Tue, 6 September 2022
Weekly Newsletter

DVN
Lighting & ADAS

NEWSLETTER #767



# Editorial

## DVN's Eye On Latest Launched Vehicles


Today we release our monthly **DVN Report** on the 35 concept and production vehicles unveiled over the last four months, to show the emerging and advancing trends in lighting technology, technique, design, and style. In today's DVNewsletter, we present pictures from the report and six takeaways; you'll want to fetch your own copy of the report for more detailed analysis.

In the meantime, we're pleased to see the trends are right in line with our forecasts in the 2022 DVN Study released this past July, **DVN Market Forecast on New Lighting Systems —Technologies and Skills to Succeed**. **This study** presents the market perspective of new lighting elements like illuminated grilles and logos; signal projections; road projections; ADB; laser light sources; OLEDs; communication displays, and more. For each new function, the study shows data-backed market potential forecasts. In this week's in-depth article, you'll find commentary about the study from renowned experts.

Sincerely yours

Finally
DVN CEO

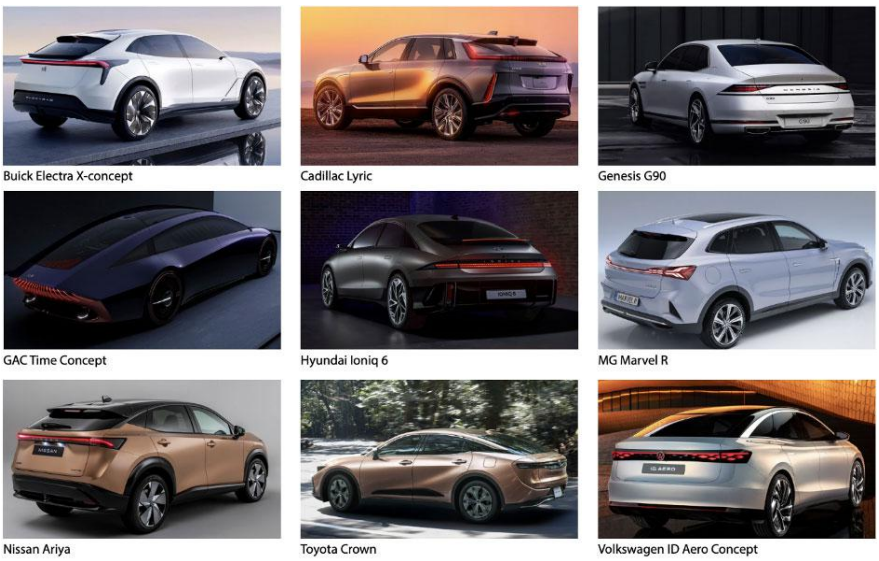
# In Depth Lighting Technology



## Six Keys from DVN Report on Latest Launches

Today we present our latest DVN Report looking closely at the lights on 35 concept and production vehicles unveiled over the last four months. Here we present six takeaways, illustrated with photos from the report. We take particular note (and a quietly appropriate amount of pride) that what we see in these latest launches tracks directly with the predictions and forecasts in our 2022 DVN Study published this past July, wherein we explain in detail the nascent and on running trends in vehicle lighting over the next decade.

- **Full-width rear lights**



- **Full-width front lights**


Chevrolet Blazer EV


Toyota Crown


Volkswagen ID Aero Concept

- **Illuminated patterns on the grille board**


Cadillac Celestiq Concept


Cadillac Lyriq


GAC Space Concept

- **Ultra-slim headlamps**


Buick Electra X-Concept

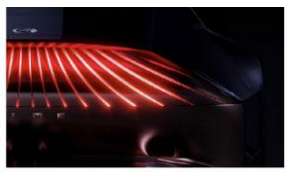

GAC Time Concept


Toyota Crown

- **Intricate-structure rear light styling**


BMW M4 CSL


DS7


GAC Time Concept

- **New special front and rear light shapes**


Cupra Urban Rebel Concept


Hyundai N Vision 74 Concept


Mercedes-Benz Vision AMG

# Lighting News

## DVN Study • Get Your Copy Now!

LIGHTING NEWS


**DVN Market Forecast on New Lighting Systems—Technologies and Skills to Succeed** presents the market perspective of new lighting elements like illuminated grilles and logos; signal projections; road projections; ADB; laser light sources; OLEDs; communication displays, and more. For each new function, the study shows data-backed market potential forecasts.

