

Digitizing Your Archive

Photographing Artwork

Use for: Large, textured, or three-dimensional artworks

You Will Need to Have:

1. Either a DSLR or a compact digital camera. While a DSLR is preferred because it can shoot in RAW (large, uncompressed files that can be converted easily to TIFF without losing data), you can use a compact digital camera that shoots large JPEGs when set to the “superfine” or “best” setting, as many compacts now create images larger than 9” x 14” at 72 dpi which can be converted easily to at least 5” x 7” at 300 dpi, a size that is adequate for printing and publishing. Recommendations: DSLR – Nikon or Canon, which have the most interchangeable lens options and are used most by professional photographers for their quality and reliability; compact digital camera – Panasonic Lumix or Canon, both of which have the best built-in lenses. Since any documentation is better than none, you can make do with a digital compact camera that you already have, even if it shoots mostly at 72 dpi and saves files as JPEGs—digital compacts have gotten good enough that you can still probably get at least a 5” x 7” printable image. However, this does not include mobile phone cameras, which have not quite progressed to the same quality as a digital compact camera.
2. A tripod. You will use the tripod and your camera’s built-in shooting timer to make sure you get as steady, clear and focused an image as possible.
3. A neutral backdrop from which to hang the artwork, in either white, gray or black. Recommendations: a clean white wall, thick opaque paper or foamboard, and, for particularly reflective or shiny work (say, a ceramic with a glaze), black velvet cloth, which absorbs extra light and will reduce reflections.
4. For three-dimensional work, a stand or table on which to place the object. Optional, a cheap and small lazy-susan turntable, which can be used to easily turn the object for alternate photographing positions without necessitating changing other parts of the lighting setup.
5. Either daylight that is diffuse and even (at least an hour before or after noon, completely overcast is good, but not with passing cloudiness that can create uneven shadows) or a lighting kit composed of 2 lights, stands, and umbrellas or diffuser softboxes. Your goal is to create even, balanced light of a soft quality, not too harsh to create strong shadows and not too brightly focused so as to create hot spots on the work. Optional for small works or objects, a tabletop light tent kit, which would provide both neutral backdrop and diffusion screening in one easy to set-up box and could be used in a small space. Optional for three-dimensional work, a third light kit, which can add more possibilities for creating shadows on the work to show dimensionality or texture. I have no particular recommendations to make here, as a good light kit with 2 lights, stands and diffusers can be found from a range of providers for about \$150. Most light kits nowadays use softboxes, which can be attached and removed easily using Velcro.
6. A tape measure, which you will use to make sure your object and camera are placed parallel to each other in height.

Step-by-Step Instructions:

1. Position your artwork. For two-dimensional artwork, hang on a flat surface (your neutral background) and make sure the work is level. For three-dimensional artwork, place on a flat surface not too close to the background (about 12 inches in front will give it enough space). Or place the small object fully inside but nearer the front edge of your tabletop light tent.
2. Measure the distance from the floor to the middle of the artwork and note the height.
3. Position the camera on the tripod, centered on the artwork and far enough away that the artwork is fully in view through the lens and with a little bit of extra backdrop showing for good measure (you can crop this down in photo-editing software later if you wish). With some digital compact cameras, you might want to move the camera further back from the work and then zoom in, as their built-in wide-angle lens can make for barrel distortions and warped edges. Make sure the camera is level and that the center of the lens is at

the same height as the middle of the artwork. You want to make sure that the lens is parallel to the plane of the artwork (i.e. not at an angle that would distort the image).

