Measuring Tomato Scores Using Agera

Part No. A60-1019-459, Version 2.0

The world's true measure of color
HunterLab

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For EasyMatch Essentials 100.0051 and Above with Agera-Tomato Option

Measuring Tomato Scores Using Agera Essentials

This option features the measurement of Tomato Scores: Fresh Tomato Color Index FTCI (C/2), Tomato Paste TP (C/2), Catsup TC (C/2), Tomato Sauce TSS (C/2), Tomato Juice TJS (C/2), Tomato a/b Ratio (a/b) (C/2) and Lycopene. This option includes: HunterLab Tomato Reference Standard (L02-1014-594), (2) 64 mm (2.5 in) OD Glass Sample Cups (04-7209-00), Port for Sample Cup (D02-1018-615) and Sample Cup Cover (04-4000-00).

SETTING UP THE INSTRUMENT

Standardization

From the ***WORKSPACE*** menu, select ***STANDARDIZATION***. You can also press the Standardization button in the Status bar as a shortcut.

Each Agera has a specific set of Black Glass and White Tiles unique to the instrument. These are not interchangeable with other instruments. Install the port plate for the sample cup. Position the standard tiles on the instrument with the white line matching the white line on the port plate.

- **READ BLACK GLASS**: Place the Agera black glass at the sensor port and press ***READ***. Make sure that the line on the tile matches the port plate white line.

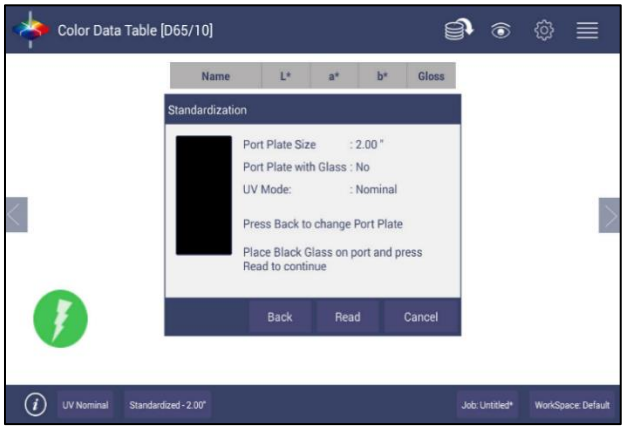

Figure 1. Read the Black Glass for Bottom-of-Scale

- **READ WHITE TILE**: Remove the black glass and place the Agera white tile at the port. Press ***READ*** to continue.

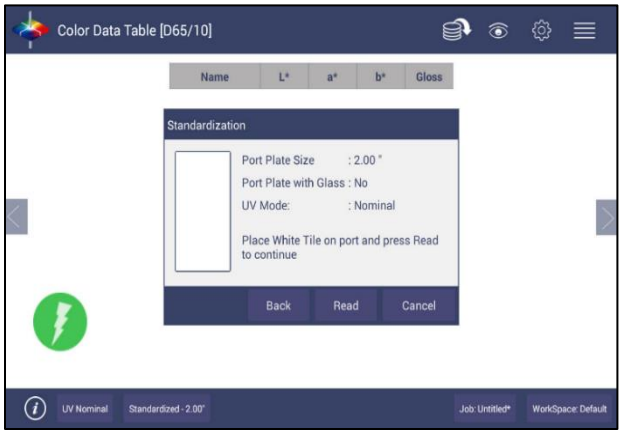

Figure 2. Read the White Tile for Top-of-Scale

- Remove the calibrated white tile when standardization is completed. Click ***OK***.
- Standardization is updated and reported as **STANDARDIZED** in the bottom status bar along with UV Mode and Port Plate Size.

Select Views

The Color Data Table has already been setup. To add the EZ View screen, go to ***WORKSPACE > VIEWS*** to select EZ View. Simply check on the box of the screen needed. Press ***APPLY*** to save one or all of the screens.

Tomato Scores are displayed on the **COLOR DATA TABLE** and **EZ VIEW**. To navigate between screens once the selections have been applied, use the ***VIEW FLIPPERS*** on the left and right of the screen. EZ View allows you to eliminate the color scale and display results – one sample at a time.

