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Lumileds' Luxeon LEDs Blaze New Trails with Audi A8 6.0, the First Production Vehicle with LED Daytime Running Lights

World's Brightest LEDs Pave the Way for Future Development of All-LED Headlamp

SAN JOSE, CA (January 8, 2004) — Lumileds Lighting announced today that its Luxeon LEDs, the world's brightest solid-state light sources, are inaugurating a new era in automotive lighting with their debut in the headlamps of the 12-cylinder Audi A8 6.0 premiering at the 2004 Detroit Auto Show. Luxeon light-emitting diodes create a distinctive cloverleaf-shaped daytime running lamp (DRL) within the headlamp assembly, marking the first appearance of LEDs in front lighting in a production vehicle after years of use in other automotive lighting components.

LEDs have been embraced by the automotive industry for rear lighting systems because they last for the life of the vehicle, improve safety, and consume little power, but until recently they lacked sufficient light output for use on the front of a vehicle. Lumileds' Luxeon light sources are significantly brighter than other LEDs, permitting the development of new front lighting applications and styling that take advantage of the benefits of solid-state illumination for the first time.



Strong Brand Identity

Each headlamp in the Audi A8 6.0 incorporates a module with five white Luxeon LEDs arranged in a five-point pattern, like the five spots on a dice, to form a combination daytime running lamp and nighttime position lamp. The daytime function of the lamp is increasingly important as more countries mandate the use of daytime running lights to reduce the number of collisions.

Because the new Audi's daytime running lamp is powered by LEDs, it is the first car in which the use of daytime driving lights has virtually no effect on fuel consumption, thanks to the low voltage demands and exceptional energy efficiency of LED technology. In addition, the signature cloverleaf motif made possible by the LEDs' small footprint is a key design element of the sports luxury vehicle, immediately branding the car as an Audi when the lights are on.

"Our engineers have evaluated prototypes with many different LEDs," said Dr. Wolfgang Huhn, General Manager of Lighting Technology Development for Audi. "Audi must choose the solution that best supports the image and quality of our vehicles. Luxeon is the LED we believe is capable of performing in all capacities to the levels required by Audi."

"We have worked with Lumileds for many years, and we knew that they offered the only LED technology with sufficient brightness to enable the Audi application," said Detlef Decker, Technical Marketing Manager of Hella, the Germany-based automotive supplier that provided the complete headlamp assembly for the Audi A8 6.0. "This enabled us to be first to market with a production headlamp incorporating LEDs for one of the functions."

First Step toward All-LED Headlamps

The use of Lumileds' Luxeon LEDs in the daytime running lamp of the Audi A8 6.0 signals a coming transition to solid-state technology for all headlamp components, including low and high beams, fog lamps and newer adaptive front lighting systems that contribute additional light while turning.

Other LED-related "intelligent" front lighting capabilities are expected to include different beam patterns automatically triggered by different situations such as highway, in-town or curve driving. This will be possible because a light beam created by multiple LEDs can be programmed to angle, dim or brighten individual emitters as needed. These features began appearing on concept cars such as the Ford Model U and the Audi Nuvolari and LeMans last year, utilizing all-Luxeon headlamps.

With Luxeon's inclusion in the Audi A8 6.0 — the first car on the road with a standalone LED daytime running lamp — Lumileds is repeating a pattern that has been followed since the first LEDs took their bow in automotive lighting more than a decade ago. Lumileds' solid-state lighting technology enabled the world's first all-LED rear combination lamp, first single-LED stop-tail lamp, and first LED front-, rear-, and side-mirror turn signals.

"The new Audi A8 6.0daytime running lamp is another milestone for our technology, and a sign that Lumileds will soon conquer the ultimate challenge in LED automotive lighting: the headlamp," said Leonard Livschitz, Director of Automotive Business Development for Lumileds Lighting.

About Lumileds Lighting

Lumileds Lighting is the world's leading manufacturer of high-power LEDs and a pioneer in the use of solid-state lighting solutions for everyday purposes including general lighting, automotive lighting, traffic signaling, signage and LCD backlighting. The company's patented Luxeon Power Light Sources are the first to combine the brightness of conventional lighting with the small footprint, long life and other advantages of LEDs. Lumileds also supplies core LED material and LED packaging, and manufactures billions of LEDs annually. A joint venture between Agilent Technologies and Philips Lighting, Lumileds is headquartered in San Jose, California, with operations in the Netherlands, Japan and Malaysia and sales offices throughout the world. For more information, call Lumileds at 408-435-6111 or visit www.lumileds.com.

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