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Overview of LiDAR and other Photonics Technologies related to Applications in the Automotive Market

Winfried Reeb

Head of Business Unit Active Components
LASER COMPONENTS Germany GmbH

40 YEARS

beyond borders

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Worldwide

! Good to know!

All production facilities are ISO 9001 certified.

! Good to know!

Laser Components Germany GmbH is ISO 9001 and EN ISO 13485 certified.

Production Facilities

Germany

Laser Components Germany GmbH
Werner-von-Siemens-Str. 15
82140 Olching / Germany

Production facility for

Optical Coatings, Precision Optics, Fiber Optics, Photon Counters, Laser Modules, Detector Modules Electronics

USA

Laser Components Detector Group, Inc.
2277 N Nevada Street
Chandler, AZ 85225
USA

Production facility for

Avalanche Photodiodes
IR Detectors
IR Emitters
PbS/PbSe Detectors
Pyroelectric Detectors

Canada

Laser Components Canada, Inc.
195 Joseph Carrier J7V 5V5
Vaudreul-Dorian, Quebec
Canada

Production facility for

Pulsed Laser Diodes

Sales Offices

Germany

Laser Components Germany GmbH
Werner-von-Siemens-Str. 15
82140 Olching / Germany

Great Britain

Laser Components (UK), Ltd.
Goldlay House 114 Parkway
Chelmsford Essex CM2 7PR
United Kingdom

Nordic Countries

Laser Components Nordic AB
Skårs led 3
41263 Göteborg
Sweden

France

Laser Components S.A.S.
45 Bis Route des Gardes
92190 Meudon
France

USA

Laser Components USA, Inc.
116 South River Road
Bedford, NH 03110
USA

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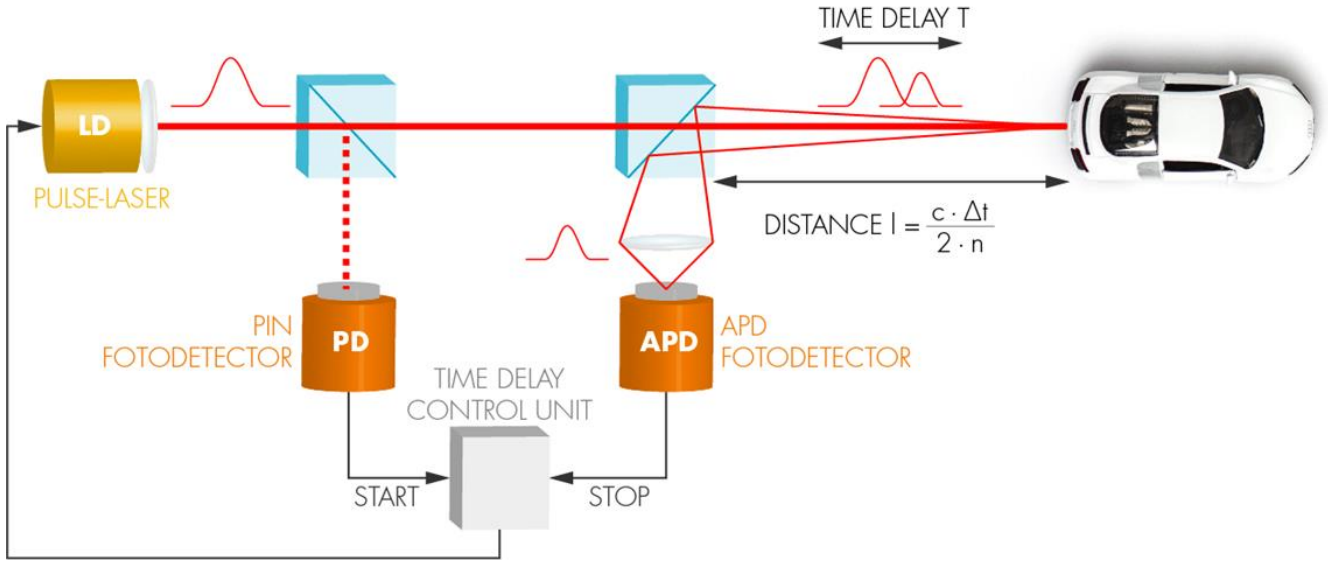
Measurement Principle TOF – Time of Flight



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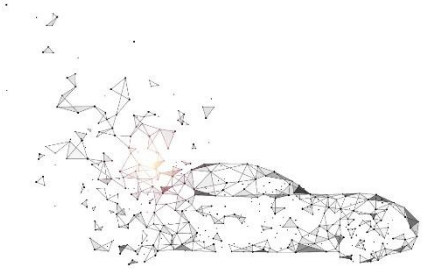
Application: Automotive Outside the Car