Two comments from BCG's Xavier Mosquet and DVN Senior Advisor Wolfgang Huhn emphasise the quality of this thorough sector analysis; for Huhn, the information only DVN can add is our expert knowledge and the expertise of our worldwide network of subject matter specialists. This makes the 2022 DVN Study unique for the vehicle lighting business. And Mosquet says the study, written by four industry master experts, "delivers the facts and figures to describe the fast-paced changes changing the face" of vehicle lighting.

Don't miss out; get **your copy** today!

# China DVN Workshop: Gearing Up For Success

LIGHTING NEWS

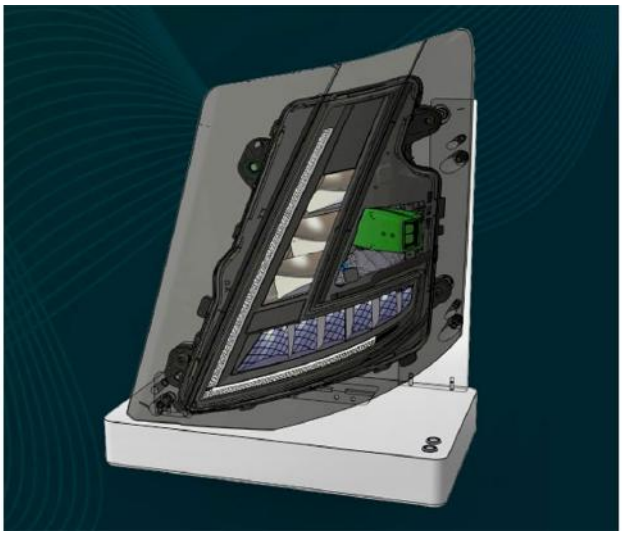

The Shanghai DVN Workshop, shaping up as an exceptional event, will be held on 20-21 September in the Shanghai area. We're gearing up for a grand event with:

- **34 lectures** from China and also by video from Europe; America; Japan, and Korea.
- **Two classy keynotes** from Hasco Vision CEO Xuejun Qiu, who will speak on the outlook on digital lighting driven by innovation, and GTB ex-president Geoffrey Draper, who will present on breaking barriers to innovation.
- **Lectures from nine automakers** including Audi; Volvo; Patac; Changan; Great Wall; Stellantis; Human Horizons; FAW, and Jidu.
- **Lectures from six vehicle interior experts** including Li Auto; Inova; Antolin; Kurz PolyIC; XingYu, and Melexis.
- **Lectures from 10 tier-1 suppliers**: Koito; Hella; Valeo; Mind; AMLS (now within Plastic Omnium); Hasco; Marelli AL; XingYu; Chongqing Varroc TYC**,** andAMS Osram.
- **Lectures from seven light source experts** including speakers from APT Electronics; Kyocera Soraa Laser; Lumileds; AMS Osram; HC Semitek; Dominant, and Seoul Semiconductor.
- **Lectures from five top tier-2 experts** representing AMLS; Texas Instruments; AML Systems; Huawei, and Ansys.
- **15 exhibitors** to showcase the latest innovations and ideas.

We anticipate most attendees will be from within China, on account of Covid-related travel restrictions. Just after the event, DVN will publish our report on the China workshop with top information, pictures, and videos.

# Cepton's Headlamp With Inbuilt Lidar

LIGHTING NEWS



At the IAA Transportation 2022 show, on September 20-25 in Hanover, Cepton plan to showcase an integrated lidar solution for headlamps, designed in collaboration with ZKW.

