A Practical and Versatile Microscope Imaging System!

Victoria Binder, Fine Arts Museums of San Francisco

Setting up a microscope imaging system can be overwhelming. Purpose-made microscope systems are often costly and involve complicated software, and equipment can quickly become outdated. At the Legion of Honor paper conservation laboratory we developed a microscope imaging system that is user-friendly so that any staff member (even the technology phoboic) can operate the camera and software with ease. The system is versatile and each main component can be used for other purposes.

iOs or Android Devices
Mac or Windows Computer
(Apple 16 GB iPad Air, WiFi Only, $480)

Canon or Nikon DSLR
(Nikon D610 24 MP; Supplier: B&H, $1,900)
A mirrorless camera is ideal because it creates less vibration during capture. Cameras with mirrors that stay open during live view and capture, like the Nikon D610, work fine too.

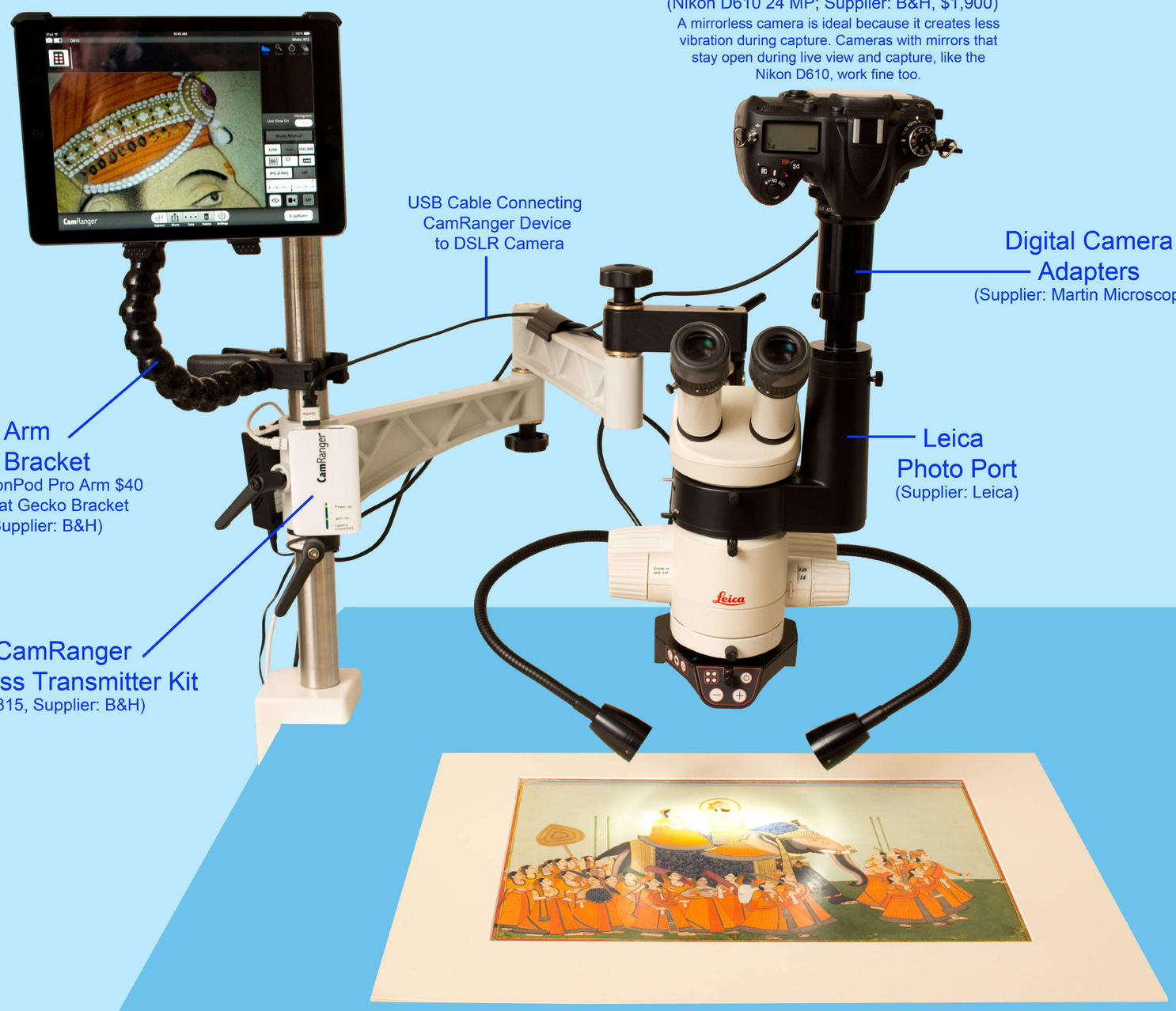
USB Cable Connecting CamRanger Device to DSLR Camera

Digital Camera Adapters
(Supplier: Martin Microscopes)

Flexible Arm and Tablet Bracket
(Dinkum Stystems ActionPod Pro Arm $40 and Delkin Devices Fat Gecko Bracket for iPad Air $20, Supplier: B&H)

Leica Photo Port
(Supplier: Leica)

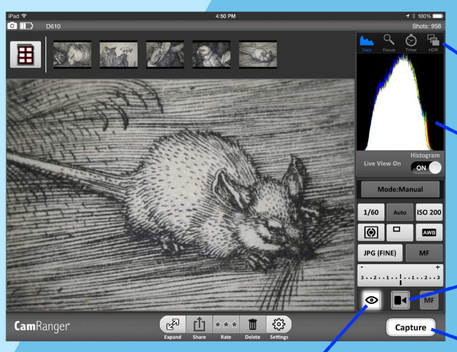
CamRanger Wireless Transmitter Kit
($315, Supplier: B&H)



CamRanger Wireless Camera Control

The CamRanger device creates its own WIFI connection between your Nikon or Canon DSLR camera and your viewing device (computer, tablet, or phone). The free CamRanger app allows you to easily operate the camera from your viewing device. For more information go to camranger.com.

