

# RevealScan™ -M Spectral Camera System

## for Art, Cultural Heritage and Art Restoration

Middleton Spectral Vision is introducing the Reveal Scan™-M, a state-of-the-art visible and infrared imaging system, crafted specifically for museum conservators, curators, and art scientists with patent pending technology. This innovative system is tailored to meet the specialized needs of the art and cultural heritage sectors, offering an accessible and affordable solution to automatically capture both visible and infrared wavelength ranges. The comprehensive system features a camera equipped with a wide wavelength range and automated wavelength selection, a built-in high performance lens, and dedicated light sources optimized for camera performance. This system is uniquely capable of revealing underpaintings, underdrawings, and intricate details that are often hidden beneath the surface of historical works. With its advanced imaging capabilities, the Reveal Scan™-M gathers information about fine compositional differences by sampling select wavelength bands, including multiple visible and infrared bands that are all perfectly aligned down to the pixel. The accompanying user-friendly analysis software enhances the underpainting further by enabling users to mathematically combine results from different imaging modes and wavelengths.



### Spectral Cameras simultaneously detect visible and infrared light

Valuable wavelength information for art is contained in both the visible and near-infrared wavelength range. Visible light from 400-700 nm is the range that humans can see, and only detecting visible light corresponds to what people see when they look at a painting. The VNIR and the near infrared (NIR) region from 700-1700 nm is very useful in detecting underpaintings and information from paint layers below the surface.

The Reveal Scan™ -M is capable of sensing overlaying visible and NIR images, from 400-1700 nm, eliminating the need for complex image registration steps to align images from separate cameras. Furthermore, the Reveal Scan™-M detects images that select discrete narrow regions of interest in the visible range and in the NIR range, inviting the possibility of material discrimination as well as producing a color image of the painting with the same number of overlapping pixels.



### Dual light source with independent switches and intensity control

Properly illuminating a painting is just as important as the camera detecting the light. Too much intensity can potentially damage the painting and certain sources are limited in the wavelength range they output. The purpose-built light sources included in the Reveal Scan™-M system contains both LED lights that emit in the visible range and halogen lights that emit both visible and infrared light. Each source is connected to its own set of controls, so the intensity of the light of the LED and the halogen lights can be independently adjusted as needed for best measurement results.

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## Powerful software tools for seamless data collection and analysis

Unlock the potential of art analysis with RevealScan™ Software, the ultimate companion in the world of art preservation and study. Designed with a clear, straightforward user interface, this software places the most essential tools front and center, stripping away the complex utilities that often accompany other camera software. Initiate a live feed to focus with precision, and capture detailed images of your artwork in a few effortless clicks. RevealScan Acquisition doesn't just store single images; it automatically captures and saves a series of images focusing on specific wavelength regions.

Transform the process of analyzing artwork with RevealScan™ Analysis, the cutting-edge software optimized specifically for the art world's unique needs. Where traditional infrared analysis falls short, RevealScan™ Analysis excels. It not only detects hidden underpaintings, but also mathematically separates them from distracting overpaintings. Utilize our algorithms to peel back layers of history with precision, revealing stunning, clear images of what lies beneath.

RevealScan™ Analysis also features principal component analysis, which has been used to find underpaintings in the past. The resulting components from principal component analysis can also be used to enhance the underpainting by removing particularly dark or light features of the outer paint layers. Both the raw images and all processed images can be effortlessly saved in popular file formats such as TIF, PNG, or JPG. This compatibility ensures seamless integration with leading image editing software like Adobe Photoshop® and Illustrator®, allowing for further refinement and analysis. Whatever the application, employ the RevealScan™ -M Spectral Camera System that integrates cutting-edge technology with unmatched user simplicity, shifting your focus to exploring the art, and not be burdened with complex tools and complex data analysis processes.

## Product Numbers

- MRC-923-020:** RevealScan™-M spectral imaging system, including spectral camera, lens, illumination, and software
- MRC-923-021:** Spectral Camera
- MRC-923-031:** Data Collection Software
- MRC-923-032:** Analysis Software
- MRC-920-031-II:** Dual halogen illumination system
- MRC-920-036:** Visible range booster illumination system

