Addendum to EasyMatch QC User's Manual for use with ColorQuest XE, UltraScan VIS and UltraScan PRO Sensors

Description

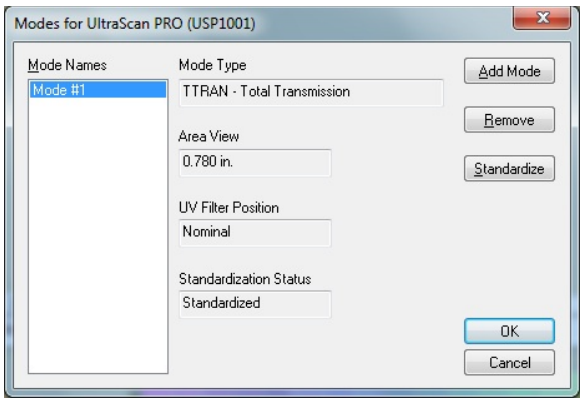
CMR-3173 provides an APHA/Pt-Co/Hazen and Gardner Color correlation for HunterLab diffuse sphere instruments optimized for samples measured in 24-mm ID round glass vials rather than typical rectangular transmission cells. These vials are appropriate for measuring the color of volatile liquids or samples that need to be heated.

The instrumental correlations to "Vial APHA-24mm [C/2]" and "Vial Gardner-24mm [C/2]" are proprietary to HunterLab, and are in agreement with the visual determination defined in:

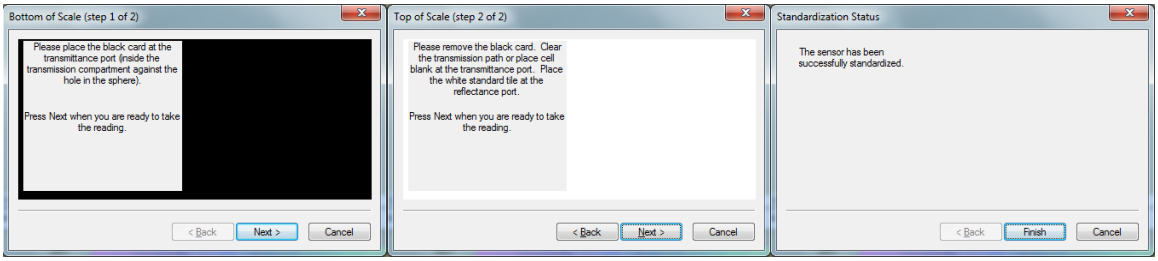
- ASTM D1209 and ASTM D5386 for APHA/Pt-Co/Hazen Color
- ASTM D1544 and ASTM D6166 for Gardner Color.

Installation

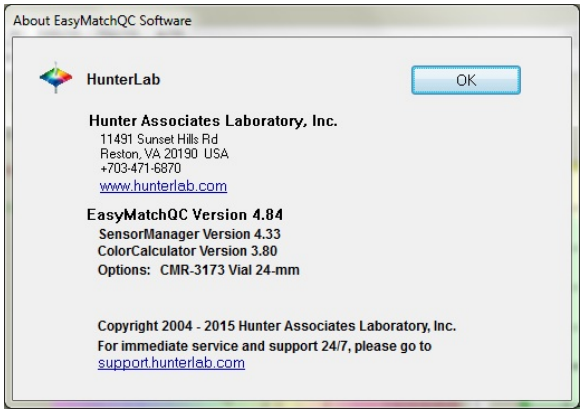
1. Install EasyMatch QC software with CMR-3173 as described in your EasyMatch QC Installation Guide.
2. Insert your hardware key into a USB port on the PC. This key allows operation of the software and activates the CMR-3173 features.
3. Start EasyMatch QC software and load a diffuse sphere sensor such as ColorQuest XE, UltraScan VIS or UltraScan PRO (will be prompted if no sensor is loaded).
4. After the diffuse sphere sensor is installed, you will be prompted to standardize. Create a mode for TTRAN – Total Transmission, Area of View 19.81 mm/0.780 in and UV Filter Nominal.



