Measuring systems based on the roundtrip time of emitted and reflected infrared laser beams can calculate the speed of vehicles precisely. Cameras take pictures of the vehicle and driver if they have committed a traffic offence.
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**Light impulses emitted from the speed camera column are reflected by the passing car and received again by the device.**

**Infrared laser light:**
- over 100 laser beams
- 100 times per second

**Maximum measuring distance:** 75 m
Intelligent LED lights, camera-based assistance systems, and information displays ensure a greater security in all driving situations.
Intelligent LED lights, camera-based assistance systems, and information displays ensure a greater security in all driving situations.

- LED interior lighting (color temperature and brightness can be chosen)
- Rear-view mirror camera
- Rain sensor
- Exterior light sensor
- LED indicator
- Camera for traffic sign recognition
- Front camera
- Head-up display
- Thermal imaging camera
- Dynamic LED indicator
- Adaptive LED headlights
- Infotainment display
- Driver information display

**EXTERIOR**

**INTERIOR**
CAR HEADLIGHTS

Seeing further ahead: the combination of LED and laser light sources enables an optimum for roadway illumination in every traffic situation.

LIGHT CONE OF HEADLIGHTS

LED headlights
- intelligent illumination to prevent glaring for oncoming traffic

LED high beams
- large-scale illumination of the traffic situation

Laser high beams
- wide illumination for an optimal vision

LASER HIGH BEAMS

- 3 blue laser diodes
- beam combiner
- deflection mirror
- color converter
- parabolic mirror
LED vs Halogen

<table>
<thead>
<tr>
<th>LED</th>
<th>Halogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>hours shelf life</td>
<td>60,000</td>
</tr>
<tr>
<td>typical connected load per lamp (W)</td>
<td>18</td>
</tr>
</tbody>
</table>

**AIRPORT LIGHTING**

Millions of new LED lamps lower the operation and maintenance costs of airports around the globe.

LED vs Halogen

- **LED**
  - hours shelf life: 60,000 hours
  - typical connected load per lamp: 18 W

- **Halogen**
  - hours shelf life: 2,500 hours
  - typical connected load per lamp: 65 W

**The PAPI display signals the correct approach angle.**

- Too high (more than 3.5°)
- Slightly too high (from 3.2°)
- Correct approach angle (3°)
- Slightly too low (from 2.8°)
- Too low (more than 2.5°)

**PAPI**

(Precision Approach Path Indicator)

**TRAFFIC**

AIRPORT LIGHTING

Millions of new LED lamps lower the operation and maintenance costs of airports around the globe.