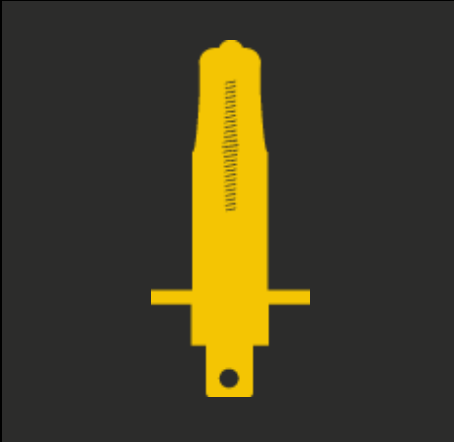




HOW WE MEASURE LIGHT?

As [LED Lights](#) have gained popularity in recent years, the most common word to benchmark the performance of a light has been "Lumens". Although Lumens is important there are many other factors to consider when shopping for LED, HID and Halogen lighting. Lumens, Lux, Candela are all forms of light measurement that should be considered when deciding which types of Offroad and Street legal lights will suit your needs best. We've taken our 45+ years of light engineering, design and manufacturing and created this light technology page to help you understand your options, choices and why KC stands out from any other lighting company on the market.

Performance Lighting Technology



Halogen Bulbs

To overcome inefficiencies of standard incandescent light bulbs, halogen technology was created. A halogen bulb is a form of incandescent light that also uses a tungsten filament. The main difference is the presence of the halogen gas when combined with the filament produces a chemical reaction that redeposits evaporated tungsten back onto the filament allowing it to burn hotter and brighter.



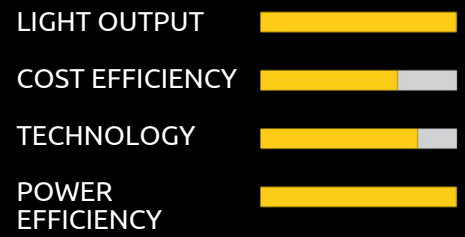
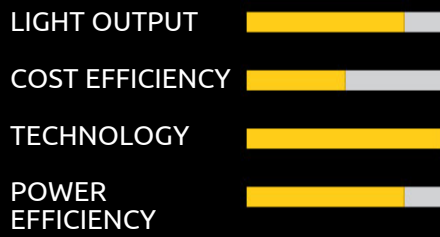
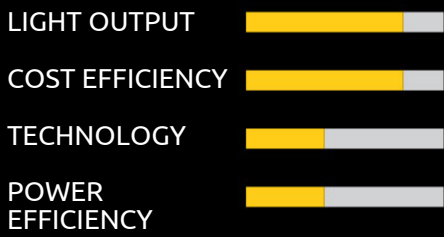
LED (Light-Emitting Diode)

An LED is a semiconductor based light source. They are considered to be a form of solid state lighting (which means it doesn't rely on incandescence but electroluminescence). LEDs have many advantages over traditional incandescent lights such as lower energy consumption, longer life, smaller size, increased physical resistance and are switched/powered digitally.



HID (High Intensity Discharge)

Advancing beyond halogen in context of light output as well as size and heat efficiency is high-intensity discharge bulbs. HID bulbs have no filament but instead tungsten electrodes. These electrodes are sealed in a quartz tube which is filled with both gas (usually Xenon) and also various metal salts which are ignited to produce an extremely intense amount of light.



KC Halogens Lights are available in:

- > Daylighter > Pro Sport > Rally 800
- > SlimLite > Apollo Pro > Headlights
- > Rally 400 > 69 Series > 35 Series
- > 26 Series

KC Halogen Lights produce a warm, dense light and are available in 55W, 100W and 130W. They are very cost effective and deliver solid light output at medium to long distances. When shopping for lights, consider KC Halogen lights when lower costs with great performance are your priorities.

KC LED Lights are available in:

- > Gravity > FLEX > Daylighter
- > Pro-Sport > LZR > C-Series
- > Cyclone > Headlights > Flashlights
- > Tail/Signal

KC LED Lights produce cool, bright light beams, are extremely power efficient and ranges from 5W to 300Ws. KC LED lights are long-lasting, durable and create a great amount of light at short and medium distances with some of our flagship LEDs reaching far distances. When shopping for lights, consider KC LED Lights when low amp draw, compact and flexible sizes are priorities.

