



REPORT
THE WONDERFUL STORY OF LIGHTING
History, Current Technologies & New Challenges

Preview "Automotive Lighting Today" [CLICK HERE](#)

Editorial

DVN Munich Workshop: The Far Distant Past

Long ago in another life on another planet, late this past January we spent two wonderful and fruitful days dreaming and discussing on the future of lighting innovations—ADB for safety, high resolution/ μ LED systems, scanning or DMD systems, ADB with low cost, lighting modules, digital lights, new generation laser lights, lighting communication, dynamic lighting...all kinds of new systems and techniques enabling new functionalities. We were excited and busy preparing for huge innovations and developments, eagerly seeking resources to make it all real. The future of lighting was brilliant.

Now just 10 weeks on, we're in a very different reality. Now just about everyone in the industry, across all sectors, is more interested in how to survive (and maybe how to contribute to the war effort against the virus) than how best to realise lighting innovations. Millions of people are unemployed; millions more are underemployed. Q1-2020 just ended, and the coronavirus has turned the world upside down in this quarter. Many automakers and lighting suppliers have seen a precipitous dropoff in sales and revenues, and have withdrawn business guidance across the world, reporting their measures in response to the impacts brought by the pandemic.

The automotive industry is strong, and so is the lighting industry; they will rebound. But big sacrifices and big efforts will be needed. Let's think about how best to be ready for that.

This week there's a [new chapter](#), automotive lighting today, in our onrunning saga "The Wonderful Story of Lighting" and we've got an in-depth piece about an interesting Romanian company called Elba.

You will also discover, how an American automotive newscast used DVN information published last week in its newsletter.

Sincerely yours



DVN President

In Depth Lighting Technology

Elba: Romanian Popular-Market Tier-1

Elba are a tier-1 lighting supplier in Romania with main activities in the vehicle lighting sector, followed by general lighting, moulding, and electronics. With revenues around €60m—significantly lower than their main global or European competitors—what draws attention is their business model and approach towards the market, which differ significantly to those of the big-name makers.

CEO Bogdan Cocian says "While our competition is focusing on highly [expensive] R&D efforts to bring latest cutting-edge innovations initially in the high end models, our mission is to bring meaningful changes with high added value impacting security, comfort, and CO₂ reduction to the mass market, at an affordable price. Our main competencies reside in the design-to-cost and design-to-quality approaches, focusing on the car models in the entry and middle range segments".

Founded in 1921, Elba started as a lighting manufacturer for the industrial sector. In 1945 the company were nationalised. That lasted until the 1990s; after the 1989 Romanian Revolution Elba's workers bought the company, leading to today's shareholder model of being owned solely by current and former employees. Elba's entry in the vehicle lighting area was in the 1950s, and in the late 1960s they started the first high-volume series deliveries for the Dacia car manufactured in Romania under Renault licence.

In 2013, Elba went through an important transformation with the construction of their new manufacturing plant covering an area of more than 80,000 m² and built on an investment of €50m. Currently with an average of 1,100 employees, Elba's capabilities cover the entire production process from concept to manufacturing and testing, exceeding 10 million products sold globally each year.

