

## “What’s the difference?”

There’s actually a LOT of difference to consider when choosing professional lighting fixtures.



### Heat - “Metal halide lamps are **HOT!!**”

Metal Halide lamps emit Infrared (IR) and Ultraviolet (UV) radiation. Neither of which is needed or usable for your show. Multiply the heat generated with the number of fixtures being used, the air conditioning volume of the venue must be increased, including the overall cost.

The IR and UV heat from the lamps is also damaging to the internal components of the fixtures. Absorbed Infrared heat must be removed from the fixture using fans and blowers, which in-turn increases the noise level of each fixture. High fan-noise levels are especially disruptive to critical shows like TV, Opera and Theatrical productions.

UV radiation degrades the plastics, painted surfaces and wire insulation, rapidly aging the fixture from the inside out.

And from a safety standpoint, the heat generated by a fixture can easily burn the skin when the housing is touched.

**LED based lighting requires much lower thermal management, which reduces ambient heat and noise. LED fixtures don’t require ANY cooling when the LED’s are dimmed down, so there is NO fan noise.**

### Output- “I want a bright show!”

Metal Halide fixtures start with the initial specified luminous output and as the lamp ages the output rapidly diminishes. Within a few hundred hours the intensity of a Metal Halide fixture can easily fall by 50%. If the technical or facility crews responsible for maintaining the fixtures neglect changing the lamps due to costs or oversight, shows can operate with lamps that are hundreds of hours overdue for replacement. The show ends up looking poor from light intensity that is potentially only 25% of what was originally intended.

**A show is produced with an LED based lighting fixture the show will remain with the same intensity as it was programmed for many years.**



### Color Temperature- “I want a colorful show!”

Color temperature of Metal Halide lamps vary over time and use. Usually increasing with lamp age and lowering red output significantly, varying the appearance of the original original show design.

**LED color temperature remains stable over life for 10s of 1000s of hours.**



### Flicker- “What in the HELL is THAT!”

It is well known that Metal Halide lamps can develop a flicker due to the arc wandering on the electrodes. This can be VERY distracting to a show and to cameras.

**LED based fixtures don’t develop any annoying lamp flicker.**



## Cost- “Just change out the ones that look bad”

Due to budgetary concerns, or if management didn't financially consider the expensive cost of regular lamp replacements, Metal Halide fixtures can be deprived of lamp replacement or replaced on a case-by-case basis only. This results in varying intensities during a show.

In addition to the cost of the lamp itself, there is also the physical cost. Technical crews and or hired electricians often have to rent lifts or scaffold systems to reach the fixtures in order to change the lamps out.

**LED based fixtures don't require lamp replacement.**



## Health & Safety- “You might want to put on some goggles!”

Metal Halide lamps contain Mercury, as well as the radioisotope Krypton 85 which is found in nuclear reactor waste products. Both are considered environmental hazards.

Currently, regulations require that these lamps be sent to special recycling centers where the Mercury element can be properly extracted from them, but long term, many cities and countries are rapidly adopting new environmental laws to prohibit the use of Mercury lamps entirely.

Metal Halide fixtures have a possibility of high pressure lamp explosion at any time before or during a show which can damage primarily optics like reflectors and infrared filters. But more importantly, lamp explosions during a show have been known to scare audiences and cause panic.

**LED's don't require any special handling, and can't explode.**



## Operation- “Fire ‘em up!”

Metal Halide lamps in a fixture must be prestruck before a show, generating heat and wasting electricity.

**LED fixtures don't require the LED engine to remain on.**

Light leaking during “black out” scenes. When intensity is a 0, Metal halide fixtures must remain on, emitting light through cooling vents at the rear of the fixture.

**LED fixtures have no light leaking from any vents, since the LED is not on.**

If the power fails, Metal Halide lighting must cool off before re- striking (unless an expensive “hot restrike” feature is included).

**LED fixtures can simply rehome and return back to the intended show immediately.**