

Guidelines for Producing High Quality Photographs for U.S. Travel Documents - for Visa Online Applications

NOTE: This version includes digital image requirements for the two new online nonimmigrant visa electronic applications: DS-160 and DS-1648.

Technological advances have changed the way passport and visa photos may be taken and the way that the U.S. Department of State processes the photos. This website is designed to help photographers ensure that:

- Customers are accurately represented and
- Photos are free of common defects that cause delays

These Guidelines for Producing High Quality Photographs for U.S. Travel Documents are divided in the links below. The Guide presents the latest recommendations for passport and visa photographs. Please take the time to become familiar with the information provided. With your help producing good quality photos for U.S. passports and U.S. visas, the Department of State can process the applications efficiently.

Setup and Production Guidelines

Successful U.S. passport and visa photography begins with careful setup and appropriate production methods.

Please review the guidance and tips below for obtaining a high-quality photograph. Correctly composing the photograph is critical to producing a suitable image file. Digital and film cameras require many of the same careful considerations.

A **Digital Camera** produces a digital photograph (digital image file) directly. The digital photograph can then be transferred to a computer using a direct connection (such as USB) or a memory card reader. You must then prepare the digital photograph to comply with the [digital photograph requirements](#). If a digital camera is not available, you may wish to consider other sources for a digital photograph.

A **Film Camera** will require additional steps to produce the digital photograph. The film must be developed and printed on photo-quality paper and then digitally scanned. Depending on the type and quality of film development, printing paper, and scanning equipment, these additional steps may degrade image quality and make preparing an acceptable digital photograph difficult or impossible.

Proper Lighting Arrangement

- [Position light sources](#) on both sides of subject to avoid shadows on face.
- Use a light source to [illuminate background](#) behind subject to avoid shadows in background.

