

In-Transit Temperature Monitoring
Arrival Quality Documentation

Lightning System



Two Instruments, One System



Lightning NFC and Lightning NFC Real-Time both display temperature data on NFC-enabled Android smart devices and iPhones using Lightning App. Lightning Real-Time provides real-time temp and location data while shipment is in transit.

What is *NFC*?

- “NFC” refers to “Near Field Communications” wireless data transmission protocol. This eliminates cords/cables.
- NFC is similar to Bluetooth, but does not require a code to “pair” devices for security.
- NFC establishes a secure data stream by proximity—the data can only be transmitted once the sending and receiving points are within 1 inch of each other.



iPhone and Android Compatible



Unique *Lightning* NFC Features



- Compact size
- Built-in LCD for immediate temperature report summary
- Audible BEEPER to ensure instrument is located upon arrival
- Hi-Visibility water-resistant pouches protects instrument and provides easy adhesive attachment to pallets
- Collected data can be reviewed for free and without a password using Cargo Data's **UpLink** portal on the cargodatacorp.com homepage.

Unique *Lightning Real Time* Features



- Built-in LCD for immediate temperature report summary
- Audible BEEPER to ensure instrument is located upon arrival
- Hi-Visibility water-resistant pouches protects instrument and provides easy adhesive attachment to pallets
- Monitors temperature, location, and light events (door openings) in real-time.
- Can issue out-of-range alerts via email or text
- Full product visibility to ***reduce losses, improve product quality, and support food security***

Upon Arrival at DC

- Lightning instrument is retrieved (audible locating BEEPER makes this easy!) from within the shipment.
- Receiver/Inspector holds Lightning Instrument behind a tablet computer or smartphone.
- Temperature chart is immediately displayed



iPhone and Android Compatible





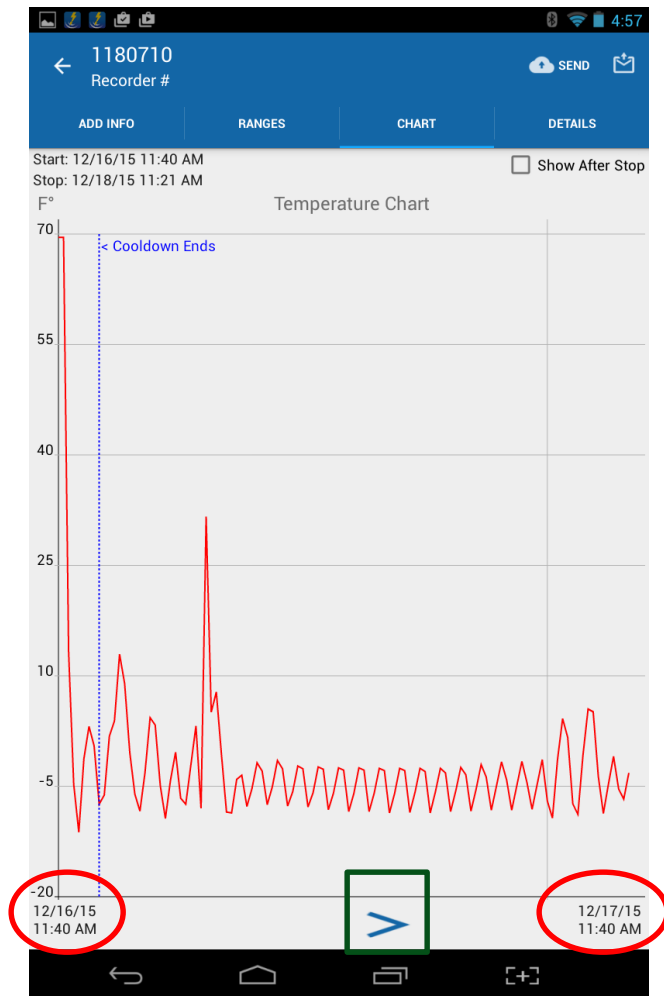
LIGHTNING APP OPTION 1

This option includes our basic Lightning NFC App.

Lightning App handles data from both Lightning NFC and Lightning Real Time temperature recorders in the same manner. There is NO need to train Receiving/Inspection staff for multiple processes.

