
Velvia vs. Provia 100F

A Digital Perspective

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Introduction

Fuji Velvia and Provia 100F are two of the most commonly used films for professional quality landscape and nature photography. Soon after its introduction a number of years ago, Velvia became the film of choice for many professional landscape photographers because of its high resolution, fine grain, and saturated colors. With the recent introduction of Provia 100F I decided to test it as a successor to Velvia from the standpoint of the quality of digital images scanned from the film. Since Provia 100F is rated somewhat paradoxically as having finer grain than Velvia but lower resolution, it was not clear which film would produce more detailed scans.

I compared images scanned from each film with respect to several criteria:

- Resolving power—the ability to extract very fine image detail.
- Smooth rendition of clear blue sky—a major problem with landscapes is annoying texture in clouds and blue skies that gets amplified when sharpening the image
- Dynamic range—the range of subject brightness that the film can capture without loss of shadow or highlight detail.
- Color rendition.

Testing Methodology

For the purposes of the test, I photographed two rolls of each film (one 35mm and one 120), developed all the film identically using Tetenal E-6 Chemistry, and finally scanned the resulting transparencies using an Imacon FlexTight Photo scanner which has an optical resolution of 3200 dpi.

I used the following test subjects:

1. A USAF resolution test chart. This was photographed from a distance of 63 inches using a 55mm Macro lens on a Nikon 8008s body mounted on a tripod. The test target was taped to the side of our house and photographed in full sunlight.
2. A Macbeth ColorChecker. This was also photographed using the 55mm macro lens on a Nikon 8008s. The ColorChecker was in full sunlight.
3. A 12-step Step Wedge with densities running in roughly equal steps from 0.0 to 2.0. This was also photographed using the 55mm macro lens on a Nikon 8008s. The step wedge was in full sunlight.
4. A cloudless blue sky. This was also photographed using the 55mm macro lens on a Nikon 8008s.
5. A test landscape. This was photographed using a 45mm wide angle lens on a Pentax 6x7 camera mounted on a tripod.

Results

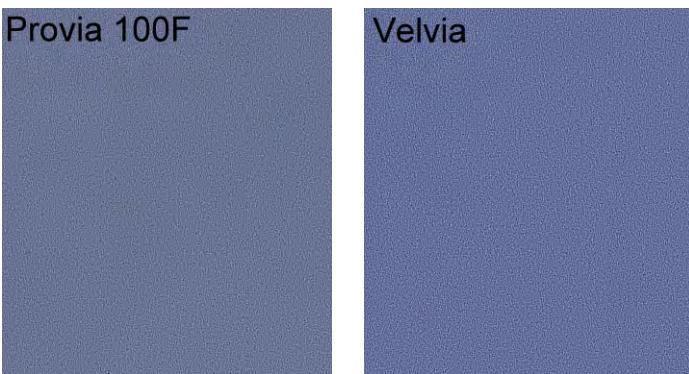
Resolving Power

Resolving power was not significantly different between the two films when scanned at 3200 dpi., although the Velvia test target seemed to have more contrast.



Rendition of Cloudless Blue Sky

The sky samples were fairly close, but Provia 100F definitely produced a smoother scan of blue skies. A tiny section of sky was scanned at 3200 dpi and then sharpened heavily twice in succession. The resulting images showed Velvia skies scan with more texture than Provia 100F.

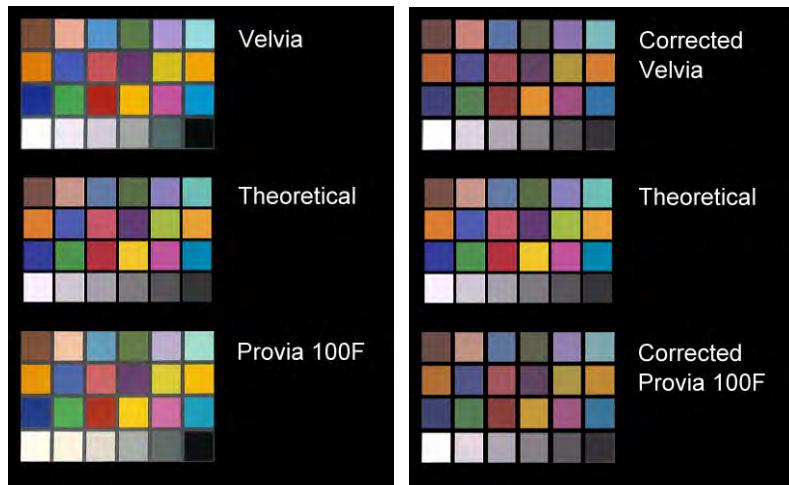


Color Rendition

Velvia was definitely more saturated and also seemed to render neutral grays as more neutral. Provia 100F had a slight yellow cast. I don't know if this was just the