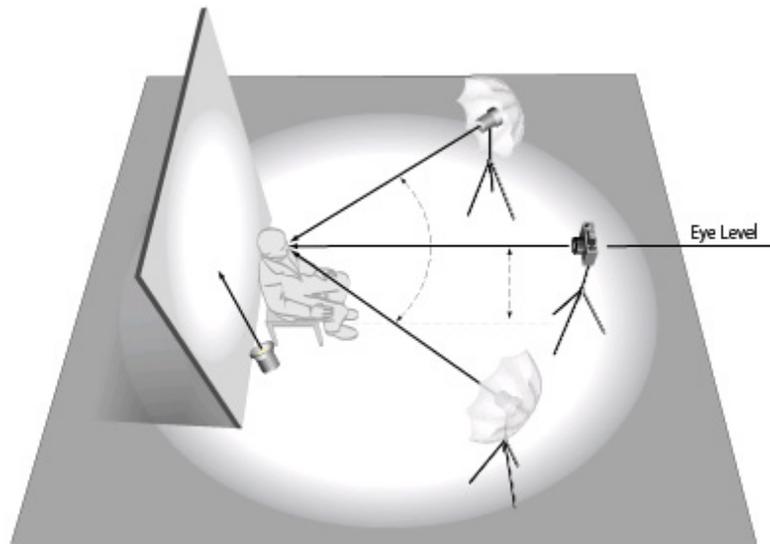
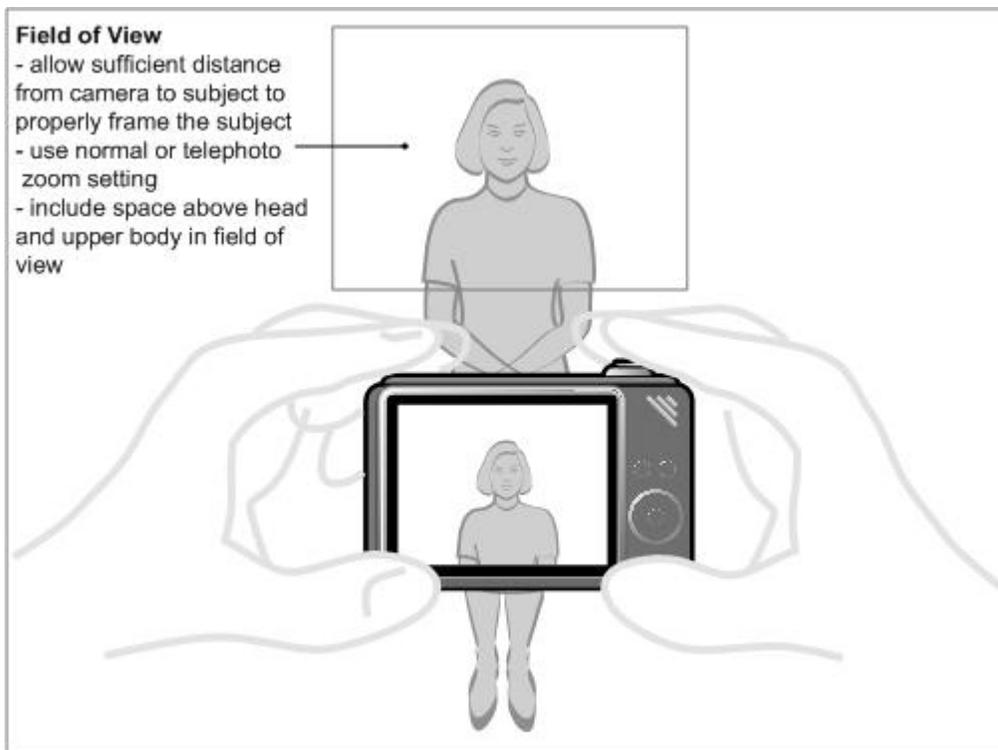
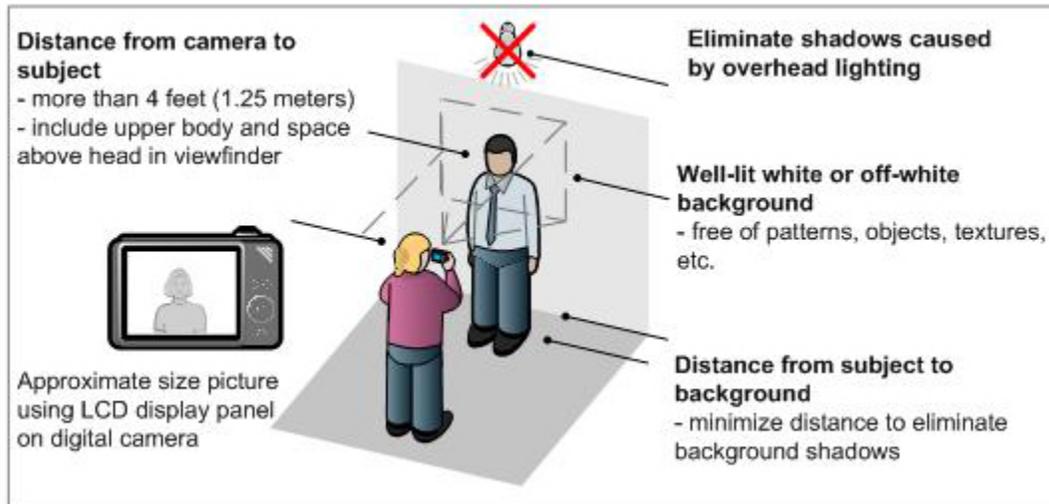


Figure 1. Camera & Lighting Setup

Camera/ [Subject Position](#)

- Place camera approximately 4 ft (120 cm) from the subject.
- Have camera at subject's eye level.
- [Position subject](#) facing the camera.