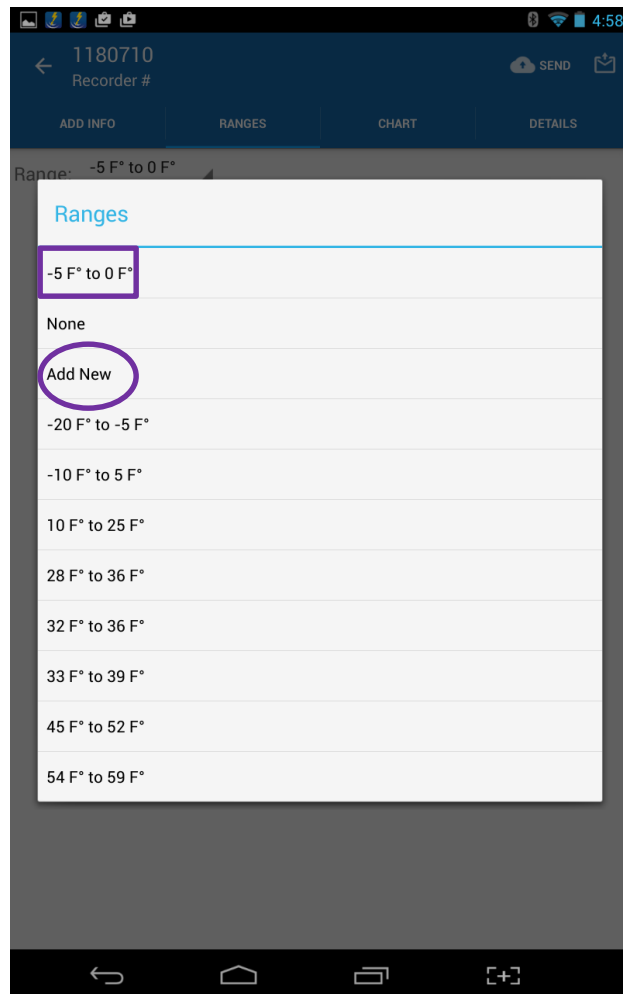
Lightning App

Initial Chart View after Recorder Data Transfer



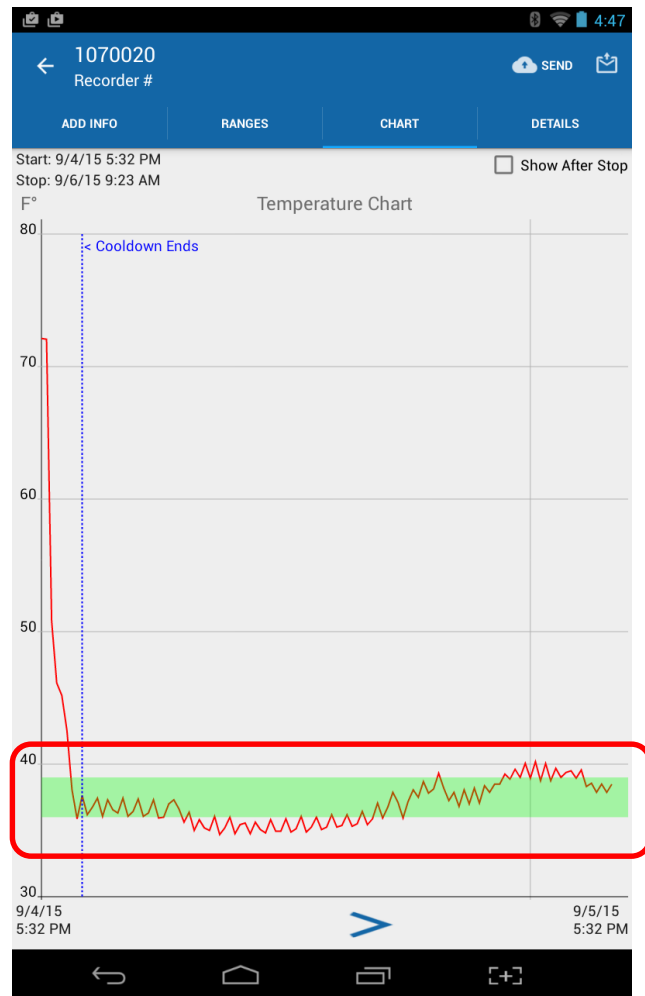
- Raw temperature data as displayed immediately after recorder is downloaded into the tablet.
- **Date and time index at bottom**
- **Advance through record by tapping >**

Select Range



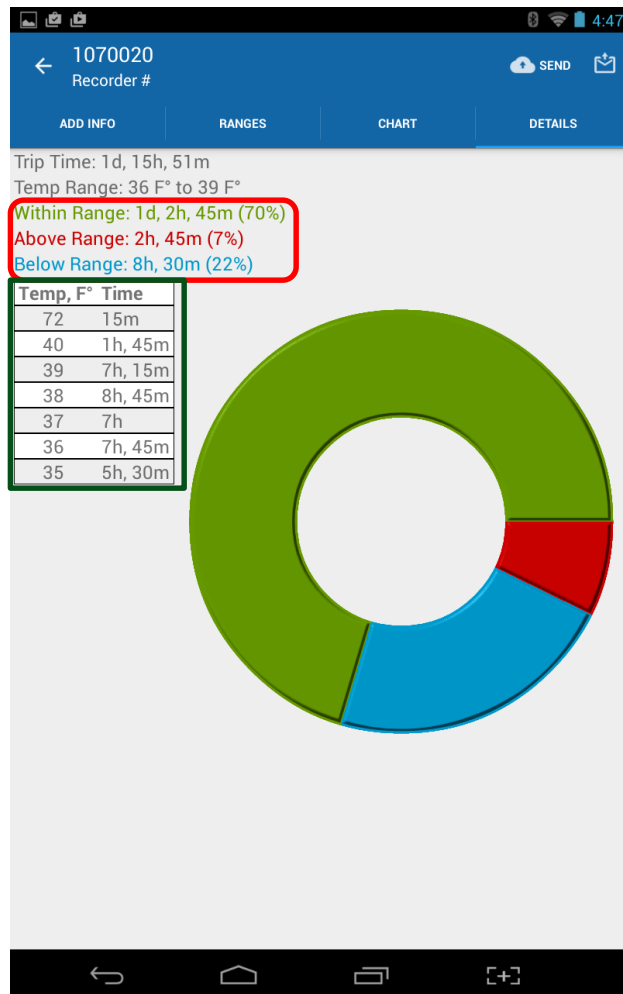
- Select range by tapping on “RANGES” tab
- Choose from default list of ranges or create a custom range

Chart with Range Indicator



Selected temperature range will be displayed as a shaded area on the chart.

