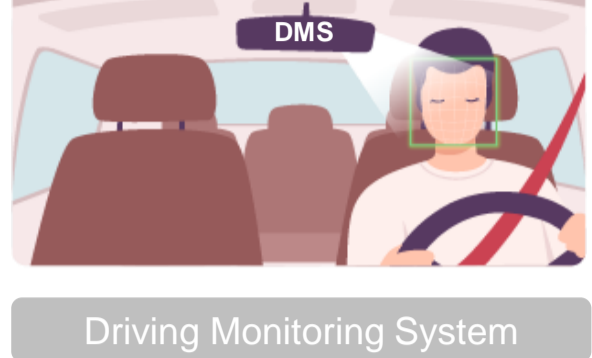


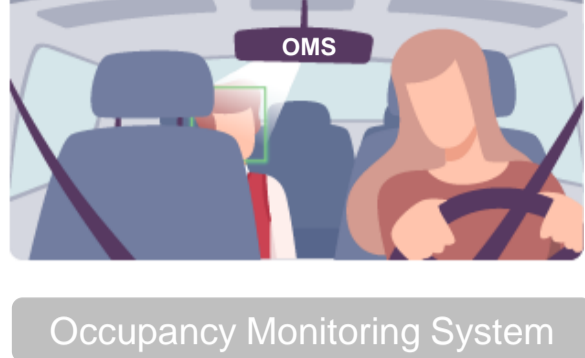


Automotive Sensing

With the increase in global traffic, safety concerns are receiving more attention, leading automotive manufacturers to continuously upgrade safety features, with vehicle sensing playing a crucial role. LED/VCSEL technology, utilizing efficient light sources and flexible control systems, enables precise distance and position sensing, supporting autonomous driving technology and smart traffic systems. Ennostar is committed to developing optoelectronics technology to enhance driving safety, facial recognition and efficiency. Our product range includes driver monitoring system, gesture control, and ranging LiDAR, making vehicle operation more intuitive and convenient, thereby enhancing driving environment safety.



Driving Monitoring System



Occupancy Monitoring System



Gesture Control



Facial Recognition



Short Range LiDAR

Infrared Component for Driving Monitoring System



IR LED	Wavelength (nm)	940
	FoV (D)	50 / 80
	Optical Power (W)	1.5

IR VCSEL	Wavelength (nm)	940
	FoV (deg.)	60x45 / 72x58
	Optical Power (W)	3.4

Market Trends & Growth Potential in Products/Technology

Governments worldwide are mandating the implementation of safety systems in vehicles within specified timelines, thereby accelerating the widespread adoption of DMS.

Ennostar's Highlights

- Utilizing high-sensitive infrared sensor technology with light sources 5~10% brighter than the industry standard, it identifies and tracks the driver's position, posture, and eye movements, offering more efficient and safer solutions for intelligent automotive applications.
- The rectangular illumination provides seamless coverage, with customizable and optimized optical designs tailored to different vehicle types, cabins, and driver scenarios.
- The exposure infrared light source with 1/3 red glow minimizes visual distractions for drivers, effectively enhancing their focus and alertness on the road, thereby improving driving safety.

Competitor	Ennostar	
non-zonal dimming	zonal dimming	
on-axial	off-axial	
circle beam	rectangle beam	
significant red glow	low red glow	

Ennostar is with you in every step

Products	Epitaxial Wafer	Chip	Package	Module
2D TOF	●	●	●	●
3D			●	●

Gesture Control



IR LED	Wavelength (nm)	940
	FoV (D)	50 / 80
	Optical Power (W)	1.5

IR VCSEL	Wavelength (nm)	940
	FoV (D)	110x85
	Optical Power (W)	3.2 / 6.9

Market Trends & Growth Potential in Products/Technology

Gesture recognition technology for automotive, as an emerging trend in automotive industry, is gradually becoming a prominent market. This technology utilizes IR light sources such as LED and VCSEL to enable interaction between drivers and passengers inside the vehicle and the vehicle system through gestures.

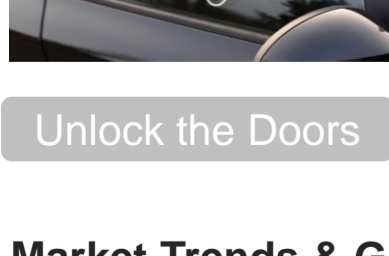
Ennostar's Highlights

- High-precision ToF technology, using infrared light sources, accurately identifies the gestures of the driver, allowing interaction with the vehicle through gestures, thereby enhancing the convenience and safety of the driving experience.
- Ennostar's infrared LED and VCSEL boast industry-leading brightness and responsiveness.
- The low red glow of the exposure infrared light source minimizes visual distractions for drivers, effectively enhancing their focus and alertness on the road, thereby improving driving safety.

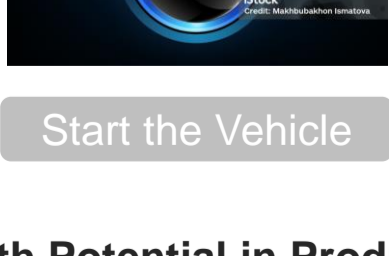
Ennostar is with you in every step

Products	Epitaxial Wafer	Chip	Package	Module
LED	●	●	●	●
VCSEL			●	●

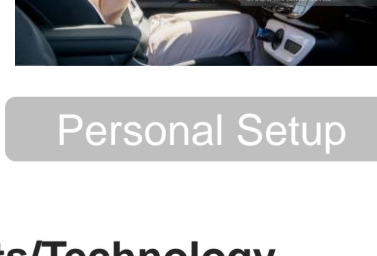
Facial Recognition



Unlock the Doors



Start the Vehicle



Personal Setup

Market Trends & Growth Potential in Products/Technology

Most mid-range and above vehicles on the market now come equipped with keyless entry, allowing owners to unlock the doors without removing the key. This feature has further evolved into facial recognition for identity verification. In addition to unlocking the doors and starting the vehicle, it can also automatically adjust seat positions and steering wheel height according to the owner's preferences. By employing Ennostar's high-level optical technology and reliable VCSEL performance, the system achieves ultra-high recognition accuracy and contour depth information, making it the preferred partner for Face ID technology.

Ennostar is with you in every step

IR VCSEL	Wavelength (nm)	940
	FoV (D)	60x45 / 72x58
	Optical Power (W)	3W

Products	Epitaxial Wafer	Chip	Package	Module
LED	●	●	●	●
VCSEL			●	●