- Select a plain white or off-white background
- Ensure that the eyes can be seen and there is no significant glare from the applicant's eyeglasses
- Position the applicant close to the background (wall), especially when using a flash
- Position camera height at the applicant's eye level
- Set camera zoom to include good clearance both below applicant's shoulders and above the head
- (Film Camera) Professionally develop print photograph on untextured, photo-quality paper no less than 2 inches wide and 2 inches high
- Ensure even lighting on the face and background
- (Digital Camera) Ensure jpg file compression is set to normal or fine
- Position camera more than 4 feet (1.25 m) from the applicant
- Center photograph on the applicant's nose
- Ensure that applicant maintains a frontal view with eyes open and a natural expression and that no part of the face is obscured

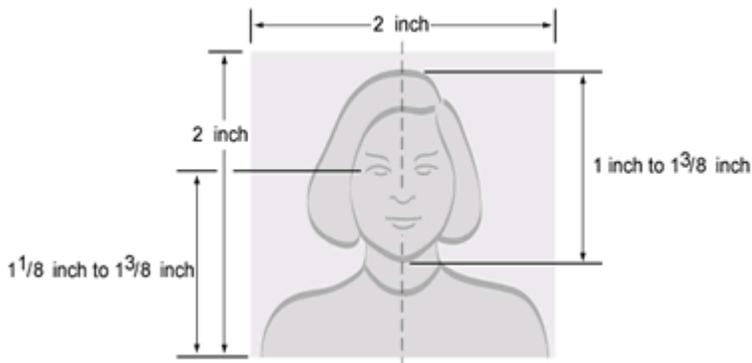
Photograph Print Properties

- Produce 2 inch x 2 inch (51 mm x 51 mm) color photo.
- Print photo on thin photo paper or stock.
- Ensure the print is clear and has a [continuous-tone](#) quality.
- Do not retouch or otherwise enhance or soften photo.

Composition Checklist

- **7 Steps to Successful Photo**

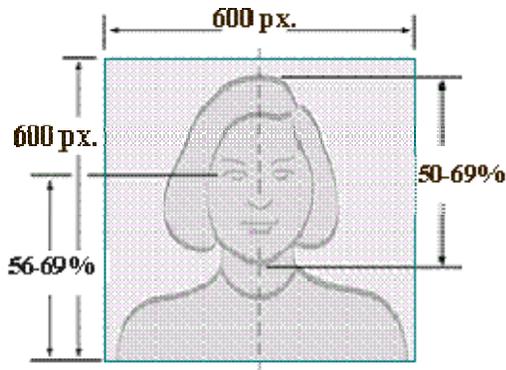
- ✓ Frame subject with [full face, front view, eyes open](#)
- ✓ Make sure photo presents [full head](#) from top of hair to bottom of chin; height of head should measure 1 inch to 1-3/8 inches (25 mm to 35 mm)
- ✓ [Center head](#) within frame (see [Figure 2](#) below)
- ✓ Make sure [eye height](#) is between 1-1/8 inches to 1-3/8 inches (28 mm and 35 mm) from bottom of photo
- ✓ Photograph subject against a plain white or off-white [background](#)
- ✓ [Position subject](#) and [lighting](#) so that there are no distracting shadows on the face or background
- ✓ Encourage subject to have a [natural expression](#)



- **Figure 2.** *Head Position & Placement*

Digital Image

Head Size



The **head height** or **facial region size** (measured from the top of the head, including the hair, to the bottom of the chin) must be between 50% and 69% of the image's total height. The **eye height** (measured from the bottom of the image to the level of the eyes) should be between 56% and 69% of the image's height.

Image pixel dimensions must be in a square aspect ratio (meaning the height must be equal to the width). Minimum acceptable dimensions are **600 pixels (width) x 600 pixels (height)**. Maximum acceptable dimensions are **1200 pixels (width) x 1200 pixels (height)**.

