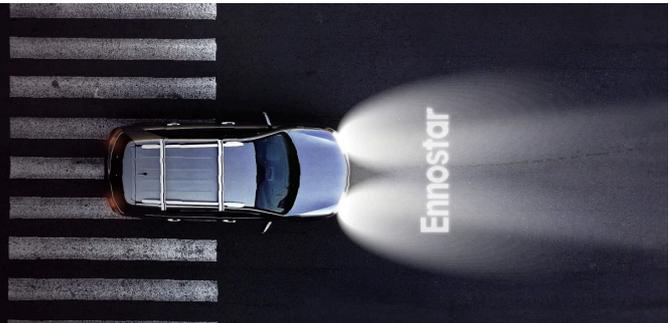


**Ennostar**

**Expert in Comprehensive  
Automotive Lighting Solutions**



## Editorial

### Summer Crop Of Lighting News!



For this week's DVNewsletter, I faced an embarrassment of riches; a tough decision to choose which articles to publish and how to arrange them. Here on my desk I have a great deal of pertinent, interesting material from automakers, tier-1 and -2 suppliers, universities, and research institutes. What a pleasure to publish fascinating, worthy content from all over our ecosystem.

Research institutes are doing the job to highlight possible problems and solutions...tier-2s are proposing innovative concepts to simplify the jobs of tier-1s and automakers, with more sustainable solutions...tier-1s are developing lamps with exciting innovations to make them modern and beautiful and polyvalent...and OEMs are taking the risk to innovate, pushed by their stylists and UX designers.

I've decided to put on the first spotlight research, with an intriguing piece by Lisa Spellman about LED flicker and its impact on machine vision. Is it a problem? Looks like it is; flicker might well be called the new glare. I thought it was solved by front-camera algorithms; that is what I understood from a CES event 10 years ago. But it seems that is not the case, and the matter is not so simple. Action will have to be taken. Should PWM parameters be constrained as a matter of standardization or regulation? Are there other countermeasures to be taken? It's an interesting and complex topic; let's dive in and get to work...together!

Sincerely yours,

**Paul-Henri Matha**  
DVN Chief Operating Officer and Lighting General Editor

# In Depth Lighting Technology

## LED Flicker & Machine Vision: Cross-Sector Standardization Opportunity



By Lisa Spellman, SAE Industry Technologies Consortia Director and John D. Bullough, Ph.D., FIES, Icahn School of Medicine Light and Health Research Center Population Health Science and Policy Program Director

The use of LEDs and machine vision technologies continues to expand in many sectors, including transport. They're in automotive signal lights and headlamps, changeable message boards, traffic signal heads, wayfinding lighting, and more. The combination of LED flicker with different camera and sensor frame rates can degrade image quality, posing risks of problems and safety threats.

The formal term for 'flicker' is TLM, temporal light modulation, and one of its effects is called TLA, temporal light artifacts. However it's referred to—as flicker, stroboscopic effects, phantom array, pulse width modulation, or temporal artifacts—the rapid modulation of lighting and signage systems using LEDs can interfere with human vision and interact with the capture rates of cameras and other sensor-based systems. These interactions can lead to differences between what is seen or detected and what is actually present, resulting in potential safety issues, inability to collect data, and more.

In 2022, the IEEE P2020 group published a [draft standard](#) specifying methods and metrics for measuring and testing automotive image quality. However, standardized cross-sector approaches to resolve LED flicker issues remain unsolved. The [SAE ITC VRU Safety Consortium](#) is researching the potential impacts of LED flicker on machine vision systems across industry sectors and determining interest to launch an initiative to develop best practices leading to standards for mitigation.

LED systems don't necessarily emit continuous light; their brightness is often controlled using pulse width modulation (PWM)—rapid on-off cycles imperceptible to the human eye. However, machine vision cameras, the 'eyes' of autonomous vehicles, rely on imaging

sensors that integrate light over a specific exposure time. When exposed to an LED light source with flicker, the captured image can be inconsistent in brightness, leading to:

- **Inconsistent illumination:** flicker can cause unintended variations in brightness across an image, obscuring crucial details like traffic signal colours or lane markings.
- **Motion blur:** if the camera's exposure time coincides with the unlit portion of the LED flicker cycle, moving objects such as other vehicles, pedestrians, and cyclists may appear blurred, hindering accurate object detection and characterization.
- **Aliasing:** when the flicker frequency interacts with the camera's frame rate, it can create a shimmering or moiré pattern on the captured image, further distorting the visual data.

