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Laserlight in Showcar: Audi Sport quattro laserlight concept

The laser light, which Audi is unveiling at the 2014 CES as the next step in headlight technology, has the potential to complement the LED high beam. It makes its debut in Audi's new Le Mans race car in June 2014, continuing the brand's tradition of testing its new technologies on the race track, the world's toughest proving grounds.

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Laser diodes emit a monochromatic and coherent light with a wavelength of 450 nanometers. In its natural form it has a bluish shimmer. A phosphor-coated film in front of the diode converts it into a white light suitable for automotive applications. Just a few micrometers in diameter, the laser diodes are even smaller than LED diodes and come very close to the theoretical ideal of a high-output, point light source for use in cars.

In the Audi Sport quattro laserlight concept show car, which Audi is displaying at the CES, the high beam produced by the laser diodes is three times as bright as the LED high beam. With a range of nearly 500 meters (1,640.42 ft), it reaches nearly twice as far – a major safety plus for the driver. Because the light beam is tightly bundled, laser diodes are not currently suitable for wide, low-beam light.

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