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Weekly Newsletter

DVN
Lighting & ADAS

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Editorial

Live From Geneva And Munich, It's DVN!

The lighting community has a really busy week. Yesterday we got an eyeful of the Geneva auto show. Three primary main takeaways:

- Electrification is gaining traction in the premium (Lucid, IMM…) and mass market sectors (Dacia Spring, Renault 5, MG…)
- Lighting is still one of the main design elements of the car (see illustration with new Fiat Panda concept).
- Falling interest of automakers for this big-name auto show.

At the same time, technical events like the DVN Workshop symposium are welcoming year by year *more* participations. It's because that's where the technology is, there's a real need to understand the technological and technical evolution ongoing, and the Workshops offers more and better networking opportunities than the auto shows.

That last point is crucial—alone one can't do much, especially with the ever-accelerating pace of technical innovation and market evolution. The magic works when people get *together*. That's the whole reason why DVN events were created 15 years ago.

The Munich DVN Workshop was a grand success; the biggest ever, with more than 450 attendees! More than 25 automakers and over 100 companies got involved. We had a great program to encompass the big topics in lighting today:

- New style trends with light integration in display and fascia
- Design for sustainability
- Importance of nighttime safety with evolving ADB technology
- Software-defined vehicles and their influence on the lighting world

If you couldn't attend, watch for our DVN Report of the event, coming on 12 March.

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

In Depth Lighting Technology

VW Golf Retrospective at Retromobile 2024

SALON RETRO MOBILE

The Volkswagen Golf's 50th anniversary was celebrated at the Retromobile show in Paris, a remarkable sales figure of over 37 million units solidifying its status as one of the world's most successful cars. The first Golf came in 1974 as VW's badly-needed, boldly-ventured replacement for the iconic but outdated Beetle, and the Golf—which initially caused great turmoil within VW—has evolved through the decades with pioneering advancements in lighting technology.

The success of every Golf generation has been down to the sum of all its characteristics—always a perfect companion for everyday life, embodying versatility, functionality, reliability, and quality. Over the decades, the model range has expanded with sporting-spec GTI, convertible Cabriolet, station wagon Variant models, and many others; there was even a small pickup truck version of the Golf I. With each new model generation, state-of-the-art technologies and safety and convenience features have been added.

Take a look at this Golf retrospective and see the evolution of lighting technology over half a century's time:

Golf I ("Rabbit", in the USA + Canada)

The first series-production Volkswagen Golf was built in Wolfsburg in March 1974; they were available a couple of months later, in May.

Simple round headlamps—tungsten R2 45/40w as basic equipment, halogen H4 60/55w on the high-spec cars, and sealed beams on the cars sent to North America. Also in North America came the first departure from the one-round-headlamp-per-side VW orthodoxy which had held sway through many years' Beetle and Bus production: US-built Rabbits had one rectangular sealed beam per side.
Simple rear lamps, too: plastic boxes over incandescent bulbs.

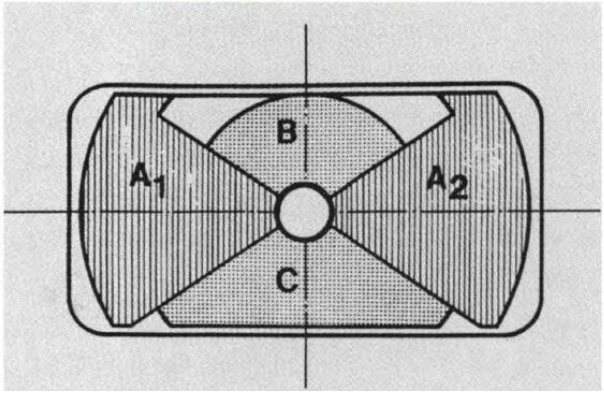
Golf II

The second-generation Golf was launched in 1983 with a plain two-headlamp grille, though a couple of years after introduction came large oblong H4 headlamps (HB1 in USA) with multi-focus reflectors offering much greater efficiency than plain parabolic reflectors—the first big lighting technology jump applied to the Golf. Rear lamps were sleeker and larger, but still technologically basic coloured-plastic boxes over glowing filaments.

