



5. COMMUNITY STANDARD FOR THE DIGITISATION OF DAGUERREOTYPE OBJECTS

This methodology was created in the framework the project as part of Deliverable: DAG_WP3_D32_1-4_StandardsDaguerreotype_V2.1

In order to deliver proper digital images from the daguerreotype objects, the consortium partners will develop a logical workflow for the realisation of the digital images. This workflow does include a description of the digitization actions (reproducing) and parameters, the documentation of the digitization and the conservation of the generated metadata. The results will be made available as a community standard for the digitization of daguerreotype objects.

Reflections

Compared to other photographic materials, daguerreotypes have characteristics that will disturb the making of a straight camera reproduction or a scan (flatbed). Some of these typical components of a daguerreotype are:

- The polished silver layer on the plate is acting like a mirror and reflects everything;
- The direction of the polishing lines can affect the visual appearances;
- The covering glass gives reflections and can contain deposits on the inside;
- Applied gold coloured paint on the mat or a polished metal mat will give more reflections.

What level of skill and technology is required?

Experienced photographers developed ways for making good reproductions of glossy surfaces by controlling the direction and reflection of the light. Daguerreobase is not limited to professional or institutional users, contrary we believe that private collections and collectors are a great added value for Daguerreobase. Larger institutes often have access to high quality digitisation technology and equipment or simply make use of external digitisation services. Private collectors and smaller institutes are looking for less expensive and easily accessible methods. Some of the current consortium partners will add content from other content providers and have to work on location, for example to the private collector's home. We expect that these collections are not well documented and have no (good) digital images available. The consortium is aware of the restriction of digitisation actions in this type of project, but we have to support the private collectors and smaller institutes with information for basic, easily transportable equipment and a simple procedure or method to realise good quality digital images for use in the Daguerreobase.

The consortium will integrate two levels of requirements, one basic method for the broad group of users and one more extended method for the experienced users that have access to more professional equipment and techniques. We found that after the submission of the Daguerreobase proposal in June 2011, the American Institute of Conservation of Art (AIC) developed a detailed instruction for the digitisation of daguerreotypes. This instruction, made by Juan-Juan Chen and Paul Messier, was part of the „Daguerreotype Documentation Workshop that was organised in the „State Hermitage Museum in St Petersburg from October 18 – 25, 2011. The instruction is available as a downloadable document in the English language¹¹ and can serve the more professional and institutional users, but is too detailed for the broad community. We recommend the professional user to download this instruction. The next document will focus on the second group of users, the broad daguerreotype community.

<http://cool.conservation-us.org/photo-ru/daguerreotype-documentation-workshop-the-state-hermitage-museum-october-18-25-2011/>

5.1 MAKING OF THE PICTURES

5.1.1 Equipment (hardware), minimal requirements

Necessary:

- Digital Camera – 10 Megapixel or higher; best choice is to get a macro lens, for example 100 mm, or a 50 mm lens with macro range. The object must always be full frame (image field or view finder as complete as possible).
- Black background (Velvet or cardboard);
- A grey coloured board for the base;
- A black photo cube, tent or cardboard box13 (60x60x60cm);
- Ruler (inches and cm);
- Tripod for the camera.

Preferable:

- A repro copy stand with two light sources or two separate light sources (flashlight, lamp with daylight quality);
- Cable release or remote control;
- Grey Chart;
- A colour chart: X-Rite ColorChecker® (http://xritephoto.com/ph_product_overview.aspx?catid=28)
- AIC Photo Documentation Targets (AIC PhD Targets)
(<http://www.conservation-us.org/index.cfm?fuseaction=Page.ViewPage&PageID=1520>)
- Qpcard (<http://www.qpcard.com>)

5.1.2 Positioning of the camera, light source(s) and daguerreotype

The daguerreotype plate is essentially a mirror, so it should not contain any reflections of light or other objects that would distract from the image on the plate. This is best accomplished by using two lamps (use two identical light sources, preferable daylight equivalent light sources) set up the same distance from the object, with an incidental lighting angle of approximately between 35° and 45°. To avoid reflections of the camera from the daguerreotype use a piece of black board with a circle cut out from the centre to accommodate the tip of the camera lens. In some of the next settings, making a cut in the box or applied black textile, will have the same effect. Next, some appropriate settings are showed.

