

INFORMATION CARD

LIGHT



KEYWORDS

sun, coal, gas, petrol, power plant, efficiency, sustainability, candle, light source, power, LED, photovoltaic panel, solar panel, illuminance

The luminous efficacy L [lm/W] is defined as the ratio between the luminous flux E in lumens (lm) and the power P in watts (W).

1 lumen (lm): luminous flux

1 lux (lx): illuminance

1 watt (W): power

Cost of energy in your country

Search the levelized cost by source on the net

e.g. Italy: combined cycle gas turbine, 0.06 euro/kWh (levelized cost)

Electrical power consumption of 1 light bulb (900 lumen)

incandescent	fluorescent	LED
60 W	15 W	13 W

Stadium lux level

320 metal halide lamps - 2000 W each - give 4000 lx (need for international match).

Daily home electrical consumption

$((n \cdot 500 \text{ kWh}) + 500 \text{ kWh})/365$

n : number of persons in household

Efficiency in distribution grid: energy and heat

Loss of energy

thermal power plant	distribution grid	light source	energy loss due to heat
65 %	10 %	energy loss depends on type and is due to heat	
		incandescent	98 %
		fluorescent	92 %
		LED	89 %