

Many application opportunities for FLATLITE[®] Electroluminescent Lamps and Power Supplies are sensitive to excessive audible noise. These opportunities include retail, residential and commercial environments among others.

Lamp Acoustical Issues

A FLATLITE[®] lamp operating in open air will emanate a tone and harmonics centered around the operating frequency of the lamp, typically 650 Hz. The construction of the lamp as a flat, semirigid panel causes it to react much the same way a planar speaker works.

There are two primary solutions to this issue when installing the lamp:

1. **The lamp may be coupled to a non-resonant surface.** Using a double stick tape (for strip lamps), or a contact adhesive (for panel lamps), the lamp can be bonded to a surface that will deaden the vibrations. Typical surfaces include concrete, insulated wood or plaster walls, solid plastic or sintra panels at least ¼ inch thick, MDF panels at least ¾ inch thick, or Styrene panels at least 1 inch thick. Hollow wood, plaster, or drywall surfaces will actually increase the volume of the noise, much as a guitar or violin body will amplify the vibrations of the strings.
2. **The lamp may be installed over a vinyl sound barrier.** This is a high density limp-mass material that is 1/8 inch thick, and is available in rolls 54 inches wide and 60 feet long. It is Fire Resistant, with a Class "A" rated version available. The lamp must be bonded to this backing for an effective installation. Contact your E-Lite Technologies, Inc., representative for information on where to purchase this material.

Important Notes

- √ Care must be taken to ensure a complete bond, without trapped air pockets that will allow the lamp to move independently in those areas.
- √ Never bond the lamp directly to an un-grounded metal surface. When installing the lamp to metal, always ensure that the metal has a clean earth ground.

Power Supply Acoustical Issues

FLATLITE[®] Power Supplies will emanate an audible hum in certain configurations. Sometimes this hum is caused by factors such as incorrect power supply for the given lamp area or incorrect voltage setting. Despite the cause, however, there is a straightforward way of dealing with this issue. As a high voltage / low current system, it is possible to locate the supply as much as 300 feet from the lamp in most instances. This allows the installation of the supply in a utility closet, basement, plenum space or other remote area where this noise is not an issue. Distances of more than 300 feet may be possible; contact your E-Lite representative for more information.