These issues can result in a range of negative impacts across sector use, including, among others:

- **Reduced accuracy of vehicle and pedestrian detection:** advanced driver assistance systems (ADAS) and autonomous vehicle (AV) systems are expected to accurately detect, characterize, and track vehicles, pedestrians, and other objects on the road. LED flicker from streetlights, vehicle lighting, and other sources can introduce artifacts and noise in video feeds, hampering the accuracy of object detection and tracking algorithms, as described in the [IEEE P2020 Automotive Imaging White Paper](#)
- **Inaccurate traffic light recognition and control systems:** LED traffic lights are increasingly ubiquitous, and their accurate recognition is crucial for intelligent traffic control and AV navigation. LED flicker can cause distortions and misinterpretations in the machine vision algorithms used to detect and interpret traffic light signals, leading to potential safety risks and traffic disruptions.
- **Inaccurate lane detection and tracking:** LED flicker can affect detection and tracking algorithms, which are critical for ADAS systems like lane departure warning and lanekeeping assist. Flicker can cause artifacts and distortions in the image data, leading to errors in lane detection and tracking.
- **Inaccurate intelligent transport systems (ITS) and traffic monitoring:** Accurate machine vision is crucial for tasks such as traffic flow analysis, vehicle detection, and license plate recognition. LED flicker can cause distortions and artifacts in the captured images, leading to inaccurate detection and recognition.
- **Inaccurate inspection systems for transport infrastructure:** Machine vision is used to inspect the safety of critical infrastructure, such as bridges, tunnels, and rail tracks. LED flicker can degrade the quality of captured images, making it difficult to detect cracks, defects, or other issues accurately.
- **Inaccurate manufacturing and inspection outcomes:** Machine vision is also used in augmented reality and collaborative robots, for enabling smart factories. Mismatch between what is 'seen' and what actually exists causes problems.

Addressing the challenges of LED flicker necessitates a multipronged approach, including cross-sector best practices and standards collaboration. LED and automotive manufacturers, camera developers, and machine vision users can collaborate to create standardized flicker measurement and mitigation best practices machine vision applications.

The future of autonomous vehicles and our collective safety on the roads requires a clear understanding and appropriate mitigation of LED flicker. By fostering collaboration between stakeholders, investing in standardized measurement practices, and developing innovative solutions, we can ensure that autonomous vehicles can "see" the world clearly, navigating towards a safer and more efficient transportation future.

We invite interested entities—including you—to [complete a brief online survey](#) to provide relevant information and indicate interest to participate in the development of best practices and standardization activities.

**Questions or suggestions?** We stand ready to answer your questions and share more information. Contact Lisa Spellman, SAE ITC Director, by [email](#) or by telephone on +1 (724) 316-3302. We're also [on LinkedIn](#) if you'd like to follow us. and we thank you for your consideration!

# Lighting News

## DVN Close Look: 2024 Nissan Qashqai

### LIGHTING NEWS



### **By Paul-Henri Matha**

After the Nissan Qashqai reveal last month, I took time to discuss with Nissan's European Technical Centre team, based in Cranfield, England, about the work they did to totally reshape the car. Thank you James Hunter, James Coaley, Callum Daly, Asim Hassan, David Wilkinson and Tim Butler for the interesting exchange!

Notable lighting content includes a lit logotype in the front combination lamp; DRLs continued into the grille; advanced functionalities including AFS, ADB, and cornering lights, and new rear lamps with the first commercialization of Hella's FlatLight technology, which received a CES award in January 2024. Here's our interview:

**DVN: We see no delineation between the grille and the lamp; how is it designed?**



**Nissan:** The team took inspiration from the lacquered scales of Japanese Samurai armor for the grille pattern, and the concept evolved to integrate that into the lamp. This was enabled thanks to package space made available by transitioning from a reflector construction to a

bi-function projector for road illuminating functions. This change enabled us to incorporate a common bezel but with a grade-differentiated signature, either metallized or illuminated, giving additional differentiation in our grade walk whilst minimizing our tooling investment.

We wanted the lighting signature to be the focus, especially considering the introduction of sequential turn on higher grades, so kept the styling around the projector area subtle and incorporated the trim finisher over the lamp to further mask it. When combining these factors, along with the strong continuous feature line in the bumper which frames the lamp and grille, we hope it delivers a well-integrated feel for the customer.

**DVN: Can you talk about the lit NISSAN callout integrated in the lamp, taking advantage of January 2023's 01 amendments to UN R148?**

**Nissan:** We eagerly anticipated the release of the updated R148 and accompanying R48 text to allow us to integrate an illuminated logo. However, we realized the **a** of **nissan** became a challenge during the initial phase how we could execute the design; how to leave the centre of the **a** masking light. Working with our supplier, we found laser etching proved an effective solution. We made several iterations of the concept using different combinations, which surfaces would be metallized and which ones grained, to find a solution which could obscure the reflector used to illuminate the surface, while also enabling the laser to fully etch the logo in the most economical way.

