User's Manual
Vista® with EasyMatch® Essentials

The world's true measure of color
HunterLab

Hunter Associates Laboratory
11491 Sunset Hills Road
Reston, Virginia 20190 USA
www.hunterlab.com

A60-1017-433 Version 3.5
EasyMatch Essentials Version 1.07.0094 and above

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Safety Notes

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

- General safety instruction that should be observed always while operating the instrument.
- Specific safety instruction critical to the type of instrument operation being explained in the manual where the caution appears.
- Additional clarification of instructions, not safety-related.
- 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**.**
- Unit is for indoor use only and not suitable for wet location.

Caution: UV Light hazard, avoid looking directly at light.

VISTA with EasyMatch Essentials

Contents

CHAPTER ONE

Setting Up the Vista

Standard Accessories

- Didymium diagnostic filter
- Certificate of Compliance
- Power Supply
- Vista Quick Start Guide
- Stylus
- USB Flash Drive
- Cleaning Cloth

Power Jack

- The instrument is supplied with a 12 VDC (5A) power supply. The power supply is plugged into the back of the instrument as shown along with the Ethernet port and the USB port.

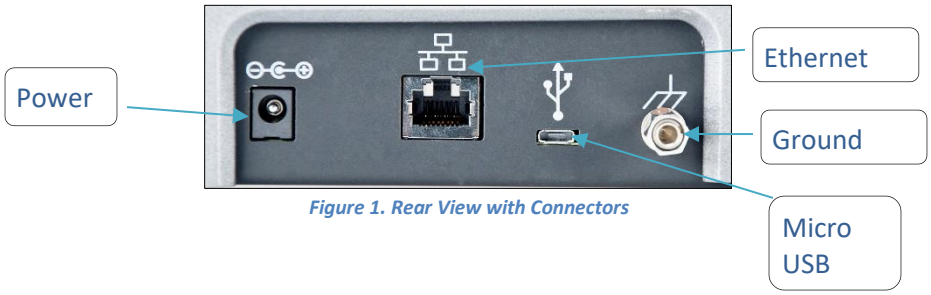


Figure 1. Rear View with Connectors

CAUTION

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

Power Switch

- To turn the instrument on, press the rocker switch on the right side of the instrument.

Figure 2. Rocker Switch

Keyboard and Mouse

- The Vista works with the following keyboard and mouse:
  - L02-1017-434 Wireless keyboard and mouse kit.
- To use this accessory, turn the power off. Plug in the micro USB adaptor to the rear of the instrument and then attach the nano-receiver for the keyboard into the USB port. Install the batteries into the keyboard/mouse and turn the power back on.

Front and Rear USB Connectors

- There are two USB connectors on the Vista. The one in the front is typically used for saving jobs and workspaces, backing up the instrument and updating software. The USB port on the back of the instrument is typically used to connect a printer or a keyboard to the Vista.

Figure 3. USB Port

Ethernet Port

- This port is used to connect the Vista to a computer or to a network with the purpose of sending data (ASCII) to a server.

CHAPTER TWO

Taking a Simple Measurement

What is HunterLab Vista & Essentials?

Vista 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 will be measured by placing in the transmission 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.

Connecting the Sensor and Taking a Measurement

- After unpacking and setting up the instrument, turn on the power using the rocker switch on the lower right side.
- Once inside the software, the main measurement screen is displayed – Color Data Table (D65/10).

Figure 4. Measurement Screen

- The instrument is automatically connected, and this is reported on the status bar. Next, the unit must be Standardized.
- Press the ***WORKSPACE*** icon  and select ***STANDARDIZATION***. Alternately, the Standardization Status at the bottom of the screen can be used to access a new standardization. Select a mode and press ***STANDARDIZATION*** to initiate. The status will be reported in the lower left screen.

Figure 5. Standardization Parameters

- **Main Measurement Screen**. The **Color Data Table** view shows the configured Color Scale, Color Differences and Indices data for the Standard and Sample measurements in the job. The configured Tolerances can be applied to the Job; Pass/Fail results will also be displayed.
- To change the color scale, etc., see **Workspace: Color Scales**. To add tolerances, see **Workspace: Tolerances**. To save these setups as a job or output, see **Jobs: Save Job**. To change the views, select ***WORKSPACE > VIEWS***.

Figure 6. Main Measurement Screen

- A long press on the Sample name will show a menu with the following options:
  - ***SET AS STANDARD*** – to set the sample as Standard.
  - ***RENAME*** – to rename the sample.
  - ***DELETE*** – to delete the sample.

Figure 7. Changing, Renaming or Deleting a Sample

- A long press on the Standard name will show a menu with the following options:
  - ***RENAME*** – to rename the standard.
  - ***DELETE*** – to delete the standard. The deleted standard is reverted into the samples list with its original name.
  - ***HITCH*** – to hitch the standard.

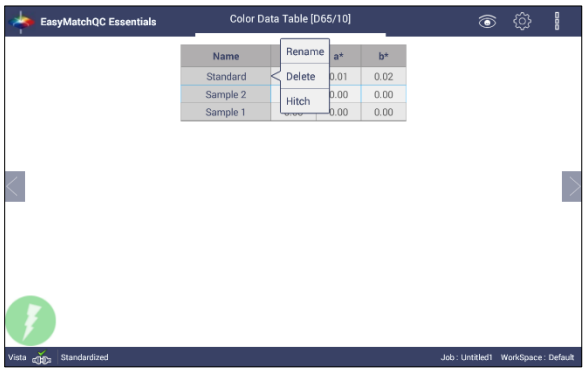


Figure 8. Long Press to Rename, Delete or Hitch

Hitch Standard

- Once a standard is named, it can be changed to a **Hitch** standard. **Hitch Standardization** is a process by which two or more instruments of similar design can be made to read the same color values on a group of specimens. This process is very useful in expanding the communications of color around the world or between vendor and customer.
- The process of Hitch Standardization involves assigning one instrument to be the reference, or master, unit and mathematically adjusting the secondary, or slave, unit(s) to read the same values. In this way, two or more instruments can be hitched together. Hitching a secondary unit to a reference instrument requires that a specimen be read on both units and the values compared and adjusted accordingly. This specimen, known as the hitch standard, is first read on the reference instrument and its values recorded as spectral data or colorimetric (tristimulus) data. The hitch standard is then physically moved to the secondary instrument where it is reread and the values from the reference unit are input into the secondary instrument's processor.

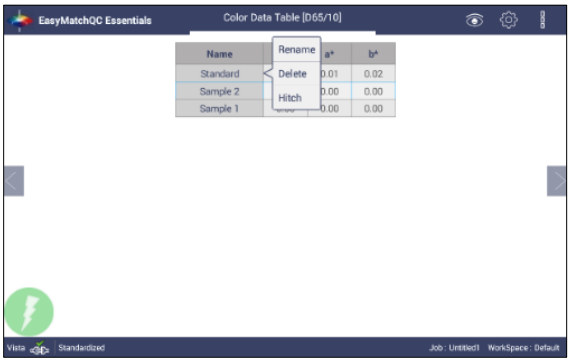


Figure 9. Hitch Standardization

CHAPTER THREE

Navigating the Essentials Screen

The EasyMatch Essentials Tools and Status features are shown below.

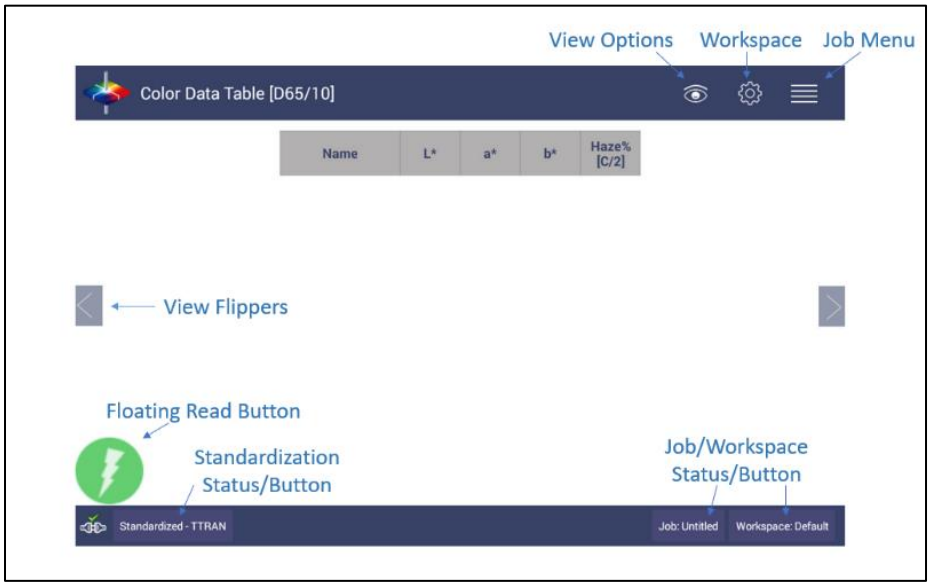
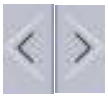


Figure 10. Color Data Screen for Vista & Essentials Tools: Read

Tools: Read

- Samples and Standards are read using this key.
- This tool can be moved around the screen by pressing and moving the icon.
- Assigning a Standard is done by pressing and holding the sample number and following the onboard instructions.
- Once a Standard is named, it can be **Renamed**, **Deleted** or changed to a **Hitch Standard**.

Tools: View Flippers



- Switching between Views can be accomplished by using the semi-transparent ***NEXT*** and ***PREV*** buttons placed at the side edges of the screen or by swiping left or right with two fingers on the screen.

Tools: Status Bar

Sensor Status

- The Vista serial number is shown at the bottom left side of the **SYSTEM BAR** .

Standardization Status

- The current state of standardization is reported. To initiate standardization, one can press on the ***SENSOR STATUS*** to open the standardization dialog.

Jobs Status

- **JOB** Status is reported on the bottom right side of the System Bar. To open a Job, one can click on the ***JOB NAME*** in the status bar.

Workspace Status

- **WORKSPACE** Status is reported on the bottom right side of the System Bar. To load a Workspace, one can click on the ***WORKSPACE NAME*** in the status bar.

Tools: View Options

- This menu shows the options for the active view. See ***TOOLBAR > VIEW OPTIONS*** for a list of the features under each view.

Tools: Workspace and System Settings

- The Workspace menu sets up the data screen with **MEASUREMENT COLOR SCALES, READ OPTIONS, STANDARDS and TOLERANCES** and **VIEWS**.
- Systems Settings initiates **STANDARDIZATION, DIAGNOSTICS, PREFERENCES**, and the **USER MANAGER** for System Security.

Tools: Jobs

- A **JOB** is a collection of all the data views (displays) and measurements (standards and samples) used for a task, product, or customer. Jobs are the 'documents' of EasyMatch Essentials, analogous to word processing documents containing text and formatting.
- Jobs can be created for many different reasons, such as to hold data for a certain customer or a specific product line. Each operator may maintain their own job with preferences or create separate jobs for different operations.

CHAPTER FOUR

Tool Bar: Jobs Function

Under the Job function, the following tasks can be accomplished:

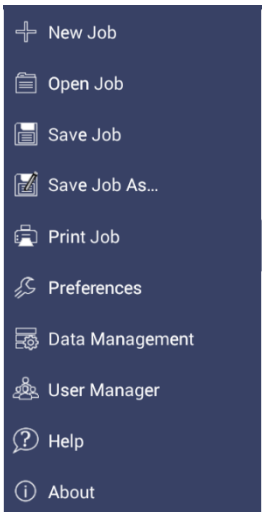


Figure 11. Job Menu

Jobs vs Workspace

JOBS vs. **WORKSPACE**: A job consists of standard and samples measured into a specific workspace. A workspace is a template with measurement conditions such as Color Scale, Index, illuminant, etc. There can be only one job open at a time. A new job will use the current loaded workspace settings. The user can change the settings and these changes are applied into the current job. The last loaded workspace settings are applied automatically when the user creates a new job. The main tool bar provides the options to create a new job, open an existing job and save a job.

Jobs: New

Create a new empty Job. Select ***JOB > NEW*** and the current job is replaced with a blank screen. The Job Status bar displays the new job as 'untitled'.

Jobs: Open

OPEN a saved Job using the main tool bar or using the Jobs listing on the status bar. A list of available jobs under the current path are displayed for selection. If the job that is needed exists in another folder, then it is an option to change the folder (**NEW FOLDER**). When the job to be opened is displayed select the appropriate button and press **OPEN**.

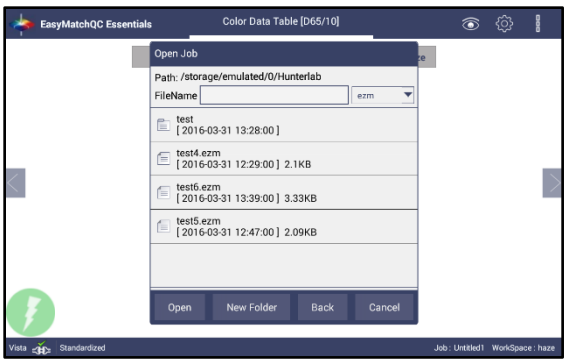


Figure 12. Open A Job

Jobs: Save & Save As

SAVE the Job under the desired name. To save a job, select the folder, ***NAME THE JOB*** and ***SAVE THE JOB*** contents into a file. These files have an .ezm or a CSV extension. There will be a default name filled in Filename box as date&time&instrument#&workspace. You can edit it if needed.

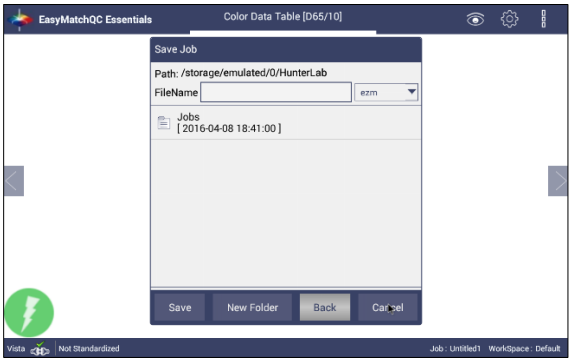


Figure 13. Save A Job

Jobs: Print

PRINT an open Job using the parameters set up under Preferences. Drivers included in the Vista are shown below. Also available is the ability to save to PDF.

Printer	**Driver**
Canon	Canon Print Service 4.4+
HP	HP Print Service Plugin 4.1+
Epson	Epson Print Enabler 4.4+
Konica Minolta	Konica Minolta Print Service Plugin 4.4+
Kyocera	Kyocera Print Service Plugin 4.4+
Lexmark	Lexmark Print Service Plugin 4.4+
Samsung	Samsung Print Service Plugin 4.4+
Sharp	Sharp Print Service Plugin 4.4+
Xerox	Xerox Print Service Plugin 4.4+

- Additional drivers can be added under ***WORKSPACE > DIAGNOSTICS > ADVANCED***.

- To save the report as a PDF file, select ***SAVE AS PDF > SAVE*** as shown below. A keyboard will be presented for naming the file. Please save the pdf file into **DOWNLOADS**. To get the PDF file exported, please go to ***JOBS > DATA MANAGEMENT > EXPORT >OTHERS***, then switch the folder to **DOWNLOAD** to select the pdf file and export.

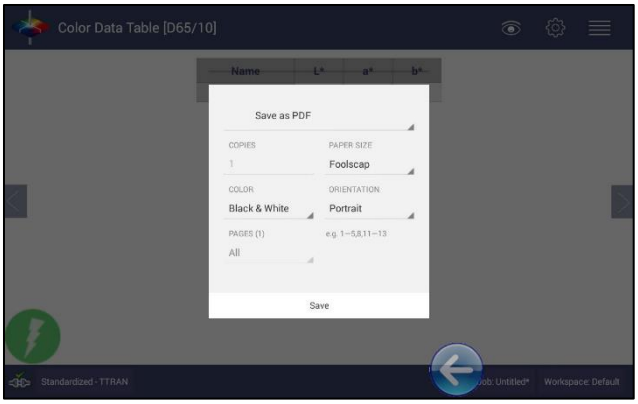


Figure 14. Select Save as PDF

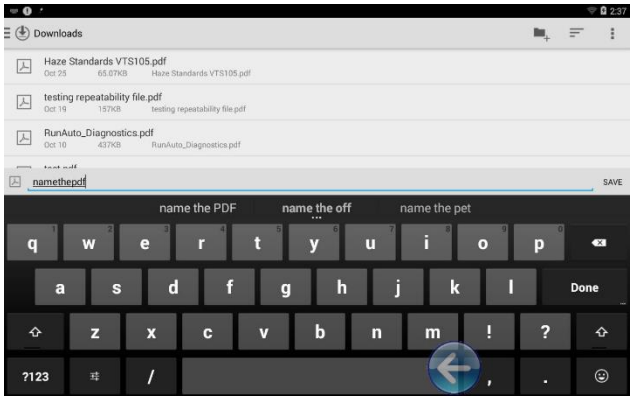


Figure 15. Name the PDF

Jobs: Preferences

This menu item shows a dialog box with two pages **General** & **Print** as shown below, where the ***GENERAL*** page contains the options to configure.

- Load the last used workspace and job.
- Set standardization time interval.
- Set screen brightness and date/time.
- Enable novice tooltip.
- Enable application security.
- Use last login credentials.
- Configure and enable network data export.
- Configure network settings for Ethernet or Wi-Fi.

- Select **LANGUAGE**.

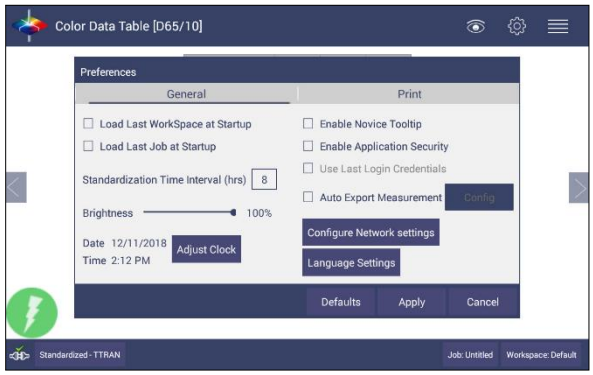


Figure 16. Jobs> Preferences> General Page

- To **LOAD THE LAST WORKSPACE AT STARTUP,** check this box and press ***APPLY***.
- To **LOAD THE LAST JOB AT STARTUP,** check this box and press ***APPLY***.
- The **STANDARDIZATION TIME INTERVAL** is a useful reminder to restandardize after time (hours). Press ***APPLY*** to set the new interval. When the time has lapsed, a prompt to **RESTANDARDIZE** will be displayed before measurements can be taken.
- Set the **SCREEN BRIGHTNESS** using a sliding scale and press ***APPLY***. After 15 minutes of idle the screen brightness will automatically reduce to 3%.
- Set the **DATE/TIME** and **TIME ZONE** using the ***ADJUST CLOCK*** feature.
- ***ENABLE NOVICE TOOLTIPS*** by checking on the box. Once enabled, screen tips are displayed for 3 seconds. To display again, roll over the lightbulb icon on the lower right part of the screen.

Figure 17. Example of Novice Tool Tip

- ***ENABLE APPLICATION SECURITY***. This selection is available after the User Manager has been set up. Please refer to the ***JOBS > USER MANAGER*** for more information.
    - When this is selected, the application will require valid login credentials at startup. On successful login, the user name will be shown in the status bar. If **USE LAST LOGIN CREDENTIALS** is checked, the user will be automatically logged in on subsequent startups.

- For **AUTO EXPORT MEASUREMENT,** check ***AUTO EXPORT*** Measurement and click ***CONFIG*** to setup the Vista. Then set up parameters in the PC or server that is used to collect data from Vista. For more detail, please see the chapter on Special Functions

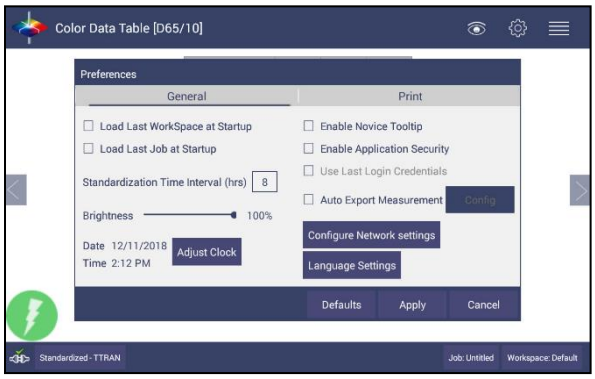


Figure 18. Auto Export

- ***LANGUAGE*** Settings provide a selection of language and change of keyboard for German, Japanese and Chinese. After changing the language selection, please restart Vista Essentials to get the new language applied.

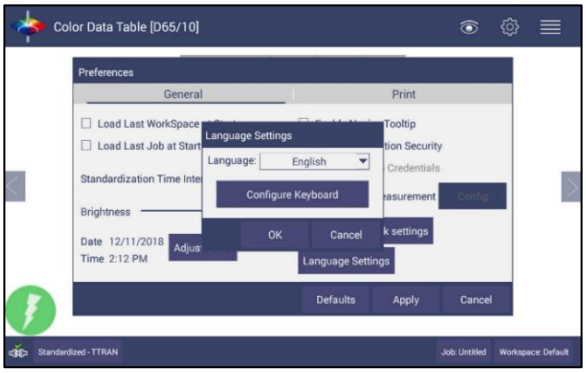


Figure 19. Language Selection

- The ***PRINT*** page allows the user to configure:
  - The ***MEASUREMENTS*** and ***VIEWS*** to print.
  - The option to **PREVIEW** before print.
  - Print report **TITLE** and **LOGO**.
  - Orientation of the report (**PORTRAIT** or **LANDSCAPE**) orientation.
  - To save changes, press ***APPLY.***

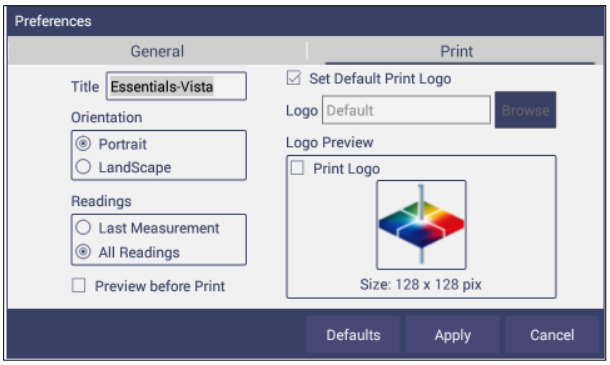


Figure 20. Jobs> Preferences> Configure Print Page

Jobs: Data Management

The data contains standard(s) and sample measurements saved in Job files and database along with the sensor information. The saved measurements are also associated with a respective Workspace and Job.

