

When are Fluorescent Tubes being banned in the US?

This is a good question, but the real issue is tube *availability*. As discussed below, fluorescent tubes will become economically impractical before any US federal ban takes place. The three drivers behind this change are economics, performance, and environment concerns.

On February 24, 2022 the European Union Commission (EC) adopted regulations under the Restriction of Hazardous Substances (RoHS) Directive banning fluorescent lighting for sale in the EU by September 2023. The exemption (4(f)-I) for specialty lamps, including those used for color critical viewing extends to February 2025 ([EU Directive 2022/279](#)). The key reason for the ban is the toxicity of mercury contained in tubes. So, it is clear that fluorescent tubes (FT) will not be available in Europe quite soon.

What about the US and North America? While the US Department of Energy (DOE) has proposed new standards ([DOE 10 CFR Part 430](#)) for lighting energy efficiency, these would not outlaw FTs. However, at least eight states already have laws either proposed or implemented that would ban FTs. Consequently, while momentum for a US federal-level ban is slowly building, individual states have already started bans.

Further, there is considerable momentum to outright ban FT worldwide. The EU decision will provide crucial support to a global effort to phase-out fluorescents under the [United Nations Minamata Convention on Mercury](#) that seeks to protect human health and the environment from the adverse effects of mercury. Already, this UN group has agreed to phase out compact fluorescent lamps by 2025. A vote on linear FTs (e.g. the T8 ones used in color viewing systems) will take place at the next meeting ([News eceee.org](#)).

For color critical viewing applications requiring either CIE D65 or CIE D50 illuminants, light sources based on fluorescent tube technology had long been the only practical, economical solution. However, in addition to the toxicity and efficiency issues discussed above, these tubes also have significant manufacturing, performance and functional issues including:

- Difficult and expensive to manufacture
- Variable manufacturing process, producing inconsistencies between tube lots or batches
- Short useful life, maintaining specifications for only 2,500 hours
- Require a ‘burn-in’ period of at least 100 hours prior to use
- Require a minimum warm-up period of 20 minutes, resulting in many fixtures begin left on, consuming as much as 90% more energy than actually required
- Significant color shifts during dimming, and so are Impractical for applications requiring dimming (e.g. soft proofing)
- Inability to precisely control the white point chromaticity coordinates
- Constant changes in tube output and colorimetric performance during their useful life

As a result of all the factors discussed above, worldwide demand for FT has dropped precipitously and, accordingly, manufacturers have closed plants, consolidated, and reduced production. The comparatively small demand of industries using FT for color critical viewing (vs. general production FT) does not, in itself, present sufficient volume to justify keeping production facilities open. Therefore, declining demand for FTs will likely cause the elimination of color critical FT availability long before legislation does.

Either way, whether the driving force is market economics, efficiency, toxicity, performance, or functionality, FT have reached their end-of-life. Users of fluorescent tubes for color critical viewing are wise to plan for this change, particularly given that alternatives exist that are less expensive (TCO), more efficient, higher performances (ref. all), highly stable, linearly dimmable, instantly switchable, dual illuminant, and more than 20 times the useful life.

The fate of fluorescent lighting is clear and near. What's your plan?



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