

## Thermometer Guide for Prevention Partnership Providers

All prevention partnership providers are required to use a calibrated thermometer with certificate of traceability and calibration testing. In addition to this requirement, the Centers for Disease Control and Prevention recommends the use of a digital thermometer with detachable probe that is kept in a glycol-filled bottle. The glycol encased probe is preferred as it measures a liquid temperature which approximates the vaccine temperature in the refrigerator/freezer. Other recommendations for thermometers include the following specifications:

- Alarm system for out-of-range temperatures
- Current, minimum and maximum temperature records
- Reset button
- Low battery indicator
- A thermometer which can provide continuous data monitoring information with user programmable recording interval
- Memory of at least 4,000 recordings
- A thermometer display which can be placed outside the refrigerator/freezer to ease reading
- The calibration report of a thermometer tells the level of accuracy of the thermometer against reference standard. A thermometer with levels of accuracy of  $\pm 1^{\circ}\text{F}/\pm .5^{\circ}\text{C}$  is recommended.

### Certificates of calibration should fulfill either of the following two criteria:

- **Criteria 1:** The certificate must identify an ILAC/MRA signatory body accredited laboratory (A2LA, L-A-B, ACLASS, IAS, and PJLA) and has a model number, a serial number, date of calibration, and measurement results indicate unit passed test and documented uncertainty is within suitable limits (recommended uncertainty =  $\pm 1^{\circ}\text{F}$  or  $.5^{\circ}\text{C}$ ). OR
- **Criteria 2:** The certificate must have a statement that the calibration testing conforms to International Organization for Standardization (ISO) 17025, has a date of calibration, serial number and model number and measurement results indicate unit passed test and documented uncertainty is within suitable limits (recommended uncertainty =  $\pm 1^{\circ}\text{F}$  or  $.5^{\circ}\text{C}$ ).

**Notice:** The following table provides list of thermometers that can be considered as options when providers plan to buy a thermometer. The information in the table, including the price and the specifications, may change over time. Providers may purchase thermometers not manufactured by companies on this list, but that also have certificates of calibration that meet program requirements.

### Abbreviations:

MRA - Mutual Recognition Arrangements

A2LA - American Association for Laboratory Accreditation

IAS - International Accreditation Service Inc.

ACLASS - ANSI-ASQ National Accreditation Board

ILAC- International Laboratory Accreditation Cooperation

L-A-B - Laboratory Accreditation Bureau

PJLA - Perry Jonson Laboratory Accreditation Service Inc.

Thermometer	Model	Price	Frequency of calibration	Recalibration Price	Manufacturer or distributor	Software	Certificate of Calibration	Min/Max recording	Alarm	Low Battery Indicator	Accuracy	Remark	Website
<b>VFC-5000 TP data logger</b>	VFC-5000 LCD TP	\$169	Every year	\$45	Control Solutions, Inc. (Distributor)	Needs software	√	√	√	√	±1°F (±0.5°C)	Recommended for vaccine transport	<a href="http://www.vfcdataloggers.com/VFC5000-TP.aspx">http://www.vfcdataloggers.com/VFC5000-TP.aspx</a>
<b>Fridge Tag®</b>	Fridge Tag2®	\$120-156	Thermometer needs to be changed after 2 years (no calibration)		Berlinger	Does not need software	√	√	√		±1°F (±0.5°C)	Recommended for vaccine storage. Previously provided by the NDDoH.	<a href="http://www.berlinger.com/temperature-monitoring/products-hardware/productdetail/product/show/Product/fridge-tagR-2/">http://www.berlinger.com/temperature-monitoring/products-hardware/productdetail/product/show/Product/fridge-tagR-2/</a>
<b>Fridge Tag®</b>	Fridge Tag2L®	\$120-156	Thermometer needs to be changed after 3 years (no calibration)		Berlinger	Does not need software	√	√	√		±1°F (±0.5°C)	Recommended for vaccine storage. Previously provided by the NDDoH.	<a href="http://www.berlinger.com/temperature-monitoring/products-hardware/productdetail/product/show/Product/fridge-tagR-2L/">http://www.berlinger.com/temperature-monitoring/products-hardware/productdetail/product/show/Product/fridge-tagR-2L/</a>
<b>FlashLink USB Certified Vaccine Data Logger with Glycol Bottle</b>	203938	\$125	Every 2 years	\$75	DeltaTrak, Inc. (manufacturer)	Does not need software	√	√	√	√	±1°F (±0.5°C)	Recommended for refrigerator and freezer. Only glycol data logger preapproved by WHO (PQS# E006/026)	<a href="http://deltatrak.com/support/vaccines-for-children-program-vfc">http://deltatrak.com/support/vaccines-for-children-program-vfc</a>
<b>TRED30-7R Log Tag data logger</b>	Tred 30-7R Log Tag data logger	\$125	Every 2 years	\$45	Log Tag Solutions (manufacturer)	Needs software	√	√	√	√	±0.3°C		<a href="http://www.logtagrecorders.com/products/tred30-7.html">http://www.logtagrecorders.com/products/tred30-7.html</a>
<b>Traceable® Memory-Card Refrigerator/Freezer Thermometer</b>	6430	\$141.82	2 years for a new model and every year for a recalibration after that.	\$43.50	Control Company	Does not need software	√	√	√	√	±0.25°C	Requires a USB flash drive to transfer data	<a href="https://traceable.com/6430.html">https://traceable.com/6430.html</a>
<b>WiFi Vaccine Temperature Data Logger</b>	WFT22	\$525	Every year	\$99-269	Dickson One (manufacturer)	Software needed/ WiFi	√	√	√	√	±0.9°F from -58 to 68°F		<a href="http://www.dicksondata.com/products/WFT22">http://www.dicksondata.com/products/WFT22</a>
<b>WiFi Vaccine Temperature Data Logger</b>	WFT21	\$479	Every year	\$99-269	Dickson One (manufacturer)	Software needed	√	√	√	√	±0.9°F from -58 to 68°F		<a href="http://www.dicksondata.com/products/WFT21">http://www.dicksondata.com/products/WFT21</a>
<b>Touchscreen - WiFi/Ethernet</b>	TWE	\$524	Every year	\$99-269	Dickson One (manufacturer)	Software needed	√	√	√	√	±0.9°F from -58 to 68°F		<a href="http://www.dicksondata.com/products/TWE">http://www.dicksondata.com/products/TWE</a>

