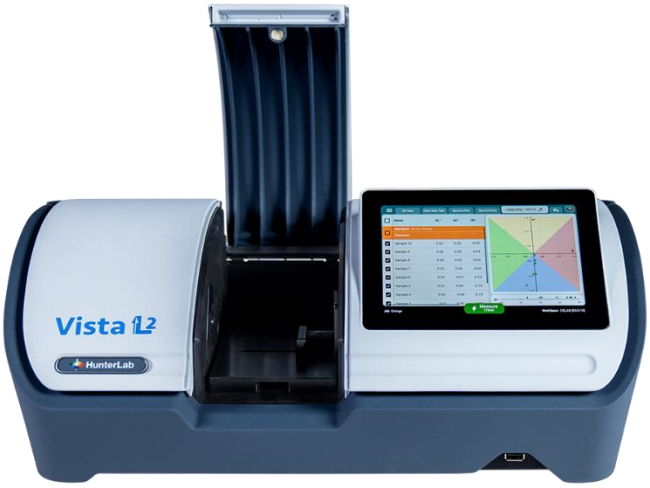
User's Manual for
Vista® L2 and Vista® L2-ER



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A60-1022-058 Version 2.0
For EasyMatch Essentials L2 2026.4 and Above

The world's true measure of color
HunterLab

Preface

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Safety Notes



Caution: If the equipment is used in a manner not specified by HunterLab, its overall safety and protection may be impaired. The instrument is for indoor use only and unsuitable for wet locations.



For your safety when using the Vista L2, you should pay attention to the following types of statements in this User's Manual:

- ***General safety instructions that should always be observed while operating the instrument.***
- ***Specific safety instruction critical to the type of instrument operation being explained in the manual where the caution appears.***
- ***Use of this equipment in a manner not specified by the manufacturer may impair the protection afforded by the equipment.***
- ***Danger of electric shock if liquids are spilled and fire if volatile or flammable liquids are spilled. Use care when measuring liquid samples.***

Legal Disclaimers: Instrumental – Visual Evaluation

The HunterLab Vista L2 Colorimetric Spectrophotometer is designed for precision color and appearance measurement. It measures numerical color and related data in absolute and relative terms.

HunterLab cannot guarantee the accuracy, completeness, efficacy, and timeliness of the data due to inherent uncertainties in instrumental readings, variations in sample presentation, and potential inconsistencies in human color perception. Users are strongly advised to verify the instrumental data with meticulous visual evaluation.

Disclaimer of Liability: Utilization of Data, Metadata and Information

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Instrument Setup and Overview

What is HunterLab Vista L2 & EasyMatch Essentials L2?

Vista L2 is a transmittance-only color measuring instrument capable of measuring color and haze of transparent and translucent liquid, films, and plaques and transparent extruded or formed blanks. All samples are measured by placing them in the transmittance compartment, either at the sphere port or receptor port. The size and nature of the sample will determine how the sample is presented and the type of sample handling device that is deployed. Sample handling will include cuvette, cells, and ampules for liquids and film holders for sheets and films.

All measurement results are displayed on a 7" high-resolution touchscreen interface through the embedded EasyMatch Essentials L2 user interface, which includes most color scales, indices, and Illuminant/observer combinations desired for industrial applications. With Ethernet and USB connectivity, data results can be saved and streamed to LIMS and SPC systems.

Standard Accessories

The Vista L2 includes the following standard accessories :

- HunterLab Wavelength Standard
- Certificate of Compliance
- Power Supply
- Stylus
- Cleaning Cloth
- Certificate of Traceability
- Initial Customer Instructions before Unpacking Guide
- Vista L2 Quick Start Guide
- User's Manual is located at www.hunterlab.com

Selecting an Installation Location

To achieve optimal performance and accurate measurements, the Vista L2 should be installed in a controlled laboratory environment that adheres to the following guidelines.

Installation Environment

- Choose a stable location with consistent temperature and humidity within operational ranges.
- Ensure the workspace is clean and free from airborne contaminants such as dust, particulate matter, and aerosols.
- Avoid areas with drafts or vibration that could interfere with measurements.
- Provide proper room lighting to ensure visibility during operation.

Placement and Access

- Place the instrument on a stable, vibration-isolated surface to minimize disruptions and avoid strong electrical fields.
- Ensure that there are no heat generating sources near the instrument.
- Maintain clear access to the rear connectors for power and network connections.
- Allow 20cm (8in.) of unobstructed clearance on each side of the instrument.
- Do not remove any of the covers. Service must be performed by a HunterLab service representative.

Power Requirements

The instrument requires: Voltage: 100-240 VAC; Current: 3.75A; Frequency: 47/63 Hz; Single Phase power with a maximum load of 60 VA; Compliance with Installation Category (Over Voltage): II.

Sample Handling and cleanliness

- Follow strict protocols for handling and preparing samples to prevent contamination of the instrument.
- Use clean tools and materials to avoid introducing dust or debris into the measurement area.
- Train laboratory personnel in cleanroom-like protocols, including appropriate attire and mindful handling of samples and equipment.

Cleaning the Vista L2

Clean the outside surfaces of the Vista L2 using a soft cloth. Do not spray liquids directly on the instrument. Care should be taken to avoid degradation of optical surfaces. Refer to **MAINTENANCE** for more detail.

Safety Guidelines

To operate the Vista L2 safely:

- Do not view the instrument LED's directly as it may be damaging to the eyes.
- Avoid submerging the instrument in water to prevent damage.
- Do not attempt to disassemble the instrument, as it contains no user-serviceable parts.
- Do not clean or access optical components without proper guidance or instructions.
- Only open the instrument or remove covers as instructed in this manual or under the guidance of HunterLab Technical Support.

For more information, please refer to **SPECIFICATIONS**.

Note: As outlined in this document, failure to comply with these conditions and protocols may adversely affect the instrument's performance.

Unpacking your Box

Review Your Order

Please review your order. Compare your order with the shipping document from HunterLab. If there are any discrepancies, please contact the HunterLab Customer Experience Team (support@hunterlab.com).

Power Jack

The instrument is supplied with a 24 VDC (3.75A) power supply. The power supply is plugged into the back of the instrument as shown along with the Ethernet port and the USB port.

Retain the packaging in case the instrument is returned to HunterLab.

User-Facing Features

Touchscreen Display

The Vista L2 features a seven-inch high-resolution touchscreen display, which serves as the primary interface for operating the instrument. The screen provides intuitive access to the EasyMatch Essentials L2 software, allowing users to view sample data, manage workflows, and adjust instrument settings.

Side USB-Connectors

The Vista L2 has one USB connector on the left side. This port is typically used for connecting flash drives or keyboards. A USB hub can be attached to connect multiple devices simultaneously. USB port can be used to export Jobs and WorkSpaces, or to update the software using a USB flash drive. Any USB flash drive formatted as FAT32 should work with the instrument.

Vista L2 supports keyboard and mouse input, including devices connected through the instrument's USB port.

Power Input and Rear IO Features

- The instrument is supplied with a 24 VDC (3.75A) power supply. Plug the power supply into the power input located at the back bottom of the Vista L2. To turn on the Vista L2, use the power switch located on the right side of the instrument.



Figure 1. On/Off Switch

- **Ethernet Port:** Connects the Vista L2 to a network for data output when connected with HunterLab Essentials L2 on a PC, and other networked systems. Prints directly to standalone or network printers. Allows for email from the instrument. Use to stream data to LIMS and SPC systems.
- **HDMI Port:** Connect an HDMI cable to display the interface on an external monitor. Touch-screen monitors are compatible with the Essentials L2 user interface and require an additional USB cable plugged into the USB-A connector.
- **Footswitch Port:** Connect a foot switch here to trigger measurements conveniently.
- **Service Port:** Connect the instrument to a PC directly using a USB-A to USB-B device cable for service or software purposes.
- **Ground Stud:** Provides a grounding connection point for the instrument when required by the installation environment or facility grounding practices.

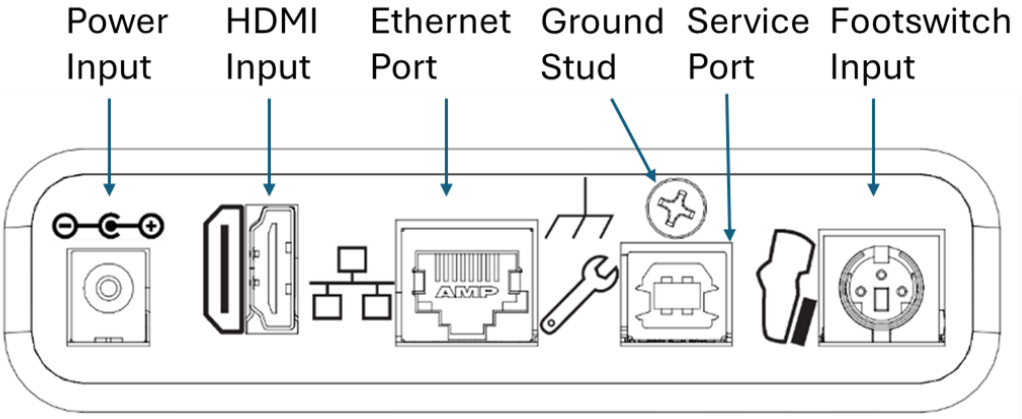

Figure 2. Ports on the Back of the Vista L2

CAUTION

Note: Use only the power cord included with this instrument or a replacement obtained from HunterLab. Be certain that the power cord is in good condition before connecting it.

Initial Essentials L2 Setup and Measurement Guide

Powering On the Instrument

After unpacking and setting up the instrument, turn on the power using the power switch on the side of the instrument base.

First Time Setup and Introductory Tutorial

When the Essentials L2 software launches for the first time, it displays the **FIRST TIME SETUP** dialog. Configure the language, region, date, and time, then tap DONE to proceed.

Next, the ***WELCOME WIZARD*** guides you through an overview of the instrument and software features. To exit the wizard, tap the X in the top-right corner. Relaunch the wizard anytime by tapping the HunterLab icon in the top-right corner.

Default WorkSpace Settings

After the wizard, the main measurement screen, EZ View [D65/10], is displayed. Essentials L2 loads with 'CIELAB [D65/10]' default WorkSpace configured as follows:

Table 1. Workspace Settings

Color Scale:	CIE L*a*b*
Indices	None
Differences	None
Illuminant/Observer:	D65/10°(CIE 1964 observer)
Mode	Total Transmittance
Views	EZ View
Standard Type	Ad hoc/Working

Note: Essentials L2 software includes two default WorkSpaces, 'CIELAB [D65/10]' and 'HunterLab [C/2]'. These WorkSpaces cannot be modified directly. However, you can edit them and save them as new ones or create a new WorkSpace and then edit there.

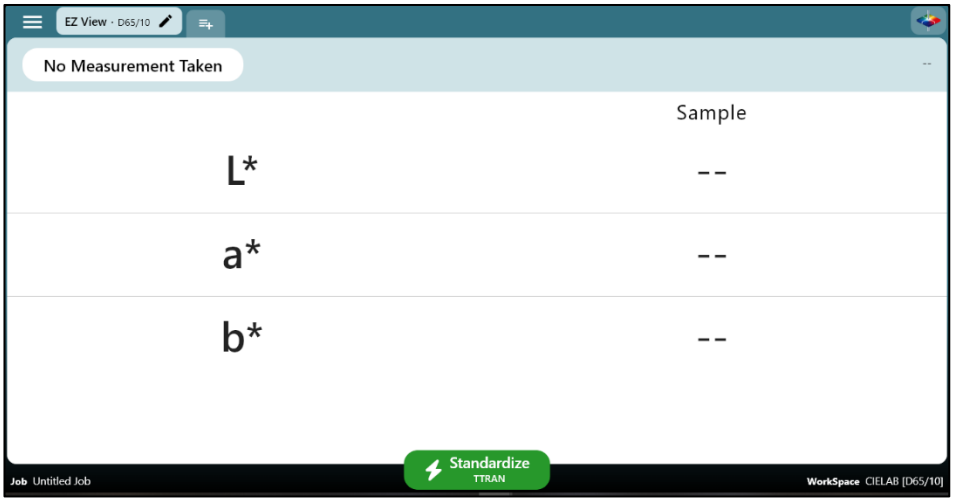

Figure 3. EZ View Default Settings

Standardization

The Vista L2's standardization process is fully automated and requires no user interaction. The default workspace is set to Total Transmittance (TTRAN) without Haze.

Note: To standardize in TTRAN with Haze or Regular Transmittance (RTRAN), create a new workspace by clicking the Workspace Name button at the bottom right of the screen, then configure the Standardization Mode accordingly.

To begin, select ***STANDARDIZE*** at the bottom of the screen. Make sure that the sample compartment is empty or contain a cell blank. Press ***CONTINUE***.
The system will standardize automatically.

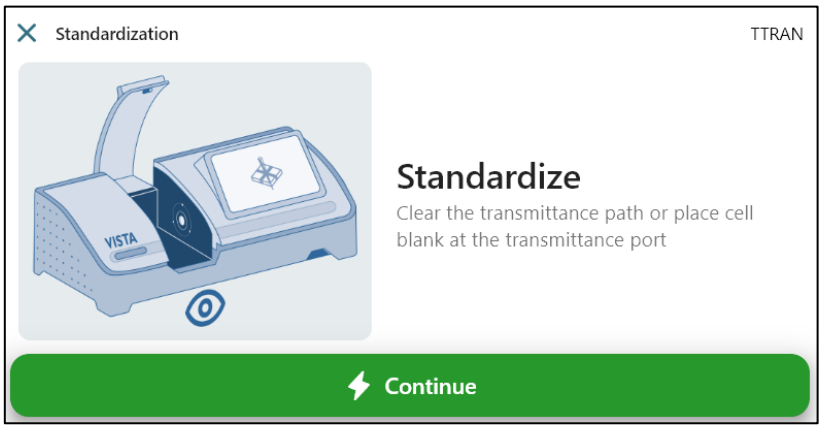

Figure 4. Reminder to Empty the Transmittance Compartment

READING A SAMPLE

1. To measure Total Transmittance, place your sample next to the sphere.
2. Press ***MEASURE***. The first reading will be treated as a standard since the CIELAB (D65/10) default WorkSpace uses the Ad hoc/Working standard type.
3. To set another sample as the standard in this job, measure the sample, tap its name, and select **SET AS STANDARD**.

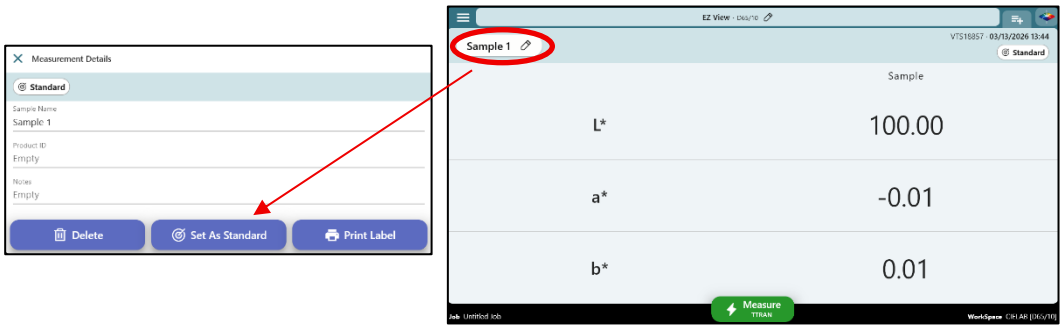

Figure 5. Set a Sample as Standard

4. In the **MEASUREMENT DETAILS** dialog, click on the associated line to edit the **SAMPLE NAME**, **PRODUCT ID**, and **ENTER NOTES**. Use the **DELETE** to remove a sample measurement. One can provide a label if a printer is attached.

   Alternately, a standard can be read in CIELab D65/10 and entered as a numeric standard. Press ***WORKSPACE*** at the bottom right side of the screen.

   Select ***EDIT CURRENT WORKSPACE***. Select ***NEXT STEP*** to proceed to ***STANDARD & TOLERANCES***, then input the standard and tolerances using CIELab D65/10 parameters.

