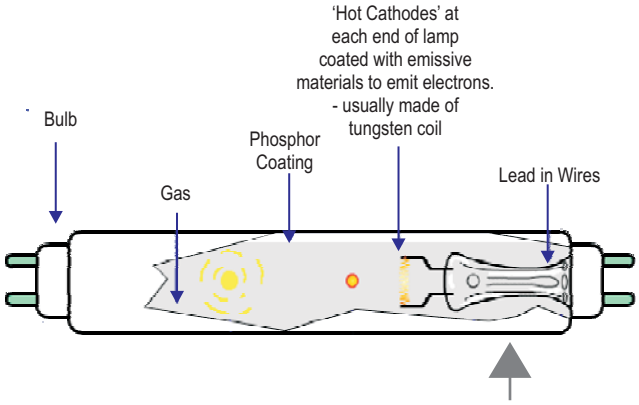
Cold Cathode vs Fluorescent

The technical name for a standard fluorescent lamp is hot cathode. The coated tungsten coil within the lamp produces electrons to support 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 ballast if dimming is required. Conversely a cold cathode electrode is a rugged ron 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 is derived. The typical lamp life of a fluorescent lamp is 15,000 hours with 3 hours of lamp life lost each time they are switched on. During this process the filament coating sublimates which causes blacking of the tube ends and finally the end of the lamp life.



The interior of a standard fluorescent lamp.
A tungsten coil is coated within emissive material.
Lamp life is dramatically reduced by 3 hours each time its switched on.

Dark shadows are typical drawbacks of fluorescent lighting fixtures

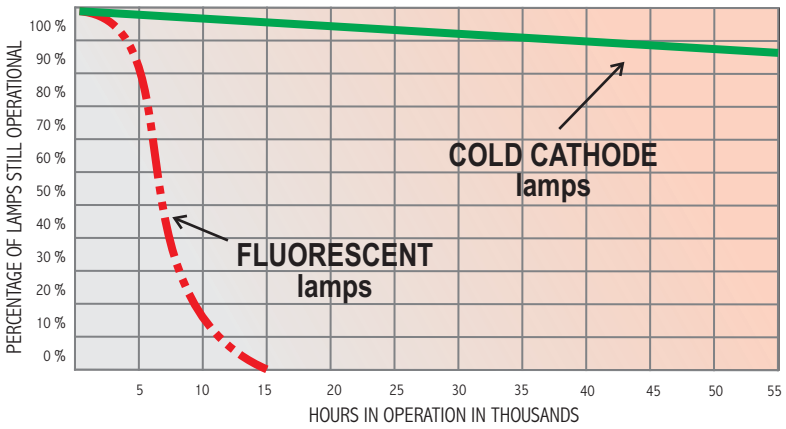
Fluorescent lighting although bright is provided in certain standard sizes and colors which may not lend itself to the size or shape of the cove or the specific color requirements of the architect or lighting designer. Being different from hot cathode tube, Cold cathode lamps needs neither a starter nor a current limiting device such as a ballast. Instead a high voltage, is provided by means of a transformer, commonly referred to as a converter. These transformers construction parameters are selected in such a way as to limit the operating current to a very low value, typically in the range from 25 to 100 mA.

The operating voltage of cold cathode lamp is chosen according to the length of lamps to be driven and the current according to the required lumen level, making cold cathode lighting versatile for wide applications.

Unlike fluorescent, Cold Cathode Lighting is the perfect choice for internal and external architectural lighting applications, they are weatherproof, flicker free and can be made to follow any contour to give a constant seamless light.
Cold cathode lighting is one of the most versatile lighting solutions available in the market.

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

TYPICAL EXPECTED LAMP LIFE : COLD CATHODE VS. FLUORESCENT



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