Golf III

The third-generation Golf was launched in November of 1991 with edges and corners rounded off all over the car, including the headlamps. Basic equipment was a multifocal H4 (HB1 in USA); higher-spec cars got twin-reflector H1/H1 (HB4/HB3 in USA) headlamps. Turn signals and optional fog lamps were set below in the bumper fascia.

The taillights were, again, sleeker than before, but still basic coloured plastic boxes over glowing filaments.



Multi-focus reflectors for H4 headlamps combine parabolic surfaces with various focal lengths. A1 and A2 have a small constructional depth and provide long-range illumination, B illuminates mainly the areas in front and to the side of the vehicle, and C is responsible for the main beam.

Golf IV

Launched in 1997, the Golf IV was the first to come with window-clear headlamp lenses. These were made of polycarbonate for the US/Canada market; glass for Europe and elsewhere, and showcased four circular elements with two for the main functions. Outboard to inboard: H7 low beam, turn signal (top) and optional fog lamp (bottom), H1 high beam (H7 for USA/Canada) with W5W position light. Optional at great extra cost, and outside North America only, was a Xenon projector low beam with turn signals in both the upper and lower small circles, and a halogen high beam inboard. The taillights began to evolve—still plastic boxes over filaments, but some versions hid the means of providing amber light for the turn signal.

Golf V

The fifth kind of Golf came in October 2003. The twin round headlight element theme carried over from the Golf IV, but with the turn signal and position lamp arranged horizontally under the 'table' where the round headlamp elements lay, bringing the light signature in familial line with the Phaeton. There were H7 halogen reflector or projector low beams, or HID projectors (only H7 reflectors or HID projectors in North America, where this generation was once again called the Rabbit in some years) and H7 high beam reflectors.

The rear lamps' evolution was picking up speed; now they had window-clear acrylic outer lenses.

For the first time, lamp stylists had to design all components inside the lamps—bezel, inner lens, chrome and grained inner parts—and they had to be made to the highest standards of finish quality, for they were all visible at a casual glance.

Golf VI

The sixth-generation Golf, introduced in 2009, further refined the round-lights theme. A black background emphasized the chrome light housings inside the headlamps, and the turn signal was moved back in. Options, depending on market, again included H7 reflector or projector low beams or Xenon projectors, with AFS functions in Europe.

The taillights grew wider, and asserted a much bolder night design. Stylistically, the crystal-clear line of turn signal and backup lamps—LED technology was optional on some trims in some markets—bears a resemblance to the taillights of the Touareg.

The European DRL mandate took force in February 2011, and so DRLs appeared on this car: an H15 bulb provided the high beam with its 55-watt filament, and the DRL with its 15-watt long-life filament.

Golf VII

Unveiled in 2013, the 7th Golf replaced round headlamps by rounded-rectangle ones. BiXenon projectors were fitted on high-spec models, wrapped with LED daytime running lights. Lower-spec models used reflector optics with H7 low beams and H15 high beam/DRLs. Some years into this model's cycle, a facelift brought LED low and high beam headlamps, including AFS functions and ADB functions.

The rear light clusters bear striking L-shaped contours, narrower on the inside and ending at the C-pillar on the outside. Incandescent bulbs did the work on most versions of the car. Here again, the European turn signal was too small for US/Canada regulations, so it was replaced by a retroreflector and the brake light flashes to approximate a turn signal in those markets.

VW's lighting brand signature was gaining real traction here, with DRL/position lights up front and tail lights at the rear.

Golf VIII

Launched in 2020, The 8th Golf brought more rectilinearly-designed LED headlamps, including Matrix technology for ADB function for option lamp—visually more striking and much smaller than before, narrowing significantly towards the inside. Higher-tech, higher-performance headlights were offered as an option. The VW logo is made more prominent by fine lines of white light, and there's a full-width white light line.

The rear lamps continue the styling evolution and echo the headlamp shape, with red cubes ensconced in a red fish hook shape. Now we have LED technology providing the rear light functions, and again the yellow turn signal is deleted on cars sent to the North American regulatory island.

During Retromobile, VW just presented the facelift with a lit barre in the grill + lit logo.

Lighting News

Mind Opto Paint Pictures With Light

LIGHTING NEWS

A new taillight from Mind Optoelectronics combines Chinese culture and modern technology. Inspired by a Tang-dynasty waist drum, it blends art and technology in what Mind call their Waist Drum Optical Fibre Rear Lamp.