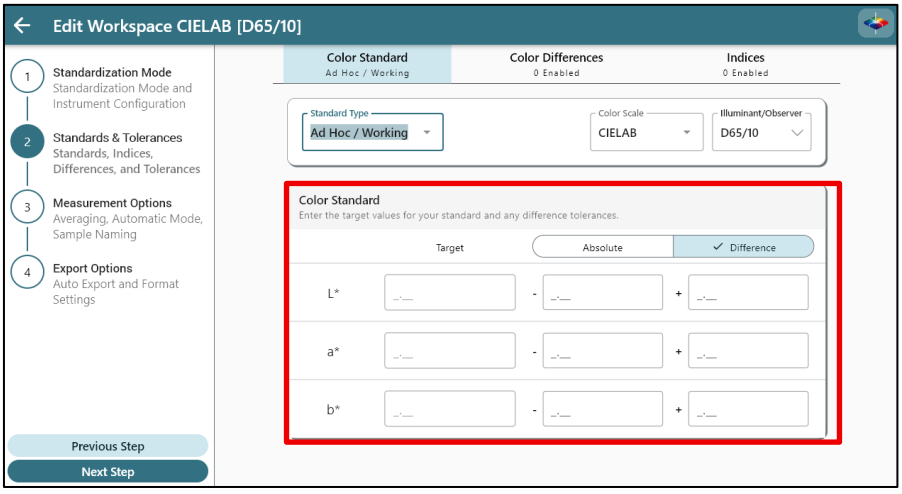

Figure 6. Setup a Simple Standard

Editing EZ VIEW

Sample Name Box

Located at the top-left corner of the screen, this box allows you to edit the sample name, delete it, or set it as the standard by tapping on it. The box is highlighted with a color corresponding to the measured color to offer a quick visual reference.

Information Area

Located at the top-right corner of the screen, this area displays the instrument's serial number, time, date, and Pass/Fail status. If the measurement is a standard, it will be labeled as a Standard in this area.

Display Options

Tap the pencil icon in the EZ View box and select ***DISPLAY OPTIONS***. Choose the radio buttons next to ***SHOW STANDARD***, ***SHOW DIFFERENCES and DIFFERENCES*** (vs. Absolute) to display the differences. All changes to the view are automatically saved to the current workspace. For more details on view editing, refer to **VIEWS**.

Changing or Adding WorkSpaces and Jobs

WorkSpaces in Essentials L2 are similar to product setups. Jobs under a WorkSpace serve as associated data files. Once a WorkSpace is launched, you can create a new job or open existing jobs under this workspace.

To change or add a **WORKSPACE**, tap the WorkSpace name at the bottom-right of the screen. Edit settings such as ***STANDARDIZATION MODE, TOLERANCES,*** **DIFFERENCES/INDICES**, ***COLOR SCALES, STANDARD TYPE, MEASUREMENT*** **OPTIONS**, and **DATA EXPORT OPTIONS**.

To manage jobs, tap the **JOB** name on the bottom left side of the screen to create a **NEW JOB** or tap one existing job to **EDIT JOB NAME, DELETE JOB, EXPORT JOB** (.csv file) and **PRINT** Spectral Data or Color Data.

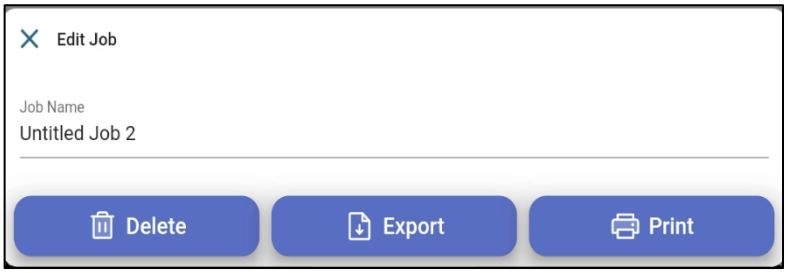

Figure 7. Renaming, Deleting, Exporting & Printing Jobs

Job Export

To begin, insert a flash drive. Jobs can be exported in **CSV, PDF, or XLS** formats, making it easy to open them in **Microsoft Excel** or automation software. When exporting a PDF, users can configure what to export in PDF Report dialog. Any images stored within a job can be exported as **JPEG files** inside a **zip folder**.

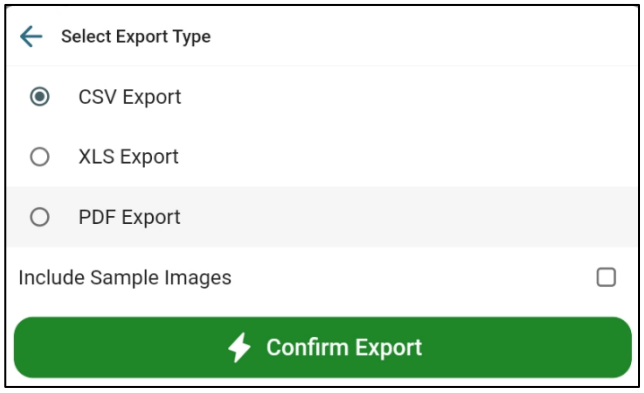

Figure 8. Select Export Type

Press ***CONFIRM EXPORT*** and check the box to include **SAMPLE IMAGES**.

Job Export-Multiple Jobs

To export multiple jobs together under a WorkSpace:

- In the Job dialog, press and hold a job to enable Multiple Job Management Mode.
- The Delete Icon (Trash Can) and Export icons will appear.
- Select multiple jobs as needed, then tap the Export icon on the top right corner of this dialog to export the selected jobs.

Job Print

- **Network** – Confirm the instrument and an Android-compatible printer are on the same Network.
- **Start** – In Essentials L2, open ***EDIT JOB*** and tap ***PRINT***.
- **Configure PDF Report** – Configure the content in the PDF Report. Tap **Export** to save the combined PDF to a connected flash drive or **Print** to send it to a network printer.
- **Select a printer** – The Android print dialog lists all printers on the network. Pick one and Essentials L2 remembers your choice for next time. Copies, paper size, color mode, orientation, duplex, and page range can be changed here.
- **Print** – Tap the **PRINT** icon to send the job.

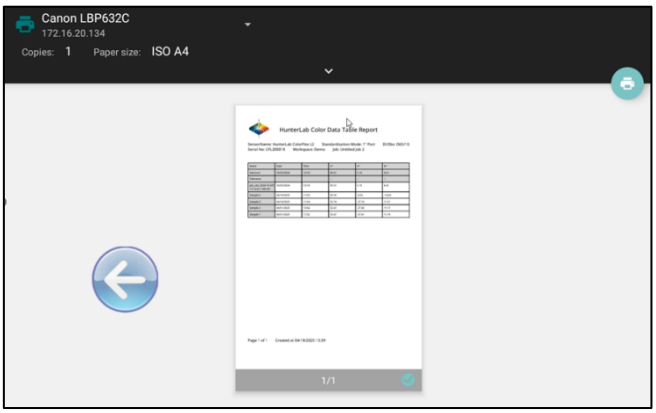

Figure 9. Job Print

PDF Report

PDF reporting now allows for more advanced combinations of multiple reports into a single file. From the **PDF Report** dialog, enable the views you want to export, then drag the views into the desired sequence to set the page order of the combined report. The available views include **Standards & Tolerances**, **EZ View**, **Spectral Data**, **Color Data Table**, and **Spectral Plot**.

- Each enabled view can be set to either **Landscape** or **Portrait** orientation using the drop-down to the right of the view name.
- Tap **Add company info** to add a company name and logo to the header of the PDF export. The header is applied to the combined report.
- Tap **Export** to save the combined PDF to a connected flash drive, or **Print** to send it to a network printer.

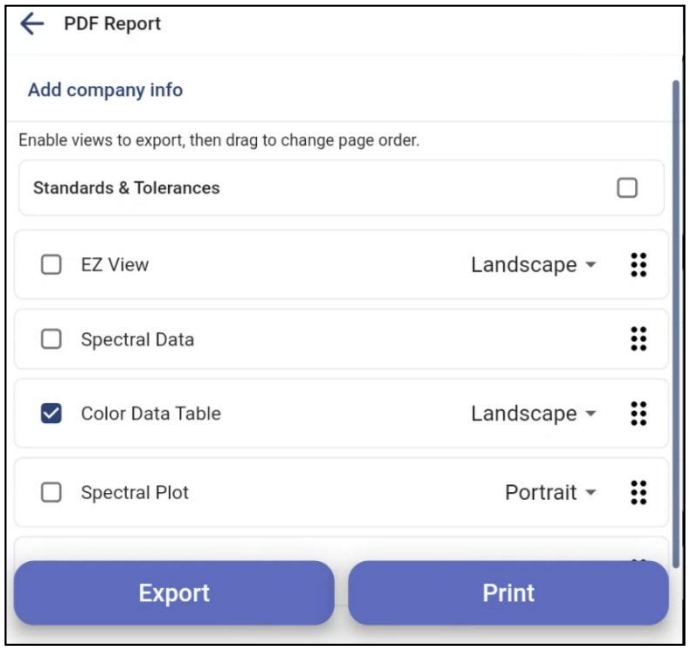

Figure 10. PDF Report Export Options

Additional settings including **INSTRUMENT SETTINGS**, **DATA MANAGEMENT**, **PERIODIC DIAGNOSTICS** and **STANDARDIZATION**, are available in the **SYSTEM MENU.**

Navigating the Essentials L2 Screen

The general screen of EasyMatch Essentials L2 are shown below.

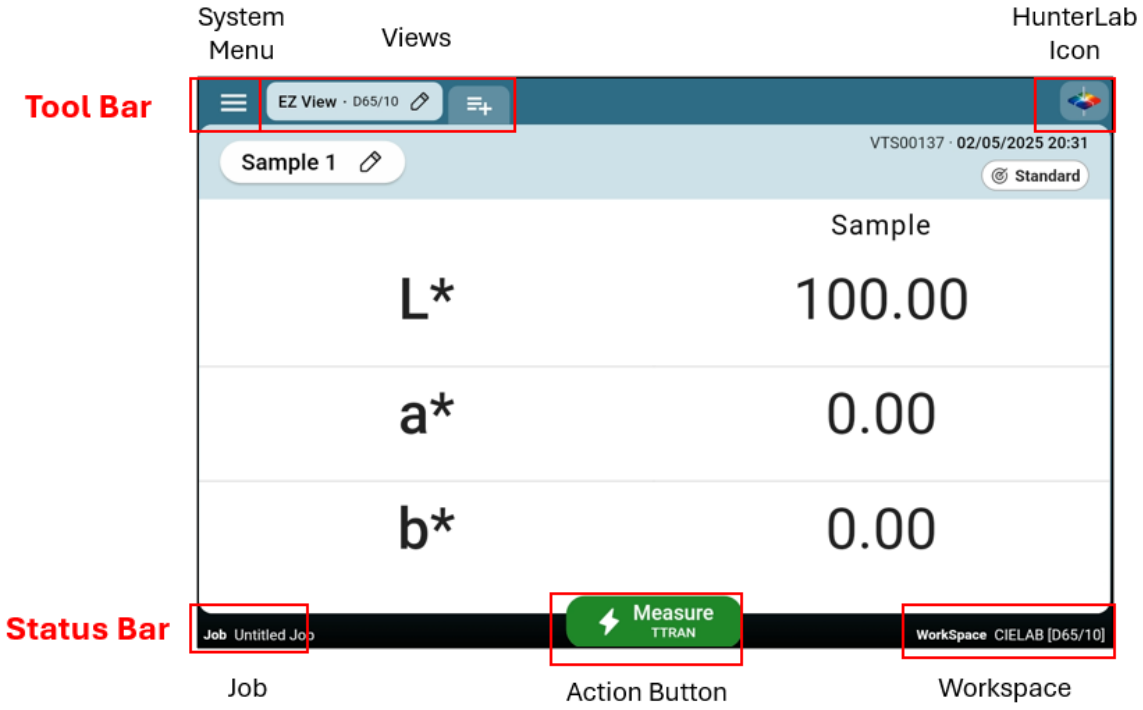

Figure 11. User Interface Screen of Essentials L2

Status Bar – Job, Action Button, and WorkSpace

The Status bar at the bottom of screen includes the following features:

Status Bar: Job

Displays the name of the current job. Tap the arrow to the right of an existing job to create a new job or select to **RENAME, DELETE**, **EXPORT** as a .csv file or **PRINT/EXPORT** a PDF report using Spectral or Color Data.

Managing multiple jobs:

1. Press and hold a job to enable ***MULTIPLE JOB MANAGEMENT MODE***.
2. Both the **DELETE** icon and **DOWNLOAD** icon will appear, allowing you to select multiple jobs for deletion or export.

Note: Each Job file can contain up to 2000 measurements. The measure button will change to a "New Job" button when this limit is reached.

Status Bar: WorkSpace

To change or create a new WorkSpace, press ***WORKSPACES*** in the Status Bar. This action opens a list of all available WorkSpaces.

- The **current WorkSpace** is always listed first.
- Remaining WorkSpaces are displayed either by **Last Used** or in **Alphabetical** Order. Click Search icon to search for a Workspace by name.
- For WorkSpaces with non-Ad hoc/Working standard types, the WorkSpace is highlighted with a color corresponding to the standard it contains, providing a quick visual reference.

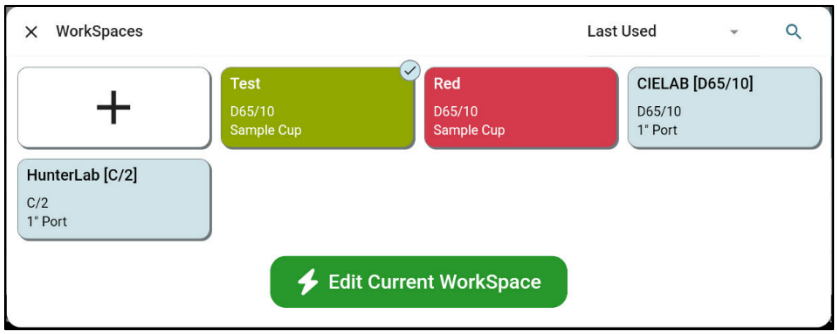

Figure 12. Edit or Create New Workspace

Managing WorkSpaces

Launch a Workspace

- Tap an existing workspace displayed in the WorkSpaces dialog.
- Click the ***LAUNCH BUTTON*** to load the selected WorkSpace.

Create a New WorkSpace

- Tap the + icon to create a ***NEW WORKSPACE***. Select an existing WorkSpace as a template and press ***CONTINUE***.
- Modify the settings for the new workspace as prompted. See ***SYSTEM MENU > WORKSPACE EDIT*** for details.
- ***NAME*** and ***SAVE*** the new WorkSpace.

Delete a WorkSpace

Press and hold a WorkSpace to enable deletion mode. A trash can icon will appear in the right corner, allowing you to select multiple WorkSpaces for deletion. To disable deletion mode, unselect all WorkSpaces.

Note: Default WorkSpaces and the active WorkSpace cannot be deleted.

Tool Bar – System Menu, Views and HunterLab Icon

The Tool bar at the top of screen includes **SYSTEM MENU**, **VIEWS**, and **HUNTERLAB ICON**.

Tool Bar: System Menu

The **System Menu** is located in the top-left corner of the screen. Tap the three-bar icon to access the following options:

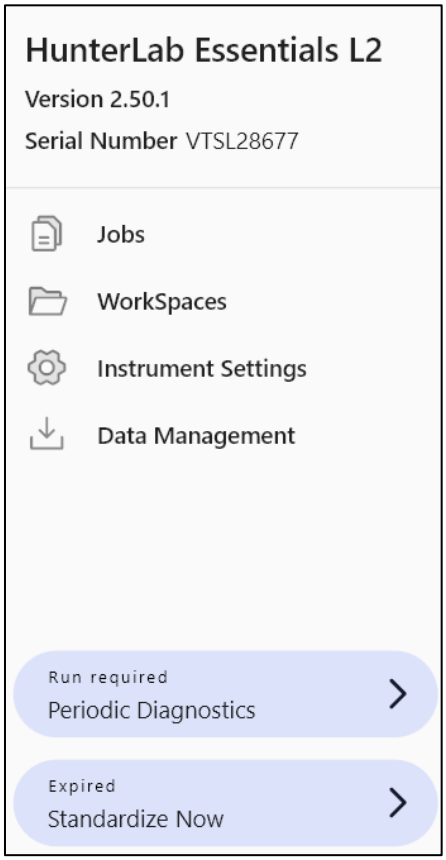

Figure 13. System Menu

- **Jobs/Workspaces**
  Alternate ways to open the Job or WorkSpace dialogs for managing data, transmittance modes , color measurement scales/indices, and options such as averaging for measurement.
- **Instrument Settings**
  Configure key settings such as standardization interval, importing product setups from another instrument, changing date and time, selecting a language, display settings, network settings, diagnostic and password security. See **INSTRUMENT SETTINGS** for more details.
- **Data Management**
  Export Jobs and WorkSpaces to a flash drive.
- **Periodic Diagnostics**

View the status of diagnostics and run diagnostic tests, including Signal Levels, Repeatability, and Diagnostic Check Tile tests. See **INSTRUMENT SETTINGS > DIAGNOSTICS** for additional information.

- **Standardization**
  Displays the status of diagnostics and enables users to run standardization.

Tool Bar: Views

The Views section in the Tool Bar displays the current view(s) in the center of the Tool Bar. Available views include:

- **EZ View,**
- **Color Data Table View,**
- **Spectra Data View,**
- **Spectra Plot View,**
- **Color Plot View**

For detailed information about each view, see **VIEWS**.

