HELLA GUTMANN

ADAS & Advanced Lighting

HELLA Gutmann

HELLA Electronics Product Portfolio

See next slide

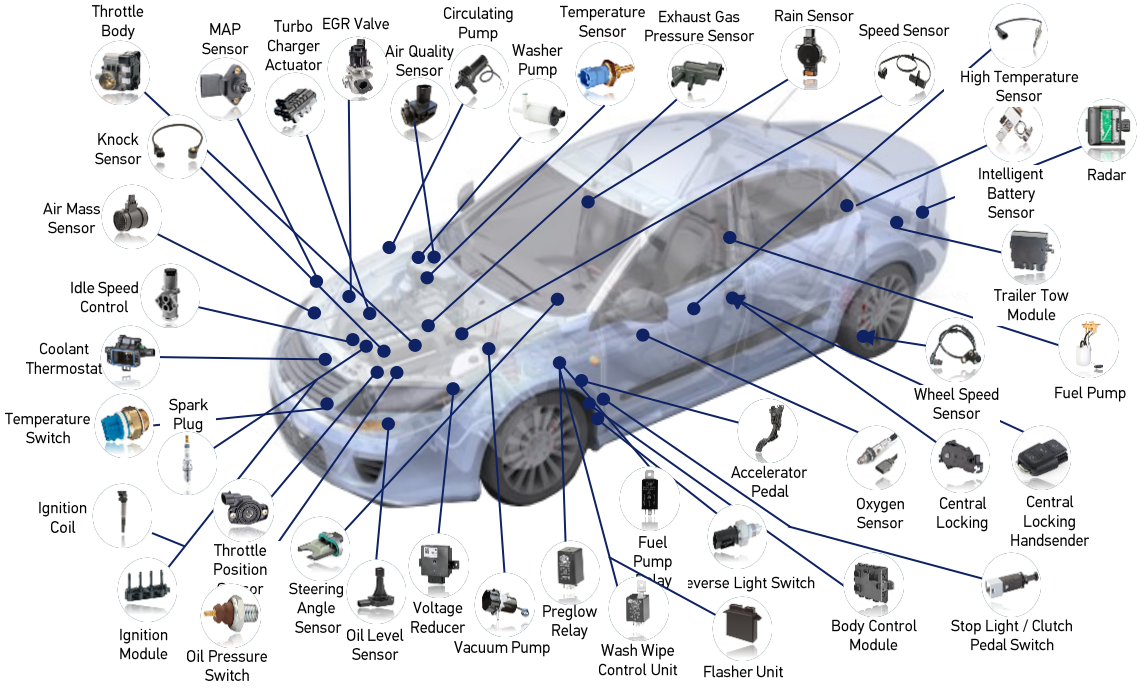
Case New Holland, Caterpillar, John Deere, Komatsu and Manitou

Case New Holland, Caterpillar, John Deere, Komatsu, Manitou

Case New Holland, Caterpillar, John Deere, Komatsu, Manitou

Barker, Byford, Haulmark, Vawdrey

Daimler, Iveco, Kenworth, MAN, Scania, Volvo



Driver Assistance Systems for enhanced vehicle safety

Driver assistance systems based on RADAR, ultrasound and RLS

Adaptive Cruise Control RADAR

Adjusts the speed to maintain a safe distance from vehicles ahead.

Traffic Jam Assistant RADAR

Adjusts acceleration and slowing down according to the vehicle ahead.

Parking Assistant Ultra-sound

Measures size of the space and moves vehicle in the parking space.

Automatic Headlight Activation RLS

Measures light intensity and activates headlights of vehicle.

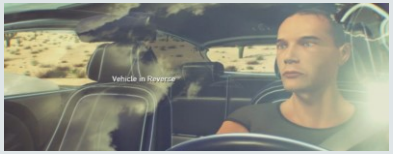
Automatic Wiper Control RLS

Activates wiper and controls wiper intervals according to rain intensity.

Driver Assistance Systems for enhanced vehicle safety

Driver assistance systems based on camera technology

Driver Drowsiness Detection



Sends alert signal after driving more than 1.5 sec. with closed eyelids.

Traffic Sign Recognition

Recognizes traffic signs. and alerts driver. Reduces speed in ACC combination.

Lane Departure Assistant

Moves vehicle to the center of the lane as soon as car gets to the lane markings.

Lane Departure Warning

Alerts driver as soon as car gets to close to the lane markings.

