

**7-YEAR WARRANTY**  
ON ALL LUSIO SSL FIXTURES

# Laboratory

*Lusio vs T5HO • 10,000 square feet*

While the use of LEDs as accent lighting and architectural lighting sources is commonplace, it's only in recent years that the light quality and output of LEDs has been substantial enough to use as a general illumination light source.

With this development in LEDs and the resulting availability in commercial and industrial LED-based fixtures, many companies have already installed or are strongly considering LEDs to illuminate a variety of spaces primarily to reap the energy savings LEDs offer over traditional light sources.

However, when considering a move to LEDs for general illumination, companies should consider several more factors in addition to energy savings.

Factors such as lifetimes, maintenance requirements, ability to use occupancy sensors, dimming capabilities, and heat gain from a fixture all contribute to an accurate cost of ownership of any lighting system.

Using these factors as a basis, Lusio Solid-State Lighting has compiled a series of documents that analyzes the Lusio Pro-Optics Series in several different applications against a fixture with a traditional light source and equivalent lumen output. In each case, Lusio Pro-Optics fixtures demonstrate a 1-year and 15-year cost of ownership savings when compared to T5HO, metal halide, or induction lamp fixtures. (Note: A 15-year period is used strictly as a period of evaluation. Lusio Pro-Optics fixture lifetimes are longer than 15 years.)

Every installation has its own specific variables that can affect cost of ownership. Use these examples as general guidelines and contact a Lusio sales representative with specifics about your application. In most cases, the savings possible with a Lusio Pro-Optics lighting system quoted in this document are conservative as compared to actual installations.

Leveraging the many benefits of an environmentally friendly Lusio Pro-Optics lighting system costs less than \$0.60 per square foot per year operating 12 hours a day. Be sure to see the **Lusio per Square Foot** line item in each sample application to see how affordable it can be to "go green" with Lusio!

SEE INSIDE!  
**Potential  
Lusio Savings:**  
**\$85,736**  
(15 yrs @ .17 kWh)

# Laboratory

10,000 square feet



## Fixtures Compared (with equivalent light output)



### Lusio Pro-Optics Low Bay Wide

LW-LUSIO-LBAYW-1x4-HO-NW

**Watts (per fixture):** 120

**L70 lifetime:** 70,000 hours

- UL
- CE
- RoHS Compliant
- Lighting Facts Certified



### T5HO

3 lamps with clear acrylic lens

**Watts (per fixture):** 176

**Estimated lamp life:** 24,000 hours

## Project Statistics

- **Average Illuminance:** 50 fc
- **Ceiling Height:** 15 ft
- **Mounting Height:** 14 ft
- **Lighting Power Density:** .504 W/sq ft
- **Total number of fixtures:** 42
- **Reflectances:** 80/70/30
- **Hourly maintenance rate:** \$50.00
- **Annual air conditioning use:** 50%

**Lusio**  
SOLID-STATE LIGHTING

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1 All figures quoted are estimated, can vary from application to application, and are not guarantees of actual performance. Some figures may be rounded to the nearest whole number.

Fixture purchase prices, which are not included in this analysis, are affected by several dynamic factors such as rebates, regional pricing differences, product availabilities, controls, and more.

Please consult a Lusio sales representative if you would like fixture pricing or a more detailed analysis of costs for your particular application.

2 The use of occupancy sensors is typically only recommended for SSL and fluorescent technologies. The addition of occupancy sensors to SSL products has no effect on lamp life whereas lamp life for fluorescent fixtures will be negatively affected.

3 A new lighting system with traditional light sources will typically have fewer replacement lamps and ballasts in the first couple of years after it is installed than it will later in its lifetime. These lamp and ballast replacements have been averaged conservatively.

Maintenance analysis includes lamp disposal fees and assumes Lusio group re-lamping at L70 and estimated 70,000 hour power supply lifetimes. Comparison fixtures are group re-lamped at 70% rated life and ballasts have estimated lifetimes of 50,000 hours. Maintenance figures do not include equipment rental fees or loss of production during maintenance periods.

4 Unlike traditional lighting sources, Lusio fixtures deliver pleasing low glare lighting, reduced energy usage, low maintenance, no mercury, silent and cool operating fixtures, and housings made with up to 80 percent recycled materials. These figures indicate the approximate investment required on a per square foot basis to leverage the benefits of a Lusio lighting system.

5 These figures take into account the average price of Lusio and traditional fixtures and were determined using the Incremental Simple Payback Method.

**Laboratory** (10,000 square feet)

**Lights On for 4,380 Hours** (12 hours/day, 365 days/year)<sup>1</sup>

	LUSIO	T5HO	LUSIO	T5HO	LUSIO	T5HO
<b>For 1 Year</b>	<b>\$0.06 per kWh</b>		<b>\$0.11 per kWh</b>		<b>\$0.17 per kWh</b>	
Energy Costs <sup>2</sup>	\$1,325	\$1,943	\$2,428	\$3,561	\$3,753	\$5,504
Cooling Costs	\$225	\$330	\$413	\$605	\$638	\$936
Operating Costs	\$1,550	\$2,273	\$2,841	\$4,167	\$4,391	\$6,440
Lamp and Ballast Maintenance <sup>3</sup>	\$0	\$3,570	\$0	\$3,570	\$0	\$3,570
Total Cost for System	\$1,550	\$5,843	\$2,841	\$7,737	\$4,391	\$10,010
Total Savings for System	\$4,294	n/a	\$4,896	n/a	\$5,619	n/a
Lusio per Square Foot <sup>4</sup>	\$0.15	n/a	\$0.28	n/a	\$0.44	n/a
<b>For 15 Years</b>	<b>\$0.06 per kWh</b>		<b>\$0.11 per kWh</b>		<b>\$0.17 per kWh</b>	
Energy Costs <sup>2</sup>	\$19,868	\$29,139	\$36,424	\$53,422	\$56,292	\$82,561
Cooling Costs	\$3,378	\$4,954	\$6,192	\$9,082	\$9,570	\$14,035
Operating Costs	\$23,245	\$34,093	\$42,616	\$62,504	\$65,861	\$96,597
Lamp and Ballast Maintenance <sup>3</sup>	\$0	\$18,905	\$0	\$18,905	\$0	\$18,905
Total Cost for System	\$23,245	\$52,998	\$42,616	\$81,409	\$65,861	\$115,502
Total Savings for System with Lusio	\$29,753	n/a	\$38,793	n/a	\$49,641	n/a
Lusio per Square Foot <sup>4</sup>	\$2.32	n/a	\$4.26	n/a	\$6.59	n/a

