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.

SPEED CAMERA COLUMN UNIT

SPEED CAMERA COLUMN

measuring area of laser

area camera 1

area camera 2

simultaneous measuring of cars in several lanes
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.

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

Light impulses emitted from the speed camera column are reflected by the passing car and received again by the device.

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

**INTERIOR**
- LED interior lighting (color temperature and brightness can be chosen)
- LED reading lights
- Interior light sensor
- Rear-view camera

**EXTERIOR**
- LED rear lights
- Dynamic LED indicator
- Rear-view mirror camera

**REAR VIEW**
Intelligent LED lights, camera-based assistance systems, and information displays ensure a greater security in all driving situations.
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
- color converter
- deflection mirror
- parabolic mirror
LED vs Halogen

<table>
<thead>
<tr>
<th></th>
<th>LED</th>
<th>Halogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>hours shelf life</td>
<td>60,000</td>
<td>2,500</td>
</tr>
<tr>
<td>typical connected load</td>
<td>18</td>
<td>65</td>
</tr>
<tr>
<td>per lamp (W)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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)

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