Managing Views

- **Adding/Removing Views**
  Tap the  icon and select the desired views from the list.
- **Reordering Views**
  Tap and hold a selected view, then drag it to the desired position.
- **Saving Changes**
  Press ***SAVE*** to apply changes. Once saved, use the tabs in the Tool Bar to navigate between views.

Note: Each view can only be opened in one tab. Essentials L2 does not support multiple tabs with the same type of view.

Editing Views

- The view currently displayed on the screen is the **active view** in Essentials L2.
- Only the active view shows a pencil icon in its tab. Tap the pencil icon to edit the view.
- If a view is not active, tap it first to display it, then tap it again to access its editing options.
- Press the left arrow at the top of the screen, or anywhere on the view screen to exit View Options.

Tool Bar: HunterLab Icon

The **HunterLab Icon** is located at the top-right corner of the screen. This can also be accessed by swiping up with 3 fingers on any page.

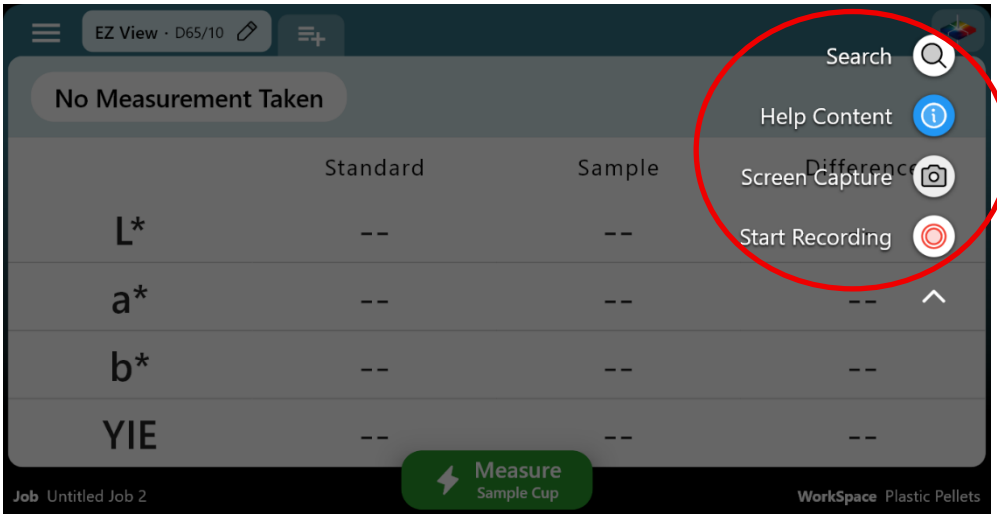

Figure 14. HunterLab Icon Features

Global Search
Use the Global Search to quickly find jobs, or workspaces or instrument settings.

Help Content
Select this feature to review the main software features.

Screen Capture
Tap **SCREEN CAPTURE**, and the image of the current screen will be saved to an attached flash drive.

Recording
The **Recording** feature will allow you to record the Essentials L2 screen. Tap **START RECORDING** to begin. To stop, tap the **HunterLab Icon** again and select **STOP RECORDING**. The video will be saved to an attached flash drive. This is helpful in the development of lab methods.

WorkSpace Edit

In the WorkSpaces main dialog, a check mark (✓) appears in the upper-right corner of the current WorkSpace box. All the workspaces are listed here in boxes. If there is a physical or numeric standard saved in a workspace, the workspace box will be shown with corresponding color rendering.

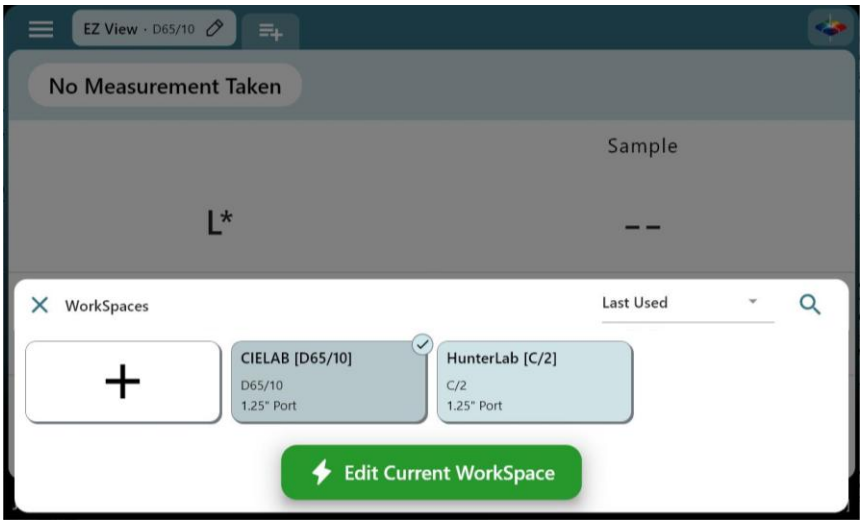

Figure 15. Workspace

To manage a WorkSpace, tap its box. The three-dot menu provides options ***to RENAME, MARK AS FAVORITE, PRINT A SEARCH LABEL*** or ***DELETE*** the WorkSpace if it is not a default WorkSpace. The Print Label option generates a unique barcode for the selected WorkSpace, allowing users to switch to it by scanning the barcode. If connected to a label printer, the barcode can be printed directly from Essentials L2.

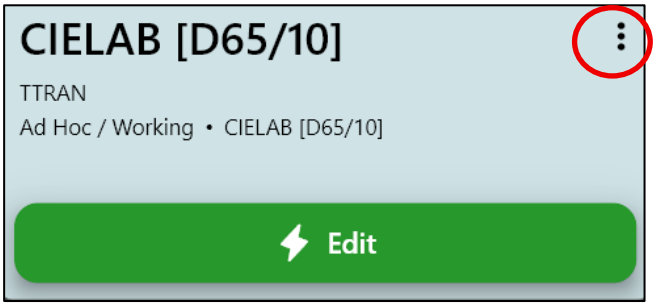

Figure 16. Workspace 3Dot

Print a WorkSpace Search Label

The Print Label option in the three-dot menu generates a unique barcode for the selected WorkSpace, allowing users to switch to this workspace by scanning its barcode.

- Plug the label printer into the USB port on the left side of the Vista L2. The **Brother QL-800 High-Speed Professional Label Printer** is the recommended and supported model for use with Essentials L2.

  The following label sizes are recommended:
  - 29x90 mm (Address Label)
  - 62x100 mm (Shipping Label)
  - 62 mm width Roll (Shipping Label continuous)
- In WorkSpace dialog, tap the workspace box which you want to print. Tap the three-dot menu (⋮) and choose **PRINT SEARCH LABEL** option to generate a unique QR code for the selected WorkSpace.

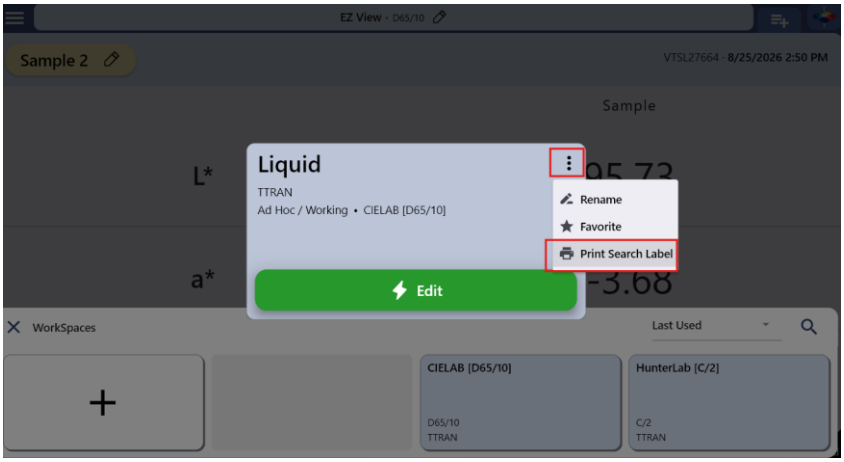

Figure 17. 3 Dot Search Label

- Scan the label with Vista L2 to load the associated WorkSpace instantly.
- Users can tap a **sample name** in **EZ View**, **Color Data Table View**, or **Spectra Data Table View**. This will open the **Sample Measurement Details** dialog, where users can click **PRINT LABEL** to print the label for that specific sample.

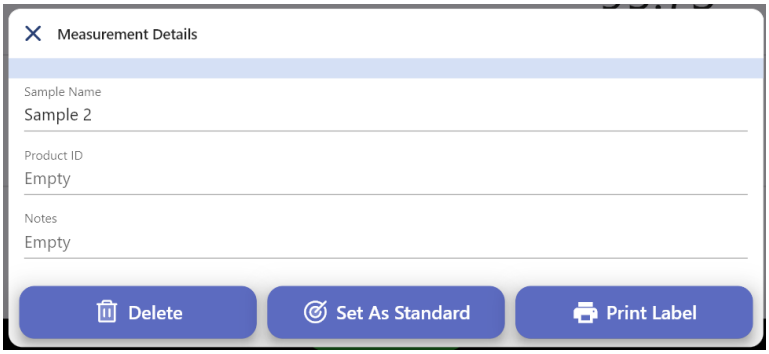

Figure 18. Sample Measurement Details

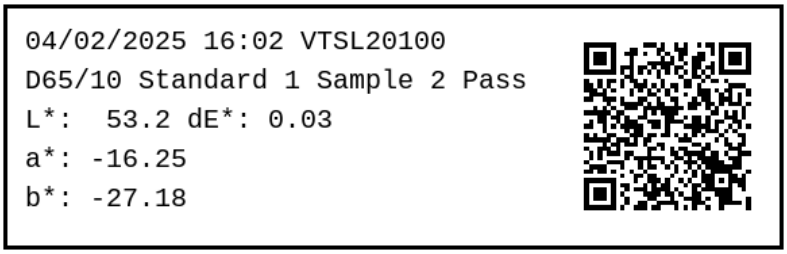

Figure 19. Printed Label

Edit A Current WorkSpace

To edit the current WorkSpace, tap **EDIT CURRENT WORKSPACE**, then modify the settings as needed. When changes are made to **standard or tolerance values**, Essentials L2 creates a **new WorkSpace revision** and locks previous jobs associated with the earlier revision.

To print a label, use the 3 dot option at the top right corner of the dialog. The 3 Dot option provides the ability to ***RENAME*** the WorkSpace, ***MARK*** the WorkSpace as a favorite and ***PRINT A SEARCH LABEL***. (See Figure 15)

To create a new WorkSpace, tap the + icon and follow the on-screen instructions to configure and customize it.

To edit another existing Workspace:

1. Tap the desired WorkSpace in the dialog.
2. Tap ***LAUNCH*** to load the WorkSpace.
3. Return to the main dialog and tap ***EDIT CURRENT WORKSPACE*** to modify the selected WorkSpace.

STANDARDIZATION MODE

This screen displays fixed options such as **TRANSMITTANCE MODE (Total or Regular)** and inclusion of **HAZE MEASUREMENT** for Vista L2. Press ***NEXT STEP*** to continue.

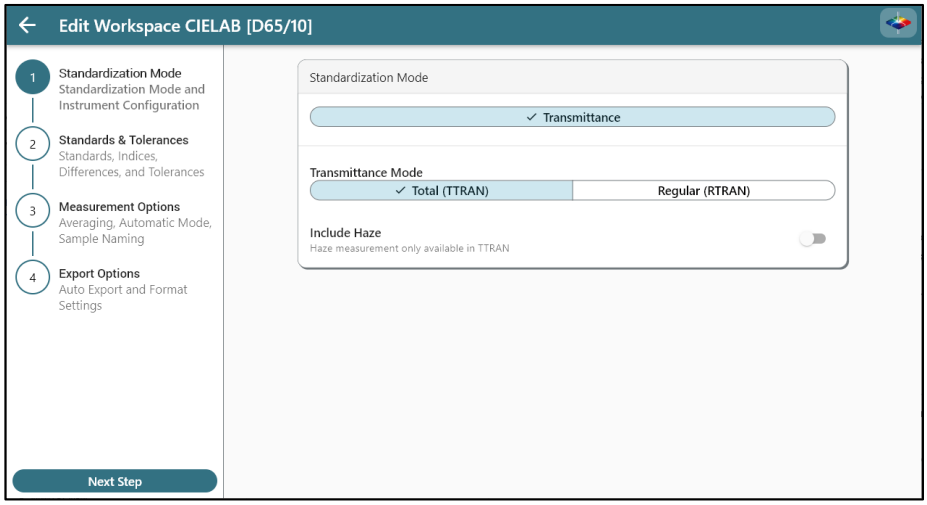

Figure 20. Standardization Mode

STANDARDS & TOLERANCES

The user can select the type of standard, Color Scale, Color Difference, Indice, Illuminant and Observer and add a numeric standard with tolerances. Tolerances can be set for **DIFFERENCE** or **ABSOLUTE**.

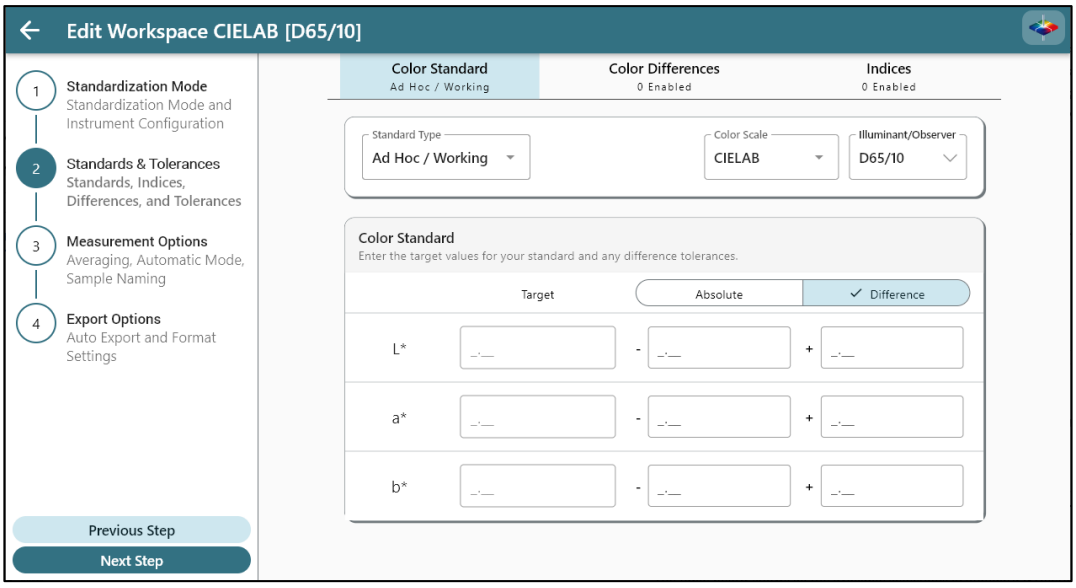

Figure 21. Standards and Tolerances

The table below shows all the available selections in Standard &Tolerances dialog.

Table 2. Available WorkSpace Selections

Standard Type	Color Scale	Color Differences	Indices	Illuminants	Observers
Ad Hoc/ Working	CIE L*a*b*	dE	APHA/PtCo/Hazen, ADMI, ASTM D1500, Saybolt, Gardner	A	2˚
Physical	CIEL*C*h	dE*	YI D1925, YI E313, WI E313	C	10˚
Numeric	Hunter Lab	dE CMC	Y Transmittance	D50	
Hitch/Transfer	CIE XYZ	dE* 2000	Haze, NTU, Opalescence	D55	
	CIE Yxy		EP, JP, CP, USP	D65	
			EBC, ASBC and ASBC Turbidity	D75	
			ICUMSA	F02	
			LOVIBOND® RYBN, AOCS RY	F07	
			Iodine, Off Hue, Chinese Acid Wash	F11	
			Transmittance%, and Absorbance	TL84	
			Chlorophyll Concentration	ULT 30	
				ULT 35	

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Color Standard Tab

Configure **STANDARD TYPE**, **TRISTIMULUS COLOR SCALES**, and **ILLUMINANTS/OBSERVERS**. Following are available **STANDARD TYPES**:

Ad hoc/ Working Standard
The first sample measurement is automatically assigned as an Ad Hoc/Working standard. Tolerances can be entered after standard selection. The other sample in a job can be manually set as standard if needed.

Physical Standard
Measure a physical standard in this dialog and use it as standard. Use the Green action button in this dialog to standardize (if there is no valid standardization) and measure the standard. Multiple measurement and their average can also be used as the standard target.

Numeric Standard
This type of standard is defined by numeric values representing standard values. This feature can be used when no physical standard is available. Enter the values for the color scale and tolerances.