Setting 1. Copy stand

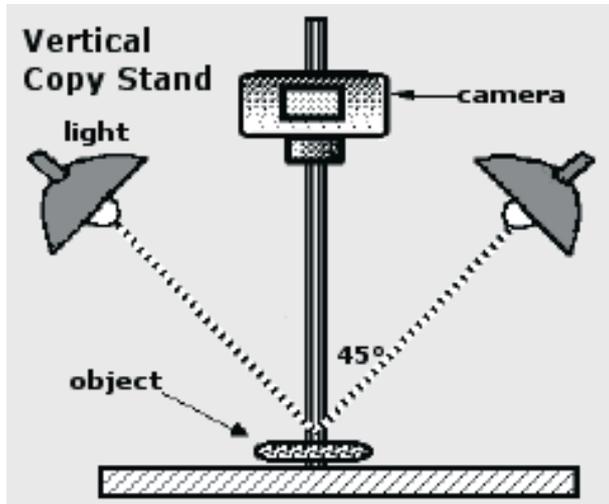
The first setting shows a classic reproduction standard with two adjustable lamps that is used for camera reproductions.



copy stand with adjustable camera and lamp positions

Camera and lamps

When using a copy stand, the camera will be mounted on the stand. Adjusting the lamps in the right position will avoid reflections from the covering glass and the daguerreotype surface to the camera. But the camera or lens will be mirrored into the daguerreotype. To avoid this mirroring, a black paper has to be mounted around the camera lens. Another option is to cover the camera with a black textile bag, with an opening for the lens.



Position of lamps and camera (www.gaksin.com)

Setting 2. Black photo cube / photo tent

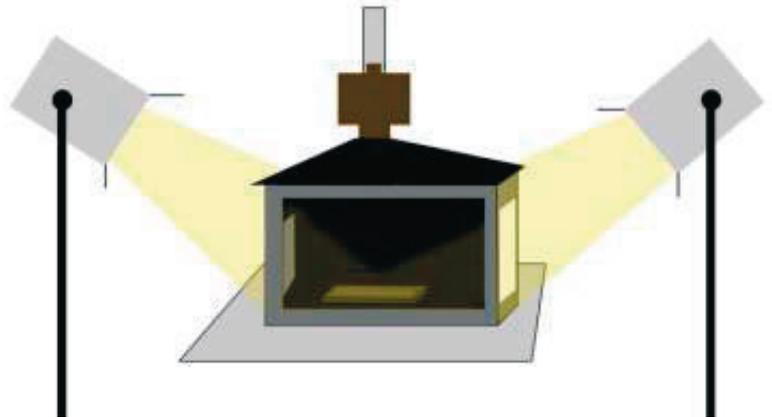


photo cube and photo tent

Camera and light source(s)

The images above show some brands of pliable lightweight tents or cubes. You can make a tent by yourself using black cloth or better black velvet. Leave an opening for your camera (front) and light sources (side left and right). Use a black or dark grey coloured background instead of a white one. The camera should be mounted on a tripod for the stability and exact positioning. The use of a remote control or cable release will prevent from unwanted moving of the object and camera during the capturing process. You probably need a support for the daguerreotype on the back of the cube or tent.

Setting 3. Morten's „black box



photograph and sketch of Morten's black cardboard box, Image supplied by Morten Heiselberg (UiB, Norway)

Camera and light source(s)

Also for this setting, the camera should be mounted on a copy stand or on a tripod for the stability and exact positioning. The use of a remote control or cable release will prevent from unwanted moving of the object and camera during the capturing process.

Daguerreotype

The use of a grey board for the background will avoid reflections and result in a less disturbing background for the final image.

Daguerreotype plates almost always have polishing lines that run parallel to one of the plate edges, so before you take the picture, try rotating the daguerreotype by 90° to determine the polishing direction. If the lamps are aligned with the polishing lines, the image will appear crisp and clean, but if the polishing lines are perpendicular to the lamps, the image will be matt and hazy.

Position your camera in parallel with the surface of the daguerreotype. Try to prevent any distortion of the object by changing the perspective, ensure that at least one border (left) of the daguerreotype aligns parallel with the viewer borders.



