



LED LIGHTING SYSTEMS Payback Calculator

DEVELOPED BY:
 CONTACT:
 DATE:
 PROJECT:
 PROJECT #:

SCOPE OF WORK HERE

Lighting System Data

| | Existing System | Proposed System |
|---|-----------------|-----------------|
| Quantity of Fixtures | 0 | 0 |
| Lighting System | | |
| Fixture Wattage – Lamp, Module or Lamp/Ballast, Module/Driver Combination | | |
| Lamp/Module Life, Rated Hours | | |
| Per Lamp/Module Cost | | |
| Per Lamp/Module Re-lamping Cost | | |
| Occupancy Rate (Percentage of time off) | | 0% |

System Operating Data & Costs

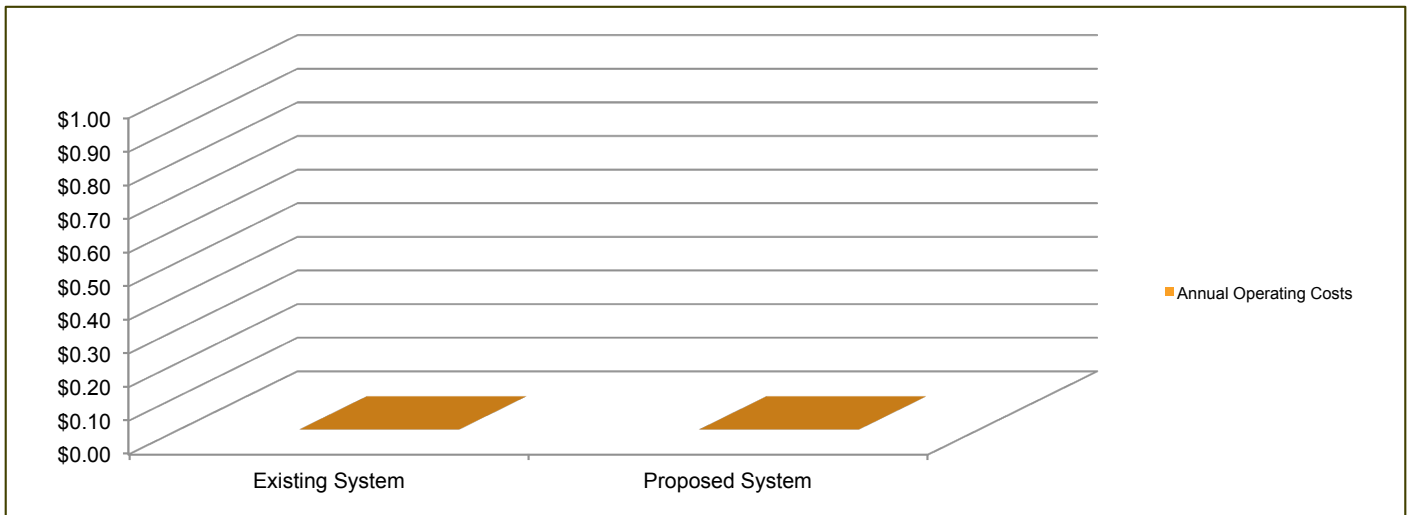
| | Average kWh Cost--> | \$0.00 |
|---|---------------------|---------|
| Operating Hours per Year (Existing vs modified proposed with occupancy) | | 0 |
| Total Wattage / Total System | 0 | #VALUE! |
| Total Kilowatts / Total System | 0 | #VALUE! |
| Total Kilowatt Hours / Total System | 0 | #VALUE! |
| Annual Energy Costs | \$0 | #VALUE! |
| Annual Lamp/Module Maintenance Costs (Based on Life Cycle in Years) | #VALUE! | #VALUE! |
| Annual Operating Costs | #VALUE! | #VALUE! |

