

CES 2025 - Automotive

Mihai Pascutiu

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Several models of Autonomous vehicles

HOLON

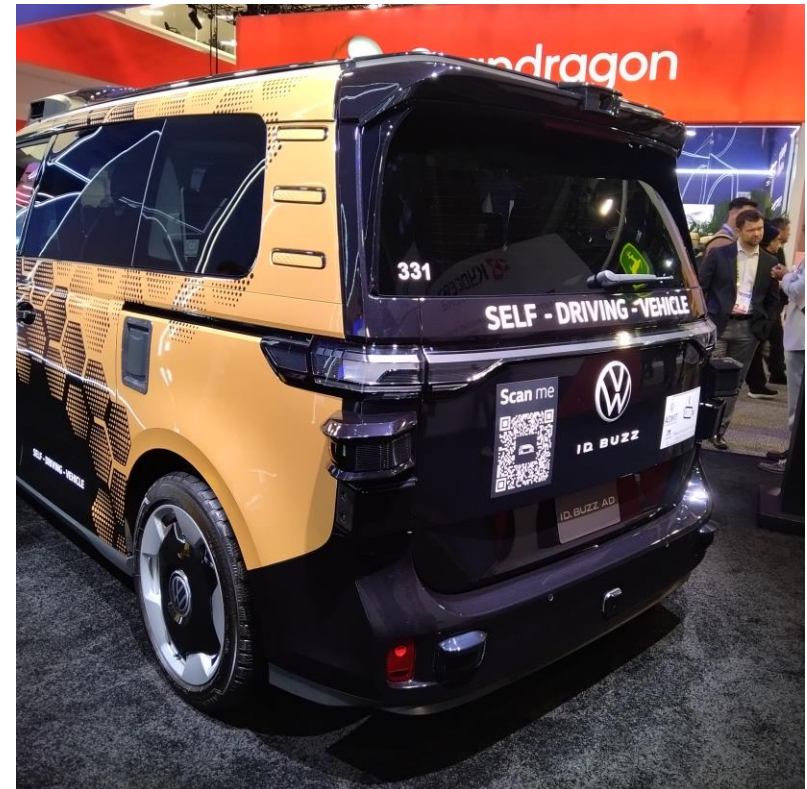
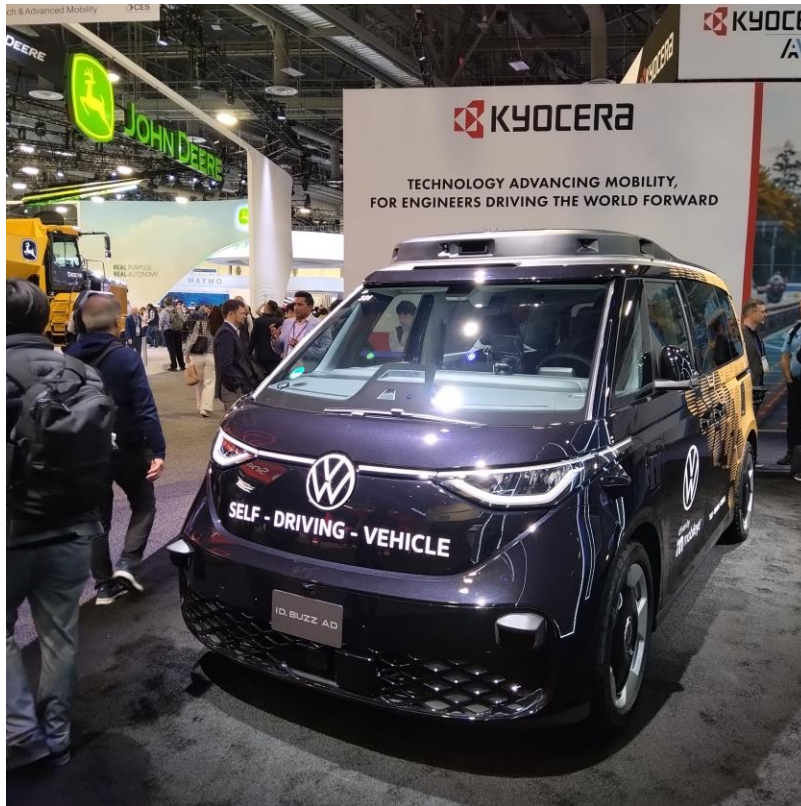
- Holon, ZOOX
- Opportunities in IR LED applications in Cameras and LiDAR



Several models of Autonomous vehicles



- Opportunities in IR LED applications in Cameras and LiDAR



Several models of Autonomous vehicles

- Waymo
- Opportunities in IR LED applications in Cameras and LiDAR



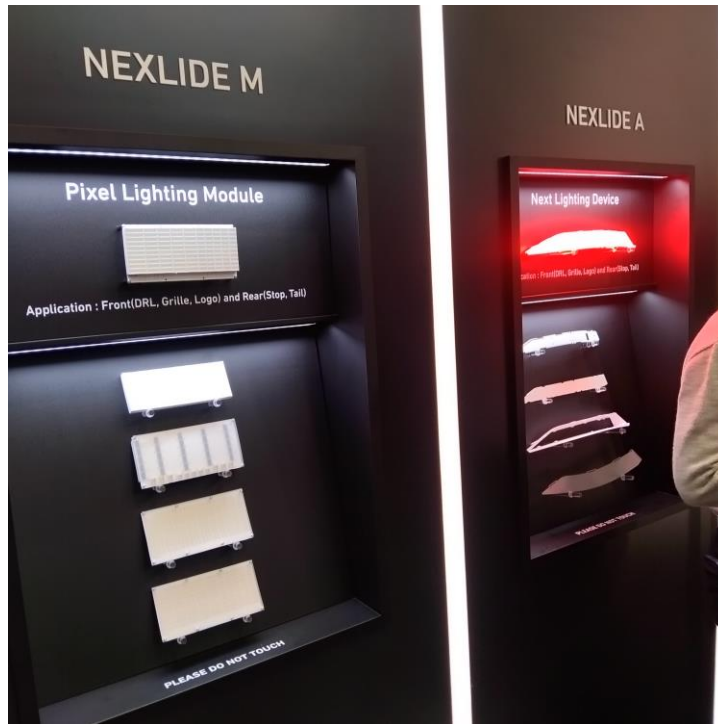
Honda

- Honda had two concept Evs on display
- Target SOP 2028
- Autonomy functions to be included



