Tue, 11 February 2025
Weekly Newsletter

DVN Lighting

NEWSLETTER #891

Editorial

The Coming Decade Hinges On Sustainability

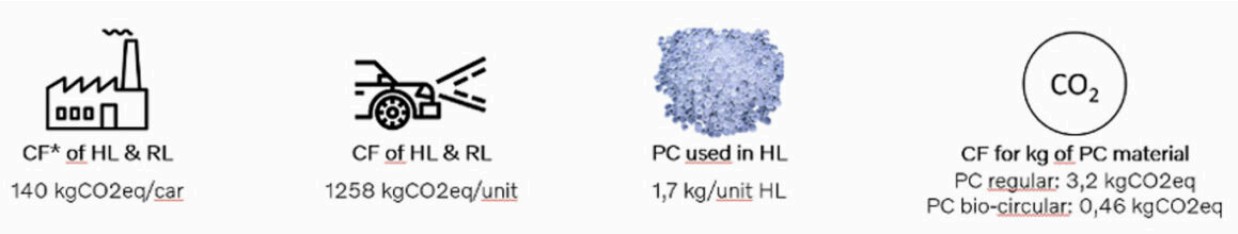
At DVN, we deliberately keep ourselves keenly aware of sustainability and its challenges. Reducing the carbon footprint of the vehicle lighting industry is front-and-centre as it becomes increasingly apparent that we will have to tread much more lightly if this, our one and only planet, is to remain inhabitable. But that—enormous though it be—is not the only reason why sustainability is crucial. It's not just about the potential unavailability of petrol in the future, or trying to apply the brakes to increasingly-evident climate change. Geopolitics lately are trending toward instability and isolationism. If Europe, for example, wants to guarantee autonomy and avoid geopolitical tension, then re-use, recycling, and repairability are urgently mandatory, not just nice to think about doing. Same goes for Canada, Australia, Japan, China, the United States…whatever country we might name.

This trend has come to consumer industries with more and more second-hand shops. Not only for ecological purposes, but also just because second-hand goods are less expensive—and another current trend is inflation pretty much everywhere, making everything more expensive. That's another driver of the hotting-up interest in repairability, reusability, and durability of goods. Our industry is being carried along in

this river; the new European requirement about circular economy including end of life vehicle stands to significantly change a lot about how we develop vehicles and components (see the document here). For example, all PCBs bigger than 10 cm^2 should be configured and constructed to facilitate removal of LEDs and components for reuse, repair, or recycling. That's a giant change from years and decades of "Broken, dead, end of life? Throw it away!".

This week's DVNewsletter is the third dedicated to sustainability and circularity. In July 2024 we talked about the circular-economy tech summit and Valeo's presentation about lighting, and in January we presented the GM-Llink initiative to remanufacture headlamps.

Sustainability is a great big domain. It involves the whole of the supply chain—raw material suppliers, logistics, component and vehicle manufacturing, energy sources, delivery to the end user—and that's just for the production phase. Then there's the use phase (for lighting, it represents around 80-90 per cent of the CO_2 footprint depending how efficient are optical systems, as shown by Volvo Cars at the DVN Munich event. And after that, at the end of the service life of the vehicle component, or whatever else, comes the post phase: collection, recycling (or refurbishing, rebuilding, reusing, remanufacturing) and finally, much-reduced residual waste.



Extract from ISAL 2023 Proceedings, Volvo Cars

Automaker and tier-1 R&D efforts are at the forefront to tackle this tall stack of challenges. Design and engineering must build sustainability into the product from the start—low power consumption, durability/long service life, easy repairability, easy post-use handling. If not, the manufacturing process, logistics, and recycling chain will be uncompetitive, and it will never work. We have seen some promising initiatives recently, and we actively promote them during DVN events. To that end, the DVN team and I have built a very promising session with 14 lectures from automakers, tier-1 and -2 suppliers, service companies, and research institutes. This diverse group will present their ideas and propose solutions. Some of them are already implemented and will be described in real-time terms.

I had a long talk with Mino Yamamoto, Valeo's circular economy director, who will be one of the keynote speakers at the event. She will explain Valeo's work in circular economy; what they have already done and what they're working on for the future. Take a look at the interview with Yamamoto in this week's DVNewsletter.

We also bring you Hans Joaquim Schwabe's detailed report of his visit to ams Osram's XLS plant in Ulm, Germany. This solution, introduced some years ago in accord with technical specifications in UN R128, makes it easy to create LED vehicle lights that are readily repairable, rebuildable, and recyclable. There'll be an update on this terrific technology at the DVN event.

You'll also read about my visit to Volvo Trucks in Gothenburg. This was the first time for me to visit a truck maker and sit in a truck to do an ADB night drive. I was not actually aware that ADB is available on trucks. It's a really fantastic feature to support truck drivers' safety and comfort during long night drives. What is also unique for truck lamps is the long lifetime requirements and harsher service conditions compared to cars. Trucks are used 24 hours per day, 365 days per years. Stepper motors, fans, and

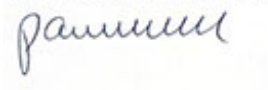
LEDs cannot necessarily last through the long, difficult service life of a heavy-duty vehicle, and so must be replaceable. The Volvo lamps are accordingly designed for easy repair, and once they're finally all done, they're easy to recycle. Car makers can learn quite a lot from truck makers, as it seems. Here again: don't miss Volvo Trucks' presentation at DVN Munich, and their lamp at the ZKW booth.

This is also the first time we will dedicate a session to 2-wheelers, truck lamps, and premium and sports cars. There's much more to the vehicle lighting community than just lights for passenger cars, and after a tentative last year, I succeed to make it happen this year. I hope you will enjoy this newly enriched content at the Munich event!

Speaking of which: don't forget to **cast your votes** for the 2024 DVN Awards! We close the vote tonight at midnight, European time.

Sincerely yours,

Paul-Henri Matha
DVN Chief Executive Officer and Lighting General Editor



In Depth Lighting Technology

DVN Interview: Mino Yamamoto, Valeo Circular Economy Director

By Paul-Henri Matha

I met Mino Yamamoto in an X-auto conference some months ago in Paris. She is X-auto President, in addition to her role at Valeo, and we talked about automotive industry challenges, particularly for our lighting industry. I had been thinking about dedicating a long session to sustainability and circularity at a future DVN event. After my talk with Yamamoto, I was convinced I should do just that. In Munich this month we will have a half day dedicated to sustainability, with 12 lectures, and Mino will give the keynote speech.

DVN: Can you introduce yourself and your background?

Mino Yamamoto: I'm Mino, born during the Year of the Dragon and raised in France by two Japanese parents. My life motto is simple and straightforward: work hard, never give up, and have guts.

I hold an engineering degree from École Polytechnique and École Nationale des Ponts et Chaussées.

I started my career at Parrot where I managed various projects in marketing and R&D for consumer drones. Then, in 2017, I joined Valeo and held roles in Product Marketing and Research & Innovation, focusing on the future of 48V electrification and shaping the innovation roadmap. In 2020, I became Corporate Strategy Director, where I had the opportunity to design and implement Valeo's Decarbonization strategy in

collaboration with the Sustainability Department. This naturally led to the creation of Valeo's Circular Economy Strategy (4R), a defining step in my career.

DVN: How did you come to be in charge of circularity? How does that role fit in at Valeo?

M.Y.: Actually, I had the great honour and opportunity to build Valeo's circular economy strategy, which led to the creation of my current role at the beginning of 2023.