The lamp uses optical fibres to realize a 3D shape for the taillight function. Beyond the traditional signal light, the lamp offers display modes including 'music beats', welcome/farewell, charging mode animation, and more.

The patented optical fibre coupling solution successfully combines LED light sources and optical fibres, achieving high efficiency and 3D styling. Besides bendable optical fibre that

provides more styling freedom, the rear lamp combines massive light guides, diamond-cut inner lenses, and other technologies to complete all rear lighting functions. A dozen optical fibres form a special hover space, creating a floating light effect that makes the taillights even more attractive. The unique shape demonstrates not only technological innovation, but also a distinguished signature for nighttime style.

With a dedicated ECU, it can be connected with multiple devices such as cell phones or tablets with real-time interconnection, bringing unprecedented convenience and fun to car lights. For example, on an outdoor camping night, this taillight synchronizes perfectly with your cell phone, computer, tablet, and other devices you might have brought along on your escape from technology, to create a light show that follows the rhythm of whatever music you might choose for those in adjacent campsites to hear.

Start of production is scheduled for Q3, 2024.

Flex-N-Gate Lights on New Lancia Ypsilon

LIGHTING NEWS

The new Lancia Ypsilon, revealed on February 14, is true to the brand's history, combining innovation, sportiness and a unique design, which evinces meticulous aesthetic details. Especially notable are its high-style rearlamps with the inbuilt y-shape. They're inspired by the legendary Lancia Stratos and the PU+RA HPE concept car of 2023.

These lamps were developed by Flex-N-Gate, and are manufactured at their plant in Sabadell, Spain.

Flex-N-Gate developed the floating styling effect while ensuring perfect homogeneity and quality, mobilizing their expertise in design, optical and electronic definition, molding complexity, state-of-the-art assembly processes, and quality control. This success is the result of strong collaboration and agility among company departments in Spain, France, and the United States, highlighting the importance of the synergy of skills across the globe, as well as good collaboration with Stellantis, maker of the Lancia marque.

Dacia Spring EV Gets New Look

LIGHTING NEWS

The Dacia Spring, one of the cheapest EVs available in Europe at just €12,000 after incentives, has got a major facelift that brings a big lighting upgrade. The front end now features Dacia's signature Y-shaped LED daytime running lights, while the rear gets segmented tail lights and a full-width black strip.

Magna's New Ostrava Engineering Centre Inaugurated

LIGHTING NEWS

Magna marked a significant milestone with the official opening of their new lighting engineering centre and testing laboratory in Ostrava, Czechia.

The event, attended by Magna executives, regional government representatives, customers, partners, and various association as well as all the employees, showcased the company's commitment to advancing automotive technology development.

During the grand opening ceremony, guests were introduced to the cutting-edge facilities of the engineering centre, strategically located in the heart of Ostrava, as well as the Mošnov Testing Laboratory. Magna executives presented their strategic plans and discussed the future of the automotive industry and technological innovations.

The new engineering centre boasts state-of-the-art equipment and ample space to accommodate the current team of eighty experienced engineers, designers, and developers, with room for future expansion. Designed to foster innovation and creativity, it represents Magna’s commitment to lighting innovation, quality, and customer satisfaction. Situated in close proximity to Leoš Janáček Airport, the testing laboratory benefits from excellent transport accessibility. It is already equipped with a fully functional photometric laboratory, complete with a 3D scanner and a prototype workshop. Plans are underway to further enhance the laboratory with environmental testing equipment and 3D printers, with employees already being prepared for their professional operation. Czechia, and specifically Ostrava with its rich history and vibrant automotive engineering industry, was the perfect choice for this investment. A country long known to be a hub of technological advancements and engineering expertise. By establishing its presence here, Magna aim to tap into the immense talent pool and foster collaboration with local partners, universities, and research institutions.

General News

Volvo Cars to Dilute Polestar Stake

GENERAL NEWS

Volvo Cars President and CEO Jim Rowan says his company plan to distribute 62.7 per cent of their USD $920m+ stake in Polestar to its own shareholders: "As we have significant operational collaborations with Polestar and a financial relationship, it is logical for us to retain influence through a smaller 18-per-cent stake in Polestar".