**DVN: You have integrated an intelligent headlamp system (AFS) with ADB function (bi-matrix module). Can you tell more about your development work on this setup?**

**Nissan:** We pushed to optimize our investments so we could realise the styling direction and advanced impression for our customer. A method we found successful to realise this was to leverage pre-developed projector modules which combined the high-volume economics with a flexibility to specify certain components within the module to fulfil our performance requirements for flux output and beam pattern distribution.

In previous years this would involve costly test drives with physical samples and a difficulty to directly compare various options side by side. We streamlined this process by using our 'Scanner' digital simulator to conduct virtual night drives and obtain subjective and objective feedback from key stakeholders. This meant we could freeze our optical performance early in the development, supporting the integrated approach with the styling.

Considering the success with the digital optical development approach on this project, we consider how we can use the same mentality to streamline our adaptive driving beam development approach.

**DVN: In the rear lamps, you have a new signalling concept developed by Forvia Hella and awarded this year at CES. Tell us about that, will you?**

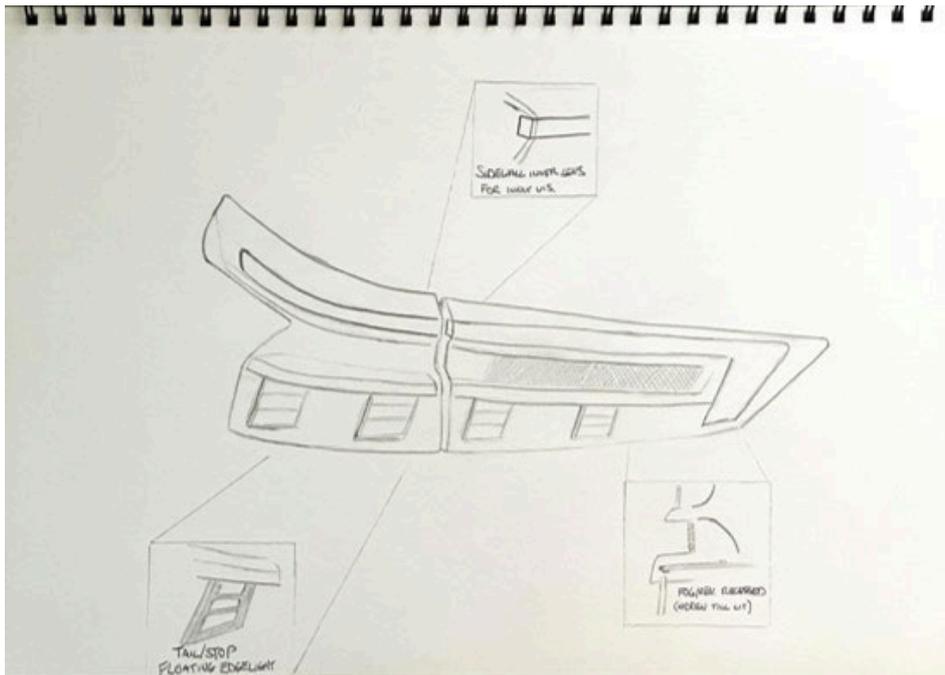


**Nissan:** We were looking to increase the advanced impression, simplicity, and integration of features in the lighting. To get the advanced impression we wanted elements of the lighting to illuminate in a way that looked 'impossible' to customers. 'How does that work?' is what

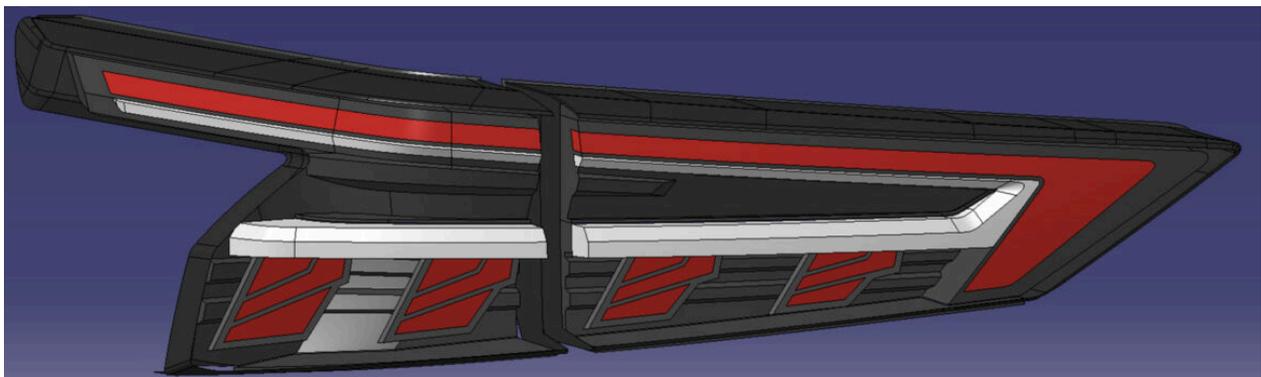
we wanted customers to think. We'd already decided to keep, but extend, the boomerang signature for tail, and to integrate dynamic turn signal in the same surface. To do that, reflectors with satinice material was the best solution, which led us to put the stop function into these 'impossible' stalactites of light.