At Valeo, sustainability is in our DNA. We are committed to supporting the UN Sustainable Development Goals, addressing critical environmental, social, and societal challenges. To tackle the two major issues of our time—climate change and resource scarcity—Valeo have launched two interconnected environmental programs: CAP50 for decarbonization, and a complementary circular economy strategy.

At Valeo, our circular economy mission is crystal clear: extend the lifespan of products to preserve their value and reduce resource consumption. To achieve our ambition, we developed our 4Rs framework: Robust Design, Repair, Remanufacturing & Recycled.

This framework is deployed across three key areas:

- Business: Scaling up our circular aftermarket by leveraging repair and remanufacturing to expand the lifespan of products already in circulation
- Conception: Innovating through robust design to expand the life of the future generation of products to unlock circularity
- Operations: Enhancing resource efficiency at our sites by reducing waste, conserving water, and building an ecosystem for recycling.

DVN: Circularity is not really well organized in Europe right now; do you foresee evolution?

M.Y.: First and foremost, we need to raise awareness about the true goals of the circular economy. Today, circularity is very often associated with recycling, but we can do much better! Why recycle a product when most of its components are still working, and it could be given a second life instead?

Our priority should be to extend the lifespan of products and maximize their use before considering a return to raw materials. Recycling should be the last resort, not the first solution. This mindset needs to shift. Now, the key challenge lies in building the right ecosystem to scale up the circular economy. To achieve this, we need to secure three critical steps: infrastructure, inputs, and circulation.

First, we must establish a structured collection network to recover end-of-life parts, or "cores," which are the "fuel"' of the circular economy.

Second, these cores must be valued appropriately to ensure they are collected for reuse, rather than being shredded back into raw materials.

Finally, cores need to move freely across borders, from the collection points to the facilities where they can be given a second life.

Building this ecosystem requires collaboration with regulators, collectors, and recyclers to align efforts and create a sustainable circular economy framework. This presents a significant opportunity for Europe, as it goes beyond environmental challenges to also address issues of sovereignty. Today, we are at the beginning of the

story and we have a great opportunity to be the actors of this transformation. I feel great momentum; let's do it!

DVN: So Valeo are taking concrete steps toward circularity in lighting?

M.Y.: Of course, we are acting. Valeo are committed to doubling our remanufacturing capacity from 1 to 2 million units per year by the end of this decade. Since launching our 4R programs, we've been expanding our Reman range to support the transformation of the car parc. Now, we're accelerating even further with our Reman 2.0 strategy. We have already launched three new products to our Reman portfolio: the world's first remanufactured front camera, and two new circular services designed for small mobility solutions, because remanufacturing will go way beyond cars! And of course, Headlamps are part of our Reman 2.0 roadmap and you'll be hearing more from us very soon!

We're also driving innovation to make headlamps even more circular. We already have headlamps with removable lens in production. More innovations are of course in the pipe. However, I can't share the details just yet.

Finally, we are committed to the development of the right ecosystem for recycled materials for lighting, which is a very specialized area. We have already validated technical solutions using representative serial products, showcasing our expertise in selecting the best feedstocks and partners in the Oreplast 3 funded project. Materials engineering demands both expertise and innovation, and at Valeo, we are committed to leading the way by developing a robust and sustainable ecosystem.

DVN: Do you see interest in Asia and America, too? Toyota have been using lighting with exchangeable components…

M.Y.: Absolutely, the circular economy is a global movement! It's one of the defining transformations of this decade, with growing momentum in Asia and America as well.

In the USA, for example, the market for remanufactured headlamps, particularly for halogen technology, is quite well-established. It provides cost-effective and environmentally friendly alternatives to new OE parts while offering higher-quality solutions compared to generic aftermarket options.

The next steps are to develop the remanufactured headlamps for led technology and Valeo are actively involved in this initiative; exciting announcements will follow!

In Japan, Toyota already offers headlamps with exchangeable outer lenses. Other Japanese automakers are also actively working on design for recyclability strategies, with ensuring easy separation of materials to develop a closed-loop plastic system. Valeo have strong concepts to support these initiatives for lighting products.

Finally, in China, driven by the strong demand for large illuminated panels, automakers are starting to explore repairable designs to recover and replace high-value components. Obviously, Valeo offer innovative solutions to support these needs.

DVN: You'll be giving a keynote speech at DVN Munich. What will be your message?

M.Y.: Circularity and sustainability are critical challenges for the automotive and mobility industry, and they are happening right now. The lighting ecosystem plays a crucial role across the entire lifecycle by:

- extending the lifespan of headlamps already in circulation through repair and remanufacturing. This ensures good-as-new performance and quality, while reducing costs for both the end user and the planet.
- innovating to make future headlamps more circular. Let's keep pushing the boundaries of innovation!
- building the right infrastructure for the lighting specialized recycled material. Let’s work hand in hand between the private and public sector.

Collaboration between the private and public sectors is key, as it’s also about securing our sovereignty. Ultimately, it is about teamwork to create a win-win business model across the whole value chain to make circularity a reality.

DVN: How about the new EU norm coming in 2030, how will it change our mindset?

M.Y.: The upcoming European End-of-Life Vehicle (ELV) regulation, set to take effect in 2030, will impact how we approach vehicle design, manufacturing, and recycling, particularly in the lighting industry.

This new regulation requires a more holistic approach to circular economy principles, compelling automakers and suppliers to rethink their entire product lifecycle—from initial design to end-of-life treatment.

Key provisions for lighting include designing for the removal of specific components from ELVs, such as printed circuit boards and wire harnesses. Headlamps and rear lamps will be subject to mandatory removal if shredding and post-shredding processes cannot extract and separate materials as efficiently as manual or semi-automated disassembly. This requirement also aims to facilitate remanufacturing activities.

Another proposed rule is related to the mandatory usage of postconsumer plastic waste from the automotive industry. According to the ELV directive, 6.25 per cent of plastic materials must be derived as automotive closed-loop plastics—meaning 20-year-old car plastic wastes will be serving as materials to build a new car. The plastics used in the lighting systems are not available in any other commodities of the vehicle, so it’s necessary to build the complete ecosystem and to master the complete value chain from car scrapyards to new parts.

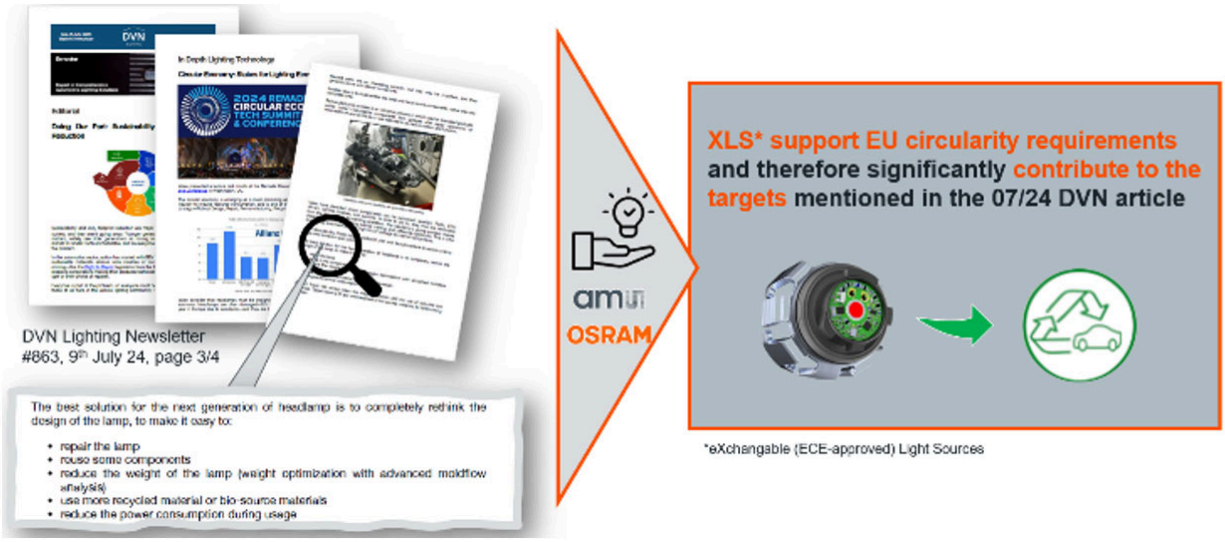
With the regulation set to take effect in 2030, it is essential to act now by assessing its impact on existing products and implementing necessary changes. This will ensure readiness for upcoming vehicle developments, with SOPs aligned to the 2030 timeline.