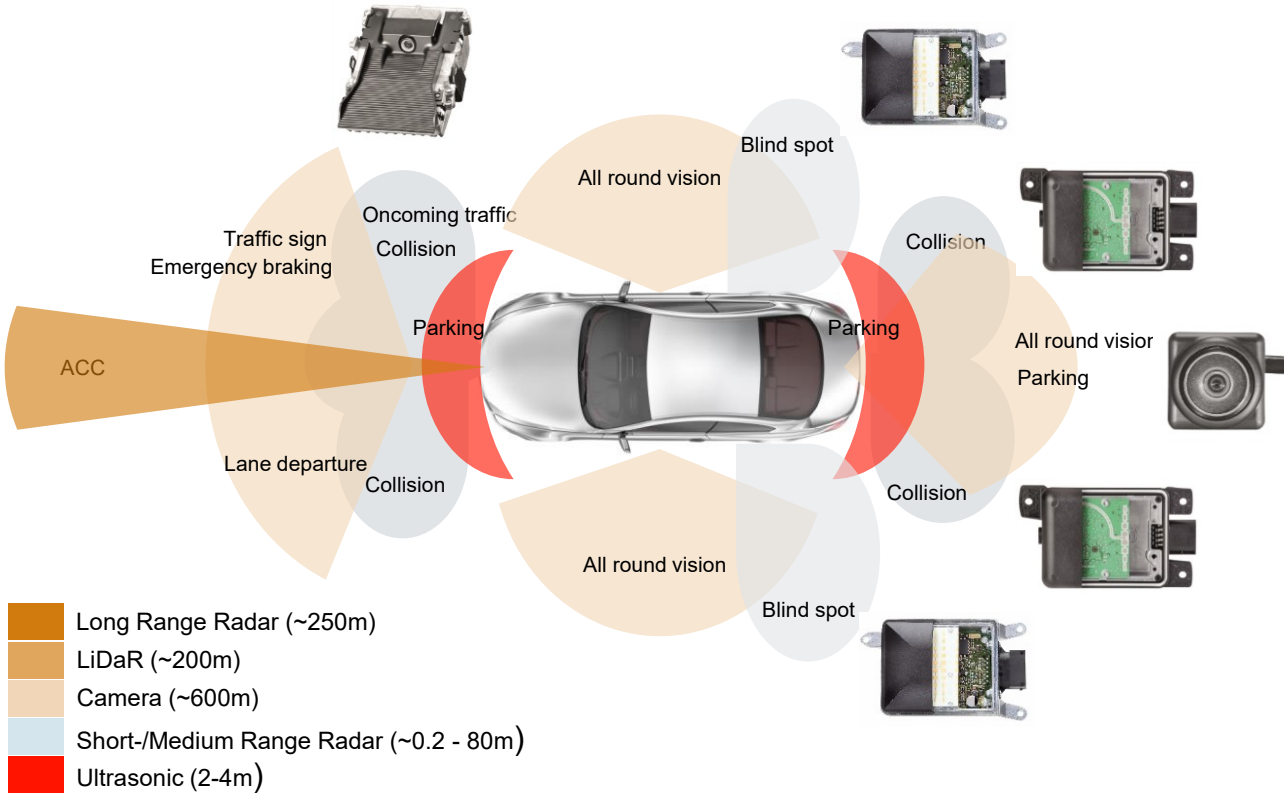
Top View & Rear View Camera

Adaptive glare-free High-Beam

Selectively masks the area that the other car is in from the light distribution.

Driver Assistance Systems for enhanced vehicle safety

Driver Assistance Systems



The Future of Autonomous Driving

SAE levels of Autonomous Driving

0
NO DRIVER ASSISTANCE

The driver is fully responsible & permanently carries all aspects of the driving tasks.

No system needed.

1
ASSISTED MODE

The driver stays fully responsible.

The system supports the driver during steering **or** accelerating / breaking.

2
PARTIALLY AUTOMATED

The driver stays fully responsible.

The system supports the driver during steering **and** accelerating / breaking.

3
HIGHLY AUTOMATED

The driver can turn attention away from the road, but must be always ready to take full control again.

The system can autonomously control the vehicle on defined & released routes.

4
FULLY AUTOMATED

The driver can dedicate himself to other activities. He has to take over the responsibility when leaving the defined route.

The system performs all driving tasks on defined routes.

5
AUTONOMOUS DRIVING

No driver needed – only passenger, no driver license necessary.

The system is able to perform all driving tasks under all conditions.

ADAS Calibration

Growing Demand for Calibration and Adjustment

Workshop Needs for ADAS Calibration Equipment

- ✓ When is ADAS necessary?
  - ✓ Body Repair, Auto Electrical, Windscreen or Wheel Alignment
  - ✓ Has the Vehicle been in a recent collision?
  - ✓ Are Calibrations being carried out according to Manufacturer Specific Specifications?
  - ✓ Are you liable for the last repair on the vehicle?

