UltraScan VIS vs. UltraScan PRO

When to Choose

UltraScan VIS

High-performance visible range spectrophotometer

UltraScan PRO

High-performance Research Grade spectrophotometer

HunterLab

About USVIS and USPRO

This material discusses technology differences and use cases for the UlttraScan VIS and UltraScan PRO. It does not suggest either the USVIS or USPRO are the only recommended instrument for specific applications.

HunterLab

UltraScan VIS

High-performance visible range spectrophotometer

UltraScan VIS – Best Applications

✅ *Routine full CIE Visible Range reflectance and transmittance color measurement*

📌 **Industries: Plastics, Paints & Coatings, Food and Beverage, Pharmaceuticals, Building Products, Paper, Textiles**

UltraScan VIS – Best Applications

1. Plastics

Use UltraScan VIS if:

- There is a need for both **reflectance and transmittance**
- There is a need to measure both Specular Included (RSIN) and Specular Excluded (RSEX)
- You need basic color quality control

Example: Measuring the **color uniformity of both opaque and transparent sheet plastic, preforms, bottles, molded parts**

UltraScan VIS – Best Applications

2. Paints, Coatings & Inks

Use UltraScan VIS if:

- There is a need for both **reflectance and transmittance**
- There is a need to measure both Specular Included (RSIN) and Specular Excluded (RSEX)
- You need to measure **paint and coatings in the visible spectrum**
- You are performing **standard quality control for color matching** in industrial coatings

Example: A manufacturer verifying that their **red paint matches a customer's color standard.**

UltraScan VIS – Best Applications

3. Food & Beverage

Use UltraScan VIS if:

- There is a need for both **reflectance and transmittance**
- There is a need to measure both Specular Included (RSIN) and Specular Excluded (RSEX)
- You are checking **color consistency** of **opaque / translucent / transparent** ingredients and products
- NIR properties are not relevant for your product
- The focus is **strictly on visible color appearance**

Example: Spirits, beer, cola and syrups, sport drinks, functional beverages, wet and dry ingredients and food products.

UltraScan VIS – Best Applications

4. Bio-Pharma (Drug Substances, Drug Products)

Use UltraScan VIS if:

- There is a need for both **reflectance and transmittance**
- There is a need to measure both Specular Included (RSIN) and Specular Excluded (RSEX)
- USP Method <1061> and <631> compliance
- EP 2.2.2 Method III and EP 2.2.1 Opalescence compliance
- Liquids including small volumes (600 uL or greater)

Example: Active Pharmaceutical Ingredients (API), Excipients, Biologics, injectables, powders, large molecule, small molecule, OTC products

UltraScan VIS – Best Applications

5. Textiles, Paper

Use UltraScan VIS if:

- There is a need for both **reflectance and transmittance**
- There is a need to measure both Specular Included (RSIN) and Specular Excluded (RSEX)
- You need to measure **printed materials, dyed textiles, or paper color**

Example: A **paper company verifying the whiteness and color tone of writing paper.**

HunterLab

UltraScan VIS

High-performance visible range spectrophotometer

HunterLab

UltraScan PRO

High-performance Research Grade spectrophotometer

UltraScan PRO – Best Applications

✅ *Advanced color analysis*

📌 Industries: Optical Materials, Pharmaceuticals, Research

UltraScan PRO – Best Applications

1. Optical, Glass & Transparent Materials

Use UltraScan PRO if:

- There is a need for both **reflectance and transmittance**, and or **extended wavelengths**
- There is a need to measure both Specular Included (RSIN) and Specular Excluded (RSEX)
- You need to measure **transparent films, glass, and optical coatings**
- Haze analysis and **NIR spectral evaluation** are required for **lens coatings, filters, and windows**

Example: A manufacturer of **UV-protective sunglasses measuring the transmittance and color effects under different UV exposure settings.**

UltraScan PRO – Best Applications

2. Bio-Pharma (Drug Substances, Drug Products)

Use UltraScan PRO if:

- There is a need for both **reflectance and transmittance**, and or **extended wavelengths**
- There is a need to measure both Specular Included (RSIN) and Specular Excluded (RSEX)
- USP Method <1061> and <631> compliance
- USP Method 1061 compliance
- EP 2.2.2 Method III and EP 2.2.1 Opalescence compliance
- Wavelength intervals 5nm or above
- Need for Small Area View down to 4 mm (0.16 in) measured

Example: Active Pharmaceutical Ingredients (API), Excipients, Biologics, injectables, powders, large molecule, small molecule, OTC products

USVIS / USPRO Comparison

Feature	UltraScan VIS	UltraScan PRO
Instrument Type	High-performance visible spectrophotometer	High-performance Research Grade spectrophotometer
Geometry	d/8° (Sphere) diffuse 8-degree viewing	d/8° (Sphere) diffuse 8-degree viewing
Wavelength Range	360 – 780 nm (Full CIE Visible Range)	350 – 1050 nm (Extended Range UV and NIR)
Area of View (AOV)	LAV / SAV	LAV / MAV / SAV
Resolution	10 nm	5 nm (higher precision)
Haze Measurement	Yes (important for transparent materials)	Yes (important for transparent materials)
Ideal for Fluorescent Samples	Yes	Yes
Reflectance & Transmittance	Yes	Yes
Reflectance	*Automated SPIN / SPEX	*Automated SPIN / SPEX
Transmittance	Regular (RTRAN) & Total (TTRAN)	Regular (RTRAN) & Total (TTRAN)

**NOTE: Not every d/8° instrument can measure both SPIN and SPEX. For example, SPEX is an option only available on th most expensive competitive sensors*

Key Decision Chart

Application	UltraScan VIS	UltraScan PRO
Routine color measurement (plastics, paints, coatings, food and beverage, pharmaceuticals, building products paper, textiles)	✅ Best choice	✅ Can do but overkill
Plastics with optical brighteners (UV-sensitive materials)	✅ Yes	✅ Can do but overkill
Paints & coatings with fluorescence or UV-sensitive pigments	✅ Yes	✅ Can do but overkill
Fuels, lubricants, petroleum products (UV & NIR analysis required)	❌ No	✅ Yes
Optical materials, glass, transparent films (UV & NIR required)	❌ No	✅ Yes
Textiles & Paper (with optical brighteners/UV sensitivity)	✅ Yes	✅ Can do but overkill
Haze measurement (for transparent materials)	✅ Yes	✅ Yes
NIR analysis (up to 1050 nm)	❌ No	✅ Yes