Rhys Carpenter Library: Return on Investment (ROI) w/ Smart Ideas Incentive

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|---|---|---|---|---|
| Light Bulb Model: T8 | | | | |
| # of T8: | 527 | | | |
| Cost = Cost of LED + Labor Cost | | | | |
| Price of LED 6114 ($): | 85.75 | | | |
| | | Cost of LED 6114($): | | 45190.25 |
| # of fixtures w/ bulbs <=4: | | 279 | Watts (T8): | 32 |
| # of fixtures w/ bulbs >4, <=8: | | 2 | Watts (LED 6114): | 20 |
| # of fixtures w/ bulbs >8, <=12: | | 2 | | |
| Time taken to change bulbs (mins): | | 7225 | | |
| in hours (hr): | | 120.4166667 | | |
| | | Cost of Labor ($) | | 4214.583333 |
| | | Total Cost ($): | | 49404.83333 |
| Annual Return = Energy Saving+ Labor Cost Saving | | | | |
| Change in kW: | | 6.324 | | |
| Hours of operation: | | | | |
| Academic Year: | 3298 | | | |
| Summer Break: | 709.5 | | | |
| Winter Break: | 0 | | | |
| Fall & Spring Break: | 0 | | | |
| Total Hour of Operation: | 4007.5 | | | |
| Change in kW-hr (kWh): | | 25343.43 | | |
| | | Return on Energy Saving/Yr ($): | | 2280.9087 |
| Frequency of changing T8/Yr | | 0.667916667 | Life of T8 (hr): | 6000 |
| Frequency of changing LED/Yr: | | 0.08015 | Life of LED 6114 (hr): | 50000 |
| Labor Cost/3 Yr: T8 ($) | | 8853.6 | | |
| Labor Cost/3 Yr: LED ($) | | 0 | | |
| Change in Labor Cost/3 Yr: | | 8853.6 | | |
| | | Return on Labor Saving/3 Yr ($): | | 8853.6 |
| | | Total Return/3 Yr: | | 15696.3261 |
| # of Years to Breakeven = Cost/Annual Return | | | | |
| | | # of Years to Breakeven (Yr): | | 9.437 |
| Smart Idea Incentive: | | | | |
| Removal of 4-ft Lamp ($): | | 7.5 | | |
| Installation of LED (<18W) ($): | | 15 | | |
| | | Total Incentive ($): | | 11857.5 |
| | | Total Cost–Total Incentive ($): | | 37518.16667 |
| | | Years to Breakeven (Yr): | | 7.17 |

| Light Bulb Model: U-Shaped T8 | | | | |
|---|---|---|---|---|
| # of U-Shaped T8 | 226 | | | |
| Cost = Cost of LED + Labor Cost | | | | |
| Price of LED UTube ($): | 100 | | | |
| | | Cost of LED UTube($): | | 226000 |
| # of fixtures w/ bulbs <=4: | | 113 | Watts (U-Shaped T8): | 32 |
| # of fixtures w/ bulbs >4, <=8: | | 0 | Watts (LED UTube): | 15 |
| # of fixtures w/ bulbs >8, <=12: | | 0 | | |
| Time taken to change bulbs (mins): | | 2825 | | |
| in hours (hr): | | 47.0833 | | |
| | | Cost of Labor ($) | | 1647.916667 |
| | | Total Cost ($): | | 24247.91667 |
| Annual Return = Energy Saving+ Labor Cost Saving | | | | |
| Change in kW: | | 3.842 | | |
| Hours of operation: | | | | |
| Academic Year: | 3298 | | | |
| Summer Break: | 709.5 | | | |
| Winter Break: | 0 | | | |
| Fall & Spring Break: | 0 | | | |
| Total Hour of Operation: | 4007.5 | | | |
| Change in kW-hr (kWh): | | 15396.815 | | |
| | | Return on Energy Saving/Yr ($): | | 1385.71335 |
| Frequency of changing U-Shaped T8 (Yr): | | 0.200375 | Life of U-Shaped T8 (hr): | 20000 |
| Frequency of changing LED (Yr): | | 0.08015 | Life of LED UTube (hr): | 50000 |
| Labor Cost/3 Yr: U-Shaped T8 ($) | | 3796.8 | | |
| Labor Cost/3 Yr: LED UTube ($) | | 0 | | |
| Change in Labor Cost/3 Yr: | | 3796.8 | | |
| | | Return on Labor Saving/3 Yr ($): | | 3796.8 |
| | | Total Return/3 Yr: | | 7953.94 |
| # of Years to Breakeven = Cost/Annual Return | | | | |
| | | # of Years to Breakeven (Yr): | | 9.146 |

| Light Bulb Model: PAR38 | | | | |
|---|---|---|---|---|
| # of PAR38: | 50 | | | |
| Cost = Cost of LED + Labor Cost | | | | |
| Price of LED 1666 ($): | 82.15 | | | |
| | | Cost of LED 1666($): | | 4107.5 |
| # of fixtures w/ bulbs <=4: | | 50 | Watts (PAR38): | 100 |
| # of fixtures w/ bulbs >4, <=8: | | 0 | Watts (LED 1666): | 10 |
| # of fixtures w/ bulbs >8, <=12: | | 0 | | |
| Time taken to change bulbs (mins): | | 1250 | | |
| in hours (hr): | | 20.83333 | | |
| | | Cost of Labor ($) | | 729.16667 |
| | | Total Cost ($): | | 4836.6667 |
| Annual Return = Energy Saving+ Labor Cost Saving | | | | |
| Change in kW: | | 4.5 | | |
| Hours of operation: | | | | |
| Academic Year: | 3298 | | | |
| Summer Break: | 709.5 | | | |
| Winter Break: | 0 | | | |
| Fall & Spring Break: | 0 | | | |
| Total Hour of Operation: | 4007.5 | | | |
| Change in kW-hr (kWh): | | 18033.75 | | |
| | | Return on Energy Saving/Yr ($): | | 1623.0375 |
| Frequency of changing PAR38 (Yr): | | 1.001875 | Life of PAR38 (hr): | 4000 |
| Frequency of changing LED 1666(Yr): | | 0.08015 | Life of LED 1666 (hr): | 50000 |
| Labor Cost/3 Yr: PAR38 ($) | | 840 | | |
| Labor Cost/3 Yr: LED 1666 ($) | | 0 | | |
| Change in Labor Cost/Yr: | | 840 | | |
| | | Return on Labor Saving/3 Yr ($): | | 840 |
| | | Total Return/3 Yr: | | 6492.15 |
| # of Years to Breakeven = Cost/Annual Return | | | | |
| | | # of Years to Breakeven (Yr): | | 2.235 |
| Smart Idea Incentive: | | | | |
| Installation of LED (<18W) ($): | | 15 | | |
| | | Total Incentive ($): | | 750 |
| | | Total Cost–Total Incentive ($): | | 4086.87 |
| | | Years to Breakeven (Yr): | | 1.88 |