- The **DATA MANAGEMENT** contains the features to Recall, Import, Export, Email a Job and Backup/Restore. After a job is saved, it can be used to create a CSV file for export and email.
  - ***RECALL*** the measurements from the database.
  - ***IMPORT*** a selected Job(s), Standard(s), Workspace(s) and Diagnostics from a USB flash drive.
  - ***EXPORT*** the Job(s), CSV files, Standard(s), Workspace(s) and Diagnostics in the Download folder or to a USB flash drive.
  - ***EMAIL*** the selected Job(s), CSV or files in the Download folder on a USB**.**
  - ***DELETE*** a Job(s), Standard(s), Workspace(s), Diagnostics and in the Download folder on a USB.
  - ***BACKUP*** the Job Files and Database into a USB Flash drive or to Network.
  - ***RESTORE*** the Job files and Database from a USB Flash drive or from a Network.

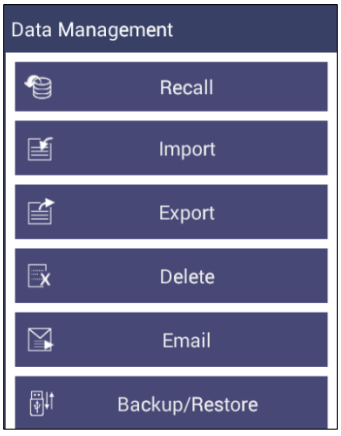


Figure 21. Data Management Menu

JOBS > DATA MANAGEMENT > RECALL

Recall measurements that have been stored to a job.

The database contains the standards and sample measurements saved in a Job along with the sensor information. The saved measurements are also associated to respective Workspace and Job.

This feature enables the user to recall the Standard/Sample(s) stored in the Database into the current running Job.

Click ***RECALL*** option in Data Management, a dialog will be displayed where the user can recall the measurements from the database by ***Selecting the Type***:

- **SHOW STANDARDS ASSOCIATED TO A CATEGORY**
  When this option is selected, the standards list is filled with the standards associated with the selected Category (i.e. like Pale Ale) from the **SELECT STANDARD CATEGORY** list. All matching samples are filled into the sample list. To narrow the list, the user can select the samples only associated with the selected standard.
- **SHOW ALL THE MEASUREMENTS IN SELECTED JOB**
  When this option is selected, the standard contained in the selected Job and all samples are filled into the sample list.
- **SHOW THE STANDARDS/SAMPLES IN THE CURRENT WORKSPACE**
  When this option is selected, the standards list is filled with the standards associated with the current workspace. All samples are filled into the sample list. To narrow the list, the user can select the samples only associated with the selected standard.
- **SHOW THE IMPORTED STANDARDS**
  When this option is selected, the standards list is only filled with the standards imported into the database. After selecting the measurements click ***RECALL*** to display them into the active Job.

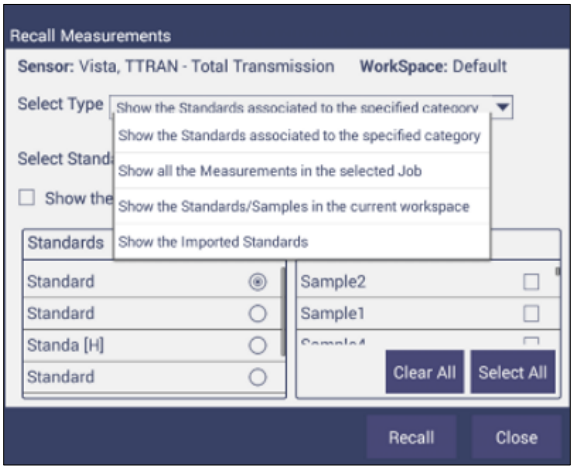


Figure 22. Recall Measurements

Jobs > Data Management > Import

This feature allows the user to import the below Job, Standard, Workspace or Diagnostics from a USB flash drive into the instrument. Data can be one file, multiple files or all files. All selected files should be in the same file path location. .

Figure 23. Import Data Type

- ***IMPORT JOB***
  This option allows the user to browse and select a Job file(s) (.ezm) from the USB flash drive and import into the instrument. If a file name already exists, then the name will be incremented numerically.

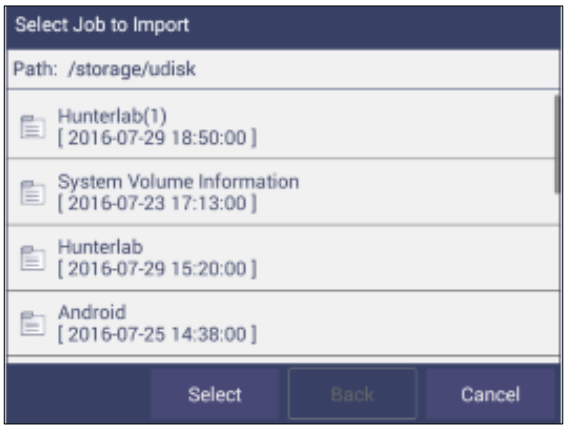


Figure 24. Import Job

- ***IMPORT STANDARD***
  This option allows the user to browse and select a Standard (extension *.std*) from the USB flash drive and import into the database. If required, the Standard Name can be changed.

Figure 25. Import Standard

- ***IMPORT WORKSPACE***
  This option allows the user to browse and select a Workspace(s) (extension *.wsp*) from the USB flash drive and import into the database. If the workspace already exists, then the user is prompted to specify a different name.

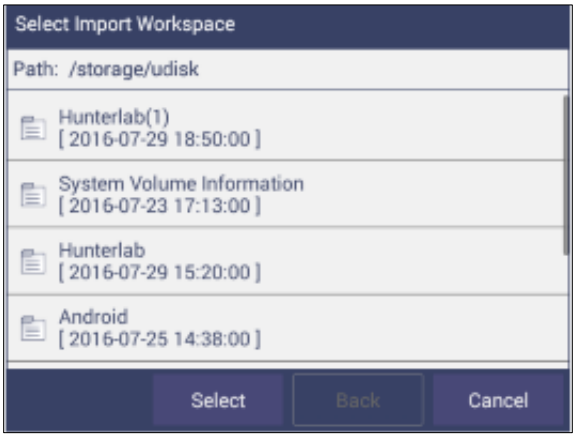


Figure 26. Import Workspace

To use the above functions, a USB flash drive must be present in the port.

Jobs > Data Management > Export

This feature allows the user to export Jobs, Standards, Workspace Settings, Diagnostics results and Others from the instrument into a USB flash drive. Data can be one file, multiple files or all files. All selected files should be in the same file path location.

- ***EXPORT JOB***

  This option allows the user to browse and select an existing Job(s) (*.ezm*) or the current active Job data and copy into a USB flash drive either in ***CSV*** or ***EZM*** file format. While exporting into EZM format, the current active Workspace settings can be applied. The color data shown in the Color Data View and the Spectral Data is saved in a CSV file. (In Rev 1.03.0070 and above, the .csv file will be automatically created/updated when a job is saved. CSV files are stored at ***HUNTERLAB > CSV FOLDER***. User can export .csv file through ***EXPORT > OTHERS***.)

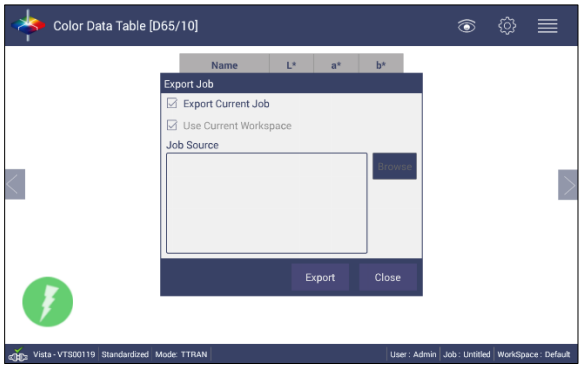


Figure 27. Export Current Job

- ***EXPORT STANDARD***

  This option allows the user to browse and select an existing Standard(s) in the database and copy into the USB flash drive as a file (*.std*).

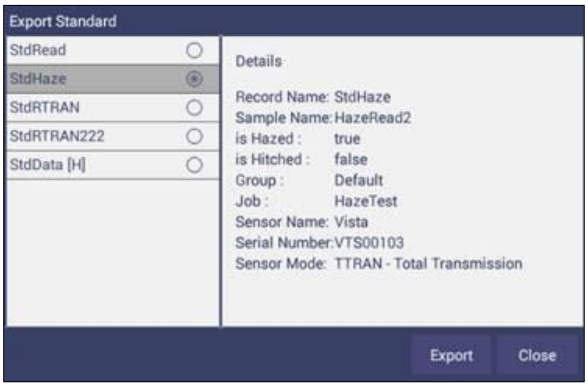


Figure 28. Export Standard

- ***EXPORT WORKSPACE***
  This option allows the user to browse and select an existing Workspace(s) in the database and copy into the USB flash drive as a file (*.wsp*). To use the above functions, a USB flash drive must be present in the port.
- ***EXPORT OTHERS***
  This is used to export the saved pdf file in the **DOWNLOADS** folder.

Figure 29. Export Others

- With a USB file in the drive, select ***OTHERS*.**

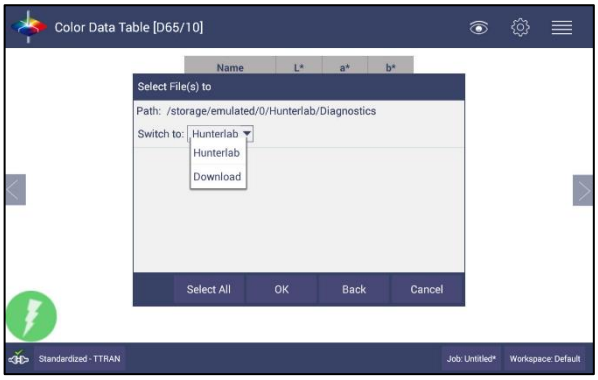


Figure 30. Select the Download

- Switch from HunterLab folder to **DOWNLOADS** and then select pdf files and click OK to get them exported.

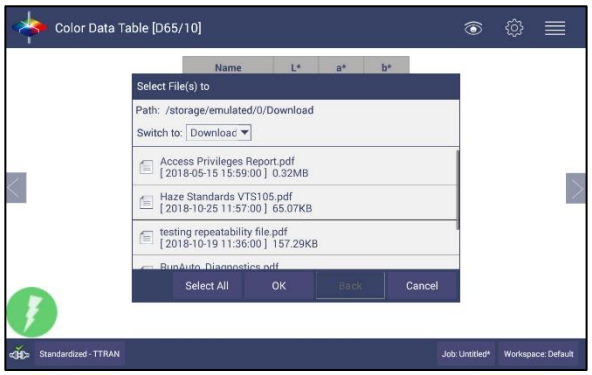


Figure 31. Select File to Download

Jobs > Data Management > Email

Saved Jobs and downloads can be emailed if there is an active internet connection. When the ***EMAIL*** option is clicked, the following screen is shown prompting the user to browse and select a user and enter the recipient email address. You can email any file in HunterLab folder as well as in the downloads folder. Data can be one file or multiple files, e.g. csv file in ***HUNTERLAB > CSV FOLDER***, pdf reports in Download folder. In Rev 1.03.0070 and above, the .csv file will be automatically created/updated when a job is saved. CSV files are stored at ***HUNTERLAB > CSV FOLDER***. These .csv files can be emailed.

Figure 32. Enter an Address to Email a Job

- ***MAIL SETTINGS***
  Click ***MAIL SETTINGS*** button to configure the SMTP mail server configuration (**PORT, SERVER**) as shown below. The mail settings configuration is mandatory to enable the mail job feature in the application. When done, press ***SEND***.

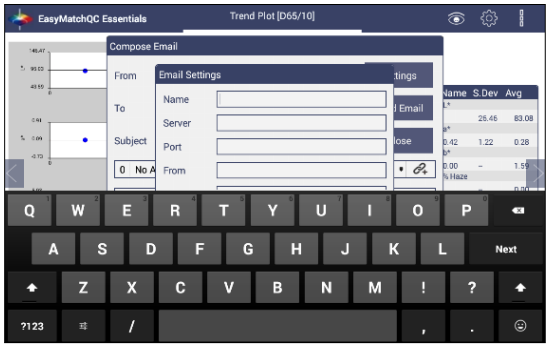


Figure 33. Enter SMTP Mail Server Information

Jobs > Data Management > Delete

The **DELETE** function will allow deletion of Jobs, Standards, Workspace, Diagnostics and files in the Download folder. Data can be one file, multiple files or all files. All selected files should be in the same file path location. Files can be deleted on a thumb drive using the ***DELETE > OTHERS*** function as shown under Data Management Export. .

Jobs > Data Management > Backup/Restore

The **BACKUP** function will copy the entire Vista database to a selected folder on a thumb drive or to a network. **RESTORE** enables the user to upload a backup folder from a thumb drive or from the network to the Vista.

- To run the network backup/store, first setup the HunterLab File Service Package on a network PC. See **SPECIAL FUNCTIONS**.
- Setting up File Storage from Vista (Client) Side

  In Vista Essentials, navigate to ***JOBS > DATA MANAGEMENT > BACKUP (or RESTORE).*** The ***SELECT ACTION*** dialog will be displayed. The user can choose between **USB DRIVE** or **NETWORK STORAGE**. When ***USB DRIVE*** option is selected, the Backup and Restore operations will be performed into the USB flash drive plugged into the system.

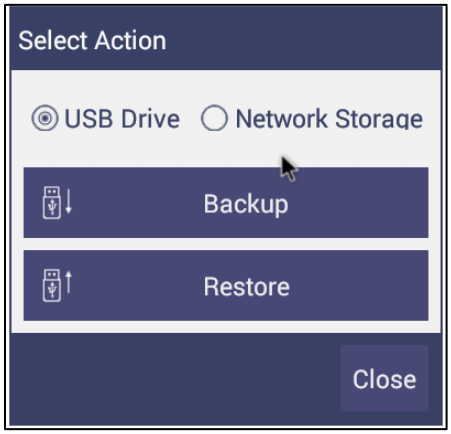


Figure 34. Select USB Option

When ***NETWORK STORAGE*** is selected, the Backup and Restore operations are performed into a network folder of the specified system where the HunterLab File Service is installed. Click on ***NETWORK STORAGE SETTINGS***.

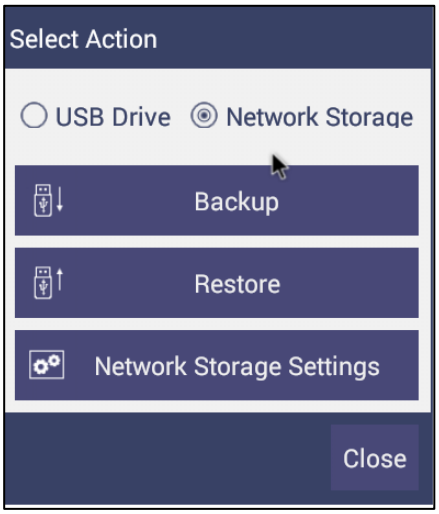


Figure 35. Network Storage Settings

In the next screen enter the **IP ADDRESS** and **PORT NUMBER**. Click on ***TEST CONNECTION*** button to verify the connectivity. Click ***APPLY*** to save the settings. The saved network settings will be used for the Network Backup and Restore operations.

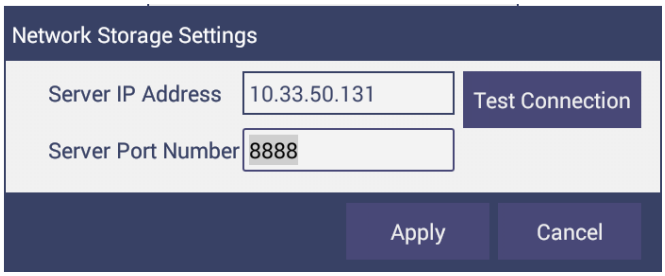


Figure 36. Network Storage Settings

After successful configuration of network settings, click ***BACKUP*** (or ***RESTORE***) to perform the complete backup of ***HUNTERLAB*** folder in Essentials-Vista to the specified network server's folder.

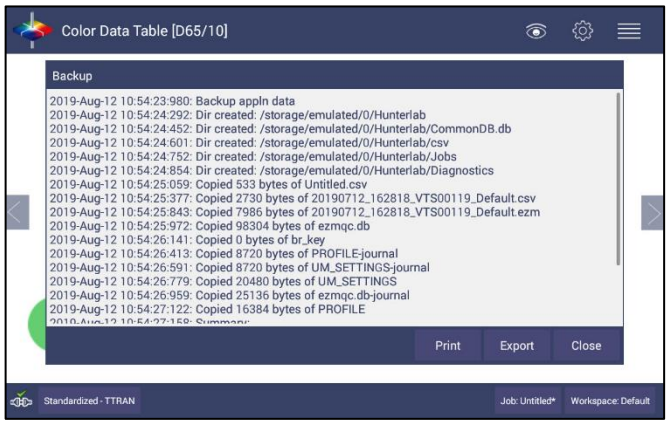


Figure 37. Backup Files on Vista

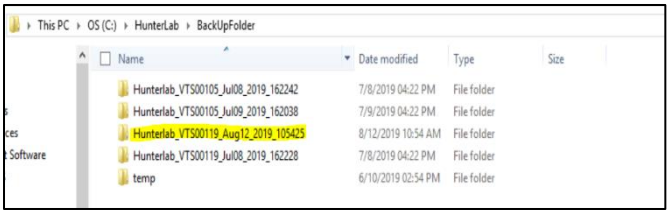


Figure 38. Backup Folder in the Networked PC

Jobs: User Manager

Security can be enabled on the Vista to ensure that operators cannot modify, delete folders or files and limit their functionality. An administrator is identified to set up the users/groups with selected privileges.

- To begin, go to ***JOBS > USER MANAGER*** to ***CREATE ADMINISTRATIVE GROUPS*** followed by ***CREATE USER GROUPS.***

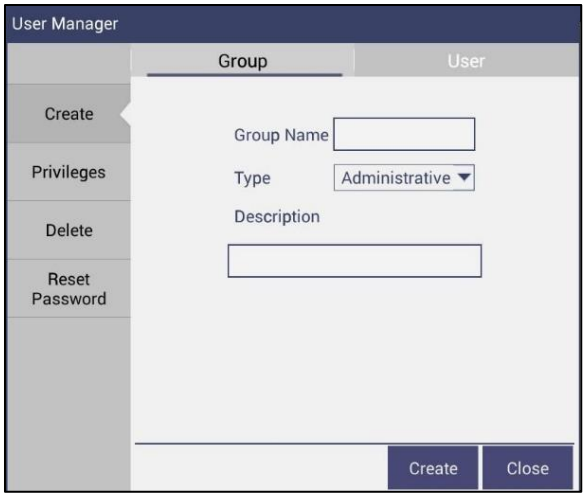


Figure 39. Create a Group

- Once the groups have been established, then individuals with **USER NAMES** and **PASSWORDS** can be setup for both Administrator and User Groups.

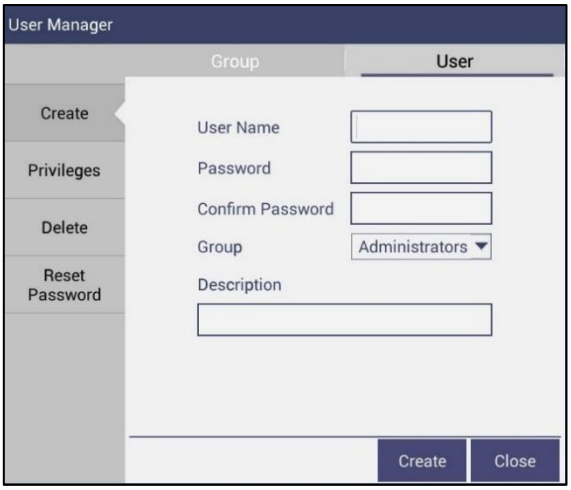


Figure 40. Setup Administrative & General Users

- Users in Administrative Groups have all features enabled. For User Groups, **PRIVILEGES** can be setup as shown below. Press ***UPDATE PROFILE*** to complete.

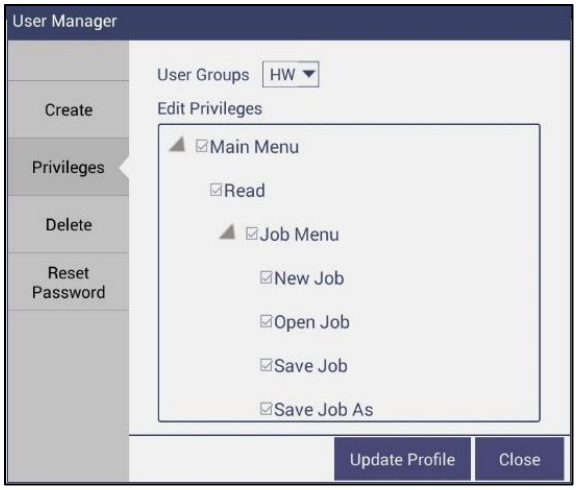


Figure 41. User Privileges

- To complete enabling security, go to ***JOBS > PREFERENCES > ENABLE SECURITY*** on the right side.

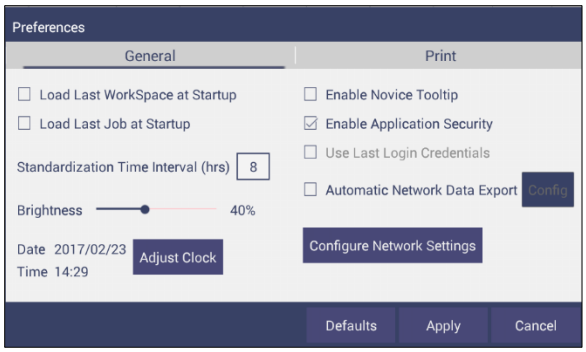


Figure 42. Enabling Security

- After enabling security, each user must enter a name and password when logging into the Vista. For convenience, the user can check the box under ***JOBS > PREFERENCES > GENERAL*** to use the **LAST LOGIN CREDENTIALS**.

