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WILLIAM R SCHNEIDER

6 WINDSOR PL

ATHENS OH 45701-3329

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A Tale of Two Lenses:

Single- and Multicoated

How much difference do coatings make in two new Cosina Voigtlander 40mm f/1.4 Nokton Classics?

by **Larry Hamel-Lambert** and
William Schneider

We generally believe that more is better.

Two is somehow better than one.

A 16-ounce soft drink is somehow better than 12 ounces. And eight cylinders are better than four. But can less actually be more? Cosina will let you decide. It is

offering its new 40mm f/1.4 Voigtlander Nokton Classic in two different versions, one with modern multicoated lens surfaces (the MC), and a special edition with single coating (the SC).

While many lenses are available with various coatings because manufacturers have changed and upgraded their coating techniques over time, the 40mm Nokton Classic is believed to be the first 35mm rangefinder lens offered for sale in two simultaneous versions that differ only in their antireflection coatings.

So, what is the difference? Can these two lenses offer unique visual fingerprints through coating differences alone, or is it strictly clever marketing?

The lenses

The Cosina Voigtlander (CV) 40mm Nokton is a fast Leica M-mount lens for use with rangefinder camera bodies including the Leica M-series, Voigtlander Bessa R3a, Konica Hexar RF, the newly introduced Zeiss Ikon, and the digital Epson RD-1. According to Cosina's Web site, the lens consists of seven elements in six groups and weighs 175 grams. It is 55mm in diameter and is approximately 30mm long, making it very compact for a lens with an $f/1.4$ maximum aperture. It accepts 43mm screw-in filters. At this time, it is avail-



Figure 1. Almost peas in a pod. Cosina's two Voigtlander 40mm $f/1.4$ lenses for M-mount rangefinder cameras differ only in their antireflection coatings. The single-coated (SC) version is pictured on the left, while the multicoated version with its lens hood attached is shown mounted to a modern Leica MP. Both of these compact lenses are very sharp even when used wide-open, making them ideal for use in dim light.

able in black finish only. The lens brings up the 50mm frame lines in most Leica M-mount bodies, but 40mm frame lines appear when it is attached to the Leica CL or selected on the popular Voigtlander Bessa R3a. Various workarounds exist to use the 35mm frame lines in other camera bodies to provide a closer match to the lens's actual view.

The lens takes in 56° of view on 35mm film, and apertures run from $f/1.4$ through $f/16$ in half-stop clicks. Minimum focus distance is 0.7 meters or about 28 inches. U.S. street price is about \$350 for the MC version but having the SC will cost you slightly more. Because the SC is made in smaller production runs, it costs about \$400. Both are supplied with front and rear plastic lens caps. An accessory lens hood that bayonets onto the front of the lens is available for an extra \$45. These prices compare very favorably to expensive lens offerings from Leica and represent a great way to get started using the excellent Leica M system. (Don't confuse this single-coated SC designation with Cosina Voigtlander's

SC-mount lenses for Nikon and Contax rangefinder cameras. Those SC lenses are multicoated and don't fit M-mount cameras.)

The 40mm Nokton feels solid in the hand and gives a sense of good build quality. On both our samples, focus was somewhat stiff at first, but eased with use. Ergonomics will feel familiar to some Leica lens users. The lens has a cupped tab for focusing, like many Leica lens offerings.

The Nokton lenses appear to be identical twins; only an additional baby-blue SC marking on the bezel of the SC version distinguishes the two on first glance. However, upon closer inspection, one can see that the coatings reflect different hues.

Single coat for better bokeh

Cosina decided to offer the lens in both modern MC and older technology SC versions because some Japanese photographers expressed a preference for single coating in black-and-white photography, according to West Coast Cosina Voigtlander distributor Stephen Gandy,

of Cameraquest in Thousand Oaks, CA. Many black-and-white shooters feel that slightly lower contrast SC lenses of the 1940s, '50s, and '60s render smooth tones and enhance *bokeh*, or the out-of-focus areas of a photograph, Gandy says. Some of these lenses also exhibit an elusive glow sought by many. Other photographers believe that SC lenses are kinder to skin tones.

