

Tue, 4 June 2024
Weekly Newsletter



NEWSLETTER #858



Webinar: OSOLON® Boost HM –
The high luminance LED for
ultra slim head lamp designs
and ADB hot spot

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Editorial

Lighting Developers At The Centre Of The Vortex

Lighting developers' work is at the centre of a frenetic confluence of safety, design, and innovation. Lighting is clearly and increasingly crucial to every vehicle's identity, and all automakers and brands are defining their own strategies. This week we bring you an in-depth interview focusing on Škoda lighting design—a great example, explaining the evolution of their brand identify, signature, and lighting technology.

At the same time, designers must innovate if they want to follow the consumer market and best their competitors. The Škoda interview touches on this—the importance of keeping aware of what is happening in the consumer industry. To that end, we're working on a detailed technical report about the Display Week event in San Jose, California last month, that gathered more than 1,000 industry experts during five days, with 130 supplier presentations. Find more information about the event [here](#).

While the wow factors proliferate, and it's easy to get carried away in the gamification fad, lighting designers and engineers must not lose sight of the primary main objective: lighting and signalling are life-safety equipment, for drivers and vehicles to see and be seen. So, we cannot just do whatever we want—we have to respect regulations, obviously, but there is also an ethical imperative here, largely unwritten, to make lighting that is not just compliant, but also really and objectively *good*.

We continue the glare discussion this week with feedback from GRE Chair.

Sincerely yours,

Paul-Henri Matha

DVN Chief Operating Officer and Lighting General Editor

A handwritten signature in blue ink, appearing to read 'pamm', written in a cursive style.

In Depth Lighting Technology

DVN Interview: Škoda's Petr Nevrela on Octavia Update



The design of the new Škoda Octavia so intrigued us that we wanted to talk with Petr Nevrela about the new exterior lighting content.

Indeed, Nevrela and the Škoda design team won a prestigious CDN award for Best Lighting Design Team. One of the main drivers of that award was the use of light on the entire current Škoda model range, and particularly the unique lighting signature. This also characterizes the 'Crystal Face' in battery-electric Enyaq IV models, with 131 LEDs that illuminate the vertical ribs and the horizontal bar of the grille. In response to an approaching driver, the Crystal Face, along with the LED matrix headlamps and rear lights, creating an animated welcome effect.



DVN: Petr, it's great to talk with you. Tell us about yourself and the Škoda lighting team, will you?

Petr Nevrela: We are quite a small team, consisting of colleague Martin Paclt and me. Until recently we also had Michal Hess, who is now working on another project. We have more than ten years' experience in light design work and still enjoying it!

The CDN win was the best award for all our efforts which we gave to the projects and at the same time perfect milestone as we now transform to new 'Modern Solid' design language.

DVN: On the new Octavia, a lot of the lighting has changed—the headlamps are integrated with the grille, for example.



P.N.: That was exactly our initial key idea, together with exterior designer Alex Leicht. We wanted to connect the mask and lamp in a new expressive way and support it with light signature. The typical Octavia double signature served the purpose perfectly. It makes it unique and again very recognizable on the road.

DVN: The headlamps have a Škoda crystal lighting callout; what does this mean?

P.N.: All our lamps are equipped with the features referring to the heritage of Czech crystal glass—whether you look at the precise sharp shapes or the transparent volumes of the signature full of rich optical effects. The Škoda Crystal Lighting branding expresses this design values and also helps as a trademark of our lamps.



DVN: What can you tell us about the performance and specifications of the LED matrix headlamps?

P.N.: The new Octavia comes with new-generation matrix headlamps. We have 36 segments, which is 50 per cent more than the previous generation. That makes the light distribution mainly more precise. Of course, at the same time it is crucial for us to keep a high level of output performance.

DVN: There are no front fog lamps, right? did you replaced them by AFS functions?