Details View



- Pie graph provides instant visual cue for amount of time shipment was within/outside selected temperature range
- Calculated percentages at/above/below range provided
- Amount of time at each temperature provided

Add Info Screen

Lightning App on Tablets

1070020
Recorder #

SEND

ADD INFO RANGE CHART DETAILS

Company Name Sample

Receiving Loc. Headquarters

Inspector Luke Skywalker +

Door # 6 +

P.O./Ref. # HQ669370

Item Romaine Hearts +

Shipper/Vendor Leaf Shippers, Inc. +

Carrier Best Carriers +

Surface/Pulp Temp 39

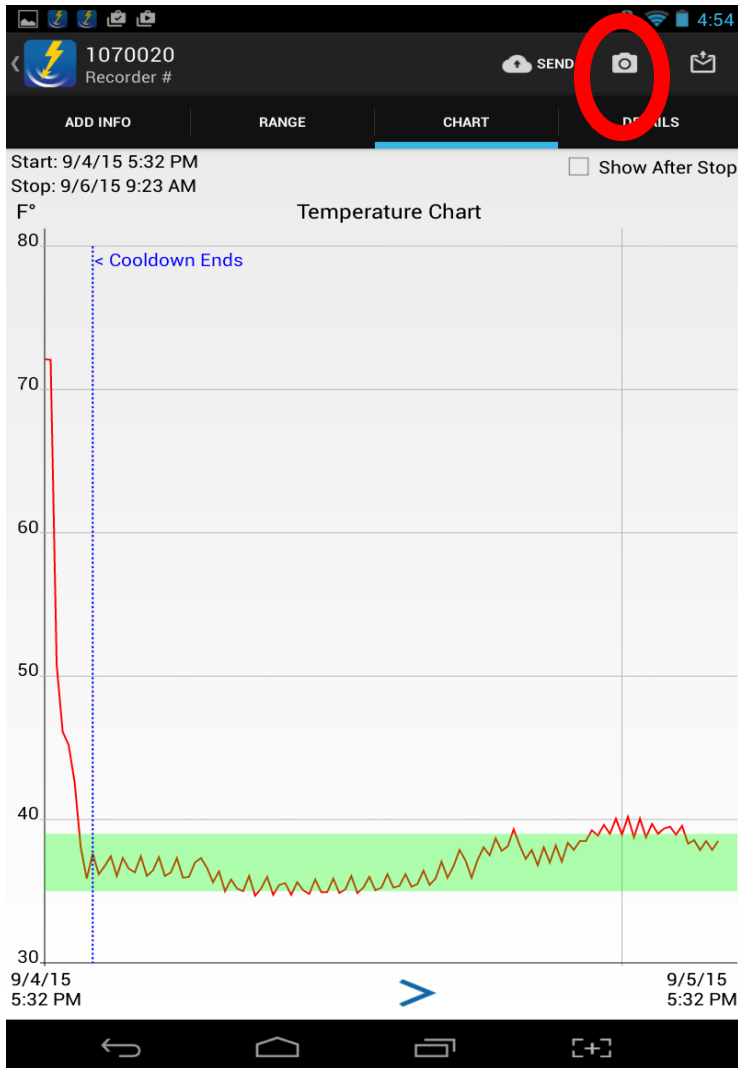
Scorecard 3

Comment
2% decay

q w e r t y u i o p
a s d f g h j k l Done
↑ z x c v b n m , .
?123 / @ ' - :-)

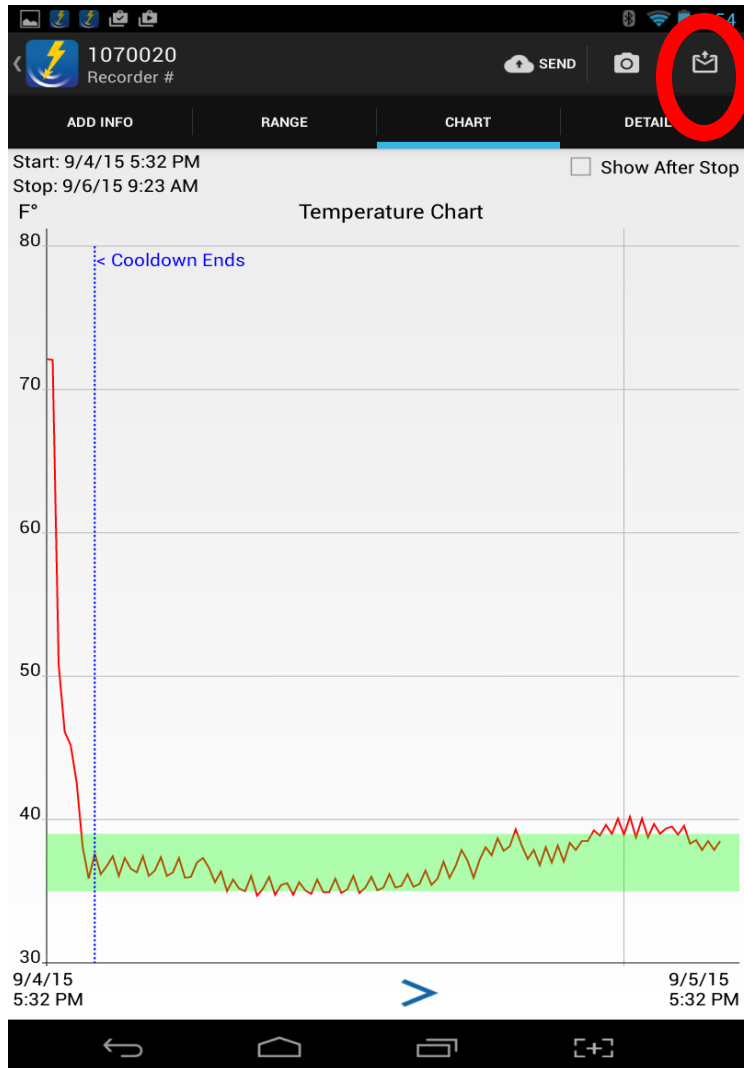
- 1) This screen allows Inspector to optionally enter data into any of the displayed fields.
- 2) “+” indicates a drop down menu is available with pre-entered selections
- 3) All fields can be modified to meet corporate QA needs
- 4) All data entered here remains with the temperature record and can be sorted on the online dashboard

Add Product Photo



1. If the Receiver/Inspector needs to document issues with the product or packaging (mold, shrivel, crushed boxes, leaning pallets, etc.), up to three photos can be added to the temperature record by tapping the camera icon at the top of all Lightning App screens.
2. Camera App on the tablet/phone will be activated
3. Photos will be viewable in high resolution within the online record review.

