

The Candela & the Casino:

Each Spotlight is *How Many* 100W Bulbs?

The candela is the foundation unit for the measurement of visible light. It is one of the seven foundation SI units. Its formal definition is:

The candela is the luminous intensity, in a given direction, of a source that emits monochromatic radiation of frequency 540×10^{12} hertz and that has a radiant intensity in that direction of 1/683 watt per steradian.

The candela is abbreviated cd and its standard symbol is I_v . The candela is then used to define the [lumen](#) and other quantities used in the measurement of visible light. It is approximately equal to the old unit "candlepower" and is generally taken to be equivalent.

Typical values for luminous intensity

	Candela
Light emitting diode (LED)	0.005
Candle	1
100 watt incandescent bulb	150
Automobile headlamp(high beam)	100,000
Lighthouse	300,000
Flashtube (peak value)	1,000,000

For an isotropic source, the relationship between the candela and lumens is $1 \text{ cd} = 4\pi \text{ lm}$ and the unit relationships is $1 \text{ cd} = \text{lm/sr}$.

Source: <http://hyperphysics.phy-astr.gsu.edu/hbase/vision/photom.html>

Using the above information and the candlepower value from the use of one (1) SkyTracker 4000W spot light, an equivalent number of 100W light bulbs can be determined.

1 candela is equal to approximately 1 'old unit' candlepower

1 cd = (4 * pi) lumens = 12.6 lm
100W incandescent bulb = 150 cd

So,
of 100W bulbs = (332,000,000 cd) / (150 cd per 100W bulb)
of 100W bulbs = 2,213,333

Using this number of 100W bulbs to describe the visible light output of the spot lights may be more useful to the public. **There will be SEVEN spotlights!**