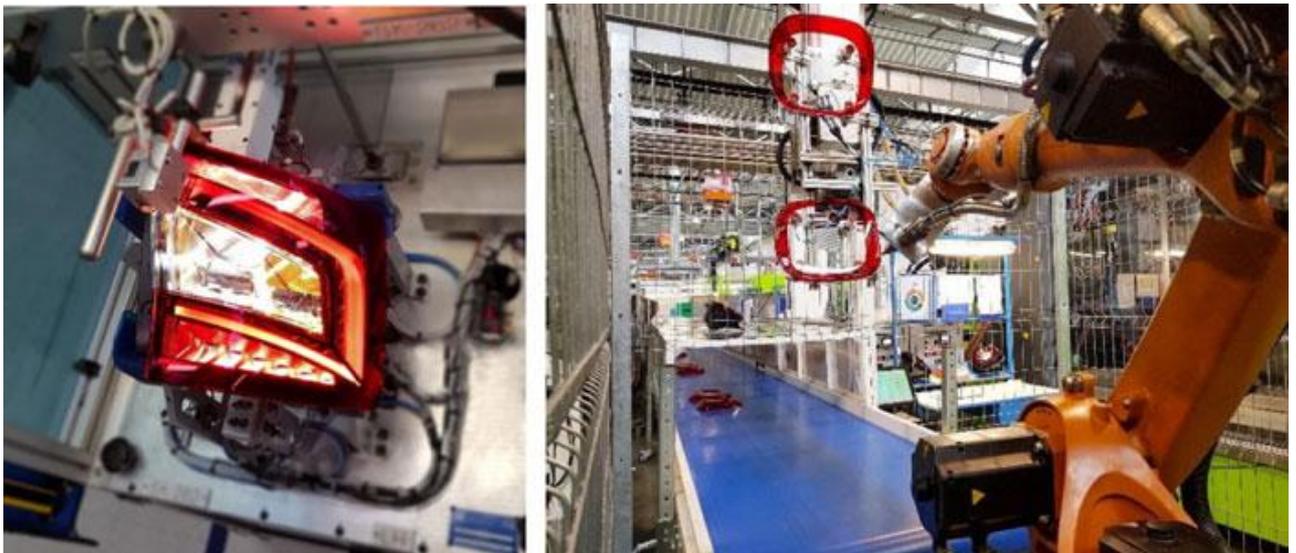


More than 60% of the company's revenue is generated as a tier-1 supplier in the vehicle lighting sector; Renault Nissan and VW Group are Elba's most important customers, mainly for the entry and middle-range car models of both groups. An [online video](#) presents a flashy show-and-tell of Elba's car lighting works.

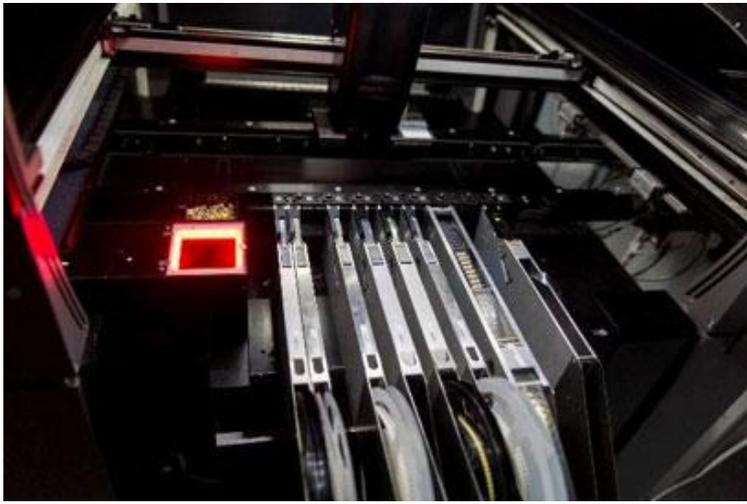


In the technical lighting area, Elba's portfolio includes highly efficient LED products for street, pedestrian, architectural, and office lighting, and they're recognised as a reference supplier for industrial and ATEX (explosive-atmosphere area) lighting.

To efficiently manage costs, Elba have their own tooling shop where the most critical injection and stamping moulds are made using automation processes developed in house. Automotive business director Nicolae Motateanu says "This activity is key to the efficiency and quality level of our industrial process—therefore, we consider it imperative to keep critical tools & process conception in-house". Both for internal needs and as well as a source of additional revenue, the company invested in specific laboratory capabilities for the vehicle lighting sector, from photometry to EMC and electromechanical capabilities allowing around 70% of necessary tests to be done in-house.



In the technical lighting sector, Elba just finished renewing all product range with the latest generation high efficiency LED technology, together with a weight reduction of their automotive products, to prune energy consumption and lower CO₂ emissions.



CEO Cocian says "LED technology is now affordable and has enabled a technological revolution in both technical and automotive lighting applications, with significant impact in energy reductions with net efficiency already converging towards 200 lm/w for several applications".

Another development direction in automotive lighting taken into account by the group involves the integration of interactive intelligent solutions meant to improve driver safety and comfort. Cocian's take: "While pixels, ADB and laser tech do not yet enter the EcoLED lighting budget of the entry-level segment, we strongly expect to achieve several significant steps in the next five years, as several technologies will reach mass market maturity".

Elba invest over €5m annually in technology, striving to provide the best-adapted products in the highest quality, with highly efficient manufacturing activities. The technical lighting industry has been developing very rapidly in recent years; here the LEDification process took place a bit earlier than in automotive; Elba decided to end production of all incandescent and fluorescent luminaires by 1 January 2020.

