The “Hotter” Side of an X-Ray Tube

Ignacio Birriel\*1, Joshua Allen1 and Anthony Todd Dotson2

1 Dept. of Math and Physics, Morehead State University, Morehead, KY 40351

2 Dept. of Kinesiology, Health, and Imaging Sciences, Morehead State University, Morehead, KY 40351

Abstract

The “anode heel effect” is a difference in beam intensity at the anode and cathode ends of the x-ray beam due to the geometry of an x-ray tube. In this study we measure the “anode heel effect”. We examined the beam intensity of a Philips DigitalDiagnost X-ray machine in the main radiology department at King’s Daughters Medical Center in Ashland, KY. Our results show clearly that the radiation intensity of the beam is greater on the cathode side.