

Purpose: To examine the correspondence between half value layers (HVLs) measured by traditional methods to those obtained by an instrument that reports HVLs with a single open beam.

Methods: The HVL was obtained from generating a transmission curve at 60, 80, and 100 kVp in the radiographic range and typically used kVp and target/filter combinations in the mammography range. These HVLs were compared to the ones obtained by instruments which provide direct value with a single open beam. Unfors and Neromax instruments were used to obtain HVL by direct single measurement. A three phase table top radiographic unit was used. Measurements were performed in good geometry using Al 115 H filters supplied Gammex Corporation. This filter is 99.9% pure aluminum.

Results: By and large there is good agreement between the HVL obtained by the two methods for regulatory compliance applications. However, there are minor differences when one is interested in a precise value for scientific applications.

Conclusions: One can use these direct HVL reporting instruments for routine regulatory compliance measurements.