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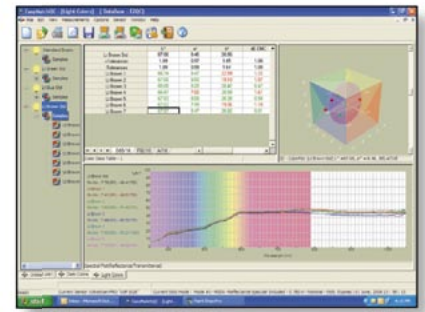
EasyMatch[®] QC

Color Quality Control Software



EasyMatch® QC

The Configurable Color Measurement Software

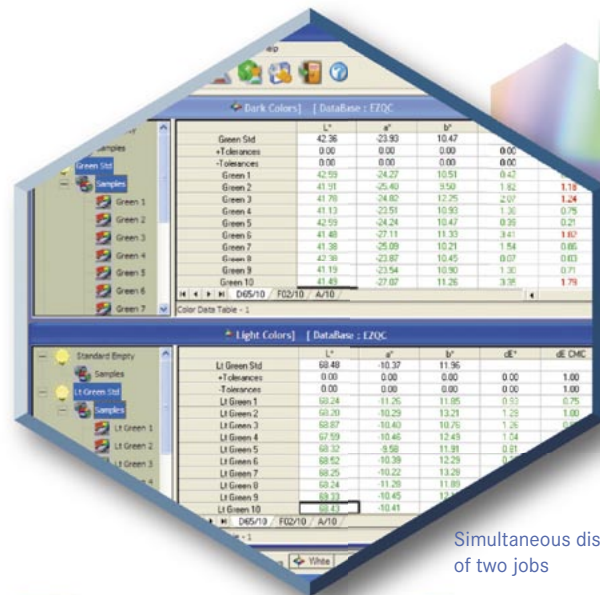


EasyMatch QC software provides almost limitless possibilities for acquiring, presenting, comparing, analyzing and reporting color information. Choose to display as little or as much information as needed. Color data and spectral data can be displayed numerically in spreadsheet form or graphically as color plots, spectral plots and trend plots. The displays and reports can be configured and sized to suit multiple application requirements. The user friendly interface provides both ease of use for routine QC operations as well as functional power for complex data manipulations.

EasyMatch QC also controls the spectrophotometer functions including built-in instrument diagnostics for all current HunterLab spectrophotometers. A multi-mode function makes it possible to standardize and read in two separate instrument modes; such as specular included and specular excluded, or UV included and excluded. A status bar displayed at the bottom of the screen indicates the sensor being used, the standardization mode and the time when the instrument should be re-standardized.

Job Structure

Standard information, sample data, and the display configuration, are stored as a job. Display configurations can be stored as a “templates” and later recalled for easy creation of new jobs. A job includes individual or multiple standards and an unlimited number of samples can be associated with each standard. Any number of jobs can be created and more than one job can be displayed at the same time. To simplify operation, a job tree display lists all standards contained in a job along with all samples associated with each standard. The job structure simplifies sharing data and the e-mail feature is used to send jobs to other locations.



Simultaneous display of two jobs

Database Storage

Standard and sample measurements can be stored to a database in Microsoft Access (.MDB) or SQL Server format. An “Automatic Standard Search” feature automatically recalls the closest standard contained in the database to a measured sample or the closest five standards are offered for selection. This standard is automatically linked to the sample in the current job. Stored standard and sample measurements can be searched and recalled by a wide range of parameters including; name, date /time range, color difference from a standard, color difference from a sample, sensor configuration, operator and many others. Additional databases can be created and EasyMatch QC even has a “Backup Database” function to protect your valuable information. EasyMatch QC can import or export data files for a job as QTX Format. It can also export selected data from a job in ASCII format and send it to a serial port or IP address.