Figure 43. Login Credentials

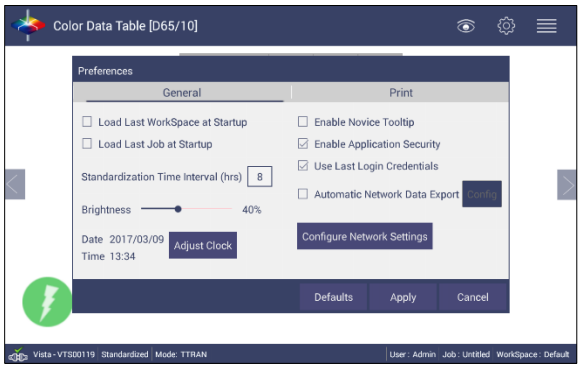


Figure 44. Enable Last Login Credentials

- If needed, the administrative user can delete groups and users and reset passwords of all Groups & Users.

Jobs: Help

To access the onboard manual, use ***JOBS > HELP***. **NOVICE HELP** can also be enabled under ***PREFERENCES > GENERAL***.

Jobs: About

The **ABOUT** menu provides information about HunterLab and the current software version.

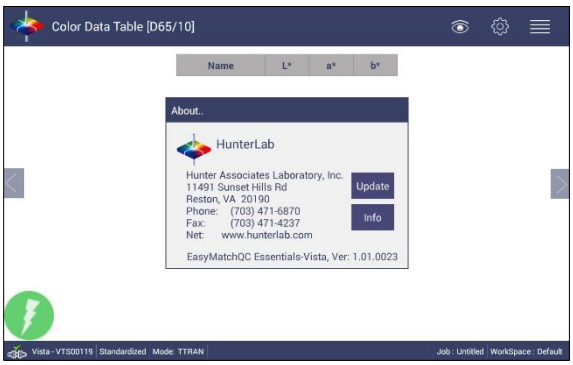


Figure 45. Job> About the Software

To update the software version from a USB, install the USB in the port on the front of the instrument. Press ***UPDATE*** to continue.

For detailed information on firmware and more, please press the ***INFO*** button on the screen.

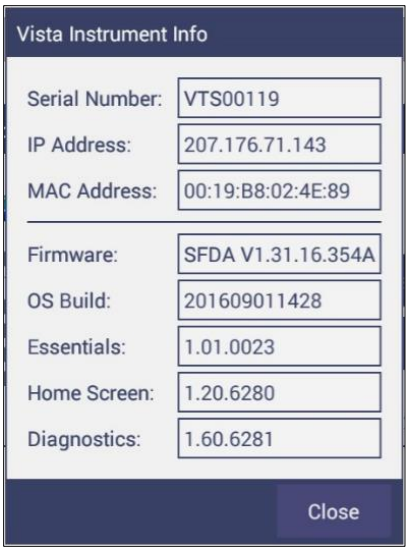


Figure 46. Instrument Info

CHAPTER FIVE

Tool Bar: Workspace

Under the **WORKSPACE** Function, the following tasks can be accomplished:

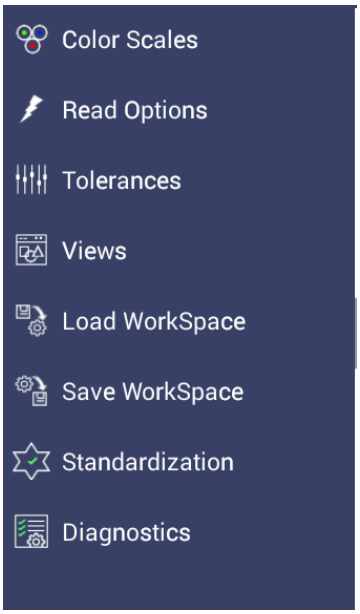


Figure 47. Workspace Parameters

Workspace: Color Scales

Color Scales provides selection of **SCALES**, **INDICES**, **DIFFERENCES,** and **ILLUMINANT/OBSERVER** (**ILL/OBS).** Once selected, **TOLERANCES** and **VIEW OPTIONS** can be set.

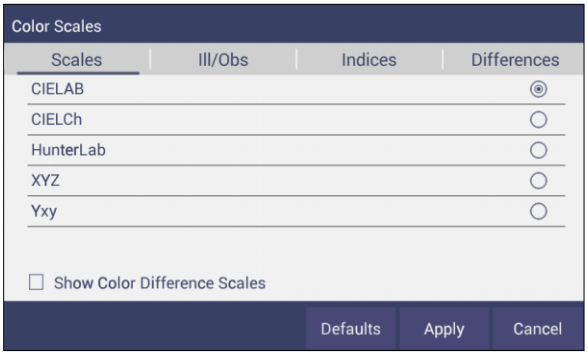


Figure 48. Color Measurement Scales

- This screen shows the five scales available for measurement. Select the absolute scale (3 parameters) and color difference scales (3 parameters) if needed. Press ***APPLY*** and begin to read your samples.

- The Illuminant/Observer screen displays combination selections for these parameters. To see all of the choices, you can scroll through the selections by viewing the screen.

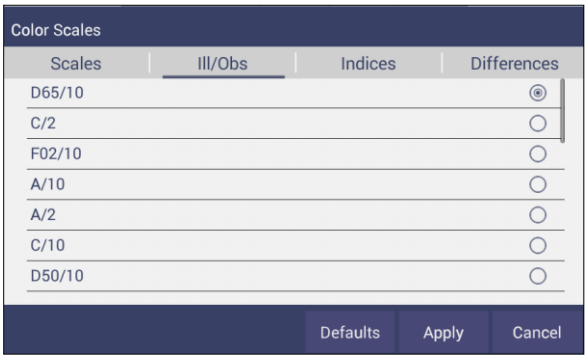


Figure 49. Illuminant/Observer Configuration

- To select indices, check the corresponding box on the right side. Multiple selections are available as well as difference indices and custom indices. To see more choices, the screen can be scrolled my moving your finger from the bottom to the top.

Figure 50. Indice Configuration

  - **CUSTOM INDICES**: Users can create modified pathlength indices and add transmittance data into the indices list using custom indices. Pathlength modification is available for APHA, ASBC, ASTM D1500, Chinese Acid Wash Color, CP Indices, EBC, EP, FAC, Gardner, Iodine, JP, Saybolt, USP and transmittance/absorbance data from 400nm to 700nm for Difference and Biased Index Difference.
    - All the created custom indices except %T indices will be showed in Bias Configuration list so that user can do bias and gains on these new indices.
    - The configured pathlength can be any number between 1-99 with maximum one decimal.
    - Due to the implementation of custom indices, most indices names have been changed compared to the names in Vista Essentials 1.03.0045. If any old index name is found in different format the index will not be calculated.

In such case, please go to ***COLOR SCALES > INDICES*** and ***APPLY*** to update the list of indices.

Figure 51. Custom Indices

- The custom indices are not listed in the default indices list and Essentials will not allow creation of default indices under custom indices as this index already exists in the default indices list.
- Scale factors of LOVIBOND®/AOCS/ICUMSA 420/ICUMSA 560 can be adjusted in custom indices dialog. LOVIBOND®/AOCS cell pathlength, instead of only 5 pathlength options in dropdown list, can be entered with any number between 1-99 with maximum one decimal.

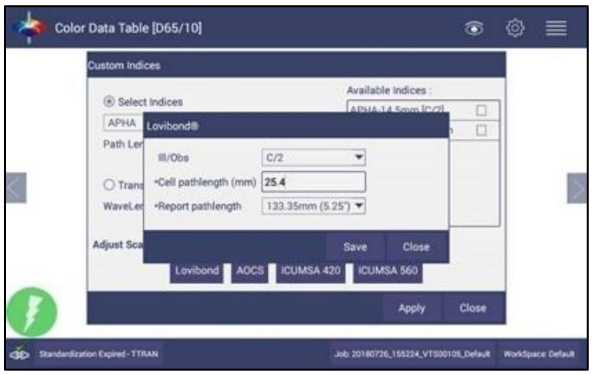


Figure 52. Parameters for LOVIBOND®

- For ICUMSA 420 and ICUMSA 560, the density (g/ml) and weight% (g/g) need to be configured for accurate ICUMSA calculation. Density (g/ml) should be from 0.5-2. Weight% (g/g) should be from 1-100.

1

[1] LOVIBOND® is a trademark of Tintometer LTD, UK.

Figure 53. Parameters for ICUMSA

- To select dE differences, check the corresponding box on the right side. Multiple selections are available. Press ***APPLY*** when all selections have been made.

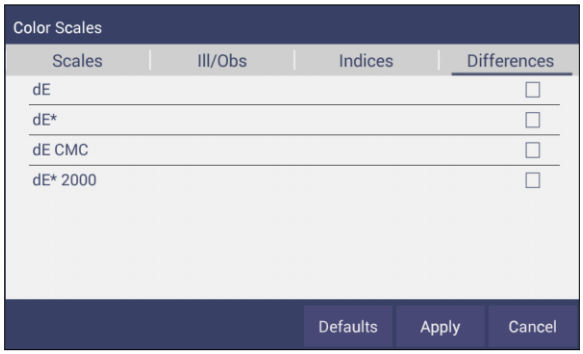


Figure 54. Color Measurement Differences

Table 1. Overview of Color Measurement Parameters for EZ View, Color Data Table, Trend Plot & Color Plot

Illuminant	Observer	Scales	Differences	Indices	View Options
D65	2/10	CIE Lab	dL*a*b*	ADMI	Pass/Fail[1]
C	2/10	CIE LCh	dL*C*h	APHA/PtCo/Hazen[4]	Tolerances
F02	2/10	Hunter Lab	dXYZ	Saybolt[4]	Time[3]
D50	2/10	XYZ[1]	dLab	Gardner[4] 10mm and 20mm	Date[3]
D55	2/10	Yxy[1]	dYxy	Haze	
D75	2/10		dE	Y Transmittance[4] Absorbance	Trace Range 1[2]
F07	2/10		dE CMC	EBC[4]	Trace Range 2[2]
F11	2/10		dE* 2000	ASBC[4] & Turbidity	Trace Range 3[2]
TL84	2/10		dE*	ADMI	Trace Range 4[2]
ULT 30	2/10			ASTM D1500[4] for 10mm and 24mm	Auto Range[2]
ULT 35	2/10			YI D1925	Display: Line[2]
	2/10			YI E313, WI E313	Display: Point[2]
				USP[4], JP[4]	Zoom
				EP[4] 10mm Y, GY, R, BY, B	Average[2]
				Iodine[4]	Std. Deviation[2]
				NTU	Meas per Display[2]
				LOVIBOND® RY4 LOVIBOND RYBN	
				AOCS RY[4]	
				Chinese Acid Wash Color4	
				FAC[4]	
				ICUMSA 420/560[4]	
				EPOP	
				CP - 10mm, CP GY/YG/Y/OY/ORR/BR 10mm	

[1]Not Available on Color Plot, [2]Trend Plot Only, [3]Color Data Table Only, [4]Custom Indice available with pathlength modification

LOVIBOND® is a trademark of Tintometer LTD, UK.

Workspace: Read Options

Read Options provides selection of ***AVERAGING, AUTO SAVE, AUTO READ, PROMPT FOR STANDARD CATEGORY*** and ***READ HAZE***. The Read command performs the operation based on the configured options.

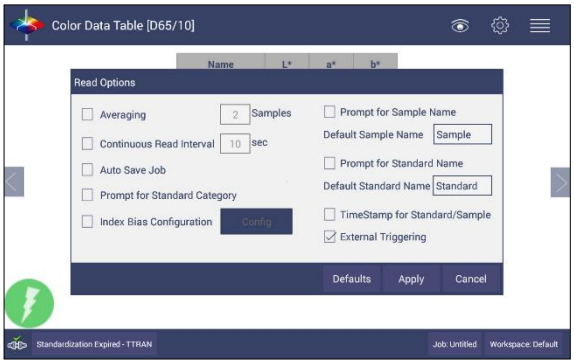


Figure 55. Read Options

- **AVERAGE**
  Select the number of readings to average to produce the final measurement. The total number of readings to be averaged can be no less than two. Close the screen and press ***READ*** to initiate.

Figure 56. Reading and Averaging

Once the ***READ*** button is pressed, the instrument will display a unique dialog box to ***READ*** and ***AVERAGE*** the readings. The second reading is taken using the unique dialog box button, ***READ***. Once all the readings are taken, press ***AVERAGE*** to obtain the results. To stop the averaging, press ***CANCEL***.

- **CONTINUOUS READ**
  This feature performs continuous measurements. In **CONTINUOUS READ INTERVAL** mode, measurements are initiated and stopped using the ***READ*** Button. The minimum value of the Read interval is <3 seconds and it will read as fast as it can update. When in Continuous Read mode, the Read Button is enhanced with a checkmark. To stop the Continuous Read, press the ***READ*** button.

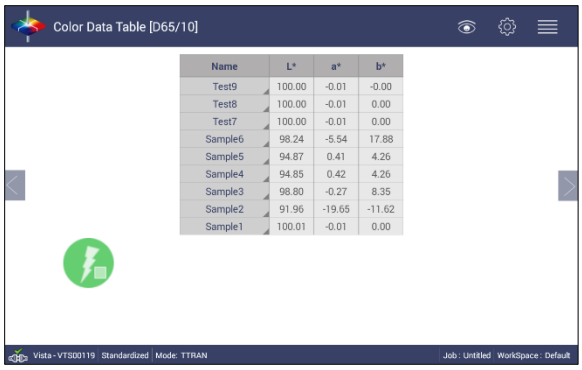


Figure 57. Auto Read

- **AUTO SAVE JOB**
  This selection will automatically save a job. Once this feature is selected, a dialog box will be displayed to name the job.

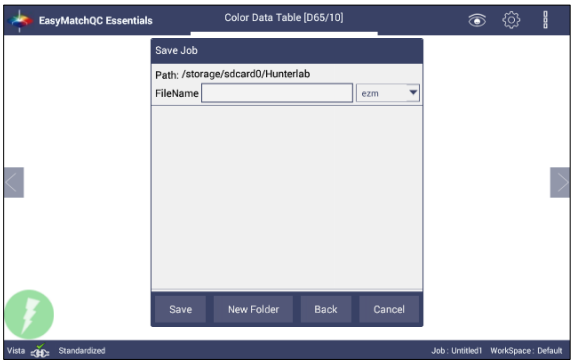


Figure 58. Auto Save Job

- **PROMPT FOR STANDARD CATEGORY**
  When this option is selected, the user will be prompted to enter the category name to which the standard can be assigned.

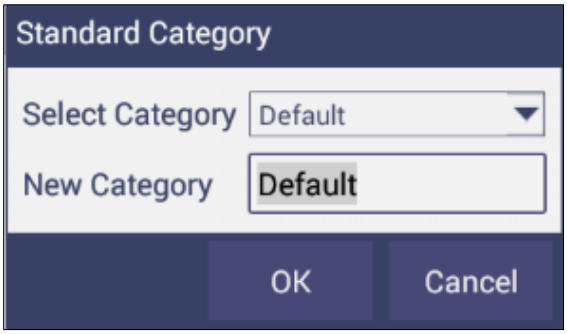


Figure 59. Prompt for Standard Category

  A category is a product type (i.e. Pale Ale) to which multiple standards can be associated. This can also be used to ***RECALL*** a group of standards.

- **INDEX BIAS CONFIGURATION**
  This option allows the user to input a custom slope and intercept correction for indices. The user can select any Index from the list of applicable indices and input the desired **GAIN AND**

BIAS values. After selecting the required Indices, select the ***APPLY*** button to save the selected Indices values and update the Views accordingly. The Bias-corrected Indices will be marked with * (eg: APHA *10mm) in the respective view display.

To calculate the slope and bias correction, read a series of samples around the target values of interest. Three methods can be used to provide corrected values:

1. **One standard data point**: In this case, the single data point is compared to the expected value. The Gain remains at 1.0 and the Bias is corrected:
   Bias= Expected Value- Measured Value
2. **Two data points**: In this case, the two readings are compared to the expected values.
   Bias Correction=Expected Value 1-(Measured Value 1*Gain)
   Gain Correction= (Expected Value 1-Expected Value 2)/
   (Measured Value 1- Measured Value 2)
3. **Linear regression**: Create a y=mx + b relationship comparing actual readings to target values, where target values is on the Y-axis and actual readings are on the x-axis. Enter the slope correction under Gain and the intercept correction under Bias.

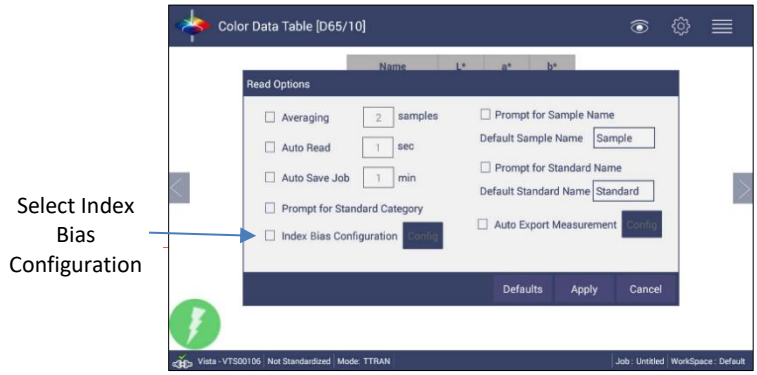


Figure 60. Slope & Bias Correction

Figure 61. Input Gain & Bias

- **PROMPT FOR SAMPLE/STANDARD NAME**. Select this feature to input the Sample (or Standard) name manually during the measurement cycle so that the Sample measurement will be inserted with the specified name. If this option is not selected, the Samples will be inserted with the specified default sample name suffixed with the auto incremented index number. Press ***APPLY*** when done.

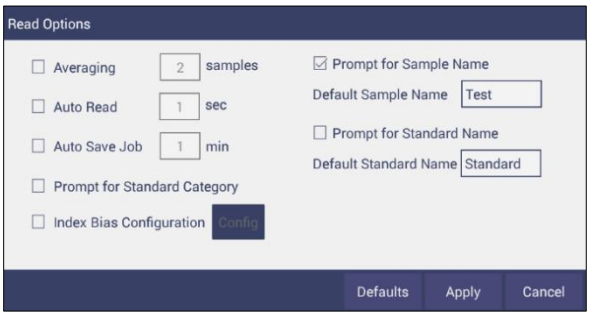


Figure 62. Prompt for Sample (Standard) Name

Figure 63. Input Sample Name

- **TIME STAMP FOR STANDARD/SAMPLE**

  Disabled feature.

  User can uncheck/check this, so when take a measurement, the sample name will include/exclude timestamp in the end.

- **EXTERNAL TRIGGERING**

  When it is checked on, a new dialog box will be opened to configure the port number. The IP address shown in Vista Essentials is the Vista's **IP ADDRESS**. After entering this information and selecting ***DONE***, then ***OK***, the enable status and **PORT NUMBER** will be saved and the application will be in listening mode as a server. **STANDARDIZE** and **READ SAMPLE** commands can then be operated using this tool.

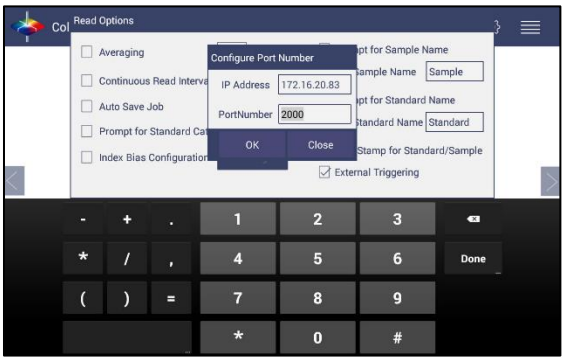


Figure 64. Configure Connection to External Trigger

Workspace: Tolerances

This command can be used to specify the **TOLERANCES**, selected in ***VIEW OPTIONS*** dialog box.

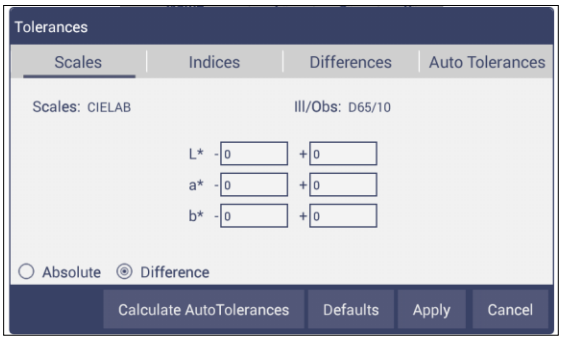


Figure 65. Tolerances Configuration

- **TOLERANCES** can be entered manually for a selected scale, index and difference, or can be auto-calculated using **AUTO TOLERANCE**. Tolerances will be displayed on the measurement screen if enabled under **VIEW OPTIONS** for the Color Data and the Color Plot Screens. **PASS/FAIL** based on these tolerances can be used on the EZ View Screen.

Figure 66. Tolerances for Scales

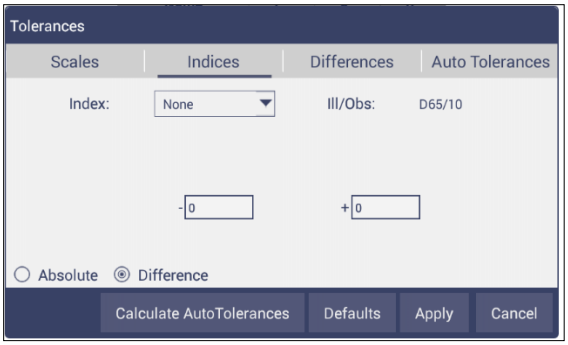


Figure 67. Indices Tolerance Configuration

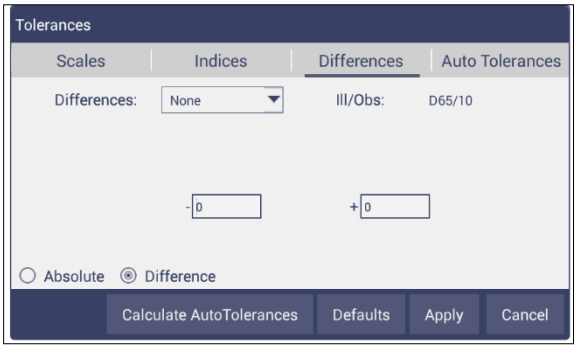


Figure 68. Difference Tolerance Configuration

- **AUTO TOLERANCES** are calculated for CMC by considering the values as l:C – 2:1 with auto correction factor = 0.75 and commercial factor = 1. However, these ratios can be modified as needed.

