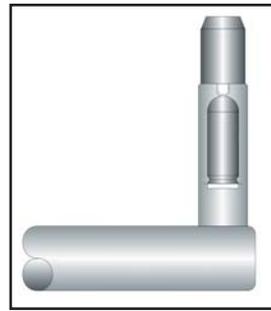
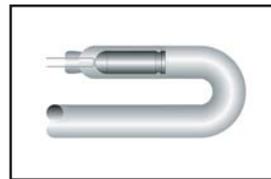


WHAT'S THE DIFFERENCE BETWEEN COLD CATHODE AND NEON?

Although both cold cathode and neon create light by the same principle, cold cathode lamps operate on significantly higher currents, utilize more efficient lamp color coatings, and are more than twice the diameter of neon tubing. Cold cathode also provides up to five times the light output of neon with the same choice of colors. Cold cathode lamps are also far easier to install and, are much less fragile. Unlike neon, each cold cathode system from Cathode Lighting Systems carries a full UL and C-UL listing.



Detail of a 25mm cold cathode lamp. The electrode is a virtually indestructible iron thimble that allows for instant lamp starting, 50,000-hour life, and the ability to dim without any special dimming ballasts. Cold cathode lamps produce up to 5 times more light than neon tubes.



Detail of a 12mm neon tube. Neon tubes are low brightness and small diameter and are ideally suited for signs and graphics but not for general illumination.

WHAT'S THE DIFFERENCE BETWEEN COLD CATHODE AND FLUORESCENT?

The technical name for a standard fluorescent lamp is *hot cathode*. The coated tungsten coil within the lamp produces electrons to support the lamp's gas discharge in a process called *thermionic emission*. This means that in order to produce electrons, the coated coil must be red hot (approximately 900° C). When the emissive material that coats the coil is consumed, the lamp ceases to operate. These lamps require special ballasts if dimming is required. Conversely, a cold cathode electrode is a rugged iron thimble that does not operate in a thermionic manner. At an operating temperature of approximately 200° C, the electrode is relatively cold, hence the term *cold cathode*. The typical lamp life of a fluorescent lamp is 15,000 hours with 3 hours of lamp life lost each time lamps are turned on.



The interior of a standard fluorescent lamp. A tungsten coil is coated within emissive material. Lamp life is typically 15,000 hours and is reduced by 3 hours each time lamps are turned on.

The chart at right illustrates the typical lamp life of a cold cathode lamp versus a fluorescent lamp based on testing a large batch of each type of lamp. Notice that 50% of the fluorescent lamps have already failed prior to reaching their rated life.