Adding a single antireflection coating dramatically improves the contrast of most lenses by reducing air-to-glass surface reflection from 4% to about 1%. Multicoating techniques further decrease the reflections to about one-half percent, enhancing contrast further over SC lenses.

Gandy believes the SC version appears to give more shadow detail, but he points out that the softer rendering of the SC lens is easily diminished by careless processing, excessive film development, or overly-contrasty printing techniques. Our tests confirm that the differences are indeed subtle.

"In Japan, the *bokeh* factor is important," says Tom Abrahamsson, a designer and manufacturer of a variety of products for Leica M cameras, who was part of a small group that brought the 40mm Nokton Classic SC idea to life. "The new lenses, with extremely sophisticated coatings and aspherical elements galore, tend to give you a very jagged *bokeh*, almost a pixilated look. These lenses are cutting edge (designs) when it comes to resolution and contrast, et cetera, but have you digging for 0 and 00 filters in the darkroom!"

He says that the look that was being sought in the 40mm Nokton was a modern, hi-tech optical design, but with "a more traditional texture to the image. Rather than aiming for a highly corrected, high-contrast lens, the SC version was designed to give a slightly soft image wide-open, and then a stop down, give a sharp, lower-contrast image than an MC lens. The SC version does give a muted color palette with modern color film and flatter contrast with black-and-white."

Is the difference real?

When the two lenses first arrived, we compared them side by side to see if the coatings did look different. Our first impression was that the SC version has a *healthy* single coating—much better than the thin-looking coatings on a 1950s Leica 50mm Elmar, for example. Of course, you can't tell photographic performance differences by just looking at lenses, so tests were in order.

For our side-by-side tests of the two lens versions, we loaded a Leica MP rangefinder with Kodak T-Max 100 black-and-white film, and outfitted a new Voigtlander Bessa R3a with Fuji Astia 100F color transparency film. We chose the T-Max 100 for its sharpness

and fine grain, and picked the Astia for its lower contrast among color transparency films. The Bessa R3a, introduced by CV at about the same time as the 40mm Nokton lens, has a 1:1 (life-sized) viewfinder with 40mm frame lines. Because the Leica MP doesn't have 40mm frame lines, we toggled the camera's preview lever to use its 35mm frame lines as a guide.

We set out in the late afternoon with the cameras, lenses, and tripods in tow. For the comparison, one frame was shot on each camera and then the lenses were quickly swapped from camera to camera for a second frame on each body. This gave us two side-by-side frames at each location, a pair in color and another pair in black-and-white.



Figure 2. In this pair of pictures, the picture made with the SC Nokton is shown on top. After scanning into Photoshop, the Color Sampler tool detects a very slight lightening of the shadow tones in the SC picture and a little less magenta overall than the MC picture (originals in color).

We chose photographic subjects that would provide a chance for the lenses to differentiate themselves. Because antireflection coatings change a lens's behavior with contrasty scenes, we purposely sought those conditions in our experiments. Subjects included white buildings with strong sunlight, backlit situations, and scenes with nighttime lighting.

The T-Max 100 film, exposed at EI 50, was developed using Kodak HC-110 developer, dilution "B" for 6 minutes at 68°. To produce prints as nearly identical as possible, prints were made from this film on Kodak Polymax Fine Art fiber photo paper using the same enlarging times for each set of two adjacent negatives.

With the Fuji Astia color slide film, we selected adjacent pairs of frames and scanned those adjacent frames as if they were one piece of film using an Epson 3200 flatbed scanner. The

resulting files were examined in Adobe Photoshop CS using the electronic Color Sampler tool, which reads density and color information. Readings were made on the same areas in each pair of pictures.

What did we see?

As we somewhat expected when we first saw the lenses side by side, the differences were small. Most nonphotographers probably wouldn't notice any visual differences, but they do exist. They are most apparent in very high-contrast scenes using black-and-white film.

