

# Q & A

## Questions and Answers: Photographic Equipment and Techniques

Some years ago, **Erik Kissa, EPSA**, gave a lecture on close-up photography. He answered questions from the audience and that *Question & Answer* exchange was published in the *Reflector*, the newsletter of the Delaware Photographic Society. This started a monthly Q&A section, which has lasted for more than ten years. In 2006 Erik became a consultant for the PSA New Member Services Web site and he contributed a collection of previous questions and answers to the site. Since then he has received and answered questions from the United States, Europe, and Asia. Beginning with this issue, Erik's feature, *Questions and Answers: Photographic Equipment and Techniques*, will appear monthly and a more extensive series of Q&As will be placed on the PSA Web site in the *PSA Journal* section.

**Readers are urged to email Erik with your questions.** <EKISSA@aol.com>

Please visit [http://psa-newmember.org/consultation\\_services/equipment.html](http://psa-newmember.org/consultation_services/equipment.html)

or Erik's new site at <http://www.psa-photo.org/> and go the *PSA Journal* section.

*Elena McTighe, APSA  
Publications Vice President*

### **Q: What should a club consider when buying a digital projector?**

**A: Which digital projector is the best depends on the intended use of the projector. The useful features of the projector depend on the size of the room and the screen, as well as the ambient light in the room.**

#### **Aspect ratio**

The photographic images require a projector with a square field to accommodate vertical and horizontal orientation. Most digital projectors are designed for PowerPoint presentations and not for photography. Their aspect ratio 4:3 (1024x768) is too narrow for vertical images with the 3:2 aspect ratio. Consequently, the projected vertical images (512x768 pixels) are smaller than the horizontal images (1024x683 pixels) and have only 56% of the area of horizontal images. This inequality has influenced some exhibitions to limit the longest dimensions of the image to 768 pixels. Fortunately, projectors are now available for the 1024x1024 pixel aspect ratio. Some exhibitions are accepting images with a 1024 pixel limit for both dimensions to equalize the projected area of horizontal and vertical images. Although home theater projectors may appeal to clubs interested in video presentation most of them do not have the aspect ratio suitable for still projection.

#### **Brightness**

The brightness of the projector is expressed with ANSI lumens. A high lumen rating means that the screen is brighter and the projector can be used in semi-darkened rooms. If the room is small and dark, a brightness rating of 2000 lumens is adequate. If the room is large and not completely darkened, a brightness of 3000 lumens is needed.

If the brightness of the projector is excessive, a lower power mode can be used. As an additional advantage, the reduced brightness extends the life of the lamp. Consequently, it is better to have an excess of lumens than to have inadequate brightness. However, the brighter projectors usually have a higher price tag.

#### **Resolution**

The standard resolution is XGA, which has 1024x768 pixels. The SXGA resolution of 1280x1024 pixels is slightly higher and the SXGA+ resolution is 1400x1050 pixels. The SVGA resolution (800x600 pixels) of inexpensive projectors is inadequate for photographic projection.

#### **Projection technology**

A colored image is projected by using one of three different technologies, each of which has different advantages. The LCD (Liquid Crystal Display) technology passes the light through three LCD panels, a red, green, and a blue. The advantages are superior color fidelity and light efficiency. The DLP (Digital Light Processing) technology uses small mirrors to reflect light through a color wheel. The DLP projectors have a high contrast ratio and can reduce the size of the projector. The new LCOS (Liquid Crystals on Silicon) technology uses liquid crystals on reflective chips, instead of mirrors. The advantage is a high resolution (1400x1050 pixels).

It is difficult to say which technology is the best. The projection technology is still a developing field and improvements can be expected.

#### **Contrast**

The contrast ratio expresses the range of tonal values from pure black to pure white. A high contrast ratio indicates that the projector can deliver



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a saturated black and a detailed tonal range. A projector with the LCD or LCOS technology has a contrast ratio of 400:1 or less, whereas a DLP technology has a contrast ratio of 1000:1 or even above 2000:1. As a reference, a typical CRT monitor of a computer has a contrast ratio of about 1:700.

**Lens**

A high quality lens reduces flair and ghosting. Most of the projectors have a 1.6x or a 1.7x zoom lens, which simplifies the positioning of the projector.

**Keystone correction**

Because the projector is usually positioned close to the screen, a correction of the keystone distortion is essential. Some projectors have automatic keystone correction.

**Color control**

The color correction is needed for adjusting the projected color on the screen.

**Lamp**

This expensive part (about \$200 to \$400) of the projector can last a long time when treated with care. The lifetime is usually rated between 1000 and 3000 hours. The deterioration of the lamp is gradual before total failure. The lifetime is expressed with the number of hours the lamp can be used before the brightness of the lamp has decreased to 50% of its original brightness. This means that a 3000 lumen projector will be a 1500 lumen projector at the specified end of lamp life.

**Size and weight**

The size and weight are not critical, especially in comparison to a slide projector. Small digital projectors are convenient to carry but may lack sufficient ventilation and run hot.

**Price**

A SXGA projector designed for photographic projection, the CanonSX80 MarkII, costs slightly over \$2000. The projector is affordable for clubs operating an international exhibition and benefiting from the upgrade to the 1024x1024 format. However, the price may be excessive for a small club and the available funds will limit the selection of the projector. ■

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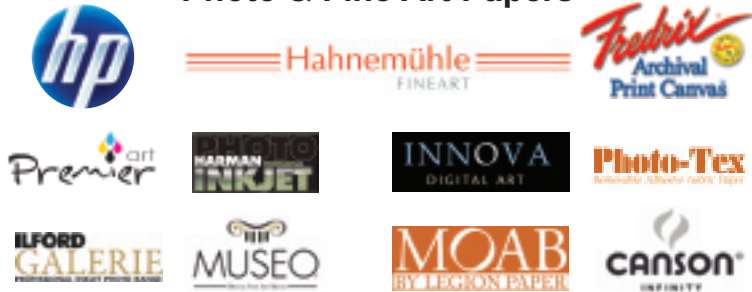
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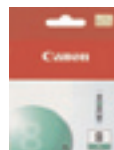
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