FELIX INSTRUMENTS
APPLIED FOOD SCIENCE

Operations Manual

F-751
Kiwifruit Quality Meter

DECLARATION OF CONFORMITY

Manufacturer:

>CID Bio Science, Inc.
>Felix Instruments – Applied Food Science
>1554 NE 3rd Ave
>Camas, WA 98607

Declares that the CE-marked Product:

Product Model(s):

>Model F-75x

FCC Compliance Statement:

>This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Complies With:

>89/336/EEC Electromagnetic Compatibility Directive
>73/23/EEC Low Voltage Directive

Compliance Standards:

EN 55027	RF Emissions Information Technology Equipment
EN 50082-1	EMC Immunity Standard
EN 60950	Safety of Information Technology Equipment
Including Electrical Business Equipment	

December 31, 2018

Leonard Felix
President

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Introduction

Felix Instruments' F-751 Kiwifruit Quality Meter is a fast, portable tool for non-destructively measuring kiwifruit quality. The F-751 can provide rapid dry matter and Brix estimations for Gold3, Hayward, and Red19 varieties, and internal flesh hue angle (hue) estimations for both Gold3 and Red19 varieties. With the F-751, users can measure large numbers of fruit, giving orchard-wide estimations and insights previously unattainable through traditional testing means.

The F-751 uses light interactance in the NIR wavelength range to determine the dry matter, Brix, and hue angle of a conical region of mesocarp in the location where the lens is placed on the fruit. Due to the thin exocarp and translucent nature of kiwifruit mesocarp, the F-751 can provide insight into a large portion of the fruit. **A single scan at the equator of the fruit** can provide a representative measurement of the entire fruit.

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Theory of Operation

At Felix Instruments, visible and near-infrared (Vis-NIR) spectroscopy instrumentation is utilized to collect spectral signature data of various agricultural and food commodities. This spectral data is then used alongside data from destructive analytical testing to create predictive models that can rapidly and non-destructively evaluate external and internal quality traits of the commodity.
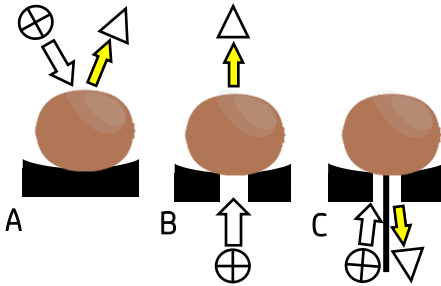
Figure 1. Geometrical configuration of Vis-NIR spectra that may be acquired in spectroscopic analysis. Light is split when it strikes an object, as some photons are absorbed, and others are reflected (A) reflectance, (B) transmittance, and (C) interactance modes (Diagram adapted from Cavaco et al.)

The F-751 Quality Meter utilizes a light interactance geometry (Fig. 1 & 2), in which a halogen lamp directs NIR and visible light into the commodity. As light penetrates a sample, photons scatter, and the resulting reflectance, transmittance, and interactance spectra is collected by a fiber optic lens (Lu et al., 2017 & Cavaco et al., 2020). The resulting frequency and wavelengths are called a spectrum, enabling users to identify and quantify the chemical composition of a sample. To create regression-based predictive models from this spectral data, artificial neural networks (ANN) are employed during chemometric analysis. The use of ANN enables users to extract hidden or unknown relationships in complex multivariate datasets (Héberger, 2008). Some of the quality traits in agricultural and food commodities that are commonly modeled using NIR spectroscopy and chemometrics include: dry matter content (DM), total soluble solids (TSS), titratable acidity (TA), pH, fat content, water content, phenols, etc.
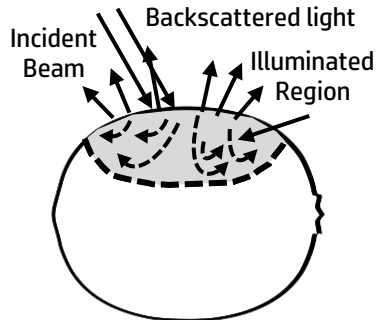
Figure 2. Schematic of light scattering within an object after being struck with Vis-NIR radiation from a spectrometer. Incident light is reflected, absorbed, or transmitted depending on the physical and chemical composition of the sample (Diagram adapted from Lu et al., 2017).

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Measurement Variance

Factors that affect measurement variance include:

1. Condition of the fruit
2. Analytical procedure
3. Accuracy of the instrument

Condition of the Fruit

It is important for the user to examine the fruit visually and physically for defects or damage prior to measurement. If the fruit is too soft (i.e., easily indented with minimal pressure), or if there is bruising, cuts, irregularities, or wrinkled exocarp, then that fruit should not be scanned and a new fruit should be chosen.