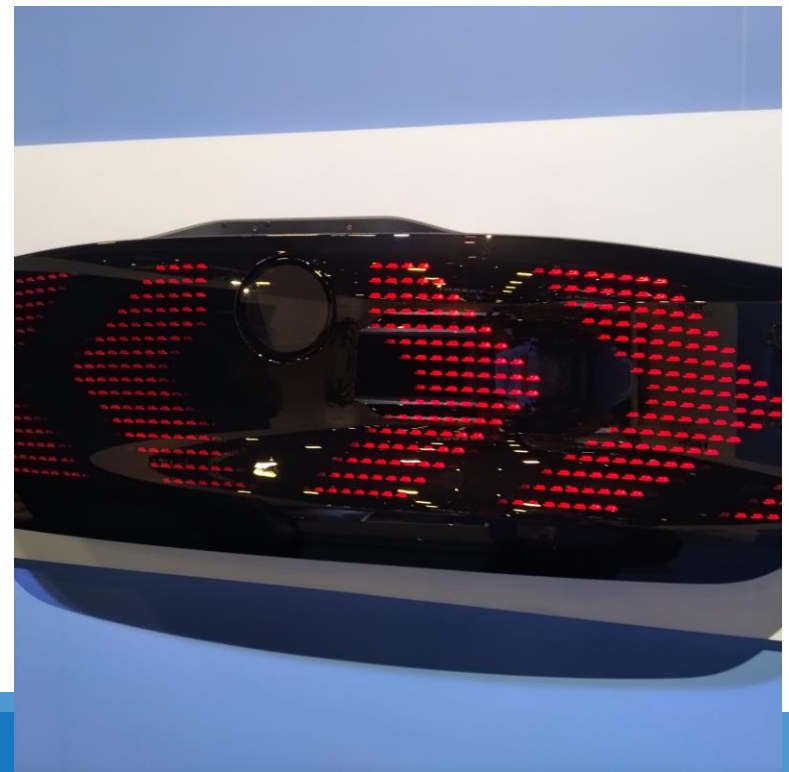
LG Innotek

- Nexslide and LG Camera solutions for AVs



OP Mobility

- Discussions with Dr. Rosenauer, L Meister and Z Hu
- Strong interest in our CSP Mini LEDs, will f-up with a presentation
- Full vehicle rear mock-up with Everlight mini RED CSP LEDs on display, showcasing animation for different functions



OP Mobility

- Rivian Headlamps, featuring also Everlight LEDs on DRL function
- Also ADB, front DRL/Turn Light pipe indicator and RGB Grille displays on booth

