

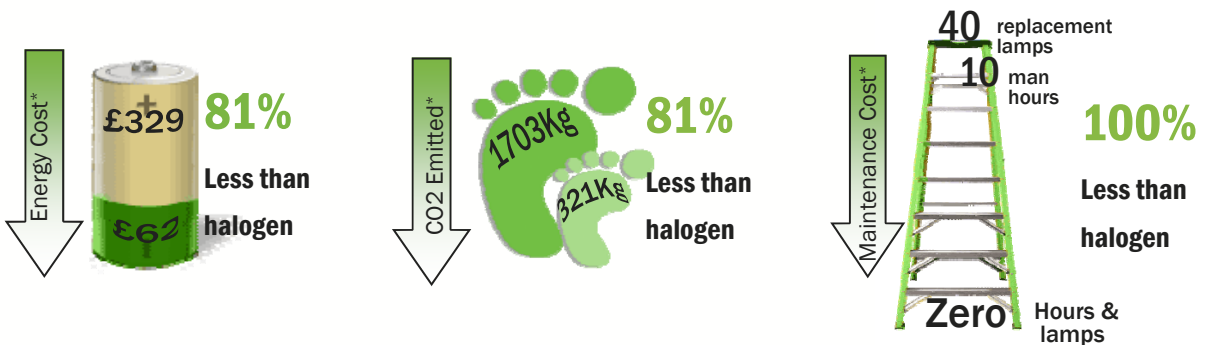


CeilingStar5 LED

Halogen MR16

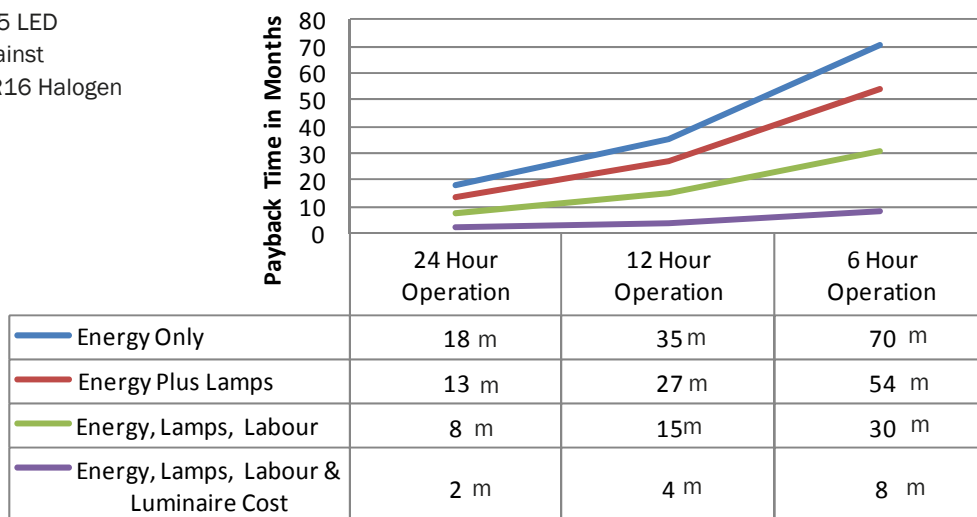
Lamp / LED power consumption	6.6W	35W
Fitting Cost (including lamp and driver)	£52.75	£29
Luminaire Lumen Output	430lm	365lm
Lamp Cost		£2.5
Lamp Lumen Output	520lm	385lm
Lifetime (Hours - L70 for LED)	80000	2000
Total power consumption (Circuit Watts)	7.8W	41.2W
Total Energy (kWh) over 80,000hrs	621kWh	3294kWh
Total CO2 (Kg) over 80,000hrs	321kg	1703kg
Lamp Changes over 80,000hrs	0 lamps	40 lamps
Total Energy (£) over 80,000hrs	£62	£329

<b>Total kWh saved over life</b>	<b>2673kWh</b>
<b>Total Kg CO2 saved over life</b>	<b>1382kg</b>
<b>Total Energy £ saved over life</b>	<b>£267</b>
<b>Lamp Changes Saved over life</b>	<b>40 lamp changes</b>



### Payback in Months

CS5 LED  
 Against  
 MR16 Halogen



Based on CO2(1kWh electricity = 0.517kg CO2), Electricity supplied @ 10p/kWh, maintenance at £25/hr, 1 lamp change 15 minutes

	100 luminaires over 5 years		
	CeilingStar5	Halogen GU10	Incandescent R80
Lamp Life (hrs)	80000	2000	1000
Cost per lamp	52.75	2.5	1.5
Total Initial Lamp Cost - 100 lamps	5275	250	150
Lamp Watts	6.6	50	75
Lamp Lumens	520	300	350
Total circuit Watts inc driver	776W	5000W	7500W
Days per year	365	365	365
Hours per day	24	24	24
Hours per year	8760	8760	8760
<b>Total kWh per year</b>	<b>6801kWh</b>	<b>43,800kWh</b>	<b>65,700kWh</b>
<b>CO2 emissions per year (kg/year)</b>	<b>3516kg</b>	<b>22644kg</b>	<b>33966kg</b>
<b>Total Energy Cost per Year</b>	<b>£ 680</b>	<b>£ 4,380</b>	<b>£ 6,570</b>
Luminaire Cost	£ 5,275		
Lamp Cost over 5 years		£ 5,475	£ 6,570

LED Energy Savings over 5 Years	Against Halogen	Against R80 Incandescent
kWh	36998	58898
kg CO2	19128 (81%)	30450 (89%)
£ Energy	£ 3,700 (81%)	£ 5,890 (89%)
Replacement Lamps	£ 5,475 (100%)	£ 6,570 (100%)
Contractor - 15 mins @£25/hr	£ 13,688 (100%)	£ 27,375 (100%)
<b>Total LED savings over 5 years</b>	<b>£ 22,862 (97%)</b>	<b>£ 39,835 (98%)</b>
<b>With initial cost of LED luminaires</b>	<b>£ 17,587 (74%)</b>	<b>£ 34,560 (85%)</b>
Payback time in years energy only	1.2	
Payback time in years with lamps	1.0	
Payback time in years with maintenance	0.6	

Based on CO2(1kWh electricity = 0.517kg CO2), Electricity supplied @ 10p/kWh, maintenance at £25/hr, 1 lamp change 15 minutes