Ultimately, this regulation serves as a catalyst for innovation across the entire automotive lighting industry.

Lighting News

Osram XLS "LED Bulbs" Support Simplicity, Sustainability

LIGHTING NEWS



By Hans Joachim Schwabe

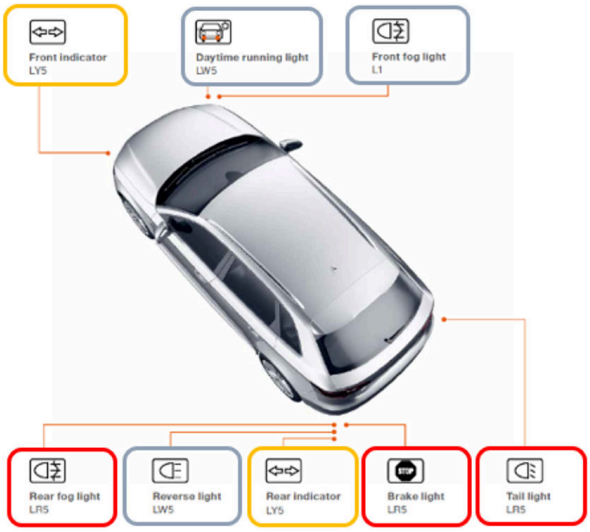
Sustainability and CO_2 footprint are major topics for carmakers and the automotive industry as a whole to realize progress for all humanity with regard to climate change. ams Osram have been at the forefront of these discussions, since over a decade ago one element for potential reuse in a circular economy was addressed by their development and introduction of a global LED exchangeable light source (XLS). Replaceable light sources facilitate dismantling of vehicles at the end of their service life, and enable the refurbishing of vehicle lamps, so they can be used as spare parts, thus providing an option to solve the challenges described in the DVN newsletter of 9 July 2024 (Valeo and GM).

Toyota was the first automaker to shape and direct that development by aligning several tier-1 and -2 suppliers to realize this future target. One of the ideas behind this approach was the significant cost of repairing a lamp assembly rather than having to replace the complete lamp. This quickly became obvious after first LED units penetrated the market some years ago, with the emitters being unstandardized components from a point in the fast-moving performance curve according to Moore's Law. Major drivers of this replaceable-LED technology have been its ability to reduce warranty costs and to offer safe and reliable standard components, thereby avoiding cheap and nasty aftermarket 'solutions'. From the onset it was clear that this program would only be successful as a globally regulated solution, realizing economies of scale through cost-efficient development and production across global car platforms and car models, with stable, reliable and competitive supply chain across the whole industry, along the lines of the globally regulated filament light sources in good old UN Regulation № 37.

For LED-based replaceable car light sources, UN Regulation № 128 defines mechanical, electrical, and optical interfaces to ensure safe interchangeability. The XLS light sources can reasonably be described as 'LED bulbs', but they are a different approach to the LEDification of the vehicle parc than the likes of LED retrofit light sources designed for aftermarket use in lamps designed to take filament bulbs. The XLS family are intended as original-equipment light sources, designed into the lamp from the start, so their application needs to be considered upfront in the (circular) vehicle design phase.

History and product range:

Toyota initiated the global program in 2015 inviting several tier-1 and -2 suppliers to contribute for a global introduction in 2018. Osram were drawn in as an industrial partner by Koito to ensure a global rollout through UN standardization and mass production in one of their industrial plants. The Osram manufacturing site in Herbrechtingen, Germany was chosen, enabling automated production in close alignment with a strong in-house R&D team. So far, the production lines in Herbrechtingen have produced over 60 billion standardized light sources, including incandescent, halogen, and LED ones. The XLS family includes light sources for use in DRLs, front and rear fog lamps and turn signals, tail and stop lights, and reversing lights; CHMSLs, and signature lights.



New ideas include using XLS as light engine for signal projection and 24V applications.

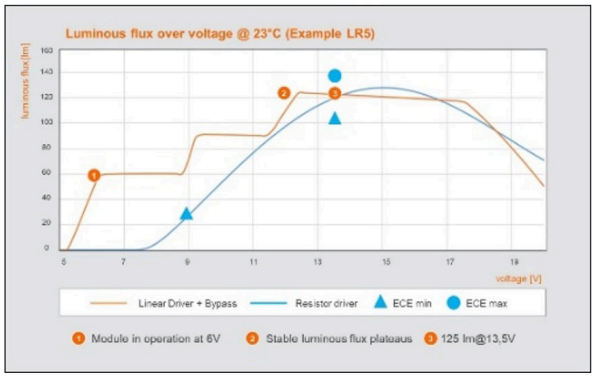
All efforts have been successful to realize a powerful and reliable product generation with consistently excellent freedom from faulty units—significantly below one per million. Following the idea of a circular economy, multiple automakers have decided to integrate XLS as standard light sources in their lamps—unstandardized design

elements by necessity. This way, automakers and suppliers have full flexibility in how they design their lamps, but the light sources themselves are removable, replaceable, and standardized.

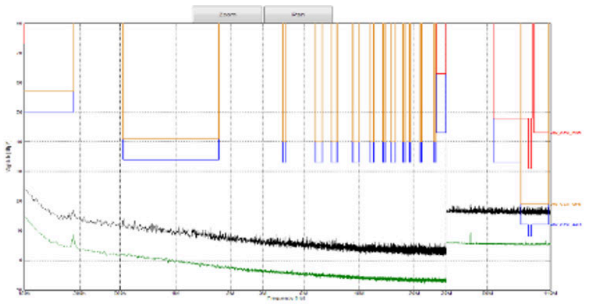
Osram were awarded a Koito Tech Award in 2019. Business development is ongoing, building out the application base in the U.S. and Europe.

Technical features

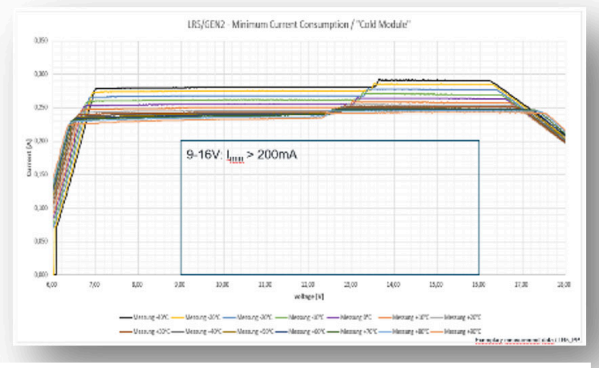
The use of a linear driver and a bypass design ensures stable light output even at low and high voltages (6 to 16 V). The design includes temperature derating, making these 'LED bulbs' robust across a wide range of temperatures.