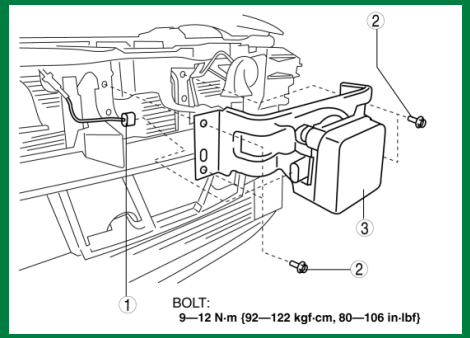
- ✓ Does my workshop work for ADAS Calibration?
  - ✓ Level Flooring, Even lighting and Adequate floor space
  - ✓ Average 2 Post Hoist bay space recommended for Front Calibrations
  - ✓ Ultimate Space Recommended for 360 Degree Calibrations: 5m x 10m
  - ✓ Tooling can be moved around the workshop according to Vehicle location

- ✓ Modular ADAS Packages to suit your needs
  - ✓ Front Camera / Radar packages
  - ✓ Full 360 Degree Calibration Hardware
  - ✓ Can be upgraded at any time

What does ADAS mean for vehicle repairs today?

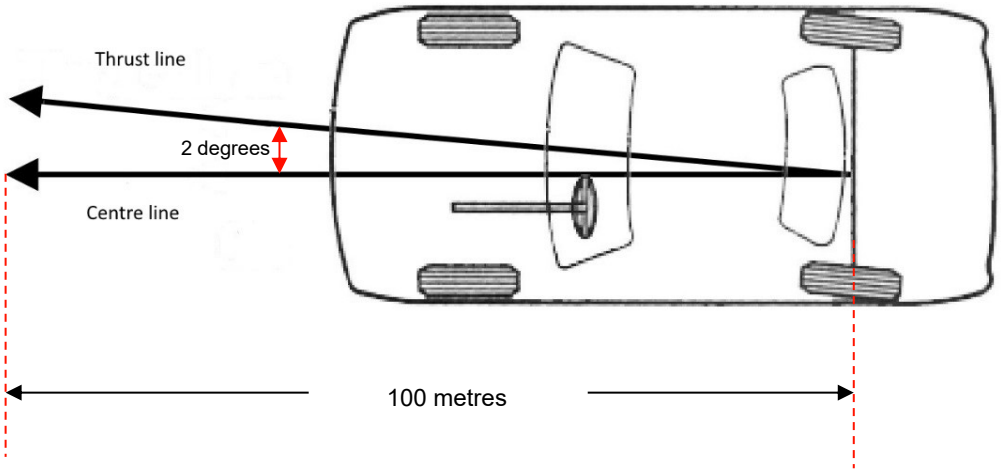
This damage has the possibility of impacting the Front Radar, Front Corner Radar, Lidar, Front All Round Camera and Night Vision Camera. Again, a careful inspection of the associated panels, once the vehicle has been dismantled is necessary to ascertain any possible damage to panels and sensor mounting brackets. All sensors must be carefully inspected for damage and replaced as required. It is possible that some or all of the replaced sensor will need to be coded to the vehicle, upon fitment.

Calibration of the Front Radar, Front Corner Radar, Lidar, All Round Camera system and Night Vision Camera will be required, once the vehicle is reassembled.



Driver Assistance Systems for enhanced vehicle safety

Importance of thrust line



If we consider a misalignment angle of:

- 2 degrees
- Distance of 100 metres
- Misalignment distance = 3.5 metres

Maximum safety on every journey

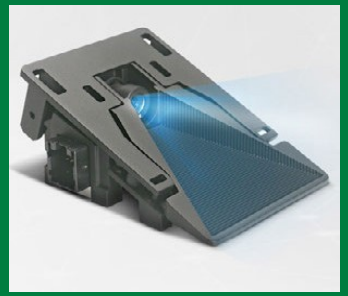
Vehicle Diagnostics & Accessories

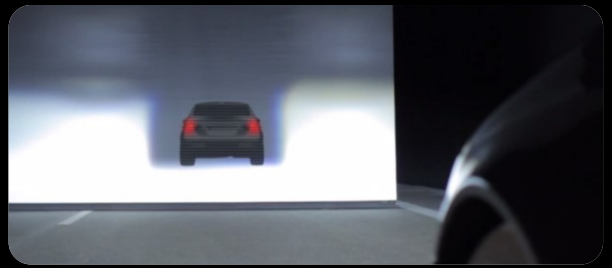
ADAS calibration

Light adjustment

Vehicle Diagnostics

Front Camera’s – ADAS Driver Assist Systems





Adaptive glare-free High-Beam

Selectively masks the area that the other car is in from the light distribution.