Hitch/Transfer Standard
A hitch standard links the values of the current instrument to a Master instrument/standard. This feature allows multiple instruments to read the same values for one product.

Hitch Configuration:

- When Hitch/Transfer is selected, tap **EDIT THE HITCH CONFIGURATION,** the blue highlighted area, and follow the instructions to setup hitch.
- Choose between **HITCH TO TILE** or **HITCH TO INSTRUMENT**. Hitch to Tile refers to using a tile that has already been assigned with a reference value; Hitch to Instrument involves using a sample that was previously measured on the other Instrument.
- Steps **to Configure Hitch:**
  - Press ***CONTINUE***. Place the tile/sample at the port and ***MEASURE***. When measuring a sample, multiple measurements for averaging are available.
  - Enter the values of the **TILE** or the **SAMPLE** from the reference or the compared instrument.
  - Select **ADDITIVE** or **RATIO** Hitch Calculations.
  - Press ***CONTINUE***. The Hitch Adjustment is shown on the **STANDARDS AND TOLERANCE** page.

Color Differences Tab

Tap the **COLOR DIFFERENCES TAB** and check **DIFFERENCES**. As a differences is checked, the pencil icon is displayed at the right side. Tap the pencil icon to configure Tolerances. Scroll down to find additional differences.

Indices Tab

Tap the **INDICES** tab and select the indices needed for the measurement.

- If an index has multiple Illuminant/Observer and pathlength options , the **Index Configuration** dialog will appear. Select the appropriate settings and tap ***CONTINUE***. Custom cell pathlength can be configured for some indices.
- A pencil icon appears on the right side of each checked index. Tap the pencil icon to:
  - **Set Tolerances**: Configure absolute or difference tolerances.
  - **Settings**: Adjust bias, gains, or change the settings of Illuminant/Observer and cell pathlength (based on the index).
- **Add Wavelength Index** button at the top of Indices list allows users to add Transmittance (T%) and/or Absorbance data at one wavelength to the indices list.

MEASUREMENT OPTIONS

Measurement Configuration:

Three reading modes are provided: **MANUAL**, **AVERAGING,** and **AUTOMATIC READINGS**. Follow the instructions on the Essentials L2 screen to set up the reading mode.

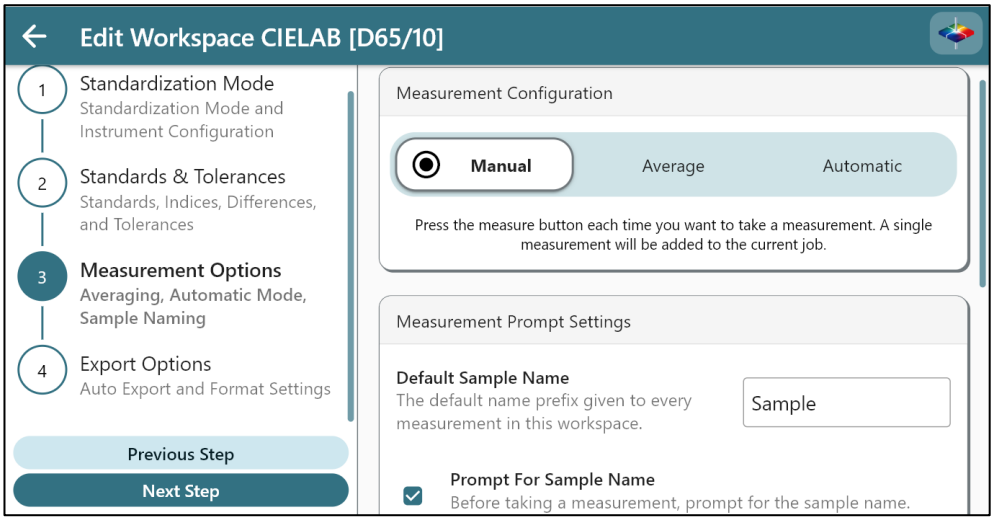

Figure 22. Measurement Options

Measurement Prompt Settings:

Edit a default sample name, enable or disable prompts for **SAMPLE NAME, PRODUCT ID, NOTES** and **INCLUDE IN AUTO SEARCH STANDARD**.

EXPORT OPTIONS

Configure ***AUTO EXPORT*** to simultaneously send the data string per measurement to a data collection system. Ensure both the Vista L2 and the data collection system are on the same network. Check details in ***INSTRUMENT SETTINGS > NETWORK SETTINGS***.

Tap ***EDIT*** button in TCP Auto Export to:

- Choose what data is going to be exported in these categories, Color Scales, Differences and Indices, and Other fields. Drag fields in the configuration list to reorder. To remove a field, click the ***DELETE*** icon on the left side.
- Select a delimiter type.
- Press ***SAVE*** when finished.
- **ENABLE/DISABLE** Auto Export.
- Auto Export Port is fixed as 9001.

In the data collection system, configure the TCP/IP method: Set Vista L2 IP as the server IP and port 9001 to collect data from the Vista L2.

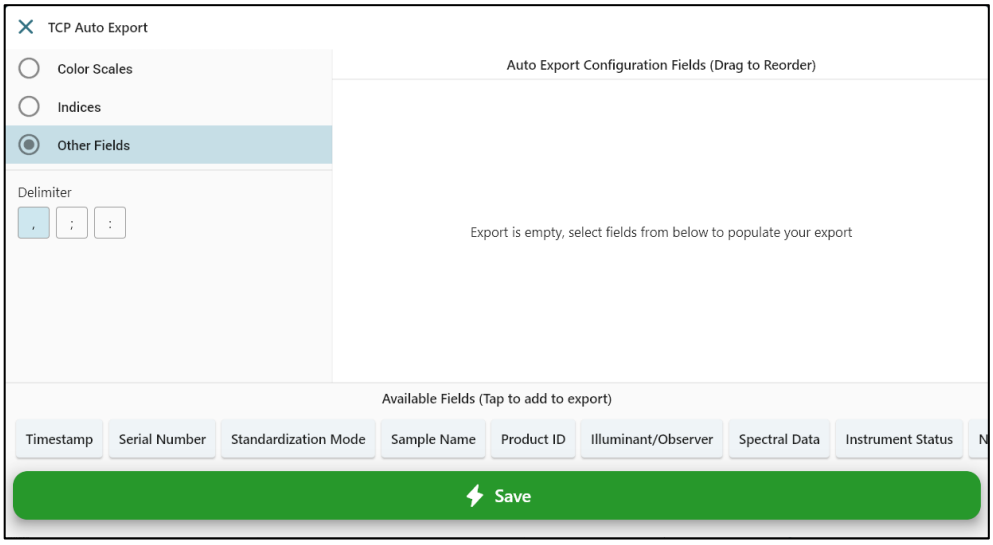

Figure 23. Export Other

Edit Label Settings

Sample Label Printing is supported in Essentials L2 when a compatible label printer is connected. The **Brother QL-800 High-Speed Professional Label Printer** is the recommended and supported model for use with Essentials L2. This printer is not sold by HunterLab and must be purchased separately by the customer.

1. Plug the label printer into the USB-A port on the left side of the Vista L2.
2. Within the Label Settings menu, users can configure the label orientation (portrait or landscape), and select options such as:
    - Auto Cut Labels

- Auto Print for Each Sample
- Include Barcode

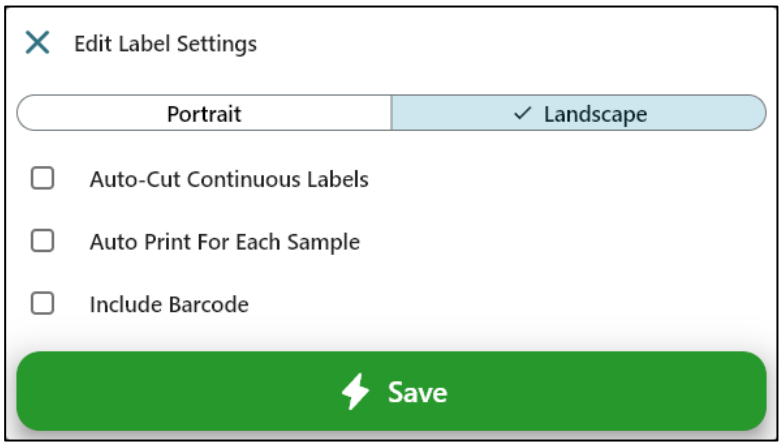

Figure 24. Label Settings

After adjusting the desired settings, press ***SAVE***. Save the WorkSpace when finished. The printed label includes the sample data along with the associated standard and tolerance information.

Views

All views are displayed in the middle of the Tool Bar.

- **View Editing**: Tap the current view (with the pencil icon) to edit. Alternatively, tap another view to load it first, then tap again to open the view options. After editing, press the left arrow at the top of the screen or tap anywhere on the view screen to exit.
- **Add/Remove**: tap the plus icon to change or add views.

EZ VIEW

This view provides a straightforward display of ***STANDARD vs. SAMPLE*** comparisons and **PASS/FAIL** results.

Overview

Sample Name Box
Located at the top-left corner of the screen, this box allows you to edit the sample name, delete it, or set it as the standard by tapping on it. The box is highlighted with a color corresponding to the measured color, offering a quick visual reference.

Information Area
Located at the top-right corner of the screen, this area displays the instrument's serial number, time, date, and Pass/Fail status. If the measurement is a standard, it will be labeled as Standard in this area.

Edit EZ View

To edit, click the pencil icon in the ***EZ VIEW*** tab. At the bottom of the screen, you will find options to edit settings including:

Display Options:
Includes **SHOW STANDARD, SHOW DIFFERENCES, SHOW COLOR PLOT**, **ABSOLUTE** vs **DIFFERENCE** and adjusting **PRECISION**. To display a simple difference (sample minus standard), select ***SHOW DIFFERENCES***. and **DIFFERENCE. SHOW COLOR PLOT** displays the color difference plot in EZ View, which auto-scales to show differences. Tapping the plot also initiates auto-scaling.

Color Scales:
Select one or multiple tristimulus Color Scales to display.

DIFFERENCES and INDICES:
To select **DIFFERENCES** and **INDICES** to display (go to WorkSpace to add first If not already selected in WorkSpace).

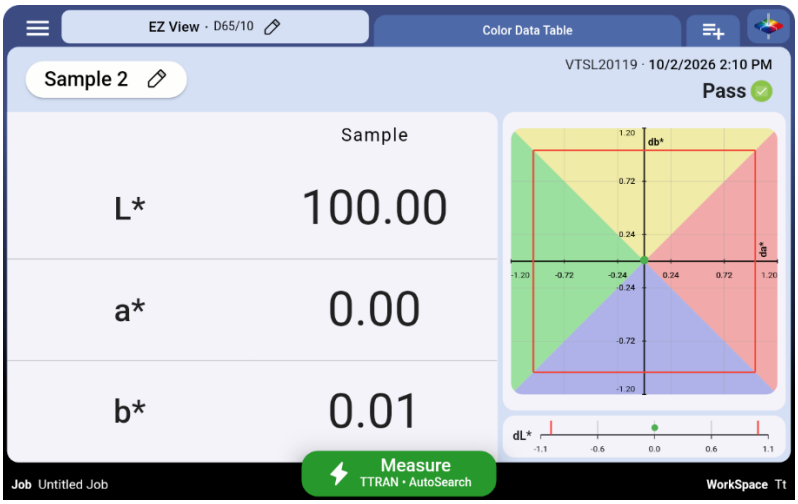

Figure 25. EZ View Display with New Options

COLOR DATA TABLE

The **COLOR DATA TABLE** displays **COLOR SCALE**, **COLOR DIFFERENCE**, and **INDEX DATA** for the standards and all samples in the job. Press and hold a column (except the Name column) to drag and reorder the fields.

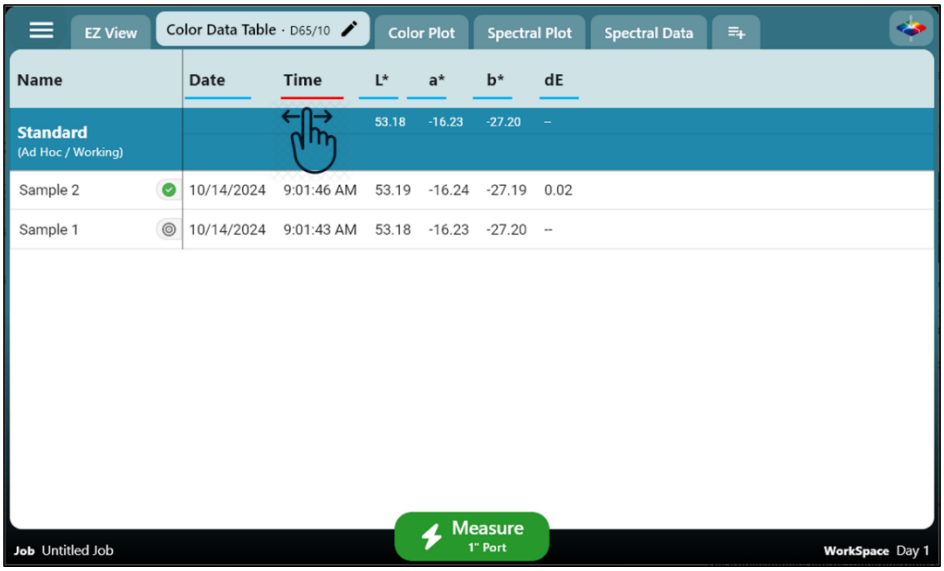

Figure 26. Color Data Display

Settings

Press the edit icon (pencil) in the **COLOR DATA TABLE VIEW TAB**. At the bottom of the screen, you will find options to edit the view settings including:

DISPLAY OPTIONS:
Includes **SHOW STANDARD, SHOW SERIAL NUMBER, SHOW DATE, SHOW TIME, SHOW PASS/FAIL, SHOW PRODUCT ID, SHOW NOTES,** and edit **PRECISION**.

COLOR SCALES
Select one or multiple tristimulus Color Scales to display.

DIFFERENCES and **INDICES:**
To select Differences and Indices to display (If not already selected in WorkSpace, go to WorkSpace to add them first.).

SPECTRAL DATA TABLE

The **SPECTRAL DATA TABLE** displays the percent reflectance for each selected measurement at the measured wavelengths. A sliding bar at the bottom of the screen provides access to all measurements.

DISPLAY OPTIONS can be accessed using the edit icon (pencil) in the Spectral Data tab. The options include showing the Standard, changing the precision of the measurement data, and selecting spectra data type (T%, Absorbance and %Strength).



Figure 27. Spectral Data Table

SPECTRAL PLOT

This view displays a graph of reflectance percentage versus wavelength. Use the + button to enlarge the plot or the – button to reduce its size.

SPECTRAL PLOT OPTIONS: SAMPLE LIMIT

This setting controls the number of samples displayed simultaneously, with a maximum limit of 10 samples.



Figure 28. Spectral Plot View

COLOR PLOT

This view displays the sample's position in a two-dimensional Color Space relative to the standard. The standard is the center point for difference measurements, plotting each sample to show variation. Each sample's position is shown without referencing a standard for absolute measurements. If the user selected Color Scale Yxy and entered four chromaticity pairs to set a tolerance box, then this view will automatically switch from 2D Color Plot to Chromaticity color Plot.

Sample List

The samples displayed on the Color Plot are listed in a box on the left side of the screen.

- **Scaling and Detail:** The Color Plot is automatically scaled. Clicking the data points allows for detailed viewing of each point's information.
- **Display** options include **SHOW ABSOLUTE vs. DIFFERENCES**, **SAMPLE LIMIT** of samples to show on the plot, **SHOW HUE**, and **SHOW CHROMA**. The Upper Limit of samples is 10.

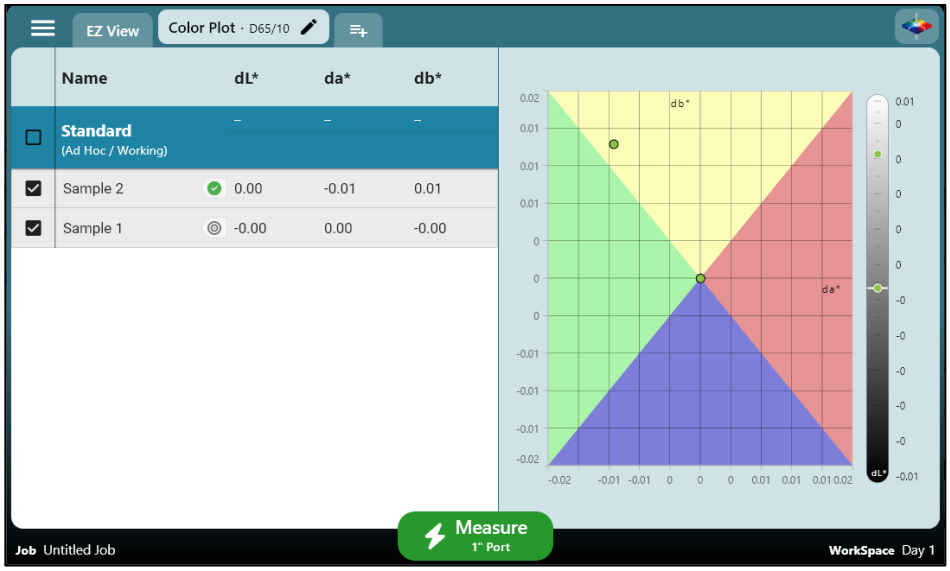

Figure 29. Color Plot View

When the workspace is configured with the **Yxy color scale**, the Color Plot displays the **x,y chromaticity plot** with the configured tolerance region.