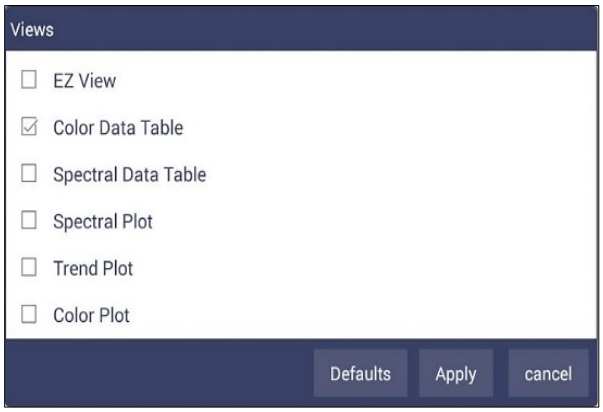

Figure 3. Workspace Views

- **VIEW OPTIONS** for EZ View includes the selection of **NO COLOR SCALE**, **PASS/FAIL, IMAGE VIEW, PRECISION** and **FONT SIZE**.
- **VIEW OPTIONS** for Color Data include **UV MODE, IMAGE STATUS, PORT PLATE SIZE, TOLERANCES, DATA ORDER, DATE, IMAGE VIEW, TIME** and **PASS/FAIL**.

Setup Tomato Indices

Go to ***WORKSPACE > COLOR SCALES*** provide four tabs in which the **SCALES**, **INDICES**, **DIFFERENCES** AND **ILLUMINANT/OBSERVER** (**ILL/OBS)** can be configured.

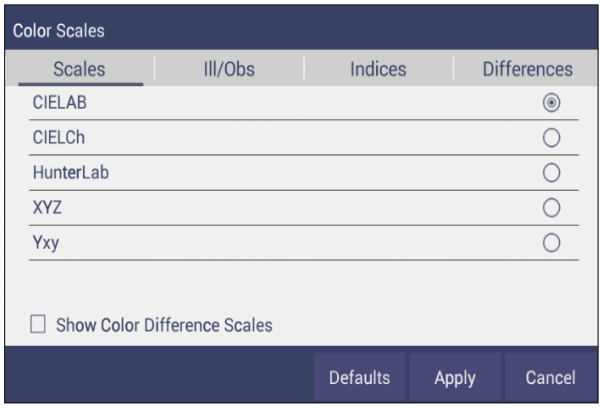

Figure 4. Color Measurement Scales

- The **SCALES** Tab shows the five scales available for measurement. Select the absolute scale or color difference scales (if a standard is selected). Press ***APPLY*** and begin to read your samples.
- The **ILLUMINANT/OBSERVER** tab displays combination selections for these parameters. The Tomato Scores use C/2.

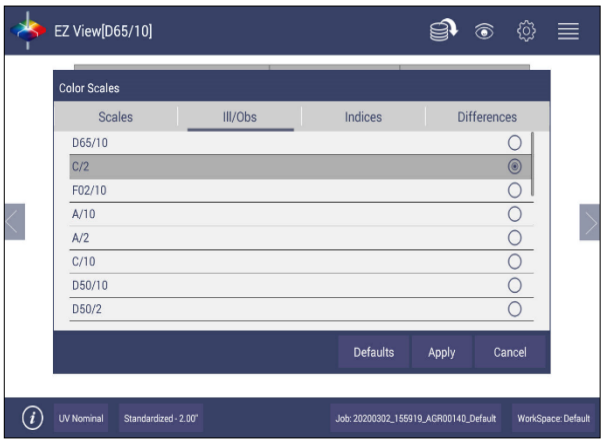

Figure 5. Illuminant/Observer Configuration

- In the default workspace for the Color Data Table, all of the tomato indices have been added: Fresh Tomato Color Index, Tomato Paste, Catsup, Tomato Sauce, Tomato Juice, Tomato a/b Ratio and Lycopene. To revise the default selection, go to ***WORKSPACE > COLOR SCALES > INDICES*** and uncheck the corresponding box for each unwanted indice. To remove all selections, press ***CLEAR ALL***. To see more choices, the screen can be scrolled. Press ***APPLY*** to continue.

