



Editorial Background:

Behind the Design of KODAK VISION3 50D Color Negative Film 5203/7203

The latest member of the VISION3 Film family is KODAK VISION3 50D Color Negative Film 5203/7203. The VISION3 Film platform is the result of a confluence of technical innovations that gives filmmakers greater creative flexibility and a better starting place for postproduction. Here, Kodak's Product Systems Engineer Merrick Distant answers questions about the science behind the new film:

What are the new features of the new KODAK VISION3 50D 5203 / 7203 film?

DISTANT: We incorporated many of the features that customers have come to like about our other VISION3 films into this new low speed, daylight balanced offering. The result is a film that renders images with similar color and contrast, providing more detail in the extreme bright areas and at the finest grain available. Improvement in the signal to noise (S/N) response over the entire exposure scale results in more usable detail at the extremes of exposure, a benefit in digital postproduction applications.

What is the emulsion science behind these improvements?

DISTANT: Similarly to the other VISION3 films, we integrated advanced dye layering technology into both the red and green sensitive layers, and the deployment of highly efficient, sub-micron silver halide (AgX) crystals in the low sensitivity sub records of all three color records. The sub-micron silver halide crystals enable detailed, discriminating capture of high exposure information and has made it possible to effectively increase the overexposure latitude of the VISION3 films by two stops while simultaneously improving the S/N in the high exposure areas. This new film also features segregation of each color record into multiple zones of light sensitivity – three zones of sensitivity for the cyan and magenta layers, and two zones for the yellow layer. This allows for increased control over color and tone reproduction and facilitates the creation of a more linear sensitometric response as a function of exposure. This film also incorporates all the VISION3 technologies that enhance image acquisition during chromogenic development such as the high performance coupler technology and the new Advanced Development Accelerators.

What do these breakthroughs mean for the cinematographer?

DISTANT: These breakthrough technologies have increased the utility and flexibility of the VISION3 films as an imaging device by extending the S/N response over a broader exposure range - both in areas of low as well as high light intensity. This offers cinematographers more creative flexibility and increased efficiency in real world shooting situations as they can take a bolder approach to lighting and the film's speed rating without the fear of compromising image quality. The additional highlight latitude in this new VISION3 50D will be very beneficial for

cinematographers as they are routinely faced with bright exterior conditions and their ability to capture details in extreme highlights are greatly enhanced.

Are there other benefits that will help cinematographers on the set?

DISTANT: Compared to our previous 50D film, this new VISION3 film will match the other members of the VISION3 family of films in terms of color and contrast. That ‘intercuttability,’ if you will, helps cinematographers lend a consistent look to a movie in a wide variety of shooting situations and exposure conditions.

How will these new films work with the latest scanners, and other digital postproduction technology?

DISTANT: By designing additional, information rich latitude into VISION3 films, the ability to enjoy predictable response as a function of exposure has greatly facilitated postproduction image manipulation in digital intermediate workflows and telecine applications. This enables digital dodging and burning in post to bring out highlight detail and the extraction of additional information from the shadows without the risk of introducing image artifacts.

How will this film perform as a digital recording element?

DISTANT: Traditionally, low speed, daylight balanced films have been the color negative film of choice for non-laser based digital film recorders. The new VISION3 50D with its linear sensitometric response and color consistency across a wider range of exposures not only makes it an excellent camera origination film but also an ideal color negative film for use in digital film recorders. In addition, the VISION3 50D also features extremely fine grain, high resolution, low level of unwarranted crosstalk between the color channels and excellent latent image keeping performance, all qualities that lend itself to the film to performing well in digital film recorders.

What’s your take on the future of film technology?

DISTANT: The ongoing innovation behind the VISION3 films proves that Kodak believes in the continued viability of silver halide imaging. These films continue to raise the bar as far as image capture and provide increased efficiencies to our customers. Investments in film technology are ongoing and our research scientists are continuing to innovate and provide features that will be beneficial to both filmmakers and postproduction professionals.