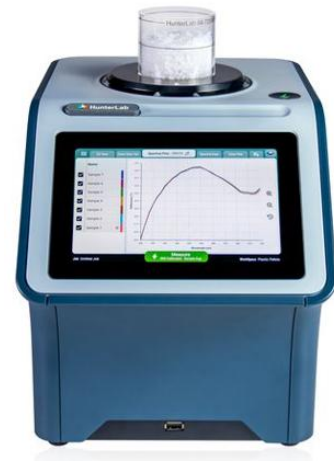


## Agera® L2 D65 UV400 Compare Mode – Detecting Optical Brighteners and Fluorescent Additives

Modern plastic resins, recycled materials, and compounded formulations increasingly contain optical brightening agents (OBAs) and fluorescent additives designed to improve perceived whiteness and visual brightness under daylight conditions. These materials can create significant visual differences that are not always obvious in standard color measurements unless UV behavior is specifically evaluated.



The Agera L2 with Essentials L2 includes **D65 UV400 Compare Mode** designed specifically to identify the presence of OBAs and fluorescent behavior quickly and objectively.

### How D65 UV400 Compare Works

The workflow is intentionally simple:

1. The sample is placed on the measurement port
2. Two consecutive measurements are automatically performed:
  - o First measurement: full D65 spectrum including near UV (360-700 nm)
  - o Second measurement: visible-only measurement with UV removed (400-700 nm)
3. Essentials L2 automatically calculates and displays the  $\Delta E$  difference between the two measurements

## Interpretation of Results

- Minimal or no  $\Delta E$  difference:
  - Indicates little to no fluorescent response
  - OBAs are likely not present
- Significant  $\Delta E$  difference:
  - Indicates UV-reactive behavior
  - OBAs or fluorescent additives are present in the material

### Why This Matters

Optical brighteners absorb UV energy and re-emit visible blue light, increasing perceived whiteness and brightness. As a result:

- Materials may appear different under different lighting conditions
- Visual appearance may shift between production sites
- Recycled content may introduce unexpected fluorescence variability
- Instrument agreement with visual evaluation becomes difficult without controlled UV measurement

The D65 UV400 Compare feature provides a fast and intuitive way to identify this behavior without requiring detailed spectral interpretation.

## Improvement Over Previous 420 nm Compare Method

Previous workflows relied on a 420 nm compare approach. While effective for trained users reviewing spectral plots, the resulting  $\Delta E$  values were often difficult to interpret directly, requiring operators to analyze spectral curves manually to determine whether fluorescent additives were present.

The D65 UV400 Compare workflow simplifies this process significantly by:

- Providing a more meaningful  $\Delta E$  comparison

- Using a full UV-inclusive vs UV-excluded measurement approach
- Allowing operators to identify fluorescent behavior immediately
- Reducing dependence on spectral expertise

👉 **Impact:** The D65 UV400 Compare feature enables faster detection of optical brighteners, improved troubleshooting of visual mismatches, and more reliable evaluation of recycled and UV-reactive plastic materials in real-world production environments.