Variance Due to Analytical Procedure

Every measurement method has inherent sources of error. For most gravimetric methods (e.g., oven, microwave, etc.) error can be attributed to unrepresentative sampling and measurement error associated with equipment (e.g., the balance not being properly calibrated, temperature not being monitored, etc.). Equipment quality also significantly impacts Brix (pocket refractometer vs. laboratory-grade benchtop refractometer) and hue angle measurements.

The F-751 Kiwifruit apps were built using the following reference methods:

- Equatorial slice of fruit dried to constant weight in a dehydrator (EZI-DRY 1000 W fruit dehydrator).
- Blossom-end of fruit squeezed to extract juice and Brix value determined using a refractometer (Atago PAL-1 Refractometer).
- Internal color (hue angle) assessed using a colorimeter (Minolta CR-400 Chromameter).

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Measurement Variance Due to the Instrument

The new kiwifruit applications have been created with artificial neural network chemometrics and a highly variable data set. This ensures a high level of repeatability and accuracy when taking measurements with the F-751. However, if the user wishes to further reduce their measurement variation, it is recommended that they increase their sample size. Increasing the sample size decreases error significantly. Using the average of ten fruit will typically deliver 30% better performance than using the average of five fruit. Because it is quick to measure with the F-751, we recommend a larger sample size that delivers the desired performance.

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Device Overview & Setup

Package Contents

The instrument will arrive in a carrying case that includes:

Part	Quantity
F-751 Kiwifruit Quality Meter	1
Removable Rechargeable batteries	4
Battery Charger	1
Hand Strap	1
Coring Tool	1
Lens Cloth	1
USB A to USB Micro Cable	1

Figure 3. *F-751 Parts*

Loading the Battery

The F-751 uses two 18650 Li-ion 3.7 V 3500 mAh rechargeable batteries. The batteries must be removed from the F-751 to be charged. To remove the batteries, twist the battery compartment cap counterclockwise, which is located on the bottom of the device under the rubber bumper *(See figure 6 on page 9)*. The cap can be tightened or loosened by twisting with fingers or a screwdriver. Use caution when removing the batteries, as the cap is spring loaded. Both batteries should be inserted into the unit positive (+) side first (facing towards the lens).

Additional protected 18650 batteries can be purchased from a preferred battery vendor.

Warning: Do not drop batteries, this may cause them to crack and rupture.

Protecting Your Device

Ensure that the rubber bumpers on the top and bottom of the F-751 are always installed when using the instrument, as they protect it from water damage.

The hand strap should be tightened so that the device has a snug and secure fit around the hand. If the lens becomes dirty, it can be cleaned with a soft cloth. The lens is made of extremely durable Gorilla Glass and should not become scratched with normal use

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Device Interface

Observe the location of the key features on the F-751:

Figure 5. *Top of Device*
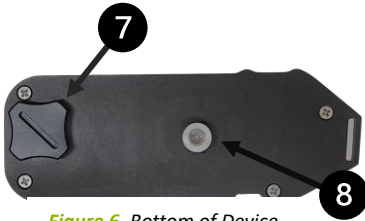
Figure 6. *Bottom of Device*

Figure 4. *Front of Device*

❶	Power On/Off Button	❺	SD Card Slot
❷	Measure Button	❻	Measurement Lens
❸	Navigation Buttons	❼	Battery Housing
❹	Micro USB Port	❽	Tripod Adaptor

	Navigating Menus	*Entering Text/Numbers*
	The instrument's interface is composed of menus that are operated using navigation buttons.	When prompted, text/numbers can be entered on the device by using the navigation buttons.
⬆⬇	**Up/Down** navigates between menu items.	**Up/Down** navigates between letters/numbers for the current cursor position.
⬅	**Left** navigates back to the previous menu.	**Left** navigates the cursor to text that has already been entered. Navigating past the beginning of the text aborts and returns to the previous menu.
➡	**Right** navigates into the selected menu item.	**Right** navigates the cursor to text that has already been entered. Navigating past the end of the text saves the desired entry and continues.

Device in Use

Powering On the Device

Press the **Power On/Off** button to power on the instrument.

This process takes a few moments, and the display will show the splash screen when the instrument is prepared to measure kiwifruit.
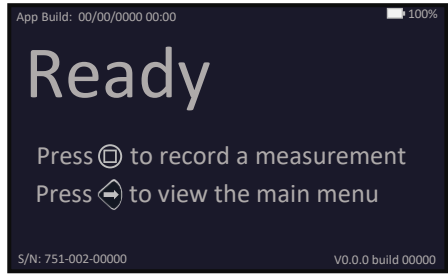

Figure 7. F-751 Startup Screen

Pressing **Right** from the **Ready** screen will take the user to the **Main Menu**.

To continue the measurement process, highlight **Load App** and press **Right**.

Figure 8. F-751 Startup Screen

Then, highlight the kiwifruit app you wish to load and press **Right**.

If you wish to load a different kiwifruit cultivar, return to the **Main Menu**, then highlight **Select Variety** and press **Right**.

