

Abstract Submitted
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Influence of the cathode composition on the performance of high pressure short arc xenon lamps OLGA B. MINAYEVA, DOUGLAS A. DOUGHTY, PerkinElmer Optoelectronics, Fremont, CA — Thoriated tungsten has been widely used as a cathode material in arc lamps. The addition of thorium reduces the work function of tungsten and allows the cathode to operate at a lower temperature. However, most of the studies on thoriated cathodes were done either for welding arcs or for metal halide lamps, where reactions with the ambient gas could contribute to the cathode erosion. In the case of completely inert, high-purity xenon gas and highly collisional arc plasma, the differences in performance of thoriated and non-thoriated cathodes are mainly material-based. In this talk we will discuss how 2% ThO₂ addition to tungsten cathodes changes the lifetime, ignition performance, and stability of xenon lamps.

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