4. Position your lights. Assemble the light heads to the stands and add the umbrellas or softboxes. Lights should be placed at 45-degree angles from the left and right sides of the artwork, halfway between the object and the camera tripod (for three-dimensional objects, play with the placement and angles to get enough shadow to show dimension or texture or set up a third light to move between the first two for that purpose). If you have umbrellas, face the lights away from the artwork; if you have softboxes, face the lights toward the artwork. If you are using a light tent, place the accompanying lights (often on small stands) at an angle to the diffuser walls of the tent, trying not to let any light spill through the open front edge of the tent.
5. Choose your camera settings manually (do not use auto mode).
 - a. Set the camera to shoot in RAW (if using a DSLR) or “superfine” or “best” (if using a digital compact). This will give you the most digital information.
 - b. Set the ISO to 100. This will reduce “noise” in the digital image.
 - c. Set the camera to “aperture priority” to keep the aperture locked.
 - d. Set the aperture to f/8 or higher. This will put more of the image in focus.
 - e. Set the white balance if shooting in JPEG or TIFF (examples, Daylight, Fluorescent, Tungsten). You do not need to set a white balance if you are shooting in RAW.
 - f. Set the camera to timer mode, the shortest option you have (usually 10 or 30 seconds). This will minimize camera shake.
6. Shoot the work.
 - a. Clean the camera lens with a microfiber cloth (won't scratch the surface).
 - b. Turn on the light kit.
 - c. Check the framing of your image to make sure you have the entire work in frame with some extra background (again, you can crop this down later).
 - d. Focus, either manually or with autofocus.
 - e. Press the shutter release and back away from the camera to wait for the timer to take the shot.
 - f. Take 2 more shots setting the aperture one setting higher and one setting lower.
 - g. If shooting a three-dimensional object, turn it to show another side or face and repeat the shooting process as necessary to have multiple views of the work.
 - h. Keep the camera and light setup in place, with everything turned off to save power and lamps, in case you need to reshoot the work after reviewing it on your computer.
7. Review and edit in photo-editing software such as Photoshop (licensed) or GIMP (freeware). Open your image in the software and look for even lighting, hot spots or vignetting (lights too close to work), exposure (too bright or too dim), sharpness, distortion (example, a square painting looks like a trapezoid, or has a barrel roundness to it, which show incorrect camera placement). At this point, you can set the white balance in RAW images, crop images down to a preferred size, and save as TIFF files with no compression. JPEGs should still be saved as JPEGs so as not to change the existing compression, but you can resize a 72 dpi image, JPEG or TIFF, to 300 dpi (this will change the image's physical dimensions from perhaps 9" x 14" to 5" x 7") and save at the higher resolution.