To keep the profile of the stalactites slim, we needed high optical efficiency to achieve stop brightness. If we didn't have good optical efficiency here, the power needed for stop would be very high, and thus thermal management a difficult problem to solve. FlatLight  $\mu$ MX offered us the solution to achieve stop and tail in the stalactites with super red LEDs, which supported the advanced impression and integration goals without making the lamp visually 'busy' by adding stop as a separate apparent surface.

We kept the same profile as the previous generation lamps for this project, but if we had changed the overall size of the lamp we might've come up with a different solution. We have to wait and see what we'll come up with for the next iteration!



**DVN: Which functions do you do with FlatLight? where are the hidden functions (stop, turn indicator, reversing lamp, rear fog)?**



**Nissan:** The FlatLights on the fixed lamp incorporate tail & stop functions; on the moving lamp the FlatLights perform tail function only. The boomerang signature is tail and dynamic turn indicator, and then we used two more reflectors on the moving lamp to perform fog and reverse, which are recessed back from the boomerang signature with inverted reflectors. By putting the reflectors upside down you achieve a few things. They don't catch natural light, so they become quite hidden until switched on. We're able to use the same PCB for FlatLight LEDs as we do for fog/reverse pockets. And the reverse lamp reflector can aim more light down to the ground to aid vision when using reversing camera or Around View Monitor at night.

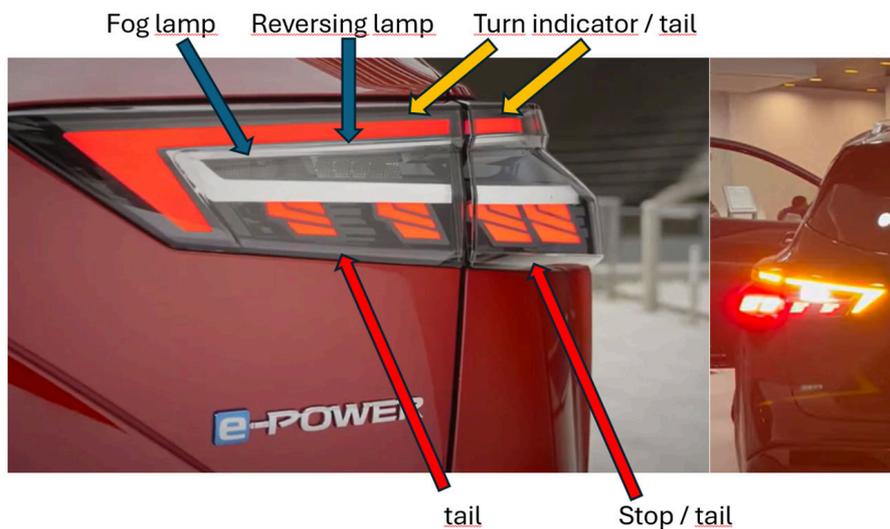
**DVN:** What kind of light intensity did you achieve for tail and stop lamp with the FlatLight technology?

**Nissan:** Of course, safety of lighting functions has to be the number one requirement! We achieve ~20 per cent above UN requirements from a photometric point of view.

**DVN:** Does the rear fog lamp shines *through* the flatlight? Is it transparent?



**Nissan:** I'm afraid not; the layout we wanted for the FlatLights would have put our fog function too close to the stop function to meet UN requirements [ $\geq 10$  cm edge-to-edge separation], so it's got its own reflector pocket up as far away from the stop function as we could manage.



# Hella + Audi's New Digital Headlamp for Q6 e-tron

## LIGHTING NEWS



**DVN comment:** Additional information about the Audi digital DRL has been published this week by Forvia Hella, after our [DVN article about the Q6 e-tron](#).