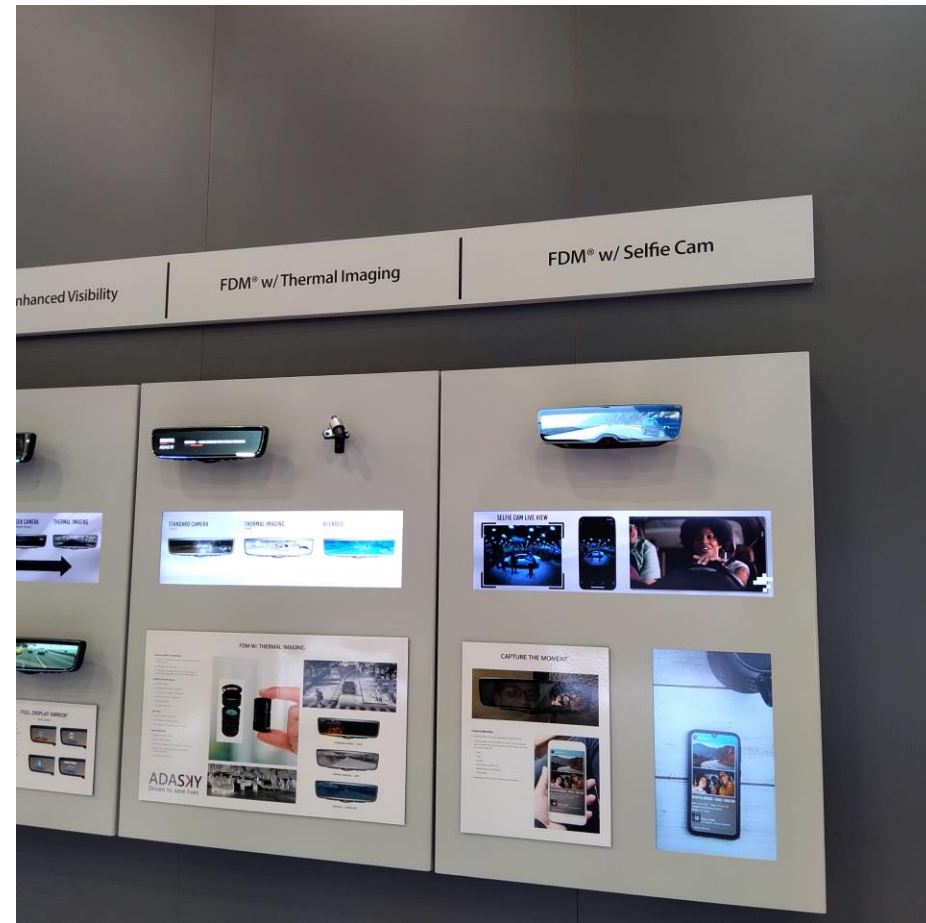


Gentex

GENTEX
CORPORATION

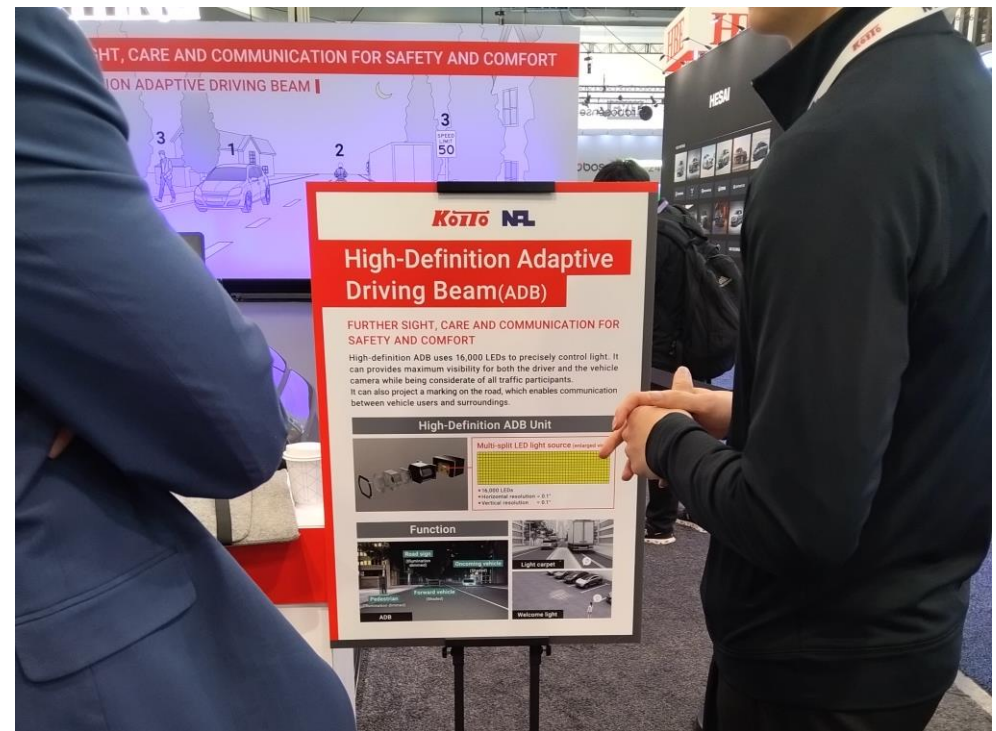
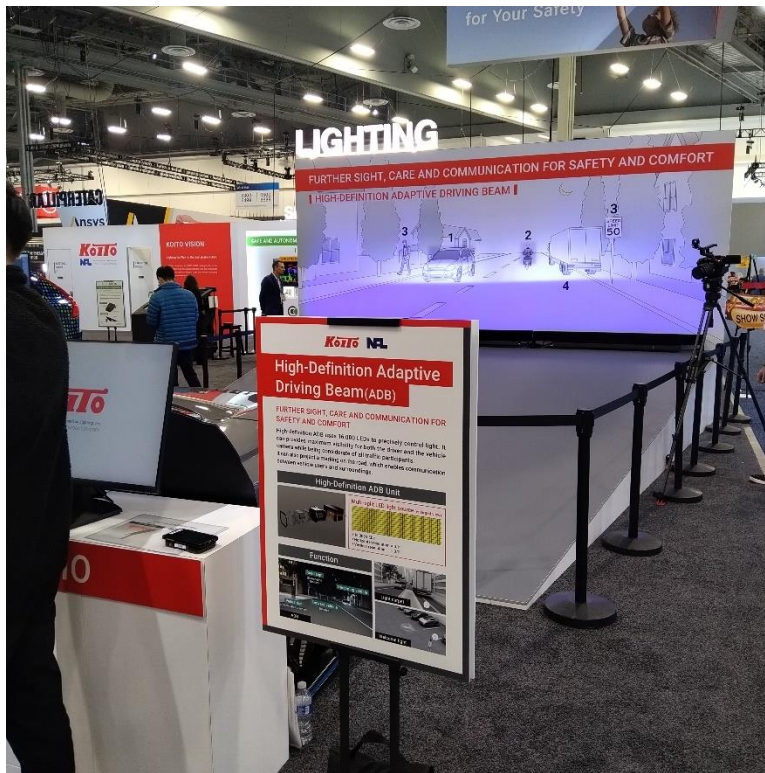
- Wide range of Cameras and Display mirrors – Internal and External
- Opportunities for TFT, IR LEDs and Ambient Light Sensors
- Discussion with Dir of Engineering for a f-up meeting