CamRanger Interface and Features



HDR Bracketing

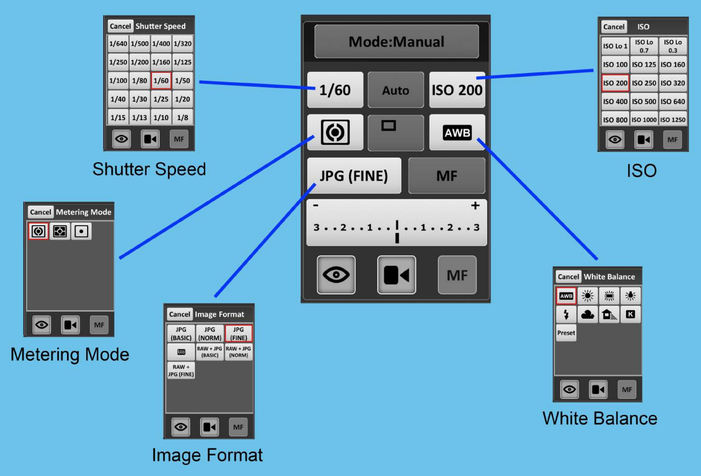
Histogram

Movie Recording

Wireless Image Capture
Images are saved to the camera card and can be wirelessly downloaded to the viewing device. JPGs and RAW files can be downloaded wirelessly to Computers. Only JPGS can be downloaded wirelessly to tablets and phones.

Wireless Live View
Double tap screen to zoom in.

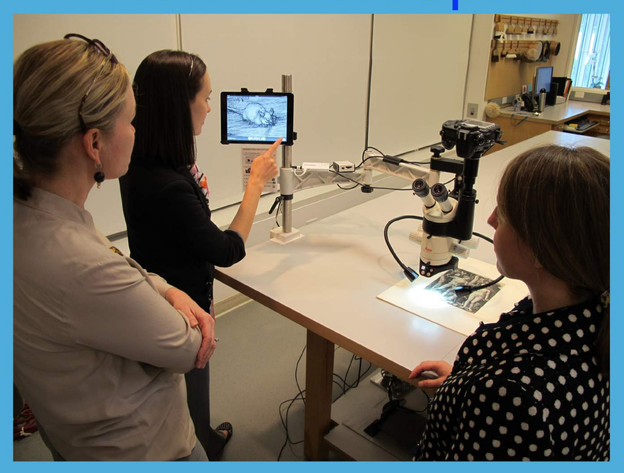
CamRanger Camera Settings



CamRanger and Sharing

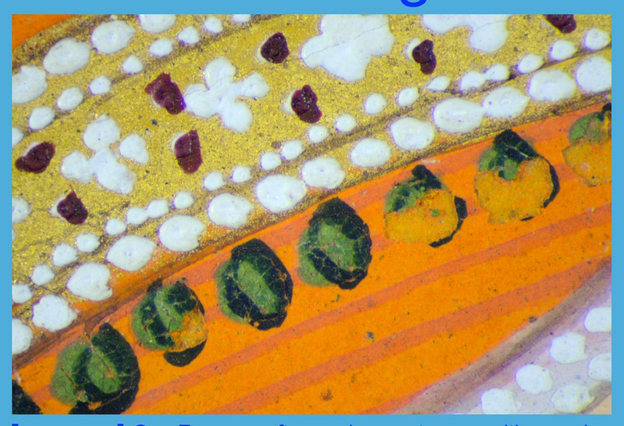
- After images are uploaded to the viewing device they can be emailed or posted on social media.
- Images and live view can be shared on multiple devices at the same time with Camranger Share software.

View in Groups!



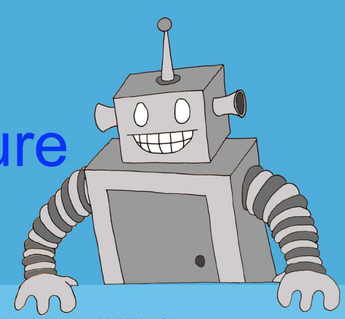
Pass it Around!

Great Images!



1 mm
CamRanger software does not come with a scale bar. The scale bar has to be manually placed in.

The Future is Here!!



Cameras are being made with built-in WIFI. Check out some of these cameras and see if the equipment and software work for you. Remember you can rent equipment and give it a test drive.

Sony a7II: 24mpx, mirrorless, full frame, $1700

Sony a7R: 36mpx, full frame, mirrorless, $2100

Sony a7S: 12mpx, full frame, mirrorless, $2500

Canon 6D: 20mpx, full frame, $1800

Canon 70D: 20mpx, APS-C sensor, $1200

Nikon D750: 24mpx, full frame, $2300

Nikon D7200: 24mpx, APS-C sensor, $1200

Olympus OM-D E-M5 Mark II: 16mpx (40mpx multishot), 4/3 sensor, mirrorless, $1100

The microscope system at the Fine Arts Museums of San Francisco paper conservation laboratory was a collaborative effort of head photographer, **Randy Dodson**, and associate paper conservator, **Victoria Binder**.

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