Forvia Hella and Audi have codeveloped a completely new headlamp concept for the Q6 e-tron. Of course, it provides adaptive lighting functions such as glare-free high beam. And it has a digital daytime running light matrix which allows end users to select their preferred light signature for the DRL from up to eight preset designs. The appearance of the matrix LED headlamps can be personalized to a high degree.

Forvia Hella management boardmember Yves Andres is responsible for the supplier's global lighting business. He says " LED lighting signatures have long been indispensable for the characteristic, emotional design language of vehicles (...) with the concept that we have brought into series production together with Audi for the Q6 e-tron, we are now opening up new degrees of freedom for end consumers to help shape the appearance of the vehicle front".

The headlamp visually divides the lighting elements into two areas based on the design of the bodywork. The lower area is primarily responsible for seeing: matrix LED headlamps with 14 LEDs provide glare-free high beam. The upper element, is for being seen via the digital DRLs with their associated design and customizeability. The DRL matrix has 61 individually-switchable segments.

The DRL designs, which also include specially customized coming home / leaving home scenes, can then be selected by the end user according to their own preferences via a software-based app or the electric SUV's multimedia interface (MMI).

The matrix LED headlamps are produced in Czechia, and a version for the Chinese market is also manufactured in China. Series development takes place in Germany and Czechia.



# Interview: ZKW CEO Dr. Wilhelm Steger

LIGHTING NEWS



***DVN comment by Paul-Henri Matha: This interesting interview with ZKW CEO Dr. Wilhelm Steger appeared in with [Top Company Guide](#).***

Change is a powerful force, one that drives innovation, transforms industries, and reshapes the future. In the dynamic world of the automotive industry, embracing change is not just an option, but a necessity for survival and success. The ZKW Group are a leader in developing innovative premium lighting systems and electronics and drives the future of mobility on the road together with LG, with "bright innovative minds" and sustainability focus.

**Top Company Guide: ZKW are undergoing a remarkable transformation. You are driving the change within the group worldwide. Can you describe this change?**

**Dr. Steger:** Since ZKW's foundation in 1938, ZKW have established a significant footprint in the global automotive sector. This journey of growth took a strategic turn in 2018, when ZKW joined the LG Group as part of the LG Electronics Vehicle Solutions. This pivotal move marked ZKW's transition from a family-owned business to a key player within a global corporate framework.

Today, ZKW continue to develop and manufacture cutting-edge lighting and electronic systems tailored to all mobility concepts, underlining our commitment to innovation in automotive lighting. In 2023, ZKW's global workforce numbered approximately 10,000 employees, and the company reported sales reaching about €1.54bn. This integration presents a wealth of opportunities for ZKW, enabling us to scale new heights and redefine our role in a rapidly evolving industry.

**TCG: How would you describe the transformation of the automotive industry? What will be the role of light in the future?**

**Dr. Steger:** The automotive industry in Europe is undergoing a remarkable transformation. When we are looking back, one terrible year has followed another in recent years. The global automotive production has been hit by several setbacks since coronavirus, including the war on Ukraine, huge increases in energy costs, high inflation, and instability in supply chains. At the same time, the industry still has to make the complete transition to electromobility and the digital networking of vehicles, combined with disproportionately high increases in development costs and investments.

The switch to electric vehicles can be seen as an advantage for ZKW, as we see a higher demand for high-quality and large lighting systems. The role of light in autonomous vehicles will be fundamentally different from today: it is no longer important to illuminate the road well in order to improve visibility. The light will be much more responsible for communicating with non-autonomous road users.

**TCG: What are the markets you are focusing now and in the future?**

**Dr. Steger:** ZKW's regional business development is in line with global market development. Our aim is to have a balanced regional portfolio. Currently, just over two-thirds of our sales come from Europe. This share will fall to less than 50 per cent by 2027. Growth can mainly be realised in North America and Asia. Meanwhile, Europe will stagnate—due not only to market factors but also to poor location conditions.

In general, China is the largest market for automotive headlamps. North America is one of the top 3 markets for automotive lighting; for ZKW it will be the second largest market in 2028.

**TCG: Which innovations have been become possible in the alliance with LG?**

**Dr. Steger:** Together with LG, we work on the customer-experience megatrend. With the Digital Lighting Experience vision and strategy, we are taking our portfolio to a new level. This also marked our world premiere, which we featured together with LG at the CES in Las Vegas at the beginning of this year 2024. The LG Alpha-Able concept car with the high-resolution MicroZ module—based on an LED light source with thousands of individually addressable pixels—gives an insight into the future of automotive entertainment. The Head Lamp Projection Theatre Display enables a 100-inch image that can be used to display a wide range of entertainment content based on over-the-top-communication via the Internet (e.g., Netflix), transforming the car into a mobile cinema experience.