Project Implementation Costs

| | | |
|---|-------------------------|---------|
| Fixture Sell Price | | \$0 |
| Fixture Installation Sell Price | | \$0 |
| Recycling & Disposal Sell Price | | \$0 |
| Total Project Sell Price (Invoice Amount to Customer) | | \$0 |
| Rebate (Custom - based on kWh saved) | 0.00 kWh Rebate Amount | #VALUE! |
| Rebate (Prescriptive - per unit price) | 0.00 Per Fixture Amount | \$0.00 |
| Total Project Cost after Rebates | | #VALUE! |

Project Payback Analysis

| | Life Cycle Calculation Years--> | 0 |
|--|---------------------------------|---------|
| Annual Energy Savings from Project | | #VALUE! |
| Annual Maintenance Savings from Project | | #VALUE! |
| Simple Payback in Years | | #VALUE! |
| Return on Investment | | #VALUE! |
| Life Cycle Savings based on Calculation Years | | #VALUE! |
| Life Cycle CO2 Emissions Reduction based on Calculation Years* | | #VALUE! |



LED LIGHTING SYSTEMS

Payback Calculator

The Fulham ROI Calculator in Sheet 1 of this Workbook is designed to provide basic LED savings calculations.

All the light yellow fields are unprotected cells intended for users to input data.

- 1 **DEVELOPED BY, CONTACT, DATE, PROJECT, PROJECT #, and SCOPE OF WORK HERE** are all for your reference purposes to differentiate this worksheet from others. Leaving fields blank will not affect the analysis.
- 2 **QUANTITY OF FIXTURES** - Input the number of current fixtures in the left column. Typically, the right column will be the same, unless fewer LED fixtures are anticipated to be needed in order to replace the existing systems. Cell F11 should never exceed cell E11.
- 3 **LIGHTING SYSTEM** is a qualitative field for you to type the kind of system you currently have, e.g. "Metal Halide" and the details of the LED system you are doing the analysis of in the right column.
- 4 **FIXTURE WATTAGE** - Here, you have a choice. You can use the lamp/modules' "stated wattages," for example, 400W MH and 250W LED, or you can use the "system wattages," if you know them. "System wattages" are always slightly higher because it takes extra energy (some of which is lost to heat) to power lamps/modules of stated wattages. Typically, LED is a more efficient system, meaning that a smaller percentage of energy is lost to heat than alternatives.
- 5 **LAMP/MODULE LIFE/RATED HOURS** is for inputting the life hours of lamps/modules of different types of systems. LED's rated hours are 50,000, for instance, while most alternatives to LED are considerably lower.
- 6 **PER LAMP/MODULE COST** - This is literally the anticipated cost of each new lamp needed of each respective type.
- 7 **PER LAMP/MODULE RE-LAMPING COST** - Maintenance costs for replacing expired lamps/modules are considerable and contribute heavily to the financial benefits of LED over other alternatives. Since LED lasts many multiples of alternatives, this cost is cut down drastically.
- 8 **OCCUPANCY RATE**: If you anticipate taking advantage of LED's capabilities, such that you can turn the modules off for a certain percentage of the day compared with how you are using your existing systems now, please enter that incremental percentage of time off into this field on the right. Oftentimes, traditional alternatives with very long re-strike are left on 24/7, but switching to LED technology means that modules can be turned off to save energy and extend system life.
- 9 **AVERAGE KWH COST** is the cents you pay on average for energy based on actual cost per kWh plus tariffs, demand charges, taxes and miscellaneous charges based on tier levels.
- 10 **OPERATING HOURS PER YEAR**- This is for your CURRENT operating hours with the existing system. Notice that the hours for LED will be adjusted based on the OCCUPANCY RATE as per 8 above.
- 11 **PROJECT IMPLEMENTATION COSTS** - These three fields encapsulate the sell price of the fixture, fixture installation, sell price and disposal of the prior fixture sell price. These must be end-user prices, rather than costs.
- 12 **REBATES** - Enter your custom rebate amount based on kWh saved, and enter incentive amounts per fixture replaced.
- 13 **LIFE CYCLE CALCULATION IN YEARS** - We typically enter 5 years into this calculation to match the duration of our Limited Warranty.