HELLA GUTMANN

Headlight Training from Hella Gutmann

Beamsetter Training

An Evolution of Light

1908
First electrical headlamp

1957
Asymmetrical light distribution

1971
H4 Halogen headlamp

1992
First Xenon system

2016
First matrix HD system

2013
LED Matrix glare-free high beam

2009
Camera controlled headlamp

2003
Bending light

The Future of Lighting is here

Headlight Aimers: SEG IV & SEG V

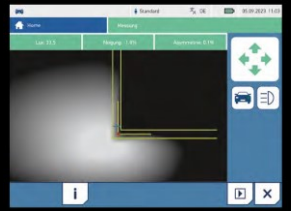
The Ultimate in Headlight Adjustment

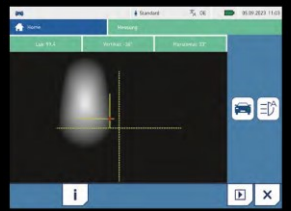
SEG IV & SEG V Headlight Aimers for modern lighting Solutions

- Real-time measurement for optimal results
- Innovative, digital and fit for the future
- LED Matrix & LIQUID CRYSTAL HD lighting capable
- Electronic Level sensor
- Lighting image digitalised automatically by the CMOS Camera
- Intuitive operation via Touchscreen
- On-board vehicle database and car history

SEG IV DLLX Beamsetter Part Number: 8PA 007 732-311

SEGV Part Number: 8PA 007 732-401

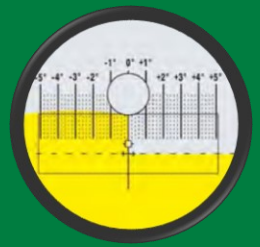




Headlight Aimers: SEG IV & SEG V

Analogue or Digital – The Future of Lighting Adjustment is Here

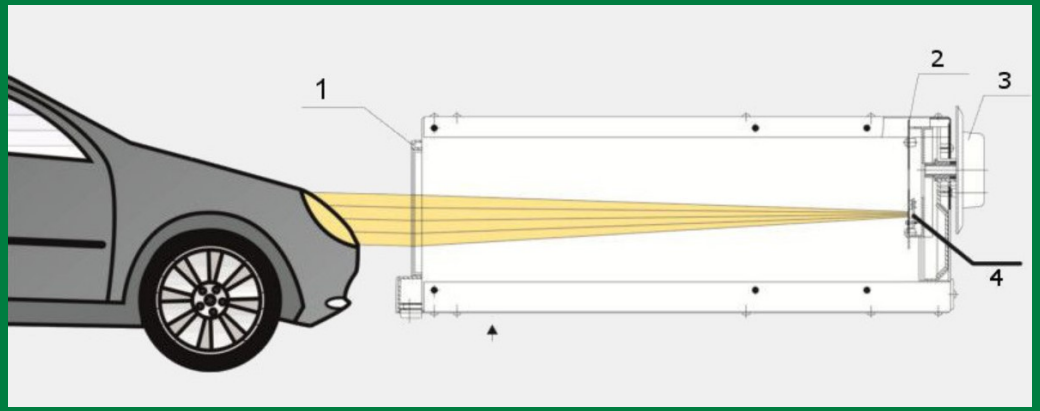
FUNCTIONS	SEG V	SEG IV DLLX
Digital luxometer	•*	•
Broadband sight**		•
Hybrid sight***	•	
Deflection mirror		•
Fresnel lens	•	•
Laser positioning aid		•
Spirit level/eccentric axle for tilt adjustment		•
Rotating stainless steel column for alignment of beamsetter box****	•	•
Optional refitting with steel wheels for leveling rails	•	•
Automatic leveling	•	
8.4" touchscreen	•	
Vehicle recognition via vehicle data base and Car History	•	
Interfaces: USB/Wi-Fi	•	
asanetwork	•	
Updatable	•	
Wheel-mounted base from polymer concrete	•	•
Longer column, adjustment range up to 1,650 mm		



