

# SPECIFICATIONS

## UltraScan<sup>®</sup> PRO

### Measurement

---

<b>Measurement Principle:</b>	Dual-beam spectrophotometer
<b>Geometry:</b>	d/8° reflectance, d/8° total transmission, d/0° regular transmission
<b>Spectrometer:</b>	Two polychromators, each with a 512 element diode array and a high resolution, concave holographic grating
<b>Sphere Diameter:</b>	152 mm (6 in)
<b>Sphere Coating:</b>	Spectrafect™ for sphere, Duraflect™ for port plate and specular exclusion door
<b>Port Size/Measured Area:</b>	
Port Diameter/View Diameter in RSIN/RSEX reflectance modes	
Large Area View (LAV):	25 mm (1 in) illuminated/19 mm (0.75 in) measured
Medium Area View (MAV):	13 mm (0.5 in) illuminated/9 mm (0.35 in) measured
Small Area View (SAV):	7 mm (0.25 in) illuminated/4 mm (0.16 in) measured
Port Diameter/View Diameter in TTRAN transmittance modes	
Large Area View (LAV):	25 mm (1 in) illuminated/17.4 mm (0.685 in) measured
Medium Area View (MAV):	25 mm (1 in) illuminated/13.2 mm (0.52 in) measured
Small Area View (SAV):	25 mm (1 in) illuminated/11.6 mm (0.46 in) measured
Port Diameter/View Diameter in RTRAN transmittance mode where lens is field stop for all areas of view	
Large Area View (LAV):	17 mm (0.67 in) illuminated/17 mm (0.67 in) measured
Medium Area View (MAV):	17 mm (0.67 in) illuminated/17 mm (0.67 in) measured
Small Area View (SAV):	17 mm (0.67 in) illuminated/17 mm (0.67 in) measured
<b>Lens Switching for LAV/MAV/SAV Reflectance:</b>	Automatic
<b>Specular Component:</b>	Automated Included (RSIN) or Excluded (RSEX) in reflectance
<b>Spectral Range:</b>	350 nm - 1050 nm full CIE visible range plus NIR
<b>Effective Bandwidth:</b>	5 nm equivalent triangular
<b>Wavelength Resolution:</b>	< 2 nm
<b>Reporting Interval:</b>	5 nm

<b>Photometric Range:</b>	0-150%
<b>Light Source:</b>	Pulsed Xenon lamps (3), calibrated and controlled in the UV range
<b>Automatic UV Control:</b>	400 nm cutoff filter for UV control and UV exclusion Optional 420 nm cut off filter for UV exclusion
<b>Transmission Modes:</b>	Regular (RTRAN) and Total (TTRAN)
<b>Transmission Compartment:</b>	Open on 3 sides 10.2 cm D X 35.6 cm W x 16.5 cm H (4 in D x 14 in W x 6.5 in H)
<b>Standards Conformance</b>	
<b>Reflectance:</b>	CIE 15:2004, ISO 7724/1, ASTM E 1164, DIN 5033, Teil 7 and JIS Z 8722 Condition C
<b>Transmittance:</b>	CIE 15:2004, ASTM E 1164, DIN 5033 Teil 7 and JIS Z 8722 Condition E, G Haze conformance per ASTM D1003 Section 8. Procedure B Spectrophotometer
<b>Standards Traceability:</b>	Instrument standard assignment in accordance with National Institute of Standards and Technology (NIST) following practices described in CIE Publication 44 and ASTM E259

## Performance

---

<b>Colorimetric Repeatability:</b> (20 readings)	$\leq 0.03 \Delta E^*$ CIE Lab on white tile in LAV mode $\leq 0.07 \Delta E^*$ CIE Lab on blue denim tile in LAV mode
<b>Spectral Repeatability:</b>	0.20 peak-to-peak between 435 nm and 695 nm
<b>Inter-instrument Agreement:</b>	$\Delta E^* \leq 0.08$ CIE Lab (Avg) on BCRA II Tile Set $\Delta E^* \leq 0.20$ CIE Lab (Max) on BCRA II Tile Set

## Physical / Electrical

---

<b>Dimensions:</b>	Height: 32.3 cm (12.7 in) Width: 42.0 cm (16.5 in) Depth: 49.8 cm (19.6 in) Weight: 25.9 kg (57 lb)
<b>Power:</b>	90 to 250 VAC, 50 to 60 Hz 60 watts passive, 120 watts maximum
<b>Interface:</b>	RS-232C serial, 19,200 baud DB9 (female) terminal and USB - serial terminal
<b>Operating Environment:</b>	4° to 38°C (40° to 100° F), 10% to 85% RH, noncondensing
<b>Storage Environment:</b>	-21° to 66°C (-5° to 150° F), 10% to 90% RH, noncondensing (-5° to 150° F)
<b>Standard Accessories:</b>	<ul style="list-style-type: none"> <li>• White calibration tile</li> <li>• Certificate of traceability</li> <li>• Black calibration light trap</li> <li>• Fluorescent standard</li> <li>• Green check tile</li> <li>• Wavelength check filter</li> <li>• Transmittance zero calibration plate</li> <li>• Reflectance sample clamp</li> <li>• LAV aperture</li> <li>• MAV aperture</li> <li>• SAV aperture</li> <li>• RS-232C cable</li> <li>• USB cable</li> <li>• Power cord</li> </ul>

For more information, please contact HunterLab at 703-471-6870, [sales@hunterlab.com](mailto:sales@hunterlab.com) or visit [www.hunterlab.com](http://www.hunterlab.com)

UltraScan and EasyMatch are Trademarks of Hunter Associates Laboratory, Inc.  
Spectrafect and Duraflect are Trademarks of Labsphere

Specifications subject to change without notice

02/12