

May 17, 2018
Ichikoh Industries, Ltd.

**Ichikoh Industries will exhibit new lighting solutions
for automatic driving, “HD Lighting prototype”
at AUTOMOTIVE ENGINEERING EXPOSITION 2018 YOKOHAMA**

Ichikoh Industries LTD. will exhibit its latest technology of lighting and electronic mirror, a technology for the new era of automatic driving, at AUTOMOTIVE ENGINEERING EXPOSITION 2018 YOKOHAMA to be held at Pacific Yokohama from May 23 to 25, 2018.

The booth is No.357.

Ichikoh will exhibit and make lighting demonstration of the feasible technology “**HD lighting unit**” prototype for the first time, thanks to high luminance lighting sources and electronic devices. HD Lighting is a technology that by using electronic devices, lightings can be controlled by pixels.

Low beam provides assistance to drivers showing navigation information, lane guide assistance and speed display by projecting signs, pictograms, numbers on the surface of the road, and improve safety of pedestrians by writing signs to alert the pedestrians rushing out in front of cars when the vehicle is approaching and by writing give way signs. The technology that replaces current communications of eye contacts and gestures between drivers and pedestrians with road writing expressions will also contribute to the automatic driving society of the future.

High beam also prevents glare to drivers of oncoming cars and cars in front while maintaining the quantity of light by having high-definition lighting patterns. It can also localize pedestrians while providing anti-glare on pedestrians by avoiding lights on their upper body.



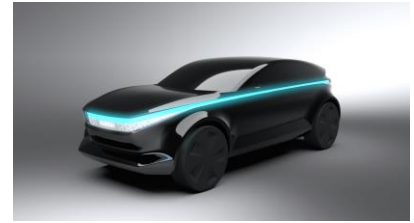
Glare free high beam



Road-crossing assistance

We will exhibit “Communication Lighting”, a system that instead of the driver, automatically communicates the intention of the car during automatic by using lightings.

In automatic driving, the driver does not communicate by eye contacts and gestures. Communication Lighting is a system that, during automatic driving, communicates the movements (intention) of the car automatically to other drivers and pedestrians that are around the car instead of the driver by using lightings and signs.



Auto pilot mode

The anxiety of drivers and pedestrians around a vehicle of automatic driving can be relieved by this system, it also improves safety by communication lamps installed around the car that alerts dangerous situations. This is an original concept focusing on the automatic driving society coming in the near future and proposes new roles of lightings (HMI: "Human Machine Interface", lighting for means/device to interface information between human and machines).

In order to meet the standards of ADS (Automated Driving System) under preparation in Europe/North America, the color blue green was adopted as lighting color notifying automatic drive in operation.

Camera Monitor System” replaces the conventional rear view mirrors and door mirrors.



Class3 CMS image

Camera monitor system replacing rear view mirrors (class 1) can always provide a wide rear view without influence of seats, headrests, passengers, luggage etc. At nightfall, it can maintain a bright visibility by the automatic light sensitivity adjustment, and improve visibility during rainy conditions, because instead of looking to mirrors through raindrops, it shows images directly captured by cameras. The new model to be exhibited this time has function of liquid crystal shutter that switches into mirror mode/monitor mode, and has also automatic anti-glare function that automatically reduces the glare when the head light of the vehicle behind flashes into the mirror.

Camera monitor system replacing door mirrors (class 3) enables aerodynamic performance, improves direct visibility and design performance by downsizing of cameras. It can provide driving assistance to drivers by image analysis that detects surrounding situation (cars etc.), and when necessary it alerts the driver that is going to change lanes, and also it changes the angle of view according to the driving condition.

Hybrid types which is combined with conventional mirrors and cameras aimed at regions that laws are not revised (China etc.) will also be exhibited.

Each type is equipped with camera cleaning system.

“3D surround multi view” for aftermarket will be exhibited.

3D surround high-resolution images captured by four cameras of 1 million pixels are real-time synthesized on the three-dimension model and displayed in the monitor.

It also supports safety driving by automatically changing the view when turning right or left/parking by a system interlocked with turn signal/back gear. Also, the visibility can be secured by a 190° wide angle camera that switches to front view at poor visibility intersections.

It is compatible with not only trucks but also special vehicles /construction machines.



Real-time high quality 360°
seamless image

(Reference)

About Ichikoh Industries:

Since its establishment in 1903, as a manufacturer specialized in car lamps and mirrors, Ichikoh Industries has delivered products to major car maker in Japan and overseas. The company equipped the first-generation Datsun headlamp (Nissan) in 1932, and has actively developed its own products: the Japan's first projector headlamp, the world's first power mirror, the mercury-free HID headlamp and the LED. In 2000, the Company started the alliance with Valeo, and became an affiliate of Valeo Group in 2017. By making the best use of the alliance, the company is enhancing joint development of new products such as electronic mirrors and self-driving, joint procurement by merit of scale and cost reduction by joint research and development, acquire additional global share by active sales activities, expand customer base and have a mutual geographical complementary relationship.

Also, a new plant on Atsugi city of Kanagawa is under construction which the start of operation is expected to be on July 2019. In the new plant, productions of Isehara will be transferred during the next 5 years, lean manufacturing system and industrial concepts created by Valeo will be adopted for the efficiency of production that leads to business growth mainly in headlamps.

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