- - **Well-Composed Photos**
-



-

Photo Quality

Brightness, Contrast and Color

Guidelines

- [Brightness](#) and [contrast](#) should be adjusted to present the subject and background accurately
- Photos without proper contrast or color may obscure unique [facial features](#)
- Color should reproduce natural skin tones
- Fluorescent or other lighting with [unbalanced color](#) may cause unwanted [color cast](#) in the photo
- Appropriate filters can eliminate improper [color balance](#)

Photo Examples

INCORRECT	CORRECT	SUGGESTIONS
<p><i>Photo Too Dark</i></p> 	<p><i>Correct Brightness</i></p> 	<p>Very dark or very light apparel may cause certain auto-exposure systems to overcompensate, resulting in overly dark or light flesh tones. A neutral gray card may be used to set exposure at a consistent level before placing the subject in the scene.</p>
<p><i>Contrast too High</i></p> 	<p><i>Correct Contrast</i></p> 	<p>Contrast that is too high is usually due to the overall light and shade in the scene. Correct contrast can be achieved by directing diffused lighting onto the subject. Such lighting increases the local contrast while reducing the total contrast.</p>
<p><i>Improper Color</i></p> 	<p><i>Natural Color</i></p> 	<p>Picture is affected by the type of light used. Avoid mixing incandescent and fluorescent lighting. Corrective filters can improve the overall light that reaches the conventional film or digital camera sensor, and thus remove unnatural color effects. A neutral white card may be used to set the white balance level on some advanced digital cameras.</p>

Head Position and Background

Guidelines

- Head should be positioned directly [facing the camera](#)
- Photo should capture from slightly above top of hair to middle of chest
- Eyes should be open and looking at the camera
- Eyeglasses should be worn if normally used by the subject
- [Glare on eyeglasses](#) can usually be avoided with a slight upward or downward tilt of the head
- [Background](#) should be plain white or off-white
- Include headpieces if worn daily for religious purposes; they should not obscure or cast shadows on the eyes or any other part of the face

Photo Examples

<p>Head Too Big</p> 	<p>Correct Head Size</p> 	<p>Crop the image so that the head size and position match the Composition Checklist.</p>
<p>Head Too Small</p> 	<p>Correct Head Size</p> 	<p>Crop the image so that the head size and position match the Composition Checklist.</p>
<p>Head Not Centered</p> 	<p>Correct Head Position</p> 	<p>Re-crop original image so that the head is centered in the frame or recapture new image with head centered in the field of view.</p>

Head not Facing Camera



Head Facing Camera



To prevent geometric distortion and ensure an adequate depth of field, the camera should be placed at the subject's eye level and approximately 4 ft (120 cm) from the subject.

By placing the subject on an adjustable height seat, the height of the camera tripod can be fixed.

A lens of about 105 mm focal length on a 35 mm film camera, or its equivalent on any other camera, should provide a sufficiently flat field-of-view

The subject's eyes should look directly at the camera and the subject may be either smiling or not, but unusual expressions and squinting should be avoided.

Head Tilted



Correct Pose



Recapture with subject's head facing directly frontal.

Image Rotated



Correct Orientation



Use an imaging editor to rotate the image ± 90 degrees.

Glare on Glasses



No Glare on Glasses



A slight downward tilt of the head will usually eliminate glare on eyeglasses. If this does not reduce the glare, try tilting the head slightly upward or rotating the glasses slightly upward or downward. The head should not be tilted by more than a few degrees to eliminate glare.

Red Eye conditions should be avoided. Red eye is caused by a direct reflection, through the pupil, from the retina of the eye when an on-camera flash is used, particularly for a subject who has adapted to a darkened environment. Red eye can be reduced by using an off-camera flash or by brightening the ambient lighting.

Background Not Plain



Plain Background



A distracting background should be avoided. Use a plain wall or a photographer's backdrop cloth as the background. The background color may be white or off-white.

Ideally, the background will be out of focus so that minor markings or texture on the background are not apparent in the photo.

