

CLYDE HSI SC-XYZ SERIES

Complete, High-performance, Turn-key, Hyperspectral Art Scanning Systems

from UV to SWIR



ClydeHSI SC-XYZ Series Hyperspectral Scanning Systems are **complete, transportable, high precision, all-in-one** hyperspectral scanning systems, designed for scanning objects up to 6m x 6m, with a spectral range from UV to SWIR (300-2500nm). The system can be supplied with a custom flight case, and includes spectral camera(s), SC-XY Series scanning system, illumination system, high performance computer and all data acquisition, display, and analysis software.

All SC-XY Series scanners have auto-focus, auto-exposure, auto-frame rate and scan motion correction, as well as a laser target finding system for accurate region-of-interest selection across full measurement area.

User interchangeable fore-optics with automatic lens magnification correction for all spectral camera and lens configurations.

Dual-camera operation with simultaneous data acquisition at speeds of 40mm/s at 0.1mm spatial resolutions across the spectral range.

Key Features:

Laser Crosshair for Accurate ROI Selection

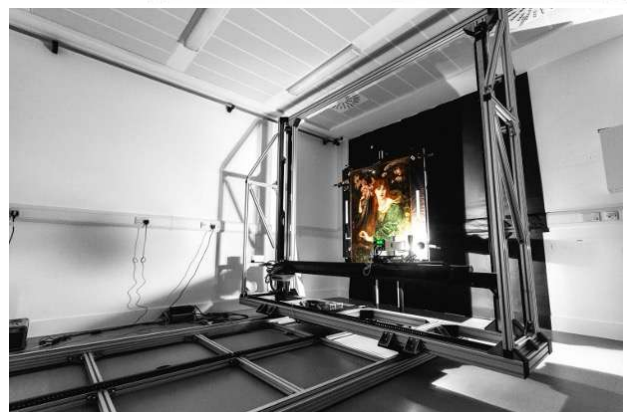
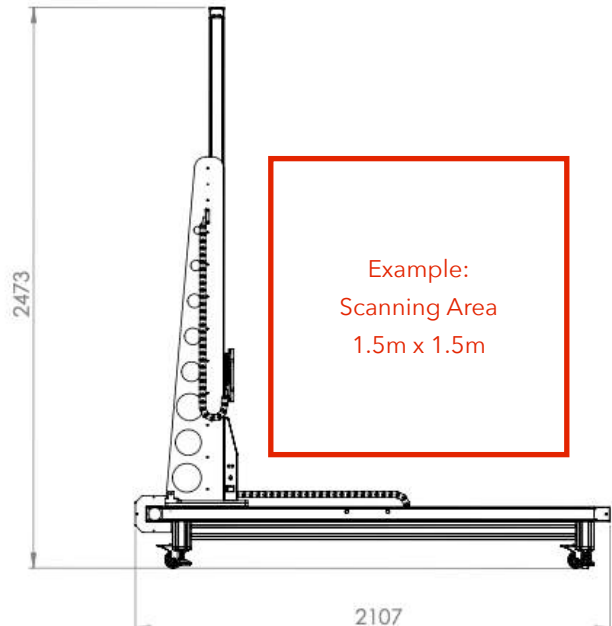
Dynamic Stand-off Distance Adjustment for non-flat Artwork

Auto-exposure Setting

Auto-square-pixel Facility

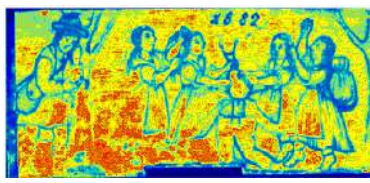
Simultaneous Dual Camera Acquisition

Micro-XRF and Raman Options



Scanning Stage Technical Specifications

Parameter	Value	Units	Comment
Scan Movement	X, Y, Zm		Multi-modal operation with spectral correction and multi-strip mosaic imaging for large area high resolution scans
Scanning Areas Available	1000 x 1000, 1500 x 1500, 2200 x 2200, 2500 x 2500, 4000 x 4000, 6000 x 6000	mm ²	Other scan areas are available - please consult ClydeHSI
Maximum Scan Pixel Area	240,000 x 240,000	pix ²	6m x 6m scanner gives up to 57.6GPix images
Scan Step Resolution	25	µm	
Optical Resolution on Target	25	µm	In macro mode
Zm (Macro Stage)	±75	mm	Option
Zm Control System	Real-time distance measurement		Option
Spectral Camera Payload	≤50	kg	2 or more HSI cameras and/or other measurement devices can be mounted and operated simultaneously



Material Characterisation of a painted beehive panel by advanced spectroscopic and chromatographic techniques in combination with hyperspectral imaging.

Retko, K, et al, Heritage Science 2020 8:120

Example System Configuration

- SC-XY Series Scan Module
- VNIR-HR 400 to 1000nm, hyperspectral camera
- NIR-HR+ 950 to 1700nm hyperspectral camera
- Broad-band (400-2500nm) illumination system
- Fore Objective Lens Kit
- Setup, focus, and calibration (reflectance) tiles
- Laser target finding system for accurate ROI setting
- Workstation computer
- Acquisition, visualisation, and analysis software
- Installation and testing by ClydeHSI engineer
- Application support and data processing help

Optional Accessories

- Photogrammetry (16 Mpix to 400 Mpix camera options)
- NIR Reflectography Camera (100 Mpix and 400 Mpix options available)
- Raman-532 Hyperspectral Camera and laser line illuminators
- SWIR-Series Hyperspectral Camera (960-2500nm)
- Broadband super-continuum laser illumination system with line dispersing optics
- LED and super-continuum laser illuminators
- Motorised painting mounting frames
- Micro-XRF
- Motorised Zm stage positioning system to accommodate for different sample depths
- Microscope for spatial resolution to 1µm
- Database server and software