Software Features



- Multiple configurable data views show as little or as much information as desired
- Operator can easily create and store individual templates of display configuration
- Job structure permits multiple standards to be present at the same time
- Jobs can be easily e-mailed
- Fully searchable database simplify recalling stored data
- User entered Data Fields simplifies tracking the effect of process variables
- Formula Fields permit calculation of custom indices
- Auto Tolerance automatically predicts acceptable limits based on measured color
- User Manager permits creation of operator groups with defined function capability
- Ability to customize printed reports
- Built-in sensor diagnostics ensures optimum system performance
- Languages include Chinese, English, French, German, Italian, Japanese and Spanish

Unsurpassed Versatility

Almost every application has its own measurement and reporting requirements. EasyMatch QC is versatile enough to meet these needs, yet is easy to configure and use. The Color Data Table displays colorimetric data for the standard and samples as well as tolerances. Numerous color scales, color differences, illuminants, observers and indices are available; as well as haze and opacity. For a detailed listing, ask your HunterLab representative for the EasyMatch QC Specification Sheet.

If desired, a sample measurement can be made a standard and a standard measurement can be made a sample. Data can be copied or cut from one job and pasted into another. It can also be pasted into an Excel spreadsheet. Data from different instrument configurations can be compared as well as data from different HunterLab instruments. Spectral and colorimetric data for standards or samples can also be keyboard entered.

1 Pass/Fail

Tolerances can be applied to any color scale or index as well as to haze and opacity measurements. Default tolerances can be set for a particular job so that the same tolerances are applied to all standards within a job. Or unique tolerances can be assigned to each individual standard. The "Auto Tolerance" feature automatically predicts acceptable limits and sets tolerances based on the standards color.

3 Custom Data

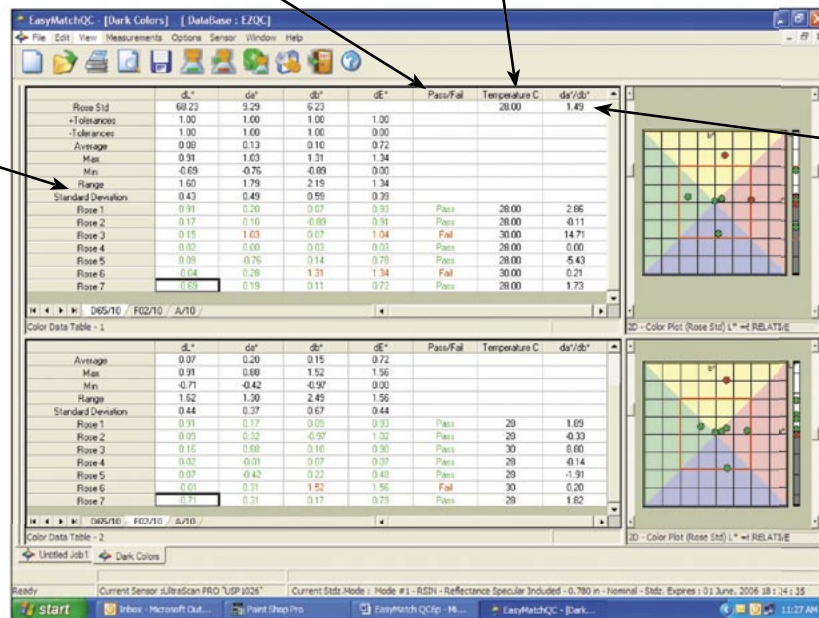
Many variables such as temperature, age, particle size, machine settings, etc. can affect final color. To determine the effect of these variables, EasyMatch QC permits entry of variables and stores them with the standard or sample measurements for analysis. Thus the cause of color shifts can be identified.

2 Statistics

Analysis includes average, standard deviation, minimum value, maximum value and range. Statistics can be calculated as measurements are being made, or on a selected group of measurements previously stored. Averaged sample or standard data can be stored as a new sample or standard.

