Agilent G2545A Hybridization Oven

Calibration Procedure

The Agilent G2545A Hybridization Oven maintains temperature calibration for at least 3 months under normal operating conditions when properly installed within the laboratory.

See the *Agilent G2545A Hybridization Oven Installation, Operation, and Maintenance Guide* (p/n G2545-9001) for information on site requirements and oven placement.

Calibrate the Agilent G2545A Hybridization Oven:

- After first installation in a working environment
- After each 3 months of use
- When systematic high microarray background noise may indicate a drift in oven temperature

Do the calibration steps in this guide to maintain optimal performance for your Agilent G2545A Hybridization Oven.

To view a demonstration of the hybridization oven calibration procedure, go to http://www.agilent.com/genomics/protocolvideos, or scan this QR code with your mobile device.

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Required Parts and Tools

Part	Vendor and part/model
hybridization oven	Agilent p/n G2545A
hybridization oven rotator rack	Agilent p/n G2530-60029
hybridization chambers	Agilent p/n G2534A
Fourtec MicroLite II USB digital recording thermometer or equivalent • Range -40°C to 80°C • Resolution 0.1°C • Accuracy ±0.3°C	MicroDAQ.com • p/n LITE5008P (8,000 readings) • p/n LITE5032P (32,000 readings)
Computer and software to work with the digital recording thermometer	Fourtec DataSuite Software or other software as specified by the digital recording thermometer vendor
Calibration service to 65°C for digital recording thermometer	MicroDAQ.com p/n CAL-NIST-TEMP or other service as recommended by digital recording thermometer vendor
general-purpose labeling tape *or* 2 cable ties (long enough to attach the digital recording thermometer to the oven rotator rack)	

Step 1. Set up and heat the oven

1 Install the hybridization oven rotator rack into the hybridization oven.

2 Load the hybridization oven rotator rack with the typical number of hybridization chambers used during a single hybridization run.

   Install the hybridization chambers without microarrays. Distribute the hybridization chambers across hybridization oven rotator rack positions to mimic normal operating procedure.

3 Turn on the hybridization oven, set rotational speed control to 20 rpm, and set oven temperature consistent with the recommended hybridization temperature for the protocol that you use.

4 Allow the hybridization oven to heat and stabilize for at least **3** hours.

Step 2. Start the digital recording thermometer

- Set up and start the digital recording thermometer.

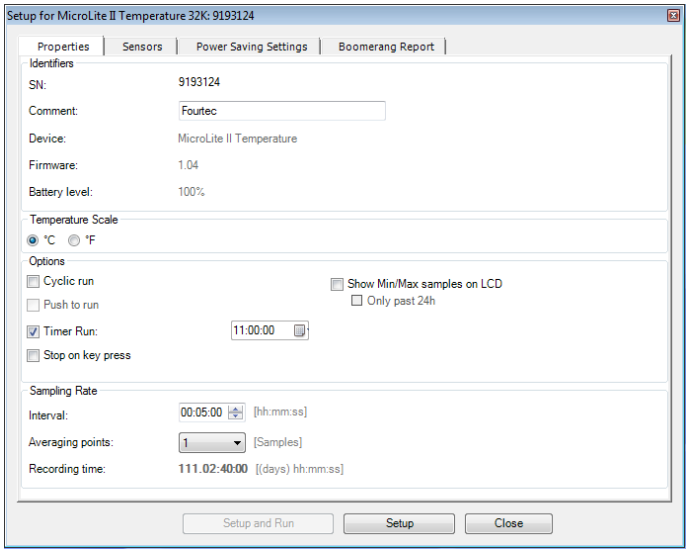
The software instructions are for the Fourtec MicroLite II USB digital recording thermometer. The hardware instructions are the same for all digital recording thermometers.

1. Install the Fourtec DataSuite Software. Follow the installation instructions that are included with the software.
2. Click **DataSuite** to start the Fourtec DataSuite Software. The program opens in Map View.
3. Remove the cover on the Fourtec MicroLite II USB digital recording thermometer and insert the digital recording thermometer into a USB port on the computer.

4. Check that the Fourtec MicroLite II USB digital recording thermometer is detected by the computer.

   When the Fourtec MicroLite II USB digital recording thermometer is connected to the computer for the first time, the LCD on the digital recording thermometer displays “Hello”, the firmware version, and then “Stop”.

   If the **Logger** icon does not appear in the DataSuite program, connect the digital recording thermometer to a different USB port.
5. Right-click the **Logger** icon and click **Setup**.

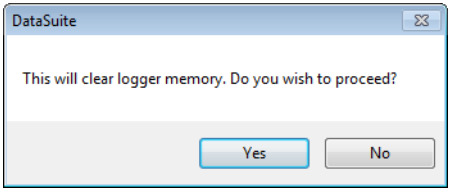


6 Set **Temperature Scale** to **°C**.

7 Mark the **Timer Run** check box and select the date and time to start the recorder.

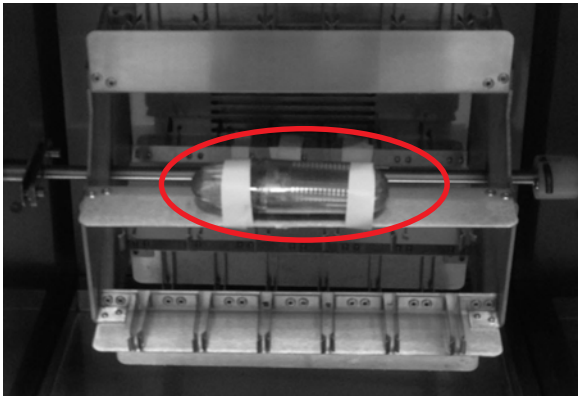
8 Set **Interval** to **00:05:00** (5 minutes).