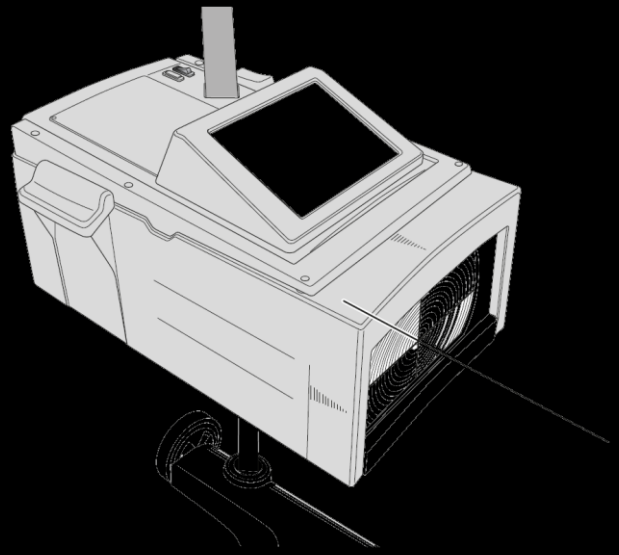
Beamsetter Training

WHAT DOES THE BEAMSETTER DO?

The task of the Beamsetter is to simulate a 10m wall



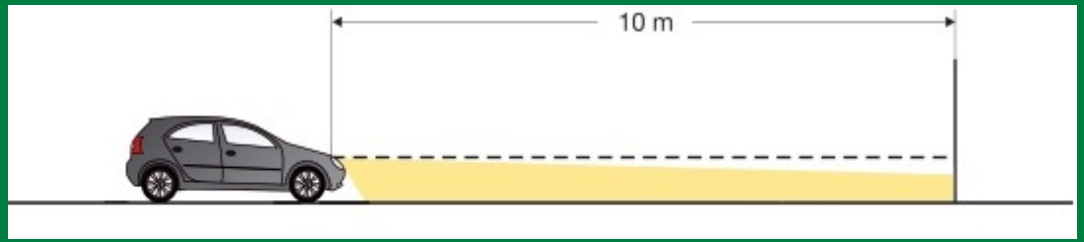
1: Fresnel Lens
2: Aiming Screen
3: Scaled Wheel (For inclination setting)
4: Photo Diode



Fresnell lens concentrates the light beam

WHAT DOES THE BEAMSETTER DO?

The task of the Beamsetter is to simulate a 10m wall



Inclination of the Headlight:

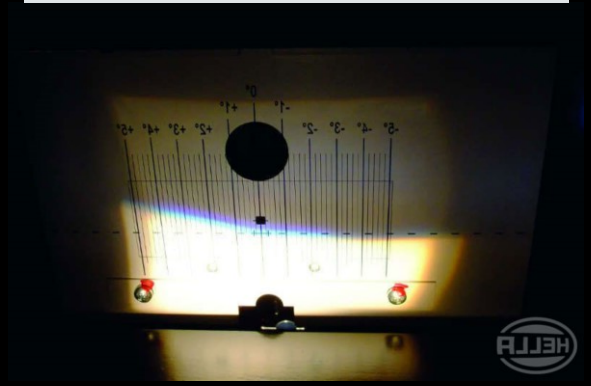
✓ **For Passenger Vehicles, this angle is usually between 1 & 2%**

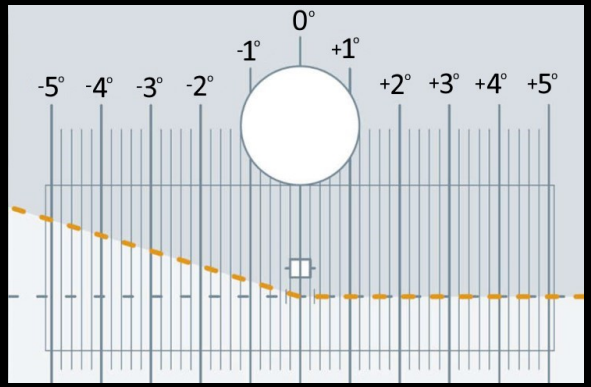
Check the inclination value on the headlight. It's usually on the shell of the reflector.

1% means the low beam tilts 10cm for every 10m, and 1.2% means the low beam tilts 12cm for every 10m.