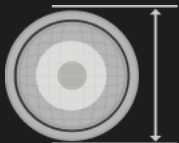
KC HID Lights are available in:

- > KC Carbon > Daylighter > Pro Sport
- POD > Rally 800 > 69 Series

KC HID Lights produce light beams that illuminate long distances and are available in 35W, 50W and 70Ws. They produce Lux and Candela ratings that could exceed 2-3 times the distance to similar wattage Halogens and LEDs. HID's are the most balanced across Output, Cost, Technology and Power. When shopping for lights consider KC HID Lights when lighting at far distances is a priority.

Lighting Myths

The ethos of KC HiLiTES



Does Size Matter?

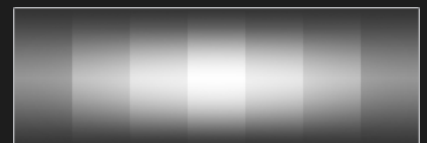
The simple answer is "Yes". A larger reflector's increased surface area is more capable of re-directing light with more intensity and efficiency than a smaller reflector. An 8" reflector will be capable of focusing and directing more light coming from the same light source (LED diode, Halogen Bulb, HID Bulb) than its 6" counterpart.



Is LED the best?

It depends on how you prioritize your needs. LEDs are the most energy efficient type of light source compared to HID's and Halogens. However the challenge with LEDs is being able to direct enough of the light emitted to achieve a good amount of light intensity at longer distances. HID's are still the best bang for the buck when it comes to Lux per watt at longer distances. But as LED technology and reflector design capabilities improve LED Lights will continue to improve. There are pros and cons across Output, Cost,

Technology and Power draw across LED, HID and Halogen lights.

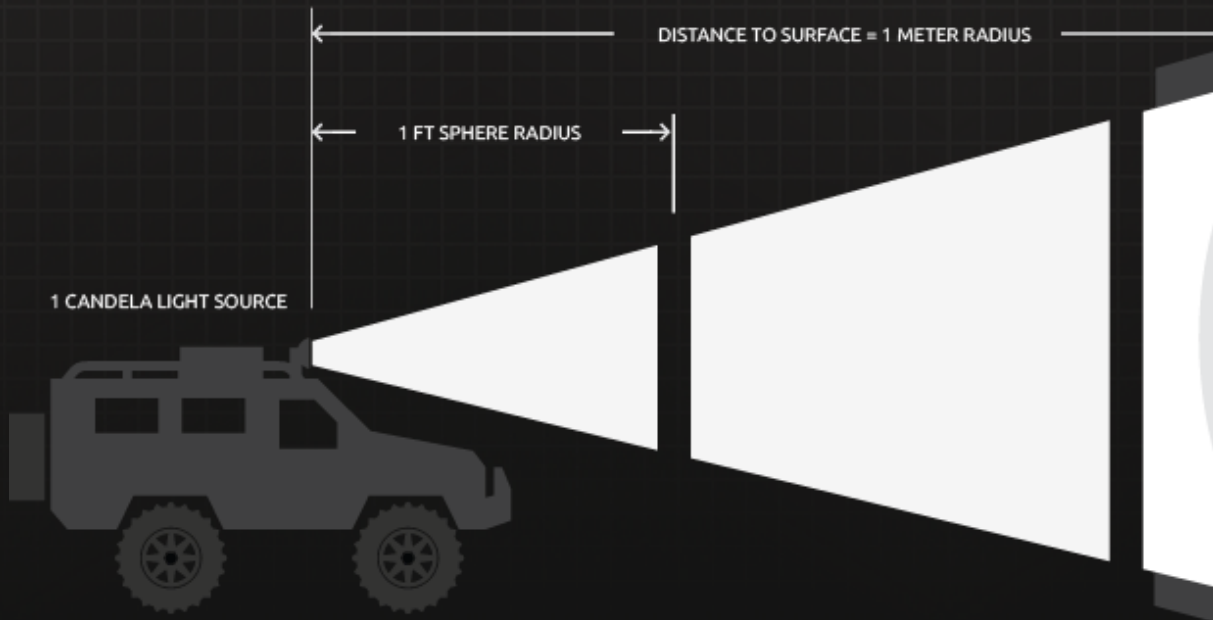


Balanced Lighting

Depending on your driving and off-road conditions and requirements, we have found that combining different LED, HID and Halogen Lights will give you the best visibility.

Even at the the professional level, we suggest a balanced lighting program to all affiliated members of our Dirt Tribe Race Teams. For off-road racing specifically, our Dirt Tribe members use a combination of Clear/Amber Off-Road HID Lights, Clear/Amber Off-Road LED Lights and LED Light Bars all with various Spot, Spread and Flood beam patterns – based on the driver's needs and preferences.