The Osram XLS ensures robust EMC design according to relevant automotive standards as well as automaker-specific requirements for radiated and conducted immunity (e.g., ISO 11452), transient immunity (ISO 7637), electrostatic discharge (ISO 10605), voltage variations and overvoltage (ISO 16750) and radiated and conducted emissions (CISPR 25 class 5). Due to the linear driver, the XLS light sources produce zero electromagnetic emissions.

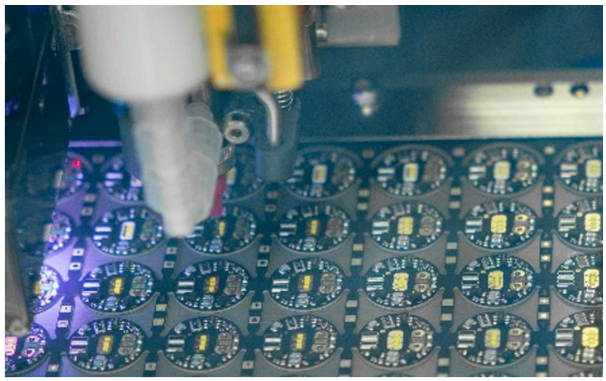


They meet advanced automotive requirements such as 6V stop/start functionality over a wide temperature range, and enable outage detection via open-circuit behaviour < 20mA in failure mode. They avoid false failure detection by ensuring currents > 100mA in operation from 9 to 16 V.

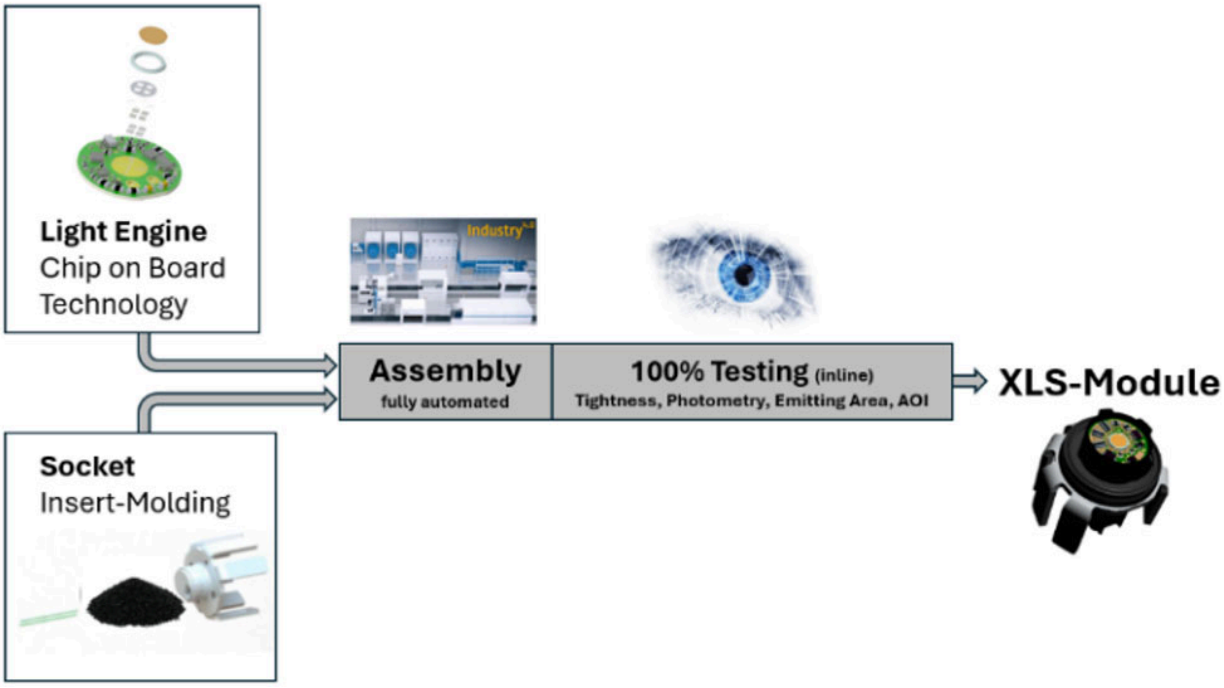


XLS can be used to power both simple and complex vehicle lighting designs as showcased at DVN events like Detroit in June 2024. This includes intricate lightguides with lengths exceeding 1 metre for tail lamps, demonstrating the flexibility and capability of the XLS in meeting diverse automotive lighting needs with the latest high-lumen categories, like LR6 and LW7. The latest LW7 / LWYx front lighting demonstrator will be exhibited at the next DVN workshop in Munich. Of course, XLS lamps can also be mixed with PCBA solutions (mix and match).

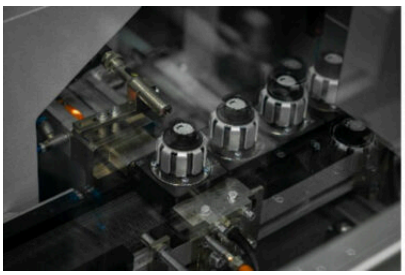
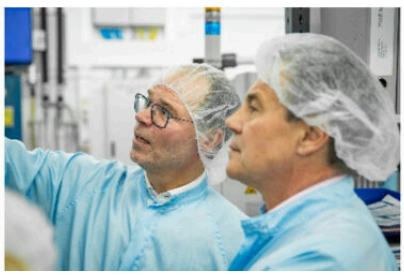
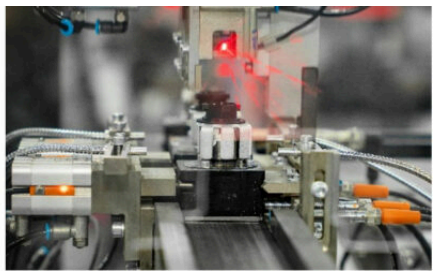
The effort to develop a dedicated COB architecture paid off. This technology enables superb thermal behaviour at reasonable product cost, leaving room for further high-lumen packages. It also allows flexible use of LED chips with different colour bins.



Production



It starts with an advanced COB, where single LED chips are bonded onto the PCB with linear driver electronics. The core element here is precise adjustment of colour steering and luminous flux.

