

# SPECIFICATIONS

# Agera<sup>®</sup> L2

Patent #US 11,002,676 B2

## MEASUREMENT

<b>Measurement Principle:</b>	Dual-beam Reflectance Spectrophotometer / Glossmeter
<b>Geometry Color:</b>	0°/45°c (circumferential) ASTM E1164
<b>Gloss:</b>	60°
<b>Measurement Method:</b>	Port up or Port forward
<b>Read Time:</b>	< 3 sec.
<b>Image Capture:</b>	High-resolution, D65 illuminated, 45°/0° image viewing, image capture and image recall
<b>Port Plate Opening:</b>	<b>Color:</b> XL - 53.97 mm (2.125 in), L - 28.57 mm (1.125 in), M - 17.47 mm (0.688 in)
<b>Area Measured:</b>	<b>Color:</b> XLAV - 50.80 mm (2 in), LAV - 25.40 mm (1 in), MAV - 15.89 mm (0.625 in) <b>Gloss:</b> 8 mm (5/16 in)
<b>Illumination Range:</b>	360 nm - 700 nm
<b>Detection Range:</b>	400 nm - 700 nm
<b>Specular Component:</b>	Excluded
<b>Spectral Resolution:</b>	< 3 nm
<b>Effective Bandwidth:</b>	10 nm equivalent triangular
<b>Reporting Interval:</b>	10 nm
<b>Photometric Range:</b>	<b>D65 Source Mode:</b> 0 to 200 % <b>Agera Classic Mode:</b> 0 to 150 % <b>Dark Performance Mode:</b> 0 to 25 %
<b>UV Control:</b>	UV Included and UV Excluded with automated comparative data viewing and reporting. Factory calibrated with user option to calibrate to their specific fluorescent standard.
<b>Light Source:</b>	Full spectrum, balanced LED array
<b>LED Life:</b>	5 years typical
<b>Spectrophotometer:</b>	Sealed optics; 256-element diode array; high resolution concave holographic grating
<b>Standards Conformance:</b>	<b>Color:</b> CIE 15:2018, ASTM E1164, DIN 5033, Teil 7 and JIS Z 8722 Condition C; <b>Gloss 60°:</b> ASTM D523, ASTM D2457, ISO 2813, ISO 7668, JIS Z 874

## PERFORMANCE

<b>Inter-Instrument Agreement:</b>	<b>Color:</b> $\Delta E_{2000} < 0.10$ CIE L*a*b* (Avg) on CCSII (CERAM) Tile Set <b>Gloss:</b> 0 - 100 $\leq 0.5$ GU
<b>Repeatability:</b>	<b>Color:</b> $\Delta E^* < 0.03$ CIE L*a*b* (Max) on Certified Instrument Standard <b>Gloss:</b> 0 - 100 GU: $\leq 0.1$ GU



## USER INTERFACE

<b>Data Views:</b>	EZ View, Color Data Table, Color Plot, Spectral Data, Spectral Plot, Chromaticity Plot
<b>Other Features:</b>	Pass/Fail Color Indication, time and date stamp, Auto-naming, auto-saving, Image Capture via high-resolution camera, average multiple measurements, time-based automatic measurements, data backup and recovery
<b>USB Flash Drive Features:</b>	Data Export: Job Data, Sample Images, Screen Capture and Database
<b>Illuminants:</b>	A, C, D50, D55, D65, D75, F02, F07, F11
<b>Observers:</b>	2° and 10°
<b>Color Scales:</b>	CIE L*a*b*, Hunter Lab, CIE L*C*h, CIE Yxy, CIE XYZ
<b>Color Difference Scales:</b>	$\Delta L^*a^*b^*$ , $\Delta Lab$ , $\Delta L^*C^*h$ , $\Delta Yxy$ , $\Delta XYZ$
<b>Indices and Metrics:</b>	E313 Whiteness Index, Ganz Whiteness Index, E313 Tint, Ganz Tint, E313 Yellowness, D1925 Yellowness Index, Y Brightness, Z%, 457 nm Brightness, Baking Contrast Units, ASTM E1349, ISO 18314-3 Blackness (My, Mc, dM) and Greyness (Gy, Gc, dG)
<b>Color Difference Indices:</b>	$\Delta E^*$ , $\Delta E$ , $\Delta C^*$ , $\Delta E$ CMC, $\Delta E$ 2000, $dC^*$ , $dH^*$ , Strength at Max. Absorbance, Strength weighted, Metamerism, Grey Scale Color, Grey Scale Stain, Shade Number 555
<b>Languages:</b>	Supports multiple languages—with the option to add more as needed
<b>Data Storage:</b>	32 GB (> 4 million data records with images)

## COMMUNICATIONS I/O

<b>USB Connections:</b>	Connectivity to printer, keyboard, mouse- Front panel (1); Rear panel (2)
<b>Ethernet RJ45:</b>	Print directly to standalone or network printers Stream data to LIMS and SPC systems
<b>External Inputs:</b>	Remote Footswitch or similar closed contact switching device
<b>Remote Access Support:</b>	Enabled via internet-based support tool

## PHYSICAL / ELECTRICAL

<b>Sensor Dimensions:</b>	Height: 28 cm (11 in) Width: 22 cm (8.75 in) Depth: 31 cm (12.25 in) Weight: 7.7 kg (17 lb)
<b>Display:</b>	7" Capacitive touch screen, high-resolution (1280 x 800)
<b>Interface:</b>	3 USB ports, HDMI Video Output, Foot switch Input, Ethernet connection, USB Service Port, Convenient physical measurement/action button
<b>Power:</b>	Input: 100 to 240 VAC, 47 to 63 Hz to universal power supply @ 24 VDC (3.75A 90W)
<b>Operating Environment:</b>	10° to 40° C (50° to 104° F), 10 % to 90 % RH, noncondensing
<b>Storage Environment:</b>	-20° to 65° C (-5° to 150° F), 10 % to 90 % RH, noncondensing
<b>System Components:</b>	<ul style="list-style-type: none"> <li>• Agera L2 sensor</li> <li>• XL - 53.97 mm (2.125 in), L - 28.57 mm (1.125 in), M - 17.47 mm (0.688 in) port plates</li> <li>• Certified Instrument Standard with NIST Certificate of Traceability</li> <li>• Black Glass Standard used for both color and gloss standardization</li> <li>• Diagnostic Check Standard</li> <li>• Agera L2 Quick Start Guide</li> <li>• 100V - 240V Universal Power Supply</li> <li>• Agera L2 User's Manual (electronic)</li> </ul>

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