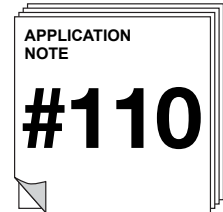


LUTRON®

For Your Information ...



Ballast Factor of Electronic Fluorescent Ballasts

Overview

Ballast factor (BF) is commonly used to specify a fluorescent lamp-ballast combination for a luminaire. ANSI C82.2-1984 defines ballast factor as the relative light output of a lamp operated on a particular ballast with respect to the light output of the same lamp operated on a reference ballast.

BF is sometimes simply called relative light output (RLO) and is expressed as a ratio or percentage.

Discussion

BF is sometimes thought to reflect the energy efficiency of the ballast. That is incorrect because BF only describes the relative light output of a lamp-ballast combination and does not consider the power that the ballast is consuming. Hence if **Ballast A** and **Ballast B** have the same BF but **Ballast A** has a higher power consumption, then it is less efficient than **Ballast B**.

Range of BF

In the electronic fluorescent ballast industry, BF ranges from 0.7-1.2. Therefore for any lamp, there are ballasts available that are designed to provide anywhere from 70% to 120% light output of a reference. Ballast factors of all Lutron ballasts are indicated on the respective specification sheets.

Need for BF data

BF is important for fluorescent lighting design and specification as it helps to calculate the total lumen output of the lamps. For example if the lumen output of a lamp is specified at 2,400lm and the rated ballast factor is 0.9, then

$$\begin{aligned}\text{Actual lumen output} &= 2,400\text{lm} \times 0.9 \\ &= \underline{\underline{2,160\text{lm}}}\end{aligned}$$

When doing lumens per watt (lm/W) calculations to comply with watts per square foot (W/ft²) requirements in a region, the appropriate method to compare ballast efficiency is by using Ballast Efficacy Factor (BEF)¹.

Multiple lamp types

When one ballast is intended to operate multiple lamp types, the ballast factor is different for each lamp type. As each lamp type has a different current requirement and provides a different light output, the same ballast will operate them at different ballast factors.

BF of Lutron dimming ballasts

Ballast factor of Lutron linear fluorescent dimming ballasts is 0.85 or greater and for compact fluorescent dimming ballasts is 0.95 or greater.

¹ Please refer to App. Note 103 (048-072) for more information

Summary

BF is a quantity that represents the light output of a fluorescent lamp on a particular ballast as a ratio of the light output of the lamp on a standard reference ballast. There are ballasts that produce lower or higher light output than reference ballasts. BF is not a measure of ballast efficiency, as it does not take into account the current supplied to the lamps.

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