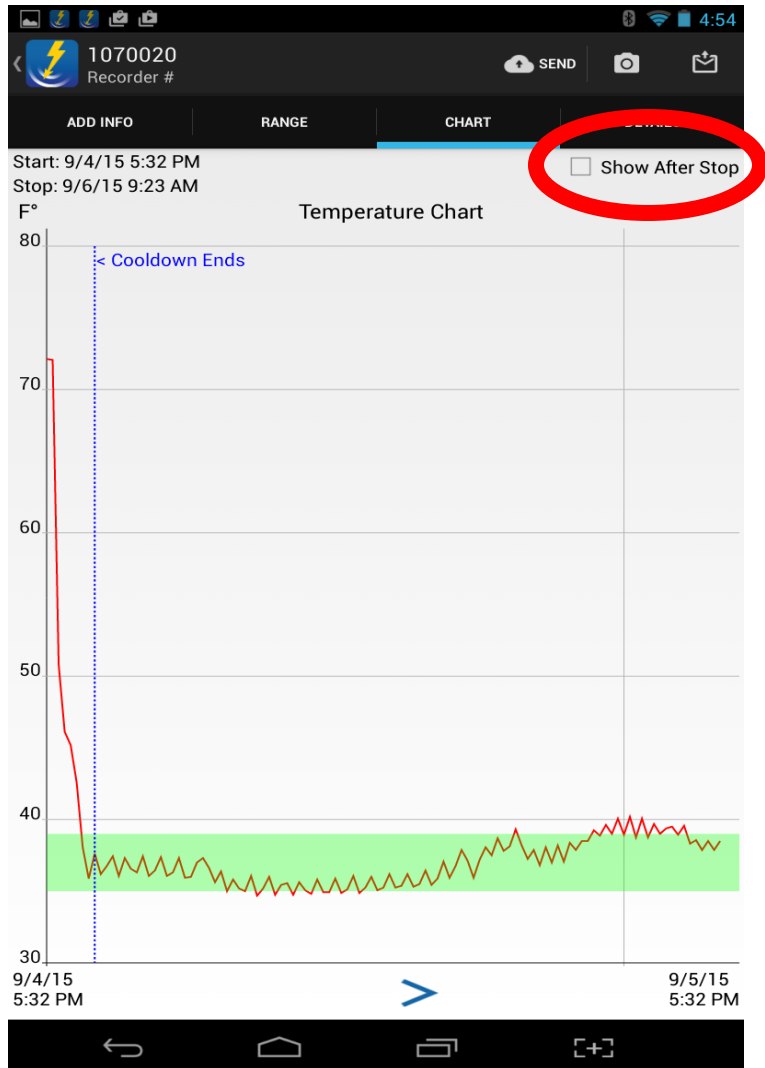
Send Immediate Email Notifications



1. If the Receiver/Inspector determines a buyer or other colleague needs immediate email notification of product arrival and/or condition, Inspector can tap the email icon the top of all Lightning App screens.
2. A simple email menu will allow Inspector to immediately send a hotlink containing all temperature and other entered data and photos to the recipient.

“After Stop” Data Recovery

Lightning App on Tablets



1. If the Lightning temperature recorder was inadvertently deactivated while in-transit, Lightning continues to monitor temperatures
2. Inspector can tap “Show after Stop” to display temperature data collected after the “Stop” button on the temp recorder was pressed.

Online Data Review

- When the Lightning NFC instrument has transferred temperature data to the tablet/phone, it will then be automatically uploaded to the Cargo Data Corporation cloud archive.
- Temperature records can be viewed online worldwide in a few moments.
- Our “public” portal is called **UpLink**, which provides full data for each shipment by entering the temp recorder serial number into the **UpLink** field on cargodatacorp.com. The **UpLink** feature is typically used by carriers, brokers, and/or shippers to view data for specific shipments
- Our “Dashboard” portal is password protected and provides Receiver with sortable access to data for ALL shipments. This portal can become invaluable for internal/external audits, carrier reviews, etc.

Public UpLink Data Viewing



HOME PRODUCTS NEWS SUPPORT RECYCLING SOFTWARE CONTACT

LOGIN



FDA FOOD SAFETY
MODERNIZATION ACT



Cold Chain Temperature Monitoring Made Simple



Lightning Real Time and Streamer4G Alert Setup

Enter or Scan Recorder #

Do not use dash(-)

GO



UpLink

TRY
ME

Retrieve Temperature Data from all types of
Cargo Data Recorders Here

Enter or Scan Recorder #

GO

Translate »

Enter device
Serial #
here

Public UpLink Data Viewing

Recorder

Company Name:	Sample
P.O./Ref#:	HQ669370
Inspector ID:	Luke Skywalker
Door:	6
Destination DC:	Headquarters

Shipment Info

Download Date:	02/15/2016
Start Recording:	09/04/2015 2:32:43 PM
Stop Recording:	09/06/2015 6:23:43 AM

