



## Distribution of Luminance

For most applications (especially in spectroscopy) the luminance or radiance is important. As shown in Fig. 1 and 2 Xe arc lamps have one "hot spot" at the cathode while Hg arc lamps have "hot spots" at both electrodes. These plasma balls may be imaged onto pinholes, fibers, monochromator slits or other small targets for maximum illumination (only the plasma ball, not the total area).

## Beam Uniformity

As shown in Fig. 1 and 2 the arc of arc lamps is non uniform and not circular. They have intensity peaks near the electrodes. Therefore the beam of lamp housings with optics for best collimation is non uniform and divergent. Fig. 3 shows the collimate output of a 200 W Hg-lamp in the vertical and horizontal planes.

Because of the arc not being uniform and circular, the divergence in one plane is not the same as that in the orthogonal plane. For most design purposes, the arc size quoted in the chapter „Arc Lamps, Specifications“ on [www.lot-orient.com/lightsources](http://www.lot-orient.com/lightsources) ("Arc Light Sources") and the lens focal length give a good guide to divergence.

For low divergence beams you should consider small arc sources and if necessary, use a pinhole as interim image.