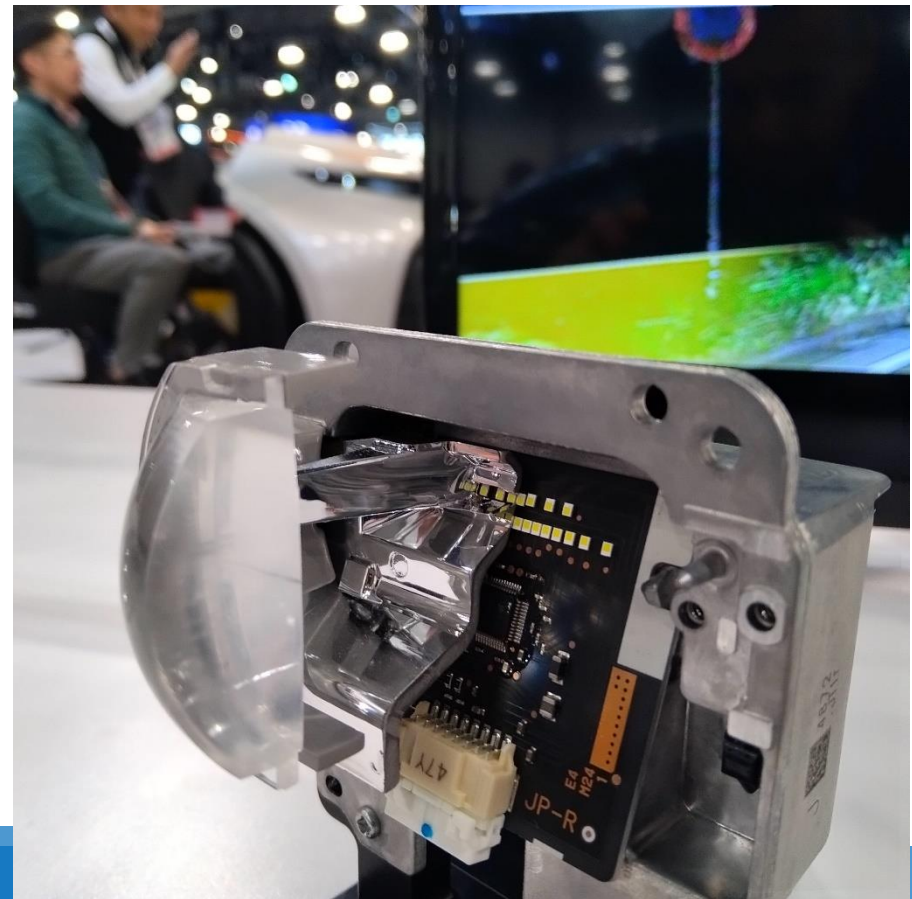
NAL - Koito

- NAL booth was exclusively focused on forward lighting and LiDAR applications
- ADB functions were showcased on two full-size setups: 18 Lit segments and 16k lit segments (Nichia device)



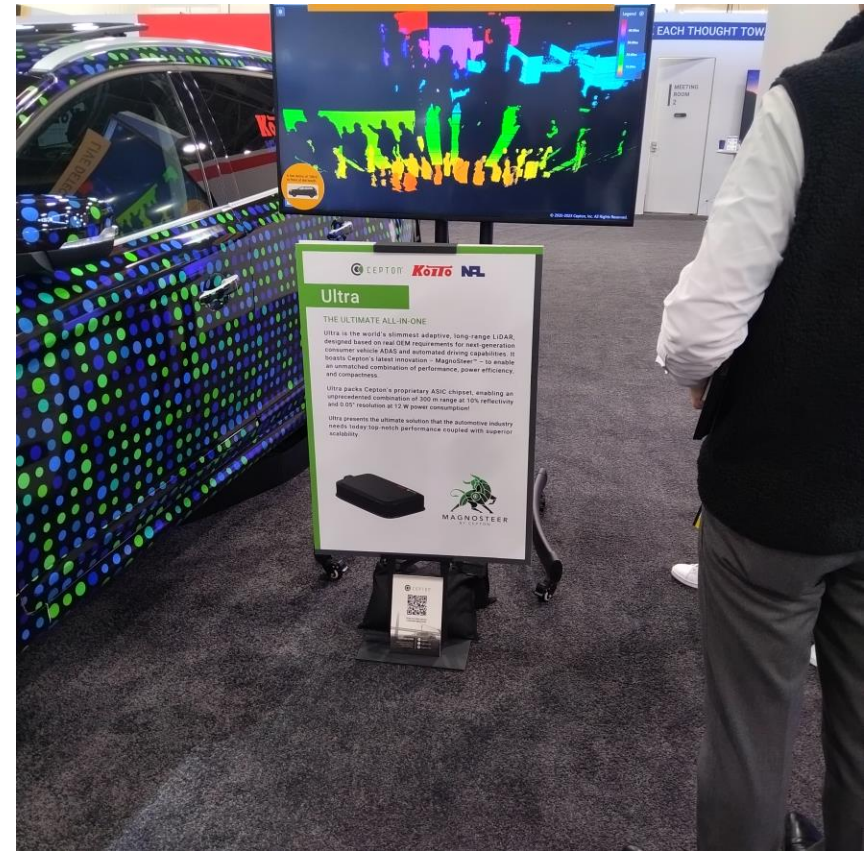
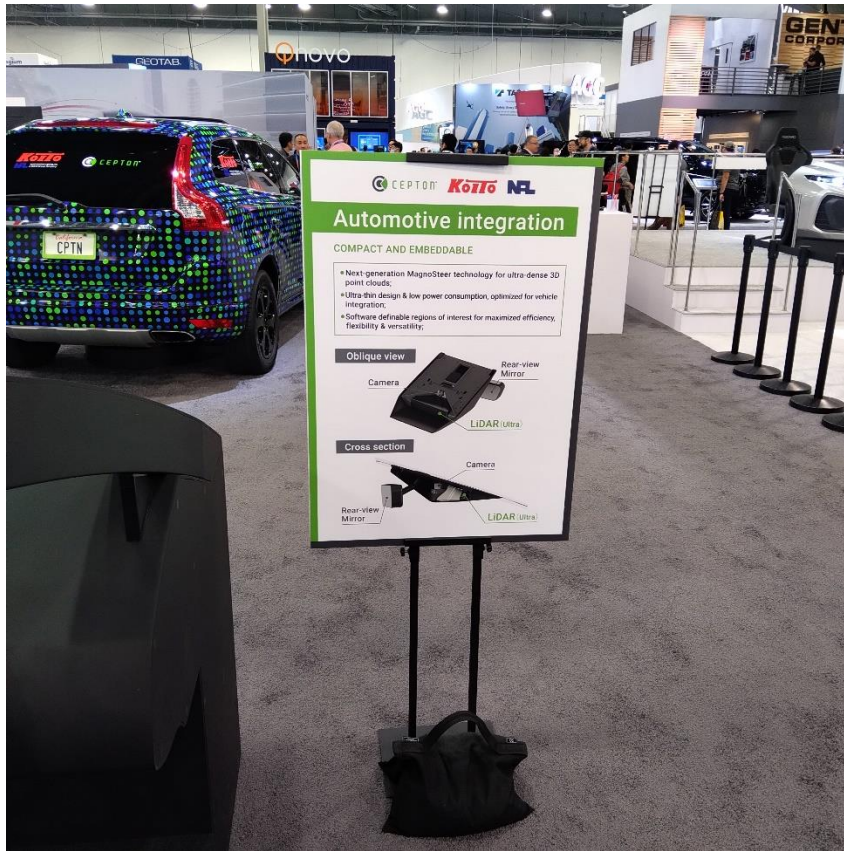
NAL - Koito

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NAL - Koito

- NAL recently acquired California based LiDAR company Cepton
- They had vehicle mocked-up with LiDAR units