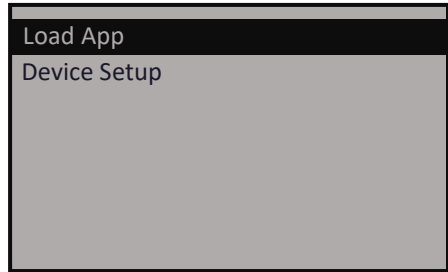Then, highlight the cultivar you will be measuring and press **Right** to continue the measurement process.
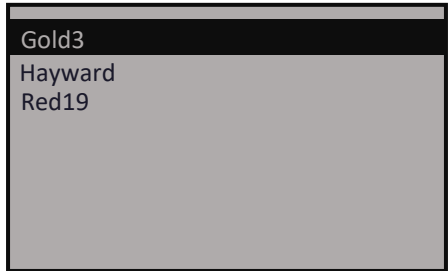

Figure 9. F-751 Startup Screen

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Device Options Menu

Upon turning on the device, press **Right** to navigate to the main menu. Highlight **Device Options** and press **Right** to access the device's options menu. From this menu, basic device settings including **Date and Time**, **Keypad and Notification Sounds**, **Backlight Intensity**, and **Language Settings,** can be adjusted.

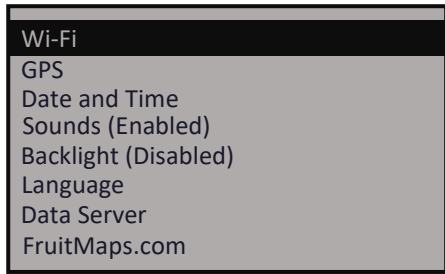| Wi-Fi |
| --- |
| GPS |
| Date and Time |
| Sounds (Enabled) |
| Backlight (Disabled) |
| Language |
| Data Server |
| FruitMaps.com |

Figure 10. Device Options Menu

Connecting to a Wireless Network

The F-751's possess Wi-Fi capabilities, allowing for a streamlined data uploading process. Highlight **Wi-Fi** and press **Right**. Highlight **Wi-Fi State** and press **Right**. Use the **Up/Down** buttons to select between enabling or disabling this feature and press **Right** to confirm selection.

Highlight **Networks**, then press **Right**. Select a network, enter the passcode as directed on-screen, and press **Right** to confirm selection.

GPS Settings

The F-751's GPS feature allows users to get accurate GPS data for each measurement taken. Highlight **GPS** and press **Right**. Highlight **GPS State** and press **Right.** Use the **Up/Down** buttons to select between enabling or disabling this feature and press **Right** to confirm selection. *This process takes a few moments.*

Once GPS State is enabled, users can view latitude, longitude, accuracy status, and more. To view this, highlight **View Status** and press **Right.**

Highlight **Upload Date\Time using GPS** and press **Right.** Use the **Up/Down** buttons to select between enabling or disabling this feature and press **Right** to confirm selection. Enter the desired Time zone Offset and press **Right.** The instrument should now display date\time based on the entered time zone offset.

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Data Server

Enable automatic upload to a Data Sever upon archiving measurements. Highlight **Data Server** and press **Right**. Highlight **Upload on Archive** and press **Right.** Use the **Up/Down** buttons to select between enabling or disabling this feature and press **Right** to confirm selection.

Upload on Archive (Enabled)
Server Address

Figure 11. *Archive Settings*

Highlight **Sever Address** and press **Right.** The default address within this menu is the Felix Instruments FTP Server. Input the address of the desired data server and press **Right** to confirm the selection.

for further instruction on uploading F-751 measurements to a Data Server.

Uploading To FruitMaps

FruitMaps is a program available for free to all F-751 users, that transposes data generated on the instrument into a visual format, allowing for users to plot their crops, generate harvest prediction dates, and more .

Highlight **FruitMaps.com** and press **Right.** Highlight **Upload on Archive** and press **Right.** Use the **Up/Down** buttons to select between enabling or disabling this feature and press **Right** to confirm selection.

for further instruction on uploading F-751 measurements to FruitMaps.

Bin Setup

Bins are the vehicles for storing measurements taken on the instrument. Setup a new bin by navigating to **App Menu > Select Bin > Create New Bin.** Highlight **Create New Bin** and press **Right** to create an empty bin.

Select Bin
Options
Archive Data

Figure 12. Kiwifruit App Menu

After selecting **Create New Bin**, a prompt will appear to enter the ID number for the bin. This number can be any number from 1-999. Press **Right** after entering the value.

Enter the ID number for this bin.

0

Scroll up and down to select characters.

Scroll right past the value entered to continue.

Scroll left past the value entered to abort.