<b>Touchscreen - POE, WiFi/ Ethernet</b>	TWP	\$599	Every year	\$99-269	Dickson One (manufacturer)	Software needed/ WiFi	√	√	√	√	±0.9°F from -58 to 68°F		<a href="http://www.dicksondata.com/products/TWP">http://www.dicksondata.com/products/TWP</a>
<b>Touchscreen - USB</b>	TSB	\$424	Every year	\$99-269	Dickson One (manufacturer)	Software needed	√	√		√	±0.9°F from -58 to 68°F		<a href="http://www.dicksondata.com/products/TSB">http://www.dicksondata.com/products/TSB</a>
<b>Ethernet Vaccine Temperature Data Logger</b>	ENT21	\$479	Every year	\$99-269	Dickson One (manufacturer)	Software needed	√	√	√	√	±0.9°F from -58 to 68°F		<a href="http://www.dicksondata.com/products/ENT21">http://www.dicksondata.com/products/ENT21</a>
<b>Ethernet Vaccine Temperature Data Logger</b>	ENT22	\$525	Every year	\$99-269	Dickson One (manufacturer)	Software needed	√	√	√	√	±0.9°F from -58 to 68°F		<a href="http://www.dicksondata.com/products/ENT22">http://www.dicksondata.com/products/ENT22</a>
<b>USB Temperature Data Logger, IP67 rated, supplied with configuration software</b>	EL-USB-1	\$60	Every 2 year	\$50	Lascar Electronics (manufacturer)	Software needed	√	√	√	√	±1°C	Recommended for vaccine transport	<a href="http://www.lascarelectronics.com/temperaturelogger.php?datalogger=101">http://www.lascarelectronics.com/temperaturelogger.php?datalogger=101</a>
<b>Temperature Data Logger with LCD</b>	EL-USB-1-LCD	\$82	Every 2 year	\$50	Lascar Electronics (manufacturer)	Software needed	√	√	√	√	±0.5°C	Recommended for vaccine transport	<a href="http://www.lascarelectronics.com/temperaturelogger.php?datalogger=402">http://www.lascarelectronics.com/temperaturelogger.php?datalogger=402</a>
<b>Temperature Data Logger with LCD screen and external Thermistor Glycol Probe</b>	EL-USB-TP-LCD-PROBE-G	\$180	Every 2 year	\$50	Lascar Electronics (manufacturer)	Software needed	√	√	√	√	±0.1°C	Recommended for vaccine transport	<a href="http://www.lascarelectronics.com/temperaturelogger.php?datalogger=479">http://www.lascarelectronics.com/temperaturelogger.php?datalogger=479</a>
<b>WiFi Temperature &amp; Humidity Data Logging Sensor</b>	EL-WiFi-TH	\$160	Every 2 year	\$50	Lascar Electronics (manufacturer)	Software needed	√	√	√	√	±0.1°C		<a href="http://www.lascarelectronics.com/temperaturelogger.php?datalogger=424">http://www.lascarelectronics.com/temperaturelogger.php?datalogger=424</a>
<b>WiFi Temperature Data Logging Sensor</b>	EL-WiFi-T	\$150	Every 2 year	\$50	Lascar Electronics (manufacturer)	Software needed	√	√	√	√	±0.1°C		<a href="http://www.lascarelectronics.com/temperaturelogger.php?datalogger=448">http://www.lascarelectronics.com/temperaturelogger.php?datalogger=448</a>