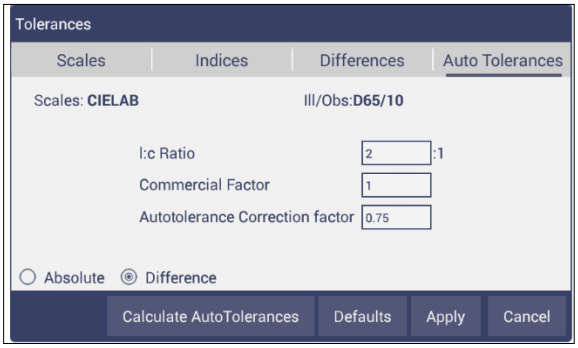


Figure 69. Auto Tolerance Configuration

- Once the tolerance parameters are selected, press ***APPLY*** and then ***CALCULATE AUTO TOLERANCES***. The calculated tolerances are displayed under the **AUTO TOLERANCE** tab. If Auto Tolerances are selected, the user cannot manually enter tolerances.

Workspace: Views

This option can be used to select the views to be presented in the application. Simply check on the box of the screen needed. Press ***APPLY*** to save one or all of the screens. The default screen is the Color Data Table. To navigate between screens once the selections have been applied, use the View Flippers on the left and right of the screen.

Figure 70. Workspace Views

Workspace: Load Workspace

A workspace is a collection of user preferred parameters as a template. When a user exits EasyMatch Essentials and returns, the last used Workspace will be loaded if the user has selected that option in **JOBS: PREFERENCES**.

- **JOBS VS. WORKSPACE**: A job consists of standard and samples measured into a specific workspace. There can be only one job open at a time. A new job will use the current loaded workspace settings. The user can change the settings and these changes are applied into the current job. The last loaded workspace settings are applied automatically when the user creates a new job. The main tool bar provides the options to **CREATE** a new job, **OPEN** an existing job and **SAVE** a job.
- **LOAD WORKSPACE**: When the user selects this button, any previously saved workspace can be loaded from the database. The newly loaded workspace settings will be applied to the job and all existing measurements within the job are adjusted accordingly.

Workspace: Save Workspace

The current workspace parameters are saved into a database with a user specified name. Saved workspaces can be moved up to the **SWITCH TO** area if desired by dragging and dropping. If no workspaces have been saved, then only default will be present.

- To override the current workspace, press ***YES*** to **SAVE WORKSPACE**. To **CHANGE the WORKSPACE**, press ***NO*** to change the name of the workspace.

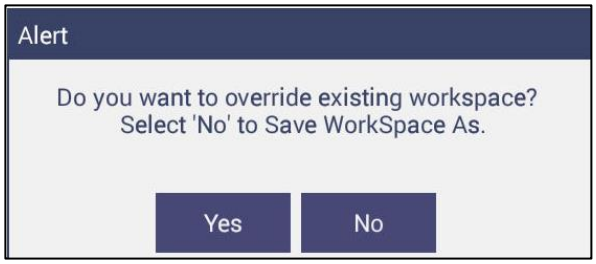


Figure 71. Save Workspace

- To **LOAD A SAVED WORKSPACE**, press ***LOAD WORKSPACE*** and choose a workspace to recall or choose a new workspace.

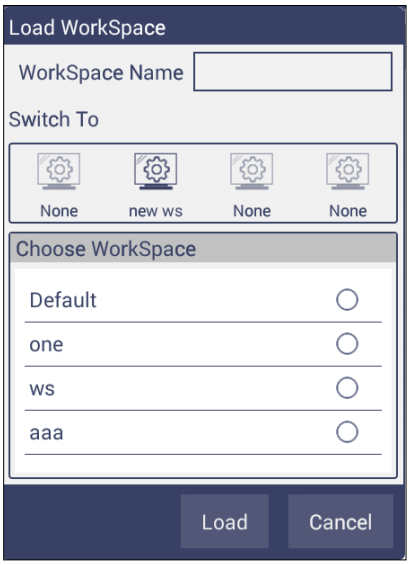


Figure 72. Load Workspace

Note: When a user exits EasyMatch Essentials and reopens Essentials, the last used Workspace will be loaded when the option 'Load Last Workspace at Startup' is selected in Jobs > Preferences dialog.

Workspace: Standardization

There are two ways to initiate Standardization:

1. From the ***WORKSPACE*** menu select ***STANDARDIZATION*** and then choose ***TOTAL*** or ***REGULAR TRANSMITTANCE*** for measurement from the drop-down menu. For ***HAZE***, select ***TTRAN*** and check the option ***INCLUDE HAZE***.
2. Select ***STANDARDIZATION*** on the status bar of the measurement screen.

Note: When samples are positioned for measurement from the middle of the compartment to the lens choose RTRAN. When samples are positioned against the sphere wall opening select TTRAN. Haze measurements are always standardized against the sphere wall and in TTRAN.

- Remove all samples from the sample compartment to standardize. If desired, a blank cell can be inserted to zero any effect of a cell or clear solvent. Press ***STANDARDIZATION***, to initiate. When complete, the status is shown in the system status bar on lower left screen.

- The ***TIME INTERVAL*** for the re-Standardization can be entered under ***JOBS > PREFERENCES.***

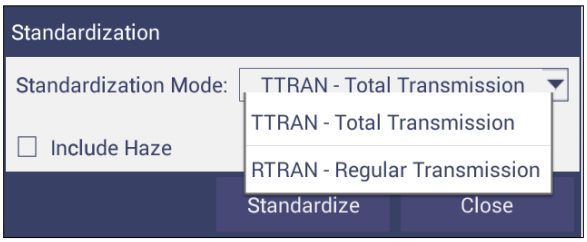


Figure 73. Standardize

- **HAZE MEASUREMENTS**
  - To add **HAZE MEASUREMENTS** to the Color Data Screen, go to ***WORKSPACE > COLOR SCALES > INDICES > HAZE***.
  - Then, select ***STANDARDIZATION > TTRAN*** and check the box beside ***HAZE***.

Figure 74. Standardization for Haze

  - Install the sample holder needed to measure your samples against the sphere port for TTRAN.
  - ***READ*** samples using the button on the measurement screen.

Workspace: Diagnostics

Five performance diagnostics and EasyCert are included with software version 1.05.0064 and higher. The five performance diagnostics are **REPEATABILITY, ND FILTER, DIDYMIUM FILTER, HAZE STANDARD TEST** and **AUTO DIAGNOSTICS**. The ND filter and Haze standards are optional. If you have these standards, you can run these tests. The EasyCert™ and EasyCal™ programs offers instrument qualification and performance validation for end-users to self-certify their Vista with traceable standards. For updated software, please check support.hunterlab.com.

Figure 75. Performance Diagnostics Menu

Testing the Vista for Colorimetric Repeatability

The **REPEATABILITY TEST** assesses how consistently the instrument can measure color. To begin, the sample compartment should be free of samples and obstacles and the user is prompted to press ***START*** to standardize. The test continues automatically. All sample readings must pass the test.

Figure 76. Set up for Colorimetric Repeatability

- A table of the difference between the current reading and the first reading (Standard) is shown after every measurement. By comparing each reading to the tolerance, a Pass/Fail assessment is shown.

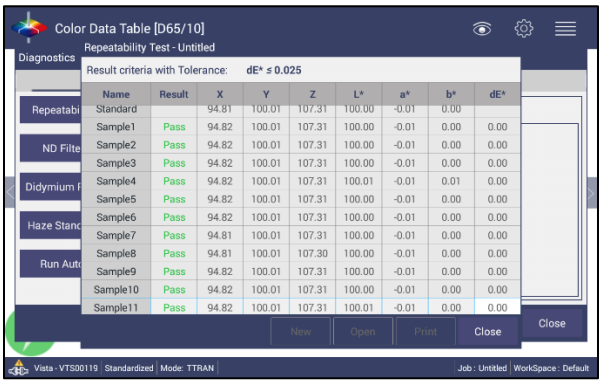


Figure 77. Repeatability Readings with Pass/Fail

- When all 30 readings have been made, the final test result is shown and saved automatically. To ***PRINT*** the results, press ***REPEATABILITY TEST > OPEN*** the file.

Figure 78. Read Options to select Pass/Fail and Tolerances

Reading the Neutral Density Filter

This test requires that you enter the target values for the ND filter that you are using in the test.

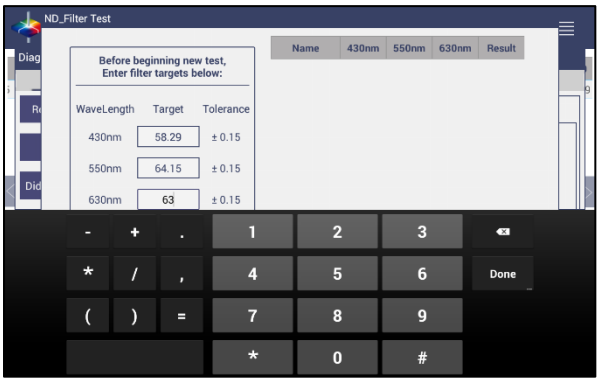


Figure 79. Input Target Values for ND Filter

- Once the target values have been entered, remove all samples from the transmittance compartment and press ***START*** to Standardize in RTRAN on air.

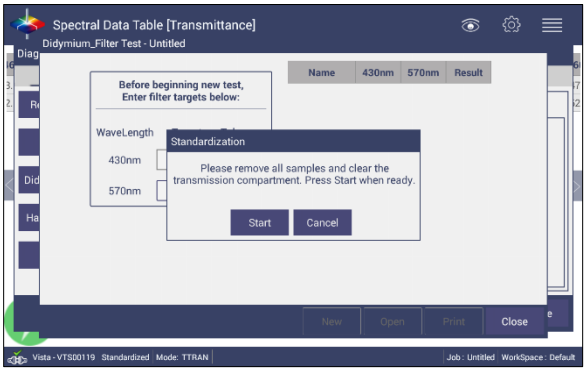


Figure 80. Press Start to Begin Standardization

- After Standardization, insert the ND filter next to the lens and press ***START.***

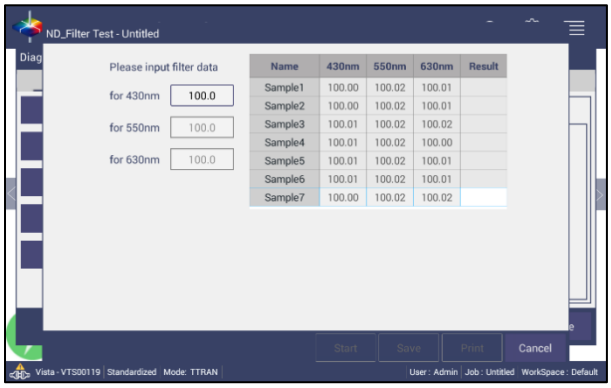


Figure 81. Reading the ND Filter

- Ten readings are taken and compared to the tolerance as an average. This test is then automatically saved and can be output to a printer by pressing ***ND FILTER > OPEN > PRINT***.

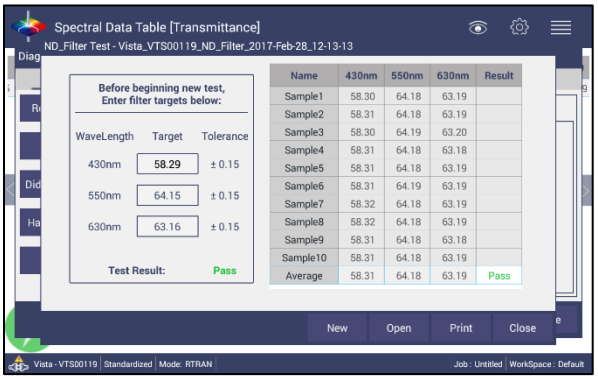


Figure 82. ND Test Result

Reading the Didymium Filter on the Vista

The wavelength test allows you to assess readings of the 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. To begin, input the target values for the Didymium filter at 430nm and 570nm.

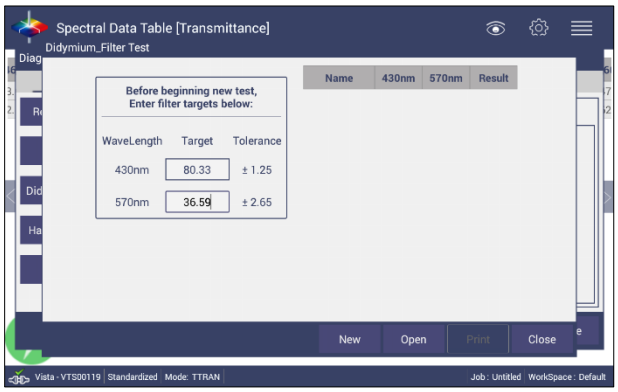


Figure 83. Select Didymium Target Values

- Remove all samples from the instrument and ***STANDARDIZE > RTRAN*** on air.

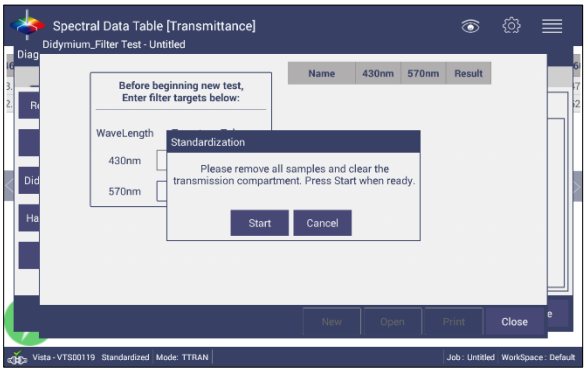


Figure 84. Standardize in RTRAN

- Place the didymium filter at the lens side of the instrument. Press ***START.***

Note: The didymium filter should be clean and free of fingerprints.

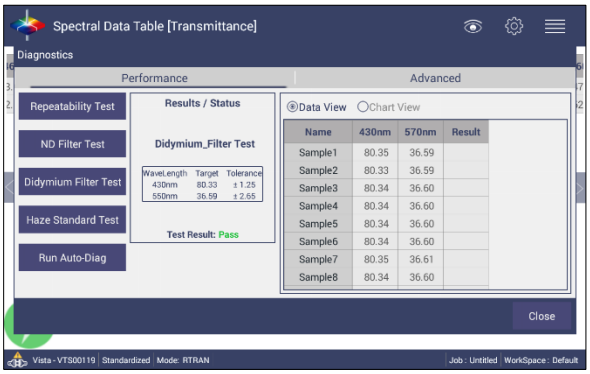


Figure 85. Didymium Test Results

- Using average of the 10 readings, the results are shown and automatically saved. If a printer is available, the results can be output pressing ***DIDYMIUM FILTER > OPEN > PRINT***.

Reading the Haze Standard

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**.** This test is automatically saved and can be printed by pressing ***HAZE STANDARD TEST > OPEN > PRINT.***

Run Auto Diagnostics

Auto Diagnostics is for use by the service department at HunterLab and not recommended for customer use. It runs all tests and detailed readings for short term repeatability, ND filter, Didymium Filter and Haze Standard performance are available by opening the CSV file.

Validate

Vista Essentials offers instrument validation options for end-users who wish to self-certify their color measurement instrumentation with traceable liquid color standards or filters. Standards are available in individual or three-sample sets, representative of the end user's working color range. Each standard is supplied with a Certificate of Analysis with traceable values and uncertainties. Standards are available for purchase in single quantity or as a time-based subscription option.

For more information, please contact HunterLab.

Advanced Tests

Advanced Tests are primarily for use by HunterLab's Service Department. The Service Department might find it useful to diagnose a problem using the Performance tests of **SHUTTER, HAZE SHUTTER, SIGNAL AND LOG FUNCTIONS**. Each of these tests can be shown in **DATA VIEW** or in **CHART VIEW**. **SIGNAL/DARK/ZERO** can be exported in CSV format. Under the System menu, you can **STANDARDIZE, MEASURE, UPLOAD PRINTER DRIVERS, RESTART** communications with a computer and use Remote Access Support through NetOps.

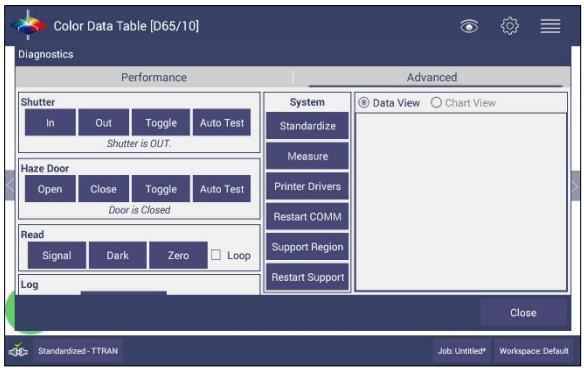


Figure 86. Advanced Menu

Advanced Tests

Performance tests include the **SHUTTER, HAZE DOOR, READ** and **LOG** tests.

- Shutter
- Haze Door
- Read
- Log

SHUTTER

The Shutter Test allow the user to control the shutter in different positions while reporting the current position on the screen. Toggle allows for one cycle to be performed. Auto test will continue for a group of tests starting with 25 Cycles.

Figure 87. Auto Shutter Test

HAZE DOOR

This test allows user control of the Haze Door to open, close or toggle open and closed. The Auto Test will run a minimum of 25 cycles to determine if the door is operating properly.

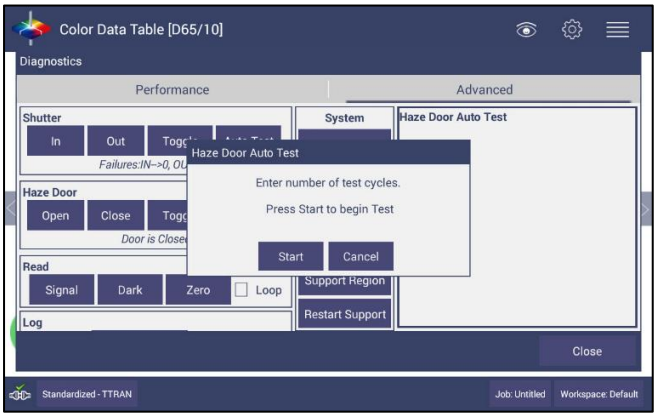


Figure 88. Press Start to Begin the Auto Haze Door Test

Figure 89. Enter the Number of Test Cycles

When the Cycles are complete the failures are reported.

READ

Once enabled, this feature records the instrument actions for tracking purposes. When complete the user returns to this screen and exports the data to a thumb drive. Once the data export is completed the data size becomes '0' again. **READ SIGNAL, DARK, ZERO**: This function

will enable the Service Department to determine proper performance of the instrument. The **SIGNAL DATA** and **CHART** for the white tile are shown in the next figure. These measurements can be put on a continuous **LOOP**.

Figure 90. Signal Data

Figure 91. Signal Chart

LOG

Once enabled, this feature records the instrument actions for tracking purposes. When complete the user returns to this screen and exports the data to a thumb drive. Once the data export is completed the data size becomes '0' again.

System Tests

Standardize & Measure

Standardize can be used prior to measurement of spectral data. This data can be exported to a download folder on a USB drive.

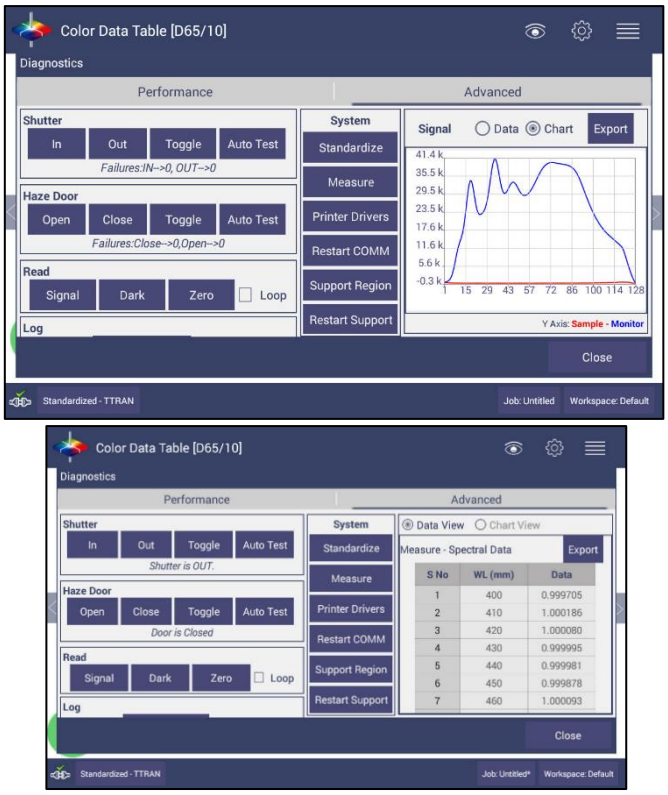


Figure 92. Measure Spectral Data

Printer Drivers

To upload a new print driver, download the ***apk*** file needed from the internet onto a flash drive. Place the flash drive into the instrument (front port) so that it can access the list of apk files. Select the driver to upload and press ***OK***.

