PRO-LITE TECHNOLOGY

Press Release

Bentley Adopts ProMetric™ Imaging Photometer for Automotive Instrument Panel Testing

April 25th 2008: Pro-Lite Technology LLP (Cranfield, England) has announced that it was chosen to supply a ProMetric™ CCD imaging photometer to Bentley Motors (Crewe, England) to assist in the development and testing of LED sources used in their vehicles. Bentley Motors (Crewe, England) produces some of the finest motor cars in the world. Bentley provides a very high attention to detail in the design and production of their vehicles, and this exacting approach extends to the selection of the photometric test equipment which they needed to help in the development of its cars' interior and exterior lighting, instrument panels and infotainment displays.

Bentley has embraced advanced, solid state lighting (SSL) based upon light emitting diodes (LEDs) in its vehicles. These are used extensively for display backlighting, for subtle mood lighting in the cars' cabins and for illuminating switches and panel indicators. For Bentley, it was vital that the LEDs selected provide consistent illumination, create the required level of brightness (luminance) and emit exactly the desired colour. Visual comparison of the LEDs is extremely subjective and simply cannot quantify the performance of the light source or display. Traditional "spot" photometers – light meters which measure the brightness and colour of a display one (small) spot at a time were one answer, but Bentley needed a more productive solution.

The solution selected was an Imaging Photometer – specifically a ProMetric™ PM-1400 CCD Imaging Photometer made by Seattle-based Radiant Imaging Inc and distributed in the UK by Pro-Lite Technology LLP of Cranfield, Bedfordshire. ProMetric photometers are powerful, CCD-based light and colour measurement instruments that provide for vastly increased productivity compared with traditional "spot" photometers. Whereas a spot photometer can only measure the brightness and colour of one point on a display or light source at a time, a CCD-based ProMetric photometer can measure millions of points simultaneously. Moreover, because the ProMetric camera views the whole light source at once, localised luminance and colour differences can be easily detected – artefacts that simple spot meters would probably miss.

The attributes of the ProMetric photometer which lead to Bentley choosing this camera over rival systems (or indeed an ordinary video CDD camera) were the PM-1400's 16,000:1 photometric resolution, full frame CCD sensor (1536 x 1024 pixels), traceable calibration and precise match to the CIE tristimulus observer functions. The PM-1400 provides a high sensitivity with wide dynamic range which means that it will detect colour and luminance differences that the human eye would see but which lesser cameras would miss. The full frame CCD gives accurate measurements of small features and individual LEDs whilst maintaining a wide field of view. The PM-1400's tristimulus filter wheel more precisely mimics the colour response of the human eye, meaning that the ProMetric camera will report colour differences more accurately. Overall, the PM-1400 provides colour and brightness measurements which Bentley can rely upon for accurate communication of LED and display performance within its supply chain and – ultimately – lead to enhanced display clarity and improved interior lighting in its cars.

Pro-Lite's Robert Yeo worked closely with Bentley's engineering team to determine the optimum camera configuration required for their application. Building upon his successful "Practical Light & Colour Measurement" training course hosted by the Photonics Cluster in Birmingham, Robert trained Bentley's engineers in the science of light measurements and in particular how to address the challenges of measuring LEDs accurately. As a result, the Bentley team were brought quickly up to speed on the operation and application of their purchase and have already started to realise a return from their investment in their ProMetric camera.

Web link: http://www.pro-lite.co.uk/File/case_study_instrument_panels.php

About Pro-Lite: Pro-Lite is a specialist distributor providing value-added service to the laser and optical radiation measurement communities in the UK and Ireland. Pro-Lite supplies lasers, laser safety eyewear, laser power and energy meters, precision opto-mechanics, as well as a complete spectrum of equipment for measuring optical radiation and the optical properties of materials. Pro-Lite also designed and delivers the popular “Practical Light & Colour Measurement” course in association with Birmingham-based Photonics Cluster (UK).

FOR FURTHER INFORMATION:

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