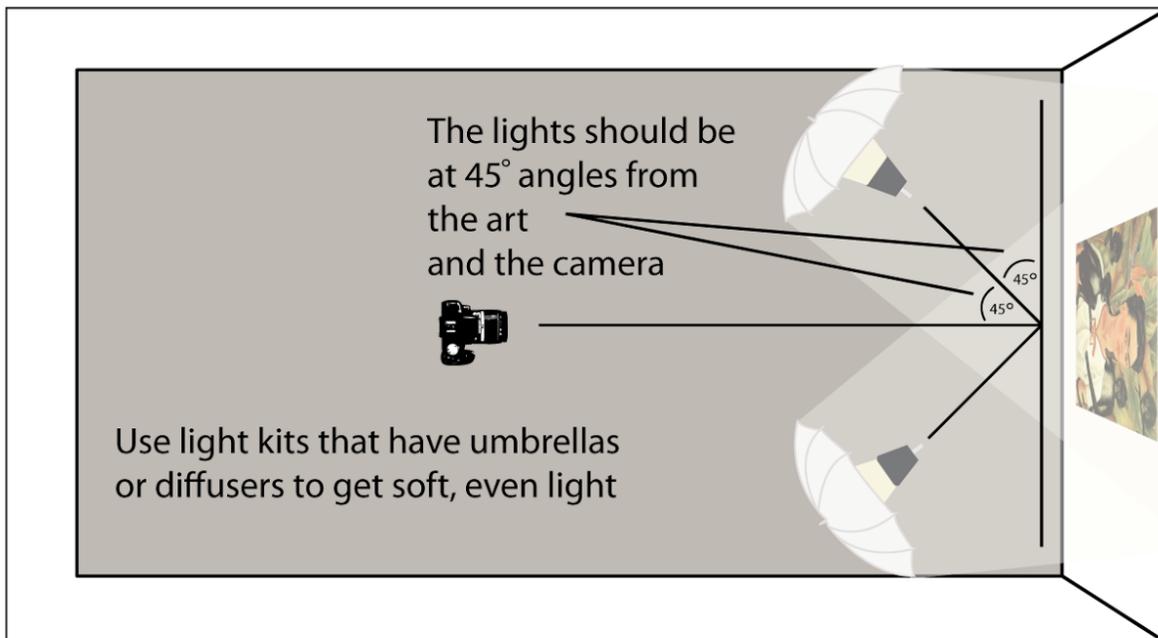
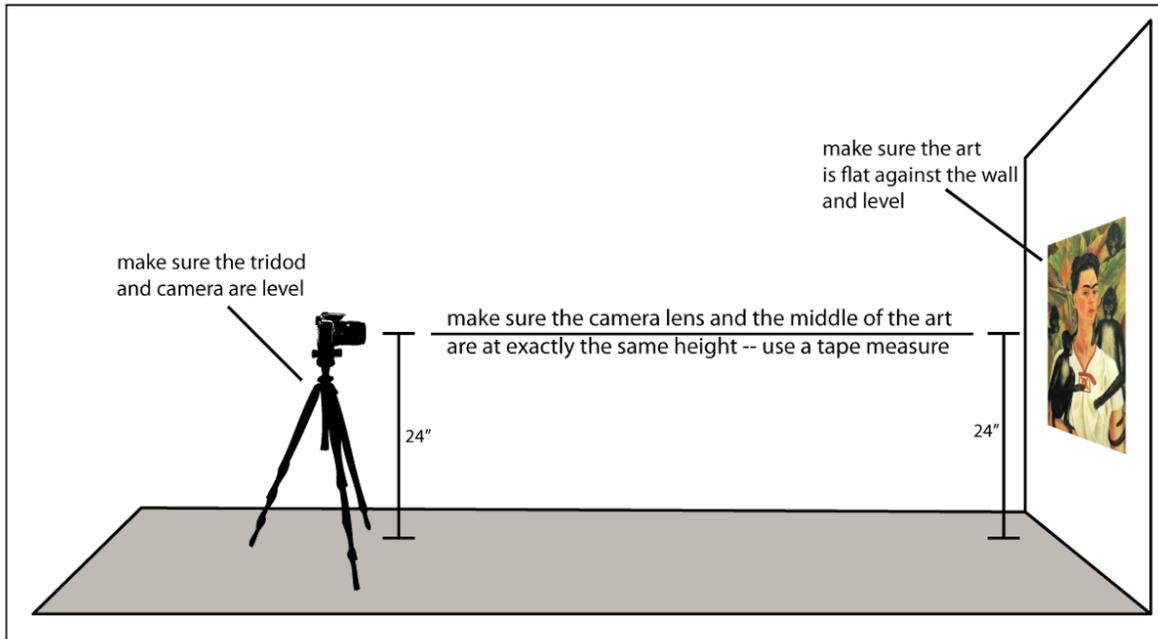
Store and Access Your Images:

1. The image you have now made is your master file. If you can, save both the RAW and any derivative TIFF or JPEG files.
2. Give your images descriptive file names that will help you identify them, such as “20010226-sculpture-front.tiff.” Dates in YYYYMMDD format can help you remember when you made the image, but mostly use what works for you and be consistent.
3. Create a folder-within-folder structure on your computer to organize your files. For example: C: drive\Photo Archive\Sculpture\2001\20020226-sculpture-front.tiff.
4. Create at least two copies of your image collection. Save one on your computer and other copies on CDs, portable hard drives, thumb drives or online storage (such as Dropbox). Store the copies in different locations, as far apart as practical. If disaster strikes one location, the other copies should be safe. Transfer your scans to a new storage medium every five to seven years to prevent file decay and loss.

Set up your computer to automatically create backups of your collection, using built-in utilities like Time Machine (Macs) or Windows Backup (PC).

This handout draws heavily from and expands on the UC-Boulder Visual Resources Center's [Tech Tips: Photographing 2D Work](#), which has been my go-to resource for many years. For more information on shooting large installations or outdoors, see their [Tech Tips: Photographing 3D Work](#) also. For more information on setting white balance manually see this [article](#) at Digital Camera World.

Proper setup of camera and lights for shooting 2-D work



Common distortions when shooting 2-D work