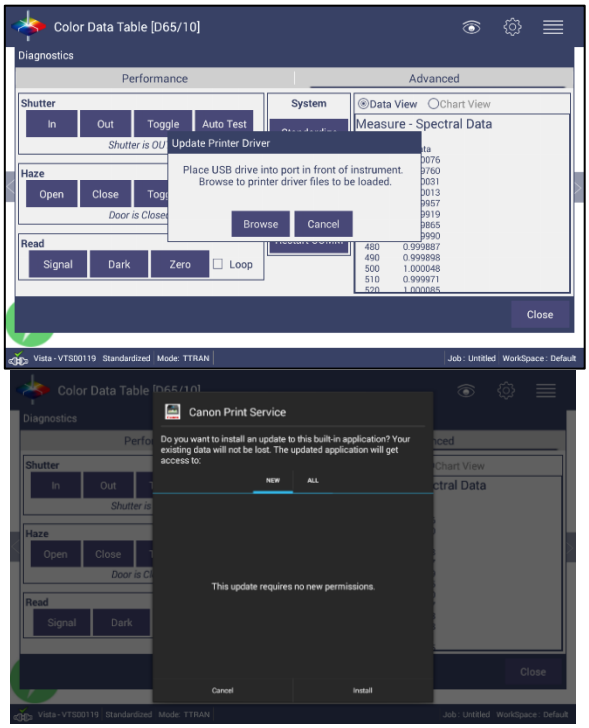


Figure 93. Insert USB with Printer Driver

Figure 94. Select Printer Driver

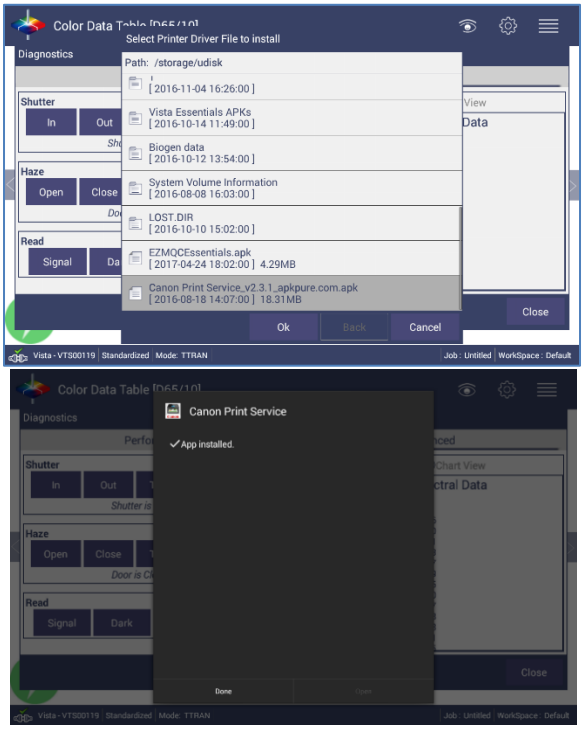


Figure 95. Updating Printer Drivers

The Vista will install the new printer driver and it will be then available to use.

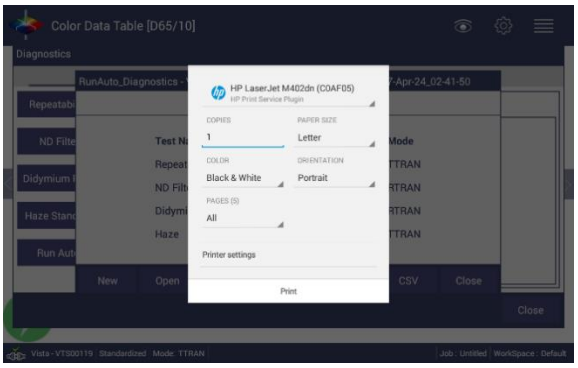


Figure 96. Printer Driver Installed

Figure 97. Printer Page

Restart Comm

RESTART COMM can be used to reset the ethernet communications for EasyMatch QC.

Remote Connection through Netops

Note: Your instrument must connect to the Ethernet or Network.

1. Select ***SUPPORT REGION***.
2. A dialog is displayed with three options for region selection. Select **USA, EUROPE** or **ASIA PACIFIC** and the URL string is modified accordingly. Press ***OK*** to continue.

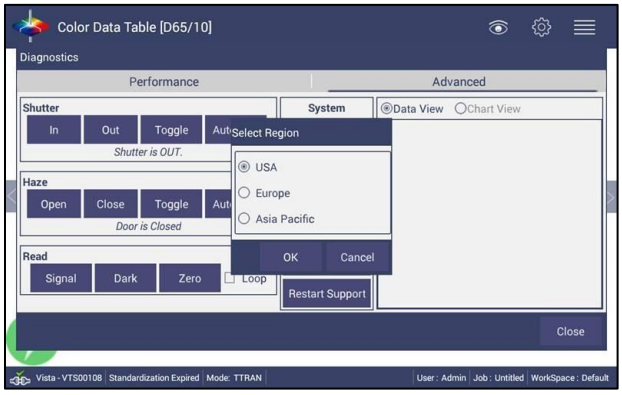


Figure 98. Select Region

3. Select ***RESTART SUPPORT*** to view the Netops Host Screen. From the top right side of the Netops Host screen, select the ***3 DOTS***. From the list menu, select ***RESTART.***

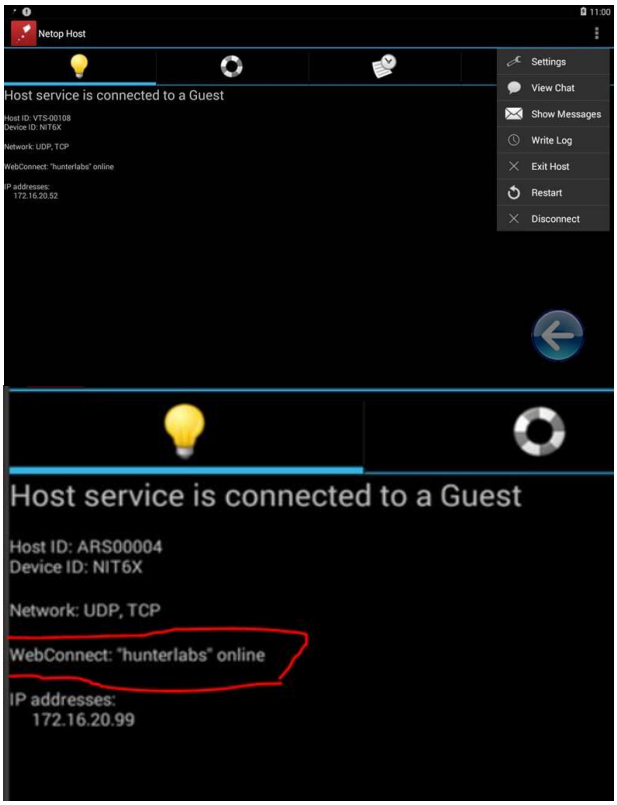


Figure 99. Netops Screen

4. To ensure that your application is successfully restarted, make sure that you see the message ***WEBCONNECT: 'HUNTERLABS' ONLINE***. If this message does not appear, please contact our support teams.

Figure 100. WebConnect to HunterLab

Toolbar: View Options

Views: EZ View

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

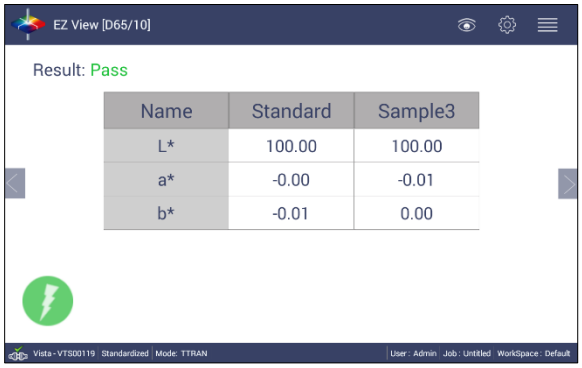


Figure 101. EZ View Display

View Options for EZ View

- includes the selection of **NO COLOR SCALE**, **PASS/FAIL, MEASUREMENT PRECISION** and **FONT SIZE**.

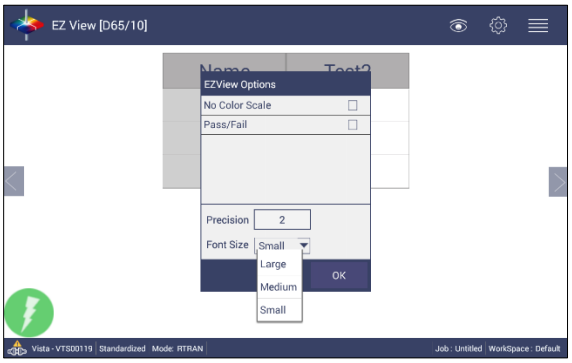


Figure 102. EZ View Options

Views: Color Data Table

The **COLOR DATA TABLE** view shows **COLOR SCALE**, **COLOR DIFFERENCE**, and **INDEX** data for the **STANDARDS** and **SAMPLES** in the job.

Figure 103. Color Data Display

View Options for Color Data

- Color Data Options such as **TOLERANCES**, **PASS/FAIL**, **DATE AND TIME**, **USER NAME, STANDARDIZATION MODE, SENSOR NUMBER** and **DATA ORDER** can be selected using the **VIEW OPTIONS**.

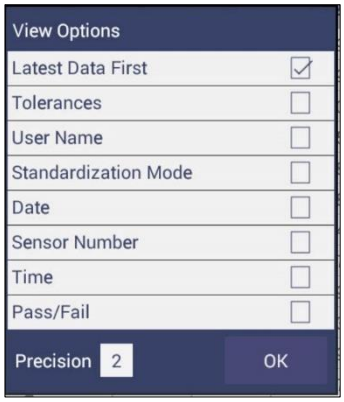


Figure 104. Color Data Screen: View Options

- A ***LONG PRESS*** on the Sample Name can enable the user to turn the sample into a Standard, change the name or delete the reading.

Figure 105. Changing a Sample into a Standard

- To delete a Sample (or Standard), select ***DELETE*** and then choose ***YES*** to confirm the action.

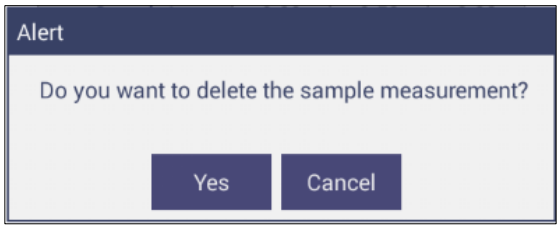


Figure 106. Delete the Sample Measurement

Views: Spectral Data Table

The **SPECTRAL DATA TABLE** displays percent transmittance or absorbance values for each selected measurement at the wavelengths being measured.

WaveLength(nm)	400	410	420	430	440	450	460	470	480	490	500	510
Sample 10	89.24	90.06	91.26	91.38	91.48	91.61	91.76	91.99	92.00	92.16	92.29	92.31
Sample 9	71.65	81.96	90.12	91.11	91.41	91.58	91.71	91.86	91.85	92.00	92.11	92.13
Sample 8	71.58	81.88	90.03	91.03	91.33	91.49	91.63	91.78	91.77	91.91	92.02	92.05
Sample 7	58.52	75.39	89.30	91.10	91.56	91.73	91.84	91.92	91.86	92.00	92.08	92.08
Sample 6	31.02	58.10	85.90	90.14	91.11	91.42	91.56	91.52	91.43	91.58	91.63	91.62
Sample 5	24.27	52.11	83.37	88.47	89.64	90.04	90.24	90.20	90.12	90.30	90.37	90.39
Sample 4	23.05	43.07	63.82	67.06	67.72	68.25	68.74	69.26	69.55	70.03	70.47	70.79
Sample 3	51.94	67.06	79.70	81.36	81.69	82.01	82.31	82.66	82.79	83.09	83.34	83.49
Sample 2	66.98	76.58	84.30	85.23	85.46	85.71	85.96	86.27	86.34	86.60	86.81	86.92
Sample 1	88.37	89.13	90.38	90.46	90.54	90.71	90.87	91.12	91.11	91.30	91.44	91.48

Figure 107. Spectral Data Table

View Options for Spectral Data Table

- The **VIEW OPTIONS** menu allows a selection of **ABSOLUTE VS. DIFFERENCE, SPECTRAL DATA TYPE (%T, Absorbance, Strength%, Difference), WAVELENGTH RANGE, INTERVAL** and **DIGITS OF PRECISION.**

Figure 108. Spectral Data Table Options

Views: Spectral Plot

This view provides a plot of wavelength vs. spectral measurement parameter.

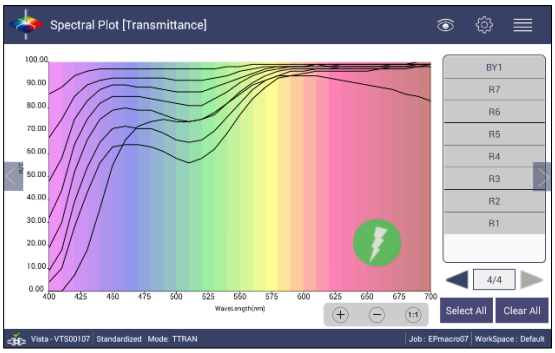


Figure 109. Spectral Plot View

- Press ***CLEAR ALL*** to remove all the samples to display. Press ***SELECT ALL*** to enable display of all samples. To select an individual sample, click on the respective ***SAMPLE*** in the list located on the right edge of the screen.
- The Sample List is paginated. Click the ***LEFT AND RIGHT ARROW*** buttons below the samples list to navigate between pages.
- Press and hold on the ***LEFT/RIGHT ARROWS*** to show a small dialog box. This dialog allows you to select the number of records per page to display and the page number to display.

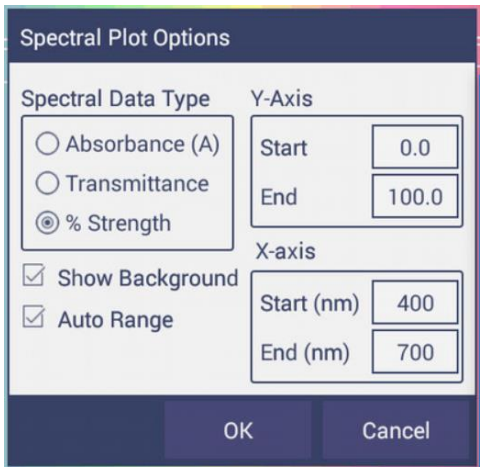


Figure 110. Spectral Plot Options

View Options for Spectral Plot

- Spectral Data Type can be ***TRANSMITTANCE, ABSORBANCE, % STRENGTH.***
- Uncheck the ***SHOW BACKGROUND***, to display the plot with white background color.
- Check ***AUTO RANGE*** to automatically scale the contents to fit. If Auto Range is not selected, then enter the Y-and X-axis range to display.

Views: Trend Plot

This tool can be used to study the trends in production and identify color variations. There are four parameters of color measurement (three scale values and optional index) which can be represented in four traces. If a sample point is selected in one of the four traces, it is highlighted in the other 3 traces in blue. The name is shown at the bottom right hand corner of the View. The **AVERAGE** and **STANDARD DEVIATION** can be shown as per the view configuration settings.

Figure 111. Trend Plot

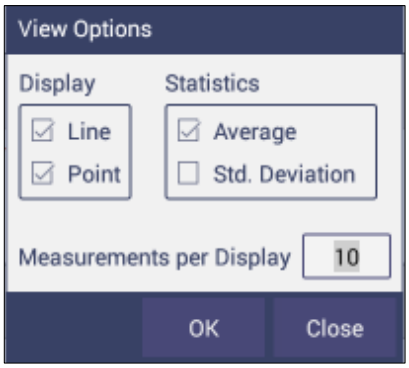


Figure 112. Trend Plot Options

View Options For The Trend Plot

- Trend Plot includes the **TYPE OF DISPLAY**, the **STATISTICS** and the **NUMBER OF READINGS PER DISPLAY**. Continuing with the **VIEW OPTIONS/TRACES**, this dialog box sets the **RANGES FOR THE TRACES** or allows selection of **AUTO RANGE**. Trace 1 to 3 uses the current Color Measurement Scale and Trace 4 will allow for measurement of differences or index. The user can select which Traces to view (**VISIBLE TRACES**) and set **CONTROL LIMITS** as a percent.

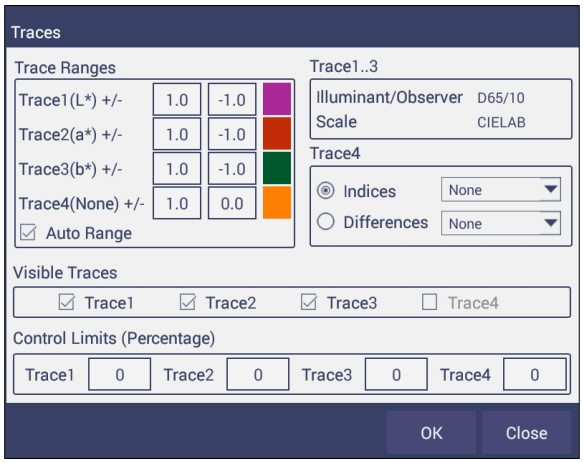


Figure 113. Trend Plot Traces

Views: Color Plot

This shows the sample location in two-dimensional Color Space with respect to the standard for difference measurements or the samples in absolute measurement. For differences, the standard is the center point of the plot and the samples are plotted separately on the graph.

- The displayed samples are shown in a list box on the right of the screen. The color plot can be zoomed and the data points can be viewed in detail.
- Press and hold on the left/right page arrows to show a small dialog box. This dialog allows you to select the number of records per page to display and the default page number to display.

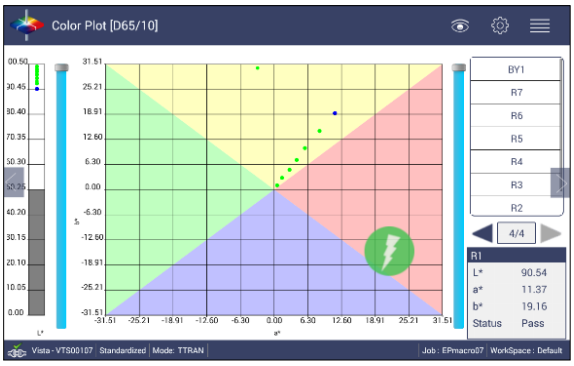


Figure 114. Color Plot View

View Options for Color Plot

- The **DISPLAY MODE** is **ABSOLUTE** or **DIFFERENCE**. The tolerance plot is available in **RECTANGULAR** and **ELLIPTICAL** when tolerances are applied. The **PASS/FAIL** sample points are shown in green and red when in difference mode, respectively. In Absolute Mode, they are shown in green.

Figure 115. Color Plot Options

CHAPTER SEVEN

Electronic Records (ER only)

HunterLab's EasyMatch Essentials Electronic Records allows communication with the Vista to measure samples and standards, while providing electronic signature capabilities and an audit trail. The special software considerations are described below.

Login Feature

EasyMatch Essentials-Electronic Records contains a login feature. The EasyMatch Essentials Electronic Records login feature has several benefits that may be helpful to some companies.

Once a user logs into EasyMatch Essentials Electronic Records, a user ID is stored as an Operator ID and may be displayed and printed as desired. These actions are also recorded in the Audit Log.

By assignment of individual user accounts and configuration of EasyMatch Essentials-Electronic Records menu items may be configured to allow and disallow specific EasyMatch Essentials Electronic Records software functions.

Storing Data/Permanent Records

Creating Job Files

Job files store the measurements made using EasyMatch Essentials-Electronic Records. While individual sample measurements are saved within EasyMatch Essentials-Electronic Records jobs, these readings are considered work in progress, not end products.

Storing

In EasyMatch Essentials-Electronic Records, users cannot delete job files. Further, they do not have access to the android operating system to delete the folder.

Altering

Modification of job files beyond adding measurements, configuring the screen display, and signing is not allowed by EasyMatch Essentials Electronic Records. The raw data behind stored measurements may not be altered in any way within the software. EasyMatch Essentials-Electronic Records alerts the user if a job has been modified from outside the software and then disallows opening of the job, in which case it should be considered invalid and restored from an earlier back-up, if available.

Deleting

The EasyMatch Essentials Electronic Records job files are retained (and backed up) for the period indicated by predicate rule. The job and database files in EasyMatch Essentials Electronic Records. are protected from deletion.

Displaying

EasyMatch Essentials Electronic Records jobs may be displayed on screen from within the software and e-mailed to other users with the same software version of EasyMatch Essentials Electronic Records.

Printing

EasyMatch Essentials-Electronic Records jobs and/or displays may be printed to any installed printer.

Standardization

EasyMatch Essentials Electronic Records prompts for standardization at intervals set by the system administrator and will not allow measurements to be made unless the instrument has been successfully standardized.

Signatures and Audit Trail

Each job will be electronically signed with the name of the signer, date and time of signing, and the meaning of the signature. The electronic signatures applied to the jobs are linked to the jobs, may not be deleted, and are always available for display or printing. Only a user with e-signature access can sign a job file.

IQ/OQ/PQ Protocols for EasyMatch Essentials-Electronic Records

The following steps define the IQ/OQ/PQ process.

IQ – Installation Qualification of Hardware and Software is accomplished by verifying that Administrative group can log in and standardize the sensor indicating that power and communications have been established.

OQ – Operation Qualification occurs after a member of the Administrative group can operate the instrument and run all sensor diagnostic tests with a ***PASS*** rating.

PQ – Performance Qualification is defined by establishing a measurement method for the application and successfully measuring the client's samples – typically transparent and translucent liquids.

Installing Essentials ER

If the Vista was ordered with EasyMatch Essentials ER, then the instrument will be ready to go. HunterLab will load the software at the factory and create a User Name and Password. These will ship with the sensor and are needed to access the software when it is first started. HunterLab recommends changing these as soon as possible.

Figure 116. Initial Login for Admin

To upgrade or install the software, place a thumb drive with the software upgrade into the front USB on the Vista. Go to ***JOBS > ABOUT > UPGRADE*** to install ER.

If the upgrade is from a non-ER version, passwords of all previous accounts will become expired. Users must change their password. When the software has finished the update, please ***RESTART*** the instrument by powering off and then powering on.

If the upgrade is from an older ER version, all user accounts are saved and applied. There is no need to restart the instrument.