HELLA GUTMANN

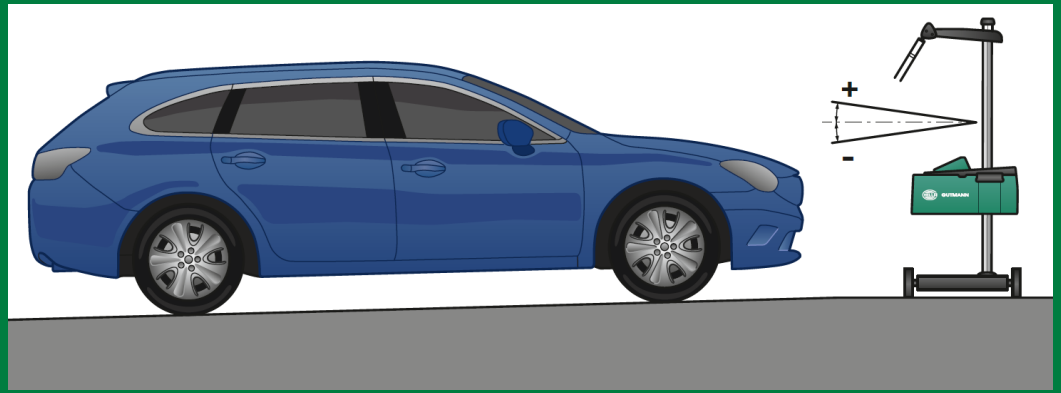
TYPICAL HALOGEN LOW BEAM





Beamsetter Training

HEADLAMP ADJUSTMENT – PREPARING THE VEHICLE



Headlamp Function

- Test the headlamp function.
- Check cover lenses for damage, scratches, and dullness.

Tyres

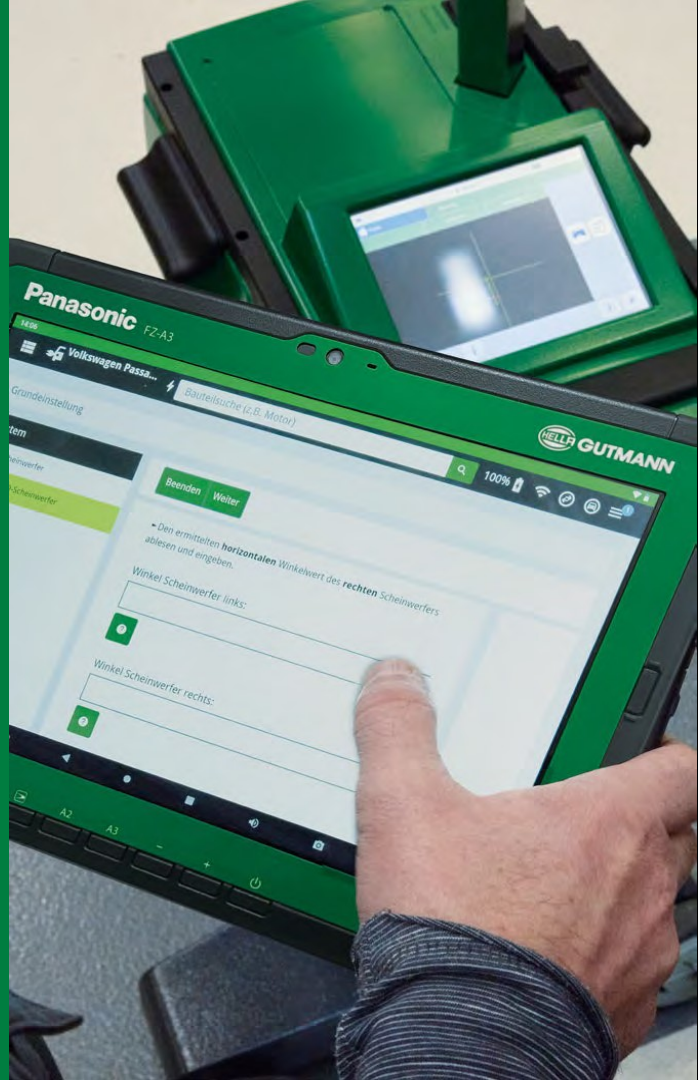
- Ensure tyres have the prescribed air pressure.

Vehicle Load

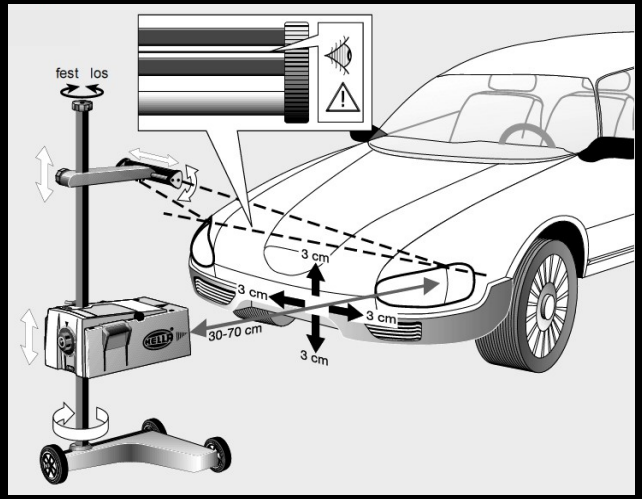
- Load vehicle with a person or 75 kg weight on the driver's seat.
- No load required for trucks and multi-lane vehicles.