At KC HiLiTES, we have always put more weight on Lux and Candela as a more practical way to measure the performance of our lights. Lumens is best described as a base metric that we use to indicate the total potential amount of light from a light source. Lux and Candela help us measure the strength, intensity and volume of light at a specific distances. Lumens, Lux and Candela should all be used to assess the performance and efficiency of our lighting products.



LUMEN

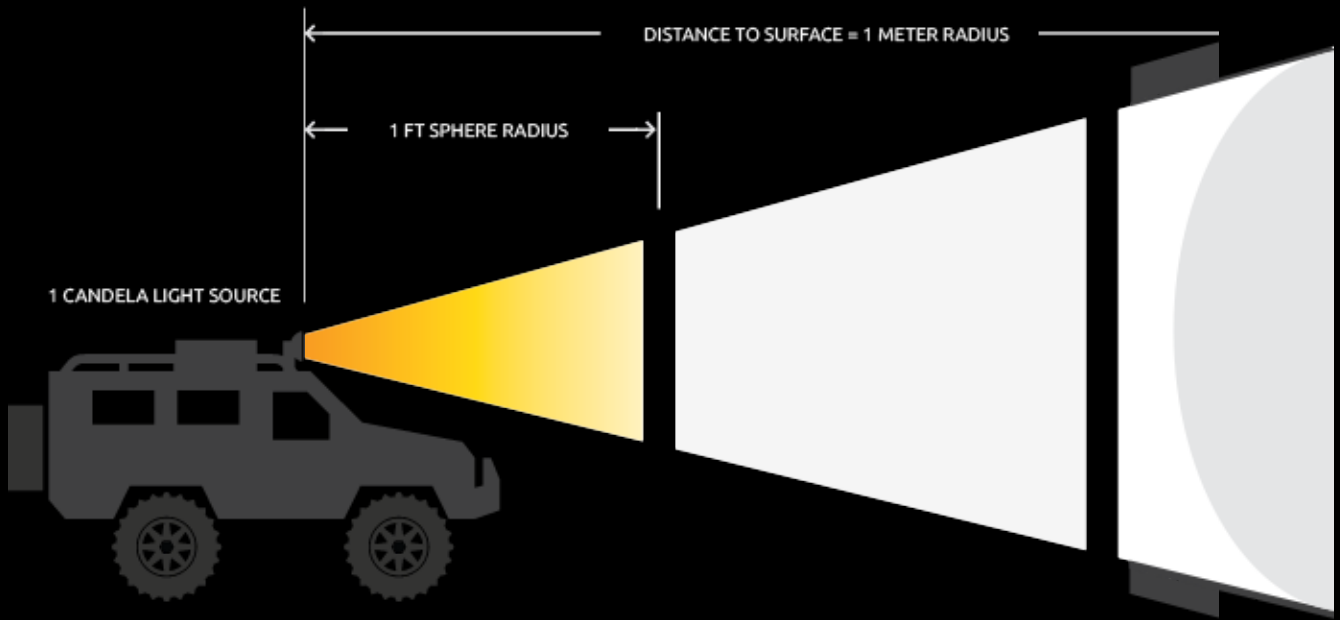


LUX



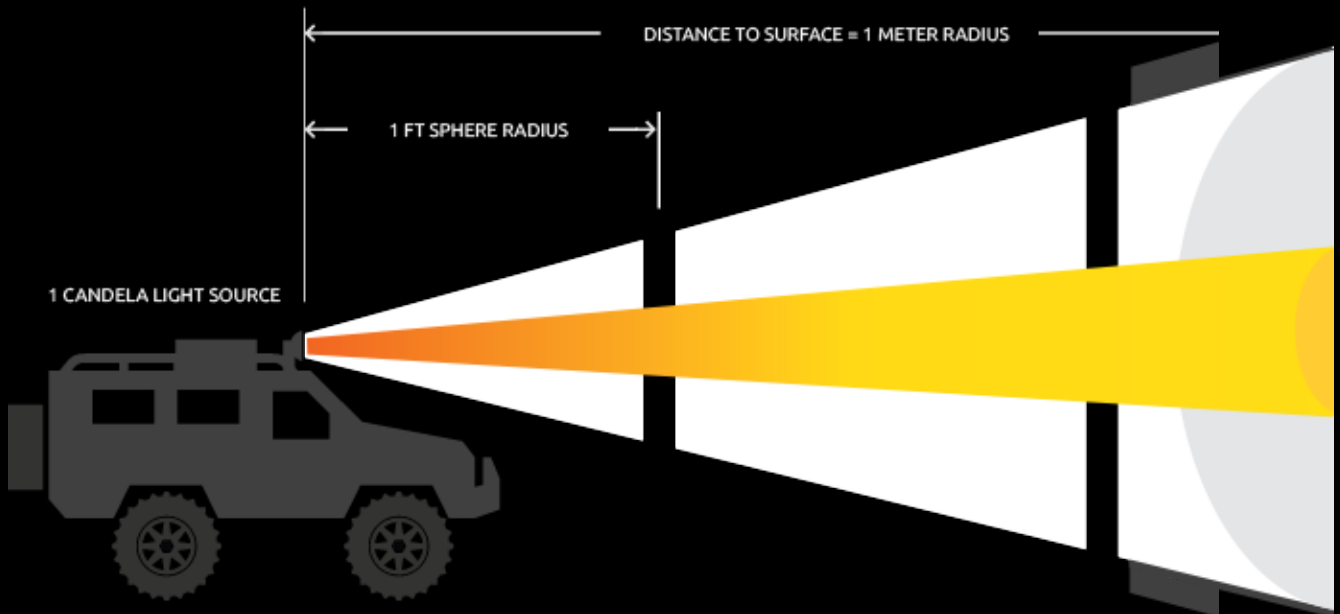
CANDELA

LUMEN



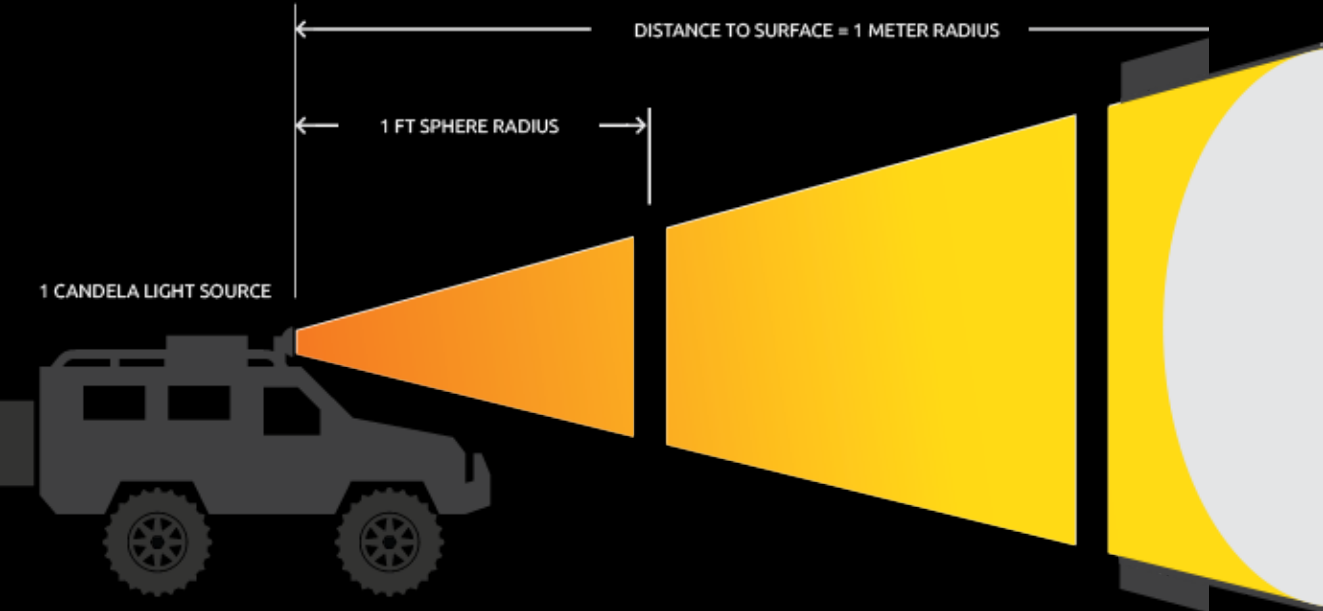
Lumen is a base metric that we use to indicate the total potential amount of light from a light source (i.e. LED Diode, Halogen Bulb, HID Bulb). This metric is usually provided by the light source manufacturer (i.e. Cree, Phillips, OSRAM). Similar to "Horse Power" of an engine. But potential light emitted is subject to various factors like electrical efficiency and optical efficiency.

LUX



Lux is the measure of light at a specific distance within a specific area at that distance. Typically LUX is measured at 10 Meters and within a square meter of space at the 10M target.

CANDELA



Candela is the total volume of light within a certain beam angle and direction.