

Common Misconceptions about Fluorescent Lighting

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Should I turn off fluorescent lighting when leaving a room?

Short Answer: Turn them off if you will be gone for more than about 15 – 20 minutes (for details keep reading).

There are a few misconceptions about fluorescent lighting that keep too many people from turning lights off to save energy. The first misconception is that it takes more energy to start a fluorescent light than it takes to run it. The second misconception is that turning a fluorescent light off and on will wear it out right away. Like many myths about energy, there is a small amount of truth in the belief².

Misconception #1: It takes more energy to start a fluorescent than it does to run it, so leave the lights on all the time to save money on your electric bill.

Reality: When you turn on a fluorescent light there is a very brief jump in electrical current when the ballast causes the light to start. This initial jump in current is much higher than the normal operating current of the light. However, this initial jump lasts less than 1/10th of a second and draws the equivalent amount of electricity of 5 seconds of normal light operation. So, if you turn a fluorescent light off and on more frequently than every 5 seconds, you will use more electricity than normal. Normal switching on and off of your fluorescent lights will have **very** little effect on your electric bill.

Misconception #2: Turning fluorescent lights off and on quickly wears them out right away

Reality:

Electric lights have a published rating for expected life. This rating is in the hundreds of hours for many incandescent lights, and in the thousands of hours for most fluorescents. Fluorescent lights have a life rating based on how many hours they are left on every time they are turned on. This is usually referred to as “burn time”, and for fluorescent lights the burn time is three hours.

Every time a fluorescent light is turned on, a tiny amount of the coating on the electrodes is burned off. Eventually, enough coating is burned off, and the lamp fails to start. Most full-size fluorescent lamps are rated to last 20,000 hours when left on three hours every time they are turned on. This means that the lamp has roughly 6,667 starts available to use up ($20,000/3 = 6,667$).

¹ This article is reprinted and distributed with permission from Randal N Smith, Newsletter Editor at Lighting Design Lab of Seattle Washington.

² The information contained in this article came from research done by Steve Selkowitz of Lawrence Berkeley National Labs.

Longer burns extend lamp life. If you “burn” your fluorescent lamps shorter than 3 hours per start, you use up your potential starts faster. If you “burn” them longer than 3 hours per start, you use up your starts more slowly. However, you are paying energy costs for the operating time of the lamps, and the most efficient lamp is one that is not on when it is not needed.

But longer burns use more energy. Operating a light when it is not needed is simply spending money for no purpose. Today’s rapidly rising electric rates mandate that every building becomes leaner with energy use to control costs.