



What The T5 Industry Doesn't Want You To Know

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Leveling the Playing Field

The T5 is the dying breath of the fluorescent technology. The chart on the right (published by Philips) compares their 360W T5 to their 460W HID. Cireon high bays of 180W “deliver” more light than a 6-bulb 54W T5 with **HALF THE ENERGY**.

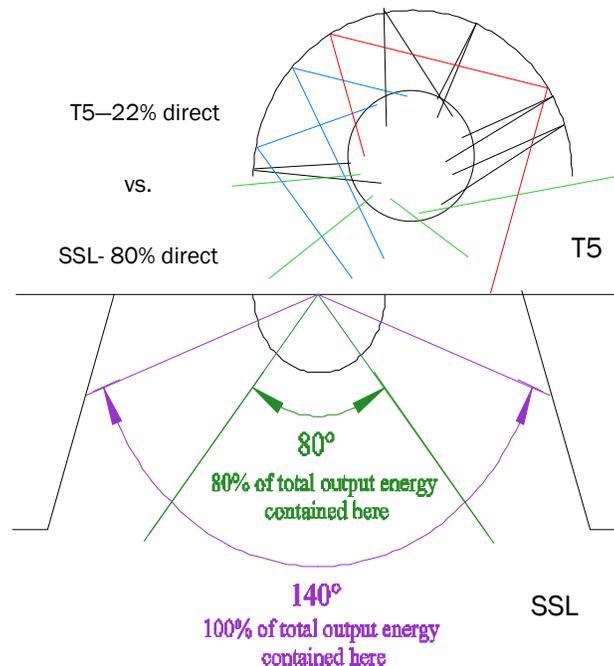
kW h Rate	MH 400 460 System Watts		T 5 54W HC 360 System Watts	
	4380*	8760**	4380*	8760**
\$0.06	\$120.89	\$241.78	\$94.61	\$189.22
\$0.08	\$161.18	\$322.37	\$126.14	\$252.29
\$0.10	\$201.48	\$402.96	\$157.68	\$315.36
\$0.12	\$241.78	\$483.55	\$189.22	\$378.43
\$0.20	\$402.96	\$805.92	\$315.36	\$630.72

A 40% reduction in energy is necessary to qualify for the full \$0.60/ft² the EAct tax deduction. The T5's reduction to 360W from 460W is 22%, while the 180W SSL is 61%. Hmm...

Efficacy vs. Delivered Light

The T5 is an “omni-directional” light source. Only 22% of the total lumens emitted from the T5 (in a high bay application) travel directly to the target; the remainder suffer a large amount of energy loss due to reflection and distance.

The Luxeon ES LED starts with 80% of its total output already in the target zone. If, instead of *total lumens*, efficacy were based upon *delivered* light, the benefits of the SSLs directional output would be much more clear. Unfortunately, industry measurement standards have not yet caught up with this.

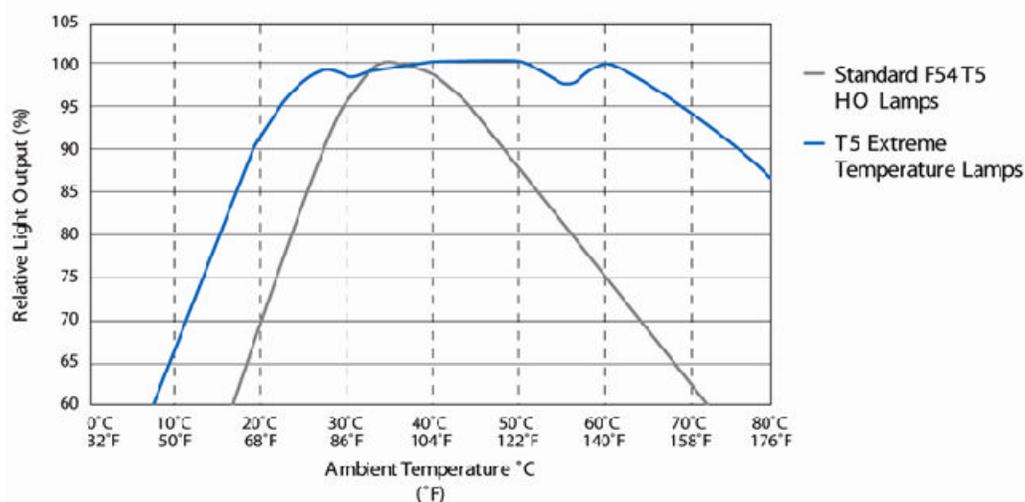


The Effect of Ambient Temperature

Few end users realize the effect ambient temperature has on the light output of the T5. The maximum output is at about 92°F and even at a controlled 72°F, there is a 25% loss in output! How many facilities does this apply to? For the SSL, the colder the better.

Performance (Relative Light Output vs. Temperature)

Philips T5 HO Extreme Temperature Lamps vs. Standard F54T5 Lamps



Re-Lamping Reality; Rated vs. Actual Life

Philips advertises the “rated life” of their T5 at 35,000 hours with a 12-hour start. While they are honest with their data, they define rated life as “the length of operation at which an average of 50% of the lamps will still be operational and 50% will not”. How many facility managers will allow their facilities to have half the bulbs out? Additionally, of the 50% that remain, “operational” means that they are still putting out *some* light.

The T5 consumes double the energy, distribution is uncontrollable, its output is greatly affected by ambient temperature, and there are six bulbs to maintain. Is there really any comparison?

Questions or comments? Please email me at jdilbeck@cireonusa.com