There appears to be a slight lightening of the shadow areas with the SC version. This would agree with Ansel Adams's observations in his book *The Negative*, where he states that an uncoated lens will raise the tones in the shadow areas of a negative, much like pre-exposing film. The book explains that while flare or pre-exposure notice-

ably affect the shadow areas on film, they produce insignificant changes in the brighter highlight areas.

We saw this effect mostly in our black-and-white prints. As an example, the deeper shadow areas in the alley scene are lightened slightly with the SC lens (see figure 3). Another difference we saw in the SC photo was that the bright bulbs in the lighting fixtures flare enough to reduce visibility of the silhouetted protective wire shielding. (This may not be apparent in reproduction.)

Visible differences in shadow tones were smaller in photographs made with color transparency film. We also noticed a slight difference in color rendering between the two lenses. Examining scans of the color transparencies in Photoshop showed the MC lens to have a slightly more magenta color balance than the SC version. This difference was indicated

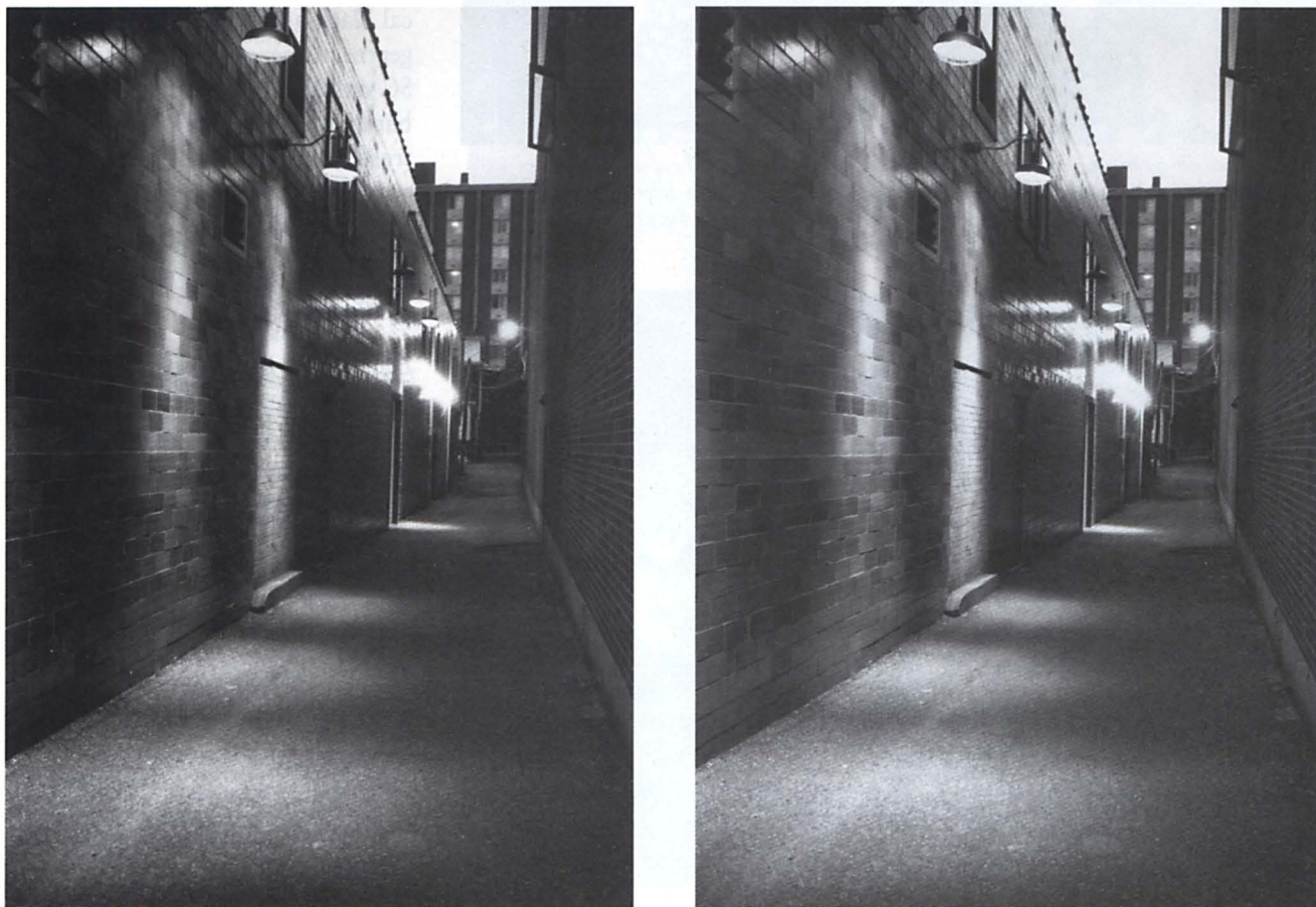


Figure 3. Black-and-white print comparisons showed some visible differences. The MC lens produced the print shown on the left, and the print from the SC is on the right. Shadow areas were subtly lightened in the original prints made with the SC version, indicating the presence of a little veiling flare. Exposure was one second between $f/2.8$ and $f/4$ using T-Max 100 exposed at EI 50.

by a 2- to 6-level difference in the green channel in Photoshop. Of our sample pictures, the Landmark Building comparison in figure 2 produced the largest difference in color, although the side-by-side frames still look nearly identical on the light table. Once we knew what to look for, it could be spotted with close scrutiny (but would be very difficult to see in reproduction).

Both lenses produce a blend of sharpness and smoothness in out-of-

focus areas (see figure 4). Again, we found the differences to be very small in the original black-and-white prints.

Conclusions

Overall, the MC version would probably be the better buy for most photographers—especially those who use color film. For most users, the differences are just too slight to justify the price difference. The lower-contrast SC version might prove to be a better choice for digital rangefinder cam-

