Visual Tools for Calibration of Banding Artifacts

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Abstract: Noise in various components of a writing engine, such as vibrations or inaccurate laser scan mechanisms for example, can result in imaging artifacts, sometimes referred to as banding. Generally the most significant source of banding artifacts are errors in the uniformity of line spacing. Local spacing uniformity errors as small as +/- 1/3 pixel can create visible banding in a high end recording system. Banding is typically qualified by making subjective judgments on the quality of fine halftone tint patterns where the level of residual banding must be nearly invisible for the system to pass. The performance of these high resolution halftone patterns is highly dependent on engine setup parameters such as exposure level and focus. In addition, physically separate copy samples are often used as the visual comparison standard. The banding qualification process is therefore often prone to error. This paper describes a compact visual indicator that is imaged on a media to magnify the effects of banding thereby making residual errors highly visible so that they may be more objectively compared with visual pass/fail standards. The visual indicator includes an integrated visual reference portion that is independent of banding to provide pass/fail visual reference or other diagnostic information.

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