Magna



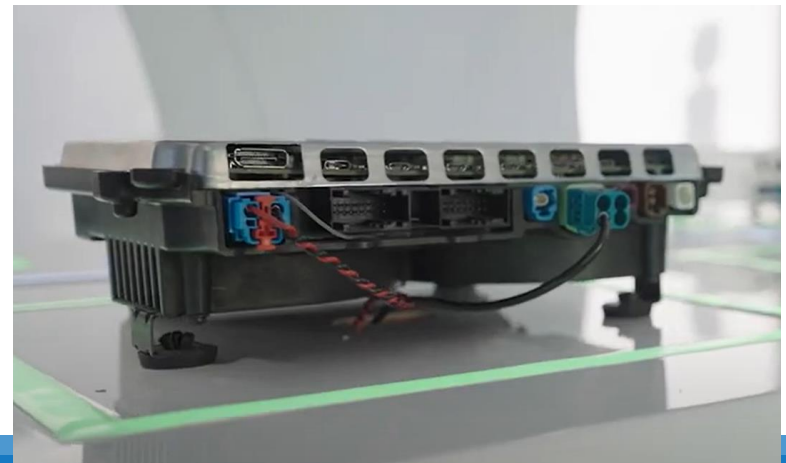
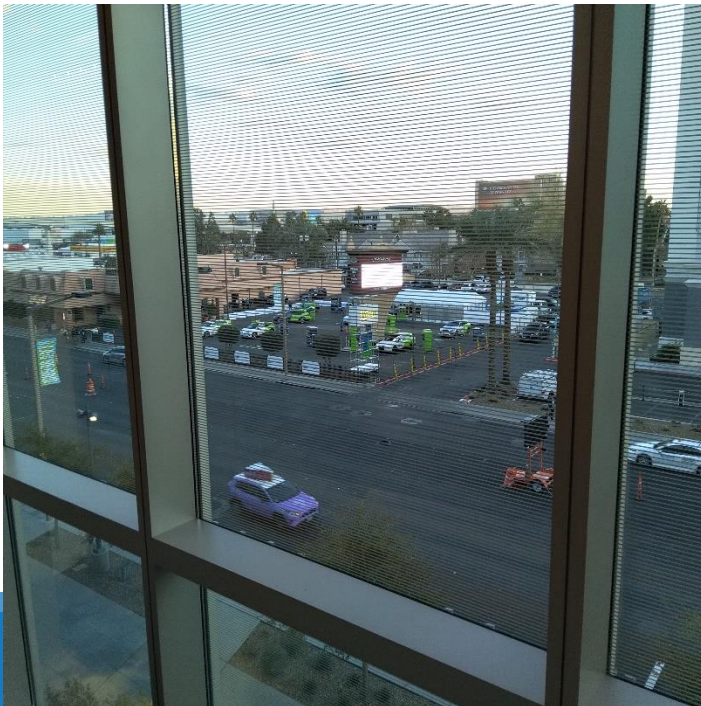
- Magna booth was bare bones, with no displays at all
- Mainly a meeting place for inviting their customers



Valeo



- Valeo had two off-site booth setup in parking lots.
- “Software defined vehicle” , LiDAR and “Electrification” were main themes
- Test track at booth was used to display autonomy features and LiDAR, with a L3 (level 3) autonomy demo vehicle



Valeo



- Rear lighting with OLED
- Front grille integrating 224 RGB LEDs for Welcoming and EV charging functions
- Valeo Thinbilite - 2 ultra-thin (15mm x 200), dual-function, adaptive headlamps (ADB)



- Augmented Panovision = Pillar to Pillar next gen displays



ERLIGHT

Scout (VW's EV subsidiary)

- New SUV and Truck on display, SOP 2027

Scout



Scout (VW's EV subsidiary)

Scout

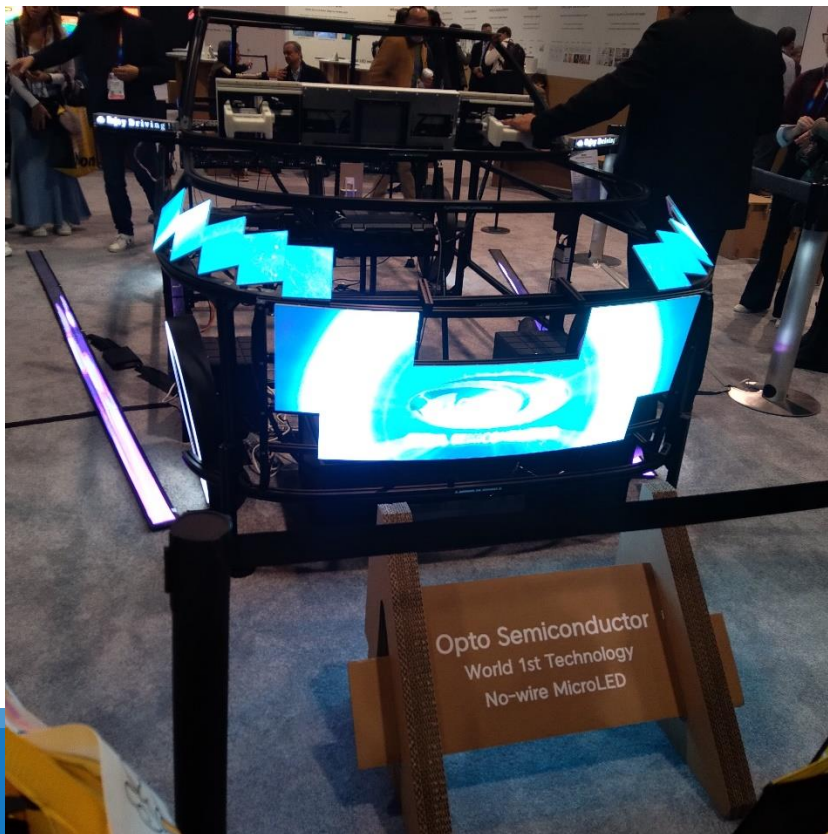
- New SUV and Truck on display, SOP 2027



SSC LEDs



- Very large booth
- Noted were new 1515 type LEDs
- Large panel stressing SSC IP legacy and how they protect it in courts
- Several micro LED displays, impressive performance
- World first “no-wire” micro LEDs



