Low Light Photography – Taking Pictures in the “Dark”

My point-&-shoot Canon SD1200 and Panasonic FZ8 take excellent photos in good light. But under low light conditions, image quality starts to deteriorate at ISO 400 and results are abysmal at ISO 800. I tried a monopod to stabilize the camera for longer exposure. Results were better, but still unacceptable.

I wanted “no-excuse” photos in churches, museums, and of entertainers in the cruise ship's theater where flash is NOT permitted and tripods are impractical. I bought a Nikon D5000 with an 18-55 mm and 55-200 mm lens for $ 950 in 2009. The camera produces excellent photographs at ISO 3200 in low light conditions. That's eight times better than my other cameras! I've taken thousands of photos with the D5000 and am extremely pleased. All the photos in this summary were taken with my Nikon D5000.

You can't judge low light capability from camera specs. It is not just ISO, pixels, or resolution. Inspection of images on a 30 inch monitor is necessary to determine if the camera can “see in the dark” to acquire focus, meter the scene, adjust white balance accurately, and render the colors properly without color separation or splotches. That ain't easy. Most cameras can't do it.

The picture below was taken in the Piazza on the Ruby Princess under ambient light – no flash. The dancers were moving as you can see from the woman's hair. This picture is OK.

The photos below were all taken with the D5000 with these camera settings:
- ISO sensitivity auto control = ON
- Maximum sensitivity = ISO 3200
- Maximum, longest shutter speed = 1/60
- Turn the AF assist light illuminator OFF. It does not help photos taken > 10 feet away and it is a nuisance.
The following pictures were taken in the theater on cruise ships to illustrate different lighting conditions, colors, the effect of bright spot lights, and movement of the entertainers. These are very challenging conditions for a digital camera. These photos demonstrate the capability and limitations of the Nikon D5000 in low light conditions.

All of these photos were taken without flash, 60-100 feet from the stage, using a 55-200 mm lens zoomed out to f 5.6. I set spot metering on the performer’s face. The camera automatically selected ISO up to 3200 and a shutter speed as slow as 1/60 second.

**See the picture (at right).** Note the face skin tones, the lack of blown-out highlights, the color accuracy, and overall quality.

The face is exposed properly, but white spot lights tend to produce strong reflections from light color skin. Note that the left shoulder has a strong reflected light, and a small “blown out” area due to too much light on the shoulder.

Otherwise, the photo is OK. The singer was essentially stationary so movement and blur were not issues. These same camera settings were used for all of the following photos.

**The photo below** was taken with the spot meter set on the man's face (wearing the white outfit) in the center of the group. The colors look very good – just like I saw it. Shutter speed was not an issue because the people were not moving much - this was at the end of the performance.
The photo below catches the dancers in mid air. Color is influenced by multi-color stage lighting and white spot lights produce high contrast images.

The photo below shows a gymnast in mid air. Color is accurate.
The colors are accurate in these two photos (below), but the high contrast, white spot light, reflects strongly from the light color skin in some areas. Otherwise the photos are good.

There was bright, adequate stage lighting for the photo below. This kind of photo is easy; not very demanding as a low light photograph. I set the spot metering on the camel's face.
This photo (below) is complicated due to the theatrical haze and multiple colors, but the camera handled it well and stopped the motion so there is almost no blur.

The photo below has weird colors, but the camera handled it well. There are some “blown out” areas on the hands due to high contrast white overhead spot lights. I was spot metering on the face of the gymnast.
The photo below is difficult because it is a very low light, “moody” setting except for the spotlight on the dancer's face. I set the spot meter on her face which is exposed very well. But there is some blur in the photo due to movement.

The photo below has pushed my Nikon D5000 to its limit. Stage light was very low = dark. If you look at this photo on a 30 inch monitor, you'll see background color is beginning to separate due to the very low level of light available on the stage.
The photos below are beyond the capability of my Nikon D5000. Reflections of the strong, white spot lights have completely “blown out” the upper layer of light skin of the gymnasts = lousy pictures.

In 2011, Nikon introduced a better low light camera, the D7000 and subsequently introduced a similar, but lower cost version, the D5100. These cameras have outstanding low light performance at ISO 6400. I bought a D7000 with an 18-200 mm lens for $1800 in 2011. I wish I could have compared the D5000 and D7000 for these photos below. But I know the D7000 is twice as good as the D5000. The D7000 and the newer D5100 are outstanding “game changers” which will revolutionize low light photography!
Where to find information on low light photography

The best website I've found for detailed, qualitative analysis of low light images via critical inspection on a 30 inch monitor and detailed reviews of all kinds of camera gear is [www.KenRockwell.com](http://www.KenRockwell.com)

Ken is a professional photographer. His product reviews are independent, objective, and highly detailed. He explains his findings, conclusions, and recommendations in plain English. I use his website regularly to get his recommendations as the first step before purchasing any product.

Best place in the US to buy cameras

If I know exactly what I want and doubt I will return it, I shop around. There are many suppliers. But when I am buying an expensive, sophisticated camera, and I'm not sure I will like it, the only place to buy is a Costco Warehouse. They have a limited selection, but they have good prices. More importantly, their return policy is outstanding. I can buy a $2000 camera, keep it for 90 days, test it under all kinds of conditions, play with all the controls, etc. And, if for any reason, I am not happy with it, I can return it for a full refund - “no questions asked”.

This is the only place I know of in the USA where I can try out a camera with assurance I can return it without restocking fees or difficulty getting a refund. A camera is an extension of my hand and my personal photographic style. I can't anticipate how it feels or whether it functions the way I want to use it until I've had it for a while. For this reason, I bought both my Nikon D5000 and D7000 from Costco. Loved the cameras and had no desire to return them, but I had that option. If my wife ever lets me buy another new Nikon, it will come from a Costco Warehouse.

NOTE: Before you buy any product, please determine the details/conditions of the return policy. The return policy I am describing is for the Costco Warehouse stores near me in Pennsylvania.

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