Exposure and Lighting

Guidelines

- [Over-exposure](#) or [under-exposure](#) may render the photo unusable
- Three-point balanced lighting is strongly recommended (see Figure1)
- [Facial features](#) should be clearly evident in the photo
- Lighting should be adjusted to avoid shadows on the face or background
- [Diffuse sources of light](#) , such as umbrella lights, are preferable to point sources

Photo Examples

INCORRECT	CORRECT	SUGGESTIONS
<p><i>Over Exposed</i></p> 	<p><i>Correctly Exposed</i></p> 	<p>Over-exposure occurs when the image receives too much light; it results in a loss of resolution (very fine detail), more graininess and less detail in highlight areas. Under-exposure occurs when the image receives too little light; it results in loss of detail in the subject's shaded areas, which can become dark and featureless.</p> <p>Exposure problems can be avoided by conforming to the recommended lighting arrangement (Figure 1) and using diffuse light sources of moderate lamp intensity.</p>
<p><i>Shadows on Background</i></p> 	<p><i>Background Uniformly Illuminated</i></p> 	<p>Illuminating the background is best accomplished with a light source that spreads illumination evenly over a wide area.</p> <p>Correct positioning of back-lighting, below the subject and radiating up, will reduce or remove shadows from the background without affecting the amount of light incident on the subject.</p>
<p><i>Shadows on Face</i></p> 	<p><i>Face Uniformly Illuminated</i></p> 	<p>To avoid shadows on the face, the amount of light striking a subject's face from two sides, should be equal. In a balanced lighting arrangement, if one of the two light sources is of a lower intensity, move it closer to the subject to offset the difference in light intensity.</p> <p>Overhead lighting can produce unwanted shadows on the face and should be avoided whether balanced lighting is used or not.</p>

Resolution and Printing Quality Guidelines

- High- [resolution](#) photography and printing are strongly recommended
- Both conventional and digital photography are acceptable, and conventional or digital printing methods may be used
- Resulting print should exhibit a [continuous-tone](#) quality regardless of the print method used (dye sublimation, ink jet, laser, etc.)
- Digitally printed photos should be produced without visible [pixels](#) or [dot](#) patterns
- Fine [facial features](#) should be discernible
- The entire face should be in [focus](#)

Photo Examples

INCORRECT	CORRECT	SUGGESTIONS
<p><i>Low Quality: Discernible Pixels</i></p> 	<p><i>High Quality: Non-Discernible Pixels</i></p> 	<p>Image quality and resolution are directly related: the higher the resolution, the better the image quality. For conventional photography, high resolution is inherently achieved through the use of 35 mm film stock. In digital photography, the size of the camera's digital sensor determines the degree of resolution that can be achieved.</p> <p>Avoid using a low-resolution digital camera. After images are loaded into the camera's memory and displayed on a monitor, images are often smaller than expected or there are discernible pixels (image pixelation) when the images are enlarged on the monitor or output to a printer.</p>
<p><i>Low Quality: Visible Coarse Dot Pattern</i></p> 	<p><i>High Quality: No Visible Dot Pattern</i></p> 	<p>Images that look fine on a computer screen may appear coarse or grainy when printed, even at the 2 inch x 2 inch dimension. This can be attributed to the differences in image resolution for the display monitor and the digital printer, with respect to the amount of image data available. Digital printers have variable resolution settings, and the proper setting needs to be selected to avoid having an image appear fuzzy or grainy. However, no printer resolution setting can adjust for too little data in the image caused by use of an inappropriate camera lens or low-resolution digital camera.</p>
<p><i>Poorly Focused</i></p> 	<p><i>Properly Focused</i></p> 	<p>The subject's face should be the central or principal point of focus. It may be necessary to adjust the distance setting on the camera's lens once the subject is framed in the scene. If excessive adjustments are needed to focus properly, the lens being used may not have a suitable focal length (approximately 105 mm) and may cause unwanted distortions in the image.</p>

Digital Image Requirements for New Online Application

The submitted digital face image must adhere to the following specifications.

IMPORTANT NOTE: Please be advised that failure to comply with any of the following requirements may result in rejection of your image by the online image quality assessment test or by a human reviewer.

