The high pressure sodium lamp is an efficient source of light (efficacies up to 142 lumens per watt), it has a long life with reasonable lumen maintenance and whilst the colour rendering on the standard lamp is poor it is acceptable for a number of applications.

The white high pressure sodium lamp has a spectrum with minimal output in the yellow. This has the property of making a large number of colours appear more vivid and so this lamp has a number of applications in retail lighting.

3.3.8 Induction

Induction lamps are essentially gas discharge lamps that do not have electrodes. Instead the electric field in the lamp is induced by an induction coil that is operating at high frequency. The only types of induction lamps that are currently in production are based on fluorescent lamp technology. Figure 3.28 shows the layout of a cavity type lamp.

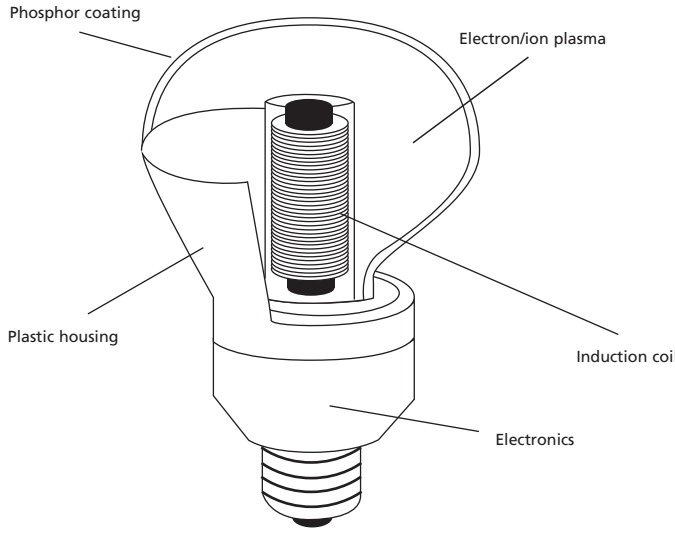

Figure 3.28
Construction of a cavity type induction lamp

The lamp consists of a glass bottle with a cavity in it into which the induction coil is placed. The glass vessel has a gas filling similar to a conventional fluorescent lamp and the phosphor coating on the inside of the lamp is also similar.

The induction coil in the centre of the lamp is fed from a high frequency generator.

An alternative architecture for this type of lamp is to have the induction coil wrapped around a toroidal lamp. Figure 3.29 shows a lamp of this type.

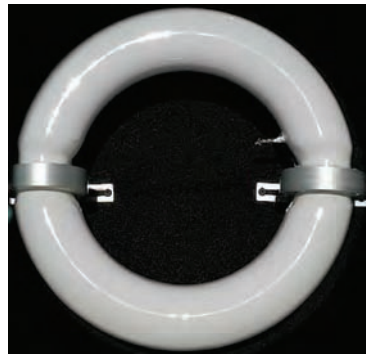

Figure 3.29
An external coil induction lamp