**TCG: What are future projects and innovations?**

**Dr. Steger:** First of all, we are working on innovation by software for lighting. Driven by increased traffic in urban areas, we developed a scene-based digital light. This feature assists the driver with light adapted to the current scene. The sensor input controls the required visibility level. We are fostering security on the road and focus on better detection of vulnerable road users. It helps also to detect wild animals or pedestrians crossing on country roads in the dark.

In addition, we enable the car to become your 'journey curator'. For example, when you are driving to the opera, the car delivers an extending home mood, pulling destination mood, gives information about the play, music is added, etc. Driven by the software-defined vehicle megatrend, lighting becomes likewise a software-defined service available for individual purposes. Services enable new revenue streams, which are powered by a new ecosystem.

**TCG: Have ZKW earned a lot of recognition for their latest product innovations?**

**Dr. Steger:** ZKW take pride in our award-winning designs and collaborations, like the mechanically transformable Volvo EX90 lamp, which features a unique 'wink' effect. The company also collaborate with Swarovski and BMW to integrate crystal optics in the BMW i7, enhancing vehicle aesthetics with light.

**TCG: What is your commitment to sustainable development goals?**

**Dr. Steger:** ZKW are committed to protecting the environment and reducing our environmental impact. The goals are the continuous reduction of resource consumption and the avoidance of fossil fuels.

We focus on sustainability along the entire product life cycle. We promise to make our production facilities CO<sub>2</sub>-neutral by 2025 and all products CO<sub>2</sub>-neutral by 2038. How we do that? We are living sustainability through eco-design, use of recycled materials and green electricity. In the manufacturing phase we are focusing the use of biogenic and recycled materials for our products, sustainable product design.

**TCG: As CEO of a global company with 10,000 employees, how do you promote a corporate culture that respects local differences?**

**Dr. Steger:** The transformation from a family-owned company towards a global player in the automotive sector as part of a stock-listed company (LG) needs time, and also causes uncertainties. During the past multiple crisis it has become difficult for all employees globally to stay always positive, that's clear. ZKW's core principle is that *together* we can achieve everything. Anything is possible and nothing is too difficult for us.

We are promoting the identification with ZKW as a global company—in form of respect and acceptance for the diversity of everyone. We are a company that values and promotes diversity, because even in light all colours are united. We see diversity as a driving force for innovation and take measures to raise awareness of diversity within the company, promoting women in management, inclusion of people with disabilities, promoting intercultural diversity, reconciling family and career.

We understand that cultural change is not a one-off project, but a continuous process. A key starting point here is communication: we rely on open dialogue with leadership information, town-hall meetings, and our internal MyZKW employee app with translation into 18 languages, which gives all employees the opportunity to be informed about company news and also to contribute their ideas and concerns.

**TCG: How is your outlook for the future?**

**Dr. Steger:** I am confident about the future of ZKW. Our position on the global market is strong, which is illustrated by our order backlog of over €9bn. This solid foundation shows that our customers have confidence in our products and innovations and that we are recognized as the partner of choice in the automotive industry. Integration into LG's network has provided us with additional resources and expertise that will enable us to remain at the forefront of developing advanced lighting systems and electronic solutions for all mobility concepts.

In short, our future looks very bright and I look forward to continuing to lead ZKW on this exciting journey.