Figure 6. Index Configuration

- To adjust **LYCOPENE offset and gain**, from the ***INDICES TAB***, select ***CUSTOM INDICES***. A new screen will appear. Select **LYCOPENE** and then adjust offset and gain

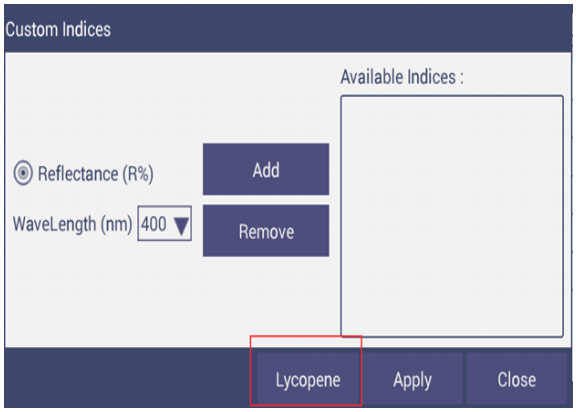

Figure 7. Adjusting Lycopene

- Adjustments to the ***GAIN and OFFSET*** for Lycopene is displayed for editing. When the Gain and Offset have been entered, press ***APPLY*** to update Lycopene calculation method.

Figure 8. Lycopene Parameters

Setting Tolerances

Tolerances can be manually entered for Scales, Indices and Differences. Tolerances will be displayed on the measurement screen if enabled under ***VIEW OPTIONS*** for the Color Data and EZ View Screens. Pass/Fail based on these tolerances can also be viewed on these screens.

Figure 9. Indices Tolerance Configuration

READING TOMATO SAMPLES

Complete the following steps to take individual readings using the Agera:

1. When beginning measurements of tomato products, it is recommended to read the hitched Tomato Reference Standard as a Performance Qualification check. If the instrument is still hitched correctly, it should read the assigned Hunter Lab C/2 values within ±0.2. If not, reset the hitch to the Tomato Reference Standard as described under **USING A HITCH TO THE HUNTERLAB TOMATO REFERENCE STANDARD**.

Note: A hitched standard is required for the Tomato Indices. If there is no hitched standard as shown in the Color Data Table, then one needs to be created.

2. To measure a sample, pour or spoon the sample into a 64 mm (2.5 in) glass sample cup until the cup is almost full.
3. Place the sample cup in the recessed area of the sample cup port plate
4. Cover the sample cup with the sample cup opaque cover.
5. Measure the sample by pressing the ***READ*** key.
6. The result is displayed.
7. Remove the sample cup from the sample port and place the next sample at the port.
8. Press ***READ*** to take another reading using this product setup.

Figure 10. Tomato Score Readings in CDT

Figure 11. Tomato Scores in EZ View

USING A HITCH TO THE HUNTERLAB TOMATO REFERENCE STANDARD

The purpose of the HunterLab Tomato Reference Standard is to improve inter-instrument agreement in Tomato Score values at multiple sites, or between a buyer and seller of processed tomato products. The hitch standard is particularly important for the Agera Tomato as the instrument is hitched to the assigned values of the HunterLab Tomato Reference Standard.

At the factory, the values for the HunterLab Tomato Reference Standard (C/2°) have been entered along with the product views. If it is necessary to re-set the hitch, here is the procedure.

1. Go to ***WORKSPACE > STANDARD AND TOLERANCES.***
2. Place Tomato Reference Standard on the port plate and select ***READ***.
3. After reading, select ***HITCH***. The Standard is displayed under ***AS READ.*** Enter the ***TARGET VALUES*** from the back of the tile.
4. Check the ***APPLY HITCH*** box and press ***OK***.

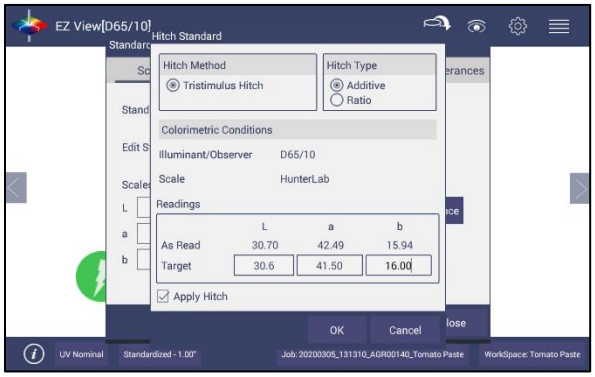

Figure 12. Hitch Standardization

5. On the next page press ***APPLY*** if you want to use the Tomato Reference Standard as your standard for this job. ***Or*** you can select to save the hitched standard into database without applying it to the current measurement.

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