[Download PDF version](#) (to bring to professional photographer)

Examples of well-composed images



Image Requirements - Technical Specifications	
Acquisition	The image file may be produced by acquiring an image with a digital camera or by digitizing a paper photograph with a scanner .
Dimensions	Image pixel dimensions must be in a square aspect ratio (meaning the height must be equal to the width). Minimum acceptable dimensions are 600 pixels (width) — 600 pixels (height) . Maximum acceptable dimensions are 1200 pixels (width) — 1200 pixels (height) .
Color	Must be in color (24 bits per pixel) in sRGB color space (common output of most digital cameras).
File Format	Must be in the Joint Photographic Experts Group (JPEG) file interchange format (JFIF).
File Size	Must be less than or equal to 240 kilobytes .
Compression	The image may need to be compressed in order for it to be under the maximum file size. The compression ratio used should be less than or equal to 20:1.
Additional requirements if scanning:	
Print Size	If scanning the image from a paper photograph, the size of the paper photograph should be at least 2 inches — 2 inches (51 mm — 51 mm) square.
Resolution	Printed photographs should be scanned at a sampling frequency of at least 300 pixels per inch .
Image Requirements Composition	
Content	<ul style="list-style-type: none"> The image must contain the full face, neck, and shoulders of the applicant in frontal view with a neutral, non-smiling expression and with eyes open and unobstructed and directed at the camera. All facial features must be visible and unobstructed. No extraneous objects, additional people, parts of the body below the applicant's shoulders, or other artifacts. The image must be from a recent (within 6 months) photo of the applicant.

<u>Head Size</u>	<ul style="list-style-type: none"> • The head height or facial region size (measured from the top of the head, including the hair, to the bottom of the chin) must be between 50% and 69% of the image's total height. • The eye height (measured from the bottom of the image to the level of the eyes) should be between 56% and 69% of the image's height. • Composition Checklist
<u>Head Orientation</u>	<ul style="list-style-type: none"> • Subject must directly face the camera. • Head must not be tilted up, down, to the side, or toward the shoulders. • Head must be centered within frame.
<u>Background</u>	<ul style="list-style-type: none"> • Subject must be surrounded by a plain, light-colored background with no distracting shadows on the subject or background.
<u>Focus</u>	<ul style="list-style-type: none"> • The entire face must be in focus and not overly-sharpened.
<u>Brightness/ Contrast</u>	<ul style="list-style-type: none"> • Brightness and contrast should represent subject accurately.
<u>Color</u>	<ul style="list-style-type: none"> • Image must be in color (24 bits per pixel). • Black and white photos are not acceptable. • Color should reproduce natural skin tones. • Color must be continuous tone no posterization.
<u>Exposure/ Lighting</u>	<ul style="list-style-type: none"> • Photo may not be over- or under-exposed. • Avoid shadows on face or background.
<u>Resolution</u>	<ul style="list-style-type: none"> • Fine facial features should be discernible. • No discernible pixels/pixelization, graininess, or dot patterns.
<u>Compression</u>	<ul style="list-style-type: none"> • Image must not be overly compressed (the compression ratio used should be less than or equal to 20:1).
<u>Alteration</u>	<ul style="list-style-type: none"> • Digital enhancement or other alterations or retouching are not permitted. • When resizing, the aspect ratio of the image must be preserved (no image stretching is allowed).
<u>Eyeglasses</u>	<ul style="list-style-type: none"> • Eyeglasses are acceptable in photo only if the lenses are not tinted and there is no glare, shadows, or rims/frames obscuring the eyes. Glare on eyeglasses can usually be avoided by a slight upward or downward tilt of the head. • Dark glasses or nonprescription glasses with tinted lenses are not acceptable unless you need them for medical reasons.
<u>Decorative Items</u>	<ul style="list-style-type: none"> • No sunglasses or other items that obscure the face. • Hats or head coverings are only allowed if worn for religious reasons AND if they do not obscure any facial features.

Digital Photography and Printing

Using digital photography to produce passport and visa photos involves more than just photographing subjects with a digital camera. That is just the first step, the image capture step, of a multi-step process that also includes image display and image printing using computer and printer equipment. Each of these components — can influence either positively or negatively — the final printed photo that will be submitted for the passport or visa. The following recommendations for each of these digital components will ensure high-quality photos.