Figure 13. New Bin Creation Prompt: Setting a bin ID #

If you have previously created one or more bins and have not archived the data on the device, this menu will display a list of those bins underneath the **Create New Bin** option. To view, edit, add (or remove) measurements from a previously created bin, simply highlight the bin you wish to access and press **Right**.
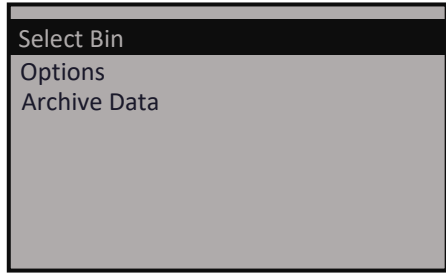
Fruit Per Bin

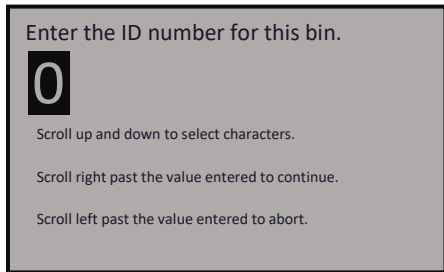A prompt will appear to enter the number of fruit to be measured within the bin. This number can be any number from 1-999. Press **Right** after entering the value. A new bin will be created, and the user can begin taking measurements *(See page 18).*

Enter the number of fruit for this bin.

5

Scroll up and down to select characters.

Scroll right past the value entered to continue.

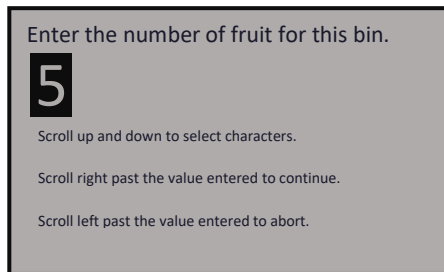Scroll left past the value entered to abort.

Figure 14. New Bin Creation Prompt: Setting Fruit Per Bin

Bin Options

Users can adjust bin settings prior to taking measurements. From the **App Menu,** highlight **Options** and press **Right** to access bin customization options.
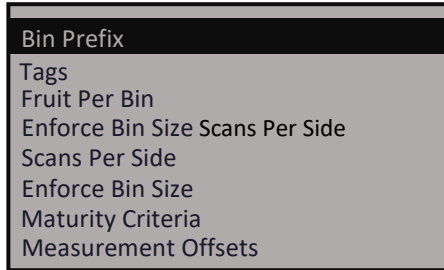
| Bin Prefix |
| Tags |
| Fruit Per Bin |
| Enforce Bin Size Scans Per Side |
| Scans Per Side |
| Enforce Bin Size |
| Maturity Criteria |
| Measurement Offsets |

Figure 15. Bin Options Menu

Bin Prefix

Users can change the prefix "Bin" to any desired prefix (i.e., **Lot**, **MA**, **Region**, etc.). Highlight **Bin Prefix** and press **Right**. Enter the desired prefix for new bins and press **Right** to confirm selection. This new bin prefix will not alter bins created prior to adjusting the prefix.

Tags

Tags help users to differentiate between factors influencing measurement results through metadata. Highlight **Tags** and press **Right**. Enter the desired metadata tag for new measurements and press **Right** to confirm selection. This new tag will not alter measurements created prior to adjusting the tag.

Fruit Per Bin

Users can set a default number of fruit per bin. All new bins created will automatically be set to the fruit per bin chosen by the user.

Highlight **Fruit Per Bin** and press **Right.** Enter the desired number of fruit per bin and press **Right** to confirm selection. By selecting ***Always use this bin size,*** all new bins created will automatically be set to the bin size chosen by the user. ***Allow changes for new bins*** will allow the user to adjust bin size whenever a new bin is created.

Enforce Bin Size

Enabling this feature will prevent users from scanning more fruit than the set fruit per bin number. By disabling this feature, users can scan as many fruit as desired, despite a set bin size. This feature is disabled by default.

Highlight **Enforce Bin Size** and press **Right.** Use the **Up/Down** buttons to select between enabling or disabling this feature and press **Right** to confirm selection.

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Sides Per Fruit

Users can set a default number of sides per fruit. All new bins created will automatically be set to the sides per fruit chosen by the user.

Highlight **Sides Per Fruit** and press **Right.** Enter the desired number of sides per fruit and press **Right** to confirm selection.

Scans Per Side

Users can set a default number of scans per side. All new bins created will automatically be set to the scans per side chosen by the user.

Highlight **Scans Per Side** and press **Right.** Enter the desired number of scans per side and press **Right** to confirm selection.

Maturity Criteria

The Maturity Criteria Threshold can be used to track the percentage of fruit that exceeds a specified DM threshold. This statistic is reported in the Bin Summary menu. The **Maturity Criteria** threshold value and the offset values can be accessed and edited through this menu.

Highlight **Maturity Criteria** and press **Right.** Enter the desired number and press **Right** to confirm selection.