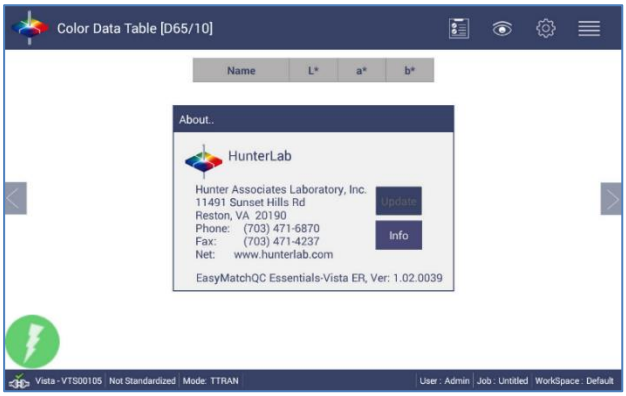


Figure 117. Jobs > About

The initial screen will require entry of a ***PASSWORD*** and ***CONFIRMATION*** of this password for the Administrator. You can enter an existing administrator account or create a new administrator account in this dialog.

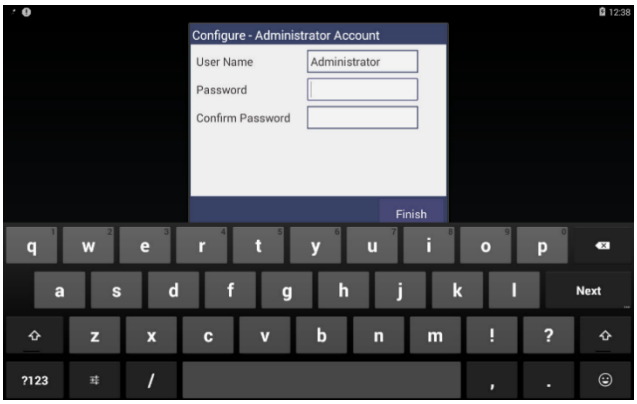


Figure 118. Opening Screen Requiring an Administrator Password

A new ER menu will be shown on the tool bar. Under the ***ER MENU***, the following functions can be accomplished:

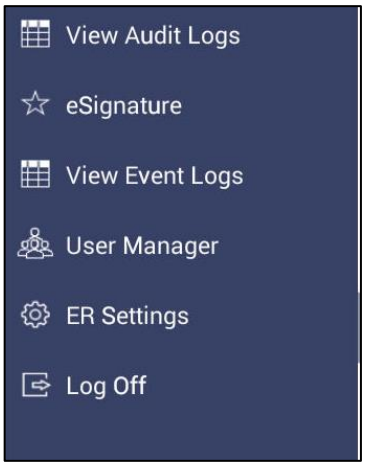


Figure 119. ER Menu

ER: View Audit Logs

The audit log can be used to monitor activity on the instrument along with User, type of activity and date/time. Steps taken within a Job such as naming a standard or sample are stored with each Job in the order taken with the description. A data filter can be used to isolate Sample and Standards, Save, Edits, e-Signatures and Printing.

Figure 120. Audit Log

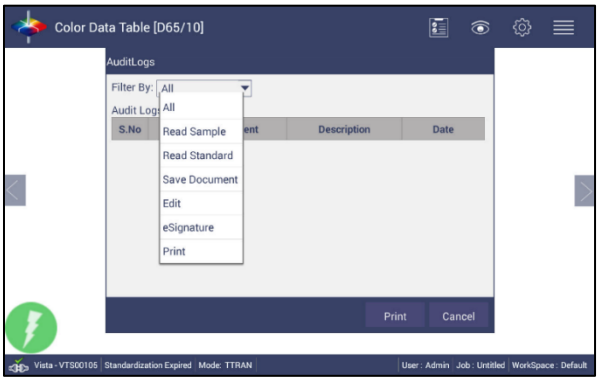


Figure 121. Audit Filter

ER: e-Signature

All users with access to ***e-SIGNATURE*** can create an e-Signature for a job. Enter the ***USER NAME***, ***PASSWORD*** and ***COMMENT***. The latest e-Signature information can be printed in the job report.

Note that e-Signatures cannot be deleted.

Figure 122. Adding e-Signature

ER: View Event Logs

The ***EVENT LOG*** provides a list of **ACTIVITIES** with **DATE** and **TIME, USER TYPE (EVENT SOURCE)** and **CATEGORY** that are recorded. This list can be filtered and printed.

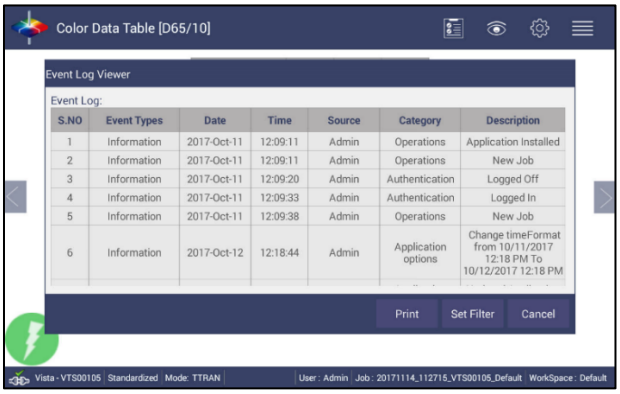


Figure 123. Event Log

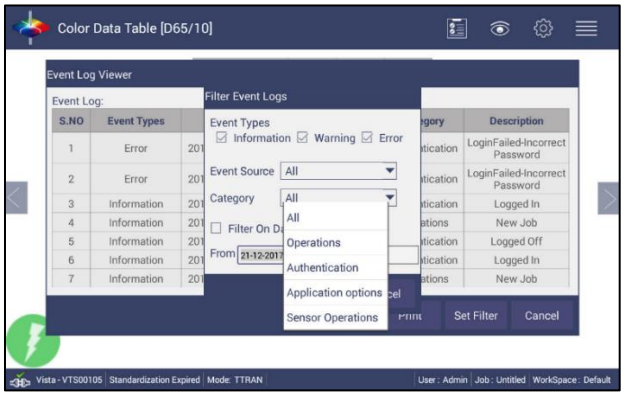


Figure 124. Event Log Category

ER: User Manager

Create

For Essentials ER, the User Manager is moved from the Job menu to the ER menu. Select ***ER MENU > USER MANAGER > CREATE*** to set up **GROUPS.** All users of EasyMatch Essentials Electronic Records software must be assigned to a Group as either an Administrative Type or a User type to define their level of privilege within EasyMatch Essentials Electronic Records.

- Enter the ***GROUP NAME***, then select the ***GROUP TYPE*** (Administrative or User).
- There can be multiple Administrative and User Groups.
- Groups can be changed, added, or deleted by a System Administrator at any time.

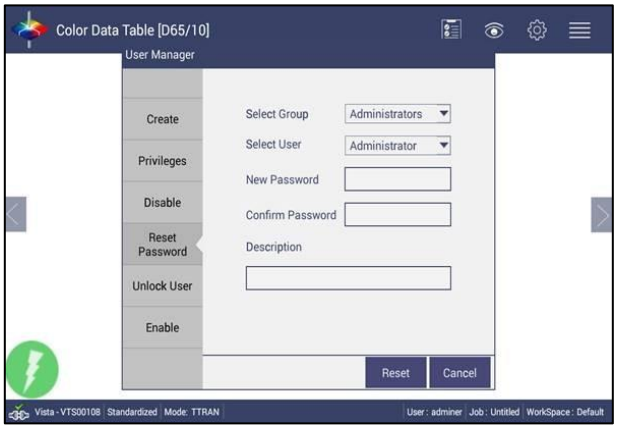


Figure 125. Administrative Groups

Once the Groups have been defined, users can be added with passwords through the User tab. Select ***USER MANAGER > USER TAB*** and ***NAME THE USER, SELECT A PASSWORD*** and ***ASSIGN THE USER GROUP***. Click ***CREATE*** to continue.

Figure 126. Adding a User

Privileges

For each **USER GROUP**, go to ***ER MANAGER > USER MANAGER > PRIVILEGES*** to assign the functions. Check a box next to each allowable function.

Note that Administrative Groups have all privileges which cannot be edited.

When all Privileges have been selected press ***UPDATE PROFILE*** to continue.

Figure 127. Assign Privileges

Disable/Enable

A Group or List of Users or a single User can be **DISABLED** or **ENABLED** as needed by the Admin. To Disable a user or group, select the ***GROUP > LIST THE USER*** to identify and then press ***DISABLE***. These accounts can no longer be used while still saved in the database. If needed, admin users can enable them again through ***USER MANAGER > ENABLE***.

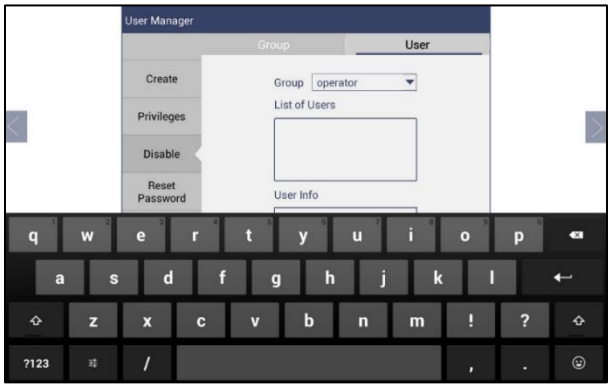


Figure 128. Disable a Group or Users

Reset Password

To reset a password, ***IDENTIFY THE GROUP*** and the ***USER*** and then ***ENTER THE NEW PASSWORD*** with confirmation of the new password.

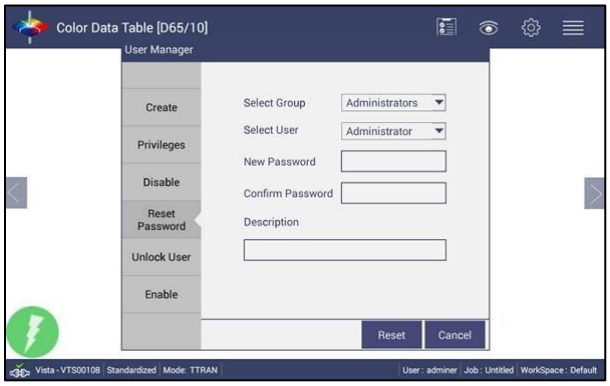


Figure 129. Reset Password

Unlock User

User accounts can be locked when they failed to login more than configured maximum attempts times. Admin users can unlock these users if needed through ***USER MANAGER > UNLOCK.***

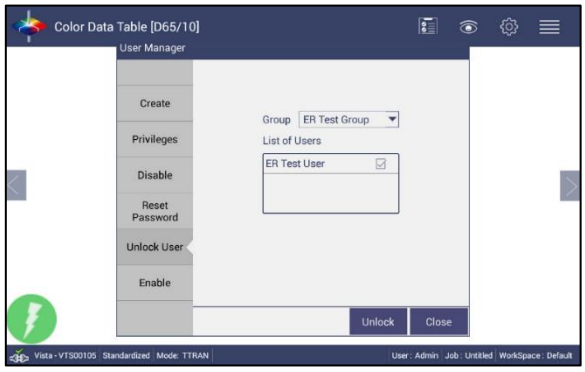


Figure 130. Unlock User

ER: Settings

From the ***ER MENU > ER SETTINGS*** to set **PASSWORD AGE, LENGTH, LOCKING THRESHOLD** and **AUTO LOG-OFF DURATION**.

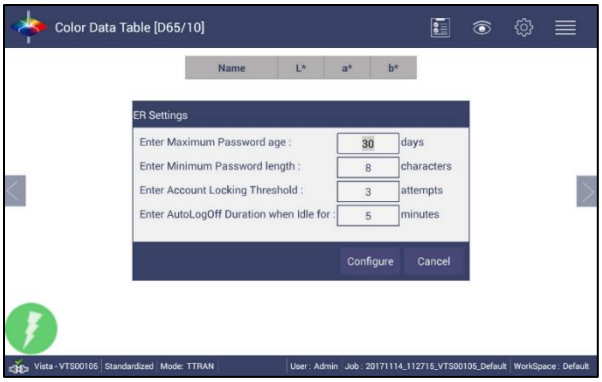


Figure 131. ER Settings

MAXIMUM PASSWORD AGE can be set to the desired length of time from 1 to 365 between required password changes (determined by company policy). Set the **MINIMUM PASSWORD LENGTH** to the desired minimum password length (determined by company policy) from 8 and up to 15. Set the **ACCOUNT LOCKING THRESHOLD** to the desired allowable number of password entry attempts from 3 to 100 before account lockout (determined by company policy).

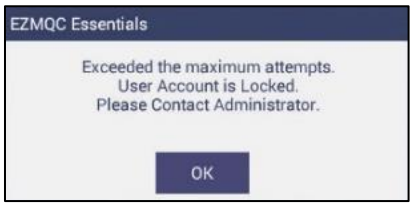


Figure 132. Locking Threshold Exceeded

Set the **ACCOUNT LOCKING DURATION** to the desired length of time between 5 and 30 minutes (determined by company policy).

CHAPTER EIGHT

Special Functions

Auto-Exporting Data through a Direct Connection between Vista and a Computer

Materials Needed

- Vista Firmware needed: 1.01.0014 and above
- Other Hardware needed: Ethernet cable & USB Ethernet adapter.

Figure 133. Ethernet Cable

Figure 134. Crossover Adapter

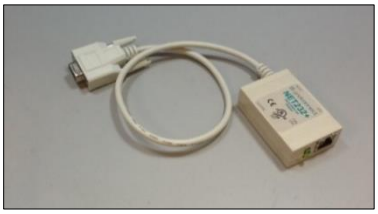


Figure 135. Ethernet to RS-232 converter for Connection via Serial port

Figure 136. RS-232 to USB converter for connection via USB port

Configure Ethernet to RS-232

- Set up Ethernet to RS-232 adaptor with static IP address and Port Number.

Connect Vista to Computer

- Plug Ethernet cable (Figure 111) into RJ-45 Ethernet connection at rear of Vista. Plug other end of cable into Crossover Adapter.

Figure 137. Rear View of Vista

- Plug other end of the Crossover Adapter into Ethernet port of Ethernet to RS-232 adaptor (Figure 113).
- Plug Ethernet to RS-232 adaptor into serial port of computer (if D-9 serial port is present) or into RS-232 to USB converter for connection to USB port. Plug power into Ethernet to RS-232 adaptor.

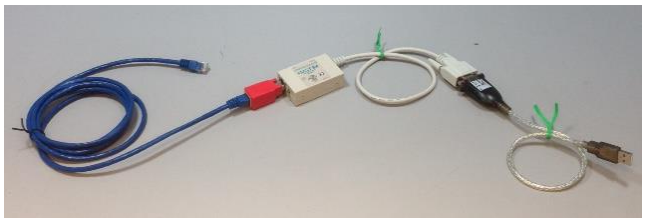


Figure 138. Cable Configuration for Direct Computer Connection

Configure the Vista

- Requires Essentials Rev 14 or higher
  - Configure the Ethernet port of Vista. Select ***JOBS MENU > PREFERENCES*** and select ***CONFIG NETWORK SETTINGS***. A choice of Ethernet or WiFi settings is given.

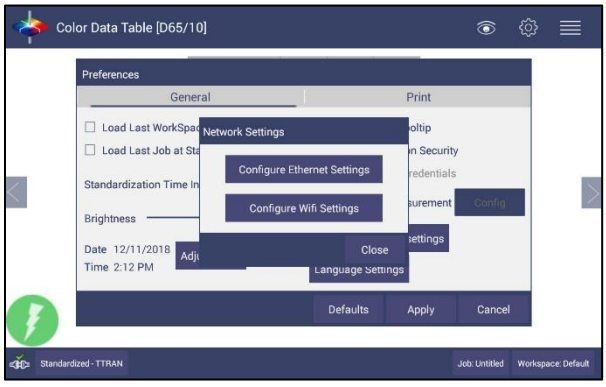


Figure 139. Select Network Settings

- For **WiFi**, select ***CONFIGURE*** and the system searches for available WiFi connections.
- For Ethernet: **Uncheck** the box next to **USE DHCP FOR ETHERNET CONFIGURATION**. Enter a valid IP address for the Ethernet port. In this example, the following parameters are selected.

IP Address: ***192.168.0.110***
Subnet Mask: ***255.255.255.0***
Gateway: ***192.168.0.1***
Preferred DNS: ***192.168.0.1***
Alternate DNS: ***192.168.0.1***

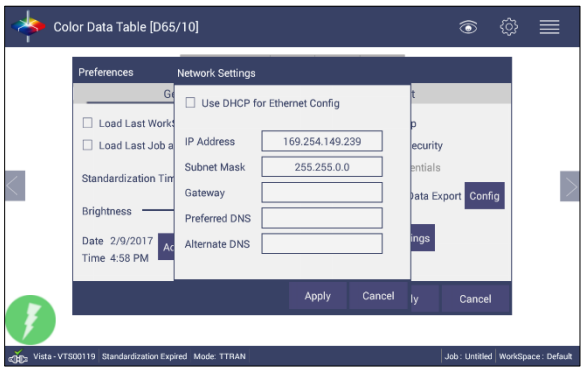


Figure 140. Configuration Parameters for Ethernet

- Press ***APPLY*** on the Ethernet Configuration and then ***APPLY*** on the Preferences Page to complete.
- Cycle power on the instrument.
- Go to ***PREFERENCES*** and select ***AUTO NETWORK DATA EXPORT***.

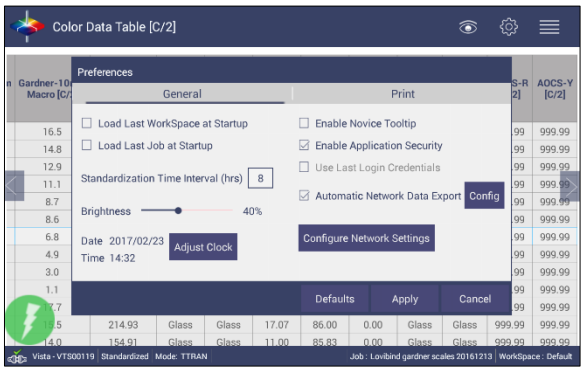


Figure 141. Read Options> Auto Export Measurements

- For a direct connection between Vista and data collection computer, set up the Vista as a **CLIENT**.
- Set the IP Address to match the settings of the Ethernet to RS-232 converter, in this case **192*.168.0.100*** and the ***Port as 10001***. Press ***APPLY*** on the screen to continue.

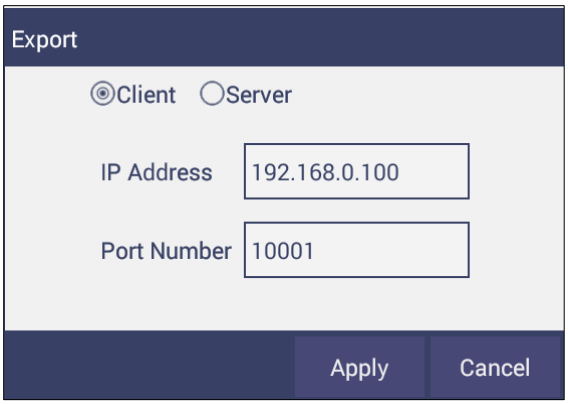


Figure 142. Read Options Export

- Vista is now ready to send data.

Configure the Computer

- Connection configurations differ depending on data collection software. In this example, Hyper-terminal is used to demonstrate connectivity. The data collection computer will be set up as a Server.
- Connect as follows:
  - ❖ Select the Comm port that represents the USB or Serial port connection. Define the Connection:

    Bits per second: 9600
    Data Bits: 8
    Parity: None
    Stop Bits: 1
    Flow Control: None

Send Data from the Vista

- Configure the **COLOR DATA TABLE** with the color scale and parameters to be transmitted.
- ***STANDARDIZE*** the instrument.
- Press the ***READ*** Button and data will be transferred to the computer.

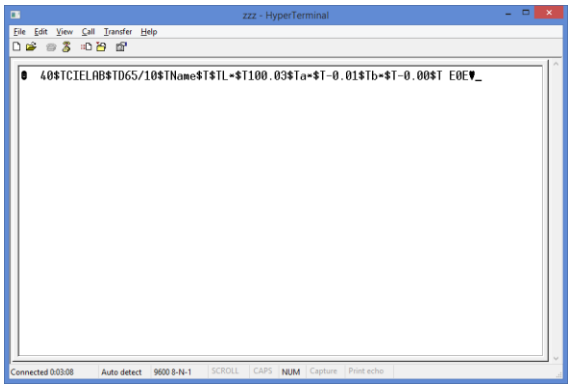


Figure 143. Data Output

The data string is shown as follows:

<STX><PACKET SIZE>$T<SCALE-LABEL>$T<ill/Obs>$T<LABEL NAME1>
<$T><VALUE1> $T<LABEL NAME2><$T><VALUE2><$T><LABEL NAME3>
$T<VALUE3>$T <LABEL NAME N><$T> <VALUE N>$T<CHKSUM><ETX>
Where, <STX> is the Start of Text (value =0x02)
<ETX> is the End of Text (value =0x03)
$T is the default delimiter.
<SCALE-LABEL> is the Scale Label (e.g. CIELAB)
<ill/Obs> is the Ill/Obs name (e.g. D65/10)
<PACKET SIZE> is the Total size (HEX String) of the Packet excluding the <STX> and <ETX>
<LABEL NAME> is the label name (e.g. L*, a*, b*, dE* etc.)
<VALUE> is the value for the preceding Label Name
<CHKSUM> is the Checksum (HEX String) - the sum of all the ASCII values in the total packet play load starting from <PACKET-SIZE> and till <CHKSUM>.

Auto-Exporting Data through an Ethernet or WiFi Connection

For Ethernet connection

- Materials Needed:
  - Vista Essentials 1.01.0014 and above
  - Ethernet cable plugged into the back of the Vista and the other end to a network hub. The computer must be connected to the same network as the Vista.

For WiFi connection

- Vista Essentials Rev 1.05.0064 and above
- Vista below VTS00388 might need hardware updated for WiFi connection.

Figure 144. Ethernet Cable

Configure the Vista

- Set up the Vista as the Server. Go to ***JOBS > PREFERENCES*** > ***AUTO NETWORK DATA EXPORT*** using a check and select ***CONFIGURE***. Choose Vista as **SERVER** and Port number as **11111**. You can also choose a delimiter to mark your data.

