

Re: Electronic Ballast for Fluorescent Light [Hack] ?

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- *From:* insula@xxxxxxxxxx (C. Nick Kruzer)
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C. Nick Kruzer (me) asked:

Will two 20W ballasts [in parallel] drive a single 40W tubular fluorescent light bulb?

Petrus answered:

No...ballasts produce high frequency AC voltage...not synchronized, they will blow...

Tom agrees and responds:

I wouldn't do that. The THD...could present a dangerous situation.

Paul C. writes:

WHY?

I'm trying to save money on a set-up for growing plants indoors under artificial light. I'm growing vegetables which requires a good amount electricity (wattage) for light. Lights made for growing plants are expensive, I think because farmers of illicit indoor marijuana gardens use them. I'm looking for ways to cut costs. I'm sick and tired of paying three dollars a pound for tomatoes at the supermarket. I live in a city apartment and can't grow anything outdoors. No direct sunlight from windows...have to use lamplight. I get a discount on electric power. Even if I break even in costs with tomato prices in supermarket I figure I'm ahead..I will also get the pleasure of watching plants grow,

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will eat organic grown, will have fun putting the fixtures together and will have a conversation piece for guests to admire...

The two 20 watt ballasts I have are from screw-in compact fluorescent lights with the bulbs removed. I can get these for about a buck apiece. I have already tried one to power a small, linear, tubular fluorescent light bulb, and it works. I matched the wattage ratings of the fluorescent grow bulb with the compact fixture wattage from label on fixture package. I attached wires from ballast to pins on the fluorescent light tube with molex type connectors salvaged from old junk computer parts. They fit perfectly. I'm looking for ways to power larger tubes, that's why I asked about the two 20W ballasts for a 40 Watt tube.

Check what the electronic ballast says for its power ratings (of tubes it can drive). Anyway the correct ballast will be peanuts in cost, a whole new fitting would be cheap as well.

Looks like that's what I'll be doing.

Leaving alone the synchronisation of the outputs of the ballasts, you have fundamental problems.

I'm glad I asked. I knew the electronics involved high frequency, but didn't know much about the technology and applications..

Tube wattage is proportional to the LENGTH of the tube. Compact fluorescent tubes get higher wattage in smaller space by compacting the length using bends and spirals.

That's good to know. It makes sense to me knowing what I know about high voltage.

Electronic Ballast/starters apply a lower voltage but higher current through the slectrodes to HEAT the electrodes for 1 – 2 seconds to enable the START of the plasma discharge with the HIGH strike volatge. Typical start voltages are around 20–30V, strike voltages are 100V and greater (says he having had voltage frequency burns from 600V 40KHz strike voltages).

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That certainly would be the incorrect start voltage for the larger tube.

TWO 20W ballasts in parallel WILL shorten the life of the tube electrodes by applying too much heating current, hence releasing mercury inside the tube from the electrodes.

Mercury!!!...I don't want to become the "Mad Hatter"! :-)

Such great answers to my question from everyone... You have my gratitude.

Here is something I found when reading about using plant grow lights. It is what initiated my inquiry, starting this thread. It involves rewiring a two bulb fixture to run only one bulb, resulting in a greater intensity of light. The author (Zink) advises that the "overdrive" process shortens the life of the fluorescent tube. I found the information while reading a Gardening forum.

<http://community-2.webtv.net/crispmint/HomeGarden/page2.html>

http://www.geocities.com/overdrive_lights/

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