(2) If all the energy released by a burning candle were emitted as 5500 Å photons, how many candle-years of illumination would a 150-gram candle provide?

From our Round-Number Handbook (January 1983) we take 10^4 calories/g for the heat of combustion and 680 lumens/watt for the light equivalent of energy in 5500 Å photons. Our 150-gram candle will yield 6×10^6 J, equivalent to 4×10^9 lumen-seconds. At 4π lumens per candle that is about 10 candle-years. In other words, the efficiency of this candle as a light source is equal to the life of the burning candle divided by 10 years!