5. Using this mode, standardize the instrument using the Black Card at the TTRAN port, followed by Air (Black Card removed) and the calibrated White Tile at the reflectance port. A successful standardization message will be displayed as the 3rd step.



6. Go to Help/About and verify that CMR-3173 is displayed indicating that it is installed correctly and ready to configure.

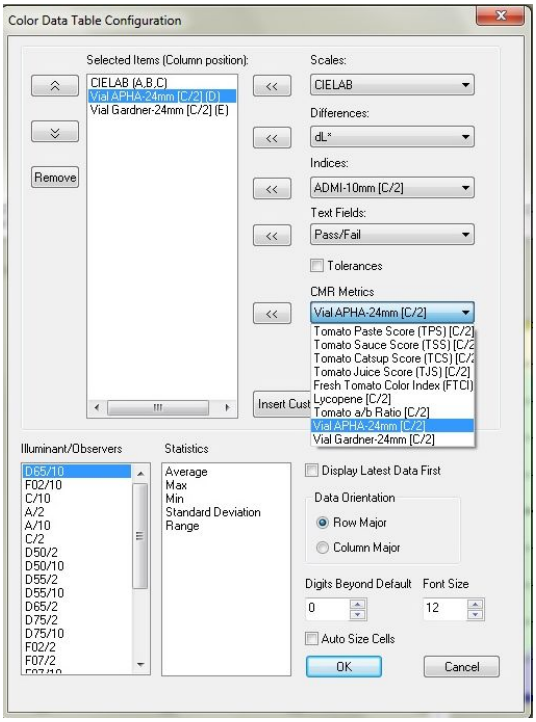


7. Place the D02-1011-550 Transmission Holder for 24-mm ID Round Vial in the
8. transmission compartment and secure to the base against the TTRAN port.

