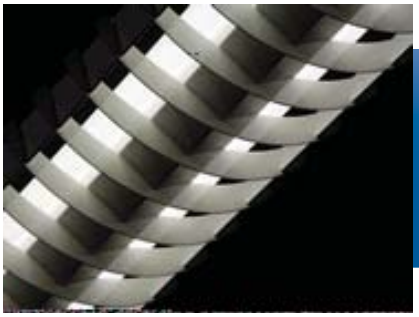
East Central Energy

ENERGY EFFICIENCY FOR YOUR BUSINESS

The ABCs of T8 Lamps



Source: www.sxc.hu

Key Points

- T8s have evolved through several generations of technology.
- Reduced wattage lamps are more expensive than standard T8 lamps.
- Super T8s offer higher lumen output, efficacy, and color rendering index ratings.

T8 lamps are found almost everywhere light is needed in workspaces. The nomenclature for linear fluorescent lamps is generally F#T#. "F" stands for fluorescent and the following number represents wattage or length in inches (F96T8 lamps are 96" or 8' in length). The "T" designation stands for tubular and the following number represents the tube diameter in eighths of an inch (T8 = 8/8 = 1"). An F32T8 lamp is rated at 32 watts. Another important parameter is Color Rendering Index (CRI) which is a lamp's ability to render colors the same as sunlight does. A CRI of 100 is equivalent to sunlight's color rendering. T8s have evolved through several generations of technology:

First Generation
The first-generation T8 products go by many names, including 700 series or basic grade. With only 2,800 lumens, 75 to 78 CRI, and typically a 15,000- to 20,000-hour rating, these 32-watt (W) lamps have the lowest lumens and shortest life of the T8s. However, they also have the lowest initial cost to purchase.

Second Generation
The second-generation T8s, also known as the 800 series, are 32 W lamps with 2,950 to 3,000 lumens, 82 to 86 CRI, and a 20,000- to 24,000-hour life rating.

Third Generation
Also known as High-Performance, Higher Lumen, or Super, the third generation of 32 W T8 lamps offers 3,100 lumens and a long-life rating of 24,000 hours. Efficacy is high, with lumens per watt in the range of 94 to 100. CRI is 82 to 86.

Fourth and Fifth Generation
The fourth-generation 30 W T8s are sometimes called Energy Savers, while the fifth-generation 28 W lamps are sometimes called Reduced Wattage.

Reduced-Wattage T8 Lamps

Reduced-wattage T8 lamps are designed to replace the old 34 W T12 lamps in fluorescent luminaire retrofits where standard 32 W T8 lamps would provide too much light. Many T12 to T8 retrofit projects balance light output by reducing the number of lamps in each luminaire, but reduced-wattage lamps allow the lamp count to remain unchanged. There are several other important characteristics of reduced-wattage T8 lamps:

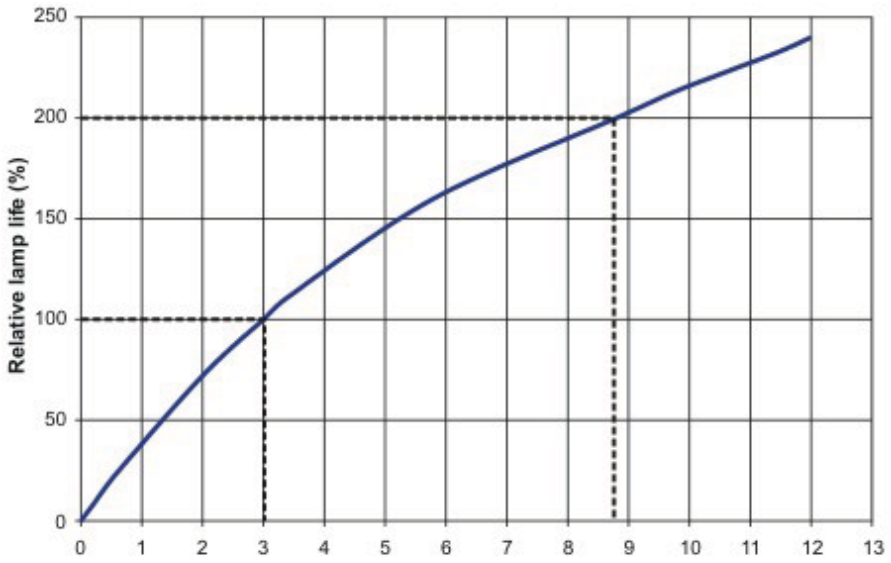
- Available in 25 W, 28 W, and 30 W models.
- More temperature sensitive than standard 32 W T8 lamps and do not operate well below 60°F.
- Should use instant-start ballast (not rapid-start or dimming ballasts).
- Best in applications that can tolerate less light.
- Potentially 24% lower energy consumption than standard 32 W T8, but lumens are reduced only 6%.
- More expensive than standard T8 lamps.

High-Performance T8 Systems

Very few manufacturers use the term “Super T8” to describe their products. To find one, you must look for system efficacies of at least 90 lumens per watt and a CRI of at least 80. Commercially available Super T8 lamps include the SYLVANIA “Xtreme,” Philips “Advantage” ALTO and GE “High Output.” Compatible ballasts include the SYLVANIA “Xtreme,” Advance “Optanium,” Universal Triad “HE” or “AccuStart8,” GE “UltraMax,” and Howard “HEX.” Here are some important factors to consider:

- Higher lumen rating: 3,100 lumens (lm), compared to 2,850 to 2,900 lm for standard T8 lamps.
- Higher average rated lamp life of 24,000 hours versus the 20,000-hour rating for standard T8 and T12 lamps.
- Can achieve a 15% to 20% lower input wattage than a standard T8 system (up to 40% less than a 34 W T12 lamp).
- Works with any type of electronic fluorescent ballast.
- Maximum savings with a low-ballast-factor (BF), low-power electronic ballast.

T8 Comparison for a Two-Lamp Fixture with a BF of 0.87				
Lamp Type	**Lamp Lumens**	**Initial System Lumens**	**System Watts**	**Initial System LPW**
Standard F32T8	2,800	4,872	53	92
Super T8	3,100	5,394	53	102
25 W T8	2,400	4,176	43	97
28 W T8	2,750	4,785	48	100
30 W T8	2,850	4,959	52	95



Contact us

If you have any questions or need assistance in making these savings a reality for your business, please contact your strategic accounts representative at East Central Energy, **1-800-254-7944 or www.eastcentralenergy.com.**

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