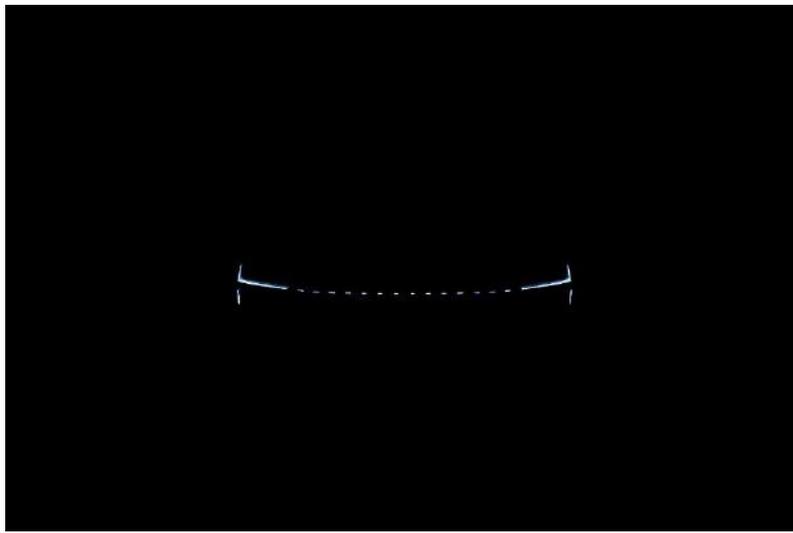
P.N.: Our previous four-elements principle of car fronts was strong theme. But thanks to the All Weather Light function, we can cover fog light mode with the sources in the main lamp. This gave us new opportunities to work with the front architecture of the car.



DVN: More generally, what is the lighting strategy at Škoda? Do you reserve lit grilles for EVs only?

P.N.: In general, we explore new possibilities how to interpret our successful light features in a new modern way. We will continue with mask illumination, but more simplified and digital style, while keeping the precision of the elements and interesting animations. At the moment we offer illuminated elements also for the Kodiaq, with different types of combustion engines and also with plug-in hybrid technology. There you can see discreet transparent elements between the ribs, nicely protected and bringing very unique expression in the night.





DVN: Last year we saw Škoda communication with front grilleboards. How did your tests on that work out? Do grilleboards have a real future?

P.N.: We tested front masks as a communication interface. We checked visibility in various conditions (sunny weather, rain, etc), understanding the information (simplicity of the message) and specific use cases in terms of safety. We are aware of several trends and technologies of cars' external communication; that's why we want to be ready for it and eventually be part of setting up the conditions.



DVN: The new Octavia has all-LED rear lighting. We can clearly recognize that it is a Škoda with its strong rear signature—on this model, segmented by four blocks. Do you have animated welcome/farewell?

P.N.: Yes, we kept our specific welcome and goodbye sequence. Both segmentation of taillight and character of the animation fit perfectly to Octavia and make so one family with the new Superb and Kodiaq.



DVN: Tell us more about the taillights, will you?

P.N.: We updated a lot of details. We stretched the clear area outward, which makes car look wider. The turn indicator is strictly horizontal now, to look slimmer. New taillight crystals grow directly from segmented signature.

DVN: What does the future hold for your design strategies? In 2022 you showed a concept, the Vision 7S, for 2026. The lighting strategy was totally different.

P.N.: We are in a period of transformation to the 'Modern Solid' design language, which we promoted with that concept car you mention, the Vision 7S. We will keep brand and product identity features. The typical Škoda frame turns into a specific shape of the mask, which we call the Tech-Deck, and the light signature serves as a product identity feature to recognize which model you see.

We have just released the first official silhouette images of our new Elroq compact electric SUV. There you can see our next light design direction!



DVN: Thank you, Petr; it's been marvellous to learn your thoughts and ideas!