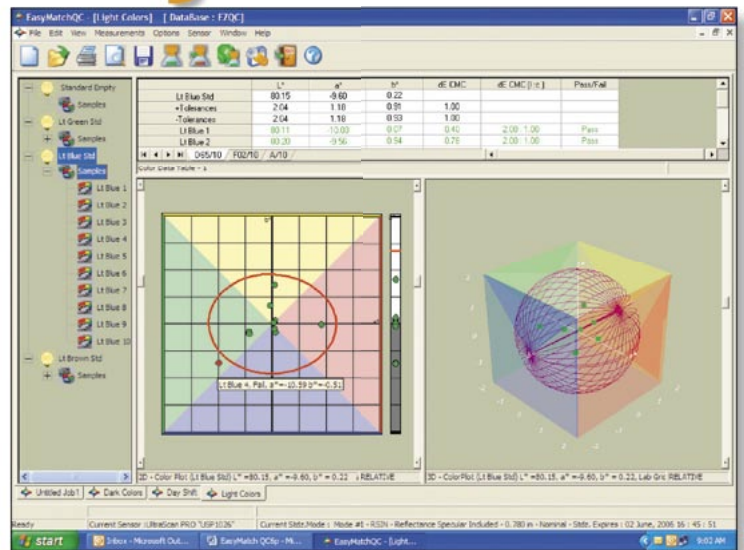
4 Custom Formula

Custom color indices can be calculated for unique application requirements. The user can enter an equation for a data field using values displayed in other data fields. When a new sample is measured, the custom index will be calculated and displayed along with other selected color data.



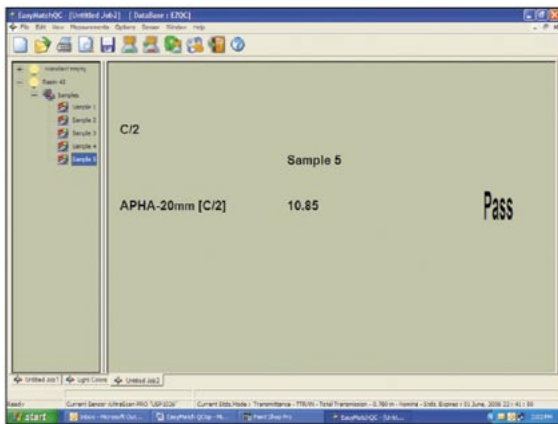
Unsurpassed Versatility

2D and 3D Color Plots
 Visually shows the sample location in two or three dimensional color space with respect to the standard as well as the rectangular or elliptical tolerances.



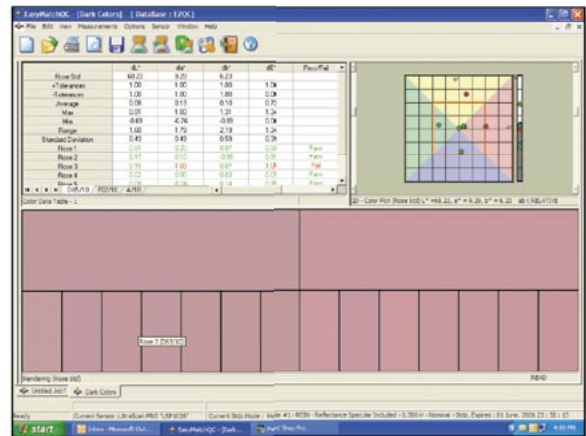
Color Render

Simulates the color of the standard and samples, for one or multiple illuminants, to view color differences.



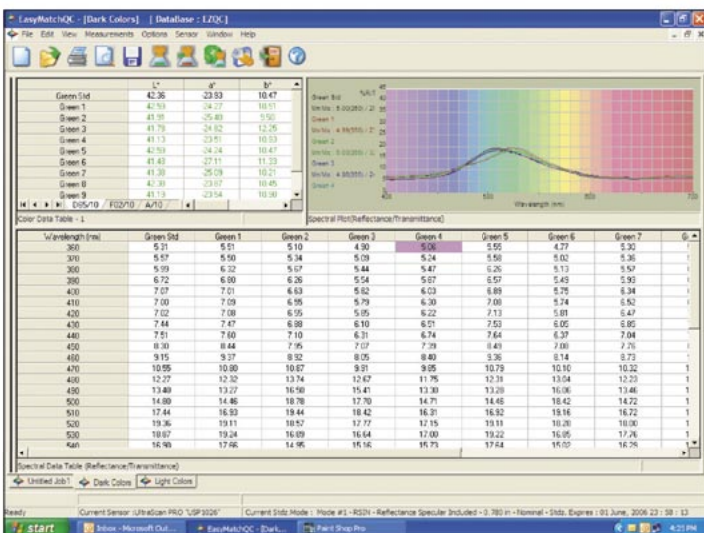
EZ View

The simplified EZ View display only shows data for the standard and the last sample measured and if desired Pass/Fail.



