on a level workbench
- Ambient temperature should be in the range of 15–32°C

Procedure

1. **Insert any EZ1 Card completely into the EZ1 Card slot of the BioRobot EZ1.**
2. **Switch on the BioRobot EZ1.**
The power switch is located on the left rear of the instrument.
3. **Press "2" to display the tests menu.**
4. **Press "2" to choose the temperature accuracy test. Use the arrow keys to set the temperature to 60°C.**
5. **Pipet 200 μl water into the testing hole in the heating block. The position of the testing hole is shown in the picture on the next page.**



6. Press "START" to start the protocol.
7. Wait 20 min for the heating block to heat to 60°C.
8. Measure the temperature of the water in the testing hole in the heating block using an appropriate thermometer.

The measured temperature can be recorded in the test report on page 3 together with the results of the volume validation and leakage test (see QIAGEN Supplementary Protocol MA31: *Evaluating pipetting accuracy of the BioRobot EZ1 workstation using the EZ1 Test Card*).

9. Calculate the temperature accuracy. If the temperature is in the range of 57–63°C, then the accuracy is within the defined specifications of $\pm 3^\circ\text{C}$.
10. To run another temperature accuracy test, press "ESC" and follow the protocol from step 3. Otherwise close the workstation door, press "ESC", and switch off the BioRobot EZ1.

11. Clean the BioRobot EZ1.

Follow the maintenance instructions in the *BioRobot EZ1 User Manual*.

Test report for pipetting accuracy and temperature accuracy of the BioRobot EZ1 workstation

The results of the temperature accuracy test and also the volume validation and leakage test (see QIAGEN Supplementary Protocol MA31: *Evaluating pipetting accuracy of the BioRobot EZ1 workstation using the EZ1 Test Card*) can be recorded here by the user for the operational qualification of the BioRobot EZ1.

Instrument and operator

Instrument: BioRobot EZ1

Serial number: _____

Location: _____

Test operator: _____

Test date: _____

Volume validation (see QIAGEN Supplementary Protocol MA31: *Evaluating pipetting accuracy of the BioRobot EZ1 workstation using the EZ1 Test Card*)

Pipetting 100 µl of water

Specification: Pipetted volumes must be between **92 µl** and **108 µl**.

Tube	Weight before run (g)	Weight after run (g)	Difference (g)	Pipetted volume Passed (µl)	Failed
1					
2					
3					
4					
5					
6					

Pipetting 500 µl of water

Specification: Pipetted volumes must be between **460 µl** and **540 µl**.

Tube	Weight before run (g)	Weight after run (g)	Difference (g)	Pipetted volume (µl)	Passed	Failed
1						
2						
3						
4						
5						
6						

Leakage test (see QIAGEN Supplementary Protocol MA31: Evaluating pipetting accuracy of the BioRobot EZ1 workstation using the EZ1 Test Card)

Specification: There must be no dripping from the tips during the test.

Tube	Tips dripped during the run	Passed	Failed
1			
2			
3			
4			
5			
6			

Temperature accuracy test

Specification: Measured temperatures must be in the range of **57–63°C**.

Measured temperature (°C)	Passed	Failed

Equipment used

Laboratory Balance

Brand: _____
Model: _____
Range: _____
Accuracy: _____
Serial no.: _____
Last calibration date: _____

Thermometer

Brand: _____
Model: _____
Range: _____
Accuracy: _____
Serial No.: _____
Last calibration date: _____

Signature: _____

Date: _____

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