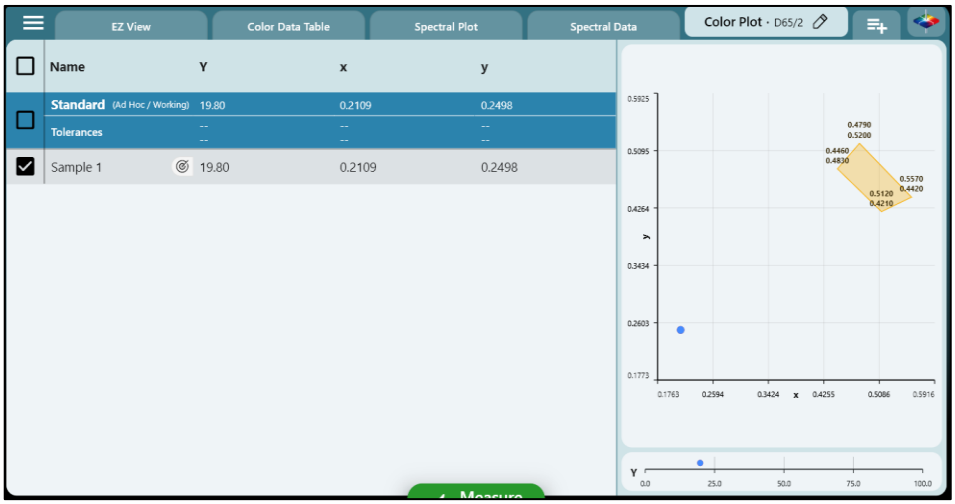

Figure 30. Chromaticity Plot

TREND PLOT

This view shows the data over time for measuring trends and monitoring the quality of a production process. This features helps to ensure that the process produces more conforming products with less waste.

Trend Plot fields can be set to Absolute or Difference and individual tristimulus color scale values or Tomato Indices. Clicking on the Axes, The x-axis can be used to measure trends over time and the Y-axis can be used to view measurements based on the tolerances. Upper and

lower limits can be set the warn of a potential issue. Range can include all or a portion of the saved measurements or can be set by time (all or a portion).



Figure 31. Trend Plot View

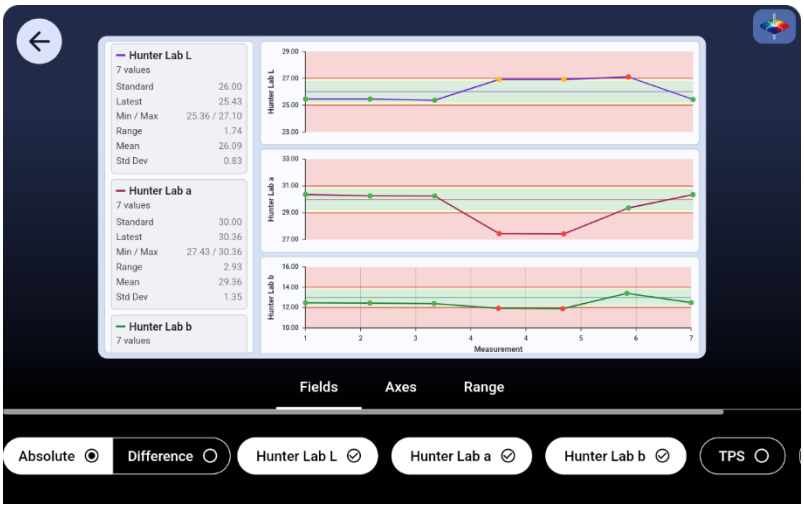

Figure 32. Trend Plot View/Fields

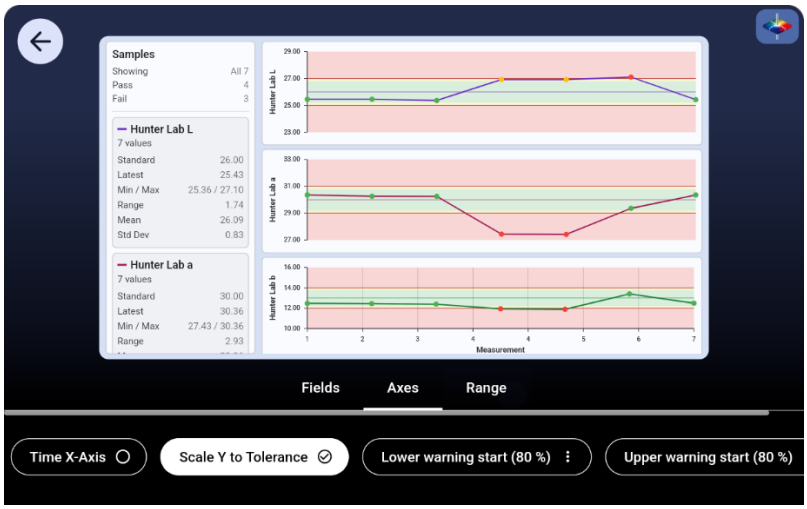

Figure 33. Trend Plot View/Axes

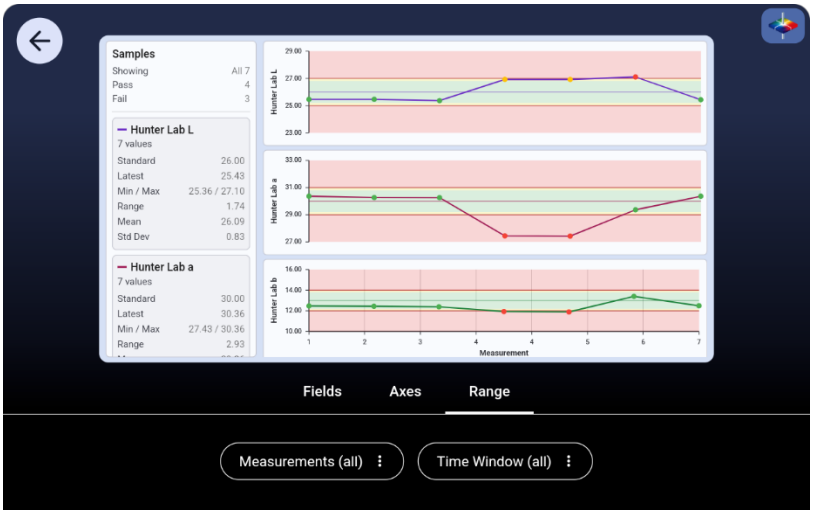

Figure 34. Trend Plot View/Ranges

Instrument Settings

Press ***INSTRUMENT SETTINGS*** under System Menu to edit the current settings for **INFORMATION, GENERAL, DISPLAY & BRIGHTNESS, NETWORKING, DIAGNOSTICS**, and **SECURITY SETTINGS**.

INFORMATION

The **INFORMATION** screen provides HunterLab Certification, the Instrument Serial Number, Version number, and Networking Addresses.

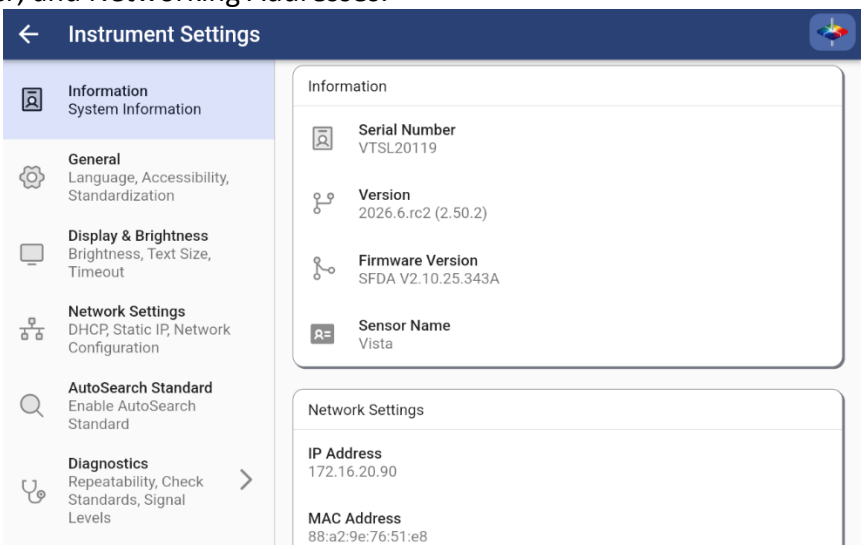

Figure 35. Instrument Information

GENERAL

On this screen, you can set the **STANDARDIZATION INTERVAL** to 8, 12, or 24 hours. Additionally, **SYSTEM SETTINGS** allow you to adjust **DATE/TIME**, **SHARE CRASH REPORTS**, select **LANGUAGE**, manage **SOFTWARE UPDATES** and **IMPORT DATA FROM PREVIOUS INSTRUMENT.**

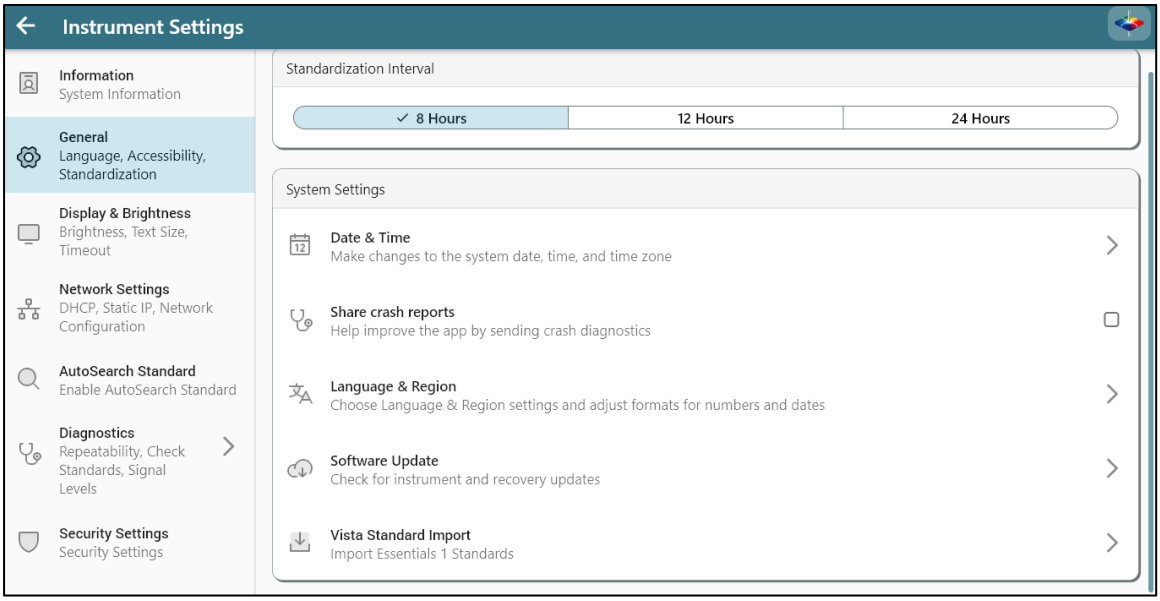

Figure 36. General Instrument Settings

Import Data From Another Instrument

To import data (Product Setups and Saved Measurements) from a Vista L2 instrument, use the USB cable to connect between the instruments. Then tap this feature and follow the prompts to import data from one instrument to the other.

DISPLAY AND BRIGHTNESS

Appearance

Changes the display background from white to black.

Text Size

Press the arrow on the right size to change the Font Size. Use the sliding tool at the bottom of the screen to change the font size, or press ***RESET*** to return the font to the original size.

Display Brightness

Use the sliding scale to adjust the brightness.

(in)Activity Timeout

Lowers the screen brightness when the time is reached.

NETWORKING

The network settings enable the Vista L2 to automatically export data to a shared network location, connect with HunterLab Essentials L2 for PC on a computer, and support other network functionalities. Network Settings offers the choice between DHCP for automatic IP configuration and Static IP for manual IP entry.

Case 1 & 2: Connect Vista L2 to a network hub using Ethernet cables

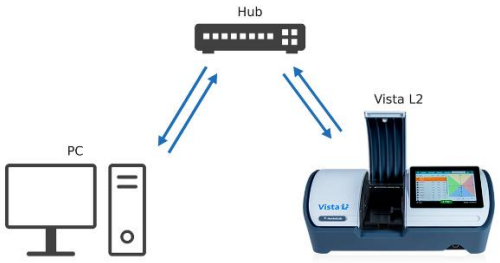

Figure 37. Network Connection Method 1

Case 1 — When a customer network is available, connect both the Vista L2 and PC to it; the network handles IP assignment automatically, so both devices end up on the same subnet.
Case 2 — When no customer network is available, connect both devices to a stand-alone router with a built-in DHCP server, which assigns each device an IP address. In either case, USE DHCP FOR ETHERNET is selected by default in Essentials L2.

1. Plug the Ethernet cable into the back of the Vista L2 and the other end to a network hub. Plug the PC to this network hub as well.

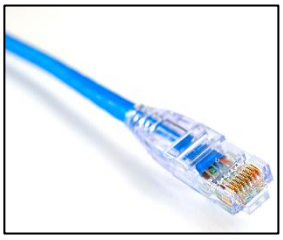

Figure 38. Ethernet Cable

2. In the Vista L2, go to ***SYSTEM MENU > INSTRUMENT SETTINGS > NETWORK SETTINGS***. Select ***EDIT*** **> CONFIGURE ETHERNET SETTINGS**.
3. Check **USE *DHCP* FOR ETHERNET** and click ***APPLY NETWORK SETTINGS***, then close the Network Settings window.

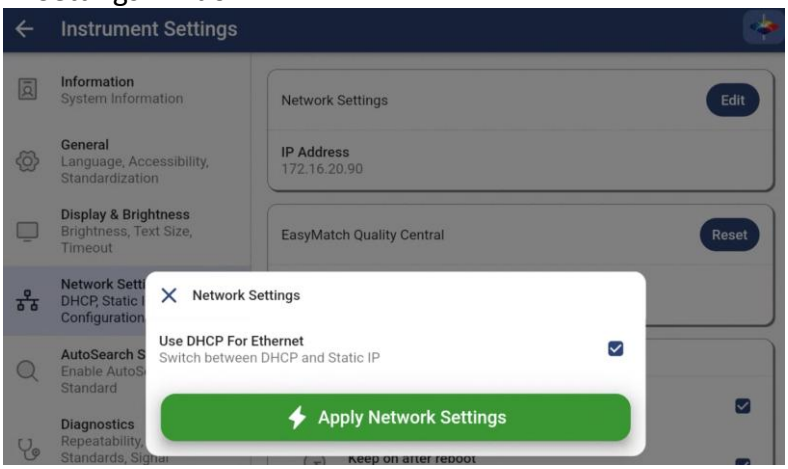

Figure 39. DHCP Network Settings

Case 3: Direct connection between Vista L2 and computer (no switch or network in between)



Figure 40. Network Connection Method 2

1. Plug the Ethernet cable into the back of the Vista L2 and the other end to the PC. If the PC does not have any available ethernet ports, a USB-Ethernet adapter can be applied.



Figure 41. USB to Ethernet Adapter

2. Check the PC IP settings:
   a. For Windows computers, open the command prompt by clicking the Start menu, type "cmd" in the search bar, and select "Command Prompt".
   b. Type in ipconfig and press Enter.
   c. Find the right Ethernet connection (in this case, it is Ethernet Adapter 2) and write down the value under " IPv4 Address" and "Subnet Mask".