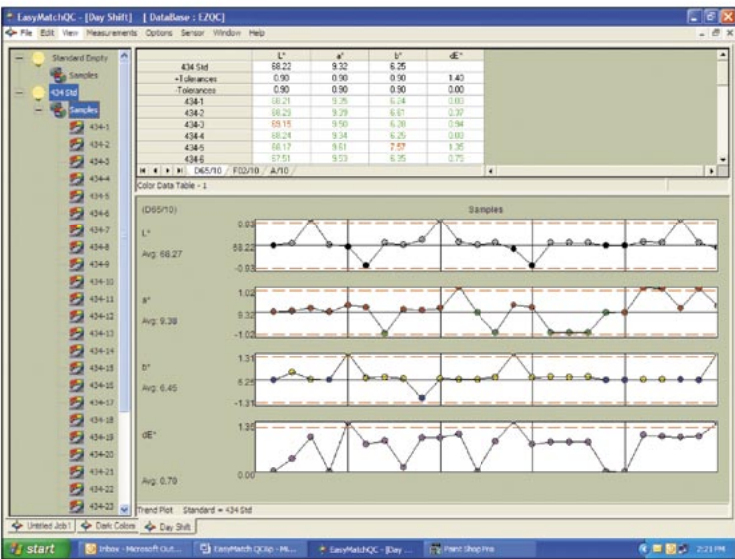
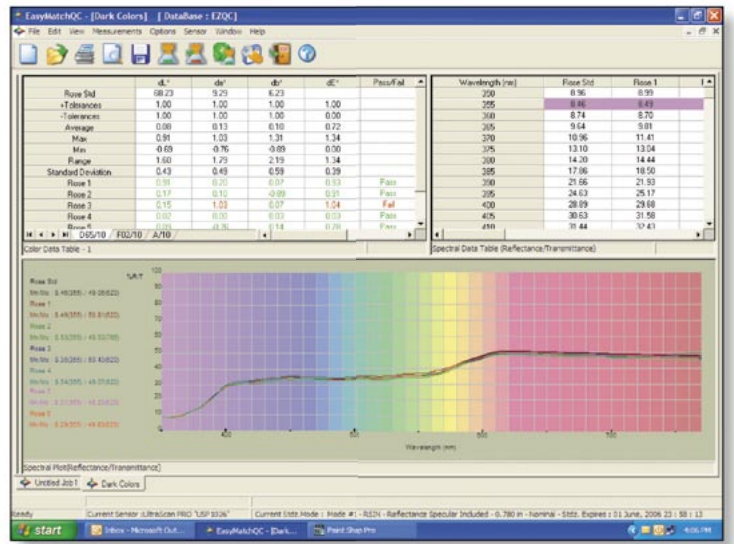
Spectral Data

Spectral data of a standard and an unlimited number of samples can be displayed as reflectance, transmittance, K/S and absorbance, in column or row format.





Spectral Plot
 Plots of a standard and samples can be displayed as reflectance, transmittance, K/S and absorbance. Spectral plots can be automatically scaled or set by the user.



Trend Plot
 Color trends of measurements can be plotted in real time to enable identifying color variations and prevent out of tolerance conditions. Historical data can be recalled and plotted to view process variations. Data can be plotted in line or column format along with control and warning limits.

Customized Printed Reports

Customized printed reports are easy to configure. Any number of views displayed with a specific job can be selected and configured for a printed report. A header and footer can also be included with desired information including title, date, time, sensor type, sensor configuration, operator, etc.

Instructional Tools

We learn in different ways, therefore three different types of instructional tools are included with EasyMatch QC.

- With the web style Help Files, desired information is located by browsing through a table of contents, examining index entries, searching on key words or reading the glossary.
- A complete EasyMatch QC Instruction Manual is included on the installation disk. This manual is divided into chapters and can be searched for words or phrases of interest. The manual can also be printed.
- An Audio-Visual Tutorial is included, and can be viewed on your computer.

