LED vs. Incandescent - Return on Investment (ROI) Analysis

8 watt, 470 lumen LED vs. 40 watt, 450 lumen, A19 incandescent

* Comparisons with fluorescent bulbs is a seperate conversation and gets into materials used, etc.

NYC KWH Costs	cents per KWH
Supply	10.5662
Delivery	11.7591
SBC/RPS	0.4968
Temporary NY State Surcharge	0.4678
	23.2899

$s per KWH	0.23
Enter Type, Lumens, Watts, Lifetime	
hours per day	24
days per year	365.25
hours per year	8766

Comparison	A19 Incandescent	LED
Lumens	450	470
Watts	40	8
Lifetime in hours	less	25,000
Watts per test period	1,000,000	200,000
KW per test period	1,000	200
Cost to run per test period	$ 230.00	$ 46.00
Cost per bulb	unknown	$ 21.97
Number of blubs per time period	more	1
Labor to change bulbs	more	less

LED - Incandecent Delta	
	Greater
less usage	32
Same hours. Bulb count will vary	
Less Watts	800,000
Less KiloWatts	800
Saving	$ 184.00
Separate analysis and costing	
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Separate analysis and costing	

* ROI will be higher when we factor in the cost of incandescent bulbs and labor to change them more frequently

For this example using $.23 per KWH, the savings is $184

We would then want to know how fast we get the ROI

Avg Hours per day	hours per year	watt save/year		$ save/year	Years of life
1	365.250	11,688		$ 2.69	68.4
2	730.500	23,376		$ 5.38	34.2
3	1095.750	35,064		$ 8.06	22.8
4	1461.000	46,752		$ 10.75	17.1
5	1826.250	58,440		$ 13.44	13.7
6	2191.500	70,128		$ 16.13	11.4
7	2556.750	81,816		$ 18.82	9.8
8	2922.000	93,504		$ 21.51	8.6
9	3287.250	105,192		$ 24.19	7.6
10	3652.500	116,880		$ 26.88	6.8
11	4017.750	128,568		$ 29.57	6.2
12	4383.000	140,256		$ 32.26	5.7
13	4748.250	151,944		$ 34.95	5.3
14	5113.500	163,632		$ 37.64	4.9
15	5478.750	175,320		$ 40.32	4.6
16	5844.000	187,008		$ 43.01	4.3
17	6209.250	198,696		$ 45.70	4.0
18	6574.500	210,384		$ 48.39	3.8
19	6939.750	222,072		$ 51.08	3.6
20	7305.000	233,760		$ 53.76	3.4
21	7670.250	245,448		$ 56.45	3.3
22	8035.500	257,136		$ 59.14	3.1
23	8400.750	268,824		$ 61.83	3.0
24	8766.000	280,512		$ 64.52	2.9

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