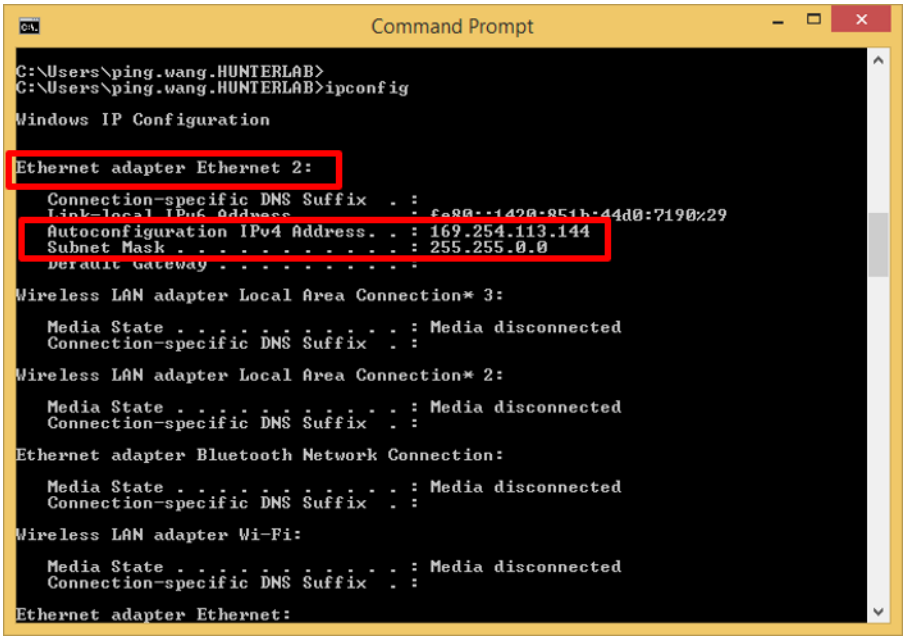

Figure 42. Command Prompt – Ethernet Adapter

3. In the Vista L2, go *to* ***SYSTEM MENU > INSTRUMENT SETTINGS > NETWORK SETTINGS***. Select ***EDIT > CONFIGURE ETHERNET SETTINGS***.
4. Uncheck **USE *DHCP* FOR ETHERNET**.
5. Type in the **IP Address**, **Subnet Mask**, **Gateway**, and **Preferred DNS** manually.
   a. The **IP Address** is equal to the IPv4 of the Ethernet Adapter. Change the last digit to any number from 1-10 that differs from the Ethernet Adapter IPv4 address, for example, 169.254.113.145.
   b. The Subnet Mask is equal to Ethernet Adapter. For example, 255.255.0.0.
   c. Enter the PC's Ethernet IP address for the Gateway.
   d. Enter the PC's Ethernet IP address for the Preferred DNS.

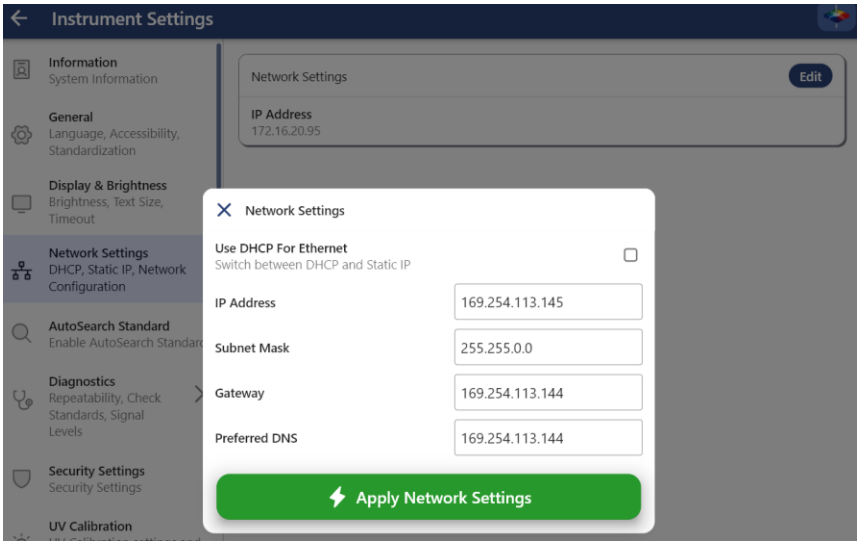

Figure 43. Network Settings

6. Select ***APPLY NETWORK SETTINGS***, then close the Network Settings window.

Remote Display Sharing

Remote display sharing can be enabled in Network Settings, allowing for remote screen sharing from the instrument to your web browser. When enabled, the instrument's screen can be viewed—and optionally controlled—from another device on the same network. To configure remote display sharing, go to ***SYSTEM MENU > INSTRUMENT SETTINGS > NETWORK SETTINGS*** and locate the **Remote Capabilities** section.

- **Enable Remote Viewing** – Turns remote screen sharing on. When active, the instrument displays a **Connection URL** (for example, http://172.16.20.172:8081) and a QR code. Enter the URL in a web browser on a device connected to the same network, or scan the QR code, to view the instrument screen.
- **Keep on after reboot** – Automatically starts remote viewing when the device boots.
- **Allow Remote Control** – When enabled, remote users can control the instrument from their browser, not just view it.

- **Require PIN Authentication** – When enabled, remote users must enter a PIN code to connect.

The same screen also displays the **EasyMatch Quality Central** Access Code used when connecting the instrument to Quality Central.

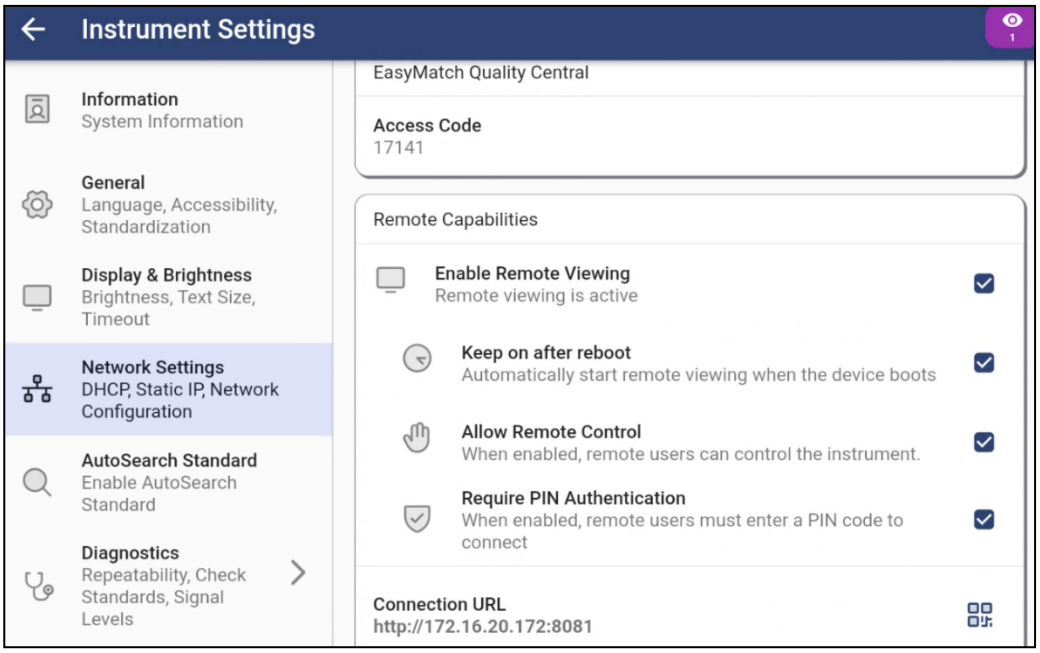

Figure 44. Remote Capabilities – Remote Display Sharing

AUTOSEARCH STANDARD

The Autosearch Standard feature automatically identifies any Workspace with passing tolerances each time a measurement is taken. To enable and use Autosearch Standard mode:

- **Enable Autosearch Standard:**
  - Go to ***SYSTEM MENU → INSTRUMENT SETTINGS → AUTOSEARCH STANDARD***.
  - Check **AUTOSEARCH STANDARD ENABLED** and configure the standardization mode and measurement options.

Note: Once enabled, the measurement options (configuration and prompt settings) set here will override those in Workspace settings.

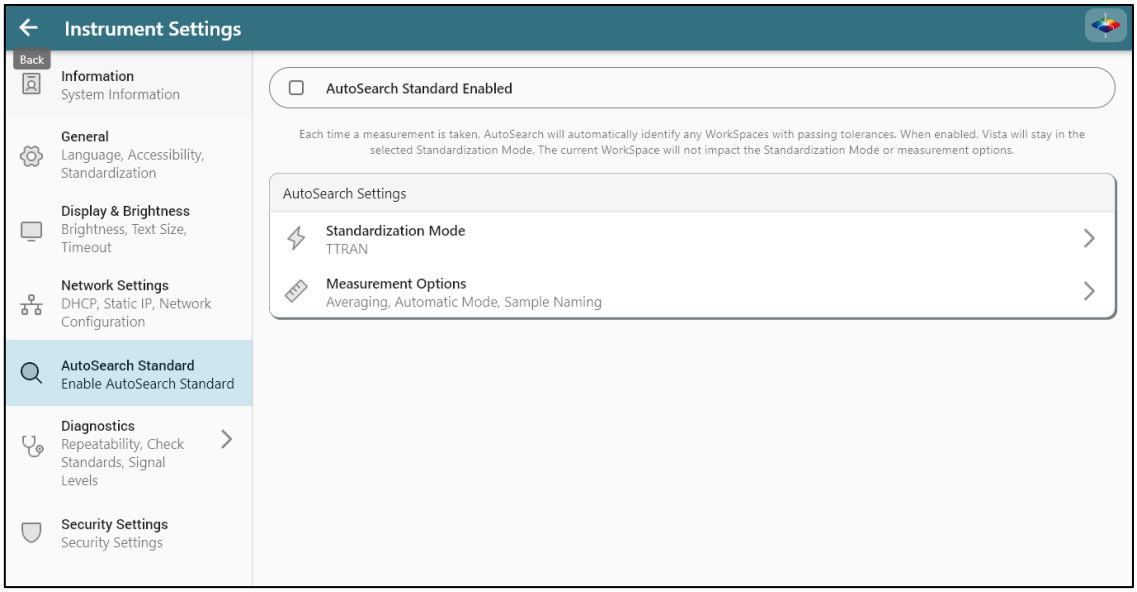

Figure 45. AutoSearch Settings

- **AUTOSEARCH SETTINGS** includes mode (TTRAN or RTRAN) and Haze. Measurement Options include Configuration (Manual, Average and Automatic) and Sample Name, Product ID and Notes.
- **Select Workspaces for Autosearch:**
  - Open ***EDIT WORKSPACE → MEASUREMENT OPTIONS*** for each Workspace you want to include.
  - Check **INCLUDE IN AUTOSEARCH STANDARD** to add it to the Autosearch process.

Note: Only WorkSpaces with Physical, Numeric, or Hitch standards will be included in AutoSearch. Your WorkSpace must also have at least one tolerance applied. If you want to exclude a WorkSpace from AutoSearch, you can always exclude it in the WorkSpace settings page for that WorkSpace.

- **Take a Measurement:**
  - The green action button will be updated to ***AUTOSEARCH***.
  - Place the sample and tap the ***MEASURE*** action button.
  - Essentials L2 will search the configured Workspaces, listing those with the same standardization mode as the current measurement and tolerances that pass.
  - If multiple Workspaces are listed, select one to save.
  - If there is no WorkSpace Standard Pass for this sample, you will still be able to save the sample to the ***No Match*** Workspace for later review.

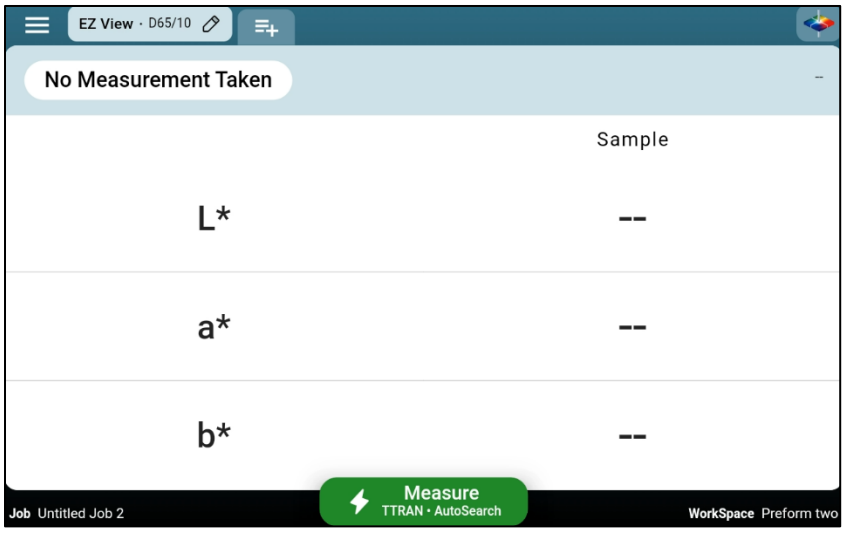

Figure 46. Measurement

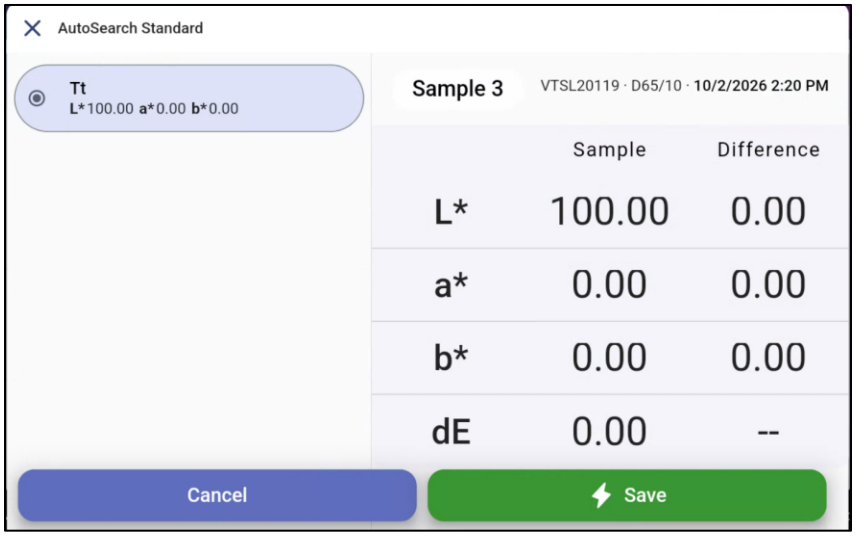

Figure 47. Workspace Auto Search

- **Save and View Results**
  - Click ***SAVE*** to load the selected Workspace and display the measurement results.

DIAGNOSTICS

The Diagnostics menu shows the overall health of the instrument, **LAST DIAGNOSTIC TEST RESULTS,** and **INSTRUMENT DETAILS**. To exit this menu, use the arrow at the top left side of the screen.

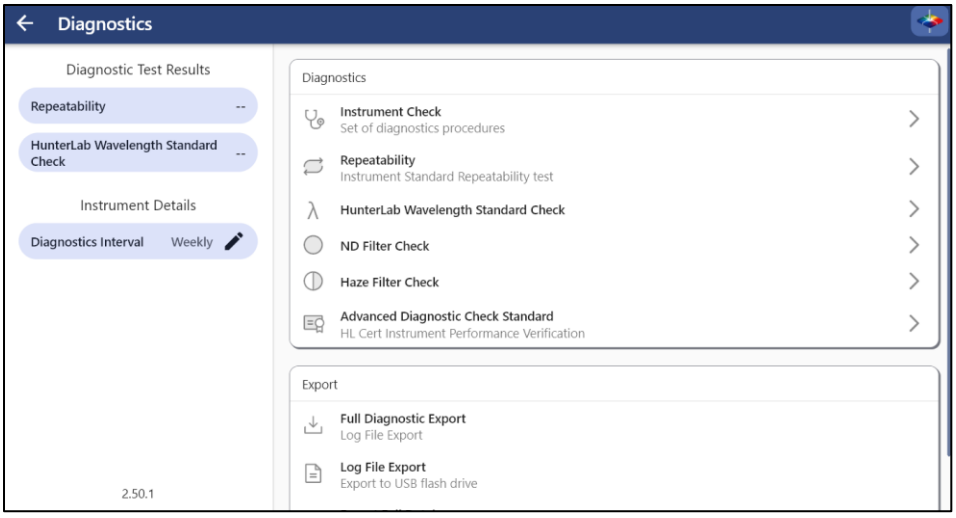

Figure 48. Diagnostics

Repeatability

Select this test to run a group of 30 readings compared to 1 standard reading on the Certified Instrument Standard. This test automatically places the standard in view for all readings

Tap the Green action button to **STANDARDIZE** and run the test.

HunterLab Wavelength Standard Check

The wavelength test allows you to assess readings of the HunterLab Wavelength Standard (Didymium Filter) that are provided with the instrument. This checks for wavelength accuracy of the instrument and should be run on a regular basis (i.e., weekly or bi-weekly) as part of a routine instrument performance check. Didymium wavelength targets are saved in each instrument.

Remove all samples from the instrument and Standardize in RTRAN on air. Follow the prompts to measure the built-in didymium standard.

