A Point Densitometer Scanner for EBT2 Film Dosimetry

**Innovation/Impact:** We have constructed a point densitometer scanner optimized for digitizing Gafchromic® EBT2 dosimetry film exposed to clinically relevant doses. This design could be implemented practically as a quality assurance tool for film dosimetry.

![Figure 1. Photo of the point densitometer inside the light tight enclosure.](image1)

![Figure 2. Close up photo of the light source (bottom) and detector (top).](image2)

![Figure 3. Relative beam intensity versus distance from the beam center determined using scanning knife edge technique.](image3)

![Figure 4. A single piece of uniformly irradiated EBT2 digitized in two perpendicular orientations.](image4)

The optics of the scanner are based on the design by Ranade et al. Major additions to our design include the custom translational stage, light tight enclosure, signal amplifier, and the characterization for use with EBT2. We will be comparing the measured homogeneity of uniformly irradiated films when digitized using the point densitometer scanner with that using a flatbed scanner (Epson 10000XL) with the implementation of a three optical channel correction.

**References:**