

## New Light Sensitometer for Film Performance and Processing Evaluation

A new reference sensitometer has been developed at the Food and Drug Administration's (FDA) Center for Devices and Radiological Health (CDRH) for the calibration of light sensitometers used for Mammography Quality Standards Act (MQSA) inspections. The new device employs a novel light source to sensitize control film. Most commercially available light sensitometers use electroluminescent panel technology in which light emission from a crystal is stimulated by an oscillating electric field. Under clinical conditions, mammography film is exposed to a Gadolinium-Oxy-Sulfide intensifying screen inside a film cassette. Intensifying screens produce an emission spectrum peaking at 550 nm, which closely matches the peak spectral sensitivity of orthochromatic mammography film. Emission spectra from commercially available light sensitometers are broad band in structure, peaking at a wavelength of 510 nanometers (nm). This in no way resembles the spectrum of a Gadolinium-Oxy-Sulfide intensifying screen. The new FDA sensitometer, however, faithfully simulates the spectral structure of light produced by intensifying screens. This unique feature would enable researchers to evaluate the relative performance of various types of mammography films without having to perform inverse-square sensitometry. Results of performance and comparison tests between the new sensitometer, commercial sensitometers, and inverse-square sensitometry will be presented.

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