Note: The HunterLab Wavelength Standard should be clean and free of fingerprints.

Using an average of the 10 readings, the results are shown.

ND Filter Check

This test requires that you enter the target values for the ND filter. Once the target values have been entered, remove all samples from the transmittance compartment and press the action button to standardize in RTRAN on air.

After standardization, insert the ND filter next to the lens and the action button. Ten readings are taken and compared to the tolerance as an average.

Haze Standard Check

The Haze test reads the haze standard and provides a pass/fail evaluation based on an average of 10 readings and the value associated with the standard.

- Select ***NEW*** to initiate the Haze Test. ***STANDARDIZE*** the instrument and then enter the Haze C/2° value of the haze standard.

Note that the tolerance used is ±10% of the standard value.

- When all readings have been taken, the results are shown.

Export Diagnostic Results, Log File And Full Database

Attach a flash drive into the instrument and press the export options here to export data.

Advanced Diagnostic Check Standard

Provides verification of instrument performance resulting in a HunterLab Certificate.

SECURITY SETTINGS

This function provides a way to enable/disable password protection.

- Check the box next to **USER-BASED ACCESS** and a confirmation screen is displayed to **CONFIRM** User Mode.

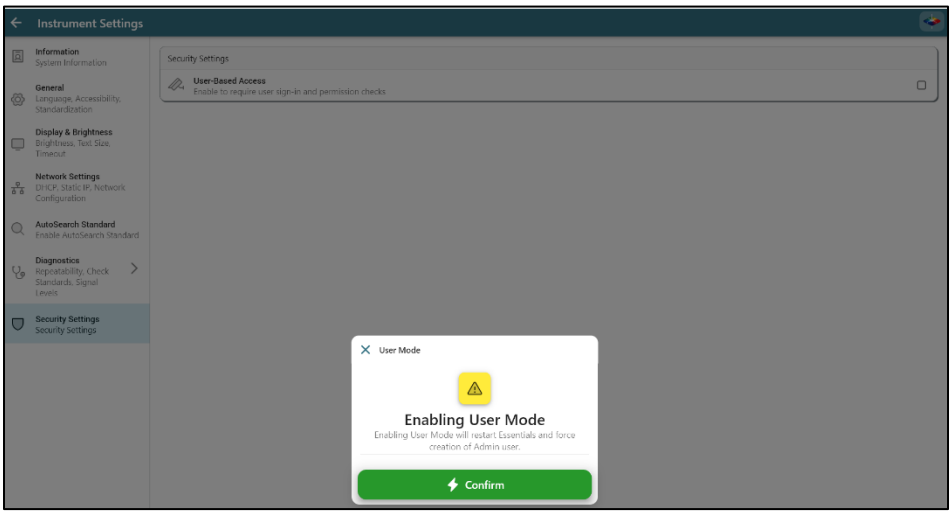

Figure 49. Enabling User Mode

The software restarts, providing a screen to set up an Administrator account. The password must include an uppercase letter and a special character.

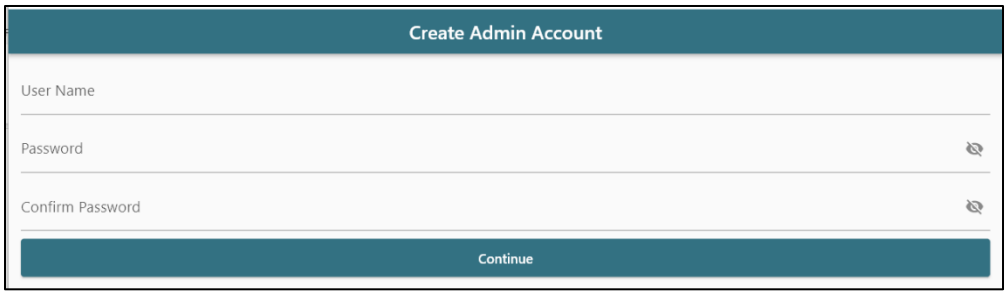

Figure 50. Create Administrator Account

After the software restarts, you can return to ***THE INSTRUMENT SETTINGS > SECURITY SETTINGS*** and **USER MANAGEMENT** provides a way to setup a User's account, password expiration, sign-in attempts and password length.

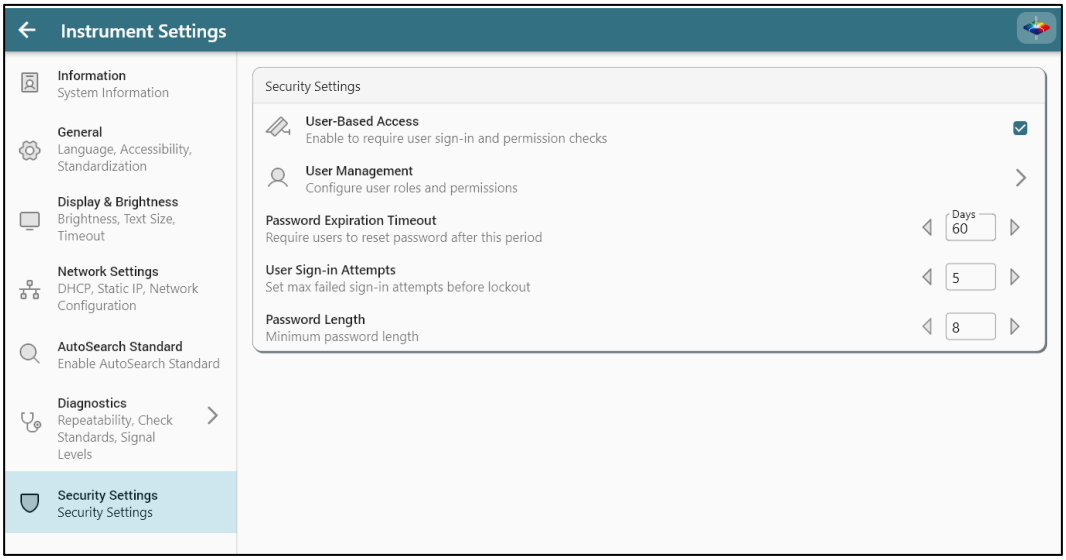

Figure 51. Set Up User Account

Follow the arrow to the right and then ***ADD NEW USER*** and/or ***MANAGE ROLE & PERMISSIONS*** for the Administrator. Press ***SAVE*** when done.

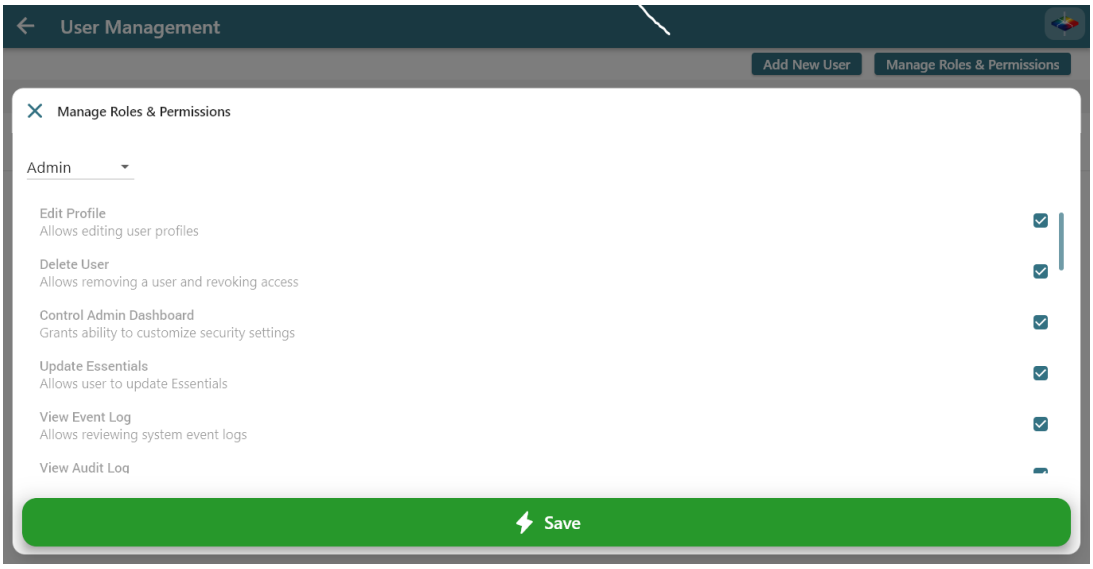

Figure 52. Manage Roles & Permissions

When adding a New User, a pin-code is provided for the first time sign in.

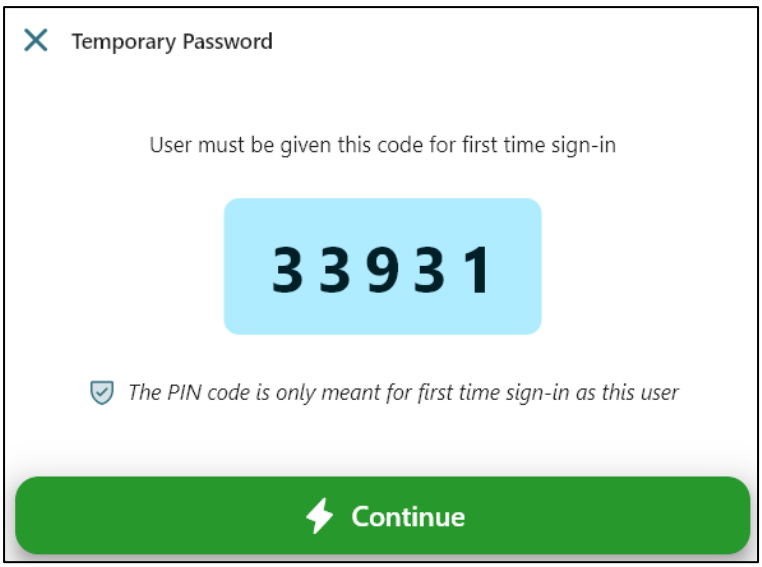

Figure 53. Enter Passcode

- Follow the instructions on the screen to setup the passcode.



Figure 54. Password Protection

Press ***NEXT*** and then enter the passcode again. Press ***DONE*** to continue.



Figure 55. Enter Passcode

- Select the Secured Functions.
- After this, a password will be required to perform the secured functions

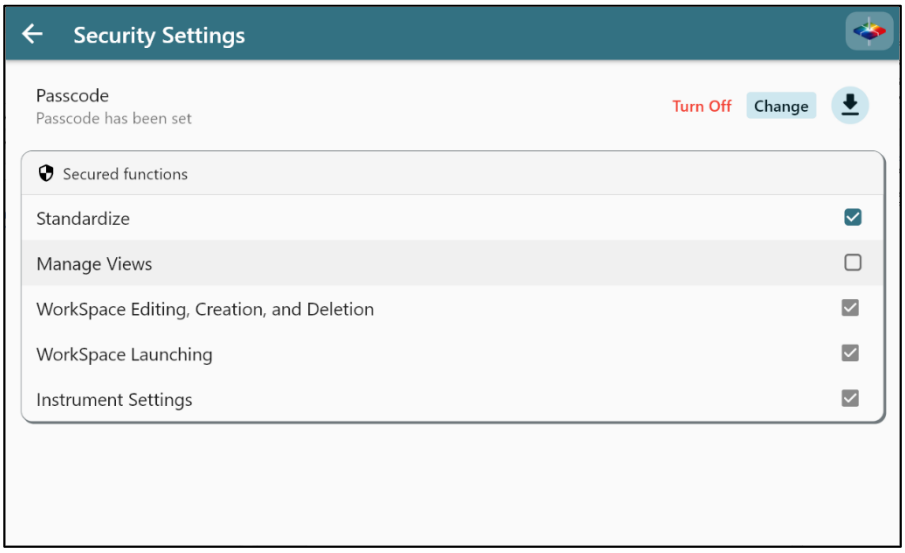

Figure 56. Select Secured Functions

Electronic Record Features (ER only)

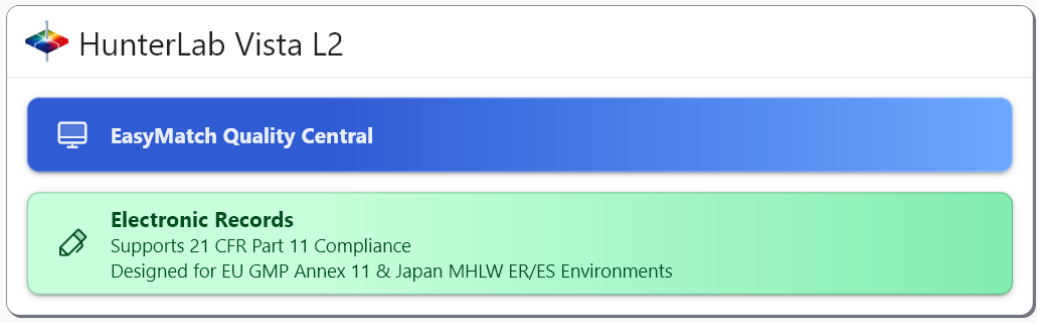

Figure 57. Electronic Records

Some instruments are available with an **Electronic Records (ER) license**. The ER license enables the instrument's **Electronic Records features** and also provides the option to use **EasyMatch Quality Central**, a PC-based companion application. Customers can choose whether to enable and use Quality Central.

This section introduces what ER adds and where to find it. It is intended to be brief — for step-by-step setup, validation, and 21 CFR Part 11 compliance guidance, always use the *Validation & Compliance Notebook* provided with your instrument's ER package.

What ER Adds

When ER is enabled, users are required to log in, and the following additional features and controls are available:

- **Secure login and user roles** — Administrator, Lab Manager, Operator, and Auditor accounts, each with different levels of access.
- **Electronic signatures** — sign individual measurements or entire jobs; each signature records the signer, date/time, and notes.
- **Audit trail** — every login, measurement, signature, export, and configuration change is automatically recorded and cannot be edited or deleted. The audit trail consists of two parts: the *audit log* (records activity within each individual job) and the *event log* (records activity across Essentials L2 as a whole).
- **Protected records** — Jobs, measurements, and audit trail records are protected from deletion, and raw measurement data cannot be modified by any user, including Administrators.
- **EasyMatch Quality Central-ER** (optional) — a PC-based companion application that connects to the instrument for centralized review, taking measurements, signing, and export using the user accounts created in Essentials L2.

Where to Find It

On an ER-licensed instrument, most ER settings live under ***SYSTEM MENU → INSTRUMENT SETTINGS → SECURITY SETTINGS***.

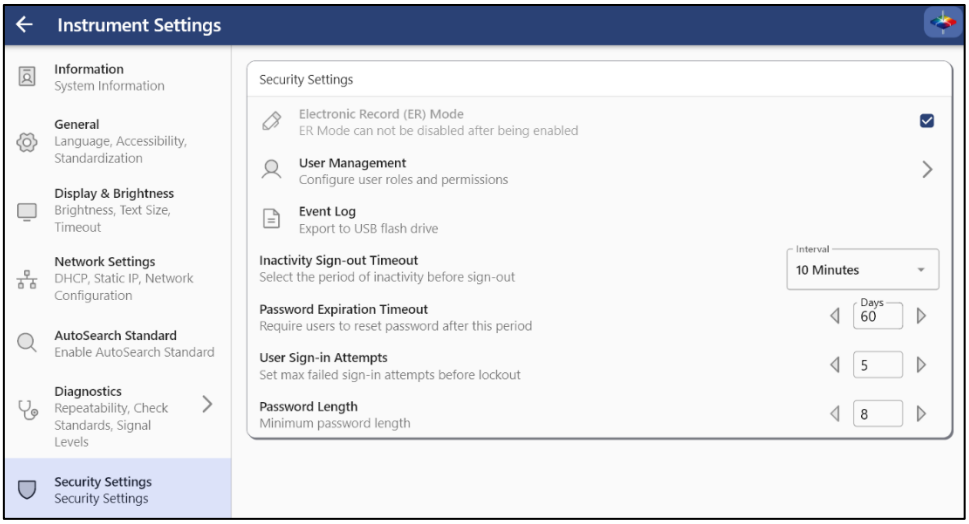

Figure 58. Security Settings when ER is enabled

From this screen, Administrators can:

- **Set up and manage user accounts** (add users, assign roles, unlock locked-out accounts).
- **Configure ER settings** such as password length/expiration, sign-in attempt limits, and inactivity timeout.
- **Export the event log** (instrument-wide activity) as a PDF report.

Electronic signatures and the **audit log** are accessed from the measurement and job screens:

- **On a measurement:** open a sample's Measurement Details (tap the sample name in EZ View or the Color Data Table) to find the ***E-Sign*** button for that measurement.

