

Venture's Technical Information: Lamp Life



Lamp life is an important consideration when purchasing a new, retrofit or replacement lamp. Two very different and distinct terms describe life: “rated life” and “economic life.”

Venture is investigating a number of exciting performance phenomena. Some lamps operating on electronic ballasts (HF, DC, or square wave) provide higher maintained lumens over life. This is a rapidly evolving topic. Look to our website for new developments.

Rated Life

Rated, or average (median), life for metal halide lamps is a value of lamp life expectancy based on laboratory and field tests of representative lamps, operating on approved ballasts, with a burn cycle of at least 10 hours per start. The average life is determined when 50% of traditional metal halide lamps initially installed are still operating.

Various operating conditions affect lamp life. One key factor is operating position. Position-oriented lamps (designed to operate in one specific position) are tested and rated based on that designated position. Operating these lamps in any other positions can dramatically shorten life, reduce lumen output and cause color shift. Lamps designated universal can be operated in any position. However, life expectancy and lumen output are sacrificed in certain positions. Published “rated life” for universal lamps is based on operation in the vertical position. “Rated life” for universal lamps operated horizontally is 75% of the published rating.

Economic Life

Economic life refers to the hours of operation during which a lamp is designed to provide optimum light output and color quality as well as lowest replacement cost. Economic life describes actual lamp life better than rated life because rated life does not account for the lumen depreciation and color shift that occur as lamps age. The economic life of lamps is generally 60% to 75% of the lamp rated life. Though economic life is important when considering a lighting system, lamp data tables show rated life because they provide a comparison with other lamp manufacturers’ ratings.

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