Lighting News

GRE Chair Shares Thoughts on Glare

LIGHTING NEWS

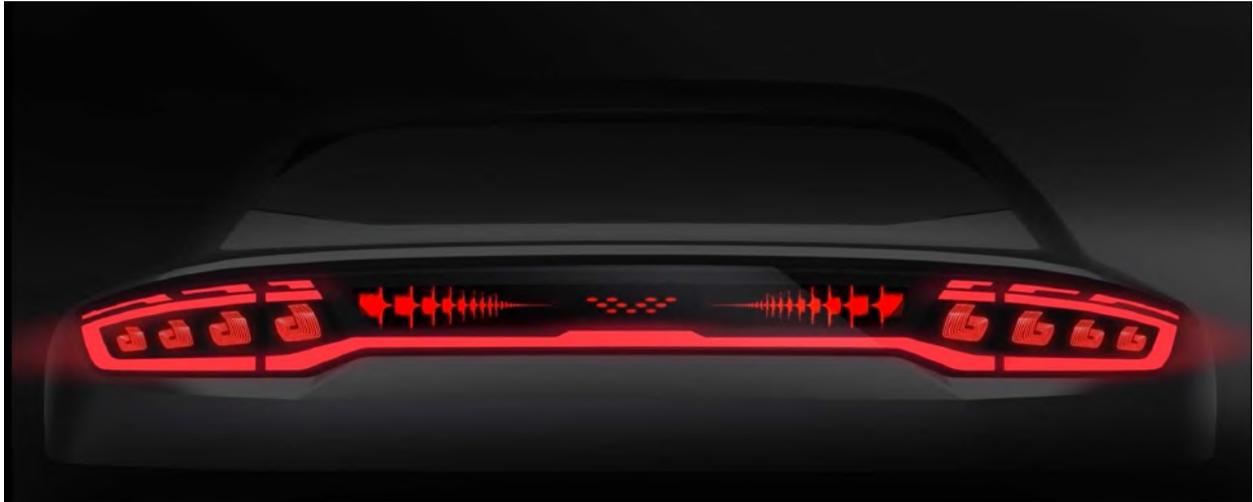


Timo Kärkkäinen chairs GRE, the UNECE group of lighting experts who meet several times a year to discuss, debate, devise, and formalize the vehicle lighting regulations used throughout the world (except on the North American regulatory island. He is also Chief Adviser at the Finnish Transport and Communications Agency, Traficom. He graciously took time to share his thoughts about the glare discussion in Geneva last month:

"I think the balance between visibility and glare is an everlasting issue. However, I believe the lighting regulations can still be gradually improved relative to glare. Before starting the actual drafting of new legal provisions, GRE needs more studies about glare. For example, the effects of latest amendments of UN Regulations should be investigated. GRE will continue the debate on glare in its 91st session on 22-25 October, 2024. Establishment of a new task force or informal working group will then be discussed."

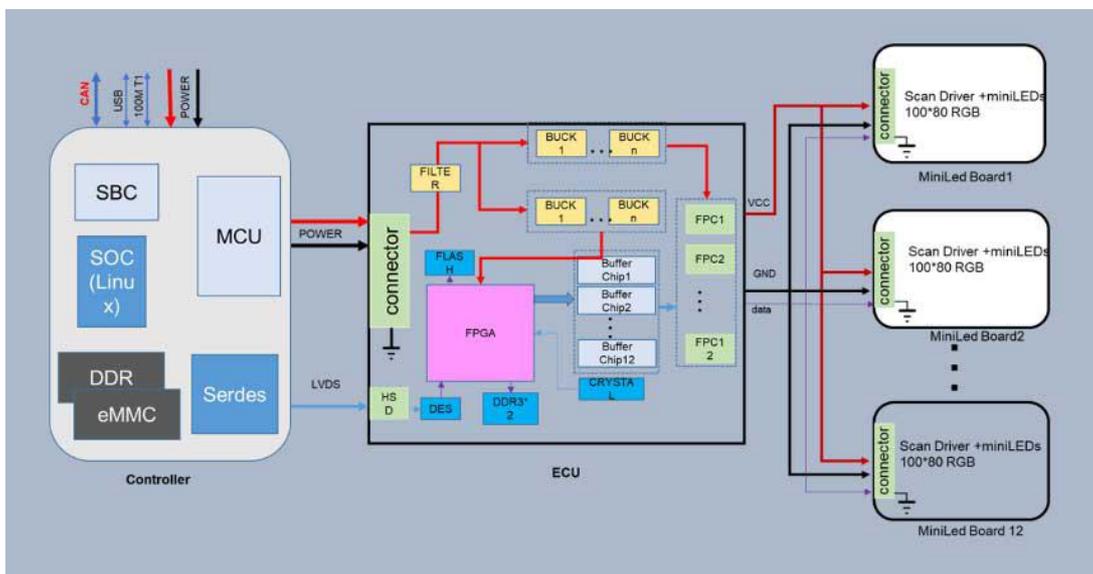
Mind's HD Graphical Display ready for SOP