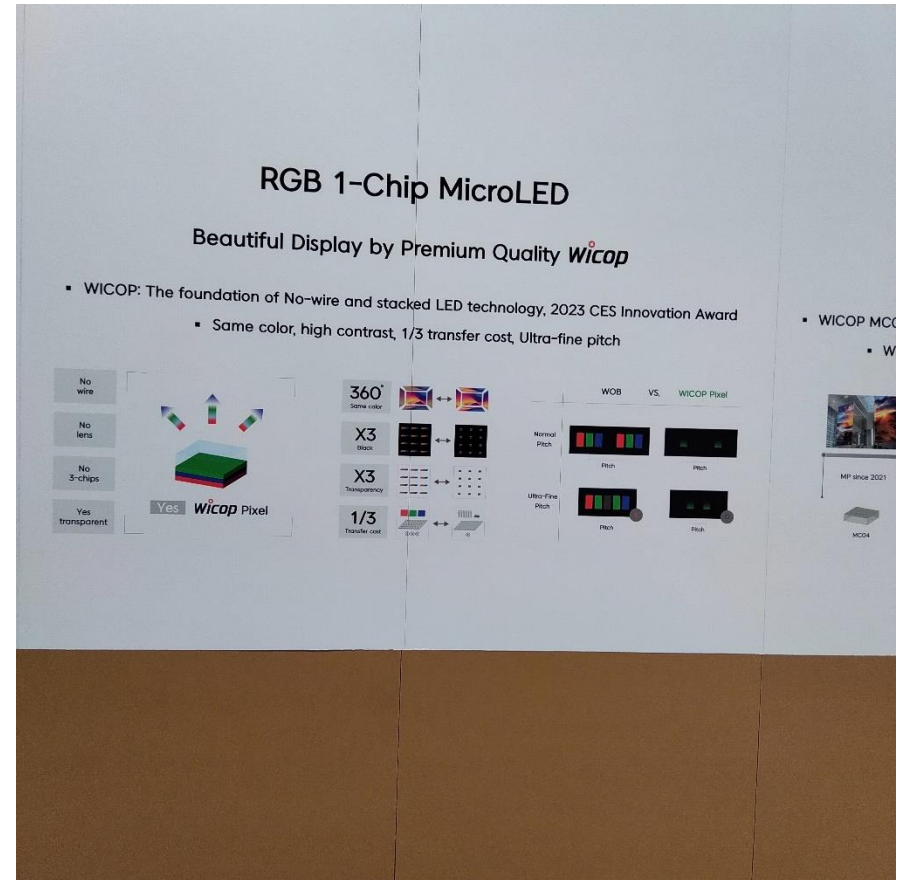
AI 3D Automobile Display Front Interaction MicroLED Display		
Brightness	6,000	nits
Pixel	MC02	-
Pitch	0.625	mm
Module Resolution	180 x 240	-
Number of Module	34	pcs

AI Curved Automobile Display Back Interaction MicroLED Display		
Brightness	6,000	nits
Pixel	MC02	-
Pitch	0.625	mm
Module Resolution	180 x 240	-
Number of Module	12	pcs

AI Transformable Automobile Display Welcome → Driving → Self Driving Mode		
Brightness	2,000	nits
Pixel	MC02	-
Pitch	0.625	mm
Module Resolution	180 x 240	-
Number of Module	8, 12, 16	pcs

SEOUL SEMICONDUCTOR
SEOUL VIOSYS

SSC LEDs



SSC LEDs



Wicop
Ultra High Luminance / GV80 HL

- 75% Reduction in heat sink mass
- Slim design light solution under 10 mm

Product Specification (Low Beam)		
Number of LEDs (10W)	6	ea
Luminour Flux	890	lm
Forward Current (Typ)	1.5	A
Forward Voltage (Typ)	6.6	V
Thermal Resistance	1.2	K/W

Product Specification (High Beam)		
Number of LEDs (5W)	6	ea
Luminour Flux	425	lm
Forward Current (Typ)	1.5	A
Forward Voltage (Typ)	3.3	V
Thermal Resistance	2.8	K/W