Multi Level Security

To ensure data integrity, software login can be required. Since users may have various job functions and experience levels, it is possible to create accounts for system users and assign specific software privileges to those accounts. The user manager function permits the creation of multiple levels of operator groups with customized access privileges. Individual operators can then be assigned to an appropriate group. Each operator can have their own password, and when logged in, will only have the software privileges assigned to their group. To meet software requirements of the Food and Drug Administration's 21 CFR Part 11, an EasyMatch ER version is available. Additional details for this version are provided on the last page of this brochure.

Software Options



EasyMatch QC-ER Software

EasyMatch QC-ER (Electronic Record Keeping) maintains and protects complete and accurate records, limits system access, performs authority checks, includes electronic signature and provides a computer generated audit trail. The Audit Log permits viewing of events such as saving, editing, printing and signing a job. EasyMatch QC-ER is supplied with a Validation and Compliance Notebook containing IQ/OQ protocols, PQ advice, and software validation and SOP templates. EasyMatch QC-ER meets the software requirements for 21 CFR Part 11 compliance. Ask your sales representative for a copy of the "EasyMatch QC with Electronic Record Keeping 21 CFR Part 11 Compliance Checklist."

Event	User	Time	Description
Save	sheardk	Dec 09 2004 15:03:22	
Sensor Standardized	sheardk	Dec 09 2004 15:03:53	CD0322, Reflectance, 0...
Read Standard	sheardk	Dec 09 2004 15:04:04	Standard 1
Save	sheardk	Dec 09 2004 15:04:24	
Read Sample	sheardk	Dec 09 2004 15:04:32	Sample 1
Read Sample	sheardk	Dec 09 2004 15:04:43	Sample 2
Save	sheardk	Dec 09 2004 15:04:47	
View Printed	sheardk	Dec 09 2004 15:04:53	Color Data Table
Signature - EasyMatchQC Version ...	Kim Sheard	Dec 09 2004 15:05:24	Creation
Save	sheardk	Dec 09 2004 15:05:24	

EasyMatch QC Management Software

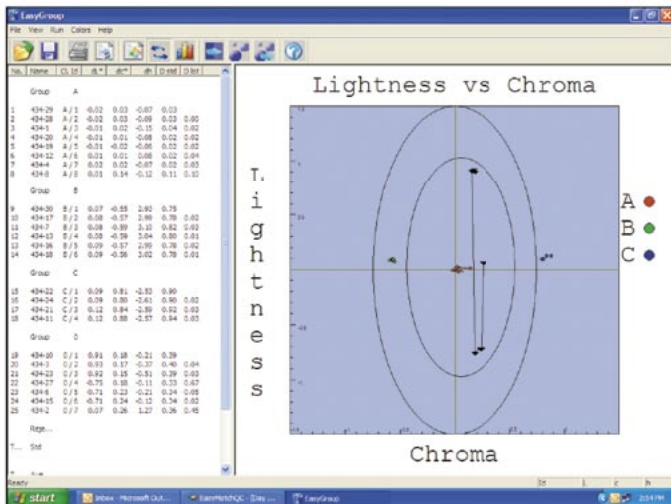
Provides a cost effective software version for use by managers to oversee and analyze measurements made in the lab or production. All software features of EasyMatch QC are included, with the exception of sensor communication.

Tomato Color Score Points Option

This option provides USDA approved tomato color scores. Available only for ColorFlex Tomato and LabScan XE.

Citrus Color Option

Provides Citrus Number, Citrus Red and Citrus Yellow scales, for measurement of citrus color. Available only for ColorFlex Citrus



EasyGroup Color Sorting and Sequencing Software

Automatically groups samples of similar shade together. It is a method to shade sort samples into a small number of groups where the samples within a group are visually acceptable to each other. The program remembers the location of previous samples for a product and forms new groups when enough samples are in the area of color space. The software can further minimize color variation by sequencing (tapering) within each group. This sequencing arranges samples in an order such that the color difference between adjacent ones is minimized. For further details, request a copy of the EasyGroup product brochure.

EasyMatch is a trademark of Hunter Associates Laboratory Inc. Specifications subject to change without notice



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