

6 Major Advantages of LED Spotlights over Halogen Spotlights

- **Lower Heat** – Halogen spotlight generates excessive heat (>250°C) that could potentially damage objects illuminated by these sources. Obviously, these temperatures can be dangerous if the lamp comes in contact with skin or flammable materials (Rea 2000). The heat produced by halogen lamps should be accounted for when considering using them in heat-sensitive applications such as in museums or art galleries. LED based MR16 average reflector temperature is only 70°C. It is safe to touch and it will not burn your fingers. Lower heat released to the room also means lesser air conditioning is needed to cool down a room installed with LED spotlights. Thus, saving extra energy.

- **Higher Energy Efficacy** – Halogen spotlights are not as energy efficient as LED spot lamps. For example, the MR16 3x1W XRE can produce a directional light equivalent to a 35Watt halogen MR16. Halogen lamps also produce IR radiations where most of the energy is wasted as heat. Simply because, LED based MR16 can produce mono-chromatic light and uses collimator lens to project the light in a precise direction, thus no energy is wasted as heat. LED spotlights can save up to 80% of your lighting cost!

- **No UV Radiation** – Quartz filament in halogen MR16 emits high UV radiation, thus require additional glass cover in luminaries to provide the required safety protection. LED based MR16 does not produce any UV radiation, therefore, no additional safety precaution is need and the light is safe for skin, cosmetic, drug and food display, paper and your precious pictures.

- **Longer Life Expectancy** – According to major halogen manufacturers' catalog, the average rated life of the halogen MR16 is between 2000 hours and 5000 hours. The average life expectancy of LED based MR16 is 50,000 hours (that is 5 years and 8 months!). Therefore, lower maintenance cost.

- **Wider Correlated Color Temperature (CCT) and Color Selection** – Halogen spotlights only have a CCT of between 2800K and 3200K depending on the manufacturer and type of lamp. Some manufacturers managed to obtain CCT of up to 4700 K. LED based MR16 offers many color selections, such as warm white (2800K – 3800K), cool white (4000K – 7000K), red, blue, green, amber and even RGB color mixing.

- **No Non-Passive Failures** – The filament capsule of a halogen lamp is pressurized and it is very fragile. The quartz capsule should not be touched with bare hands because the oil and salts from the fingers can corrode the quartz and weaken it. At the end of life, the broken filament coil within the capsule may touch the quartz and melt into it while it is still hot. This event will create defects on the quartz envelope, and defects of this sort can make the capsule shatter. Failure can also occur if the lamp is accidentally struck. Thanks to the feature of solid state technology, LED based MR16 does not have any fragile or moving parts, therefore making the lamp robust, shockproof, and safe to touch.