Add/Edit Range

Temperature Range:	35.00F...39.00F
Total Time:	1d 13h 45m
Time Above Range:	0d 2h 45m (7%)
Time Below Range:	0d 2h 0m (5%)
Highest Temp:	40.19F
Lowest Temp:	34.69F
Average Temp:	37.19F
Degree Minutes Above:	103.1F min
Degree Minutes Below:	-20.6F min

Shipper/Vendor Info

Shipper Company:	Leaf Shippers, Inc.
Shipping Location:	
Carrier:	Best Carriers

Product Info

Commodity:	Romaine Hearts
Comments:	2% decay
Recorder Type:	LN
Pulp. Temp:	39
Scorecard:	3

Chart

Tabular

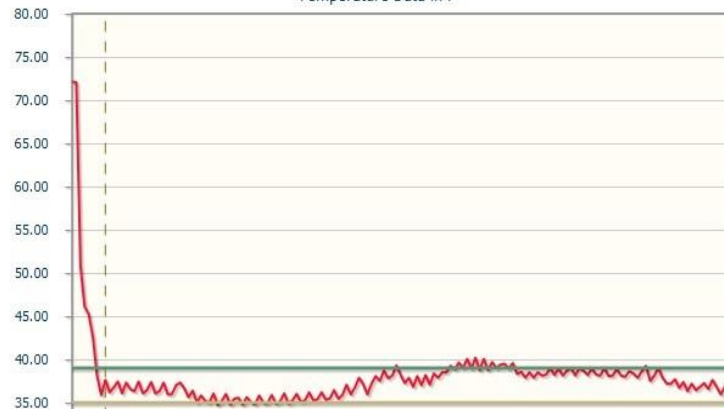
Download/Print

Reset Zoom

☐ Show After Stop

After Stop shows
chart only - not
included in above
calculations.

Temperature Data in F°



The Chart is provided to enable all involved parties to view the recorded time & temperature data on a Cargo Data recorder

Click on the tabular tab to see all recorded set points or save/print tab.
Contact us for information on all our products



UpLink Data Viewing (with photos)

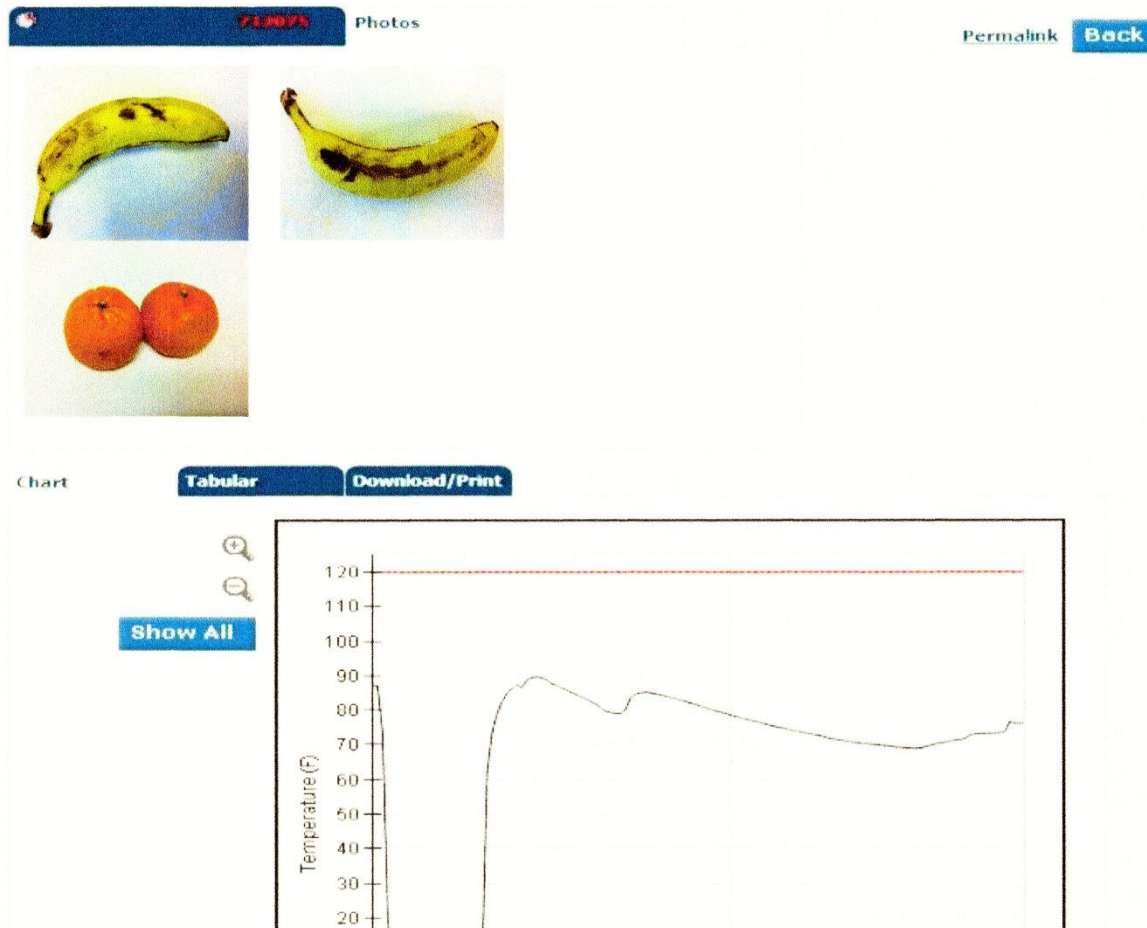


Photo Review



Return to HOME PAGE Main Functions ▾ Management Functions ▾ My Account Logout About ▾

 RECORDER REPORT

Info



Item #	Item	Vendor	Country of origin	F
1444	Bananas	good stuff	USA	





ABC Grocery CO-OP



LIGHTNING QA APP OPTION 2

This option includes our enhanced Lightning QA App.

