Hardware Technical Specification

ART OBJECT SCANNING AND ANALYSIS SYSTEM

CONCIERGE SPECTRAL IMAGING SERVICE

Spectral measurement and analysis of the μm-dimensioned pixel specimens that comprise a work of art

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CSIS is an imaging and analysis service for use by museums and other repositories of high value art work. It uses a device called a *Spectral Scanner* to both capture spectra reflected off art objects and analyze the materials used to make the objects. The system uses specialized area sensors to spectrally image artwork in the X-Ray, Ultra Violet, Visible and Infrared energy bands and custom scientific instruments to perform non-destructive materials analysis of the objects. For security and logistical reasons the scanner is setup at a client's site, thus minimizing the amount of time high value artwork is either not on display or otherwise normally secured.

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CSIS HARDWARE SPECIFICATIONS

Spectral range	X-Ray through Infrared
Spectral resolution.....	.1KeV X-Ray, 1nm/5nm – UV, Visible, IR
Photodynamic range.....	3.84 [log10(S/N)]
Photodynamic resolution..	12 bits
Vis Dmax.....	4.3 (from measurements of Wrattan 96 3.0 ND filter)
Light sources.....	X-Ray, Deuterium, Xenon, Infrared
Illuminating/viewing system (Vis)	Transmissive: 0/0 (0º illumination/0º viewing angle) Reflective: 45/0 (45º illumination/0º viewing angle)
Repeatability/Vis…… *(white point measure)*	Spectral reflectance or transmittance: within .1% Colorimetric values: within ∆E*ab 0.1
Spatial resolution.....	Pixel measurement area: 15 µm, 35µm, 70µm
Mechanical repeatability ..	±.001" over area measured
Pixel resolution.....	360, 720,1,814 ppi
Microscopic enlargement.	3X – 7,000X
Effective measuring area.	4'x8'
International standards	CIE: Publication CIE 015:2004 ISO: 11664, Parts 1 – 5, 10526:2007 ASTM: E 308 - 08, E 1347-06, E 1164 ANSI: CGATS.5-2009 ICC: ISO 15076-1:2010, ICC v4
Trade standards……..	ColorSync 2.5 and above, ICM 2.0 and above, TIFF MS
OS Compatibility……..	Windows, MAC OS, Unix, Linux
Measuring modes.....	Area measurement mode/imaging, Single Measurement Mode/material analysis
Measuring rate.....	3.28 minutes/sq ft at 360 ppi
Data presentation.....	Graphical, animated or numerical
Vis.....	Colorimetric coordinate systems: L*a*b*, sRGB (optional: XYZ, Yxy, L*U*V*, HVC, Device RGB /CMYK)
Measurement conditions.. *(Vis)*	Illuminants: CIE Standard Illuminants A, C, D_{65} also D_{50}, D_{55}, D_{75}, F_2, F_7, F_{11} Observers: CIE 2º or 10º Standard Observers
Environmental.....	Temperature: 60º - 80º F (15º - 26º C) Relative humidity: 20 - 80%
Electrical draw.....	110V - 60 Hz 20 amps 2,400 watts
Physical.....	Length: 14' Height: 8' Width: 9' Weight: 975 lbs
Integrated host.....	Rack mounted server array
Applications	Spectral measurement and spectral analysis of high value original works of art, artwork identification, reproduction, authentication, conservation, restoration, documentation

Specifications subject to change without notice.

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