The effect of direction of the polishing lines. Image left, light perpendicular with polishing lines. Image right, light aligned with polishing lines (ME_63, portrait of Frank Jacob Diederik Anne Kuil van Trojen, Museum Enschedé)

Reference materials

Include a colour target and a ruler in the image. The ruler should include inches and centimetres and will be positioned next to the daguerreotype object. Always keep a small gap between the object and the ruler and the colour target to avoid creating a shadow. The colour target allows you to make postprocessing (controlling RGB values of the digital image) in order to create a more constant quality of images. We will provide a PDF document¹⁹ containing a ruler for you to print on paper.

When capturing larger numbers of objects and objects from different owners or collections, it is advisable to include identification labels that contain the owners or collection name and a registration number (if present) or a reference number. This will allow you to identify the object during the further adjusting of the digital files.

5.1.3 Capturing the image

Camera settings

- Set your camera to the highest quality possible (preferable RAW or Fine quality Jpeg);
- Turn off the camera's internal flashlight;
- Turn off the digital zoom because this will decrease the quality of the image;
- Select a low ISO setting

Centre the object in the viewfinder or display and position the distance from the camera in order to fill the frame. Focus the camera until the daguerreotype image becomes sharp. The glass reflections in the daguerreotype and glass deposits can disturb the image sharpness.

What images are required?

All daguerreotypes should be photographed from the front and back side (recto and verso). Consequentially, there will always be at least two images available for each record. If needed, more images may be added to show the sides or particular details of the object.

Some types of housing such as hinged cases, do not open fully. The best option is to photograph the case recto, case verso, inside lid (left) and inside tray (right), making a total of four images.



Captured image from the recto, including ruler and colour checker (HM02)



Captured image from the verso, including ruler and colour checker (HM02, portrait of Eduard Fxx)

5.1.4 Saving and Adjusting Digital Images

Next table is showing a comparison of current digital file formats and their preferred use for each stage of the digital imaging workflow.²⁰ This table is indicative and shows the best options, even for use in defining the minimal requirements. Each content provider has to make the step of uploading the captured digital image from the digital camera to the computer. To follow the next recommendations, no special or professional equipment is required, just the attitude to read the recommendations and choose a good option.

<i>Format / Use</i>	<i>Capture</i>	<i>Working</i>	<i>Delivery</i>	<i>Archiving</i>
JPEG	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>Maybe</i>
TIFF	<i>Maybe</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
PSD / PSB	<i>N/A</i>	<i>Yes</i>	<i>No</i>	<i>No</i>
Proprietary Raw	<i>Yes</i>	<i>Yes</i>	<i>Not Best Practice</i>	<i>Not Best Practice</i>
DNG	<i>Yes</i>	<i>Yes</i>	<i>Maybe</i>	<i>Yes</i>

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Table downloaded from <http://www.dpbestflow.org/file-format/file-format-overview>

Steps to make:

- Download image from camera to computer;
- Rename and store „raw“ or „jpeg“ image files;
- Always keep the original digital file (preferable the RAW file, or the high res jpeg/tiff) and make a duplicate record to adjust to the required quality for the upload;
- Apply colour management and crop (size) the copy image file;
- Name and store copy file in new „format“ (upload quality for Daguerreobase).

After capturing, the digital images must be downloaded on the computer and renamed. We strongly advise to use DNG²¹ to store raw file data.

Why converting to DNG:

- DNG is a standard openly documented format;
- DNG is suitable for archiving image data since it is an open source format;
- DNG contains information about the camera that made the file and how the file needs to be processed (interpreted).

This means that if you use a newly released camera with newly released proprietary RAW format files that are converted to DNG, these DNG's can be processed in any older software that supports DNG processing.

File naming

Naming digital image files is a key organizational task in digital image workflow because it is the most basic element of your file system structure. Digital cameras do not currently have very sophisticated naming options and the default names are confusing and lack one of the most important criteria for digital image file naming, and each file name must be unique. If your organization has a preferred system, you can ignore the next proposal for file naming.