QA App includes all features from the basic app, but adds commodity specific checklists, support for multiple product details on a single shipment, and notation for accept/reject determinations.

Data entry in product attribute fields is OPTIONAL...add as much detail as needed—nothing else.

Arrival Details

Lightning QA App Simplifies Documentation

1180710
Recorder #

ADD INFO RANGES CHART DETAILS

Company Name Test Company

Receiving Location Headquarters

Inspector* Han Solo

Door* 7

Carrier* Tie-Fy

Arrival Time* On Time

Category* Seafood

ENTER P.O. (S)

- User navigates to the “ADD INFO” tab
- Arrival details can be added
- Inspector selects product category
- Fields with plus (+) signs support drop down menus
- When data has been entered, inspector taps “Enter PO” button

Quality Attribute Documentation

Seafood Category

Seafood

P.O. #

Vendor*

Item*

Item #

Country of Origin USA

Lot/Farm #

Brand

Surface/Pulp Temp*

Pack Date*

☐ Fresh ☐ Frozen

Discoloration

Leakers

Crystallization (if frozen)

Sell by Date in Specs*

Case Count as ordered

Weight as ordered

Measured as ordered

Rejected*

Comment

DONE ADD NEW P.O. ADD NEW ITEM TO P.O.

- Tap camera icon to add photos of product or paperwork
- Field with red asterisks are mandatory
- Green plus symbols (+) indicate fields which support drop down menus
- Inspector can document all relevant category specific quality/condition attributes **including the accept/reject decision**
- Inspector can add an additional PO, more items, or finish the record.

Produce and Floral Categories

This screenshot shows the 'Produce' category form. It features a blue header with a back arrow and a camera icon. The form includes several input fields: 'P.O. #' (required), 'Vendor' (with a green plus icon), 'Item' (required), 'Item #' (required), 'Country of Origin' (pre-filled with 'USA' and a green plus icon), 'Lot/Farm #' (required), 'Brand' (with a green plus icon), 'Surface/Pulp Temp' (required), 'Brix', 'Bruising/Scaring', 'Discoloration', 'Shrivel', 'Evidence of Insects', 'Case Count as ordered', 'Weight as ordered', 'Measured/size as ordered', 'Rejected' (required), and 'Comment'. At the bottom, there are three buttons: 'DONE', 'ADD NEW P.O.', and 'ADD NEW ITEM TO P.O.'.

Produce

P.O. #*

Vendor*

Item*

Item #

Country of Origin USA

Lot/Farm #

Brand

Surface/Pulp Temp*

Brix

Bruising/Scaring

Discoloration

Shrivel

Evidence of Insects

Case Count as ordered

Weight as ordered

Measured/size as ordered

Rejected*

Comment

DONE ADD NEW P.O. ADD NEW ITEM TO P.O.

This screenshot shows the 'Floral' category form. It features a blue header with a back arrow and a camera icon. The form includes several input fields: 'P.O. #' (required), 'Vendor' (with a green plus icon), 'Item' (required), 'Item #' (required), 'Country of Origin' (pre-filled with 'USA' and a green plus icon), 'Lot/Farm #' (required), 'Brand' (with a green plus icon), 'Pulp Temp (fresh cut)', 'Water Level (fresh cut)', 'Soil Moisture (potted)', 'Soil Temp (potted)', 'Case Count as ordered', 'Rejected' (required), and 'Comment'. At the bottom, there are three buttons: 'DONE', 'ADD NEW P.O.', and 'ADD NEW ITEM TO P.O.'.

Floral

P.O. #*

Vendor*

Item*

Item #

Country of Origin USA

Lot/Farm #

Brand

Pulp Temp (fresh cut)

Water Level (fresh cut)

Soil Moisture (potted)

Soil Temp (potted)

Case Count as ordered

Rejected*

Comment

DONE ADD NEW P.O. ADD NEW ITEM TO P.O.

Deli and Dairy Categories

This screenshot shows the 'Deli' category form. The header bar is blue with a back arrow and the title 'Deli'. The form contains the following fields: 'P.O. #' (required), 'Vendor' (required), 'Item' (required), 'Item #' (optional), 'Country of Origin' (pre-filled with 'USA'), 'Lot/Farm #' (optional), 'Brand' (optional), 'Surface/Pulp Temp' (required), 'Sell by Date in Specs' (optional), 'Case Count as ordered' (optional), 'Rejected' (required), and 'Comment' (optional). Each required field has a red asterisk. Green plus icons are next to the Vendor, Country of Origin, and Brand fields. At the bottom, there are three blue buttons: 'DONE', 'ADD NEW P.O.', and 'ADD NEW ITEM TO P.O.'. The status bar at the top shows the time as 5:02.

This screenshot shows the 'Dairy' category form. The header bar is blue with a back arrow and the title 'Dairy'. The form contains the following fields: 'P.O. #' (required), 'Vendor' (required), 'Item' (required), 'Item #' (optional), 'Country of Origin' (pre-filled with 'USA'), 'Lot/Farm #' (optional), 'Brand' (optional), 'Surface/Pulp Temp' (required), 'Sell by Date in Specs' (optional), 'Case Count as ordered' (optional), 'Rejected' (required), and 'Comment' (optional). Each required field has a red asterisk. Green plus icons are next to the Vendor, Country of Origin, and Brand fields. At the bottom, there are three blue buttons: 'DONE', 'ADD NEW P.O.', and 'ADD NEW ITEM TO P.O.'. The status bar at the top shows the time as 5:02.