Visitors to the show will be able to see a live demonstration of the 3D near-field perception of the solution, which was designed to improve the perception of objects in the blind spots of vehicles.

Cepton's Nova lidar sensor used features a combination of compact design, high resolution and a large horizontal and vertical field of view. The sensor's compact design allows flexible, seamless integration for 360° perception. This allows the system to accurately perceive objects in the immediate vicinity of the vehicle, such as pedestrians, cyclists and other obstacles on the road. Based on Cepton's patented lidar technology and specially designed ASIC microchip, the Nova sensor achieves high system and energy efficiency. This makes the lidar solution suitable for passenger cars, commercial vehicles and EVs.

Through the collaboration with ZKW, Cepton aim to demonstrate how easy it is to integrate such a lidar sensor into main headlights and that this is a viable placement option for lidar sensors. The headlamp integration allows discreet installation, a cleaning mechanism, and a high level of protection for the sensor. In addition, a dual-sensor concept makes it possible to detect cut-in scenarios.

*Cepton, a Silicon Valley lidar supplier for automotive and smart industrial applications, aim to take lidar mainstream and achieve a balanced approach to performance, cost and reliability, while enabling scalable and intelligent 3D perception solutions across industries.*

# Li SUV L9 Has Many Sensors, Reconceived Interior

LIGHTING NEWS


This summer, Chinese brand Li Auto unveiled their top-of-range SUV-L9, seeking to compete against the likes of the BMW X7 and Mercedes-Benz GLS. The L9 driver sits in a startlingly simple space; the instrument panel has been replaced by a HUD and an "interactive safe-driving screen".


Crucial driving information is presented via the HUD, so the driver needn't look down at instruments. The interactive safe driving screen is mounted above the steering wheel and uses miniLED backlight technology driven by Macroblock. The time-multiplexing architecture of Macroblock's miniLED backlight driver helps implement a zoned design to allow the screen to have high brightness *and* high contrast. It can display clearly important driving information—speed, electric and combustion-engine range—even in bright sun. And when driving at night, the screen will not be so bright as to impair the driver's vision. A system the maker calls "multi-touch technology" is said to enable better interactions between the HUD and the safe driving screen.


Slimline white front and red rear full-width light bands further confirm this current styling trend; the front bands are bookended by what looks like side marker lights; could Li have eyes on the North American markets? A sensor cluster centred at the leading edge of the roof, with additional sensors below it looking through the windshield, hint at advanced level of autonomous driving capabilities.