Interview with Elba CEO Bogdan Cocian

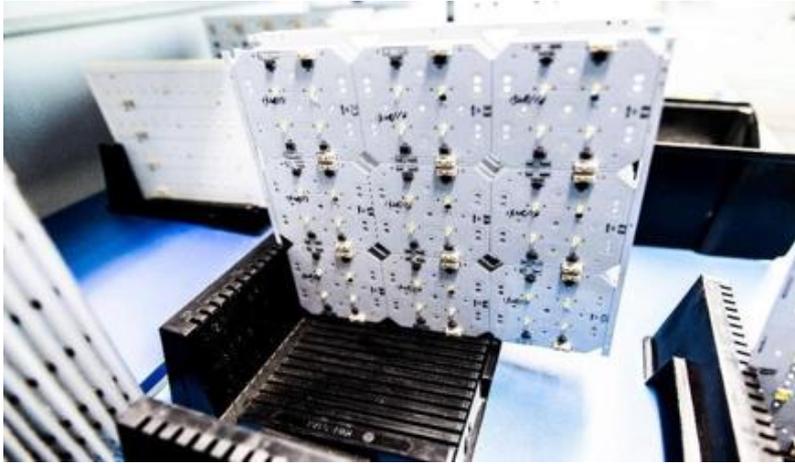


Bogdan Cocian studied engineering at the famous French "École Centrale de Paris". Returning to Romania after working in business strategy roles with clients across Europe, Asia, and South America, he joined Elba in 2012; in 2015 he became CEO.

DVN: What does it look like for a small company like Elba to innovate?

Bogdan Cocian: I strongly believe that innovation is synonymous with progress, so I am always looking for new solutions and effective approaches, That's why we devote all our efforts to transform the challenges in our business sector into profitable opportunities. We have to

innovate, especially when it comes to meeting directives relating to sustainability. Here, the organisation is concentrating on weight reduction of its automotive products and continuing what I call LEDification across the board.



Although not one of the big players in the global automotive lighting sector, we are thrilled to be Elba, a small but agile and fast-growing company with a different business model and a pragmatic vision towards delivering relevant solutions for the mass market segment.

DVN: What about LED developments?

B.C.: Modern LED technology has enabled a technological revolution in automotive lighting and our R&D team are continuously involved in the development of new headlights and rear lamps for mass production. Thus, based on our specific competencies for design-to-cost and design-to-quality, we bring meaningful innovation into the market at an affordable price.

DVN: and about software?

B.C.: Advancement of technology is another Elba focus, particularly in the realm of software development. The arrival of 5G will bring us a step closer in the connectivity area. We expect to have several solutions that require large amounts of data, from AR-based apps for an improved car-buying experience to improved driver experience, personalisation, predictive maintenance and so on. Although today's Elba has a clear production-based profile, this shift towards electronics and software-based solutions in our sector is a key element of our future development. For this reason, we are studying the opportunity to create either from scratch or through an external acquisition of a software business unit.

DVN: During the present difficulties, what is your situation at home, the situation of Elba, and the situation in your country?

B.C.: We've reduced the activity for the automotive sector to the development of new projects, while the demand from the car makers has been limited. However, this is also an opportunity to optimise the shop floor and do maintenance tasks that were hard to plan before summer. Our moulding and technical lighting activities are going as usual—the demand for antibacterial UV lighting for medical facilities has been very high since the beginning of March. For the moment in Romania, while we have fewer cases than other countries, the situation is similar to what we see in most EU countries: a state of emergency has been declared and people's movement is being limited. We are still able to go to work, buy food or medication, and make short walks around the house.

Testimonial

DVN asked Paul-Henri Matha, Volvo Cars' Exterior Lighting Technical Leader, to describe his relationship with Bogdan and Elba. Here's what he had to say:

"I was really pleased to work very closely with Elba during my time in Romania between 2012 and 2015 when I developed lighting parts for Dacia in the Renault Group. Bogdan has strongly transformed the Elba company with a lot of improvement (new plant, new machines, development of a complete R&D team). During this period, Elba developed by themselves their first rear lamp for the Dacia Duster and after that the Sandero and Logan models, and began new business with other OEMs. We were pleased to help them to grow and to increase their

skills. I am very pleased to see that Elba are still growing in 2020, and I wish them the best thing for the coming years"

Lighting News

DVN Article Presented in US Auto Newscast



Last week's Driving Vision Newsletter contained an [article](#) describing the new automatic-headlights mandate in Japan. We are happy to see that piece get picked up and narrated during the [8 April edition](#) of Autoline Daily, an American automotive newscast. The DVN page used as the Autoline reporter's source was clearly visible onscreen during the telecast.



