

GE Lighting Institute

GE ConstantColor® CMH® Ceramic Metal Halide Lamp Color Performance Improvements over Quartz Metal Halide Lamps

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New approaches to Metal Halide lamp design, materials and processes have recently led to the introduction of GE's ConstantColor® CMH® Ceramic Metal Halide family of lamps which are significantly improved in performance when compared to standard Quartz Metal Halide (QMH) lamps. Quality-of-light characteristics such as lumen maintenance, lamp color-shift and spread, color rendering Index (CRI) and dimming of CMH® lamps make them a preferred choice for the most demanding metal halide requirements.

Typical mean lumens for QMH lamps are in the 65-75% range, while CMH® lamps provide a 10- point improvement to approximately 85% mean lumens when operated on standard magnetic ballasts. New Electronic ballast introductions hint of even better mean lumens, but these systems will require much further testing before conclusive results are established.

Lamp color spread and color shift are significantly reduced with CMH® lamps. The industry recognized 10-step oval for QMH lamps means that they can have a color temperature range of +/-500 Kelvin temperature and still be within the normal range. CMH® lamps have a much smaller color spread, from as little as +/-75 Kelvin to no more than +/-150 Kelvin. Besides this, lamp color shifts as it ages and can add to the overall color spread of an installation by as much as 300 Kelvin for QMH lamps. The CMH® family of lamps have imperceptible color shift and appear similar to each other regardless if they are old or new.

Conserving energy on metal halide systems can be achieved by dimming the lamps down to 50% of rated wattage on approved dimming systems. However, QMH lamp CRI decreases from 65 CRI down to approximately 45 CRI when dimmed, making them unappealing for important color critical applications. CMH® lamps when dimmed drop down to only 65 CRI, making them the same as that of QMH lamps at full wattage. This makes CMH® lamps more appealing for color critical applications.

Keeping these important quality-of-light elements in mind when designing a lighting system can only lead to the consideration of GE ConstantColor® CMH® lamps for the most demanding applications. For more information regarding GE ConstantColor® CMH® lamps, contact your local GE Sales Representative or log on to www.gelighting.com.