



### THE GREAT LIGHTING DEBATE

#### Fluorescent vs Metal Halide:

Walk into any rink in Canada and you will likely hear a debate about which team is the best: Canadians, Maple Leafs, Canucks, Flames, Oilers, or Senators.

Walk into any rink in Canada and you may hear rink owners or operators having a similar debate over ice lighting: fluorescent or metal halide.

Metal halide has been the omnipresent force in ice lighting for years. However, fluorescent technology lighting in arenas has not only emerged in recent years but has started to catch up to its metal halide rival.

Many rinks have old metal halides that haven't been changed in years, thus creating that familiar yellow glow that darkens the building. Lamp depreciation in metal halide can be extreme, and the efficiency of heat generation in metal halide can put a strain on the ice surface.

So what advantages can fluorescent technology offer metal halide?

#### Light Quality:

When comparing high-intensity fluorescent (HIF) lighting systems with metal halide in ice arenas, the results can be staggering. Most noticeable to the naked eye is the better quality of light with HIF. All lamp manufacturers assign a Color Rendering Index (CRI) to each lamp that ranges from 0-100, with 0 being darkness and 100 being natural daylight. Fluorescents' CRI ranges somewhere in the 80s throughout the lifespan of the lamp, and they will maintain that bright, white light color that you see. Metal halides, on the other hand, are born with a CRI in the range of the 70s and can depreciate to as low as CRI ranges in the 50s, after six months of use.

While standard metal halide fixtures have a universal aesthetic, there are two forms of popular HIF technology: the common rectangular fixtures and the "star" fixtures. While the rectangular fixture and the star fixture both attain comparable light quality levels, foot candles and energy savings, the star fixture helps illuminate the surface of the ice surface more evenly due to the circular low-light glare.

Also to be considered when dealing with fluorescent technology are the advantages in the lamps themselves, specifically from T12 or T8 lamps to T5 lamps. For the layperson, lamp diameter is measured in eighths of an inch. For example, a T8 lamp is 8/8 of an inch in diameter. In other words, it's an inch wide. T5 lamps are, of course, 5/8 of an inch wide. Both star and rectangular fixtures in ice arenas should call for T5 lamps. In much the same way that T8 lamps have replaced T12 lamps, the newer T5 technology is an improvement over its predecessors. Because T5 technology has a higher lumen-per-watt ratio, it was designed specifically for high roof areas. The lumen output of T5 is 60 percent higher than that of T8, so fewer lamps or fixtures are required for ice arena applications.

#### Instant On/Off:

Instant on/off re-striking capabilities is another advantage of HIF technology. Metal halide lamps normally need 25 minutes or more for the lights to warm up to full brightness. Most rink operators will be hesitant to turn off metal halide lamps in short down periods because of the time it will take to restart them. The option, then, is to allow the lamps to burn continuously, which is obviously not the most efficient use of energy. With fluorescent lighting, lights can be turned on and off with as little as a 15-minute gap in usage.

**Energy and Maintenance Savings:**

Perhaps the biggest benefit of HIF lighting is the energy savings that the rink owner will realize by switching from metal halide to fluorescent. In addition to the improved energy savings provided by the instant on/off capability, switching to fluorescent technology results in a drop in wattage per fixture, more than 10,000 watts can be saved annually. Payback on the initial investment is typically two years.

The fluorescent lamps themselves have a much longer lamp life than their metal halide counterparts, resulting in lower maintenance costs. And because fluorescents have cooler operating temperatures than metal halide lamps, the strain on compressor systems is considerably less.

Fluorescents give you more light, using less wattage, for less money, while doing your part to put less of a strain on the environment. Why switch to fluorescent? The better question may be: Why not?

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