Measurement Offsets

The **Measurement Offset** is determined through a calibration process, which is performed prior to the instrument being shipped. However, in some cases the user may need to perform an offset calibration to achieve accurate measurements. If you notice that your instrument is predicting consistently higher or lower than it should be, please contact *Felix Instruments Support* to receive instructions on how to perform an offset calibration.

Highlight **Measurement Offset**, select between **DM, Brix, and Hue**, and then press **Right.** Enter the desired number and press **Right** to confirm selection.

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Archive Data

Archiving data allows users to keep measurements easily organized and prevent clutter. The user can also choose to allow the archived data to automatically be sent directly to **FruitMaps.com** or a **Data Server** *(See page 12)* in addition to the archived folder on the SD card.
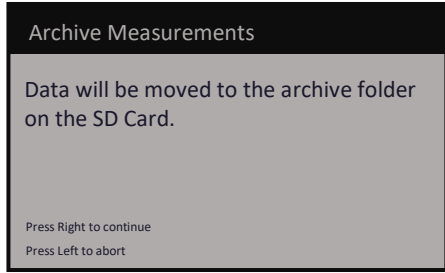

Figure 16. Archive Measurements Screen

From the main menu, navigate to **App Menu > Archive Data,** and press **Right.** Once prompted with the **Archive Measurements** screen, press **Right** to complete the archiving process. The instrument data can now be accessed through the archive folder on the SD Card *(See page 20).*

Measurements Preparation

To begin taking measurements, navigate from the **App Menu > Select Bin** and press **Right.** Select between **Create New Bin** or a pre-existing Bin.

Figure 17. New Bin Creation Screen

After completing the procedure on page 12, the main measurement screen will be displayed. When no measurements have been taken, the screen will display "Empty." Press **Up/Down** to view or edit each individual fruit measurement.
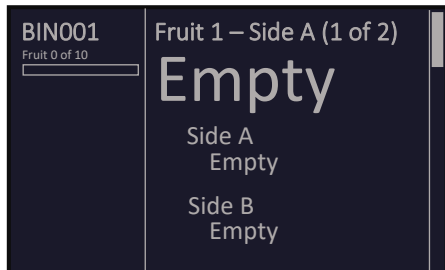

Figure 18. Measurement Screen

Measuring Kiwifruit

To ensure the highest degree of accuracy for a single fruit, it is recommended to perform a single scan at the equator of the fruit. This is the default configuration for the device. Abnormally high seed count or dense areas of seeds have the potential to cause artificially inflated predictions. If the user notices unusually high predictions for a particular fruit, then those results should be discarded, and a different fruit should be selected for measurement. Irregularities on the surface of the kiwifruit such as scabs can also increase measurement error. Users should avoid these areas when scanning the fruit.

Scan Here
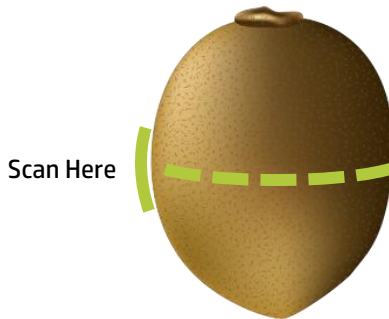
Figure 19. Where to Scan a Kiwifruit

- The instrument may produce unusually high predictions for a particular fruit. If this is the case, those results should be discarded, and a different fruit should be selected for measurement.
- Irregularities on the surface of the kiwifruit such as scabs can also increase measurement error. Users should avoid these areas when scanning the fruit.
- Kiwifruit firmness also plays a critical role in achieving accurate predictions from the device. Only firm fruit should be measured, as soft fruit will cause artificially inflated results due to changes in cellular structure and density.

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Taking Measurements

Position a kiwifruit horizontally over the lens of the instrument, with the equator of the fruit centered over the lens. Then, press the **Measure** button to take a measurement. If a bin has not yet been created, the device will automatically create an Ad Hoc bin with the prefix "AH001".

By default, the device will automatically perform three successive scans for each side.

*This process takes a few moments. The display will show **Wait** while measuring the fruit.*

Once the measurement has completed, the device will make an audible beep and the screen will display the measurement results.
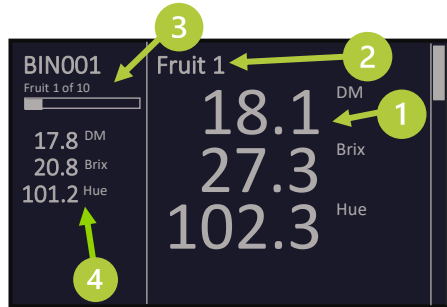
Figure 20. Measurement Screen w/ Scans

---

1. Average Dry Matter, Brix, and Hue values for the currently selected/ measured fruit.

3. Name and number of the current bin.
   a. Number of fruit with completed measurements out of the total number of fruit in bin.
   b. Bin progress bar (will gradually fill as more fruit have completed measurements).