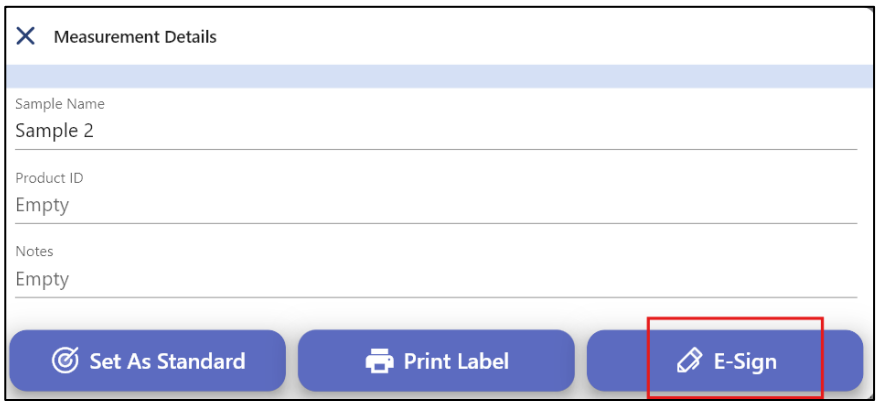

Figure 59. E-sign on a Measurement

- **On a job:** Tap the **Job** button and select a job. The ***E-Sign*** button and *audit log icon* are then available for that job. Use ***E-Sign*** to electronically sign the job, or use the ***audit log icon*** to view, print, or export the job's audit log. Once a job is electronically signed, it becomes read-only. No additional measurements can be taken or added to the job.



Figure 60. E-sign on a Job

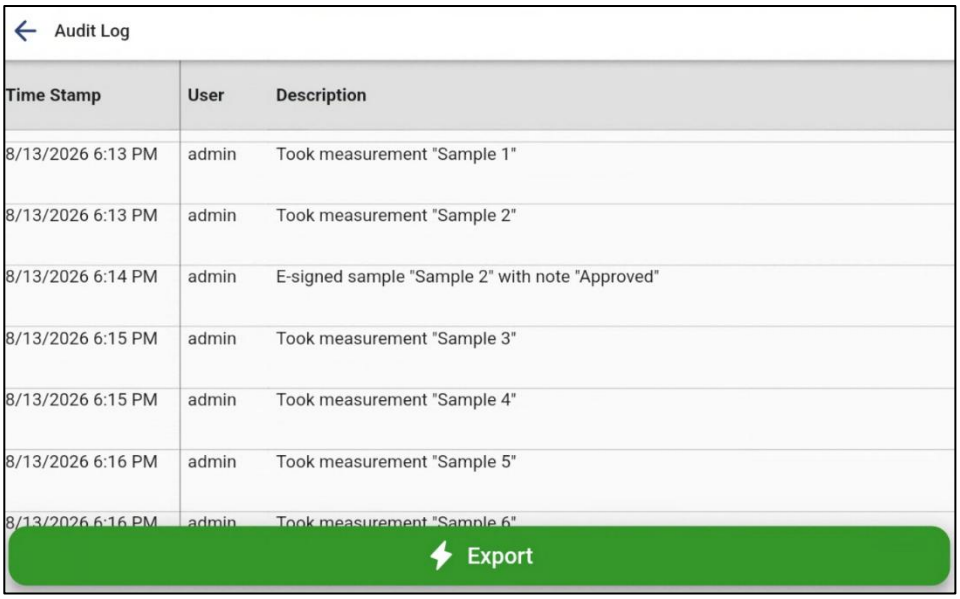

Figure 61. Audit Log View of a Job

Together, the audit log and event log make up the instrument's **audit trail**. The audit log records activity associated with a specific job, while the event log records activity across the Essentials L2 system, including events such as user logins and logouts that are not associated with an individual job.

All other functions described in this manual — including WorkSpaces, Jobs, Standardization, Views, and Diagnostics — operate in the same general manner whether or not ER is enabled. ER adds additional controls for user access, electronic signatures, audit trails, and record protection.

Data cannot be deleted in the ER version. Once ER is enabled, job files, measurements, and audit trail records cannot be deleted by any user, including Administrators. Raw measurement data also cannot be modified. These controls are intentionally built into the ER system to help preserve record integrity.

Note: This manual covers instrument and software operation. It does not cover ER installation, configuration, or validation. Refer to the Validation & Compliance Notebook provided with your instrument's ER package for licensing, IQ/OQ/PQ protocols, the 21 CFR Part 11 compliance table, SOP templates, and related validation guidance.

How to Update Essentials L2 in Vista L2

You can update the Essentials L2 on the Vista L2 using one of the following methods:

Method 1: Update from a USB Flash Drive

Method 2: Update via Internet (Built-in Essentials Updater)

Method 3: Remote Install from Quality Central

The latest Essentials L2 software and release notes are available on the HunterLab Support website.

Method 1 – Update Using a USB Flash Drive

1. Download the **HUNTERLAB-type file** onto a flash drive (e.g., *2024.4.2.hunterlab*, where *2024.4.2* is the release number).

Note: You can rename the file if needed. Essentials L2 will automatically recognize the file based on its type, not its name.

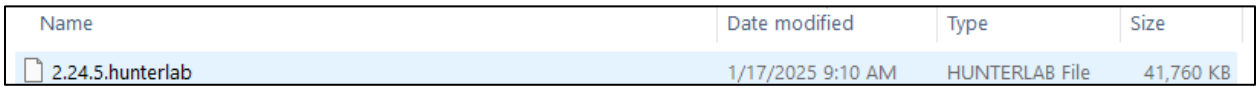

Figure 62. Essential Update File

2. Insert the flash drive into the Vista L2.
   - Essentials L2 will automatically detect the file on the drive.
   - If the file is a newer version than the currently installed one, Essentials L2 will display a prompt to update.
3. Follow the on-screen instructions to complete the installation of the new Essentials L2 user interface.

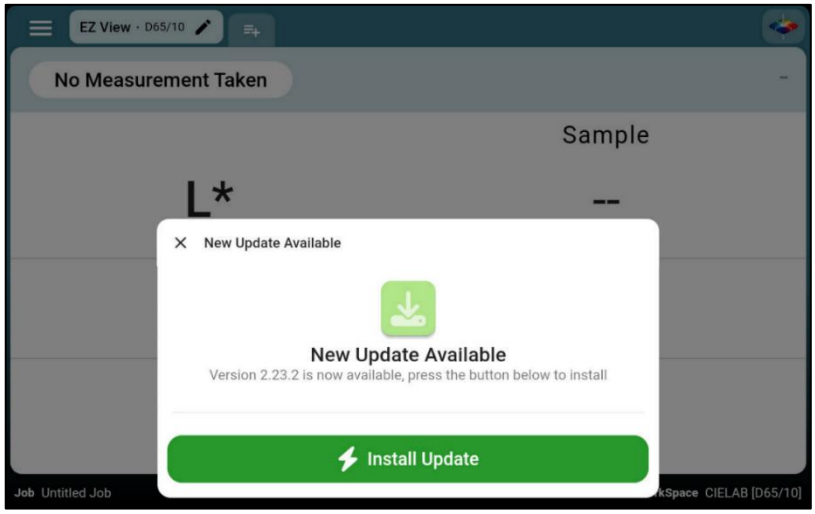

Figure 63. Install Update

Method 2 – Update Using the Built-in Essentials Updater (Internet)

When the Vista L2 is connected to the internet, Essentials L2 can check for available software updates directly.

1. In Essentials L2, navigate to: Instrument Settings → General, then tap Software Update.
2. If a newer version is available, follow the on-screen instructions to download and install the update.

Note: The "Check for updates on launch" option is disabled by default. Once enabled in the Software Update menu, Essentials L2 will automatically check for updates when the application starts.

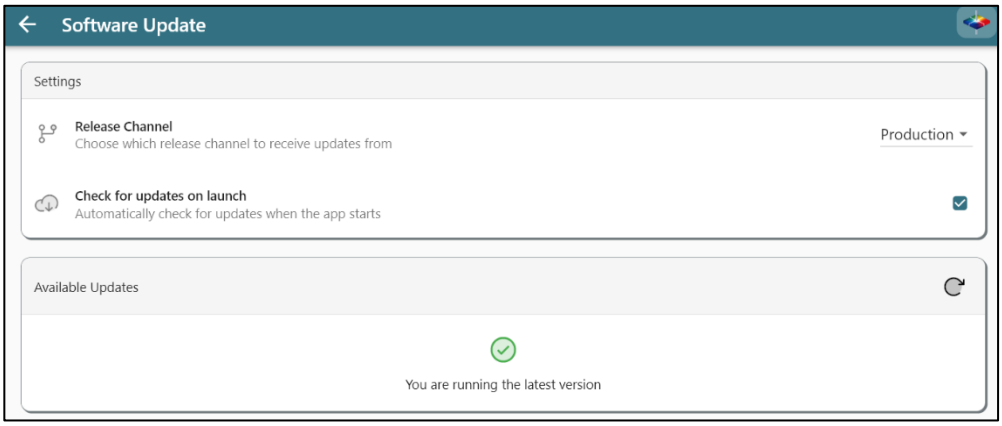

Figure 64. Update using the Built-In Updater

Method 3 – Remote Install from Quality Central

Starting in EasyMatch Quality Central 2026.4 and above, you can push a Hunterlab update file to a connected instrument over the network — no flash drive required.

Requirements: Quality Central 2026.4 and above, and the instrument connected to Quality Central on the same network.

1. Download the .hunterlab file to the PC running Quality Central.
2. In Quality Central, go to ***SETTINGS → INSTRUMENT SETTINGS*** and select the connected instrument you want to update.
3. Choose the ***REMOTE UPDATE*** option and select the .hunterlab file to push it to the instrument.
4. Confirm the update on the instrument, then follow the on-screen prompts to complete the installation.

Specifications

Instrument Specifications and Setup: This chapter provides detailed specifications and characteristics of the instrument. Place the instrument in a location with sufficient space for optimal performance, moderate or subdued lighting, and no drafts. Recommended operating conditions, including temperature and humidity ranges, are listed in the *Operating Conditions* section below.

Note: Do not leave Vista L2 in an area where temperature or humidity extremes are possible.

Operating Conditions

Storage Temperature (3weeks)	-21°C to 66°C (-5°F to 150°F)
Operating Temperature	10°C to 40°C (50°F to 104°F)
Noncondensing Humidity	10% to 90%

Physical Characteristics

Weight	6.35 kg (14 lbs.)
Dimensions (Height x width x depth)	17.78 cm x 48.58 cm x 22.86 cm (7 in x 19.13 in x 9 in)
Interface	Front Panel USB for data export/import via thumb drive or bar-code scanner; Ethernet RJ45 for direct printing to network printers, and data stream to LIM and SPC Systems
System Power	100 – 240 VAC, 47 – 63 Hz to universal power supply @ 24 VDC/3.75A
Display	7-in Touch screen, high resolution 1280x800
Sample Compartment	Cover - Removable to accommodate large samples 108mm x 101.6mm x 187.3mm (4.25in x 4.00in x 7.38in)
Base to Measurement Port	63.55 mm (2.5 in)
External PC Software	Compatible with EasyMatch Quality Central

Conditions of Illumination and Viewing

Dual Beam Spectrophotometer	Sealed optics; 256 element diode array and high resolution concave holographic grating
Light Source	Full spectrum LED Array; LED life – 5 years typical
Geometry	Tt/0° or Td/0° per ASTM 1164, CIE 15-2018
Sphere	76 mm (3 in) coated with Spectralon™
Port Size/Measured Area	18.5 mm (0.73 in) illuminated/ 9.8 mm (0.39 in) measured
Transmittance Modes	Total (TRAN), Regular (RTRAN), Haze

Instrument Performance

Spectral Data	Range: 400-710 nm Reporting Interval (nm): 10 nm
Spectral Resolution	<3 nm
Effective Bandwidth	10nm equivalent triangular
Measurement Path length	Up to 100 mm
Photometric Range	0-150%
Measurement Interval	<3 seconds
Measurement Speed (at 23°C)	≤2.5 seconds; 4 flashes
Inter-instrument Agreement	ΔE* ≤ 0.15 CIE L*a*b* (Avg) on Transmittance Filter Set; ΔE* ≤ 0.25 CIE L*a*b* (Max) on Transmittance Filter Set ±0.30% at 10% TH (Haze)
Colorimetric Repeatability	ΔE* ≤ 0.02 on air w/30 readings

Measurement

Data Views	Color Data Table, Spectral Plot, EZ View, Tristimulus Color Plot, Pass/Fail Color indication, time and date stamp, auto-naming, auto-saving, data backup
Illuminants	A, C, D50, D55, D65, D75, F02, F07, F11, TL84, ULT30, ULT35
Observers	2° and 10°
Color Scales	CIE L*a*b*, Hunter Lab, CIE L*C*h, CIE Yxy, CIE XYZ
Color Difference	∆E*, ∆E, ∆E CMC, ∆E 2000
Indices and Metrics	APHA/PtCo/Hazen, ADMI, Saybolt, Gardner, ASTM D1500, Iodine, ICUMSA, EBC, ASBC, ASBC Turbidity, Chinese Acid Wash, LOVIBOND® RYBN, AOCS RY, AOCS Cc 13d-55 Chlorophyll Concentration, FAC, YI E313 Yellowness, YI D1925, WI E313, CIE Y Transmittance, Pharmacopeia -US, Japanese, Chinese, EU, EP Opalescence, Haze, NTU Pass/Fail Color Indication, Time/Date Stamp, Auto-Naming, Auto-Saving, Data backup.
Data Storage	4 million Records max; 32 GB
Languages	Supports many Languages

LOVIBOND® is a registered trademark of The Tintometer Ltd., UK.

Standard Accessories

Standard Accessories	HunterLab Wavelength Filter, Certificate of Compliance, Power Supply, Initial Customer Setup Guide, Quick Start Guide, and Vista L2 User's Manual on www.hunterlab.com.

Standards Conformance

Standards	CIE 15:2004, ISO 7724/1, ASTM E1164, DIN 5033, Teil 7 and JIS Z 8722 Condition E, G

Regulatory Notice

The world's true measure of color
HunterLab

Declaration of Conformity

EU / EMC Directive:	**2014/30/EU Electromagnetic Compatibility** **2011/65/EU RoHS** **2014/35/EU Low Voltage Directive**
Standard to which Conformity is Declared:	**IEC 61326-1: 2021** **EN61010-1 Product Safety**
Manufacturer:	**Hunter Associates Laboratory, Inc.** **11491 Sunset Hills Rd, Reston, VA, USA**
European Representative: Representative's Address:	**Christian Jansen** **HunterLab Europe GmbH** **Murnau D-82418 Germany**
Type of Equipment:	**Transmission Spectrophotometer**
Model No.:	**Vista ® L2**

I, the undersigned, hereby declare that the equipment specified above conforms to the Directive(s) and Standard(s) above

Place:	*Reston, VA, USA*	Signature	
Date:	*January 23, 2026*	Full Name	*Kyle Fruth*
		Position	*Electrical Engineer*

Document A61-1021-995 Rev A

Vista L2 Maintenance & Safety

Maintenance for the Vista L2

The Vista L2 is designed to require minimal maintenance. This section highlights the few components of the sensor that need occasional upkeep to ensure the instrument operates correctly.

- **Cleaning the Vista L2**

  The Vista L2 is NOT waterproof, but the exterior of the case may be wiped with a damp cloth.

- **Cleaning the inside of the Vista L2**

  Lift the light cover to access the transmittance compartment. The inside may be cleaned with a lens brush or with a small amount of soapy water on a lint-free cloth or towel.

  Note: Do not spray directly into the instrument chamber.

  The light cover can be left in an upright position or removed for sample measurement as it does not affect the sample readings.

  The sphere port can be protected with an optional cover glass. Contact support@hunterlab.com for more information.

- **Haze Standard Care**

  The Assigned % Haze for this standard is a combination of the surface and internal scattering properties of this material. To maintain the surface properties, it is important that the surfaces of this standard are not damaged during normal usage. If the surface is contaminated, a cotton cloth moistened with isopropyl alcohol, or a laboratory glass cleaner such as Sparkleen™ or Alconox can be used to gently wipe the surface. After wiping it, allow it to dry for a minimum of 60 minutes.

When You Need Assistance

If you need technical or sales assistance on applications, troubleshooting, service, warranty, accessory pricing, and more, please contact the office nearest you:

For the Americas, Support@hunterlab.com

For Asia, AsiaSupport@hunterlab.com

For Europe, EuropeSupport@hunterlab.com

For all other regions, Support@hunterlab.com

Additionally, our global support website offers 24/7 assistance with a library of information on various color measurement and appearance topics, such as applications, instrument operation, and troubleshooting. The HunterLab global support website is located at **support.hunterlab.com**.

For personalized assistance, go to support.hunterlab.com and locate the **Create A Ticket** button on the menu. Your information is gathered and registered. Our Customer Experience Teams will respond to your inquiry.

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