

**Purpose:** To investigate the possibility of using the IC Profiler (Sun Nuclear Corporation) for monthly QA of linear accelerators. **Method and Materials:** Photon and electron profiles measured with the IC Profiler, consisting of 251 ionization chambers located along the X, Y and diagonal axes, were compared to the profiles measured in water with an IC10 ionisation chamber. Three different methods were used for energy measurement of the photon and electron beams: 1) different thicknesses of solid water slab on the IC Profiler, 2) an acrylic continuous energy wedge and 3) a step wedge made of solid water. For the last two methods, the measured PDD equivalent curve was corrected for the change in profiles in order to remove the profile effect. All photon measurements were performed at SSD=75 cm with a 30x30 cm<sup>2</sup> field size in order to be equivalent to a 40x40 cm<sup>2</sup> at the isocenter. The electron measurements were done at SSD=100 cm with a 25x25 cm<sup>2</sup> field size. **Results:** The agreement between symmetry and flatness measurements with the IC Profiler and the water tank was very good: maximum relative difference of -0.7% for 6 MV and 25 MV photon beams and -1.3% for electron beams (from 4 MeV to 22 MeV). Energy measurement using methods 2 and 3 was very fast and seemed to be as sensitive to an energy change as method 1. Method 2 gives a linear interpolation of the relative dose as function of the depth whereas method 3 gives the relative dose averaged over 10 detectors at 4 different depths. **Conclusion:** The IC Profiler is well adapted to the measurement of photon and electron profiles. Three different methods were tested for energy determination and more measurements are needed to establish the most accurate one.