

Lighting System Cost/Performance Comparison		Fluorescent Application	HID Application
Parameters			
System Type	T5 4' x 6 Lamp 54w	250W Electronic Ballast - Acrylic	
System lumens per watt	60	99	
Bulb wattage (total unit)	324	250	
Number of Luminaires	200	200	
Footcandles on the ground	30	45	
<small>(Retrieved from data obtained on the Lighting Assessment Form)</small>			
Initial Costs			
Cost per Luminaire	\$218	\$394	
<b>Net Cost per Luminaire</b>	<b>\$218</b>	<b>\$394</b>	
Accessories	n/a	\$0	
<b>Total Luminaire Package Cost</b>	<b>\$43,600</b>	<b>\$78,800</b>	
Cost per Lamp	\$10	\$49	
Number of Lamps	1200	200	
<b>Total Lamp Cost</b>	<b>\$12,000</b>	<b>\$9,800</b>	
<b>Sub Total</b>	<b>\$55,600</b>	<b>\$88,600</b>	
Installation Time in hours	1.50	1.00	
Labour Rate ( \$/hour)	\$74	\$74	
<b>Total Estimated Installation Cost</b>	<b>\$22,200</b>	<b>\$14,800</b>	
<b>Total Estimated Recycling/Disposal Fees</b>	<b>\$0</b>	<b>\$0</b>	
<b>Sub Total</b>	<b>\$77,800</b>	<b>\$103,400</b>	
Rebates and other adjustments	-\$21,000	-\$28,600	
<b>TOTAL INITIAL COST</b>	<b>\$56,800</b>	<b>\$74,800</b>	
Operating Costs			
Input Power (Watts)	352	265	
Redundant Emergency Lighting Annual Load (Watts)	0	n/a	
Energy Rate (\$/kW)	\$0.12	\$0.12	
Operating Time per Year, in Hours	5,214	5,214	
<b>ENERGY COST per Year (@ Full Load)</b>	<b>\$44,050</b>	<b>\$33,163</b>	
Total Possible Annual Load (KWhrs)	367,086	276,357	
Total Proposed Load with Dimming	367,086	276,357	
Load Reduction Due to Dimming (KWhrs)	0	0	
<b>Energy Savings Due to Dimming</b>	<b>\$0</b>	<b>\$0</b>	
<b>ENERGY COST WITH DIMMING</b>	<b>\$44,050</b>	<b>\$33,163</b>	
Relamping Method	Spot	Spot	
Lamp Life (Hours)	18000	30000	
# Lamps Replaced per Year averaged over 10 years	46	28	
# Hours per Lamp Change	0.5	0.5	
Labour Rate to Replace Lamps, per Hour	\$45.00	\$45.00	
<b>RELAMPING COSTS per Year</b>	<b>\$1,506</b>	<b>\$1,988</b>	
Luminaire Cleaning Time (hours)	0.5	0	
Labour Rate to Clean Luminaires, per Hour	\$45	\$45	
<b>Cleaning Costs per Year</b>	<b>\$4,500</b>	<b>\$0</b>	
HVAC Factor Estimate	\$0	\$0	
<b>TOTAL MAINTENANCE &amp; OPERATING COSTS PER YEAR</b>	<b>\$50,057</b>	<b>\$35,151</b>	
<b>TOTAL SYSTEM COSTS for 10 YEAR PERIOD (incl. initial costs)</b>	<b>\$557,366</b>	<b>\$426,312</b>	
The Savings			
<b>TOTAL ANNUAL OPERATING COST SAVINGS (based on operational savings only)</b>		\$14,905	
<b>TOTAL COST SAVINGS OVER 10 YEAR PERIOD (includes initial costs)</b>		\$131,054	
<b>SAVINGS as a %</b>		23.5%	
<b>Payback period (years)</b>		1.2	
<b>Payback period (months)</b>		14	
<b>ROI (yearly savings on capital investment)</b>		20%	
<b>Net Present Value @ Weighted Cost of Capital</b>		\$316,108	
<b>NET CASH FLOW /month</b>		\$1,242	
Financing Lease (ESP In House Financing calculated net of rebates)		\$3,269	
<b>NET CASH FLOW /month (including lease through term)</b>		<b>-\$2,027</b>	
Scenario B Investment Returns - Rising Energy Costs			
Energy cost savings over 10 years (Including non-discounted rising energy costs)		\$490,404	
Maintenance cost savings over 10 years		\$40,180	
Initial Investment difference		-\$18,000	
<b>Total Cost Savings over 10 Year Period</b>		<b>\$512,583</b>	
Net Present Value of Investment			
Energy cost savings over 10 years @ rising costs (discounted cash flows)		\$37,509	
Maintenance cost savings (discounted cash flows)		\$80,359	
<b>NPV of cost savings</b>		<b>\$135,869</b>	
Environmental Impact			
<b>Annual Emissions REDUCTION</b>		metric tonnes (1000 kg) CO <sub>2</sub>	25
		metric tonnes (1000 kg) Carbon	7

**\*\* Disclaimer**

While every attempt has been made to ensure accuracy, the information provided here is for example only and is based on information provided. The customer/reader is solely responsible to ensure the accuracy and applicability of this projection to the part