LIGHTING NEWS

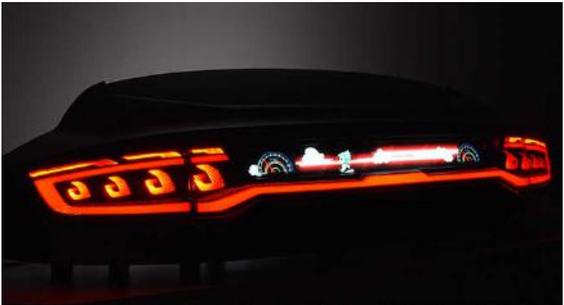


Mind's newest RGB miniLED light source and compact display module offers high brightness and high resolution. Its pixel pitch of 0.68mm and 12 miniLED screens create an expansive display area of 91 × 8 cm, with 135 × 120 resolution for an immersive effect. High luminance of 2,000 cd/m² make it easy to read, day or night. The display is AECQ102-qualified, and maximum power is 50 watts.

The HD graphical display is made possible via the collaboration of the driver and HD controller. Vehicle instructions are sent to the controller by CAN, while multimedia files are conveyed to the controller via Ethernet. The controller converts the multimedia files into LVDS signals and send them to the driver, which translates the data with SPI and turn on miniLED pixels with a driver IC from Macroblock. End result: HD graphics and seamless videos on the display in real time. The HD controller plays a crucial role, ensuring stable and efficient image and video transmission to let the following driver obtain vital information of road and traffic conditions ahead. The controller enables users to customize image and video uploads, while allowing automakers to expand display content and scenarios via OTA updates.

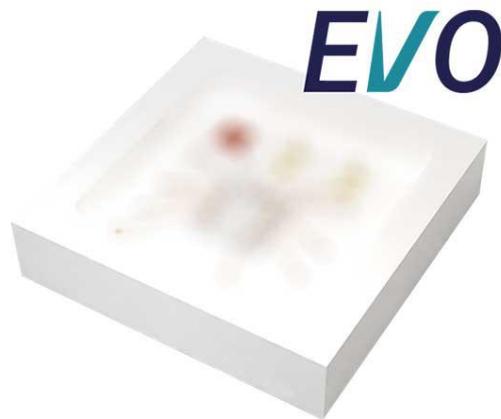


In parking mode, the display can show useful graphics or animations to provide information for other drivers, such as reminders of obstacles, real-time road conditions, and traffic light signals. Welcome/farewell animations and animated games can bring fun. Scenarios can be customized to meet users' and automakers' wishes, to provide a personalized driving experience.



Brightek's New Automotive RGB ICLED Platform

LIGHTING NEWS



Brightek Optoelectronics have launched their new Evo series of RGB iCLEDs. Specifically designed for automotive ambient lighting, they represent a new generation of ICLED products tailored to the smart cockpit trend. An ICLED is what it sounds like: an LED with inbuilt [integrated circuit for lighting control](#). Featuring a new IC design, the Brightek Evo family offers 16 million times more colour richness than a traditional ICLED, up to 7,000 mcd intensity, intelligent temperature sensing, and voltage detection capabilities. These features allow for precise colour calibration based on the installation environment and various intelligent surfaces.

