

## LED Lighting Considerations

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LED lighting's most unique "green" aspect is its potential to reduce power consumption in the OR. Older halogen lights consume over 200 Watts of power per light head. Some recent halogen designs consumed as much as 400 Watts of power each. Halogen lights require more input power simply because this filament-based (incandescent) technology is much less efficient at turning electrical energy into light than LED. Halogen's incremental power use has a dual effect; not only does it consume energy directly, but the added radiant heat emitted by the unit increases the load on the facility's HVAC system. Effectively, Halogen makes you pay twice for its inherent inefficiency.

LED lights currently on the market are very similar, from a green perspective. All designs that offer maximum spot size diameter and intensity, including those touted as "second generation", feature similar array-based LED emitter configurations, and consume a similar amount of power.

Currently, in the absence of any substantial green difference between LED lighting options, we recommend that customers primarily select lights using the gold standard of product comparison; the clinical trial. Not only do trials allow surgeons to select the best light based on usage performance criteria, but LED's low heat and resulting improvement in surgeon comfort gives them a personal stake in green selections.

However, moving forward improvements in LED efficiency will permit the design of lights that consume even less power than the best units available today. When this occurs, green energy efficiency could become a major selection criterion in LED-based OR lighting.

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