Digital Camera

Digital cameras are principally characterized by their image resolution or mega-pixel capacities; from low-resolution (less than 1 mega-pixel) to high-resolution (greater than 1 mega-pixel) to advanced high-resolution (4 mega-pixels or more). The camera's resolution is the most critical feature in producing high-quality photographs. For U.S. passport and visa photographs, a digital camera with a resolution of 1 mega-pixel will be more than adequate for capturing the image and producing the final photo that conforms to the dimensions specified on this web site.

These cameras generally have automatic features for controlling many of the photographic qualities emphasized on the preceding web pages. Care should be taken not to rely totally on these controls since each subject — facial characteristics, clothing, facial movement, etc. — can vary and may not be accommodated for by the automatic settings.

Cameras with a direct electronic camera-to-computer interface are preferable to those requiring the use of an external memory card. Data transfers will occur much faster and allow for verification of a good image being stored in the computer. If a retake is required because the subject blinked or moved, it would be more convenient than taking several shots to be sure of a good one and then downloading them via the memory card.

Computer

The computer is the central component in digital photography. It stores and displays the digital images from the digital camera and enables those images to be printed on a variety of digital printers. Because of the huge amount of data contained in high-resolution digital images, the computer should have adequate memory and storage capacities. In addition to these two key elements, the computer should have high-speed interfaces to the camera and printer, as well as a fast CPU to control the image processing functions. The recommended computer configuration for processing digital images is provided below:

- CPU Speed: 1.4 GHz
- Main Memory: 128 MB RAM
- Hard Drive Storage: 20 GB
- Interfaces: High-speed interfaces to match your camera and printer, such as Firewire or USB 2.0

Display Monitor

Most display monitors today are capable of displaying images in various screen resolutions, all of which are suitable for viewing passport and visa images. These monitors also display images in a wide variety of colors. However, an image can look quite different when viewed on various display monitors, in terms of both screen resolution and image quality. For this reason, it is important to set the monitor's settings to the manufacturer's default values to view the image in the most appropriate manner. For more accurate color-matching, check that the calibration of your monitor is correct. If necessary, use the monitor's control panel to fine-tune its color adjustments; for instance, to set the monitor's color temperature to 6500 °K to approximate daylight. For even greater color accuracy, the stored image can be converted to and displayed in a device-independent color space by using standard image display software. This removes the color bias of the specific display monitor and will more accurately represent the way the image should actually appear.

Printer

If digital printers are used to produce passport and visa photographs in lieu of conventional photographic processes, the photographs produced must be high quality and photo-like in appearance. Certain types of digital printers such as — inkjet and dye sublimation — can be used to produce high-quality passport and visa photos. Inkjet printers deposit multi-colored ink onto photographic print paper. Dye sublimation printers use heat, applied to a multi-colored ribbon or film, to release a dye that is transferred onto photographic print paper. These two types of printers, when used with compatible print paper that produces high resolution, photo-like images, are suitable for printing passport and visa photos. They have multiple printer settings to control the format, print resolution, and print quality of the printed photo. In addition, they come with printer-specific device driver software that converts the stored image pixel data in the computer into the actual printer output to be printed onto the photographic paper. Just as with display monitors, printers have their own unique color profile that should be taken into account before the image is printed. The combination of proper printer settings and photo-quality paper determines whether high-quality photos can be obtained.

Avoiding Photo Printing Problems

Using digital photography to produce high-quality passport and visa photos is dependent on the condition and proper use of the digital camera, computer, display monitor, and digital printer. Maintaining the digital printer in good working order however, can be the single most important aspect of producing quality photos. Regardless of how much attention is paid to capturing, storing, and displaying an

image, image quality will be poor if printers — including inks and ribbons — are not properly maintained. To ensure that a quality print is obtained, the image can be transferred to disk and taken to a photo lab to be printed. The equipment found in a photo lab will normally be capable of producing higher-quality photos and undergoes the frequent calibration and maintenance necessary for consistent results.