Automotive ambient lighting applications encounter several challenges, such as smooth colour and brightness adjustment; varying brightness requirements for different installation positions, tolerance of vehicle line voltage surges, and maintaining colour consistency. Brightek's Evo range has responsive features:

- 16-bit PWM greyscale colour mixing, providing 16 million times more colour expression than traditional 8-bit products. This enables finer and more realistic colour performance, adapting to various temperatures and interior panels or intelligent surfaces, and ensuring smooth colour transitions.
- With 256 levels of current adjustment, the Evo series delivers up to 7,000 mcd, capable of penetrating various smart surfaces within the vehicle. This versatility supports diverse interior designs and is also suitable for exterior ambient lighting applications.
- Maintains RGB current variations within $\pm 2\%$, minimizing colour differences of each ICLED to an almost imperceptible 2 SDCM—better than the market standard of 3 SDCM. This ensures the high aesthetic standards demanded by luxury vehicles.
- Intelligent temperature and voltage sensing capabilities, stable operation at temperatures up to 125°C, and overheat protection.

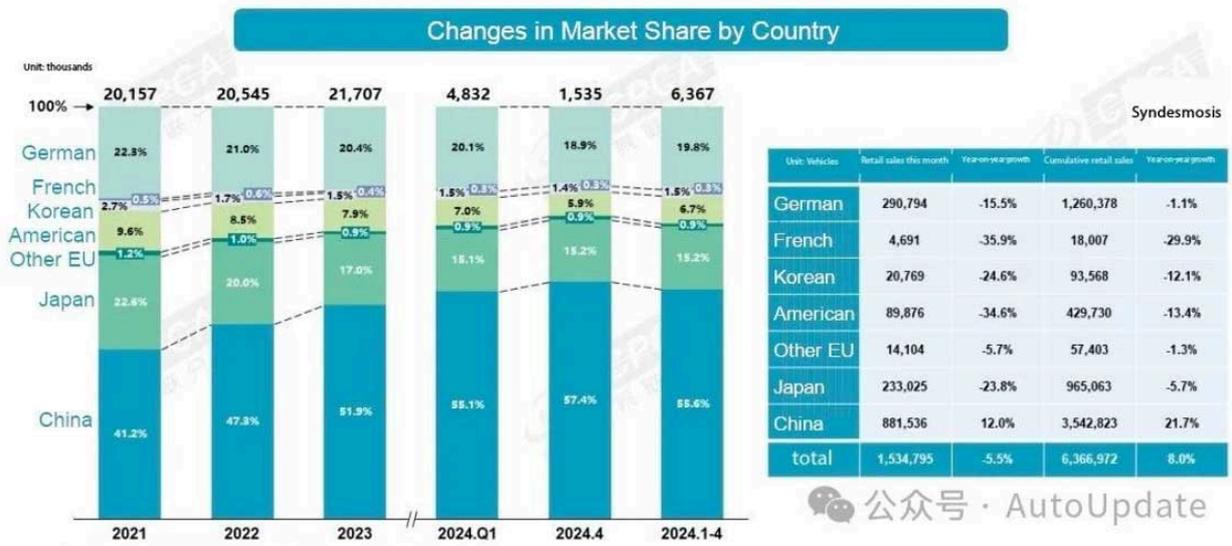
Brightek General Manager Chih-Hung Tzeng will be delivering a talk at the upcoming US DVN Workshop, entitled "Machine-Learning Optimized Tuning Solution for IC-LED Based Ambient Lighting Applications".

General News

Chinese Car Market Share by Country

GENERAL NEWS

China Automobile Market Share by Country



The CPCA (China Passenger Car Association) have published figures about market share by automaker country of origin.

In three years, market share of Chinese makers has risen from 41 per cent to 56 per cent. Over the same time, German makers have remained stable, and American and Japanese makers have seen volume declines.