Speed Control

- 850 nm or 905 nm PLDs, Si-APDs
- Laser Jammer
  - 905 nm PLDs, Si-PINs

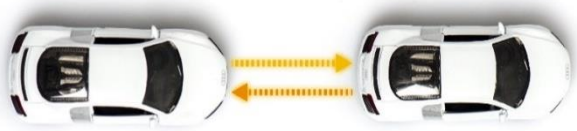


Traffic Monitoring

- 850 nm or 905 nm PLDs, Si-APDs, cameras

ACC - Adaptive Cruise Control

- 905 nm PLDs, PINs, Si-APD, Si-PM



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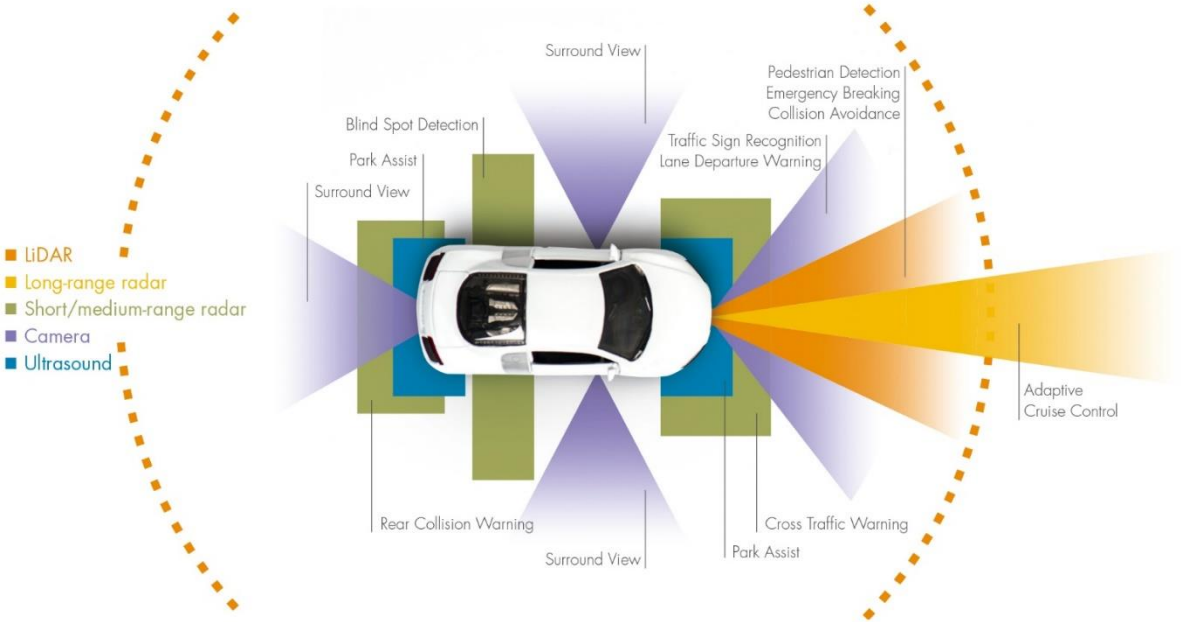
Market Segment Automotive / LiDAR

Types of Environmental Sensors



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Application: 3D Automotive Laser Scanner

3D Laser Scanner

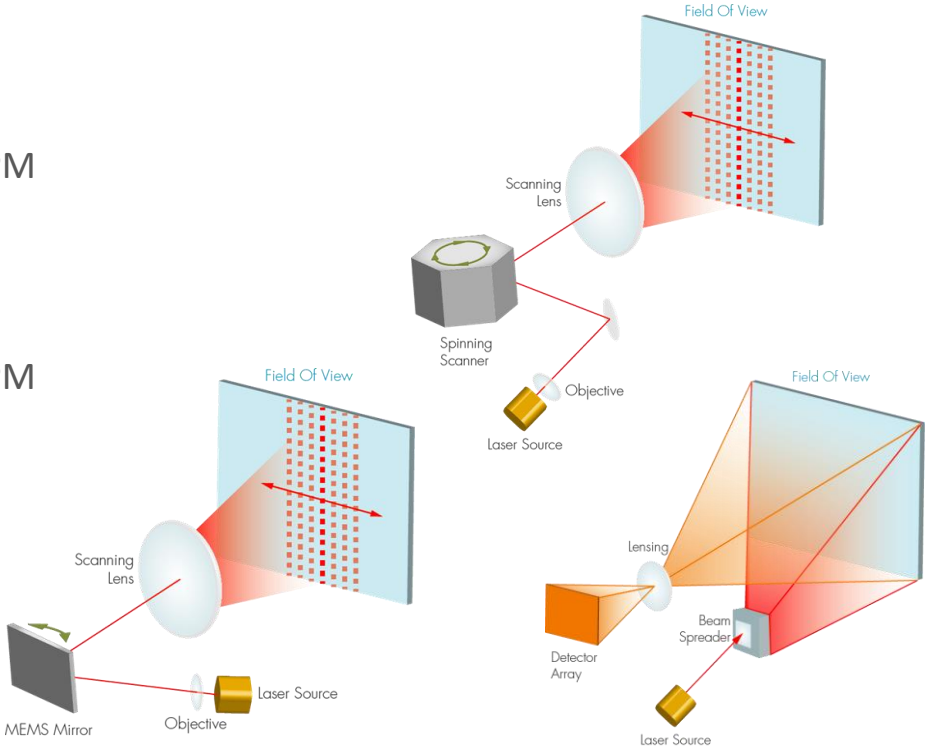
- 905 nm PLDs (Arrays), QS-PLD (QuickSwitch), Si-APDs (Arrays), Si-PM

Solid State 3D Laser Scanner

- 905 nm PLDs (Arrays), QS-PLD (QuickSwitch), Si-APDs (Arrays), Si-PM

Flash LiDAR

- VCSELs, HPLD, SPADs, HD-SiPM



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Application: Automotive in the Car

Head-up Display

- High-power single-mode laser diode, red, green, blue, or 3 color laser

Anti-Fatigue Driving Detection System

- IR laser diode, VCSEL, DOE, drowsiness detector

Laser Headlight

- High power laser diode

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Application: Automotive in the Car

Air Quality Monitoring System

- PM2.5 sensor, red laser diode, Si-PIN photodiode

Laser Indicator

- Visible laser diode modules

Rolls Royce Star Roof

- Fiber optic lights

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SUMMARY

Overview of LiDAR and other photonics technologies related to applications in the automotive market

- Photonics plays an important role in the automotive market and mobilty in general.
- For safety and health applications inside and outside the car.
- LiDAR sensors are important for safety reasons and autonomous driving.

LASER COMPONENTS®

Your Contact

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Thank you for your attention!

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