batch of film I used, an artifact of the chemistry I was using to develop the film, or if this is an actual property of the film itself. Since color casts are easily removed digitally and saturation can also easily be either enhanced or reduced, I don't count this as an important factor.

The Macbeth ColorChecker images below show how each film reproduces a range of colors. For reference, I have also added a theoretical digital simulation of the way the ColorChecker is supposed to look when displayed on a CRT in the sRGB color space.

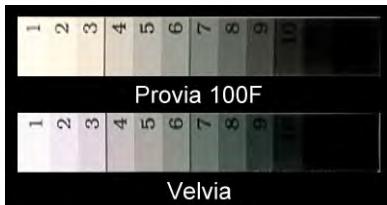


The left hand image shows the raw Velvia and Provia 100F scans compared to a simulated ColorChecker. The right hand image shows the result of correcting the two scans so that the neutral patches in the bottom row match the theoretical values.

Dynamic Range

In addition to its obvious advantage of being one stop faster, Provia 100F is also a little less contrasty than Velvia, thus affording some welcome additional exposure latitude. You can always increase contrast digitally, but once there is loss of highlight or shadow detail in the original, there is no way to recover the information

later. The following images illustrate the loss of shadow detail in the darkest patches of the step wedge:



The step wedges also show Velvia's tendency to run a little magenta and the yellow/orange cast in the Provia 100F.

Landscape Test

As a final test, I shot the same landscape with both films. The results are illustrated below:

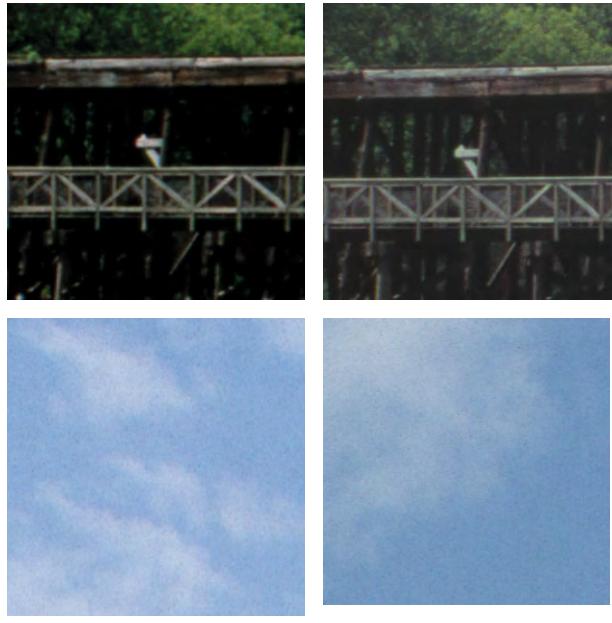


Velvia

Provia 100F

Note that the sky is a more natural blue in the Provia 100F compared to somewhat magenta Velvia sky. The Velvia greens are far more rich, however and the overall effect seems more pleasing (at least before digital color adjustment). Finally, the Velvia has darker shadows and exhibits more loss of shadow detail. Highly magni-

fied portions of each image take from the center and from the sky are presented below:



Velvia

Provia 100F

The magnified portion of the bridge from the center of the image illustrates the loss of shadow detail in the Velvia. Both versions are very sharp. The section of sky illustrates Velvia's slightly more textured rendition of smooth subjects.

Conclusions

The bottom line is that if your primary intention is to scan your film and manipulate it by computer, Provia 100F is superior to Velvia in nearly every important category. Those areas where it falls short are relatively easy to remedy by color balancing, selective color correction and brightness curve adjustments applied to the digital image. On the other hand, if vivid colors in the film original are important to you and you like the high contrast of Velvia, you may find Provia 100F a little tame.