

AgX Image Manipulation and Quality; Color Negative Film Technologies and their Correlation to Imaging Performance

Drake M. Michno

Eastman Kodak Company, Rochester, New York 14650

Abstract

Imaging systems, based on silver halide sensor technology, provide ever expanding imaging capabilities as adjunct technologies, which enable advances in signal capture and manipulation continue to evolve. These complementary technologies play a preeminent role in determining how the original scene information is recorded and subsequently utilized to render the reproduced image. Associated Image Quality attributes such as image structure, color recording capability, and photospace utilization are influenced by, and directly correlated to, these technologies as well as their integration within the imaging element.

Although interrelated, the analog imaging process utilized by color negative films can conceptually be segregated into the discrete stages of detection (signal acquisition), amplification (solid state to dye signal translation), signal processing (modulation of both macro and micro dye scale image), and display (human "readable" image). An overview of the role and function of several enabling imaging technologies intercepting each stage of this imaging chain, as well as their collective impact on the reproduced image will be presented. The main focus of the presentation will center on image manipulation technologies and film design strategies. Objective data, which highlights the net effect of signal modification on image quality parameters, will be shown.