



Media Information  
January 6<sup>th</sup> 2015

## **BMW Innovations at the Consumer Electronics Show (CES) 2015 in Las Vegas. BMW M4 Concept Iconic Lights – bright ideas for enhanced driving pleasure.**

**Munich/Las Vegas.** At the Consumer Electronics Show (CES ) 2015 in Las Vegas, BMW is providing further evidence that it is a world leader in the development of Laserlight. Having already supplied its first models with Laserlight to customers, it is now presenting further laser functions for vehicles of the future. Laserlight is now able to offer its impressively long beam range of up to 600 metres in combination with the BMW Selective Beam function (anti-dazzle High-Beam Assistant). At CES, BMW is unveiling ways in which Laserlight, extensively integrated with assistance systems and vehicle sensors, can be used to implement new intelligent lighting functions for enhanced safety and comfort. For example, it can work with the navigation system to illuminate corners well in advance, while a laser-based Dynamic Light Spot can provide early warning of people or animals at night from a distance of up to 100 metres.

### **New lighting technology opens up design scope.**

The BMW M4 Concept Iconic Lights model, with exterior paintwork in Cool White metallic, features a new interpretation of the typical BMW twin round headlights. On the move, the laser technology can be identified by the fine blue strips inside the lights. Meanwhile, the rear light clusters of the BMW M4 Concept Iconic Lights model are based on OLEDs (organic light-emitting diodes), which produce light from wafer-thin semiconducting layers of organic material. For the first time, both the tail lights and rear direction indicators feature OLED technology. The illuminated surfaces are positioned to produce a three-dimensional effect. OLEDs also take up less room on account of their thin size.

### **Shining example of innovative technology: anti-dazzle Laserlight and laser projection.**

BMW Laserlight sets new standards in terms of beam range and brightness. Inside the laser headlights, the “coherent” monochromatic blue laser light is converted into harmless white light. A special optical system directs the rays from the high-performance diodes onto a phosphor plate inside the light, which converts the beam into a very bright white light that is similar to natural daylight

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and pleasant to the eye. Despite consuming 30 percent less energy, the parallel light beam is ten times more intense than that produced by halogen, xenon or LED light sources. BMW Laserlight also has a beam range of up to 600 metres, more than twice that of conventional headlights, for increased safety in the dark. The camera-based BMW Selective Beam system, which is controlled by dynamic actuators, prevents oncoming or preceding vehicles being dazzled and allows the laser high beam to be left on at all times.

### **Enhanced safety through connectivity.**

Extensive integration of the innovative Laserlight with other vehicle systems allows a variety of intelligent lighting functions to be implemented. Integration with the navigation system, for example, allows the proactive Adaptive Headlight control system to illuminate corners even before the steering wheel is turned. Laserlight also adds a new dimension to the Night Vision system's Dynamic Light Spot function. In pitch-dark conditions, people and animals can be detected from a distance of up to 100 metres, by infrared camera, and "spotlighted" by the laser-based Dynamic Light Spot. This is a longer range than that of any other system. Also, if the vehicle detects reduced clear road width ahead, the laser headlights can be used to provide "narrow clearance" lighting. A laser projection function indicates the exact width of the vehicle in relation to the road to allow safe passage through the narrow space. BMW M4 Concept Iconic Lights also showcases a further "visionary" system: "High Power Laser" diodes. This system projects driver information directly onto the road in front of the vehicle, allowing drivers to concentrate optimally on the traffic even in pitch darkness.

### **OLED rear light cluster with three-dimensional effect.**

Organic light-emitting diodes – OLEDs – are an innovative, efficient, sustainable light source that form the basis for the BMW Organic Light system. OLEDs have a low power consumption, which helps to further reduce vehicle CO<sub>2</sub> emissions. Another sustainable feature of this technology is the fact that no expensive rare earth metals are required in the production process. Unlike ordinary LEDs, which are a point light source, OLEDs produce light uniformly over their entire surface. The OLED elements are very thin, with a thickness of just 1.4 millimetres. Also, the individual modules can be activated separately,



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generating new possibilities for creating different lighting effects at the rear light clusters.

### **Different lighting effects in different driving modes.**

In the past, rigorous legal requirements regulating the brightness of vehicle lighting have limited the number of lighting functions that it was possible to implement with OLED technology. On the BMW M4 Concept Iconic Lights model, BMW Organic Light is used in the tail lights and rear direction indicators. By activating the OLED segments individually, it is possible to create different rear lighting effects in different driving modes. Whereas normally the L-shape is wide and uniformly illuminated, in Sport mode a different-shaped light pattern can be used by activating only some of the OLED segments. The rear light then appears as a narrow, focused and sharply defined “strip” of light.

### **New technologies create new design options.**

Lighting is an important design element in modern vehicles. From the front, all vehicles of the BMW core brand are instantly identifiable by the combination of their twin round headlights and the hallmark kidney grille. At night, the four glowing corona rings form a distinctive signature.

The BMW M4 Concept Iconic Lights model presents a new interpretation of the twin circular headlight theme. The headlights feature laser technology which is attractively highlighted by fine blue LED strips when the vehicle is on the move. Thanks to the new laser technology it was also possible to give the headlights a flat and sharply sculpted design.

The L-shaped rear light clusters are just as distinctive in terms of styling as the front lights. The “L” shape is a typical design hallmark that accentuates the width of the rear and gives the vehicle a striking and powerful look that always stands out from the crowd, whether at night or during the daytime. On current models, LED-powered light strips and other light elements emphasise the L-shape at night and make the brand identity more easily recognisable in the dark. BMW first presented a rear light cluster with OLED elements on the BMW Vision Future Luxury concept model, which made its world debut in Beijing in April 2014. BMW M4 Concept Iconic Lights displays its own version of this design. Its M-style OLED rear light cluster marks a new evolution of the typical



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BMW L-shaped lighting design which, with the BMW 7 Series launch, was reinforced with a distinctive “glowing” effect. OLED technology makes it possible to create a new, more three-dimensional and at the same time very sharply defined appearance. BMW M GmbH will be launching a production model featuring OLED technology in the near future.

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### **The BMW Group**

With its three brands BMW, MINI and Rolls-Royce, the BMW Group is the world's leading premium manufacturer of automobiles and motorcycles and also provides premium financial and mobility services. As a global company, the BMW Group operates 30 production and assembly facilities in 14 countries and has a global sales network in more than 140 countries.

In 2013, the BMW Group sold approximately 1.963 million cars and 115,215 motorcycles worldwide. The profit before tax for the financial year 2013 was € 7.91 billion on revenues amounting to approximately € 76.06 billion. As of 31 December 2013, the BMW Group had a workforce of 110,351 employees.

The success of the BMW Group has always been based on long-term thinking and responsible action. The company has therefore established ecological and social sustainability throughout the value chain, comprehensive product responsibility and a clear commitment to conserving resources as an integral part of its strategy.

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