Meat and Frozen Categories

This screenshot shows the 'Meat' category form. The top bar is blue with a back arrow and the title 'Meat'. The form contains the following fields: P.O. # (with a red asterisk), Vendor (with a red asterisk and a green plus icon), Item (with a red asterisk), Item #, Country of Origin (pre-filled with 'USA' and a green plus icon), Lot/Farm #, Brand (with a green plus icon), Surface/Pulp Temp (with a red asterisk), and Pack Date (with a calendar icon and a '1' badge). Below these are checkboxes for 'Fresh' and 'Frozen'. The bottom section includes Discoloration, Leakers, Crystallization (if frozen), Sell by Date in Specs (with a red asterisk), Case Count as ordered, Weight as ordered, Measured as ordered, Rejected (with a red asterisk), and a Comment field. At the bottom are three buttons: 'DONE', 'ADD NEW P.O.', and 'ADD NEW ITEM TO P.O.'.

Meat

P.O. #*

Vendor* +

Item*

Item #

Country of Origin USA +

Lot/Farm #

Brand +

Surface/Pulp Temp*

Pack Date* 1

☐ Fresh ☐ Frozen

Discoloration

Leakers

Crystallization (if frozen)

Sell by Date in Specs*

Case Count as ordered

Weight as ordered

Measured as ordered

Rejected*

Comment

DONE ADD NEW P.O. ADD NEW ITEM TO P.O.

This screenshot shows the 'Frozen' category form. The top bar is blue with a back arrow and the title 'Frozen'. The form contains the following fields: P.O. # (with a red asterisk), Vendor (with a red asterisk and a green plus icon), Item (with a red asterisk), Item #, Country of Origin (pre-filled with 'USA' and a green plus icon), Lot/Farm #, Brand (with a green plus icon), Surface/Pulp Temp (with a red asterisk), Crystallization, Sell by Date in Specs, Case Count as ordered, Rejected (with a red asterisk), and a Comment field. At the bottom are three buttons: 'DONE', 'ADD NEW P.O.', and 'ADD NEW ITEM TO P.O.'.

Frozen

P.O. #*

Vendor* +

Item*

Item #

Country of Origin USA +

Lot/Farm #

Brand +

Surface/Pulp Temp*

Crystallization

Sell by Date in Specs

Case Count as ordered

Rejected*

Comment

DONE ADD NEW P.O. ADD NEW ITEM TO P.O.



Password Protected “Dashboard”

Review all data collected by Lightning System
Basic Lighting App or Lightning QA

Access Protected Data Online

CARGO DATA
Cold Chain Monitoring Made Simple

HOME PRODUCTS NEWS SUPPORT RECYCLING SOFTWARE CONTACT **LOGIN**

FDA
FDA FOOD SAFETY
MODERNIZATION ACT

HACCP
Hazard-Analysis
Critical-Control-point

**Cold Chain Temperature Monitoring
Made Simple**

**Lightning Real Time and
Streamer4G
Alert Setup**

Enter or Scan Recorder #

Do not use dash(-)

GO

UpLink

TRY ME

Retrieve Temperature Data from all types of
Cargo Data Temperature Recorders Here

Enter or Scan Recorder #

Do not use dash(-)

GO

Translate »

Password Protected Dashboard

To View Report

Can sort by any heading



Recorder #

P.O.#

Vendor

Carrier

Inspector

Category

Date Downloaded to

Rejection ☐

Select items to meet criteria and click on **SEARCH**
The matching criteria will be shown and then **CREATE REPORT**
To return to ALL items, click **SHOW ALL**

Search **Show All** **Create Report**

Type	Recorder #	P.O. #	# of items	Inspector	Category	Vendor	Carrier	Rejection	Date Started	Date Stopped	Date Downloaded	View
LN	1151739	167	1	hector	Frozen	Nicks frozen food	Fastway	Yes	December 7, 2015 11:17 AM		December 10, 2015 9:09 AM	View
LN	1151732	912f	1	joe	Frozen	Freezies	Fastway		December 7, 2015 11:18 AM		December 10, 2015 9:50 AM	View
LN	1003735	1444T	1	joe	Produce	good stuff	Fastway	Yes	December 10, 2015 9:44 AM		December 14, 2015 10:32 AM	View
LN	1003735	19986	1	joe	Produce	aaa	Fastway		December 10, 2015 9:44 AM		December 14, 2015 10:32 AM	View
LN	811768	421	1	joe	Deli	joes deli	bestest		December 10, 2015 9:41 AM		December 14, 2015 10:50 AM	View
LN	1127563	822	1	hector	Floral	Joes Avocados	bestest	Yes	December 10, 2015 9:40 AM		December 14, 2015 10:52 AM	View
LN	1127563	Q4677	1	hector	Floral	pretty posies	bestest		December 10, 2015 9:40 AM		December 14, 2015 10:52 AM	View
LN	530	5432	1	joe	Frozen	aaa	bestest		December 10, 2015 9:44 AM		December 14, 2015 11:00 AM	View
LN	529	144	1	hector	Poultry	aaa	Fastway		December 10, 2015 9:44 AM		December 14, 2015 11:02 AM	View
LN	529	1786	1	hector	Poultry	aaa	Fastway		December 10, 2015 9:44 AM		December 14, 2015 11:02 AM	View

Detailed Report

RECORDER # 1180710

P.O. # 1764

Company Name	Test Company
Receiving Location	Ventura
Inspector	hector
Carrier	Fastway
Door #	33
Arrival Time	On Time
Date Started	12/16/2015 11:40 AM
Date Stopped	12/18/2015 11:21 AM
Downloaded Date	12/18/2015 11:48 AM