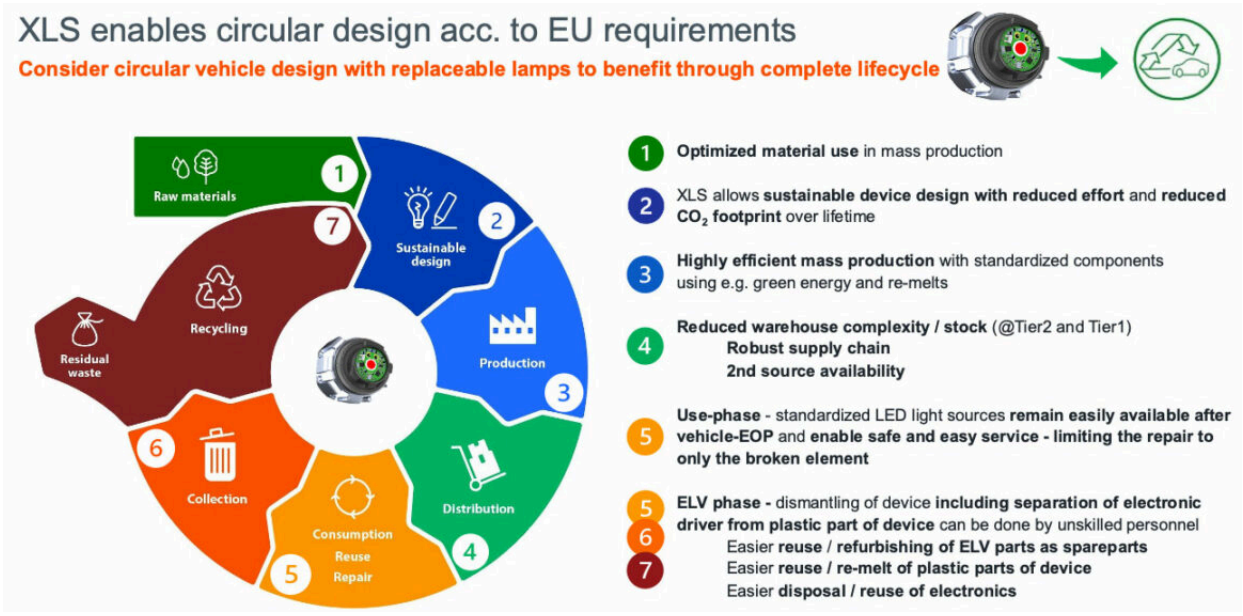




The integrated production even contains the phosphor conversion material, allowing customized colour adaptions on request. 100-per-cent inline inspections supported by AI-based tools ensure zero defect at maximum yield with full traceability over the value chain.

Automated inline moulding machinery can realize all types of the XLS family with different connectors.

Outlook and Conclusion

With the growing trend towards circular design, we expect a wider distribution of Osram XLS. All seven points of the EU circular economy graph are addressed.



The existing trend towards further cost reduction without decrease in performance requirements like start/stop capability, top level EMC and reliability will remain. To cover the latest styling requests, LR6 and LW7 will provide increased luminous flux, LWYx enables combination of white DRL and amber turn signal with one light source, while an LR5 variant with deep red colour can address premium design demands.

To enable future plug-and-chug standardized light sources for software-defined vehicles, Osram propose to streamline communication protocols for exterior lighting. Such a standardized protocol could perfectly be implemented into future XLS generations with a dedicated ASIC solution.

Furthermore, Osram see the possibility to install re-tested or fresh XLS light sources into exterior lamps as a perfect lever to give a warranty to spare parts dismantled from ELVs.

DVN Interview: Volvo Truck Lighting & ADAS Team

LIGHTING NEWS

L-R: Felix Dumont (Global Function Owner, Visibility Functions) · Gabor Szalo (Engineering Specialist, Visibility) · Sidse Pedersen (Lead Engineer, Headlamps) · Sara Engdal (PO and Group Manager, Visibility Hardware) · Stig Elofsson (Sr. Expert Exterior Light, Headlamps) · Paul-Henri Matha (DVN) · Daniel Malm (Product Owner, Vision Perception)

By Paul-Henri MATHA

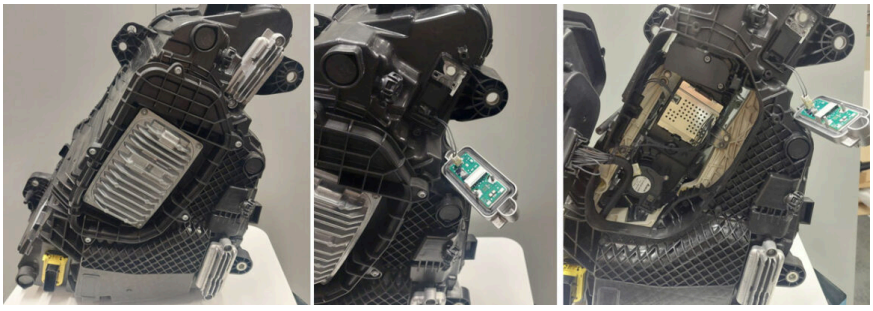
Just before Christmas, during long and dark Swedish winter days, I visited Volvo Group R&D lighting and ADAS in Gothenburg to exchange about our common passion for lighting. I was accustomed to meeting Stig Elofsson and Sara Engdal during SIS meeting in Sweden to prepare for GTB meeting every six months. The main topic we wanted to discuss was the ADB system they have developed, in mass production from 2021.

When we talk about headlamps, even if exterior design can be equivalent between automotive and truck lamps, a lot of things are different:

- Lamp aiming: Access is totally different between a truck and a car. There's no hood to open on a truck. On this Volvo truck, access is from behind via the wheel well for the main lamp, and from the cabin for the auxiliary additional high beams in the roof.

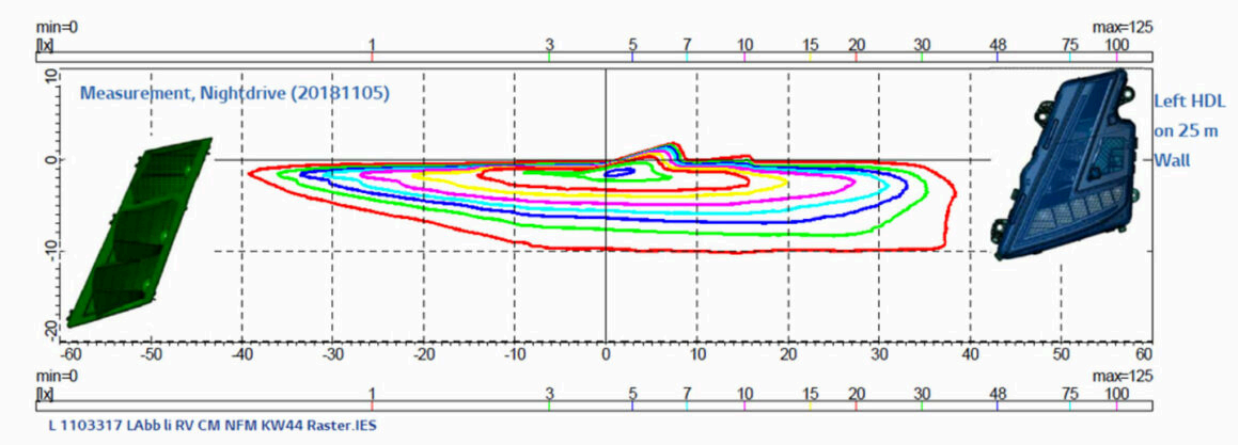
- Vibration proofing: The lamps have to endure rough-service operation around the clock, every day. Lamps are assembled directly on the chassis and must resist constant vibration and mechanical shock, much harder compared to passenger cars.
- 24-volt line voltage (in Europe and Japan; in North America big trucks run 12v electrics like passenger cars): That means a different ECU for lamps, and different light sources.

Reliability is the biggest difference I see between cars and trucks. Cars see maybe 10,000 to 20,00 hours' usage over a 15-year service life, truck usage is also 15 years, but 7 days per week and 24 hours per day, so around 130,000 hours—or ten times the passenger car usage! EC102 qualification for LEDs is not enough. Same for stepper motors, DC motors, and fans. Then truck makers are requesting to be able to exchange all these components from the lamp. Headlamp design is affected by this requirement that generates totally specific designs. With recycling requirements coming in 2030 in Europe, car makers would do well to investigate how lamp design is done on trucks, and adopt or adapt similar guidelines.to be able to replace components. Truck service shops have been equipped and trained with ESD protection, for a practical example.