# Driver Assistance News

## AEB Doesn't Work At Night: IIHS

DRIVER ASSISTANCE NEWS

IIHS IMAGE

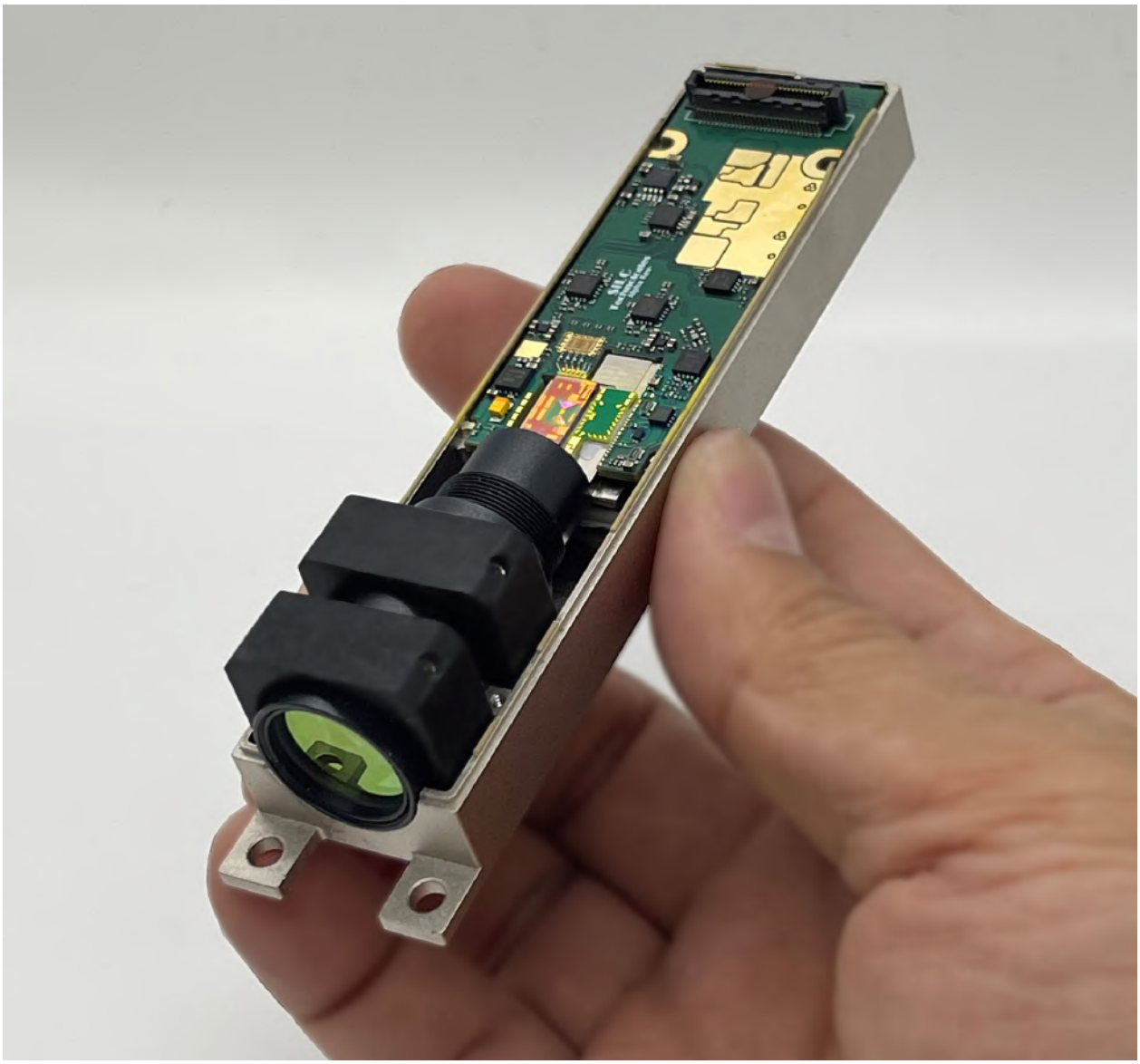
The Insurance Institute for Highway Safety, in a new study, has found many AEB (automatic emergency braking) systems perform poorly after dark. More than half the 23 tested models earned 'Basic' or 'No Credit' grades; only four earned a 'Superior' grade: the Ford Mustang Mach-E, the Nissan Pathfinder, and the Toyota Camry and Highlander.

Despite their poor performance at night, 19 of the 23 vehicles earned high marks in similar daytime tests. IIHS president David Harkey said this may be due to automakers primarily focusing on daytime conditions when designing automatic-brake systems.

Apart from the two Toyota models which both did well, there wasn't much performance consistency across most automakers' model ranges. There's reason for optimism, though; Harkey says in 2019, only about half of models performed well even in the daytime. In 2021, over 75 per cent of tested models received 'Superior' or 'Advanced' grades in daylight.
"Many automakers are confident that they can improve their systems in a way that will address the nighttime problem," Harkey said. "We're confident that the automakers will respond, and within a couple years, we will see these systems improved quite a bit".

# SiLC's Kilometre-Range Eyeonic Lidar

DRIVER ASSISTANCE NEWS



SiLC say their Eyeonic Vision Sensor can perceive; identify, and avoid objects at a range of over 1,000 metres. Having previously demonstrated a detection range of more than 500 m at CES this year, SiLC have now optimised their hardware to double the distance.

