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Jennifer L Schei* (jlschei@lanl.gov) and **Christopher D Tomkins**. *Comparison of calibration targets used to infer radiographic spot size.*

Robust radiographic image reconstruction is dependent on the ability to accurately model the radiographic system physics. The x-ray spot size impinging on the object of interest can affect the resulting image resolution such that smaller spots allow for the resolution of finer features. Accurately measuring the source spot size allows for more accurate image reconstruction and information extraction. Several different targets have been utilized to measure the source spot, each with theoretical strengths and weaknesses. We compared the performance of six different targets used to measure the source spot size: the air force target (AFT), circular resolution target (CRT), radiographic grid, rolled edge (RE), rolled L (RL), and Tungsten ball. We found that the AFT, CRT, and Tungsten ball inferred spot sizes within 3% median difference of each other. The grid inferred spot sizes 6% larger than the other three targets, and the RE and RL inferred spot sizes approximately 10% larger. The RE and RL did not resolve the high frequency features as well as the other targets. Using targets that accurately measure the source spot size can improve image reconstruction and feature extraction, as well as reduce the number of pre-shot measurements. (Received February 10, 2016)