

## LED Driver Sound Ratings

LED drivers are not completely silent. Some make buzzing or humming sounds, which can be annoying, especially in studios where audio is typically being recorded. The sound emitted by LED drivers may change as the light controls are changed: dimming lights often increases noise, as does changing colors in RGB systems.

The quietest LED drivers are electronic, not magnetic. And the quietest electronic drivers are fully potted drivers. These drivers have the electronics contained in a leak-proof case. After the electronics are assembled and tested, liquid potting material is poured into the container, submerging the electronics. The potting material then hardens. Potting material is thermally conductive, to help keep the electronics cool. It is also electrically insulating, to keep components from shorting. Also, the potting material deadens sound vibrations, which is why fully potted drivers run quieter.

So even if you don't need your driver to be waterproof, you might want to consider using the more expensive waterproof HLG series instead of the non-waterproof enclosed SP series. The SP series is louder, the output voltage not as well-regulated. The SP series is an economy solution, whereas the HLG series is simply better made and quieter.

Some LED drivers have sound ratings that correspond to fluorescent ballast ratings. The following excerpt is from the National Lighting Product Information Program Specifier Reports "Electronic Ballasts" report, Volume 8, Number 1, May 2000, page 18.

Ballasts are rated from "A" to "F" based on their noise level. The rating does not directly indicate the amount of noise the ballast generates, but instead defines the range of ambient sound levels in which people will not notice the ballast noise. While manufacturers use the same ranges, there is no standard describing the method of measurement or application of the rating. Table 6 shows the average sound levels, in acoustic decibels (dB), for noise ratings "A" through "F."

Noise Rating	Average Ambient Sound Level (dB)
A	20-24
B	25-30
C	31-36
D	37-42
E	43-48
F	49 and higher

"A"-rated ballasts are for indoor applications such as offices, and noisier "B"-rated ballasts are intended for outdoor applications or indoor spaces such as warehouses where noise is not as bothersome. Most electronic ballasts have a noise rating of "A."

Although electronic ballasts are usually quieter than magnetic ballasts, other factors can amplify the vibration and noise generated by a ballast, such as the mounting method, location of the ballast in the fixture, and even loose parts in the fixture.