eras, such as Epson's RD-1, because digital cameras offer less exposure latitude. The SC lens may help retain some minimal additional detail in that situation.

For collectors, the SC version also might be desirable because it has been produced in lower numbers. Gandy of Cameraquest notes that originally only one production run of 500 SC lenses was planned. Due to demand, a second run of another 500 SC lenses was eventually made.

Whichever version you prefer, both offer good performance in low-light situations even when using the fast $f/1.4$ maximum aperture. Wide open in dim light, the lens performs very well. Figure 5 illustrates the performance of the MC version used wide open. Having an $f/1.4$ aperture invites making pictures that deliberately explore shallow depth of field and eases indoors exposure worries.

In our opinion, it takes a methodical black-and-white photographer to get the full benefit of the higher-priced SC version. The differences are slight, but they can be seen in some high-contrast scenes. If black-and-white is your game, and you are passionate about tonalities and *bokeh*, the extra \$50 for the SC version might be money well spent. ■



Figure 4. Smooth out-of-focus areas are important to some photographers. These enlargements of two prints show that the two 40mm Noktons perform similarly. In our opinion, the difference in coatings didn't have much of an effect on the appearance of the leafy background in this pair of pictures. Exposure was $1/15$ second at $f/2$. The MC print is on the left.



Figure 5. This photo was made using the MC 40mm Voigtlander Nokton handheld in dim light at $f/1.4$ and $1/30$ second on Kodak Tri-X film. Wide-open sharpness is remarkable given the reasonable cost of the lens. Because of their light-grabbing $f/1.4$ maximum apertures, both versions of the lens are great tools for exploiting available light.

Larry Hamel-Lambert and William Schneider teach photography in the School of Visual Communication at Ohio University. Hamel-Lambert holds degrees in journalism and photography. He has worked as a photojournalist and picture editor at several U.S. newspapers. Schneider holds degrees in photography and mechanical engineering.

Resources:

- Ray, Sidney F. (1988) *Applied Photographic Optics*, Focal Press, London and Boston
- Adams, Ansel (1981) *The Negative*, New York Graphic Society, Boston