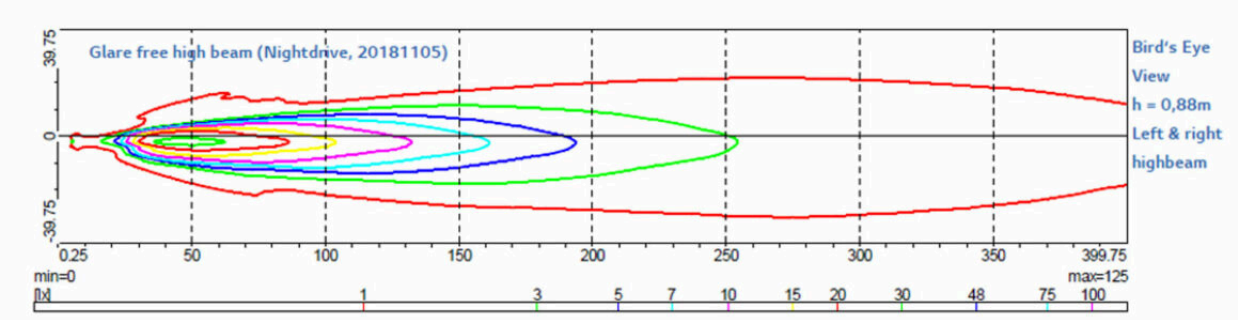
Back of the lamp: easy access for PCB, fan, ECU, and motor for replacement

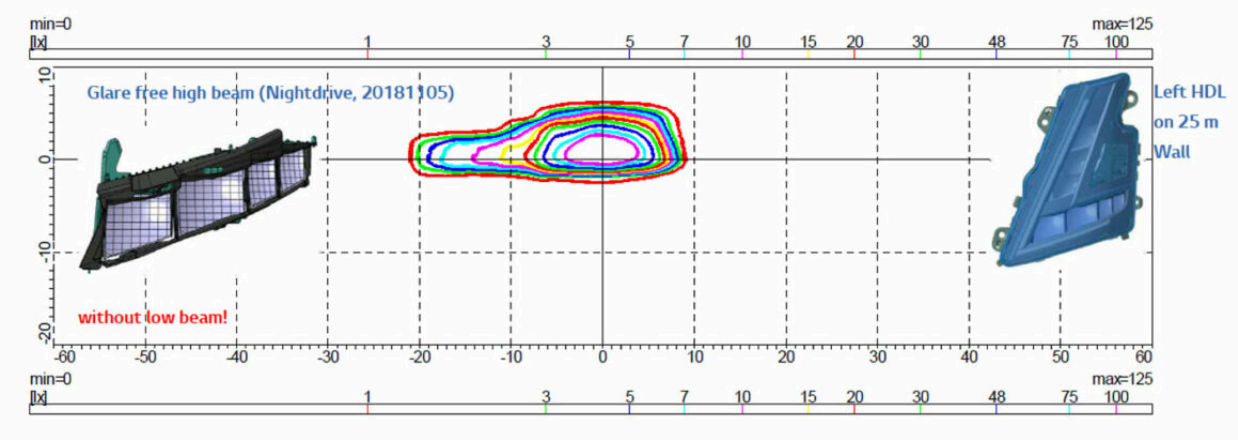
On the FH truck we tested, low beams needed a cleaning system due to very high flux, higher than 2,000 lumen per lamp.



The lamps are by ZKW, including a 12-segment ADB system.

High beam field of view is ±20° H × ±7° V, with I_{max} 112,500 cd, to give a visibility range of 200-250 metres without the additional high beams switched on.





The ADB system has been tuned with specific requirement for trucks. There's no real need to have a high resolution system or a very long range in ADB. What is important is to have the largest possible beam at low speed, even in semi-bright environments, to be able to detect obstacles and animal on the side. To meet those needs, the main focus was placed on low-speed activation (from 10 km/h), fast reactivation of high beam (Ramp-up 500 ms), and careful tuning on ADB deactivation to avoid false triggering by streetlights, for example, or by roadside traffic signs.

To avoid glare on motorways, Volvo use side radar to anticipate segment deactivation during overtaking. When no cars are detected, it is possible to manually switch on the roof-integrated extra high beams for additional range.

This ADB system works very well. We did not dazzle any cars during the night drive, and the visibility was very good. This system will surely increase safety a lot.

Lumax Shuffle Europe Tech Centre Organization

LIGHTING NEWS

Lumax have announced a new organisation for their European technical centre.

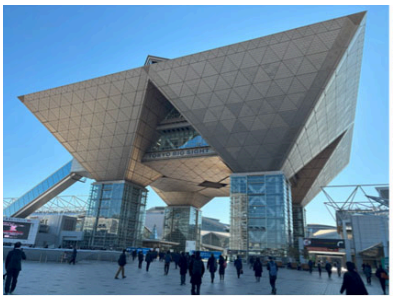
C. S. Singh has been appointed EVP and Head of Innovation, Product, and Technology Development. He will lead the European and West Indian engineering and R&D centres, and report to CEO Raju Ketkale.

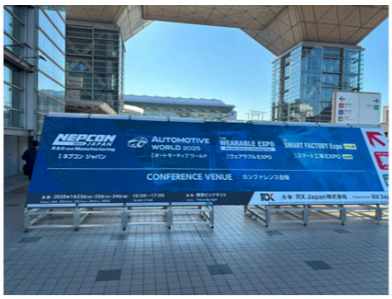
Singh brings 24 years' automotive lighting experience from companies including Uno Minda, Varroc Lighting, and Autolite India.

In Europe, the Czech office will be run by Vlado Dobrus (optics engineering and application lead, with 26 years' experience in vehicle exterior lighting, with support from Ian M Barnard (director of lighting new technology and innovation, with 38 years' engineering experience, and Peter Schussleder (senior advisor, new product development and R&D).

Automotive World Tokyo: Main Lighting Takeaways

LIGHTING NEWS

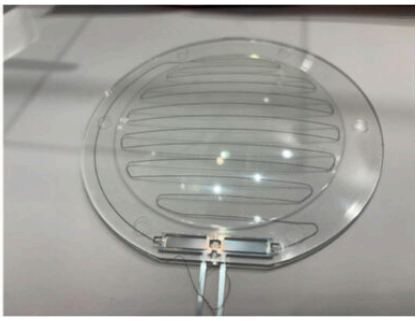




The Automotive World 2025 expo was held at Tokyo Big Sight from 22nd to 24th January. The 1,800 companies on site exhibited their innovations in technologies such as sustainable mobility, car electronics, SDV, MaaS, autonomous driving, connected cars, and EV technology. 85,825 visitors saw the show. Here are some companies who introduced new products and interesting technologies related to lighting:

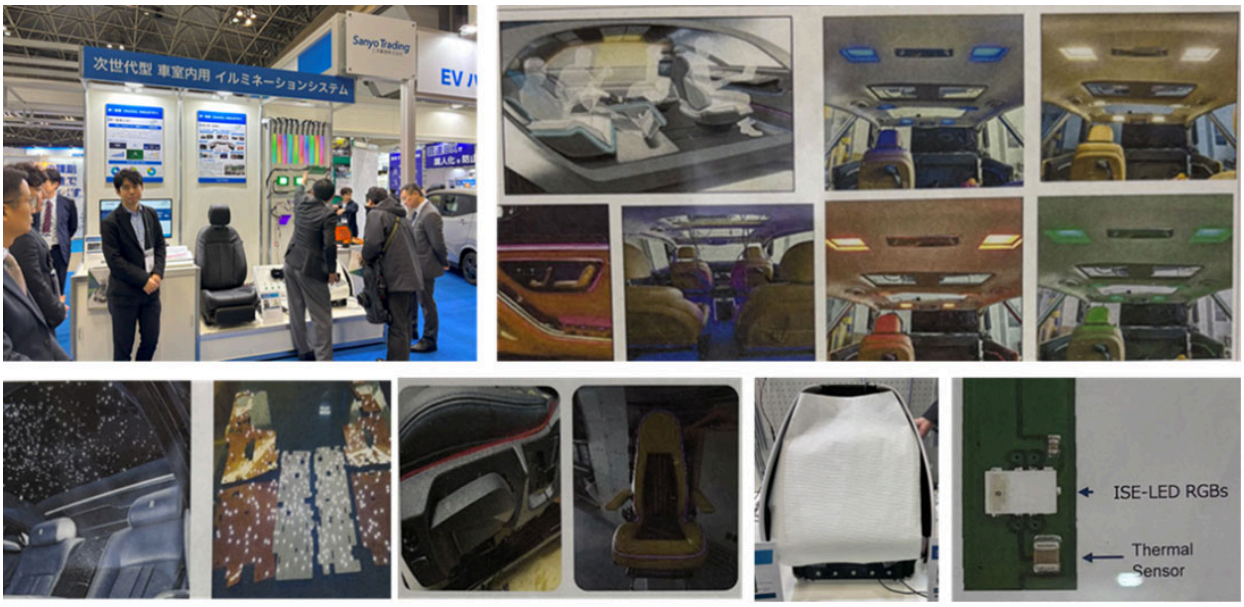
Ruhlamat: Thawing with lens-embedded wires

As a longtime specialist in the field of specialized machine construction, Ruhlamat offer individually tailored as well as standardized machine solutions. They can provide lenses in which heating wires are precisely embedded. Shown here is a lamp lens and MB logo with millimetre-wave radar behind the logo front plate. The Toyota Century also uses this technology. Sankei Giken can do it in Japan.



Duckil: Next-generation interior lamps

Duckil Industry are a Korean global mobility electronics module and components company. Their product ranges from plastic injection mouldings to control parts such as switches and switch parts, and fuse and relay boxes. Also cable ties and connectors for wire harnesses. They've developed next-generation interior mood lamp modules such as ISELED and RGB LED lights, flexible ambient lamps for seats, celestial lighting, and one they call the Advanced Development Ambient lamp. They have a Fusion Lighting Integrated Module, too, which is ambient light for the entire vehicle by using ISELED controlled through ILAS communication.

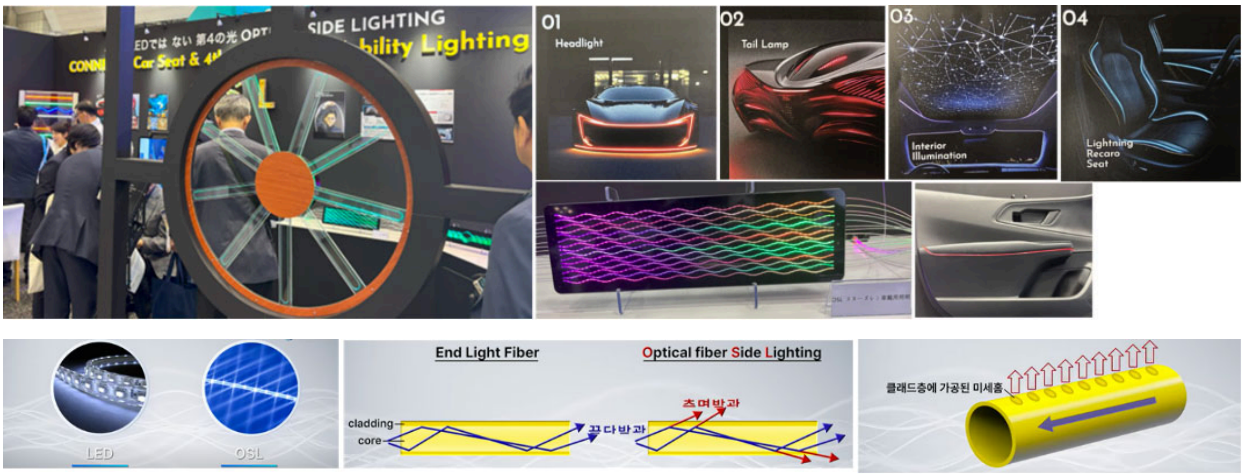


Sumitomo Chemical: No-Coating-Needed Lens

Sumitomo Chemical's Sumipex MH 022 is a PMMA headlamp lens which needs no hardcoat. Their acrylic resin is highly transparent and scratch-resistant, and the lack of a coating means it can readily be reconditioned.

Solar Optics: Optical Fibre Side Lighting (OSL)

Korea's Solar Optics have developed high-brightness side light emission, which was impossible with conventional optical fibres. It is possible to emit light with less power consumption than LED. The light emitting part does not generate heat, has a long life, is highly safe, and can be bent into any shape, making it suitable for complex designs. Light is guided along microscopic grooves in the cladding layer to produce clear light. The optical fibre cladding layer is processed with ultra-precision to form light-emitting areas on the sides as well. OSL's fibre optic technology provides soft, uniform light by precisely controlling light dispersion, reflection, and distortion.



Murata: Gyro Accelerometer MEMS for Headlamp Levelling

Murata's SCH1633 combined gyro and accelerometer is a MEMS sensor which directly measures the car angle, constantly updating the light position to keep the lamps properly aimed no matter what's going on with the road and car.

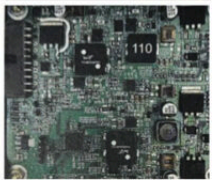
Nippon Seiki's Laser Projector

Nipon Seiki have developed a laser projector whose close-distance and oblique projection allows unprecedented high mountability. Its new ultra-short focal length optical system can project images offset in both the X and Y axes. This allows the projector to be placed on pillars or other areas in the vehicle interior to avoid the passengers, and on door mirrors or other areas outside the vehicle to project images in the correct position.

Keeper's Intelligent ISELED Light

Taiwan's Keeper have developed road projection technology with 25,600 individual controllable light pixels. (40µm pixel pitch). Keepertech developed ISELED welcome and Ambient lights. They showed PWM intelligent LED lighting solution for automotive application. There are several class-4 electronic circuits designed for headlamps.

