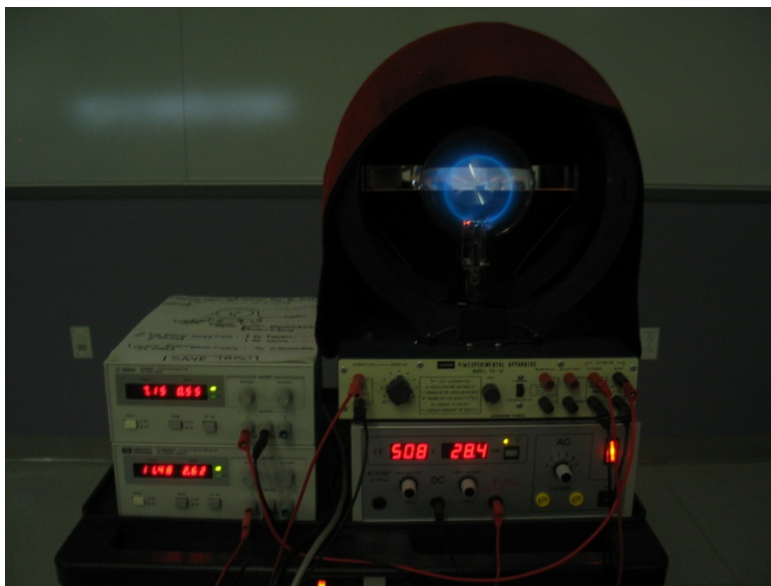


e^- Beam Deflection Due to a Magnetic Field



Purpose: To show how an electron beam is deflected by a uniform magnetic field.

Location: Room 146; on cart near door to room 148

The apparatus and equipment are already set up on a cart. If the proper connections are not in place, there is a diagram showing the correct connections. Once set up, plug the cart power cord into a socket. First turn on the 500V power supply and make sure the voltage is set to approximately 500V. This is the acceleration voltage applied to the electrodes. Next turn on the top Agilent/HP power supply and set it to approximately 7V (be sure not to exceed 8V or the heater filaments might burn out). With the lights off, a horizontal blue electron beam should become visible. Make sure the CURRENT ADJ. knob on the e/m apparatus is turned to maximum setting (10A). Set the current to 0 A on the bottom power supply and turn it on. Slowly increase the current to the coils. The beam will begin to bend and eventually complete a circular path in the magnetic field. The bulb itself can be turned up to 90 degrees as well (to see a spiral path).