At DVN, the primary main objective is to promote and facilitate people thinking about vehicle lighting. There's long been a culture of attention to car lights in parts of Europe and Asia, but historically much less so in North America. So it looks like we're having some effect, and we're surely glad of that.

As to the subject of the report, we've [described](#) in detail in 2017, our position on automatic lights: it's a very effective safety feature, and so easy and inexpensive to implement that we'd like to see it on all vehicles in all markets—including North America, where there's still no sign of any hope of progress toward joining the rest of the world in getting the safety benefits of ADB.

A VIP Support of Valeo Complex Shape Passed Away



his death,

Following the announcement of the death of Jacques Calvet, chairman of the Managing Board of PSA, I had in mind the several meetings with him about the integration of the *Complex Shape Reflector*, in the Citroen XM in 1989, and then the Peugeot 605 one year later. At the announcement

I remember the strong involvement of Jacques Calvet for the *Complex Shape Reflector* introduction in the two models, for already one reason: the compactness !

With his great support, the technology had a great success, equipping until now a huge number of models.

Jacques Calvet, a great visionary, managed the company from 1984 to 1997, making it a leading automobile manufacturer. I would like to pay a tribute to the memory of this great captain of industry who is leaving us..

Coronavirus Countermeasures at Lighting Companies



Q1-2020 just ended and the continuously spreading coronavirus has turned the world upside down in the first three months of 2020. Many companies across the world have reported their measures in response to the impacts brought by the epidemic:

Hella are in the final quarter of their fiscal 2019-20, but still decided to amend their business guidance. They anticipate demand declines in the global automotive industry which will lead to a drop in vehicle lighting, which will directly affect Hella's business. Magna decided to pull back their

business outlook for 2020, and Infineon withdrew their FY2020 outlook as well, with the expectation that business will be affected by the decline in the end markets.

Osram expect not to achieve their original business guidance for fiscal 2020; over half their sales come from the automotive market. Cree announces preliminary 3Q-2020 results and revised their business outlook. And Signify suspended their financial outlook for FY2020, increased prices three per cent, asked employees to take a 20 per cent pay cut.

Audi's High-Res Headlamps



Audi's DMD headlamps are based on a small chip containing a million micromirrors, each of which measures just a few tens of micrometres on an edge. With the help of electrostatic fields, each individual micromirror can be tilted up to 5,000 times per second. Depending on the setting, the LED light is either directed via the lenses onto the road or is absorbed within the headlamp, to mask out areas of the light beam.

In the Audi e-tron Sportback, the digital light performs multiple tasks. It can generate dynamic leaving and coming-home animations that appear as projections on a wall or on the ground. This presentation transforms the area in front of the car into a carefully illuminated stage. Not only does the digital light system deliver cornering, city, and highway lighting as versions of the low-beam light with exceptional precision, it also supplements the high beam by masking out other road users with even greater accuracy.

It also offers innovative functions such as lane light and orientation light. On freeways, the lane light creates a carpet of light that illuminates the driver's own lane brightly and adjusts dynamically when they change lane. This improves the driver's awareness of the relevant lane

and contributes to improved road safety. The orientation light uses darkened areas masked out from the light beam to predictively show the vehicle's position in the lane, thereby supporting—especially on narrow roads or in highway construction zones—the safe lane centre assist. The marking light function is also used in conjunction with the optional night vision assist. The light automatically draws attention to any pedestrians it detects, thereby reducing the danger of overlooking pedestrians in the immediate vicinity of the lane.

Genesis G80 Glitters With Lights, Brims With ADAS



The Genesis G80 luxury executive sedan has made its digital world premiere.

