THIRD PARTY TEMPERATURE MONITORS

Follett medical-grade refrigerators and freezers are designed to maintain precise temperature control of pharmaceuticals, vaccines, blood, mother’s milk, and other valuable medical products. The forced air refrigeration delivers consistent temperatures and quick recovery after multiple door openings in the most demanding applications. These refrigerators and freezers have a temperature monitoring and control system that is designed to maintain a precise temperature throughout the entire cabinet. This document discusses use of third-party temperature monitoring systems in conjunction with Follett refrigerators and provides insights on how to handle inconsistencies that may occur between the two temperature monitoring systems.

When monitoring temperatures inside a refrigerator or freezer, a temperature probe is placed in a buffering material (usually a glycerine-water mixture) that simulates the mass of the product to be stored in the unit. The location and volume of the buffering material will impact the recorded temperature shown on a display. Follett specifies appropriate volumes of a glycerine-water mix for buffering in each of its refrigerators and freezers. For optimal performance, the glycerine-water mix is placed in a bottle with the temperature probe and that bottle is located in the top front corner of Follett units because this is the area likely to experience the most temperature fluctuation. When using a third-party temperature monitor with a Follett refrigerator or freezer, the temperature display from the third-party monitor may not always match that of the Follett unit. Differences between the temperature reading on the Follett display and the reading on the third-party monitor do not mean that there is an issue with the performance of the Follett unit. Rather, such differences are likely caused by one of the following reasons:

* Different volumes/masses of buffering material (amount of glycerine-water mix in the respective bottles) in the two systems.
* The ice point calibration of the probes and the accuracy of the third-party monitoring system.
* Different locations of the probes inside the storage compartment.
* Normal tolerance differences (typically less than 1o C) between the probes of the different monitoring systems.

However, if differences in temperature displays between the two systems is of concern, the following are some steps that can be taken to mitigate this issue:

* Put the Follett controls “to sleep” (crescent moon icon button on the controls) and rely solely on the third-party device for displaying temperature. The Follett unit will still provide alarms if the unit exceeds any limits as measured by the Follett probes.
* Nest the third-party probe among the product being stored. This is consistent with the CDC guidelines to “place the buffered probe of the digital data logger in the center of the unit with vaccines surrounding it”\* (CDC Vaccine Storage and Handling Tool Kit, page 25)
* Nest the product being stored together. This is consistent with the CDC guidelines to “always store vaccines in their original packaging with lids closed” and “never store loose vials or manufacturer-filled syringes outside of their packaging\* (CDC Vaccine Storage and Handling Tool Kit, page 22)
* If the temperature difference is within +/- 1o C, adjust the temperature of the Follett refrigerator to match the third-party probe and the unit will provide stable temperatures around the new setting. Note that if there are differences in the bottle size or location, discrepancies between the Follett reading and the third-party probe reading may still occur. Before making any changes to factory-default settings, please contact the factory.
1. Vaccine Storage & Handling Toolkit; CDC; January 2018; pp. 14-30 <http://www.cdc.gov/vaccines/hcp/admin/storage/toolkit/storage-handling-toolkit.pdf>