# ams OSRAM's XLS LR6 Demonstrator @ DVN Detroit

## LIGHTING NEWS



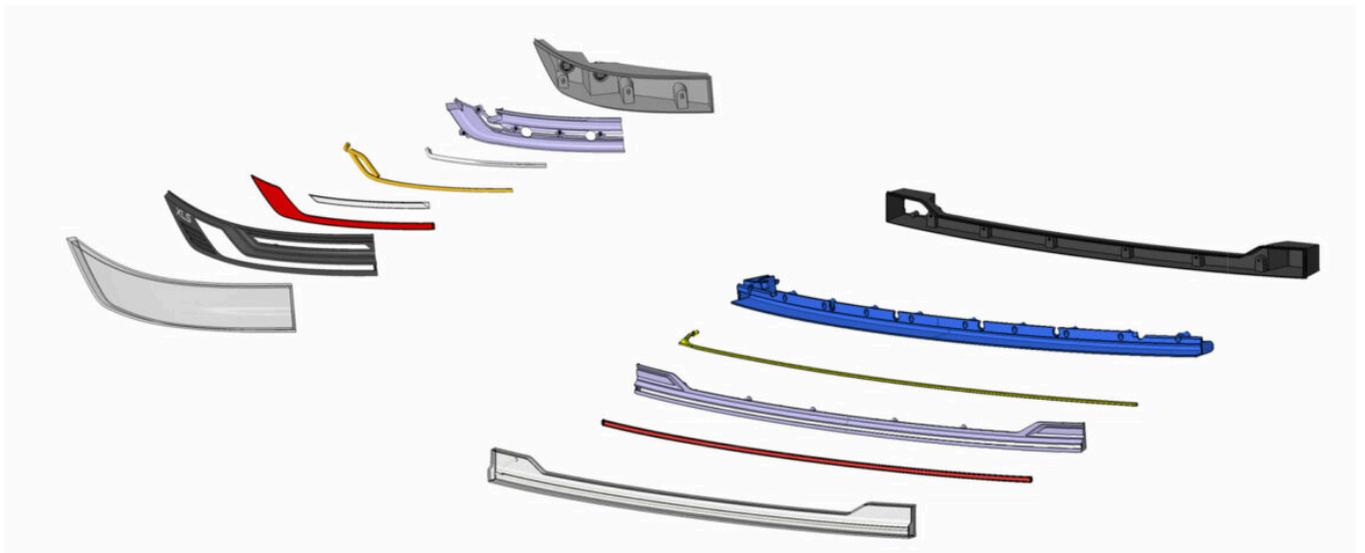
The trend of long light guide application for rear lighting is well known, and shows up all around the globe.

The LR6 brings a simple plug-and-play solution. Part of ams OSRAM's XLS family of eXchangeable LED Signal light sources, previously [reported](#) in DVN ([twice](#)), the LR6 is a new category of red light source, a candidate for standardized in UN R128. It delivers 180 lm at 25°C ambient temperature—that's quite a lot; for comparison, a red PR21W filament bulb puts out between 88 and 132 lumens at 13.5v. This high output allows long light guide applications, as shown first at the DVN Workshop near Detroit last month.

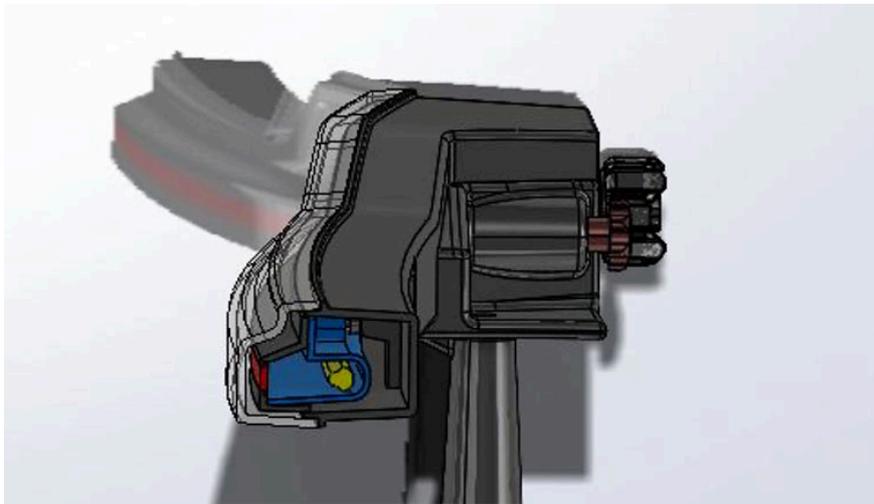
The ams OSRAM XLS demonstrator consists of two parts: a metre-long light guide illuminated with just one LR6 providing the tail light function, and a rear combination lamp with two light guides and using an LY5 for the turn indicator and an LR5 for the tail/stop light functions. All light functions comply with UN Regulations. The two parts are arranged as the rear combination light and the light on the trunk.

The target of the demonstration was to give a proof-of-concept for design-in of the LR6 in long light guide applications. The LR6 also can be applied to great effect in light guide CHMSLs.





DVN comments: This is a pleasingly simple solution with standard light sources, already validated. Easy to exchange or extract for recycling and repairing. LR6 module power consumption is 5.2W (4 chips). Total power consumption for the full rear position lamp (3 modules for left, center + right) is around 15 watts.



# Driver Assistance News

## Hongqi's Self-Driving Minibus

### DRIVER ASSISTANCE NEWS



Chinese media have reported that Hongqi are testing robotaxis. This after the company's 10 July announcement of having received governmental approval for road testing their third-generation  $L^4$  Robotaxi. Hongqi say their robotaxi has completed more than 100,000 km of autonomous driving in public road tests.