Letters in the name should only be the letters of the Latin alphabet, with a preference for capital letters (A-Z);

Avoid the use of any spaces in the file name;

Only use hyphens and underscore;

Avoid any other punctuation marks, accented letters, non-Latin letters, and other non-standard characters such as forward and back slashes, colon, semi-colon, asterisks, angle brackets or brackets;

File names should end in a three-letter file extension preceded by a period, such as .JPG, .TIFF, .DNG, etc.

It is advisable to use the name or initials of the organisation or collector at the beginning of the string. If the objects that were captured have identification numbers, consider to incorporate these number or the main characteristics in the file name, but keep in mind that you are limited to 31 characters. Short names will work best and don't forget – if you do forget, I hope your computer will remind you to before overwriting an existing file – each digital image file should have a unique file name.

We do propose this template for naming of the files: XXX_YYYY-ZZZZ.JPG

XXX = owner or collections abbreviation, for example Nederlands Fotomuseum will become NFM.

YYYY = sub-collection, identification number, material or technique, year of acquisition, date of capturing, ...

ZZZ = a sequence number, normally you will know the number of objects that you will capture, this number can begin at 01, 001, 0001 depending on the expected quantity;

Ending with the file format extension.

Some examples:

NFM_20130401_0021.DNG; FMA_P_1973-235.TIFF, PKL_G-60204.JPG

Colour management

The new Daguereobase will make use of Delt.ae software to check all images before they are accepted to the system.

For more information see <http://picturae.com/uk/deltae> . To use this service, only images with the following RGB values in Adobe Photoshop will be accepted:

- white: no more than 242 in any of the RGB channels

- black: no less than 33 in any of the RGB channels

Color space for image editing

Photoshop gives you several choices to use as a working space. In general, you should be working in one of the wider gamut spaces, such as Adobe RGB (8 and 16-bit) or ProPhotoRGB (16-bit).

Cropping

After correcting or adjusting the colour, the image can be cropped by cutting away the ruler and the colour chart.

You should end with some similar image as showed below.



Cropped images from the recto and verso (HM02, portrait of Eduard Fxx).

Upload quality - File type and number of pixels

Before uploading, the images need to be converted/compressed to jpeg. Use JPEG (compression 10) as a delivery format for the Daguerreobase and adjust the size related to the size of the daguerreotype, between 1024 x 1024 pixels (for smaller objects such as jewellery and small cases) and 1600 x 1600 pixels (for the larger objects). As the images you will capture want to be a square, adjust the longest side of the image to the required number of pixels.

Why no larger files?

The images mainly will be used to view on a computer (pad, phone, tablet, ...) and with the currently available quality of the screens (a normal screen resolution is 72 dpi), the above mentioned number of pixels will create the best affordable image quality. Larger files only will need more storage capacity and will slow down viewing of the images.

5.2 MORE INFORMATION ON DIGITISATION WORKFLOW, METADATA AND STORAGE

At the Daguerreian Society Symposium in Baltimore, Mel Wachowiak and E. Keats (Museum Conservation Institute of the Smithsonian) were presenting Update Methods for Digitization of Daguerreotypes. Next you can find the link to two videos, in the first video the authors are introducing their institute and guide you through a more professional digitisation capturing process of a daguerreotype plate. Of course WE ARE NOT ASKING you to demount a daguerreotype housing to follow this instruction to document a bare daguerreotype plate, but to see this video as a method to build your own DAGHOUSE and to use it for the documentation of a „housed“ daguerreotype.

http://www.youtube.com/watch?feature=player_embedded&v=VzoLOGIMS18

In part two, a continuation of part one, you will see their DAGHOUSE, their setup to reproduce daguerreotypes, build from black PVC pipes and connectors.

http://www.youtube.com/watch?feature=player_embedded&v=KXVyS6Allh0

Extra's

An optional, but very useful method of documenting the daguerreotype surface, tarnish and other damage, is to photograph a daguerreotype in specular light. This method is explained in the above video and below you can see an example of this. The image left is a standard frontal capture, the image on the right is the result of specular lighting (photographs supported by Martin Jürgens, Rijksmuseum Amsterdam).



standard frontal illumination (45° from left and right) and specular illumination (using sheet of glass at 45° between camera and object)
American Society of Media Photographers

American Society of Media Photographers <http://www.dpbestflow.org/node/633>