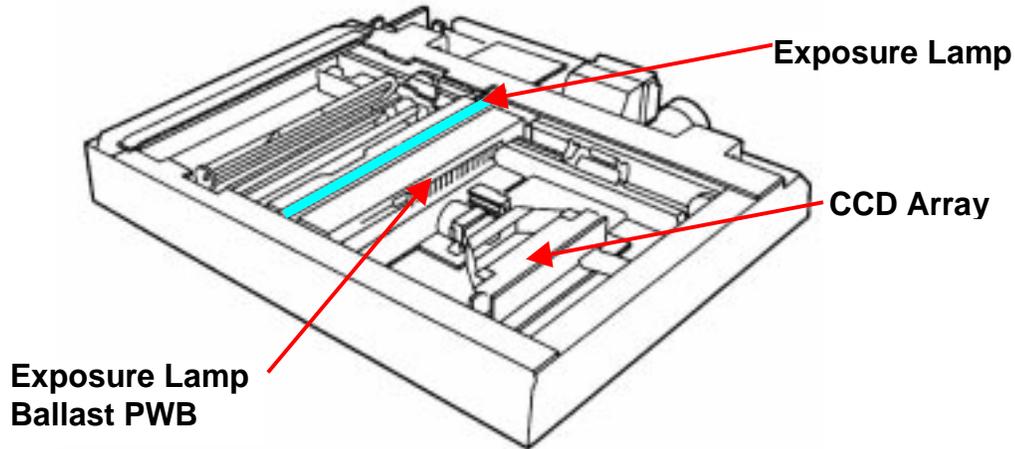


Exposure Lamp - Image Input Terminal

Exposure Lamp and Lamp Circuitry

In most machines, a quartz Lamp is used to illuminate the original document. However, a Xenon Lamp is used in this machine as a means of reducing heat. Unlike incandescent Lamps, including quartz Lamps, the illumination of a Xenon Lamp is not continuous. It varies directly with the instantaneous voltage of the driving signal. This is similar to fluorescent bulbs and means that if the driving signal is AC (Alternating Current), the lamp emits no light when the instantaneous voltage is zero.



If the bulb drive frequency is 60 Hz or higher, the human eye sees this as a constant level of illumination. However, the CCD Array on the CCD PWB are fast enough to see the change in illumination caused by the AC drive signal used for the Xenon Lamp. Therefore, the CCD must capture its image when the Exposure Lamp outputs are known to be non-zero.

Exposure Lamp - Image Input Terminal

Exposure Lamp and Lamp Circuitry (continued)

For the CCD must capture its image when the Xenon Lamp outputs are known to be non-zero, two techniques are used.

1. The Pre -IPS PWB adjusts the effective sensitivity of the CCD so that it is the inverse of the Exposure Lamp AC drive signal
2. The drive signal to the Exposure Lamp is intermittently interrupted as shown in the figure below.

