i-LAB® Application Note
QA/QC Liquid Color Analysis

Application Challenge
Sample measurements of incoming raw materials and products often require transportation to the lab for analysis. This results in delays in inspecting raw materials and putting them into production.

Application Solution
The i-LAB V210 package enables users to make quality color comparison measurements of liquids in a timely, compact, and cost effective package.

Markets and Applications

Food and Beverage

- Ingredient Inspection
- Intermediate and Final Product Testing
- New Product Research

Industrial

- Raw Material Inspection
- Product Development and Research
- Process Sampling

Processing companies are increasingly challenged to quickly and accurately measure raw materials, intermediate stage, and final products. The ability to measure liquid color samples against an accepted standard or reference and analyze those results quickly and cost effectively enables improved quality control of the process. The i-LAB® Hand Held Analyzing Spectrometer allows users to make consistent spectral measurements that provide the ability to test the color of liquid or solid samples against a reference, and perform application specific analysis.

S860 NIR Model

S560 Visible Model

Customer Benefits

- **Portability**
  The i-LAB weighs only 7.4 ounces making it ideally suited for a variety of field and process plant color analysis measurements.
- **Measurement Flexibility**
  Allows users to measure liquid color samples with disposable or reusable sample adaptors.
- **Process Time Improvement**
  Reduces the amount of time required to inspect and analyze product samples.
- **Application Specific Analysis**
  Customized measurement methods can be created with our Spectrum Software for specific customer applications.

"Bringing the Instrument to the Sample!"

micrOptix

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i-LAB®

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QA/QC Liquid Color Analysis Process

The QA/QC measurement method requires the user to first measure their reference sample and store it into the i-LAB's internal memory. Once this is completed, the user can then measure and analyze liquid samples against the stored reference sample to determine if they match their quality standards. The method takes the sample spectrum and performs a Savitsky-Golay derivative calculation that is used for data comparison. The measurement method is set up to "pass" a sample that has a 98% or greater correlation using a Pearson Correlation (R^2) between the samples derivative spectrum and the reference sample. The measurement method "fails" a sample that has a <98% correlation.

i-LAB® Specifications & Features

Wavelength Range	400 - 700 nm • Visible Model 650 - 1050nm • NIR Model
Bandwidth	4 - 7 nm • Visible Model 6.5 - 10.5 nm • NIR Model
Light Source	Spectrally Balanced LEDs
Display	Backlit LCD, 2" x 2"
Detector	Linearized Photo Diode Array
Communications	mini-USB
Dimensions	2.75"(w) x 5"(h) x 1.75"(d)
Weight	7.4 Ounces
Power	Approx. 1 Watt using 3 AA Batteries
Data Logging	Up to 500 Spectra
Method Storage	Up to 100 Measurements
Approvals	CE

Manufacturing Specifications and Features Subject to Change

i-LAB Spectrum Software enables users to create custom measurement methods for their i-LAB.

Application Customization
User definable parameters

- Pass/Fail Threshold
- Measurement Method Name
- Customer Specific Display Results

Product Selection

i-LAB V 2 1 0

i-LAB Visible Range Spectrometer System with i-LAB Spectrum Software Standard Version, and 10 mm Pathlength Samplettes (qty 50).

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