The car's ample width gives it an imposing presence, complemented by full LED quad headlamps designed to echo the Genesis emblem and understatedly elegant quad linear signal lights. Entering the marketplace last week in South Korea, and in the second half of the year in other markets, the G80's ADAS roster includes:

- Highway Driving Assist II, assisting the driver during lane change manoeuvres when the turn signal is used, among other capabilities;
- Smart Cruise Control with Machine Learning incorporates artificial intelligence within the ADAS to help the car independently learn the characteristics of the driver;
- Forward Collision Avoidance Assist helps bring the G80 to a stop automatically in certain situations where there is a risk of collision. It can detect potential collision risks where a pedestrian is sensed close to the vehicle;
- Blind Spot Collision Avoidance Assist actively monitors blind spots, reducing the chance of potential impact with moving vehicles and if a vehicle is in the driver's blind spot.

Osram Appoints New CFO



Osram have appointed Kathrin Dahnke as their new CFO starting 16 April. Dahnke replaces Ingo Bank, who will become CFO of AMS on 1 May.

Dahnke was appointed by Osram's Supervisory Board as CFO of the Management Board. She was most recently a member of the Management Board of the Neuss-based conglomerate Werhahn, involved in building materials, consumer goods, and financial services.

The supervisory board picked Dahnke to take on Osram's challenges as they are still working on integration with their new owner AMS.

Samsung, LG See Higher Profits in Q1-2020



Korean electronics giants LG and Samsung both revealed their preliminary earning guidance for the first quarter of 2020, and the spreading coronavirus pandemic did not seem to impact much on their

business.

LG Electronics reported tentative consolidated revenues of USD \$12.03bn and with an operating profit of \$800m for 1Q20. Compared to 1Q19, the sales were about 1% lower but the operating income increased by 21%.

Meanwhile, Samsung Electronics posted their 1Q20 earnings guidance with consolidated sales of \$45bn and a consolidated operating profit of \$5.25bn. In comparison with the same period last year, the sales grew by 5% and operational profit increased by 2.7%.

Both companies announced they are cutting LCD production to focus on OLED and Micro LED display technology. LG will end domestic LCD production, while Samsung will terminate all LCD production by the end of this year. Despite both makers' stable and increased business for the first quarter in 2020, they've both closed many facilities and their business in the coming quarters might still be affected by the expected market decline due to COVID-19 pandemic.

Driver Assistance News

Aptiv, Hyundai Form JV



Hyundai Motor Group and Aptiv have formed a 50/50 autonomous driving joint venture to make mobility safer, greener, more connected, and more accessible.

Headquartered in Boston with technology centres across the USA and Asia, the coöperative venture will use Hyundai's design, engineering and manufacturing expertise with Aptiv's autonomous driving solutions to commercialise a platform for robotaxi providers, fleet operators, and automotive manufacturers.

Robosense Lidar Helps Fight Virus Spread in China

In the middle of the coronavirus outbreak, there is a shortage of frontline staff and a high risk of cross infection caused by people's close interactions.



To reduce the high risk of human interaction, RoboSense have coöperated with nearly 20 partners including Neolix, Gaussian, Alibaba's Cainiao Robotics, Unity Drive Innovation, Zhen

Robotics, and others on unmanned vehicles and robots to deliver goods and to carry out cleaning and disinfection tasks around the clock, non-stop. Example applications already in service are showcased in a frenetic [video](#) posted online.

More than 20 hospitals including Beijing Union Medical College Hospital, Shanghai Children's Hospital, and Shanghai Public Health Service Centre are using Gaussian autonomous robots to clean and disinfect. They have also been used in Singapore, and have been included in Singapore's "productivity improvement subsidy" national project.

In order to assist medical personnel in treatment and prevention, Candela deployed millions of medical disinfection and distribution robots to the emergency specialty field hospital built in response to the coronavirus pandemic

Gosuncn's patrol robot has an epidemic prevention and control mode, through human body infrared temperature measurement and screening, mask-wearing intelligent identification, remote speaking intercom, remote command dispatching, historical information backtracking, and other functions to address front-line security needs. It has been used in most of the streets, airports and train stations in China.

RoboSense Lidar's technology provides these robots with perception ability that outperforms human eyes. In the future, as the autonomous robot has showcased a huge rising demand in the society, RoboSense aim to use their embedded AI perception algorithms which generate real-

time semantic-level structural environmental information for the autonomous robots to make decisions faster and more precise.

Reducing driver distraction with vehicle activated signs



When drivers are distracted, they can miss what is right in front of them. But a kind of opposite is also true: intense focus on one thing makes people more likely to miss other things around them, no matter how obvious. The famous [invisible gorilla](#) study on the matter, the crux of which can be [seen online](#), starkly illustrated this.