2. Name and number of the currently selected/ measured fruit.

4. Average Dry Matter, Brix, and Hue values for the current bin.

Bin Summary

A bin's summary statistics can be viewed at any time by pressing **Left** from the **Measurement** menu. This screen displays the average, standard deviation, minimum, and maximum of the bin's DM, Brix, and Hue measurements.The statistic at the bottom of the screen indicates the percentage of fruit that have a dry matter value above the "maturity criteria" threshold that is set by the user in the **Options** menu.

Pressing **Right** from the **Measurement** menu will open the **Edit Measurement** menu. In this menu, users can delete all measurements for one side of the fruit, delete all measurements for the entire fruit, or delete all measurements for the current bin.
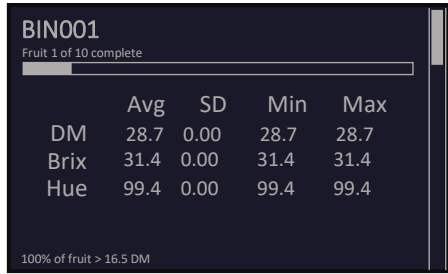
Figure 21. Measurement Summary Stats Screen
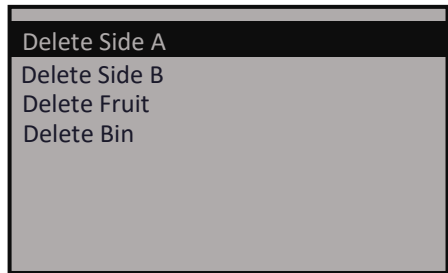
Figure 22. Measurement Options Menu

WARNING Once a fruit or a bin is deleted, the data is permanently removed from the device and cannot be recovered.

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Measurement Evaluation

Users have three methods to view and assess measurements.

1. Directly on the instrument interface
2. Offline on your PC using the SD Card or data server
3. Online with FruitMaps.com

Accessing Measurements on a PC: Using the SD Card

1. Turn off the device.
2. Remove the SD Card from the device.
3. Insert the SD Card into your PC.

Figure 23. SD Card Folder on PC

4. When measurements are taken with the instrument, a comma separated variable .txt file is created in the root folder of the SD card that logs information for each scan.

5. Measurements can be viewed and edited by right clicking the **.txt** file and choosing **Open With > Microsoft Excel**.

Figure 24. Exporting Measurements to Excel

6. When opening the .txt file type, Microsoft Excel will automatically guide the user through a series of prompts. Simply click **Next >** through the wizard and then **Finish**. This will ensure data is delimited into columns within Microsoft Excel.
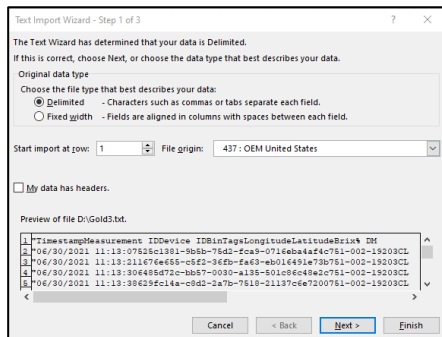
7. The .txt log file contains the following identifying information for each measurement:

- Timestamp
- Measurement ID
- Device ID (Serial #)
- Bin

- Fruit
- Side
- Scan
- Tags

- Latitude
- Longitude
- DM
- Brix
- Hue

Figure 25. Measurement .txt Log

8. Data that has been archived on the instrument will appear in a unique folder found within the **Archive** folder. Data that has not been archived can be accessed in the **Data** folder. Applications containing the chemometric models are housed within the **Apps** folder.
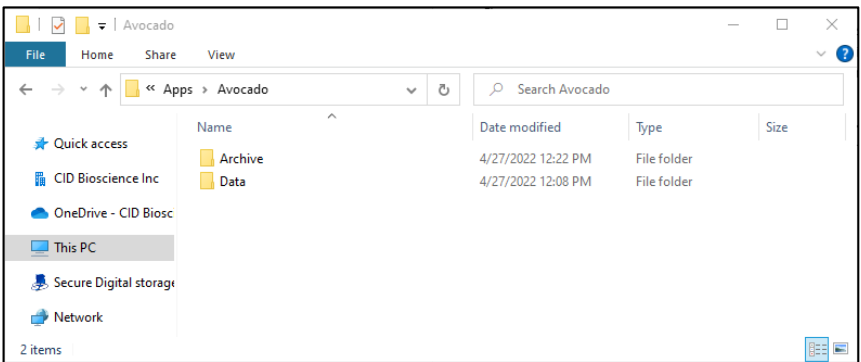

Figure 26. F-751 SD card Archive Folder on PC

Accessing Measurements on a PC: Using the Data Server

Each instrument comes with a unique account specific to its serial number.

These instructions are designed for Windows 10, but the FTP server will work with any operating system or client.

