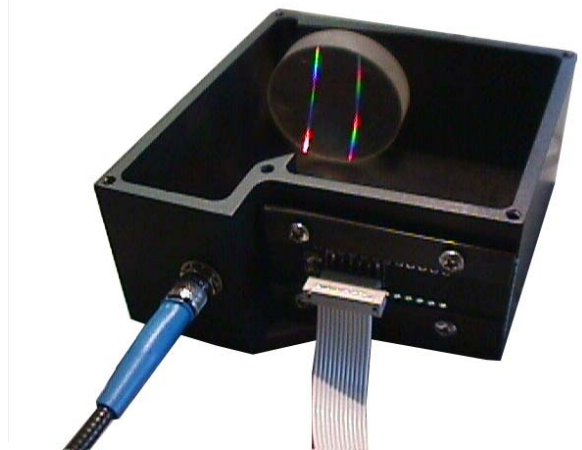


Color Measurement Systems

➤ BLACK-Comet CXR SpectroColorimeter

- Reliably measure CIELAB & Delta E* values
- Fiber optic Interface for sampling accessories
- Concave grating provides high sensitivity and
- Consistent resolution throughout 280-900nm range
- No mirrors for lowest possible stray light
- Extremely rugged with no moving parts
- Shock-proof durability and permanent alignment
- Miniature size, low cost, portable instrumentation
- Battery pack options for field measurements
- Simple USB2 interface to notebook & desktop PCs



High performance spectrocolorimeter has internal concave grating spectrograph optics with no mirrors or adjustments

➤ Color Measurement Accessories

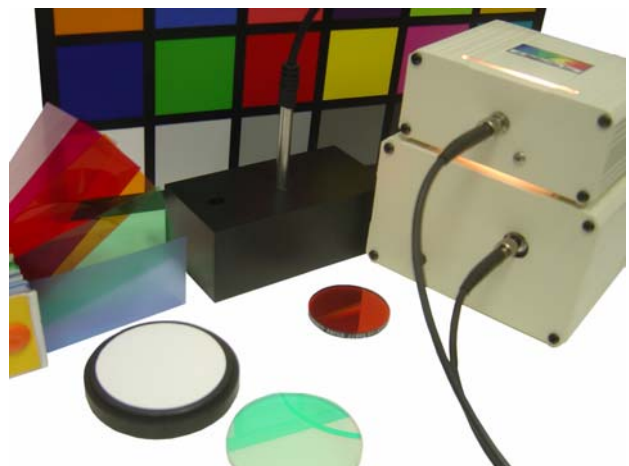
- **Liquid samples** - cuvette holder or dip probe
 - Food & Beverage
 - Industrial & Home liquids
- **Solid samples** - reflectance probe or fixture
 - Textiles
 - Plastics
- **Powder samples** - reflectance fixture
 - Pharmaceuticals
 - Raw materials



RFX Reflectance fixtures have integrated halogen light source to make color measurement easy by placing samples on top

➤ Versatility with Fiber Optics

- **For use** in the lab, in the field, on-line, or at-line on the production floor
- **Color monitoring** and measurement
- **Quality Control** of incoming raw materials or finished products
- **Little to no sample prep needed!**



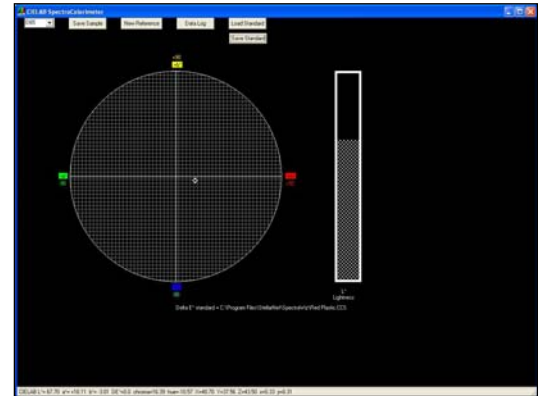
Reflectance Probe & Light source

Color Measurement Systems

➤ SpectraWiz Software included free

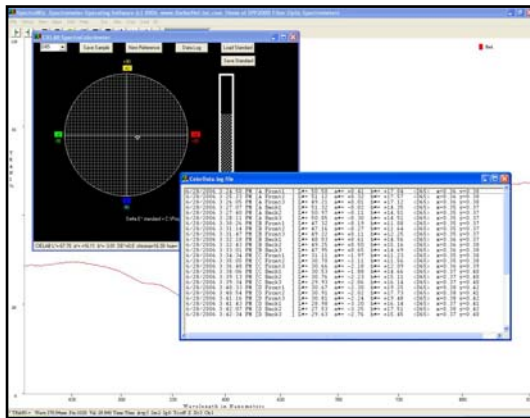
• CIELAB color app measurements

- **L***: Brightness (0 to 100)
- **a***: **Green** (-a) to **Red** (+a)
- **b***: **Blue** (-b) to **Yellow** (+b)
- **Delta E*** color difference
- **X Y Z** tristimulus
- **xy** chromaticity
- **chroma**
- **hue**



CIELAB color measurement application

- **Select any illuminant (A-C,D50-D75,F1-F12)**
- **Compare samples to saved color standards**
- **Sample color values can be saved to text file**



Color App and Data log work with live Spectra

➤ **Measure Delta E* color difference**

- Compare sample colors quickly & accurately
- Color variation displayed as numerical value
- Identify variations better than your eyes

➤ **Save your own color standards for comparison**

- Open color standard file for Delta E* value measured against target sample

➤ **Easily save color data into text log file**

- Import log into Word or Excel for data management and QC reporting

| Item | Description | SpectroColorimeters include SpectraWiz software free |
|---|---|--|
| BLACK-CXR | SpectroColorimeter | -best quality concave optics with fiber optic & USB2 interface |
| BLUE-Wave-VIS | SpectroColorimeter | -compact miniature optics with fiber optic & USB2 interface |
| GREEN-Wave-VIS | SpectroColorimeter | -lowest cost miniature optics with fiber optic & USB interface |
| Accessories for solids or powders using a reflectance stand – samples placed o top | | |
| RS50 | Reflectance standard to set white reference, 50mm diameter | |
| RFX-2 | Reflectance fixture with integrated light source & F600-VIS-NIR fiber optic cable | |
| Accessories for solids or powders using a reflectance probe – samples place under | | |
| RS50 | Reflectance standard to set white reference, 50mm diameter | |
| R600-8-VISNIR | Reflectance probe VIS-NIR, 600um fiber optic cable, 7 illuminate around 1 read | |
| RPH | Reflectance probe holder. Maintains 45 or 90 degree angle variable distance (0-3/4") | |
| RTIP45 | Black tip has 45 degree angle and slides onto reflectance probe and locks to set position | |
| SL1 | Light source to illuminate fiber optic probe with 10,000 hour Tungsten-Krypton bulb | |
| SL1-Filter | Option instead of SL has color equalization filter in 0.5 inch diameter nose cone | |
| Accessories for liquids – samples placed in cuvette or dip probe placed in beaker | | |
| SL1-CUV | Integrated light source with standard 10 mm cuvette holder and F600 fiber | |
| DP400 | Dip probe with 400um armored fiber, includes 10mm path length tip (requires SL1 light) | |
| DP400-TIP | Additional tips for dip probe. Specify 2, 5, 10, or 20mm path lengths | |