So how can hyperfocused drivers be made aware of what they need to know? Illuminated signs along the road that help to warn or educate drivers of the road ahead have been proven to help drivers pay

attention to the road and increase their observation, as a study by the IMOB Transportation Research Institute in Belgium found.

Too many signs and line markings have also been noted to be more harmful and distract the driver even further, as a study by The Road Safety Observatory highlights. In this study, vehicle-activated signs (VAS) were proven to be more effective in making drivers aware of what they need to know, compared to a clutter of static signs drivers tend to ignore.

In the study, it showed that VAS have been successfully used in making drivers aware of their speed or of a possible hazard. It outlines how trials of VAS to manage speeds for the U.K.'s Department for Transport has seen speeds reduce by 22 km/h on rural roads, and by 11 km/h at bends or junctions.

Road Safety Award For Valeo



Valeo have received the 2020 Road Safety Innovation Award in the "Preventing the consequences of an accident" category, for their Valeo Rescuer™ product. As from 2018, all new vehicle platforms approved for sale in Europe must be fitted with an integrated automatic eCall (emergency call) system that instantly connects the vehicle with emergency services in the event of an accident.

Valeo invented Valeo Rescuer, the first eCall system to comply with European standards, applicable for vehicles already on the road. The product

- automatically and autonomously detects accidents, thanks to its accelerometer and gyroscope;
- geolocates the vehicle, thanks to its GPS;
- transmits key data to identify and locate the vehicle, via its GSM card;
- puts the driver (or a person on board) in contact with a 24/7 support platform, by voice and in their own language (using an integrated microphone and speaker), and

- calls out an emergency response team in under 95 seconds if necessary.

Every second counts when vehicles are involved in accidents, and reducing the emergency response time is vital. The challenge is therefore to offer essential security assistance to as many people as possible in the simplest way. Valeo Rescuer is very user-friendly. By simply plugging it into the vehicle's 12V socket, a user can activate their subscription to a support service through a dedicated Valeo mobile application. It will come on sale within a few months.

General News

Renault, Nissan Strategy on Track Despite Corona Crisis



Renault and their alliance partner Nissan have the resources to weather the coronavirus crisis and will roll out strategic plans as scheduled in mid-May, the automakers' top executives are saying.

Renault Chairman Jean-Dominique Senard and Nissan CEO Makoto Uchida said the three-year strategic plans for the automakers and alliance member Mitsubishi were needed to restore investors' confidence.

Renault and Nissan have seen their sales fall and profit evaporate in the 18 months since the November 2018 arrest of Carlos Ghosn, who had led the alliance as chairman and was also serving as chairman and CEO at Renault.

Since the beginning of the year, Renault's share price has fallen by 58% while Nissan's has fallen by 46%. The two automakers, which have also been forced to temporarily close a large part of their production sites, are considering shutting down activities and products that have little chance of becoming profitable.

Nissan might close factories in Spain, and the Renault brand could withdraw from the Chinese market where Nissan is relatively strong.

Economist Predicts Auto-Sales Recession



New and used auto sales are headed for a recession in 2020, thanks to stay-home orders aimed at stopping the spread of COVID-19. Cox Automotive's chief economist Jonathan Smoke predicts U.S. sales of new light vehicles are headed for fewer than 12 million units in 2020, down from 17.1 million in 2019. That's assuming stay-home orders begin to lift by around May and auto sales start to recover in the second half.

The question at this point is how long the recession lasts. "It all depends on the virus," Smoke says. Zo

Rahim, Cox's manager of economic and industry insights, says retail sales in the last week of March were down 67% compared with a year earlier. The second quarter, Smoke says, will be even worse—"most likely historic."

In that same scenario, U.S. used-vehicle sales, including dealer and private sales, are headed for fewer than 30 million in 2020, down from around 40 million in 2019, Smoke says. To put that in context, U.S. auto sales bottomed out in the Great Recession at 10.4 million, the lowest per-capita sales since World War II. Deliveries in 2010 were 11.6 million; in 2011, 12.8 million. Meanwhile, for the month of March, the Manheim Used Vehicle Value Index was 141.9, or 4.4% higher than March 2019, the company says during the webinar. However, Manheim reports the usual seasonal "spring bounce" in used-vehicle values was cut short this year by a few weeks.