

My name is Stephen Beard. I have been a lighting professional in Vermont for 20 years. I carry the National Council for Qualification of Lighting Professionals (NCQLP) “LC” Lighting Certification and I am a Member of the Illuminating Engineering Society (IES). I am a certified design partner of Efficiency Vermont in their Lighting Design Program.

I am writing to you to share lighting facts in support of H.410, the bill to expand appliance efficiency standards in Vermont - in particular the provision to close the loophole that allows inefficient high-CRI T12 lightbulbs to be sold here.

The T12 fluorescent lamp first went to market in 1939<sup>1</sup>. It was a revolutionary energy-efficient product nearly 80 years ago, and remained a solid choice for many decades, until advancements in lighting technology eventually created better alternatives. T12 lamp production finally largely ended in 2012 due to T12’s inability to meet modern federal energy efficiency standards.

I say T12 production “largely” ended because the 1992 federal EPCACT law which terminated production of the inefficient T12 lamps in 2012 allowed one loophole – production of specialty high Color Rendering Index (CRI) T12 lamps could continue.

High-CRI applications where color rendering is important include spaces such as clothing retail and automotive paint shops. In the early 1990’s when the EPCACT law was passed, the high-CRI exemption was on sound technical ground, as energy efficient high-CRI options to T12 were limited.

However, in the intervening decades a number of far more energy-efficient high-CRI lamp options have become available. These include T8, T5, and now LED (which can offer good color rendering while using up to 70% less energy than a T12 system.)

In the meantime, inefficient high-CRI T12 lamps originally intended only for specialty applications have increasingly crept into standard lighting environments as replacement lamps in applications they were not originally intended for, such as Vermont homes and offices. This use of the high-CRI loophole as workaround to the EPCACT ban on T12 lamps has helped a significant amount of inefficient T12 light fixtures to persist in Vermont years after the federal ban on most T12 lamp production went into effect. As a professional lighting auditor and designer, I continue to see T12 lamps in virtually every space I audit, and I continue to take the opportunity to inform consumers that the energy cost of operating their inefficient T12 light fixtures is 30% to 70% greater than that of a T8 or LED system that meets federal energy efficiency standards.

Fortunately, there are numerous good cost-effective replacements available. Philips currently manufactures a 4’ LED lamp they advertise as compatible with a broad range of existing T12 ballasts<sup>2</sup>. Philips estimates their LED T12 Instant Fit lamp results in energy savings of 55%, and these savings can be realized without needing to call an electrician to change out a light fixture or a ballast – the end user can simply install the LED T12 lamp in exactly the same manner they would install a legacy fluorescent 4’ T12 lamp.

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<sup>1</sup> <http://www.edisontechcenter.org/fourescentlampdev.html>

<sup>2</sup> <https://www.homedepot.com/p/Philips-40-Watt-Equivalent-Daylight-4-ft-T12-LED-Light-Bulb-468710/301154648>

Consumers who wish to save on their power bill can also join the groundswell of businesses and homeowners who are replacing their inefficient T12 light fixtures with complete new dedicated LED light fixtures that far exceed federal energy efficiency standards, and which are now frequently available at or below the historical cost of legacy fluorescent technologies.

Over the past two decades the electrical industry and the State of Vermont have taken powerful steps to encourage customers to remove the grossly inefficient T12 fixtures from their buildings and replace them with better lighting options. There are several generations of improved technology that have emerged to fit the needs of consumers, including efficient T8 and LED lamps that meet the federal energy efficiency standards, while incidentally providing high CRI ratings.

H.410 would set the efficiency requirements for high-CRI fluorescent T12 lightbulbs at the same levels the federal standard requires for all normal-CRI fluorescent lightbulbs. This would greatly encourage the adoption of energy-efficient lamps in Vermont. For this reason, I urge you to pass H.410.

Thank you,

Stephen Beard, LC, MIES