**More Savings with Lusio:** 21 cars off the road • 107 metric tons of CO<sub>2</sub> reduced • 154,526 kWh saved in 15 years

**7-YEAR WARRANTY**  
ON ALL LUSIO SSL FIXTURES

**Lights On for 8,760 Hours** (24 hours/day, 365 days/year)<sup>1</sup>

	LUSIO	T5HO	LUSIO	T5HO	LUSIO	T5HO
<b>For 1 Year</b>	<b>\$0.06 per kWh</b>		<b>\$0.11 per kWh</b>		<b>\$0.17 per kWh</b>	
Energy Costs <sup>2</sup>	\$2,649	\$3,885	\$4,857	\$7,123	\$7,506	\$11,008
Cooling Costs	\$450	\$660	\$826	\$1,211	\$1,276	\$1,871
Operating Costs	\$3,099	\$4,546	\$5,682	\$8,334	\$8,782	\$12,880
Lamp and Ballast Maintenance <sup>3</sup>	\$0	\$3,991	\$0	\$3,991	\$0	\$3,991
Total Cost for System	\$3,099	\$8,536	\$5,682	\$12,325	\$8,782	\$16,870
Total Savings for System with Lusio	\$5,437	n/a	\$6,642	n/a	\$8,089	n/a
Lusio per Square Foot <sup>4</sup>	\$0.31	n/a	\$0.57	n/a	\$0.88	n/a
<b>For 15 Years</b>	<b>\$0.06 per kWh</b>		<b>\$0.11 per kWh</b>		<b>\$0.17 per kWh</b>	
Energy Costs <sup>2</sup>	\$39,735	\$58,279	\$72,848	\$106,844	\$112,584	\$165,122
Cooling Costs	\$6,755	\$9,907	\$12,384	\$18,163	\$19,139	\$28,071
Operating Costs	\$46,490	\$68,186	\$85,232	\$125,007	\$131,723	\$193,193
Lamp and Ballast Maintenance <sup>3</sup>	\$15,330	\$39,596	\$15,330	\$39,596	\$15,330	\$39,596
Total Cost for System	\$61,820	\$107,781	\$100,562	\$164,603	\$147,053	\$232,789
Total Savings for System with Lusio	\$45,961	n/a	\$64,041	n/a	\$85,736	n/a
Lusio per Square Foot <sup>4</sup>	\$6.18	n/a	\$10.06	n/a	\$14.71	n/a
Payback <sup>5</sup>	2.2 years	n/a	1.8 years	n/a	1.48 years	n/a

**More Savings with Lusio:** 42 cars off the road • 214 metric tons of CO<sub>2</sub> reduced • 309,053 kWh saved in 15 years

## See more cost of ownership studies!

Visit [www.LusioLighting.com/tools/ownership.asp](http://www.LusioLighting.com/tools/ownership.asp)



### ◀ Atrium (5,000 sq ft)

*Lusio vs Metal Halide*

- **Average illuminance:** 20 footcandles
- **Ceiling Height:** 50 ft
- **Mounting Height:** 50 ft



### ◀ Laboratory (10,000 sq ft)

*Lusio vs T5HO (3 lamps)*

- **Average illuminance:** 50 footcandles
- **Ceiling Height:** 15 ft
- **Mounting Height:** 14 ft



### ◀ Commercial Space (10,000 sq ft)

*Lusio vs Induction*

- **Average illuminance:** 35 footcandles
- **Ceiling Height:** 20 ft
- **Mounting Height:** 18 ft



### ◀ Indoor Sports (25,000 sq ft)

*Lusio vs T5HO (4 lamps)*

- **Average illuminance:** 70 footcandles
- **Ceiling Height:** 40 ft
- **Mounting Height:** 35 ft



### ◀ Retail Space (40,000 sq ft)

*Lusio vs T5HO (4 lamps)*

- **Average illuminance:** 50 footcandles
- **Ceiling Height:** 22 ft
- **Mounting Height:** 20 ft



### ◀ Cold Storage (100,000 sq ft)

*Lusio vs Metal Halide*

- **Average illuminance:** 20 footcandles
- **Ceiling Height:** 34 ft
- **Mounting Height:** 32 ft



### ◀ Warehouse (200,000 sq ft)

*Lusio vs T5HO (4 lamps)*

- **Average illuminance:** 30 footcandles
- **Ceiling Height:** 25 ft
- **Mounting Height:** 23 ft



### ◀ Industrial Space (500,000 sq ft)

*Lusio vs T5HO (4 lamps)*

- **Average illuminance:** 50 footcandles
- **Ceiling Height:** 23 ft
- **Mounting Height:** 20 ft

