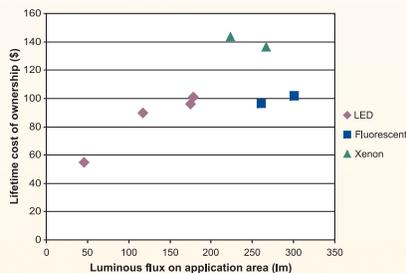


Lighting Answers: Residential Under-cabinet Luminaires

Under-cabinet lighting is one of the first residential illumination applications for LEDs. In *Lighting Answers: LED Residential Under-cabinet Luminaires*, the National Lighting Product Information Program (NLPIP) tested LED under-cabinet luminaires found at home improvement stores and compared their performance with fluorescent and xenon models. NLPIP tested the under-cabinet fixtures based on ASSIST *recommends* testing procedures, which measures the illumination falling on a simulated kitchen counter and backsplash.



Cost of ownership over 10 years vs. light output of under-cabinet luminaires.



Discrete shadows produced by LED luminaires vs. soft shadows produced by fluorescent luminaires.

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Results

- Three of the four LED luminaires, and all of the xenon and fluorescent models met a recommended illuminance level for kitchen tasks. The fluorescent and xenon luminaires produced a higher total luminous flux than the LED luminaires.
- All of the luminaires, except one xenon model, met the illuminance uniformity ratio recommended for task lighting in the *IESNA Lighting Handbook, 9th Ed.*
- The average application efficacy of the four LED luminaires was 29 lm/W, compared with an average 21 lm/W for the two fluorescent luminaires and 5 lm/W for the two xenon luminaires.
- Over a 10-year period, the cost of ownership of the LED luminaires is expected to be close to that of fluorescent luminaires, assuming that the LED luminaires survive for the full period. If they fail and require replacement, the LED cost of ownership would approach that of the xenon luminaires.
- Other considerations for selecting a residential under-cabinet luminaire include the color temperature and color rendering properties of the light, the product warranty, ability of the luminaire to be dimmed and aimed, and the number of discrete shadows produced.

The locally available luminaires shown above were tested and compared for uniformity, color, and efficacy.

The complete publication may be viewed and downloaded at:
www.lrc.rpi.edu/programs/NLPIP