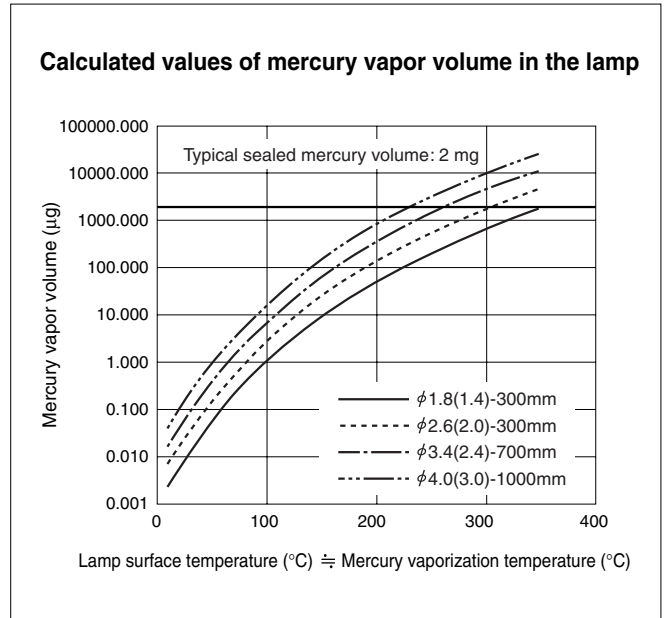
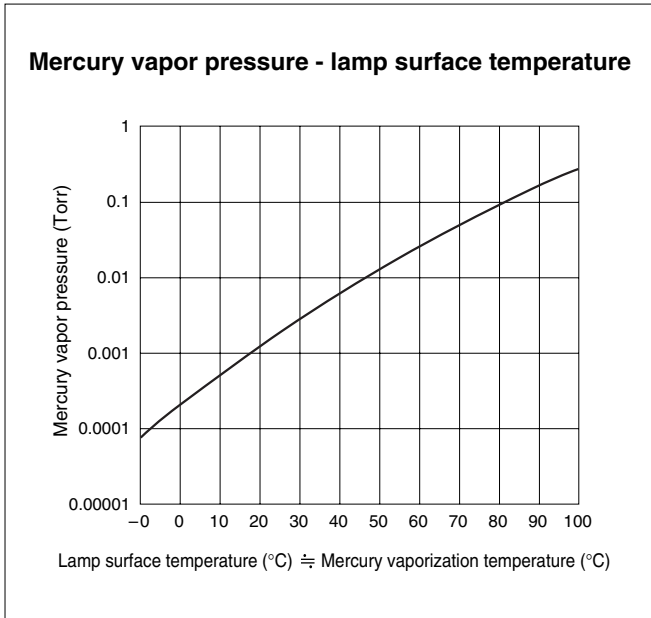


●Mercury Vapor Pressure and Volume

Mercury vapor pressure and volume, depended on ambient temperature, have the characteristics shown in the figure below.

Mercury vapor pressure is depended on ambient temperature, and mercury vapor volume is depended on ambient temperature and

lamp volume. Lamp surface temperature at lighting is 40 to 90°C depending on the lamp current. Amount of mercury actually required to vaporize to light the lamp is about a few μg.



●Distribution of lamp surface temperature and mercury

With Sanken CCFLs except those for TV sets, a nearly equal volume of mercury is intentionally placed on both ends of the lamp near the electrode (outside the effective emission area). This is to increase lamp life (low temperature life in particular).

At lighting, as temperature inside the lamp rises, mercury is vaporized to high pressure and diffused.

At lights-out, the evaporated mercury returns to liquid mercury and is adhered inside the lamp. Because of this, mercury near the electrode gradually (taking long time) moves to the effective lighting area, but the volume of mercury thus moved is not so significant as to cause the decrease of back-light luminance.

When the lamp surface temperature distribution is inappropriate, however, mercury is gathered to the coldest area, and it will shorten the life of the lamp. For details, see Section 4-2, “Defects Caused by Mercury Migration due to Gradient of Lamp Surface Temperature,” on page 11.

It is very difficult to judge whether the lamp wall temperature distribution in a unit state is proper or not by measuring the lamp wall temperature directly. Instead, it can be judged whether a lamp wall temperature distribution is proper or not by checking the distribution of mercury. Please contact our Engineering Dept. about the detailed check method.