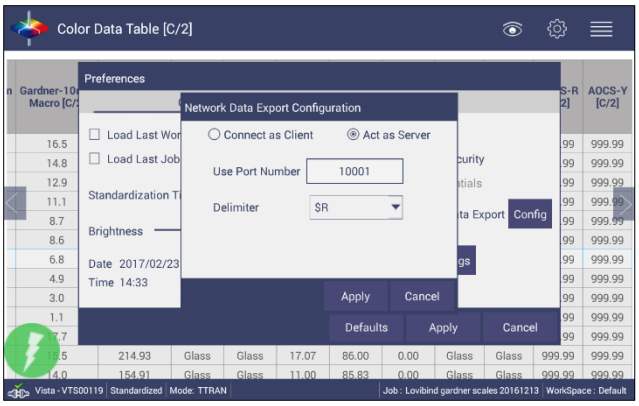


Figure 145. Auto Export Measurement

- To define the **DATA EXPORT**, go to ***JOBS > PREFERENCES*** and select ***CONFIG NETWORK SETTINGS***. Select **ETHERNET** or **WIFI** settings.

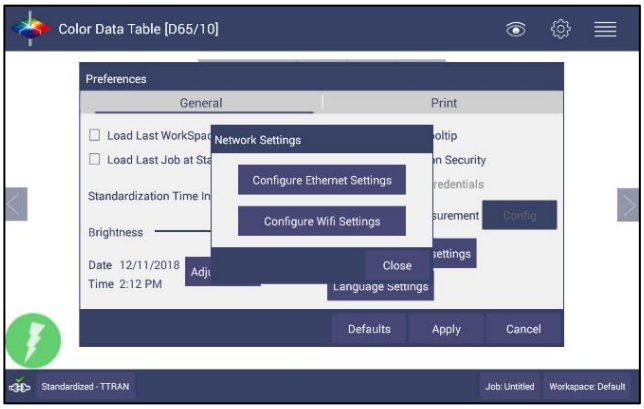


Figure 146. Select Network Settings

- For **WiFi**, select ***CONFIGURE*** and the system searches for available WiFi connections.
- For **Ethernet**: ***CHECK*** the **DHCP box for Ethernet Configuration** (When use the ethernet network, no need to manually enter the IP address and subnet mask. Please update the screen capture here.)

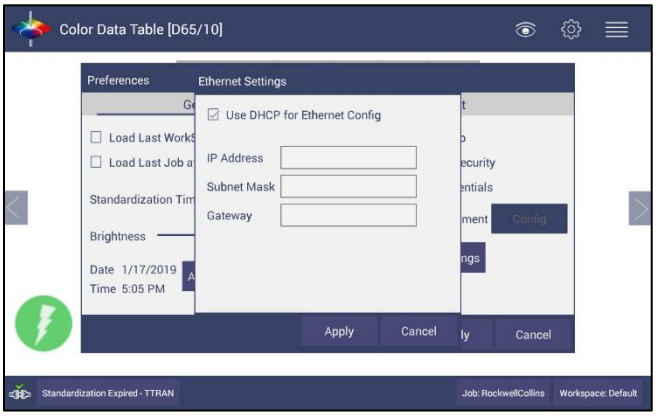


Figure 147. Jobs> Preferences> Ethernet Configuration

- Press ***APPLY*** on the Ethernet Configuration and on Preferences page. If you have different configuration in this Network Settings dialog before, please cycle power on the instrument to apply the changes. Otherwise, no need to cycle power. The Vista is now ready to send data.

Configure the Computer Using HyperTerminal Software

- Go to the computer and open **HYPERTERMINAL**.
  - Make a ***NEW CONNECTION***. Enter a ***NAME FOR THE CONNECTION***.

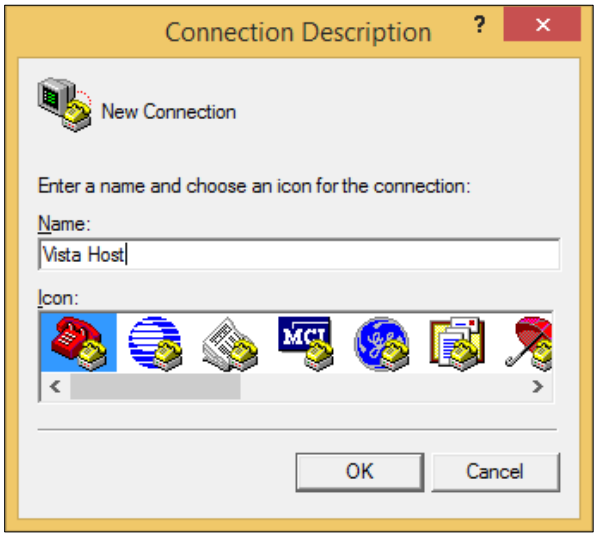


Figure 148. Setup for HyperTerminal

  - Connect using **TCP/IP**(Winsock)
  - Enter the Vista **IP ADDRESS** and **PORT NUMBER**

Figure 149. HyperTerminal Connection to Vista

Send Data from the Vista

- Configure the Vista for the **COLOR DATA SCREEN**:
  - Select **COLOR SCALES, INDICES & ILLUMINANT/OBS** (***WORKSPACE***> ***COLOR SCALES***)
  - **STANDARDIZE** the instrument. (**WORKSPACE**> ***STANDARDIZATION***)

❖ ***READ*** sample and view the data on the computer.

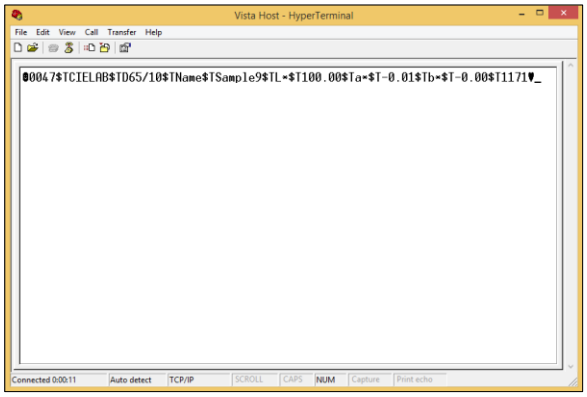


Figure 150. Data from Vista through Ethernet Connection

The data string is shown as follows:

<STX><PACKET SIZE>$T<SCALE-LABEL>$T<ill/Obs>$T<LABEL NAME1><$T><VALUE1> $T<LABEL NAME2><$T><VALUE2><$T><LABEL NAME3>$T<VALUE3>$T . <LABEL NAME N><$T> <VALUE N>$T<CHKSUM><ETX>
Where, <STX> is the Start of Text (value =0x02)
<ETX> is the End of Text (value =0x03)
$T is the default delimiter.
<SCALE-LABEL> is the Scale Label (e.g. CIELAB)
<ill/Obs> is the ill/Obs name (e.g. D65/10)
<PACKET SIZE> is the Total size (HEX String) of the Packet excluding the <STX> and <ETX>
<LABEL NAME> is the label name (e.g. L*, a*, b*, dE* etc.)
<VALUE> is the value for the preceding Label Name
<CHKSUM> is the Checksum (HEX String) - the sum of all the ASCII values in the total packet play load starting from <PACKET-SIZE> and till <CHKSUM>.

Measuring Haze

- Standardize the instrument. For ***HAZE***, select ***TTRAN*** and check the option ***INCLUDE HAZE***.

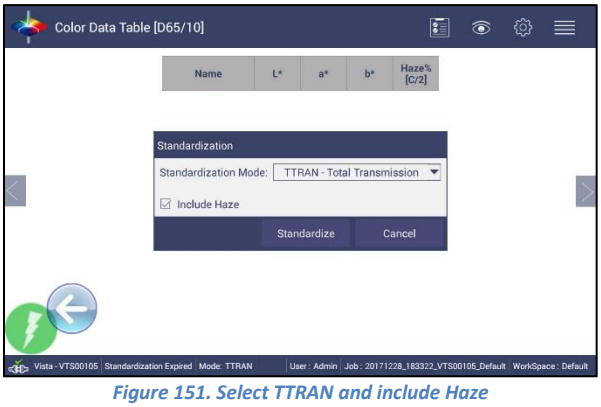


Figure 151. Select TTRAN and include Haze

- Go to ***WORKSPACE > COLOR SCALE > INDICES*** and scroll down to check the corresponding box on the right side for Haze.
- Install the sample holder needed to measure your samples against the sphere port for TTRAN.
- ***READ*** samples using the button on the measurement screen.

Connecting Vista to EasyMatch® QC

EZMQC Version 4.88 and above have ability to connect with current Vista Sensors. For Vista with serial number less than VTS00135 probably need to have some hardware added and the software updated (Vista Essentials 1.00.14 and above).

1. Connect Vista and PC with EasyMatch QC to the same network.
2. Connect Vista to PC through an Ethernet Cable
3. Connect Vista to a PC through Wireless Access Point

Connect Vista and PC with EasyMatch QC to the same network.

Option A: Connect to a network hub through Ethernet cable

Both Vista and PC with EasyMatch QC must be connected to Ethernet ports with same Ethernet network.

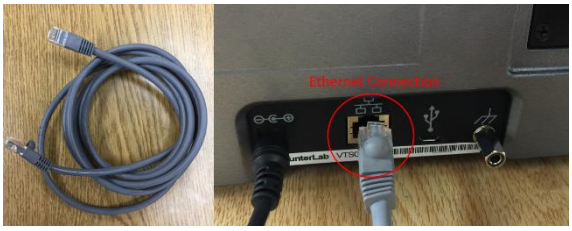


Figure 152. Ethernet Cable

Connect Vista to network, go to ***JOBS > CONFIG NETWORK SETTINGS***. Select ***CONFIGURE ETHERNET SETTINGS***. Check **USE DHCP FOR ETHERNET CONFIG** and click ***APPLY***. If you used the other network setting before, please restart Vista to apply the new network setting.

Open EasyMatch QC in the PC. In ***SENSOR> ADD SENSOR > VISTA***. Select ***ETHERNET*** and check the box **DISCOVER AND SELECT A SENSOR IN THE NETWORK** and then click **SEARCH** to automatically search.

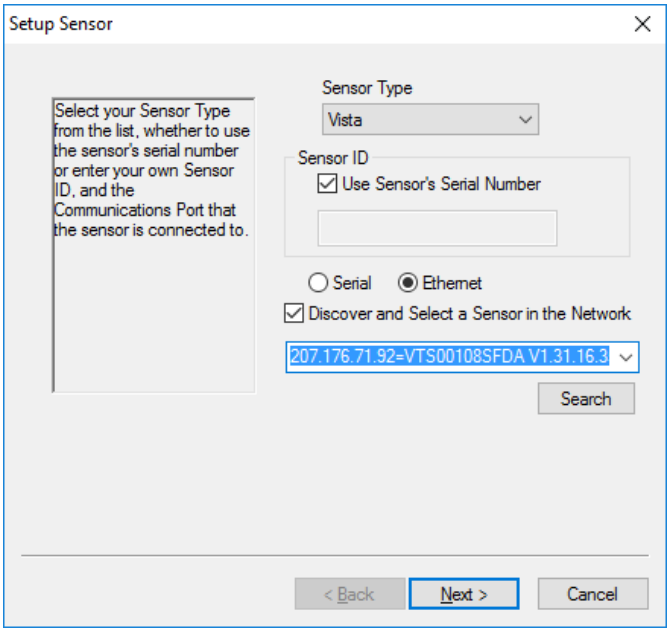


Figure 153. Discover a Sensor in the Network

There will be a drop-down list of all available Vista sensors. If the sensor in the list including IP address as well as sensor name, then it is connectable. If the sensor in the list with "??????" instead of sensor name, it means that EasyMatch QC can find the VISTA, while VISTA is not free to connect to EasyMatch QC. If you meet this problem, you can restart VISTA and click search again. Also, you can go to Vista Essentials, ***WORKSPACE > DIAGNOSTICS > ADVANCED*** and click ***RESTART COMM*** to have Vista communication available, and then go back to EasyMatch QC and click search again. **RESTART COMM** is available in Vista Essentials Rev 21 and higher. Please download our latest Vista Essentials from our support website.

Option B: Connect to a hotspot through the WiFi connection

Note: This option only works for VTS00388 and above. All Vistas below this serial number do not have WiFi ability built-in. Also, WiFi network option is only available for Vista Essentials Rev 1.05 and above.

- To connect Vista to network, go to ***JOBS > PREFERENCES*** and select ***CONFIG NETWORK SETTINGS***.
- Select ***CONFIGURE WIFI SETTINGS*** and the WiFi configuration dialog will be prompted.
- Please search and connect to the available WiFi and write down the IP address showing in this dialog. After the WiFi configuration, please click the floating ***BACK BUTTON*** to go back to Essentials app.

- Open EZMQC in the PC. In ***SENSOR*** > ***ADD SENSOR*** and select ***VISTA***. Select ***ETHERNET*** and check the box ***DISCOVER AND SELECT A SENSOR IN THE NETWORK*** and then click ***SEARCH*** to do an automatically searching. There will be a drop-down list of all available Vista sensors.

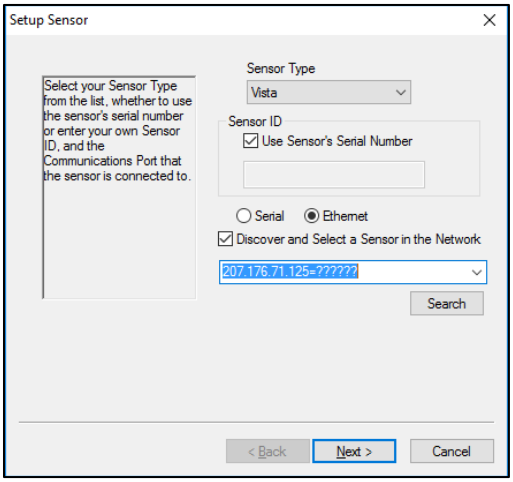


Figure 154. Selecting Vista from EasyMatch QC

- If the sensor is in the list including IP address as well as sensor name, then it is connectable. If the sensor is shown in the list with ***??????*** instead of the sensor name, it means that the software can find the Vista, while Vista is not free to connect to EasyMatch QC. If you meet this problem, you can restart Vista and click search again. Also, you can go to ***VISTA ESSENTIALS > WORKSPACE MENU > DIAGNOSTICS > ADVANCED*** and click ***RESTART COMM*** to have Vista communication available. Then go back to EasyMatch QC and click ***SEARCH*** again. ***RESTART COMM*** is available in Vista Essentials Rev 21 and higher. Please download our latest Vista Essentials in our support website.

Connect Vista and PC with an Ethernet cable directly.

(Note: You can use the ethernet adapter here to connect to USB port of the computer.)

a. Connect the Ethernet cable and then restart Vista and the computer.

b. Open ***COMMAND PROMPT*** in the computer. Type in ***IPCONFIG***. Under the Ethernet adapter information, review the ***AUTOCONFIGURATION IPV4 ADDRESS*** and ***SUBNET MASK***.

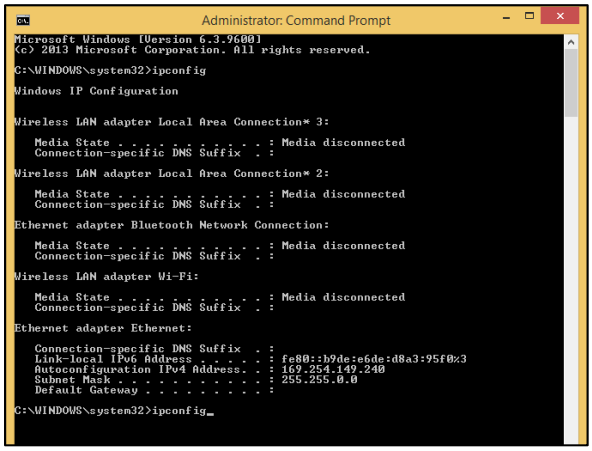


Figure 155. Configuration for EasyMatch QC

c. Open **VISTA ESSENTIALS**, go to ***JOBS > PREFERENCES > CONFIGURE NETWORK SETTINGS > ETHERNET***. Uncheck ***USE DHCP FOR ETHERNET CONFIG***. Type in the ***IP ADDRESS*** and ***SUBNET MASK*** manually, then press ***APPLY***. The IP address here should be exact same as the ***AUTOCONFIGURATION IPV4 ADDRESS*** in the PC, except for the last digit. Press ***APPLY*** on the Ethernet Configuration and then ***APPLY*** on the Preferences Page to complete.

d. ***RESTART*** Vista to apply the network settings.

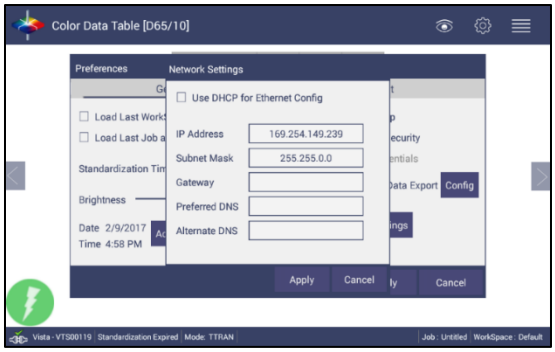


Figure 156. Configure IP Address & Subnet in Essentials

e. Open **EASYMATCH QC** and from the ***SENSOR*** menu ***> ADD SENSOR*** and select ***VISTA***. Select ***ETHERNET*** and uncheck the box to ***DISCOVER AND SELECT A SENSOR IN THE NETWORK***. Then type in the **IP ADDRESS** which has been set up in Vista Essentials. Or you can check the box to **DISCOVER AND SELECT A SENSOR IN THE NETWORK** and **SEARCH** to find the Vista.

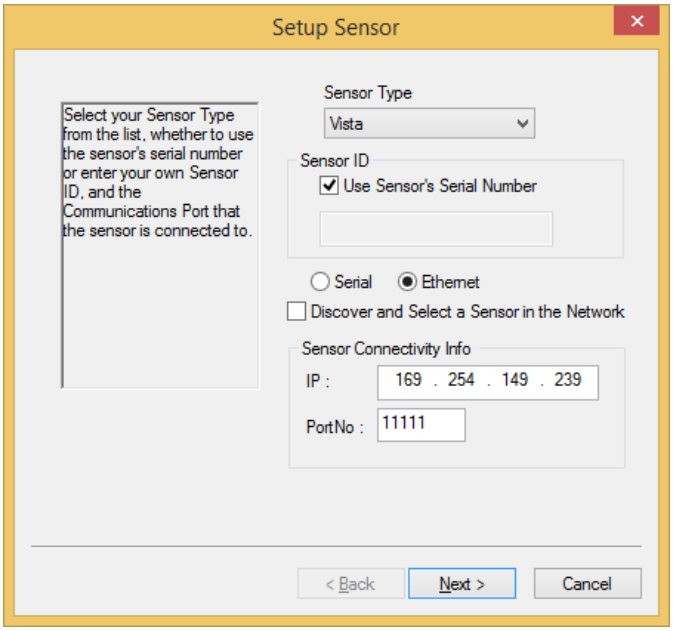


Figure 157. Setup Sensor in EasyMatch QC

HunterLab File Service Package

The HunterLab File Service is a customized background service which provides the network storage facility for Essentials-VISTA to backup a File or Folder to a networked PC. This package contains:

- HunterLab File Service Installer (FileServiceInstaller.exe)
- A package file ***HLFSPACKAGE.PKG***.

To Install the File Service Package

- Copy the above installation package files into a networked PC.
- Run the executable ***FILESERVICEINSTALLER.EXE*** and follow the guided steps to complete the installation process.
- After installation a shortcut for ***HUNTERLAB FILE SERVICE CONFIG TOOL*** will be created on Desktop**.** Double click on the shortcut ***HUNTERLAB FILE SERVICE CONFIG TOOL***.

Figure 158. File Service Tool

- Select the **ROOT FOLDER** by clicking on the ***BROWSE*** button. The Essentials Backup will be stored in the configured Root Folder path. Enter the ***PORT NUMBER*** for the network File service. Click on the ***APPLY*** button. The File service will be restarted with the new settings.

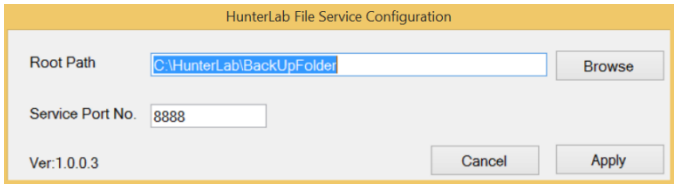


Figure 159. Select Root Folder

Note: Make sure that the configured port number is added to Exceptions in the firewall. The configured port number in the server must be same at the client side (Essentials-VISTA).

Setting up File Storage from Vista (Client) Side

In Vista Essentials, navigate to ***JOBS > DATA MANAGEMENT > BACKUP (or RESTORE).*** The ***SELECT ACTION*** dialog will be displayed. The user can choose between **USB DRIVE** or **NETWORK STORAGE**. When ***USB DRIVE*** option is selected, the Backup and Restore operations will be performed into the USB flash drive plugged into the system.

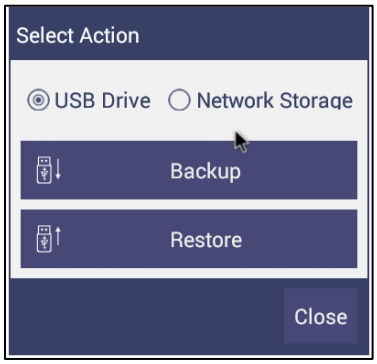


Figure 160. Select USB Option

When ***NETWORK STORAGE*** is selected, the Backup and Restore operations are performed into a network folder of the specified system where the HunterLab File Service is installed. Click on ***NETWORK STORAGE SETTINGS*** Button

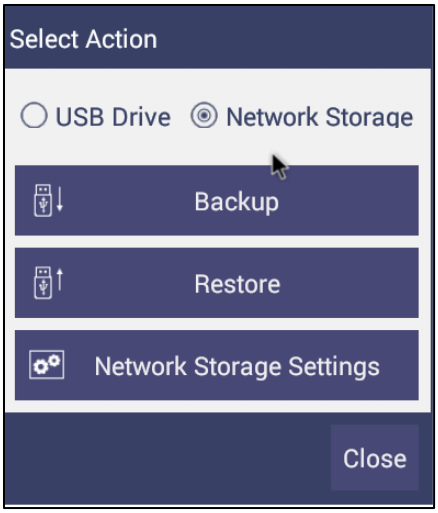


Figure 161. Network Storage Settings

In the next screen enter the **IP ADDRESS** and **PORT NUMBER**. Click on ***TEST CONNECTION*** button to verify the connectivity. Click ***APPLY*** to save the settings. The saved network settings will be used for the Network Backup and Restore operations.

