

Automatic Headlamp Leveling

LuMEMS

Characteristics:

This new AML LuMEMS, provides the true pitch angle of the vehicle, can be integrated into virtually any type of vehicles, and offers improved performance with lower weight. These performance features make this technology the preferred solutions for automatic leveling and improve safety and comfort for the driver.



Applications:



Automatic
Headlamp
Leveling

LuMEMS Automatic Headlamp Leveling

Specifications:

| Performance | |
|---|------------------------------|
| Temperature range of operation | -40 to 85°C |
| Current consumption | 85mA |
| Weight | 35g |
| Pitch angle range | -8 to +12° |
| Pitch angle mode | Static and dynamic |
| Durability | 15 years vehicle life |
| Typical operation | Continuous pitch information |
| Electrical connection | |
| Input voltage range / nominal | 9 to 16V |
| Output | LIN |
| Connection | tbd |
| Mating connector | tbd |
| Calibration mode | LIN |
| Reverse polarity | -14V |
| Design features (see drawing for details) | |
| Fixation | 3 brackets with screws |
| Dimensions | 82 x 65 x 21 mm |
| Protection | IP40 |

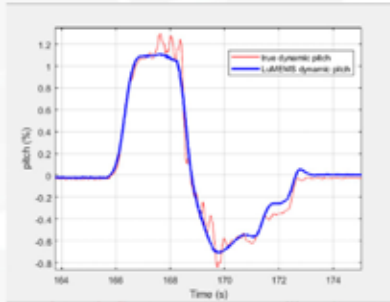
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AML has developed the digital sensing for automatic leveling of headlights.

For decades, OEMs and Tiers have relied on the chassis sensors. These cannot detect all influencing factors and are exposed to harsh environmental conditions due to their external fitting on the vehicle. The chassis sensors with their long wiring and protection devices are additional weight and inhibit a weight-optimized vehicle development.

With LuMEMS AML offers a digital and therefore very small and light solution to measure the pitch angle of the vehicle independent of the road position.

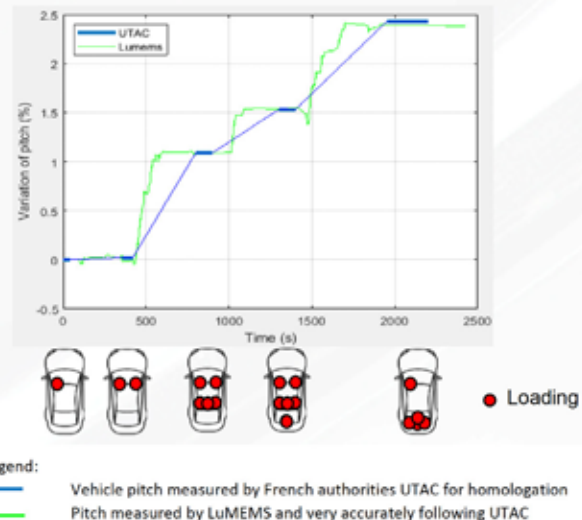


Static as well as dynamic headlamp leveling is possible with a very high accuracy. With LuMEMS a significant weight reduction with positive influence on CO2 emissions is achieved.

The real-time pitch angle of the vehicle additionally provides more safety through best illumination and reduced glare of oncoming traffic.

True pitch angle measurement

This technology is based on MEMS sensors and a micro-controller. In a stationary state LuMEMS measures and calculates load variation. During the motion phase, a specific algorithm calculates the pitch of the vehicle relative to the road. LuMEMS preferred installation location is the vehicles cabin. LuMEMS allows to adjust headlamps in accordance with ECE R48.



Compare the benefits of this new AML LuMEMS to the limits inherent in chassis sensors:

- Weight reduction up to 1kg
- Higher accuracy
- Free available space on chassis
- Tires wear and pressure included
- Car body deformation included
- Protected installation area
- High standardization
- No interface to CAN bus needed
- Aging of suspension and shock absorbers included



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