Independent research using Xicato Spot Modules shows a link between light quality and the attraction of retail displays.

There is a strong link between the quality of accent light sources, in terms of color rendering ability and in particular the rendering of deep reds, and the attention-grabbing potential of retail displays, according to the outcome of an on-site evaluation by end-users and lighting designers conducted by independent researcher, Colette Knight and peer reviewed by University College London. Shoppers and lighting designers took part in the experiment carried out in a House of Fraser store in London. It showed that there was no statistical difference between the appreciation of colors rendered with halogen or Ra 95 (R9 >95) LED sources, whereas the rating was lower for Ra 80 (R9<20) LED sources. This translated directly into the rating of the display itself in terms of its attraction.

LEDs provide economic and ecological advantages over traditional lamps in retail display lighting, but will not be adopted if there is a fear that the overall atmosphere of a retail setting and the attention-grabbing ability of a display coupled with the appearance of individual products that are highlighted will suffer due to light quality compromises. Xicato commissioned independent researcher Colette Knight to design and conduct research in order to evaluate the effect of lighting quality on the attraction towards, appreciation of and sales of merchandise. The research was peer reviewed by Peter Raynham of University College London.

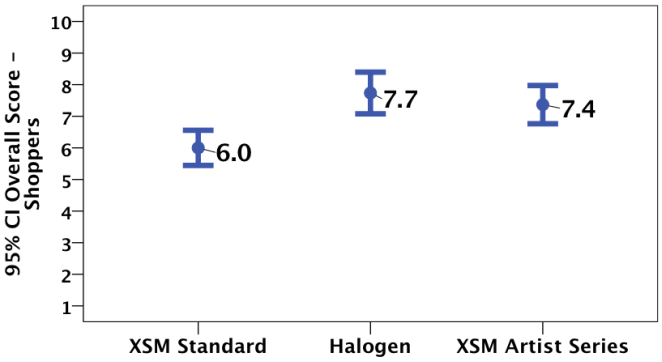
The PIED A TERRE ladies shoe display was chosen as the test location in consultation with the building services management at House of Fraser on Oxford Street, London. A display with three identical alcoves was installed such that all three were illuminated with halogen lamps, Ra 80 LEDs (R9=16) or Ra 95+ LEDs (R9>95). The LED sources were based on Xicato's Standard modules for Ra 80 and the Artist Series modules for Ra95. As well as being able to switch between these three scenes, it was also possible to have each alcove lit with a different source for direct comparisons. The experiment design concentrated on making the color rendering the only variable. Execution of the project involved the collaboration with Xicato (modules), Gamma Illumination (luminaires), RENA (Bits2Power controls).

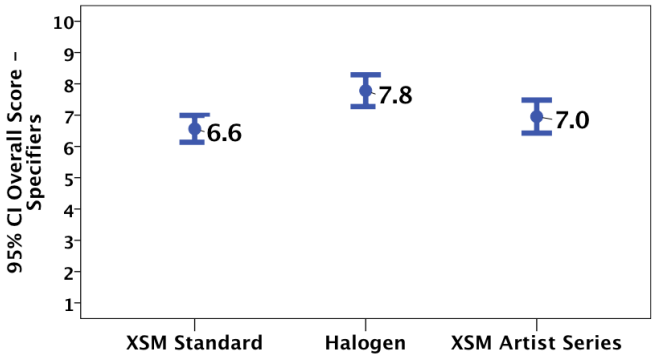
Over the course of several weeks quantitative research was conducted with 19 targeted shoppers recruited in advance and scheduled for interviews at specific times. An interviewer from a consumer research agency, Acumen Fieldwork, conducted the interviews based on a designed protocol. In addition in-depth qualitative interviews were conducted with 31 lighting designers to gain a deeper understanding of how professionals perceived the differences in lighting quality between the three solutions.

The results showed that with both the shoppers and the lighting designers there was no statistical difference between the rated lighting quality of halogen sources and the Ra 95 (R9 >95) LED sources (Xicato Artist Series modules); both make colors appear as vibrant and attractive. A statistically significant lower rating was given to Ra 80 (R9<20) LED sources as compared to Halogen or the Artist Series module (R9>95). This translated directly into the overall rating of the display itself in terms of its attraction. The graphs over page show a typical outcome.

Effectiveness of lighting in display

Question: Please give an overall score out of 10, which indicates how effective you think the lighting in this display is in terms of grabbing your attention and making the shoes stand out. 10 would be excellent, 1 would be very poor indeed





The test set up is shown below

A full report is available from Roger Sexton, contact details below.

Sales are being logged as the three light sources are switched on a weekly basis – this will be the subject of a follow-up paper.

Xicato

Xicato is a Solid State Lighting company founded by seasoned industry professionals, with offices located in Silicon Valley, California (HQ), London and Tokyo.
Xicato develops, manufactures and globally markets LED modules that simply are functional replacements for traditional lamp technologies, offering all the life and energy-saving advantages of LEDs with no light-technical or aesthetic compromises. Xicato provides industry leading specifications via an open approach with a global circle of leading end-users, specifiers and luminaire manufacturers. Xicato is committed to address the whole broad sphere of the general illumination world, taking on segment by segment with its focus on continuous innovation.

Xicato believes that lighting plays a valuable role in the creation of places for people. We highly recommend the use of a qualified lighting designer from one of the following organizations:
PLDA Professional Lighting Designers Association - www.pld-a.org
IALD International Association of Lighting Designers - www.iald.org

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