1. To connect to the FTP server, open **File Explorer**. Right click on **This PC** and select **Add a network location**.
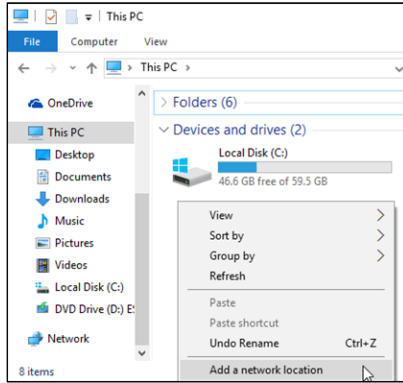2. Follow the onscreen instructions, selecting **Choose a custom network location**.

Figure 26. Adding Network Location on PC

3. In the **Specify the location of your website** dialog, enter the IP Address **FTP://100.21.100.246/SERIALNUMBER** Where SERIALNUMBER is your serial number.

4. Under **Specify a Username and Password if Required**, uncheck **Log on anonymously**. Enter the instrument serial number and desired username.

If desired, enter a custom name for the network location.

Figure 27. Entering Network Address

Felix Instruments   Phone: +1 (360) 833-8835   www.felixinstruments.com
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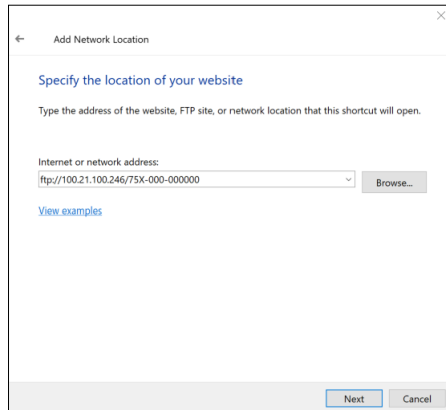5. When you are done, the FTP site will appear under **Network locations** in **This PC**. Right click the folder and select **Login As**. Input the username and the password (the device's serial number). Ensure that **Log on anonymously** is unchecked. Click **Log On.**
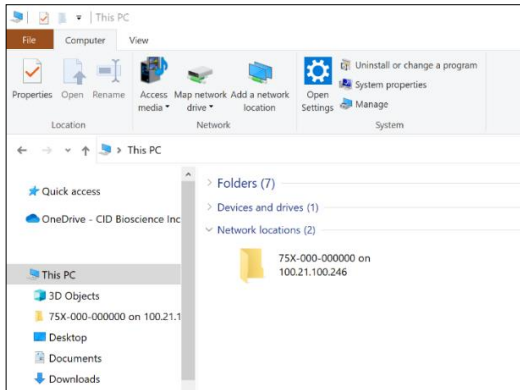
6. Download files by copying from this folder.

Figure 28. Data Server Folder on PC

7. Connect the instrument to the desired wireless network

8. Ensure that the instrument has **Data Server Upload** enabled. Connect the instrument to the desired data server

9. Navigate to **App Menu > Archive Data** and press **Right.**

10. When the device displays a message saying where the data will be archived and uploaded to the data server, press **Right** to archive the data. The instrument's data should now be available to view in the data server folder.
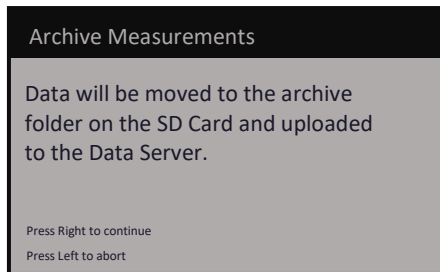

Figure 29. Archive Measurements Screen

Accessing Measurements on FruitMaps

FruitMaps.com, produced in-house by Felix Instruments, is a proprietary application that enables kiwifruit growers to better visualize their crop data and convert their gathered measurements into actionable harvest insights.

To upload instrument data to FruitMaps, GPS must be enabled *(See page 11 for instructions on enabling GPS)*.

Before uploading measurements to FruitMaps, you will need to set up an account at fruitmaps.com.

1. Login to FruitMaps.com and register this device using the serial number. The instrument's serial number can be found on a sticker on the back of the instrument.
2. Connect to a wireless network *(See page 11)*.
3. Ensure that FruitMaps **Upload on Archive** is **(Enabled)** *(See page 12)*.

Measurements will now automatically be uploaded to **FruitMaps.com** whenever they are archived *(See page 16)*. **All measurement data uploaded to FruitMaps is based on the average DM per fruit.**

Updating The F-751

Updating Device Firmware

Note: Offset calibration is always recommended after installing new firmware or before using new apps. The offset calibration procedure is located on the Felix website. Consult Felix Instruments support with any questions.