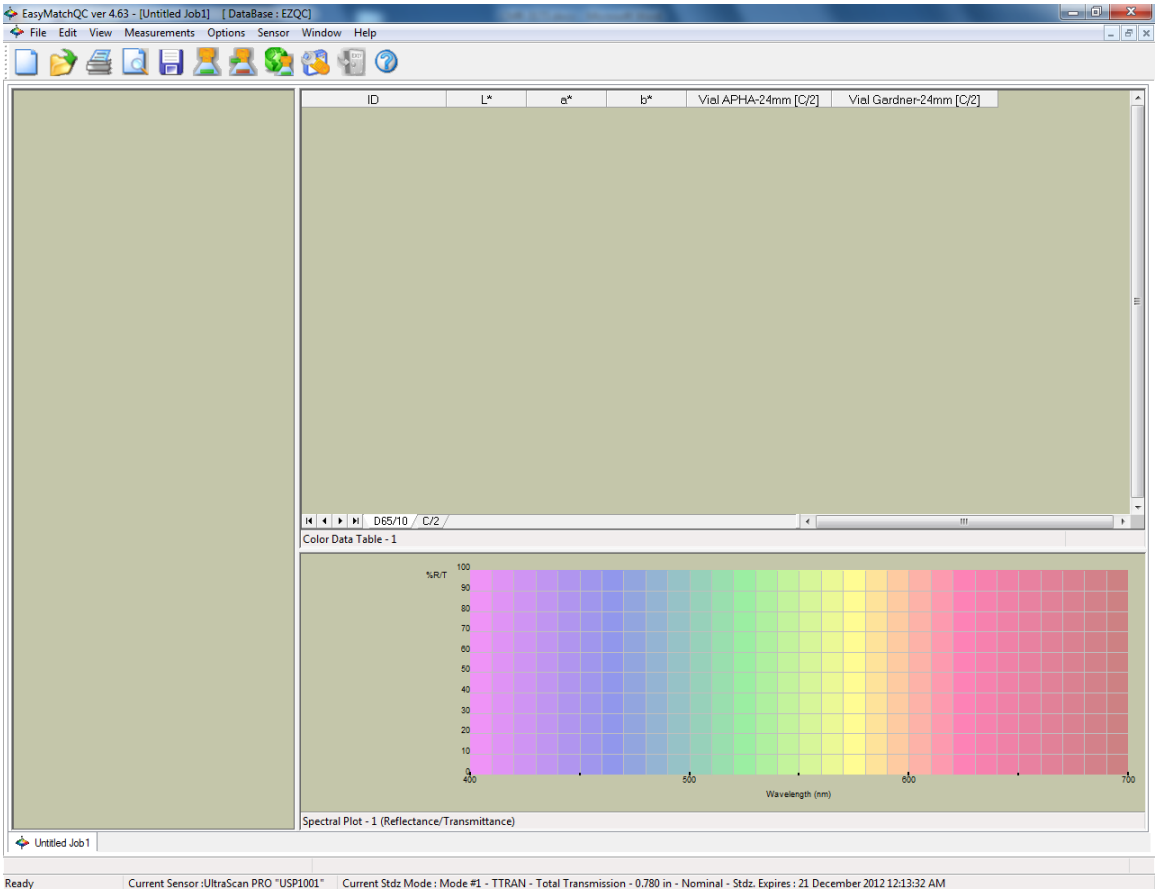
Software Configuration

To set up CMR-3173 for display, take the following steps:

1. To display the APHA and/or Gardner metric for use with the 24-mm Vial, place your mouse over an empty area in the Color Data View, Right Click/Configure and select Indices. Find “Vial APHA-24mm [C/2]” and “Vial Gardner-24mm [C/2]” in the list and select either or both metrics for display in the Color Data View.



2. Your screen should look similar to the following. While the Vial APHA-24mm [C/2]" and "Vial Gardner-24mm [C/2]" metrics are always displayed for C/2 conditions, other illuminant/observer conditions such as D65/10 can be chosen for display and reporting of L*, a*, b* color values.
3. For a simpler display, uncheck "Tolerances" if you do not wish to set and display them. Adjust the font size (12 pt is typical). Set your mouse over the Color Plot/Right Click/Delete to remove this plot if not using. Your display should look similar to the following:

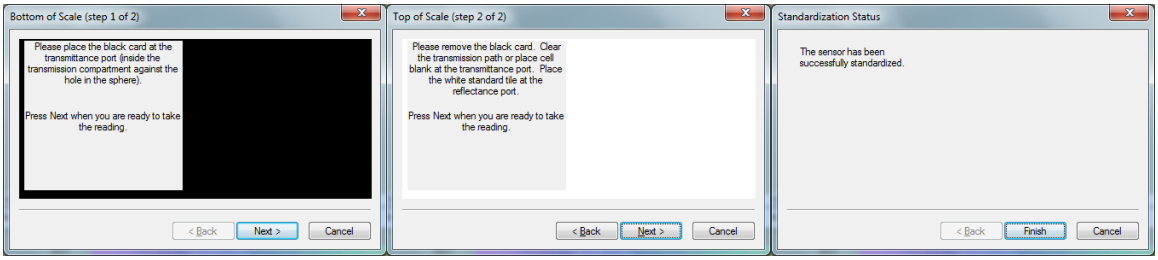


4. Select File/Save Job Template As to save this display view as the default “01 Basic Color Template” for all subsequent new Jobs.