Range Selected	-10.00F...5.00F
Total Time	1d 21h 30m
Time Above Range	0d 2h 0m (4%)
Time Below Range	0d 2h 0m (4%)
Average Temp	-3.56F
Lowest Temp	-10.38F
Highest Temp	31.63F
Degree Min. Above	766.88
Degree Min. Below	-5.63

[Download as Excel](#)

[Email Report](#)

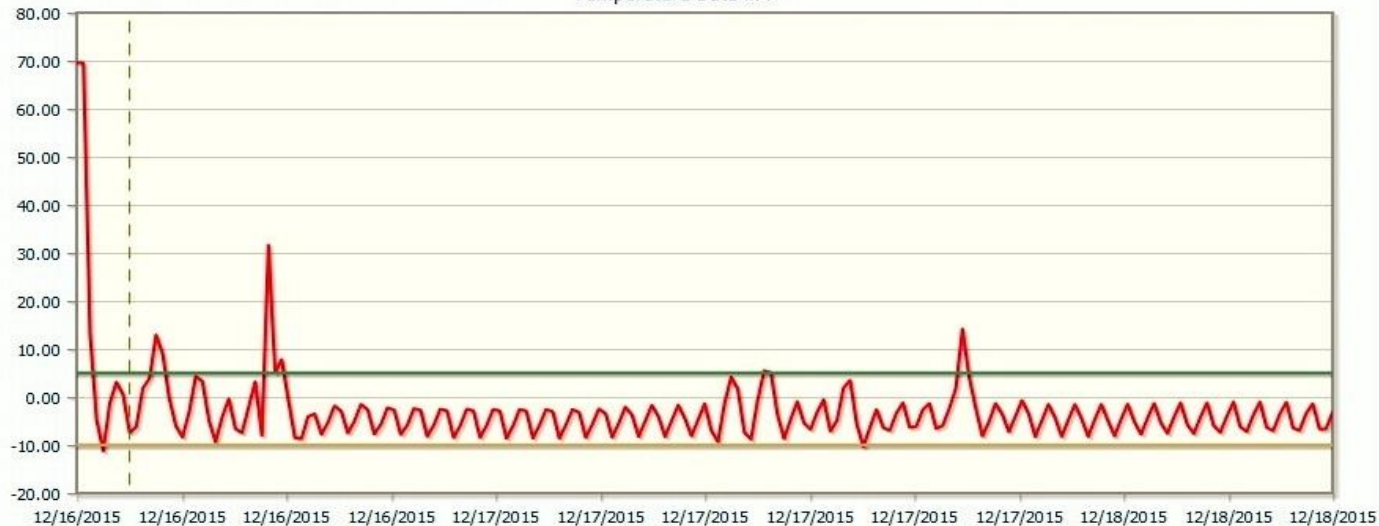
[Print Report](#)

[Back](#)



Item #	Item	Vendor	Country of origin	Lot/ Farm #	Brand	Surface/ Pulp Temp	Sell by Date in Specs	Crystallization	Case count as ordered	Rejected	Comment
10	Shrimp	aaa	USA			5		Yes		Yes	
190	Chicken Wings	aaa	USA			6				No	

Temperature Data in F°



Returned Recorder Bounty Program

- Cargo Data has always promoted recycling; it's easy and generates cash flow!
- Just collect and return all of the used temperature recorders using our postage-paid return envelopes.
- We offer a bounty program for returning 10 or more recorders per shipment.
- Our returned recorder bounty program helps reduce your costs, landfill contamination and supports sustainability.



....One more thing—for Audits



- Streamer4G is a reusable real-time temperature monitoring system.
- Can be mounted in a trailer, cooler, back room, etc...to provide real-time monitoring and out-of-range alerts
- Monitors two zones, supports external probes/sensors
- **Price:** Starts at \$355.00, volume pricing available



Lightning System Math

- Lightning NFC Price: **\$23.50 ea**
- Lightning Real Time Price: **\$32.50**
- Bounty paid for each returned used NFC recorder: **\$5.00**
- Bounty paid for each returned used real-time recorder: **\$5.00**
- Basic Lightning App or QA App: **Free**
- Unlimited online data access: **Free**
- “Lightning System only” Tablet computers for Distribution Centers: **Free**
- **Cost of *Lightning System* is borne by Suppliers. Recycling bounty program earns income**



Cargo Data's Lightning System Program Implementation

1. ***Lightning System*** temperature recorders to be adopted by ***category*** for perishable inbound shipments
2. Cargo Data will provide free *NFC enabled tablet computers* for each distribution center. Provided devices will have ***Lightning System*** functionality ***only*** to promote security and productivity.
3. Cargo Data's returned recorder recycling bounty program can assist with sustainability goals while offsetting costs.



Cargo Data's Lightning System Program Implementation (continued)

4. Cargo Data recommends a scheduled incremental implementation by category
5. Initial effort should be put toward transitioning each category supplier into ***Lightning System*** instruments. While this transition is in progress, QA Inspectors/Receivers will receive training on most efficient use of ***Lightning*** instruments and ***Lightning App***.
6. Carriers and suppliers to be advised of **UpLink** temperature data viewing features on Cargo Data website.



- 1) Thank you for this opportunity to present Cargo Data's ***Lightning System*** temperature monitoring system and supporting products.
- 2) Samples and demonstrations of ***Lightning System*** products are available for no obligation evaluation.
- 3) Cargo Data stands ready to assist in enhancing you temperature monitoring and QA programs with highly accurate temperature monitoring instruments, easy shipment documentation, automated data archiving, and returned recorder recycling bounty program.