Scanning a Printed Photograph for New Online Application

A passport-quality paper photograph may be digitized by scanning to a [JPEG](#) image.



Photograph Scanning Guidance

- The photograph to be digitized must be at minimum 2 inches by 2 inches
- The scanner [resolution](#) ([sampling frequency](#)) should be set to a minimum of 300 dots per inch (dpi) or 300 pixels per inch ([ppi](#))
- The digital photograph should be saved as a high-quality (low-[compression](#)) JPEG image file

Visa Photo Guide Frequently Asked Questions

How many passport photos are required to be submitted with the passport application?

Two (2) identical photos must be submitted with the passport application.

How many photographs are required to be submitted with the visa application?

One (1) photograph of the visa applicant must be submitted with each visa application (following the instructions in this Photography Guide).

What type of paper are the photographs to be printed on?

The photos should be printed on thin photo-quality paper.

Do the photos have to be in color?

Yes, the photos must be in color.

How recent must the photos be?

The photos must be no older than 6 months.

How big must the photos be?

The photos must measure exactly 2 inches by 2 inches.

What pose should the photos show?

The photo should show a clear, front view, full face of the customer. The customer should be in normal street attire, without hat or dark glasses against a plain white or off-white background. The customer should have a natural expression, mouth closed, and eyes open and looking directly ahead. Photos in which the face of the person being photographed is not in focus will not be accepted.

How big should the head be in the photo?

The customer's head, measured from the bottom of the chin to the top of the hair, should be between 1 inch and 1-3/8 inches. The head should be centered in the photo. The head of the person being photographed should not be tilted up, down or to the side. It should cover about 50% of the area of the photo.

Can hats or religious headgear be worn for the photo?

Unless worn daily for religious reasons, all hats or headgear should be removed for the photo. A signed statement from the applicant must be submitted with the application verifying the item is worn daily for religious reasons. In all cases, no item or attire should cover or otherwise obscure any part of the face.

Can eyeglasses be worn for the photo?

Eyeglasses worn on a daily basis can be worn for the photo. However, there should be no reflections from the eyeglasses that obscures the eyes.

Can sunglasses or tinted glasses be worn?

Dark glasses or nonprescription glasses with tinted lenses are not acceptable unless you need them for medical reasons. A medical certificate may be required.

Can work uniforms be worn for the photo?

Uniforms, clothing that looks like a uniform, and camouflage attire should not be worn in photographs except in the case of religious attire that is worn daily. Otherwise, normal street attire should be worn.

Can a parent or guardian appear in the photo of a minor child?

No, the minor child must be the only subject in the photo. Nothing used to support the minor child, whether by mechanical or human means, should be in the camera's frame.

Are photos that are copied from recent driver licenses or other official documents acceptable?

No, only original photographs are acceptable. Copied or digitally scanned photos of photos will not be accepted. In addition, photos must not be retouched to alter the customer's appearance in any way.

Are snapshots, magazine photos, or photos from vending machine acceptable?

No, snapshots, magazine photos, most vending machine prints, or full-length photographs are not acceptable.

May photos be taken with a digital camera?

If the digital camera has sufficient resolution — capable of capturing and storing images with 1 million pixels (megapixels) or more — it can be used to take the photos. However, printing of digital images is best done by professional photography processing labs because many off-the-shelf digital printers cannot achieve the image-quality required for passport and visa photographs. In any case, the image-quality criteria, described on this website, must be met in the submitted conventional film photo and/or the digital image printed photo.

The confirmation page has an X in the box where the photo should be, what does that mean?

The photo upload failed. You will need to submit one print photograph meeting requirements, stapled or glued to the online DS-1648 confirmation page. See the print photo format found in the [Nonimmigrant Photograph Requirements](#). If the confirmation page includes a photo image, then the photo upload function has succeeded and no separate print photograph is required.