2.6 Low Pressure Sodium

Low pressure sodium lamps are similar in many ways to fluorescent lamps as they are both low pressure discharge lamps. All the differences in characteristics stem from the use of sodium in the discharge tube rather than mercury. The key differences are the need to run the lamp hotter to maintain the vapour pressure of sodium, the need to contain the very reactive sodium metal; and the fact that sodium emits its light in the visible rather than the UV frequency range, so there is no need for a phosphor layer.

There used to be a range of designs for sodium lamps but currently the U-tube lamp is by far the most common type. A typical lamp of this design is shown in Figure 52.

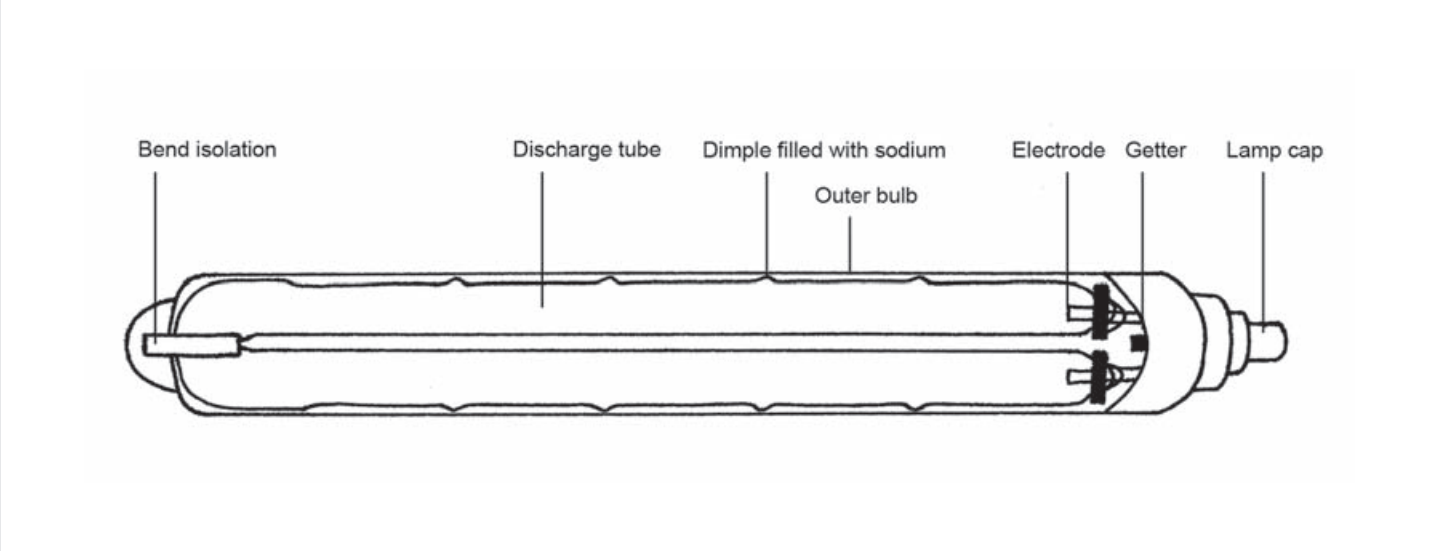

Figure 52
Typical construction of a low pressure sodium lamp.

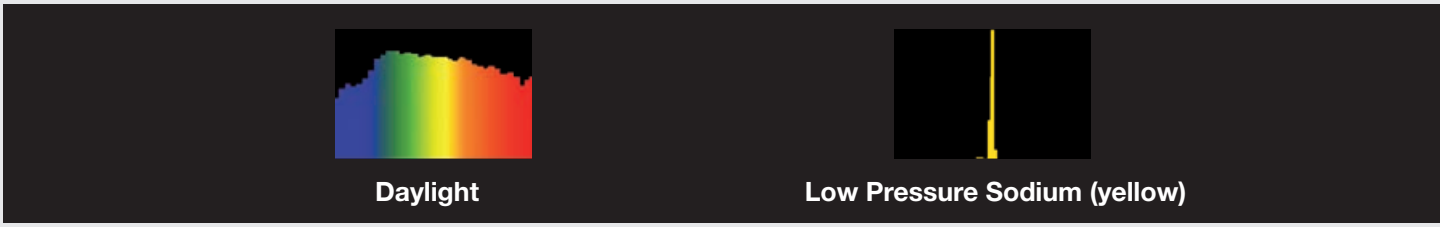

Figure 53
Typical spectral light distribution of low pressure sodium lamp in comparison to daylight spectrum.