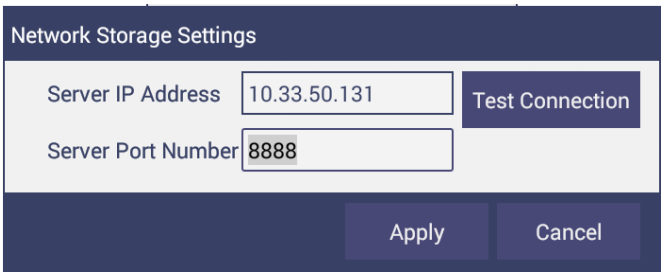


Figure 162. Network Storage Settings

After successful configuration of network settings, click ***BACKUP*** (or ***RESTORE***) to perform the complete backup of ***HUNTERLAB*** folder in Essentials-Vista to the specified network server's folder.

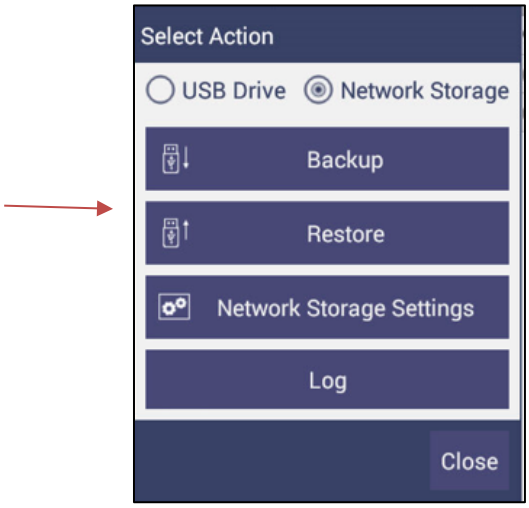


Figure 163. Select Restore

Select the files to be restored.

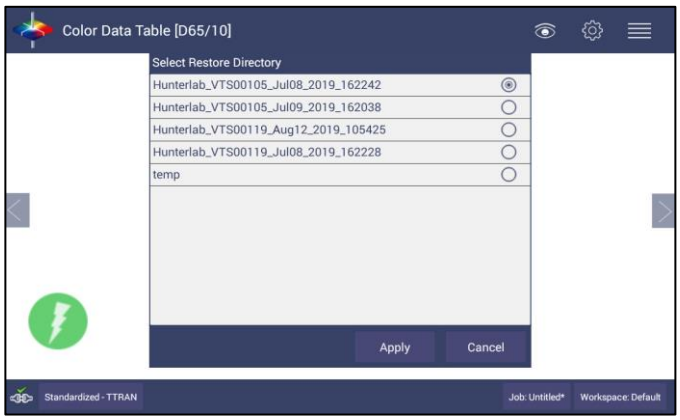


Figure 164. Select Files to be Restored.

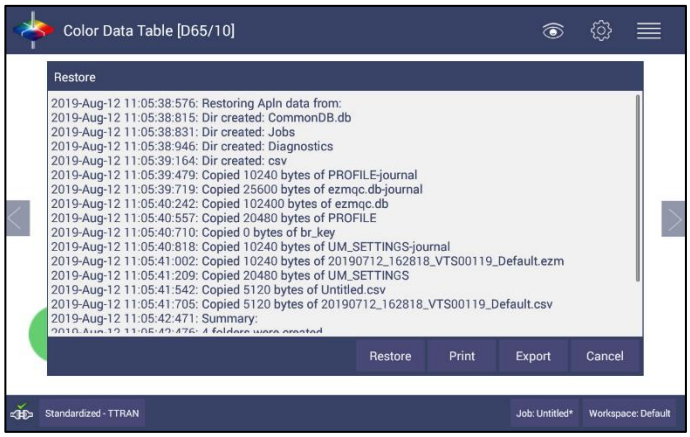


Figure 165. Files Restored

Workspace: Convergence (CMR required)

Convergence CMR is required for this feature. If Convergence CMR is not enabled in your instrument, please contact support@hunterlab.com and we can help to enable it through our Remote Support Access. Vista Essentials 1.06 and above is required.

Essentials and EasyMatch QC applications use independent data storage formats and database locations. With Convergence, the measurements performed by either Essentials or EasyMatch QC will be saved to a common database. This database will be updated to both Essentials and EasyMatch QC in parallel upon measurement completion. This feature is very helpful if the user takes measurements in Essentials but later wants to use EasyMatch QC to analyze data.

The Common Data Storage is updated as measurements are taken from both connected applications.

1. Whenever a measurement is performed from any connected application, a Data Update notification is sent to both the connected applications.
2. The operation can be carried out only when the system status changes to 'active'. A 'busy' status is shown when any operation is in process.
3. Once convergence is setup, EZMQC and Vista Essentials can talk to each other: If both software packages are open, the measurement data is shown at the same time. All data measured from two software packages will be saved into the Common SQL Database. Both software packages can recall data from the Common DB.

Select ***WORKSPACE > CONVERGENCE*** to display the below options as shown in the below list of options.

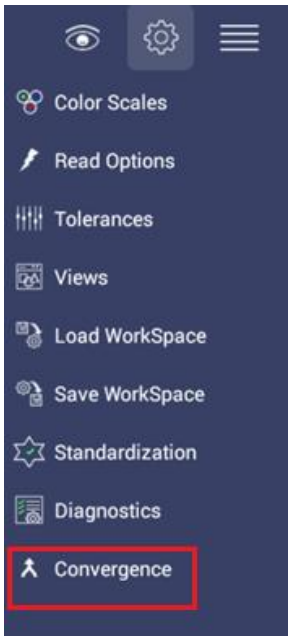


Figure 166. Select Convergence

Convergence > Common DB Settings

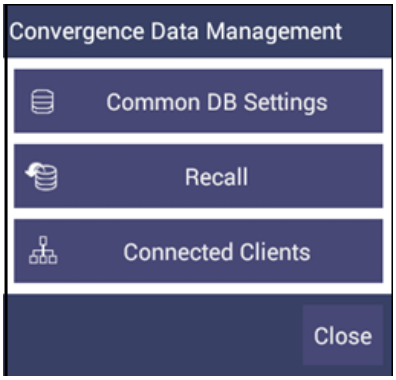


Figure 167. Convergence Sub-menu

Select Common DB Settings. O the next screen, select type as ***NETWORK DATABASE***.

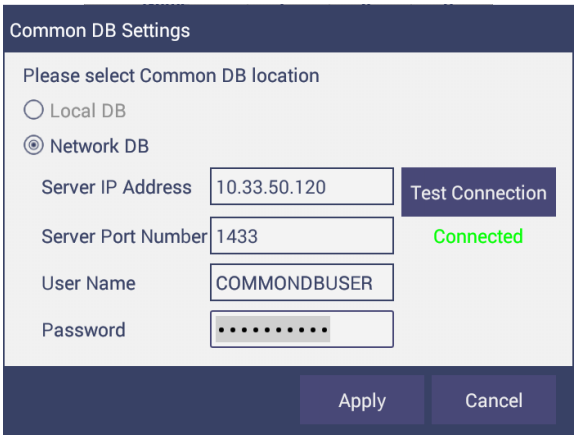


Figure 168. Select Database Type

The ***NETWORK DB*** option can be used to configure the network information (**IP ADDRESS, SERVER PORT NUMBER, USERNAME, PASSWORD**) and save the measurements. Click ***TEST CONNECTION*** to verify the Database connection then click ***APPLY*** to save the configuration settings.

Note: Please use Server Port number as 1433 (for below SQL Server 2012). For SQL Server 2012 and above, please follow the below steps to find the port number to be used.

- Run ***SQL SERVER CONFIGURATION MANAGER*** on the ***SQL SERVER*** system.
- Click on ***PROTOCOLS FOR SQLEXPRESS*** item and open the ***TCP/IP*** Properties dialog.
- Now, use the port number mentioned in **TCP DYNAMIC PORTS** under **IPAll** section.

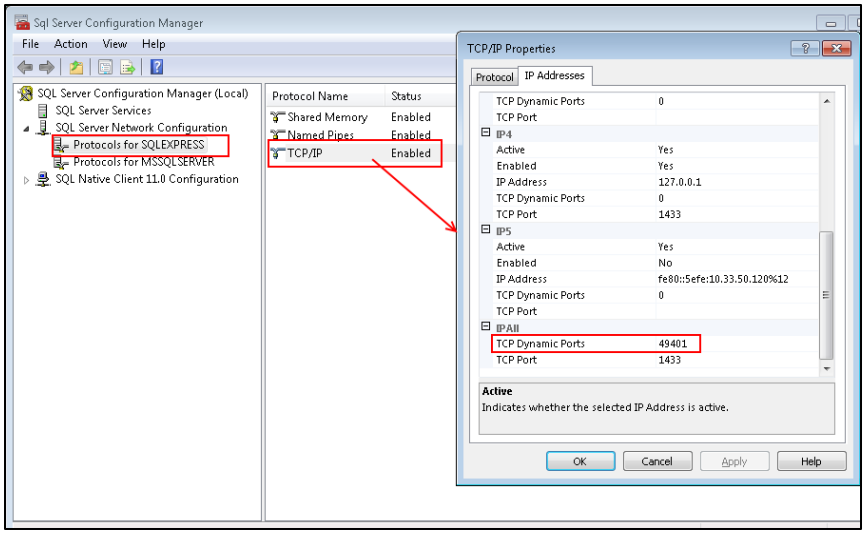


Figure 169. SQL Configuration Manager

Convergence > Recall Measurements

Click ***RECALL*** to select the Samples/Standards from the Common DB. Select individual samples using the radio buttons next to the sample name or type the text in the ***FILTER BY NAME*** text box and filter the list of the populated list of measurement records whose names matching to the text typed as shown below.

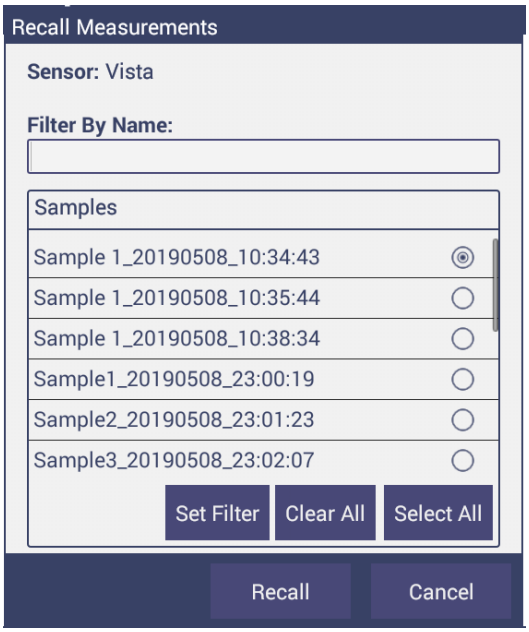


Figure 170. Recall Measurements

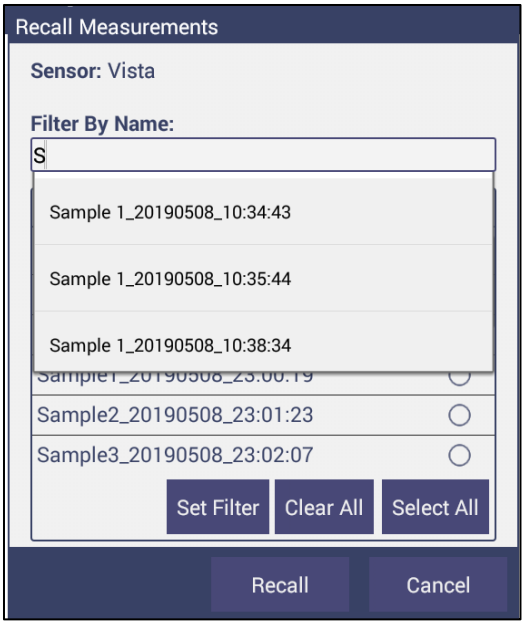


Figure 171. Filter by Name

To ***SET FILTER***, press this option on the bottom of the dialog box. Then select the type of measurements (i.e. Standard or Sample) or specify the dates. Then press ***OK*** to continue.

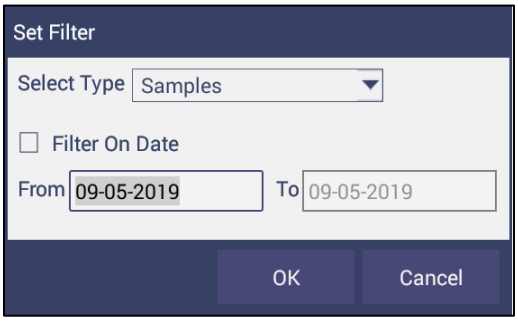


Figure 172. Set Filter

After selecting the records from the populated list, press ***RECALL*** to bring the selected measurements into the current Job.

Convergence > Connected Clients

CONNECTED CLIENTS is used to display the list of the current connected active clients using the convergence service.

Protecting the Sphere Port with a Cover Glass

The purpose of this is to protect the sphere from chemical vapors.

- Before installing the cover glass, run the wavelength accuracy diagnostic. To complete this test, go to ***WORKSPACE > DIAGNOSTICS*** and run the ***DIDYMIUM FILTER TEST***.
- Inside the Transmission Compartment, locate the 3 screws on the cover plate near the sphere. Remove the screws, cover plate (1) and the rubber ring (2). Insert the cover glass (3), being careful not to leave fingerprints. Replace cover plate and ring and secure with the screws.

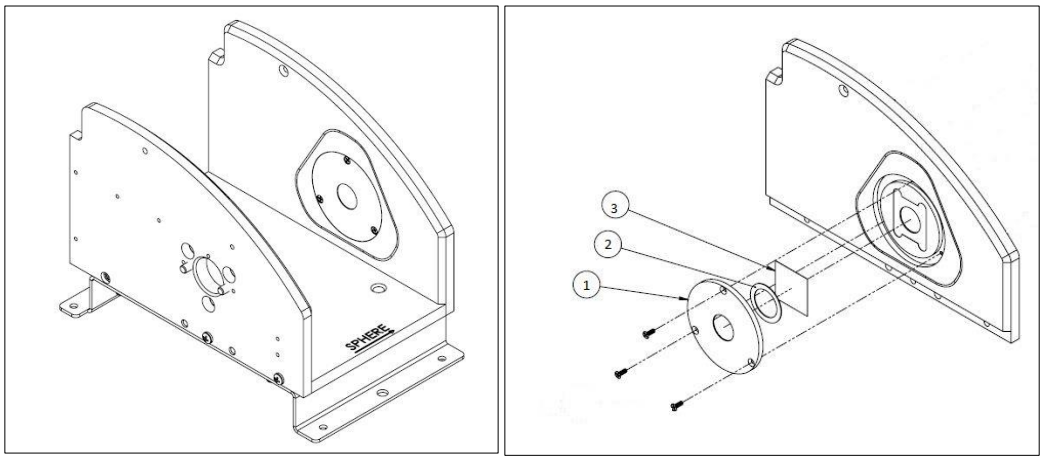


Figure 173. Inserting a Protective Cover Glass

- Once the cover glass is installed, the instrument should be re-standardized and the didymium filter test rerun. Readings will be slightly different than before.

	Wavelength Check	
	430nm	570nm
w/o Cover Glass		
w/Cover Glass		

Tips & Tricks: Assigning a Standard

Figure 174. Assigning a Standard

- To create a standard, press and hold the Sample Name. A menu will be displayed. Select the ***SET AS STANDARD*** option. The system will then ask, "are you sure you want to set this sample as standard?". If yes, then the sample is renamed as Standard.
- To rename the sample or standard, use the ***RENAME*** function.
- To delete the sample or standard, use the ***DELETE*** function.

Tips & Tricks: Recover Unsaved Measurement Data

- In the case where the application is closed unexpectedly, the data is temporarily stored in a table along with the Job details. When the application restarts, a prompt allows the user to recover the data.

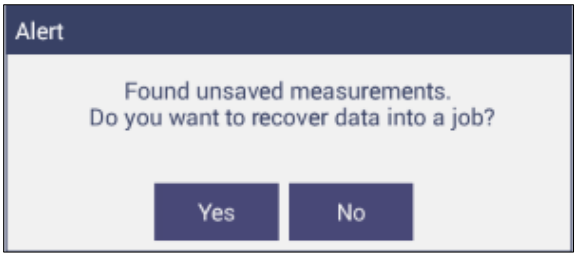


Figure 175. Recover Data

- If the user answers ***YES***, all measurements are recovered into a new job or appended to a saved job.

CHAPTER NINE

Specifications

The specifications and characteristics of the instrument are given in this chapter. For best performance, the instrument should be placed where there is ample work space with medium or subdued illumination and no drafts. The operating conditions (temperature and humidity ranges) are given in the Operating Conditions section below.

Note: Do not leave Vista 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)
Performance Temperature	21-28°C (70-82°F)
Noncondensing Humidity	10% to 90%
Standard Accessories	Certificate of Compliance, Didymium Diagnostic Filter, Power Supply, Vista Quick Start Guide, Stylus, USB Flash Drive, Cleaning Cloth

Physical Characteristics

Weight	6.4 kg (14.0 lbs)
Dimensions (height x width x length)	177.8 mm x 485.8 mm x 228.6 mm (7 in x 19.1 in x 9.0 in)
Base to Measurement Port Distance	63.5 mm (2.5 in)
Communications Interface: USB Micro OTG: Front Panel USB: Ethernet RJ45:	To printer, keyboard, mouse To USB thumb drive for saving & backing up data For Save, Print and Email capability
Standards Conformance: Colorimetric	CIE 15:2004, ASTM E1164, DIN 5033, Teil 7 and JIS Z 8722 Condition E, G;
Standards Conformance: Haze	ASTM D1003
System Power	100-240 VAC, 47-63 Hz, 60W

Conditions of Illumination and Viewing

Light Source	Full spectrum LED array
Dual Beam Spectrophotometer	256 element diode array and high resolution, concave holographic grating
Geometry	Tt/0° or Td/0° per ASTM
Sphere	76 mm (3 in) Spectralon™

Port Size/Measured Area	18.5 mm (0.73 in) illuminated/ 9.8 mm (0.39 in) measured
Transmittance Modes	Total (TTRAN), Regular (RTRAN), Haze
Transmittance Compartment (H x W x D)	108.0 mm x 101.6 mm x 187.3 mm (4.25 in x 4.0 in x 7.38 in); Cover can be removed for large samples

Instrument Performance

Spectral Data	Range: 400-700 nm Reporting Interval (nm): 10 nm
Spectral Resolution	<3 nm
Spectral Repeatability	Standard deviation within 0.1 %
Measurement Pathlength	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*(D65/10) ≤ 0.15 (Avg) on Transmittance Filter Set; ΔE* (D65/10) ≤ 0.25 (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, Spectral Plot, EZ View, Tristimulus Color Plot, Trend Plot
Illuminants	C, D65, F02, A, D50, D55, D75, F07, F11, TL84, ULT30, ULT35
Observers	2° and 10°
Color Scales	CIE L*a*b*, Hunter Lab, CIE LCh, CIE Yxy, CIE XYZ and differences
Color Difference Indices	ΔE*, ΔE, ΔE CMC (l:c), ΔE*2000
Indices and Metrics	APHA/PtCo/Hazen, Saybolt, Gardner, YI E313 Yellowness, YI D1925, ADMI, EBC, ASBC Turbidity, CIE Y Transmittance, USP, EP, JP, NTU, ASBC, WIE313, ICUMSA, Iodine, FAC, Chinese Acid Wash Color, ASTM D1500, LOVIBOND® RY, AOCS RY
Other	Hitch Standardization Haze
Data Storage	250 spectral or tristimulus with Pass/Fail Tolerances as Working, Physical, Numeric and Hitch

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

Regulatory Notice

HunterLab
ISO 9001 Certified

Declaration of Conformity

EU / EMC Directive:	**2014/30/EU**
Standard to which Conformity is Declared:	**IEC 61326-1: 2012 / EN: 2013**
Manufacturer:	**Hunter Associates Laboratory, Inc.** **11491 Sunset Hills Rd, Reston, VA, USA**
European Representative: Representative's Address:	**Christian Jansen** **Griesbraeustrasse 11, 82418 Murnau, Germany**
Type of Equipment:	**Transmission Spectrophotometer**
Model No.:	**Vista**

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

Place: *Reston, VA, USA*

Date: *May 25, 2016*

Signature: Tim Barrett

Full Name: *Tim Barrett*

Position: *Systems Engineer*

CHAPTER TEN

Features, Options, Maintenance & Assistance

Vista Maintenance & Safety

The Vista is engineered to be virtually maintenance free. This section outlines the few parts of the sensor that are to be maintained for the instrument to function properly.

- **Cleaning the Vista**

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

- **Cleaning the inside of the Vista**

  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.

- **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™ can be used to gently wipe the surface. After wiping allow to dry for a minimum of 60 minutes.

- **Didymium Standard Care**

  Check the filter for fingerprints, dust, and other contaminants. If necessary, gently clean the didymium filter with a cotton cloth moistened with Sparkleen™. After wiping allow the filter to dry for at least one hour.

- **Power Required**

  Voltage: 100-240 VAC,1.5A, 47/63 Hz
  Single Phase
  180 VA maximum
  Fuse: 1.4A, SB
  Installation Category (Over Voltage): II

- **Safety**
  - Do not view the instrument LED's directly as it may be damaging to the eyes.
  - Do not submerge the instrument in water.
  - Do not take the instrument apart as there are 'no user serviceable parts' in the instrument.
  - Do not disassemble the instrument and attempt to clean the optical components.
  - Do not open the instrument or remove any covers except using the instructions given in this User's Manual or under the direction of HunterLab Technical Support.

When You Need Assistance

If you need for 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 India, Middle East and Africa, IMEASupport@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. A subsequent form gathers information on your request for response from our Customer Experience Teams around the globe.

CHAPTER 11

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Table of Figures