### INPUT TABLE

#### A) Existing Operating Hours

	M	T	W	T	F	S	S	Ttl Hrs/Week	Wks/Yr	Total Hours/Season	Load	Load/Hrs
Summer	18	18	18	18	18	10	0	100	17	1705	100%	1705
Fall	18	18	18	18	18	10	0	100	9	902	100%	902
Winter	18	18	18	18	18	10	0	100	17	1705	100%	1705
Spring	18	18	18	18	18	10	0	100	9	902	100%	902
<b>Totals</b>								<b>400</b>	<b>52</b>	<b>5214</b>	<b>100%</b>	<b>5214</b>

#### B) Proposed Operating Hours

	M	T	W	T	F	S	S	Ttl Hrs/Week	Wks/Yr	Total Hours/Season	Load	Load/Hrs
Summer	18	18	18	18	18	10	0	100	17	1704.67	100%	1704.67
Fall	18	18	18	18	18	10	0	100	9	902	100%	902
Winter	18	18	18	18	18	10	0	100	17	1705	100%	1705
Spring	18	18	18	18	18	10	0	100	9	902	100%	902
<b>Totals</b>								<b>400</b>	<b>52</b>	<b>5214</b>	<b>100%</b>	<b>5214</b>

#### C) HVAC Annual Cost Savings Calculations

77 Existing Heat Loss	78%	Old Ballast Efficiency	<b>Months Used Annually</b>	<b>0</b>
8 Proposed Heat loss	97%	New Ballast Efficiency		
69 Heat Loss savings	92%	AC Efficiency		
<b>- Total Kilo/Watt hours Saved</b>	<b>\$ -</b>	<b>Savings</b>		

#### D) Capital Cost (WACC) Leasing Information

rate:	5.0%	(Weighted Average Cost of Capital)
rate:	4.9%	Buyout % 0.0% Term (months): 24

#### E) Rising Energy Costs

Year	\$/KWh	costs	disc
1	\$0.01	\$ 907.29	0.0100
2	\$0.02	\$ 1,814.57	0.0190
3	\$0.03	\$ 2,721.86	0.0272
4	\$0.04	\$ 3,629.14	0.0346
5	\$0.05	\$ 4,536.43	0.0411
6	\$0.06	\$ 5,443.71	0.0470
7	\$0.07	\$ 6,351.00	0.0522
8	\$0.08	\$ 7,258.29	0.0569
9	\$0.09	\$ 8,165.57	0.0609
10	\$0.10	\$ 9,072.86	0.0645
		\$ 49,900.72	0.4134

#### F) Accessories

Product Description	Quantity	Unit Price	Discount	Total Cost
Emergency Lighting Control & Lamp	0	\$ 128.00	0%	\$ -
Occupancy Motion/Sensor	0	\$ 99.00	0%	\$ -
Isolated Step Down Transformer (700va)	0	\$ 89.00	0%	\$ -
Lenses (Glass/Acrylic/Silicone)	0	\$ 61.00	0%	\$ -
Wire Guard	0	\$ 36.00	0%	\$ -
Lens Clamp	0	\$ 39.00	0%	\$ -
SenzaFil Wireless Communication Package	0	\$ 15,000.00	0%	\$ -
<b>TOTAL ACCESSORIES</b>				<b>\$ -</b>

#### G) Client Internal Project Costs (For Rebate Applications ONLY)

Details	Type	Quantity/Hrs	Rate/Price	Total Cost
Client Employee supervising/assisting	Labor Costs	10	\$ -	\$ -
Consulting Fees	Consulting Fees	0	\$ -	\$ -
Electrical Engineering Review	Contractor Fees	0	\$ -	\$ -
	Permits, etc	0	\$ -	\$ -
				<b>TOTAL CLIENT PROJECT COSTS \$ -</b>

#### H) Rebate Calculations (Use only applicable)

\$143.00	<- 1. Rebate per luminaire (Enter \$ amount)	\$ 28,600.00
\$0.00	<- 2. Rebate rate on investment (enter %)	\$ -
\$0.00	<- 3. Rebate on kWatts saved (Change in luminaire wattage)	\$ -
\$0.00	<- 4. Rebate on kWatts saved (per kW without Dimming)	\$ -
\$0.00	<- 5. Rebate on kWatts saved (including Dimming)	\$ -
\$0.00	<- 6. Rebate on GJ/yr saved (including Dimming)	\$ -
\$150.00	X QTY 0 <- 7. Occupancy Sensor Rebate (Box 1 X Box 2)	\$ -
\$0.00	<- 8. Flat Amount	\$ -
	<b>Total Calculated Rebate</b>	<b>\$ 28,600.00</b>
	<b>Total Allowable Rebate (max of 40%)</b>	<b>\$ 28,600.00</b>
		<i>Total Estimated Project Cost (incl. labour &amp; recycling)</i>
		<b>\$ 109,144.00</b>

#### I) Recycling/Disposal Fees (For Rebate Applications ONLY)

Unit Disposal Rate for Fixture	\$ 10.00	# of Units	200	\$ 2,000.00
Unit Disposal Rate for Lamp	3.12	# of Lamps	1200	\$ 3,744.00
		<b>Total Estimated Disposal Fees</b>		<b>\$ 5,744.00</b>

Select a System Type      0 # Units      0 # hours Lit/day      0 # days lit/week