

Headlamp innovation is talked up at Mercedes-Benz

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Credit: Daimler

(Tech Xplore)—New technology news from Mercedes-Benz reflects headway into headlamps. The news is about headlamps that are designed to deliver high precision, brightness without glare and much more. Cars

of the future from Mercedes-Benz are to use these developments.

The company has worked up a "dazzle-free" continuous main beam, and the system carries "precision with resolution of more than 2 million pixels."

(A headlamp from Mercedes-Benz features chips that work with over 1 million micromirrors, in other words, more than 2 million in total per vehicle, said the company.)

Explained further: "The headlamp in HD quality provides a chip working with over a million micro-mirrors. The light is split up into tiny pixels. The smaller these light pixels become the better the system can react to different situations, the more precisely objects and passers-by can be illuminated and simultaneously individual areas can be faded out or dimmed in a targeted manner."

Mercedes-Benz has added a name to the tech, called "Digital Light."

Using it, the goal is for the driver to get the ideal light distribution for every driving situation. "The idea behind this isn't necessarily the brightness or the distance of the light," said *BMW BLOG*, "but the ability to shine light exactly where it's needed and not where it isn't. With that many individual lights, the Digital Lights can create illumination in exact places and even exact [shapes](#)."



Credit: Daimler

How it works:

The light is software controlled. "Algorithms receive detailed information about the surroundings from the vehicle sensors, and from it calculate in real time the brightness value for each one of over two million pixels," said the Daimler [release](#).

"Sensors, such as cameras or radar, detect other [road users](#) and powerful computers evaluate the data as well as digital cards in milliseconds and give the headlamps the commands for adapting the light distribution in all situations. These efforts yield optimum vision for the driver without

dazzling other road users."

Getting the benefit of light to suit the driving situation is just part of the good news about this technology development. The other key feature about the Digital Light system is that it can deliver messages, as it can "beam messages like direction arrows or warnings onto the road."



Credit: Daimler

BMW BLOG (not affiliated with BMW AG) talked about this feature. Nico DeMattia said, "Mercedes is capable of creating specific images on the road ahead with the lights. So if there's roadwork ahead, the lights

will shine a roadwork sign ahead on the road, as well as surrounding illumination, to alert the driver. If a pedestrian is crossing the street and the systems on board recognize it, the lights will display zebra lines across the street to warn the driver."

New Atlas similarly had a description of what you would experience with this information-giving capability. It referred to "the car creating a zebra crossing for a pedestrian waiting to cross the road, and Mercedes says the system could also project [light](#) traces onto the road to replace missing [markings](#), along with direction arrows and warnings."

Greg Kable, in *Autocar*, said, "Other illuminated symbols, such as stop signs, [guiding](#) paths, ice warnings and distance guides, are also expected to be offered on the production versions of the Digital Light headlights, according to Mercedes-Benz."

The innovation was developed by Mercedes-Benz in collaboration with two partner companies, according to the Daimler release.



The new HD projector technology from Mercedes-Benz uses sensors on the vehicle to identify other road users and ideally adapt the light distribution to the environment. In this process, drivers and front passengers of oncoming vehicles

are shielded from the light beam and not dazzled. Credit: Daimler

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