



Mercedes V-Class MPV features Hella LED headlamp.

VEHICLES

Prospects Bright for Lighting, Sensor Supplier Hella

Claiming to be the market leader in sales of 24-GHz narrow-band radar technology, Hella has 15 OEM customers using the technology in 120 vehicles. The supplier is readying a 77-GHz unit for production in 2019.

Roger Schreffler | Jun 06, 2017

DETROIT – One of Europe's leading automotive lighting suppliers, Hella, continues to move aggressively into adaptive front lighting and safety electronics.

Based in Lippstadt in western Germany, Hella claims to be the world's leading supplier of adaptive front lighting including adaptive-driving-beam systems.

The supplier does yearly business of \$6.8 billion, more than half in Europe and an estimated \$1 billion in North America. In the fiscal year ending in May 2016, automotive accounted for 76% of Hella's total sales, with lighting – front, rear and interior – accounting for \$3 billion.

Among its OEM customers, mostly in Europe because of legal restrictions prohibiting the introduction of adaptive-driving-beam headlights in the U.S., are Audi, BMW, Mercedes-Benz, Renault, Skoda, General Motors and Ford.

In the truck sector, Hella supplies light-emitting-diode modules to DAF Trucks of the Netherlands.

Hella's main North American customers are GM and the U.S. operations of Mercedes-Benz and BMW, supplying mainly rear lighting to the latter. To GM, Hella supplies front and rear lighting to the Cadillac XTS and CT6 sedans and the Chevrolet Equinox, Buick Envision and GMC Terrain CUVs.

In addition to lighting, Hella is a major supplier of radar sensors.

The supplier's Hamm electronics plant in Germany is gearing up to introduce the fourth generation of its 24-GHz device in mid-2017 while a 77-GHz unit is being readied for production in 2019.

Hella put its first-generation 24-GHz radar sensors into series production in 2005. The devices are ideal for applications such as blindspot detection, lane-change assistance and rear-facing parking assistance. Claiming to be the market leader in sales of 24-GHz narrow-band radar technology, Hella has 15 OEM customers using the devices in 120 vehicles.

The supplier's fourth-generation radar sensors will expand functionality to include door-exit assistance to alert vehicle occupants of vehicles, motorcycles and bicycles passing on the side.

Kristian Doscher, head of original-equipment marketing, tells *WardsAuto* in an interview Hella expects to see double-digit growth rates in sales of advanced front-lighting systems over the next five years, "because all premium OEMs are trying to sophisticate their lighting. We expect the technology to move from higher-level to lower-level segments."

Hella launched its first-generation AFS system in 2006 utilizing xenon lighting. The supplier, while not first on the market with the technology, was among the early entrants. In 2010, it was first to launch adaptive-driving-beam technology on the Volkswagen Touareg, again utilizing xenon lighting.

The supplier followed in 2013 with a more advanced system, this one using LEDs, on the Audi A8. Called MatrixBeam, the system incorporates 25 LEDs into five mini-reflector chips per headlamp.

Lined up side by side within the housing unit, each LED is controlled individually and can raise, lower or move laterally and dim or brighten based on driving conditions and traffic levels. The unit can mask out up to eight different road users within a fraction of a second while high beams operate free of glare.

Audi has since expanded the technology, employing both 25- and 20-LED chips, for the A7, A6, A4 and R8 models.

In 2016, it introduced an 84-LED MultiBeam unit on the Mercedes-Benz E-Class and Porsche Panamera. Jointly developed with Daimler, MultiBeam is designed with three rows of LEDs which distribute light through a lens. Doscher says MultiBeam is the first lighting system to feature variable low- and high-beam functionality.

“Both, by being adaptive and employing LEDs, offer greater safety and comfort,” Doscher says. At 50 mph (80 km/h), Hella estimates the technology gives drivers an additional 1.3 second to react to an obstacle or hazard.

Adaptive-driving-beam systems incorporate a camera on the windshield which recognizes oncoming traffic and transmits that information to a control unit which in turn adjusts the beam accordingly to one of five dynamic patterns: city, highway, country, inclement weather and so-called bending, which automatically illuminates the corner when turning.

Steffen Pietzonka, vice president-marketing at Hella’s U.S. subsidiary, notes current U.S. regulations permit only one dynamic option, bending. He is hopeful regulations may change by 2018 or 2019, at which time he expects luxury brands including Cadillac and Lincoln to follow with more dynamic features.

In Europe, Pietzonka says even the C-segment Opel Astra now employs MatrixBeam lighting.

Making this possible, LED costs have come down faster than he had predicted several years ago, and the industry is adopting the technology at a rapid rate. In the next three to five years, Pietzonka expects adaptive-beam lighting to be installed in one-third of vehicles sold in the premium segments in Europe.

Hella expects the global market for LED headlamps to grow to 20% of new cars in 2020, up from 4% in 2016, while the shares held by halogen and Xenon lamps will fall from 89% to 77% and 7% to 3%, respectively.

By market, the supplier predicts LED headlamps' share of installations will grow to 45% in Europe, up from 12% in the same 4-year timeframe; 23% in North America, from 4%; and from 3% to 16% in China, the world's largest auto market.

By 2020, Hella expects LEDs will be adopted in some markets for premium down to A-segment cars. "This trend will begin in China, the U.S. and Europe," he says.

Besides safety, automakers are switching to LEDs to reduce power consumption. Halogen lighting runs on 55 watts of electricity while LED projector lamps use as little as 12 watts. Also, LEDs carry an estimated 10,000 hours of charge compared with 800-1,000 hours for halogen lights. "More than enough to last the life of a vehicle," says Pietzonka.

An added advantage is higher illumination. By switching to LEDs, Hella reports it can create a light source that is better for an aging eye as well as making lighting more stylized.

In the electronics field, Doscher says Hella's 77-GHz radar sensor technology initially will find use in the premium segment when introduced in 2019. Hella hopes to keep module costs down by utilizing many of the same components now used in its 24-GHz modules.

In terms of 24-GHz, narrow-band technology, Hella is the global market leader, according to Doscher. In addition to Audi, it supplies BMW, Hyundai, Mazda and GM.

The executive notes radar is good at detecting objects, relative speed, distance and location. But it cannot see surfaces; it only sees points. Camera technology, on the other hand, can recognize surfaces and objects.

"In the future, we anticipate using a combination of radar to detect an object, then camera technology to classify it," Doscher says. "Already, cameras are used to

recognize oncoming traffic. This is an area where lighting and electronics will fuse together in the next couple of years.”

In an agreement signed last summer, InnoSenT, a leading provider of radar technology, will sell all future products and services in its automotive portfolio exclusively to Hella in an effort to foster long-term growth in driver-assistance systems.

Hella forecasts long-range radar, currently installed in 7% of light vehicles sold globally, will increase to 20% in 2020; short and midrange radar, currently at 14%, will reach 32% in the next four years, while Lidar, at 3%, will grow to 10%.

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