China's Zhejiang Geely Holding, majority owner of Volvo Cars, will continue to provide operational and financial support to Polestar.

Rivian Shed Workforce

GENERAL NEWS

Rivian are laying off 10 per cent of their workforce, on concerns about slower EV sales. The company made the announcement as part of their fourth-quarter earnings report, in which they announced they likely won't make more vehicle sales this year than in 2023. (57,232 vehicles).

This current round of layoffs is expected to affect over a thousand workers at the Irvine, California-based company, whose overall workforce comprises 16,700 salaried and hourly employees.

CEO RJ Scaringe said, "Our business is facing a challenging macroeconomic environment—including historically high interest rates and geopolitical uncertainty—and we need to make purposeful changes now to ensure our promising future".

Rivian make three vehicles: the R1T truck, R1S SUV, and the EDV electric delivery van. They will unveil their second-generation R2 model next month, which is expected to be a smaller, more affordable compact SUV.

During an earnings call with investors, Scaringe said the company are focused on reducing costs, most notably by shrinking the number of ECUs in each vehicle. He also talked up the imminent release of the R2, despite it not being scheduled for production until late 2026.

"We’re in a very interesting moment in time where there is a lack of choice of highly compelling EV products in that $45 to $55,000 price range", Scaringe said. Current Rivian R1T and R1S models both start at around USD $72,000.

VinFast Lost Major Money in '23

GENERAL NEWS

Vietnamese EV maker VinFast reported a net loss of more than $2bn in 2023 after missing sales targets, despite a 90 per cent increase in revenue.

In a filing submitted to the US Securities and Exchange Commission, VinFast said their total revenue in 2023 was $1.19bn, up 91 per cent compared to the previous year. But they also reported a net loss of $2.39bn, up 14.7 per cent compared to 2022.

In a statement, VinFast CFO Anh Nguyen said "We saw favourable results in our business operations in the fourth quarter with strong revenue growth and improved profit margins. We remain focussed on enhancing investment performance and strengthening our balance sheet by reducing production and materials costs".

A total of 34,855 VinFast EVs were delivered in 2023—well shy of VinFast's 50,000 target.

Plastic Omnium Post Record-High '23 Revenue

GENERAL NEWS

Plastic Omnium's 2023 annual report, just published, contains sunny numbers:

- Revenue at a record high of €11.4bn, with strong +20 per cent growth vs. 2022.
- Continuation of the strategic roadmap and a sharp improvement in lighting business profitability.
- Operating margin of €395m, that is +€31m, driven by more sustained activity levels in 2023 than 2022.
- Good cost control in an ongoing high-inflation environment and a marked improvement in the lighting business margin.
- Robust net result: group share of €163m and a proposed dividend of €0.39 per share, stable compared to 2022.
- Strong free cashflow generation of €227m, above the adjusted target of between €190m and €210m, including controlled investments of 4.7 per cent of revenue.
- Excellent commercial momentum reflected by a record order intake in 2023 and including in particular major order intakes in the first half of the year.
- A change in group segment reporting enabling the contribution of the group's different businesses to be better assessed through the Exterior Systems, Powertrain, and Modules segments.
- Continued rollout of the carbon neutrality roadmap with a 20-per-cent decrease in CO_2 emissions (scopes 1 & 2) compared to 2019 (baseline for our commitments), and the recognition, by CDP, of climate commitment with the grant of the highest "A" rating.

Outlook for 2024 has been also communicated :

- In a market expected to decline slightly in 2024 (estimated at -0.7 per cent by S&P), Plastic Omnium aim to outperform global automotive production and improve all their financial aggregates—operating margin, net result group share, free cash flow, and net debt—compared to 2023, with a controlled increase in investments.
- To support future growth, Plastic Omnium also aim to improve their cost structure to become more competitive by adapting its industrial capacities to changes in production and pooling its resources.
- To focus on the exterior-system business and especially lighting business. Exterior-systems revenue increased by 32.5 per cent compared to 2022, thanks to the robust performance of the Intelligent Exterior Systems division, which benefited from a recovery in production, fewer supply chain issues, and five more launches in 2023 than 2022. The lighting division reported a full year's revenue, which was stable in 2023 compared to 2022 pro forma figures.