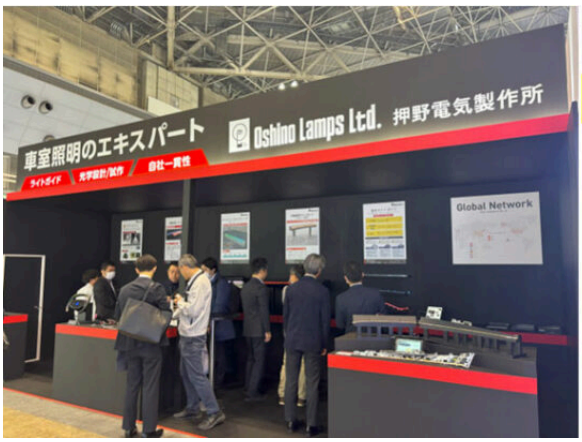


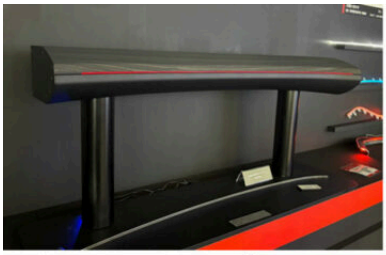
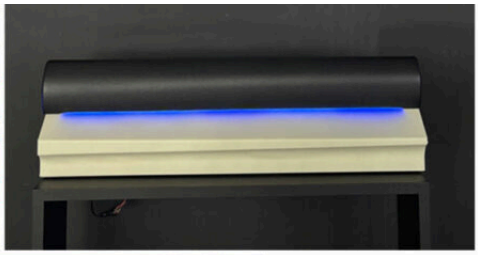
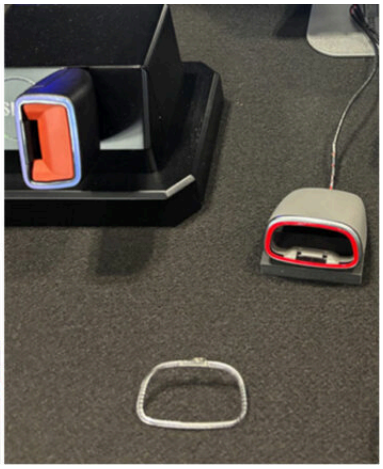
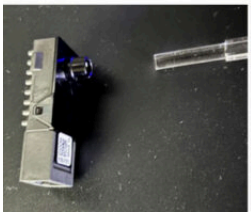
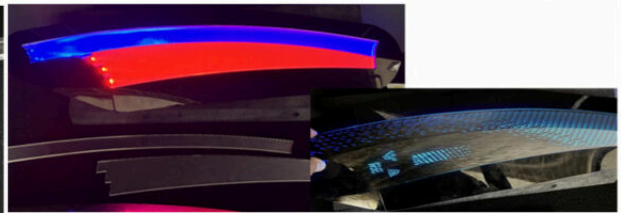


Oshino: Unique Light Guide, Lens, LED unit

Oshino Lamps showed their new developments, including:

- Window switch lens: lighting in seven locations with a single light source, with their unique lens design.
- Pinhole light: The irradiation opening is only 2mm in diameter, so it has a seamless appearance that makes it difficult to see where the lamp is. The small single lens allows spatial illumination in sunvisors, headrests, roofs, and more.
- Long-length interior light guide: one-piece injection moulding, microprism processing, 35μm min, single LED light source. Good for instrument panels and roofs.
- Flowing dynamic illumination: 5 LEDs serve a 600-mm light with their unique lens.
- Back lens light guide for surface illumination: optical design and prism control make for very even brightness. Microprism processing on curved light guide plate (22μm): fewer LEDs, all on one side. About 200 cd/m^2, 560-mm length. Maximum processing size is 80 × 8 cm.
- Seatbelt buckle illumination makes it easy to buckle in, even in the dark.



New Fiat Panda

LIGHTING NEWS

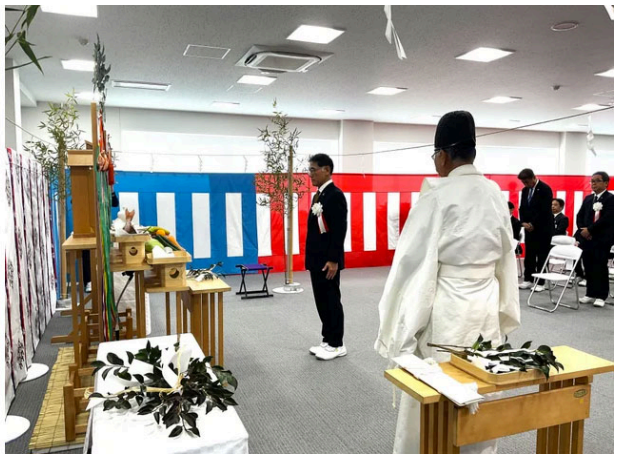
By Paul-Henri Matha

You can now order the new Fiat Panda (Grande Panda compared to first Panda generation). I just wanted to focus on lamp details, with their pixel design. Are pixel-style lamps the new trend for small cars? It's beginning to look like it, what with the Hyundai Inster's 1-row pixels and now the Fiat Panda with a 3-row pixel DRL. A private joke for vehicle lighting engineers, perhaps? 1-row matrix versus 3-row pixel?

The charging slot is quite well integrated in the grille. And round the back the rear lamps are rectangular blocks that refer to the original Panda lamps, but with crystal lenses and five red blocks—this may pose a condensation-management challenge for the lamp supplier.

Stanley Grow Hiroshima Plant, Finish New Building

LIGHTING NEWS



On 15 January, Stanley Electric held a completion ceremony for the expansion of their Hiroshima factory.

The plant will play a vital role as a key production hub for vehicle lighting and electrical components. This expansion is part of Stanley's strategic efforts to boost their global competitivity in the automotive industry amidst a period of significant transformation.

Vision for the Hiroshima Factory

- A model factory that leads other manufacturing bases by integrating the company’s unique production innovation activities with IT/DX technologies to reduce costs and improve quality
- A flexible manufacturing base, responsive to diverse customer needs and future changes in the automotive sector.
- A factory that promotes carbon neutrality by implementing energy-saving equipment, optimizing logistics, using renewable energy to reduce CO_2 emissions, and actively using sustainable materials, ensuring harmony with both the global environment and local communities.

The plant is at 1866 Okuya, Shiwa-cho, Higashihiroshima-shi, Hiroshima, Japan. The expansion construction cost about ¥8bn (€52.2m, $52.8m). The site area: 25,200 m^2, and total floor area is now up to 24,354 m^2 (up from 12,961 m^2 before expansion). Products built there include vehicle lighting and electrical components, including headlamps, rear combination lamps, and more.

Breaking News

ELBA and MIND begin a New Strategic Partnership

BREAKING NEWS

On february 10th, ELBA, one of the leading manufacturers of lighting fixtures and components for the automotive industry in Romania, announced the beginning of its collaboration with MIND, marking the first stage in the development of commercial relations between the two companies.

This partnership involves the supply of injected plastic components by ELBA for use in projects developed by MIND. This collaboration strengthens both companies' capacity to deliver high-quality products and meet the dynamic demands of the market.

The partnership is based on ELBA and MIND collaboration in technology, project development and manufacturing for OEM Automotive Industry. Both companies are committed to excellence and innovation in their products and services. This collaboration will support the development of new and efficient solutions for their customers. Through this partnership, ELBA and MIND reaffirm their position as trusted industry partners and expand their portfolios of strategic automotive lighting collaboration.

To go further ...

Hyundai Mobis' Human Centric Interior Lighting

TO GO FURTHER ...

At CES, Hyundai Mobis presented their human centric interior lighting concept with 32 unique patterns to reduce stress, motion sickness. A variety of automakers have presented similar concepts, or are already selling cars with interior lighting to optimize occupants' wellbeing by respecting their circadian rhythms. This is a feature that should not be neglected in the future. Take a look at the online video.