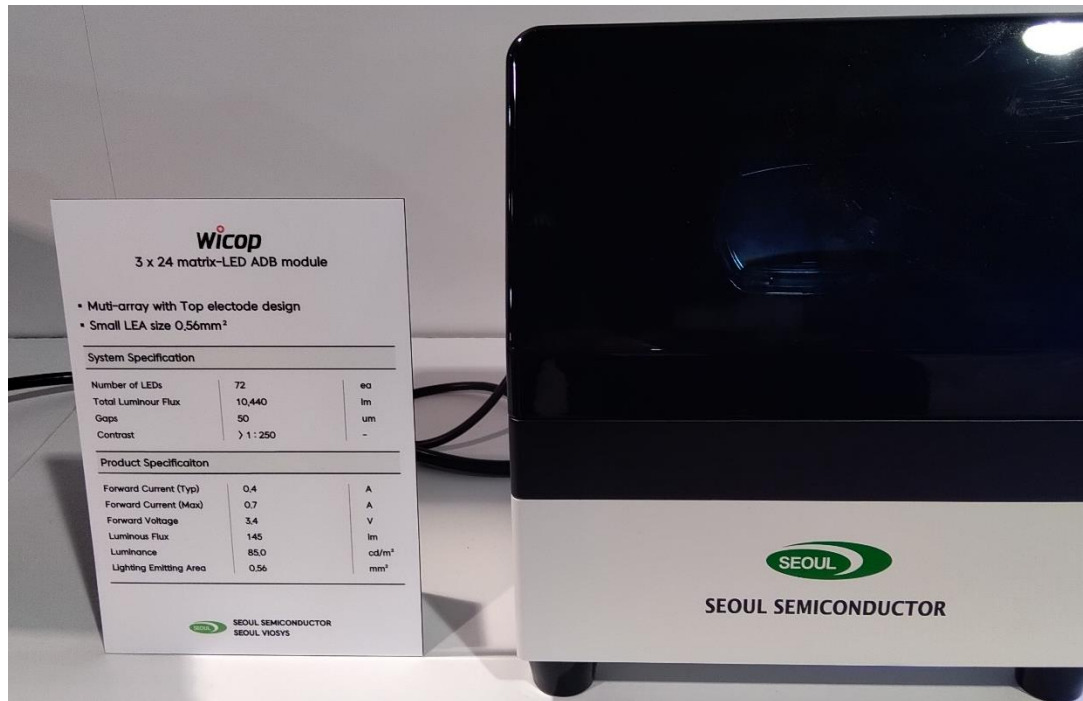
SEOUL SEMICONDUCTOR
SEOUL VIOSYS

Wicop
White LED Module / Front Lighting

- Slim animated line display
- Thin 25mm Front display, 6x5 LDM with Pitch 0.8mm

System Specification		
LED Chip	300 x 220	um
PCB Size	25.6 x 25.6	mm
PCBA Q'ty / cabinet	6 x 5	ea
Resolution / PCBA	32 x 32 (1,024)	-
Resolution / cabinet	960 x 32 (30,720)	-
Pitch	0.8	mm
Brightness @ 14mA	8,000	nit
Power / LDM	0.8	W
Power / cabinet	34	W

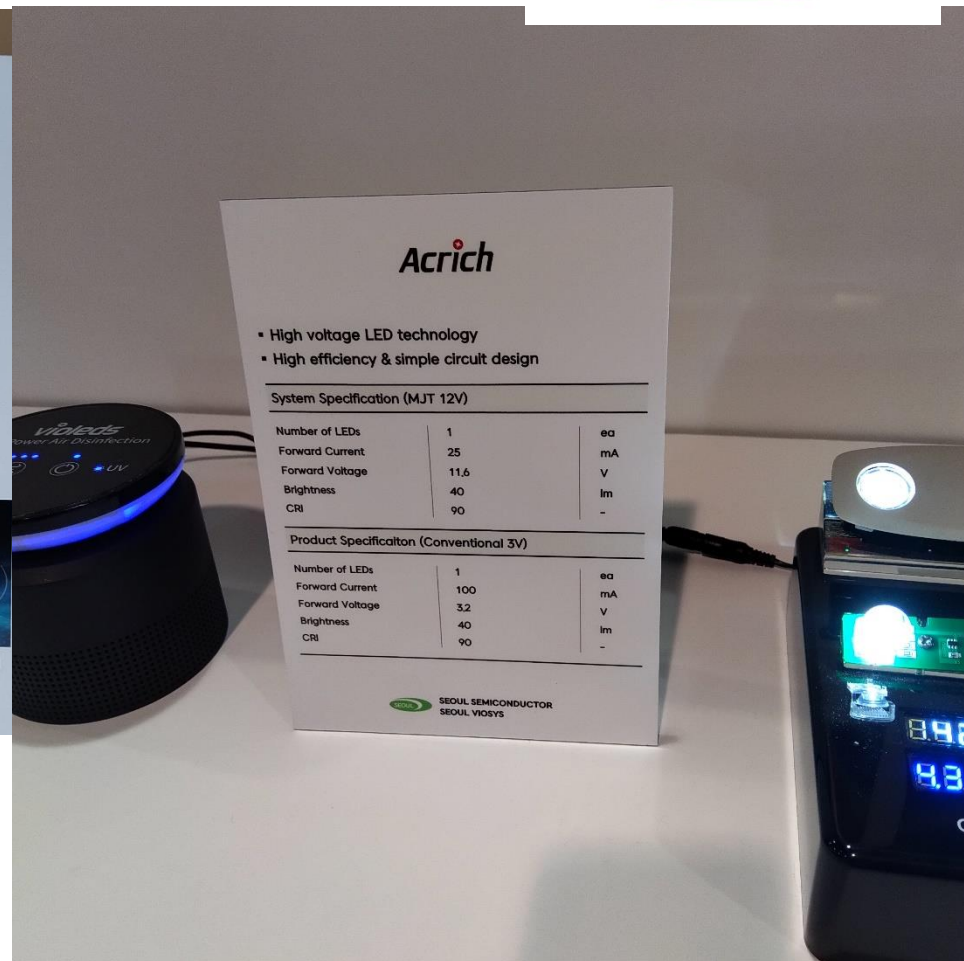
SSC LEDs



Total Solution Provider

Every Wavelength - Every Application

- The only company that can supply to vehicles from 200nm to 1,400nm
- From EPI to module, vertically integrated and stable in-house production



violeds
UV-C LED / Air Disinfecter


- Over 90% one pass air disinfection
- The permanent system without filters

System Specification

Number of LEDs	16	ea
Peak Wavelength	275	nm
Driving Current	3	A
Radiant Power	385	mW
Power Consumption	15	W

Product Specification

Forward Current (Typ)	100	mA
Forward Current (Max)	150	mA
Forward Voltage	6.0	V
Radiant Flux	24.0	mW
Peak Wavelength	275	nm
Thermal Resistance	8.0	K/W

 SEOUL SEMICONDUCTOR
SEOUL VIOSYS

violeds
UV-C LED / Console Box


- 99% disinfection within 1 second
- AEC-Q102 qualified

System Specification

Number of LEDs	4	ea
Driving Current	0.1	A
Radiant Power	64	mW
Power Consumption	2.4	W

Product Specification

Forward Current (Typ)	0.03	A
Forward Current (Max)	0.1	A
Forward Voltage	6.1	V
Radiant Power	5.5	mW
Peak Wavelength	275	nm

 SEOUL SEMICONDUCTOR
SEOUL VIOSYS

SSC LEDs



1515
Automotive Interior Display

- QD less with High color gamut
- Cost effective by reducing LED quantity

System Specification		
Display size	323 x 182	mm
Pitch	x - 8 / y - 8	mm
Optical Distance	3	mm
LED array	42 x 24	-
Number of Zones	1,008	ea
Number of Drivers	8	ea
Power Consumption	19	W

Product Specification		
Forward Current (Typ)	20.0	mA
Forward Voltage	5.8	V
Luminous Flux	11	lm