The heart of this first-of-its-kind lidar transceiver is SiLC's silicon photonic chip which integrates FMCW lidar functionality into a single, tiny chip. Representing decades of silicon photonics innovation, this chip is the only readily-integratable solution for manufacturers building the next generation of autonomous vehicles, security solutions and industrial robots. "Our technology platform is flexible enough to address ultra-long-range to ultra-short-range applications which speaks to our understanding of what is needed to truly make machine vision as good or better than human vision," said Dr. Mehdi Asghari, SiLC's CEO and founder.

*SiLC Technologies apply their deep expertise in silicon photonics to advance market deployment of FMCW lidar solutions. The company's breakthrough 4D+ Eyeonic Chip integrates all photonics functions needed to enable a coherent vision sensor, offering a tiny footprint while addressing the need for low cost and low power.*

# Five Million Subarus With EyeSight

DRIVER ASSISTANCE NEWS


The five-millionth Subaru equipped with EyeSight driver assist systems was built this past June, counting since the first version of EyeSight was introduced in Japan in May 2008.

EyeSight achieved a world first in using solely stereo camera technology to provide driver assist features such as adaptive cruise control and pre-collision braking that detects not only cars, but also pedestrians, cyclists, and motorcyclists in the vehicle's path. EyeSight-equipped models currently account for 91 per cent of Subaru's global sales, and the system has constantly been awarded top ratings by independent agencies around the world.

The latest generation EyeSight comes with a redesigned stereo camera that features a much wider viewing angle; combined with improved image recognition and processing software, it offers enhanced driver assist functions in a wider range of situations.
Subaru also introduced the EyeSight X advanced driver assist system in Japan. Featuring the new stereo camera combined with four radars located in front and rear bumpers, a newly-developed high-definition map and vehicle locator, and other advanced technologies, EyeSight X offers extended functions such as lane change assist, speed control before entering a curve, and hands-off driving assist in traffic congestion, ensuring a safer and more comfortable driving experience on Japanese highways.

# General News

## New VW CEO Faces Software Challenges

GENERAL NEWS

Porsche boss Oliver Blume started as VW Group CEO last week, and immediately set to work putting out figurative fires. Blume told top managers he has a ten-point plan focusing on topics including financial robustness, sustainability, the capital market, and development in China and North America.

Blume's predecessor Herbert Diess' big plan hinged on replacing factory workers with 10,000 software workers who would transform VW Group into a tech powerhouse. But so far it hasn't gelled; users grow frustrated and furious with faults and failures. In-car displays are freezing, hanging, going blank. A trip to the dealer and leaving the car for a day is required to get access to over-the-air software updates.

"It's the disease that is spreading," Jake Fisher, senior director of auto testing at Consumer Reports, said in an interview. "I am talking about systems that, when you know how to use it, now it's multiple steps to do something that used to be one button, and that is a shame. It's moving backward and making these cars worse." VW EV drivers complain about their cars suddenly braking because of a traffic sign detection system so buggy, they tend to just deactivate it; a smartphone app that is glitchy and lacking features; and challenges syncing their phone with their EV either wirelessly or with a cord.

# Ford, GM Safety Recalls Hit Nearly 400K U.S. Vehicles

GENERAL NEWS

Ford and GM have issued safety recalls affecting nearly 400,000 U.S. vehicles, according to separate reports filed with NHTSA. The largest recall covers more than 277,000 Ford Super Duty models and Lincoln Continental luxury sedans from the 2017-20 model years: an internal lens on the rearview camera has an antireflective coating that may degrade over time from exposure to ultraviolet radiation. The degradation "can lead to a progressively foggy or cloudy rearview camera image," according to the safety recall report.

Ford told U.S. auto safety regulators it is aware of 7,625 Super Duty and 1,236 Lincoln Continental warranty reports in the U.S. as of July 13 that are potentially related to the defect.