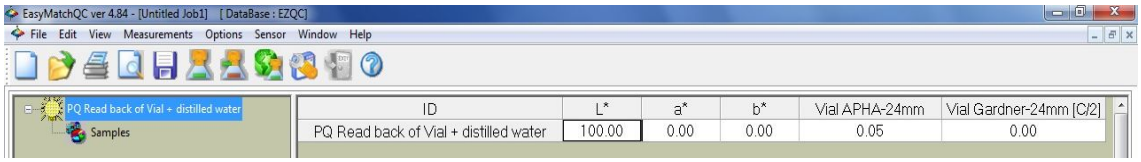
Daily Operation

Operate CMR-3173 as follows:

1. Fill a 24-mm ID Round Vial with distilled water (or other colorless solvent) and place in the holder. There are adjustment screws to make sure that the vial fits snug in the holder.
2. Standardize the instrument in TTRAN LAV 25 mm UV Filter Nominal mode using the light blocker to set 0% transmission and distilled water (or colorless solvent) in a 24-mm round glass vial to blank top-of-scale at 100%.



3. As a PQ (Performance Qualification) step, it is recommended that the User read back the vial and solvent as a Standard or Sample prior to beginning a series of product measurements. It should always read APHA/Pt-Co/Hazen value of 0 and Gardner value of 0 closely.

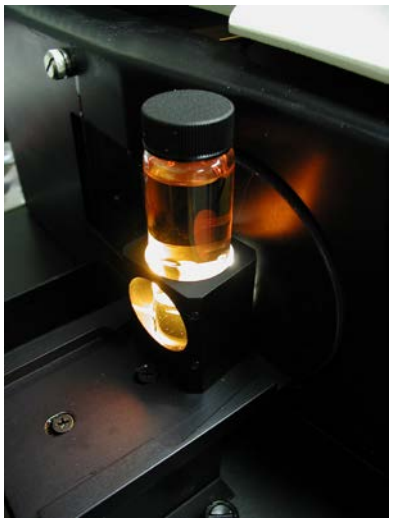


4. After performance qualification, proceed to measure the APHA/Pt-Co/Hazen and/or Gardner color of liquid samples in the 24 mm ID vials.

Source for 24 mm Diameter Vials used as Transmission Cells

The cells come in three height/volumes with the same 24 mm ID defining the sample path length, and fit in the same D02-1011-550 Transmission Holder.

A13-1015-359 20 ml Molded Glass Vials 24 mm ID
Clear, round 24 mm (0.94 in) ID, molded, borosilicate glass vial with **dimensions of 27.25 OD x 57.5 mm high** (1.07 in OD x 2.26 in high).This vial size conserves **sample volume at 20 ml** for measurement. Comes with black polypropylene screw on tops with a PTFE disc liner to contain volatiles and prevent spills. Can be heated to 250C. Comes as a case lot of 144 vials. Requires **D02-1011-550 Transmission Holder for 24-mm ID Round Vial** for measuring in TTRAN (preferred) or RTRAN transmission on HunterLab sphere instruments.



A13-1015-360 40 ml Molded Glass Vials 24 mm ID
Clear, round 24 mm (0.94 in) ID, molded, borosilicate glass vial with **dimensions of 27.75 OD x 95 mm high** (1.09 in OD x 3.74 in high) that requires a minimum 20 ml of sample for measurement but **can hold up to 40 ml**. This size is easy to handle and fill. Comes with black polypropylene screw on tops with a PTFE disc liner to contain volatiles and prevent spills. Can be heated to 250C. Comes as a case lot of 144 vials. Requires **D02-1011-550 Transmission Holder for 24-mm ID Round Vial** for measuring in TTRAN (preferred) or RTRAN transmission on HunterLab sphere instruments.

A13-1015-361 60 ml Molded Glass Vials 24 mm ID
Clear, round 24 mm (0.94 in) ID, molded, borosilicate glass vial with **dimensions of 27.5 OD x 140 mm high** (1.08 in OD x 5.51 in high) that requires a minimum 20 ml of sample for measurement but **can hold up to 60 ml**. This size is easy to grasp with tongs when being heated up 250C. Comes with black polypropylene screw on tops with a PTFE disc liner to contain volatiles and prevent spills. Comes as a case lot of 72 vials. Requires **D02-1011-550 Transmission Holder for 24-mm ID Round Vial** for measuring in TTRAN (preferred) or RTRAN transmission on HunterLab sphere instruments.