1. Verify the firmware to be installed is compatible with the quality meter hardware version.
   a. Refer to the Version Table on the Product Support > Downloads page.
2. Download the firmware from the Product Support > Downloads page. Unzip the file onto your computer if necessary.
3. Determine and download the compatible app or model for the firmware to be installed. Refer to the Version Table on the Product Support > Downloads page. Unzip the app file onto your computer if necessary.
   a. Note: The user may use their own apps or apps from previous builds. Please contact customer support for compatibility considerations.
4. Power ON the F-751 and ensure all the measurements on the device are archived to the SD Card.
5. Power OFF the device, remove the SD Card and insert it into the computer.
6. Copy the entire contents of the SD Card onto the computer.
7. Delete the contents on the SD Card EXCEPT any file that begins with "*F75XSettings*". Deleting the contents of the SD Card is optional however promotes a cleaner environment for saving measurements with the new firmware and apps.
8. Copy the desired apps to be used onto the SD Card (refer to step 3).
9. Reinsert the SD Card back into the F-75X.
10. Connect the F-75X to your computer using the micro-USB to USB-A cord that was provided with your instrument. Note: Ensure the device batteries are charged to at least 50% before starting the firmware update.
11. Open the firmware update file that was downloaded and unzipped in step 2.
12. Follow the on-screen instructions to update your device.

Updating App

Note: Offset calibration is always recommended after installing new firmware or before using new apps. The offset calibration procedure is located on the Felix website. Consult Felix Instruments support with any questions.

1. Determine the app to be installed is compatible with the firmware version installed on your device. Refer to the Product Support > Downloads page compatibility tables.
2. Before performing any installation process, it is recommended to backup all files that reside on the SD Card onto your computer.
   a. Power ON the F-75X and ensure all the measurements on the device are archived to the SD Card.
   b. Power OFF the device, remove the SD Card and copy the entire contents of the SD Card onto your computer.
3. With the SD Card still attached to your computer, delete the old app(s) from the SD Card. This step is optional, it is allowable to have multiple apps on the SD Card however the following considerations apply:
   a. If more than one app resides on the SD Card, the F-751 will power on to the "Ready" screen. The user will then be required to press the right arrow button to load the desired app.
   b. If only one app resides on the SD Card, the unit will load the single app immediately when powered on and no further action will be required. It is recommended that the F-751 only have one app on the SD Card.
4. Copy the new app onto the SD Card.
5. Insert the SD Card back into the F-751.

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Troubleshooting

If something goes wrong on the device, it can always be reset by pressing and holding the **Power On/Off** button for twenty seconds, waiting for two seconds, then pressing the **Power On/Off** button again.

Visit the Felix Instruments website and click the F-751 Kiwifruit icon for advanced troubleshooting, frequently asked questions, or to report a problem.

Felix Instruments is committed to provide customers with high quality, timely technical support.

Contact Felix Instruments:

Website	http://www.felixinstruments.com/support	*Mailing Address*	Felix Instruments 1554 NE 3rd Ave Camas, WA 98607 USA
Email	support@felixinstruments.com	*Fax*	360-833-1914
Phone	800-767-0119 (U.S. and Canada) 360-833-8835 (Other countries)		

Specific technology in this device was developed with the generous help and technical guidance of PROCINORTE, a network of national agricultural research bodies in the three countries of North America: Canada, USA, and Mexico https://www.procinorte.net/.

Technology was also developed and licensed from Central Queensland University, Rockhampton, Australia https://www.cqu.edu.au/

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SELLER'S WARRANTY AND LIABILITY

Felix Instruments- Applied Food Science warrants new equipment of its own manufacturing against defective workmanship and materials for a period of one year from date of sale. The results of ordinary wear and tear, neglect, misuse, accident, and excessive deterioration due to corrosion from any cause is not to be considered a defect.

Felix Instruments' liability for repairing or replacing defective parts during the warranty period is contingent on examination by a Felix Instruments authorized representative. Felix Instruments liability will not extend beyond repairing or replacing parts from the factory where they were originally manufactured. Repair or alteration by an unauthorized technician voids warranty.

Material and equipment which is not manufactured by Felix Instruments is to be covered only by the warranty of its manufacturer. Felix Instruments will not be liable to the Buyer for loss, damage, or injury to persons or to property by the use of equipment manufactured by other companies.

Buyer accepts the terms of warranty through use of this instrument and any accessory equipment. There are no understandings, representations, or warranties of any kind, express, implied, statutory, or otherwise (including, but without limitation, the implied warranties of merchantability and fitness for a particular purpose), not expressly set forth herein.

All instrument repairs or replacement covered under warranty require a Returned Material Authorization (RMA) number. Please contact Felix Instruments technical support department at support@felixinstruments.com to obtain an RMA number before shipping instrument to CID Bio-Science, Inc.

Buyer is responsible for shipping charges to Felix Instruments headquarters:

1554 NE 3rd Ave.
Camas, WA 98607
USA

Felix Instruments is responsible for return shipping charges on repairs and/or replacement covered by warranty.

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