SEOUL SEMICONDUCTOR
SEOUL VOSYS



Wicop mini
Automotive Interior Display

- 0.3mm optical distance with WICOP mini
- High resolution by local dimming

System Specification		
Display size	323 x 182	mm
Pitch	x - 8 / y - 8	mm
Optical Distance	3	mm
LED array	42 x 24	-
Number of Zones	1,008	ea
Number of Drivers	8	ea
Power Consumption	19	W

Product Specification		
Chip size	400 x 200 x 100	um
Forward Voltage	5.4 - 5.8	V
Chip Power	0.4 - 1.2	mW

SEOUL SEMICONDUCTOR
SEOUL VOSYS

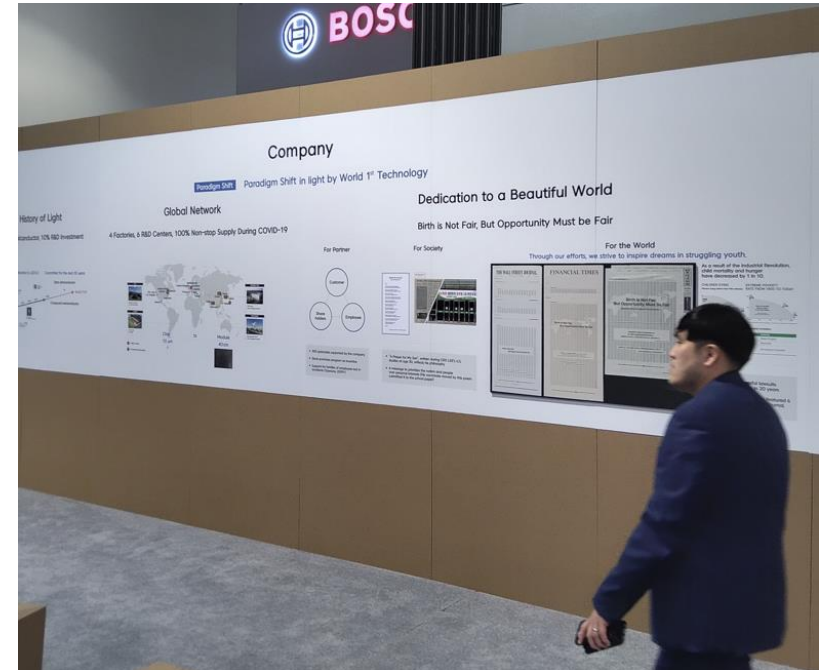
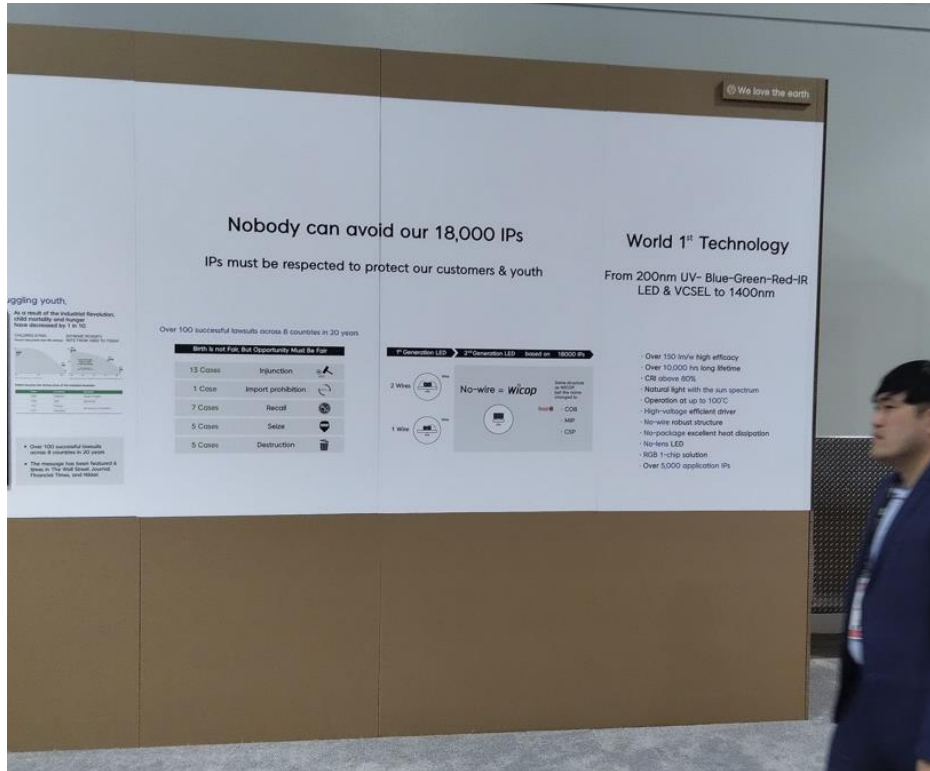




SSC LEDs



- Large panel stressing SSC IP legacy and how they protect it in courts !



Ams Osram

- ams OSRAM's OSIRE® E3731i LED and Stand-Alone Intelligent Driver (SAID) use OSP license-free protocol to connect color LEDs, sensors and microcontrollers.
- EVIYOS HD 25 source - designed for automotive high-resolution dynamic forward lighting Adaptive Driving Beam (ADB) headlights EVIYOS HD 25 features 25,600 pixels that are automatically driven by a dedicated ASIC, allowing the projection of high-resolution images and alerts on the road, as well as personalized messages.



AUO (+BHTC)



- AUO is collaborating with Sony Honda Mobility to showcase world's first Micro LED Media Bar Solution
- features a High contrast, brightness, resolution, and ultra-wide viewing angle, showing charging status and vehicle details as displaying personalized content



CES 2025

- Aptera full-solar vehicle demo drives around CES



Conclusions

- AM market still moving forward on Autonomous driving and AVs
- This means upcoming opportunities in Car-to-Pedestrian communications, exterior mounted displays using Mini and Micro LEDs
- AVs employ various types of Cameras, meaning AM grade IR LEDs will see increased demand
- Larger displays represent increased demand in TFT LEDs

Thank You for Your Attention!