9 Click **Setup**.



10 Click **Yes** to continue.

11 Remove the unit from the USB port and replace the cover.



12 Put the digital recording thermometer onto the middle of the hybridization oven rotator rack.

13 Secure the digital recording thermometer to the hybridization oven rotator rack. Use general-purpose laboratory labeling tape or cable ties.

CAUTION Make sure that the digital recording thermometer is secure and will not detach from the rack. If the digital recording thermometer comes loose during use, the data collected can be inaccurate. A loose digital recording thermometer that becomes trapped and prevents the rotator rack from rotating can damage the oven.

14 Close the oven door and allow the digital recording thermometer to record temperature data for at least **3** hours.

Make sure the hybridization oven rotator rack is set to rotate during this time.

WARNING **The digital recording thermometer can be hot to the touch. Use caution while handling.**

15 Remove the digital recording thermometer from the oven. Let the oven continue to operate after you remove the digital recording thermometer from the oven.

Step 3. Retrieve the temperature data from the digital recording thermometer

- Follow the instructions for the digital recording thermometer to retrieve the temperature data.

These steps are for the Fourtec MicroLite II USB digital recording thermometer.

1. Start the Fourtec DataSuite Software.
2. Remove the cover on the Fourtec MicroLite II USB digital recording thermometer and insert it into a USB port on the computer.

3. Right-click the **Logger** icon and click **Stop** to stop data recording.
4. Right-click the **Logger** icon and click **Download Data.**

   The Fourtec DataSuite Software automatically saves the data on the computer.
5. Double-click the **Logger** icon to view a graph of the data.
6. To view archived data:
   a. Click **File > Open**.
   b. In the Open Data Files dialog box, select the time period and logger for which you want to view the data.
   c. Click **OK**.

   The archived data appears in History View. The Data File Path shows the folder in which the logger data was saved.

7. To export the data to a spreadsheet, click **Export to Excel** in the lower graph toolbar.
8. Record the oven temperature from the digital recording thermometer.

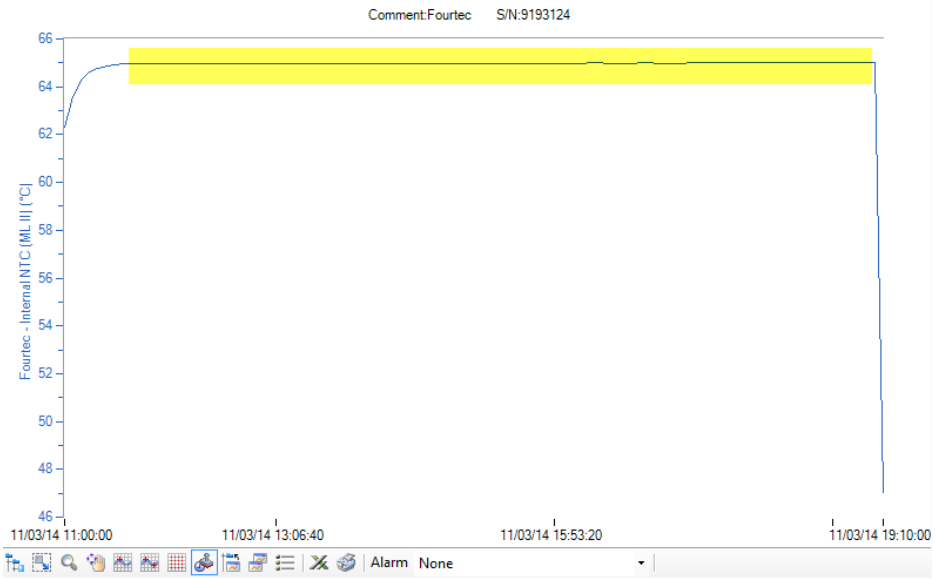


Figure 1 Temperature reading. Period of stable temperature is highlighted.

Take the temperature reading from the period of stable temperature data recorded before the oven door is opened.

Step 4. Calibrate the oven

1. Compare the temperature reading from the digital recording thermometer with the temperature on the digital display on the control panel of the hybridization oven.

   Make sure that the oven temperature is stable after the digital recording thermometer is removed and before you adjust the hybridization oven. The oven temperature is stable when the temperature display on the oven reads the current set temperature.

2. If the difference between the two temperature readings is more than 0.2°C:

   a. Press both ▲ and ▼ at the same time until the two outside decimal points of the display begins to flash to put the display into calibration mode.

   b. While the decimal points are flashing, press the ▲ or ▼ arrow pad until the reading on the display matches that measured by the digital recording thermometer.

   If the arrow pads are not pressed for five seconds, the display stops blinking and reads the temperature in the chamber.

3. To recheck the temperature, start from "Step 2. Start the digital recording thermometer" on page 4. Repeat calibration steps if needed.

The calibration procedure is now complete. Please keep your records as required by GLP guidelines.

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