The front of the minibus retains Hongqi's family design of a chrome straight waterfall grille. There are two doors and a lidar. Inside, the interior has numerous metal bars, a red button (emergency stop?), sofa seats, and a ceiling screen.

As the automotive industry shifts from electrification to intelligence, autonomous driving technology has also jumped on this wagon to grow rapidly in China, from  $L^{2+}$  assisted driving gradually becoming standard to unmanned delivery vehicles, unmanned sanitation vehicles, and  $L^4$  robotaxis. Global Market Insights data shows that the worldwide AV market was valued at USD \$2tn in 2023, while China's autonomous vehicle market was valued at \$8.01bn, according to Renub Research.

# General News

## Philippe Krief is New Renault CTO

### GENERAL NEWS



The Renault Group have appointed Philippe Krief as Chief Technology Officer, in parallel with his current duties within the Alpine brand. He will take over on 1 September from Gilles Le Borgne, who will take on a strategic advisory role to the CEO.

As CTO, reporting to CEO Luca de Meo, Krief will manage all engineering activities and resources. He will be able to draw on his extensive experience in this field, in particular his experience as Ferrari's Director of Engineering. Krief's mission will be to lead and shape a team that anticipates and creates, identifying the innovations and products of tomorrow, with the key challenge of developing the next 'intelligent' vehicles in record time, ahead of competitors.

As CEO of Alpine, Krief has devoted the last 12 months to implementing the brand's strategy, and to the arrival of the new Alpine range of vehicles. With him, the brand has also accelerated the development of its next platform dedicated to high-performance 100-percent electric vehicles. Under his impetus, Alpine has embraced hydrogen power with the Alpenglow Hy4 prototype, a true demonstrator of innovative hydrogen engine technology.

Renault Group CEO Luca de Meo says, "Gilles has contributed to our company's spectacular turnaround, the fastest in recent automotive history. He was able to get our engineering moving again, and to regain efficiency, enabling us to deliver a large number of the models in the Renaultion plan this year. My warmest thanks to him. He is leaving a prime position and high-performance teams to Philippe, who I'm sure, drawing on his wealth of experience, will drive forward a new dynamic to gain an even greater lead in the face of competition coming from both the East and the West. Let's not forget that motorsport is a laboratory of innovation for our vehicles. It's up to us to make this a reality, so that they are accessible to as many of our customers as possible".

A graduate of the École Nationale Supérieure de Techniques Avancées, Philippe Krief has worked on a wide range of models, from the B-segment to cars worth several million euros. After starting out at Michelin, he continued his career with the Fiat Group, before moving on to Ferrari and then Maserati, as Vehicle Department Director and Technical Director of the Alfa Romeo brand (respectively). He returned to Ferrari in June 2016 as Director of Engineering. He was appointed Director of Engineering and Product Performance for the Alpine brand on February 21, 2023, before becoming CEO.

# Geely's Zeekr 7X SUV

## GENERAL NEWS



The SUV's design is consistent with the Zeekr 007, and features an anticipated 800V electrical architecture capable of over 700 km range. The letter X indicates it belongs in Zeekr's SUV series. The 7X SUV is larger than the compact Zeekr X SUV. It is designed with a golden ratio of 0.618, frequently observed in nature to create visually pleasing compositions.

It introduces a range of innovative design elements: a continuous interactive light strip at the front, lower headlamp clusters, and a roof equipped with lidar for advanced driver-assistance systems. It has concealed door handles and a near-continuous tail light design, all contributing to a sleek and futuristic look.



# Honda Ye S7 Electric SUV for China

## GENERAL NEWS



Honda are ready to expand their EV lineup in China with their new Ye series. The Ye S7 was officially previewed at the 2024 Beijing Auto Show.

The exterior design features sharp surfacing and angular wheel arches, which are shared with the P7. The S7 has unique full-width LED headlamps and a Cadillac-like tail. The EV features sideview cameras instead of mirrors, and flush door handles.

The Ye P7 will be built by GAC Honda, a joint venture between Honda and GAC Group, while the Ye S7 will be built by Dongfeng Honda, a joint venture with Dongfeng Motor.



# Chery's New Exeed Exlantix ES

GENERAL NEWS



Chery have unveiled their 2025 Exeed Exlantix ES coupe, already available for 'pre-order' and with a full launch slated for later in August. This model retains the design of its predecessor while introducing an 800V architecture.

The Exlantix ES features a streamlined coupe silhouette and updated exterior colours including red, purple, and blue. Notable design elements include a continuous LED light bar at the front, slim headlamp units, and an ISD (interactive social display). The rear has a continuous taillight and a retractable spoiler. It has a low drag coefficient of 0.205.

