



Alternative Approaches to Modeling for Flash Thermography

S. M. Shepard

Thermal Wave Imaging, Inc., Ferndale, MI, USA

Flash thermography data is typically interpreted as either a sequence of images, or a collection of pixel time histories acquired after flash heating of the surface. Modeling of the process typically requires prior knowledge of the thermophysical properties of the sample, as well as the amount of energy used to excite the sample. However, this information is often unavailable to the inspector. The difficult of matching model results to non-laboratory data is compounded by the fact that flash thermography is often performed with infrared cameras that do not provide absolute temperature data. We have developed a simple model that is based on the noise characteristics of the camera, and uses that as a basis for predicting sample response to flash heating response. The method predicts minimum detectable flaw diameters and depths based on a simple test sequence.