<b>High Accuracy WiFi Data Logging Sensor with external Thermistor Glycol Probe</b>	EL-WiFi-TP+-PROBE-G	\$305	Every 2 year	\$50	Lascar Electronics (manufacturer)	Software needed	√	√	√	√	±0.01°C		<a href="http://www.lascarelectronics.com/temperaturelogger.php?location=us&amp;datalogger=482">http://www.lascarelectronics.com/temperaturelogger.php?location=us&amp;datalogger=482</a>
<b>Temperature and Relative Humidity Data Logger with Graphic LCD Screen</b>	EL-GFX-2	\$150	Every 2 year	\$50	Lascar Electronics (manufacturer)	Software needed	√	√	√	√	±0.5°C		<a href="http://www.lascarelectronics.com/temperaturelogger.php?datalogger=449">http://www.lascarelectronics.com/temperaturelogger.php?datalogger=449</a>
<b>Temperature Data Logger with Graphic LCD Screen</b>	EL-GFX-1	\$135	Every 2 year	\$50	Lascar Electronics (manufacturer)	Software needed	√	√	√	√	±0.1°C		<a href="http://www.lascarelectronics.com/temperaturelogger.php?datalogger=441">http://www.lascarelectronics.com/temperaturelogger.php?datalogger=441</a>
<b>High Accuracy Temp/RH Data Logger with Graphic Screen</b>	EL-GFX-2+	\$200	Every 2 year	\$50	Lascar Electronics (manufacturer)	Software needed	√	√	√	√	±0.2°C		<a href="http://www.lascarelectronics.com/temperaturelogger.php?datalogger=464">http://www.lascarelectronics.com/temperaturelogger.php?datalogger=464</a>
<b>Dual Channel Temperature Probe Data Logger with Graphic Screen</b>	EL-GFX-DTP	\$185	Every 2 year	\$50	Lascar Electronics (manufacturer)	Software needed	√	√	√	√	±0.1°C		<a href="http://www.lascarelectronics.com/temperaturelogger.php?datalogger=463">http://www.lascarelectronics.com/temperaturelogger.php?datalogger=463</a>
<b>Dual Channel Temperature Data Logger with graphic screen and external Thermistor Glycol Probes</b>	EL-GFX-DTP-PROBE-G	\$295	Every 2 year	\$50	Lascar Electronics (manufacturer)	Software needed	√	√	√	√	±0.1°C		<a href="http://www.lascarelectronics.com/temperaturelogger.php?location=us&amp;datalogger=481">http://www.lascarelectronics.com/temperaturelogger.php?location=us&amp;datalogger=481</a>
<b>Refrigerator/Freezer Guard</b>	VM605E	\$730 with a valid 2 year NIST Certificate	Every 2 year	\$30 at time of purchase \$95 for recalibration	Temperature Guard (manufacturer)	Software needed	√	√	√	√	±0.1°C		<a href="http://temperatureguard.com/VM605e.html">http://temperatureguard.com/VM605e.html</a>
<b>Refrigerator/Freezer Guard</b>	VM605E	\$800 with A2LA Calibration Certificate	Every year	\$100 at time of purchase \$125 for recalibration	Temperature Guard (manufacturer)	Software needed	√	√	√	√	±0.1°C		<a href="http://temperatureguard.com/VM605e.html">http://temperatureguard.com/VM605e.html</a>

Manufacturers of equipment who wish to add or edit the information above can contact the Immunization Program with the phone number provided.

Please contact the North Dakota Immunization Program at 701.328.3386 or 800.472.2180 with any questions.