

# [How fluorescent fixture works essay sample](https://assignbuster.com/how-fluorescent-fixture-works-essay-sample/)

Much of the lighting in both homes and offices is done by four-tube fluorescent arrangements of fixtures that are combined together although each two separate two-tube unit is an independent entity. They use same ballast, but work independent of each other. If one of the pairs is removed from the foursome fixture, almost half of the energy utilized is saved although illumination is lowered. (http://www. howeverythingworks. org/.)

The pair of each two tubes is connected in series such that for complete circuit, any current discharged via the gas in one tube flows through the other gas in the adjacent tube. This way, if one of them goes off, the other one goes out simultaneously. In this case, only one of the tubes is not operational and since it does not have the capacity to sustain discharge, the adjacent partner does not receive current and they cannot illuminate. This problem is addressed by replacing the malfunctioned tube with an operational one and the pair starts working again even if for a short period.

As tubes serve, they start to reduce discharges by consuming energy while amount of light is reduced. This is because fluorescent fixtures first heat the electrodes at the tips of the tubes before they start to discharge whereby during startup, an electric current is created in each electrode then the heated electrodes induces electric charges into the fluorescent  gas to start up the discharge. Discharge only starts after initial heating current and its failure to start makes the electrodes continue to heat indefinitely provided the ballast is still useful and is indicated by observing the ends of a tube that has failed to start; the electrodes glow red hot. It is a waste of resources to leave such tubes in a fixture as cash is burning up!

Reference;

Bloomfield, A. L. (1997). How everything works. (http://www. howeverythingworks. org/). Retrieved on 3 rd June 2009.