Suspension

- Follow manufacturers' instructions for hydraulic or air suspension.



HEADLAMP ADJUSTMENT – SETTING UP THE BEAMSETTER



Beamsetter Positioning

- **Move Beamsetter in front of the headlamp to be checked.**
- **Align Beamsetter to the middle of the headlamp or light source.**
- **Vertical and horizontal deviations must not exceed 3 cm.**

Distance

- **Distance between Beamsetter and headlamp varies by manufacturer.**
- **For HELLA GUTMANN Beamsetters, distance ranges from 30 to 70 cm.**

HEADLAMP ADJUSTMENT – SETTING UP THE BEAMSETTER

Finally, set the "forward inclination" on the device.

This corresponds to the tilt angle of the headlamp cut-off line.

The forward inclination is given in % and can normally be found on the headlamp.

For example, 1% means that the low beam is at an angle of 10 cm at a range of 10 m. The aiming screen is set to the correct percentage using the scaled wheel.

GENERAL LIGHTING INFORMATION AND PATTERNS

The Importance of Dipped Beam

- ✓ **– Essential for safe road lighting at close range.**
- ✓ **– Prevents dazzling other road users.**
- ✓ **– Statutory requirement for all vehicles.**
- ✓ **– Ensures vehicle visibility in the dark.**

Halogen Headlamps & Dipped Beam

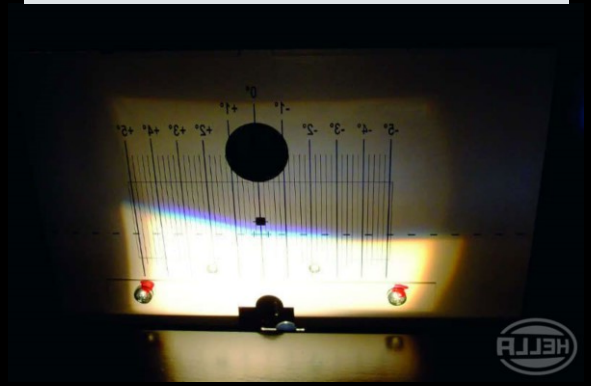
- ✓ **– Asymmetrical light distribution with a 15° increase.**
- ✓ **– Most widespread light distribution.**
- ✓ **– Continuous increase in the asymmetrical component.**
- ✓ **– Light color is whitish yellow.**

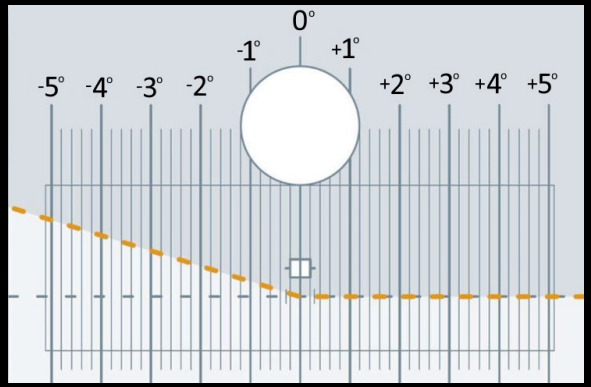
Light Distribution Characteristics

- ✓ **– Symmetrical light component to the right of the vertical "zero line".**
- ✓ **– Runs just below the dotted "cut-off line" to avoid dazzling oncoming drivers.**
- ✓ **– Asymmetrical distribution improves visibility of the driver's lane and left-hand edge of the lane.**

HELLA GUTMANN

TYPICAL HALOGEN LOW BEAM

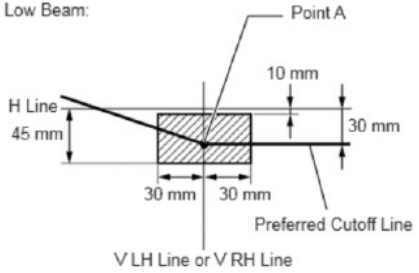




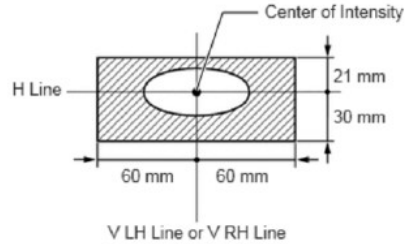
HEADLAMP ADJUSTMENT – Toyota Hilux 2022 OEM Info

Alignment distance 3 m:

Low Beam:



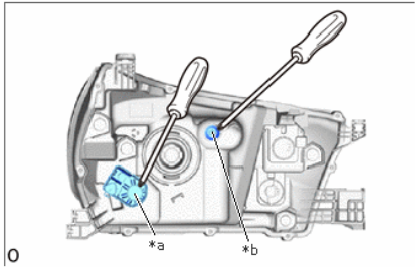
High Beam:



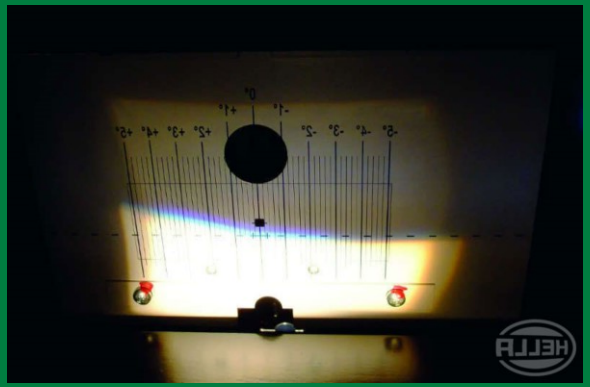
a. for Type A:

i. Using a screwdriver, adjust the aim.

1.

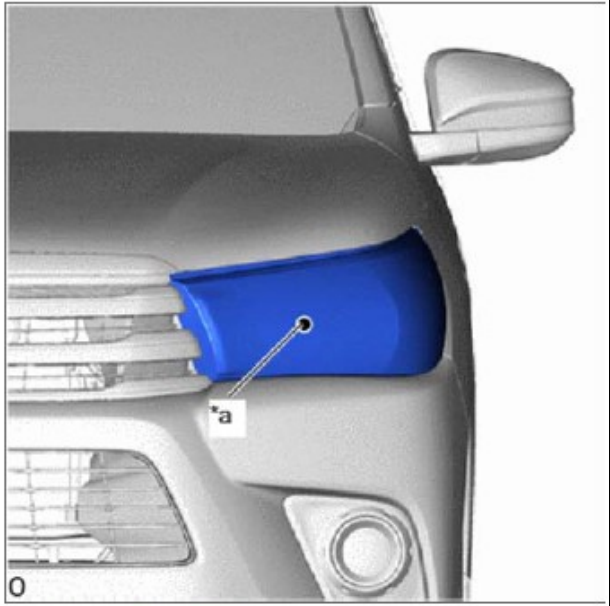


*a	Vertical Aiming Screw
*b	Horizontal Aiming Screw



HELLA GUTMANN

TYPICAL HALOGEN LOW BEAM



*a	Center Mark

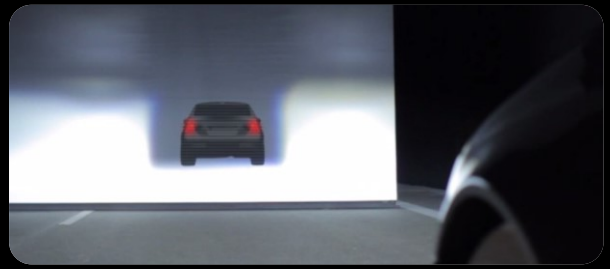
HELLA GUTMANN

Beamsetter Training
Matrix Headlight

Beamsetter Training

LED Matrix Headlight

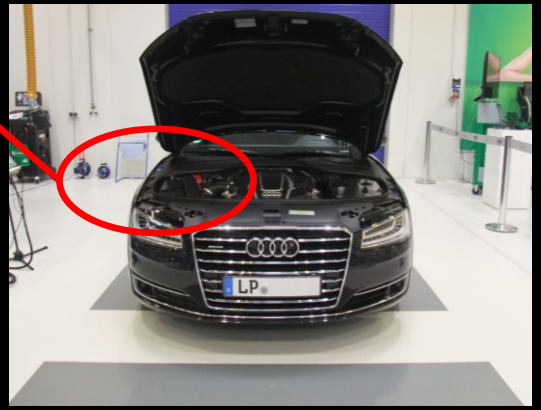
15 Control units in the network	**29** Meters of cable in the headlight	**27** Connectors	**31** Heat sinks
4 Control units in the headlight			**3** Temperature sensors
5 PCB's in the headlight			**1** Cooling fan
224 Parts			**19** Basic settings
82 LEDs	**966 Mio.** Light distributions	**51** Cut-off lines	**84** Tools for production



Beamsetter Training

HEADLAMP ADJUSTMENT – Matrix Headlight

Always connect a Battery Supply Charger!

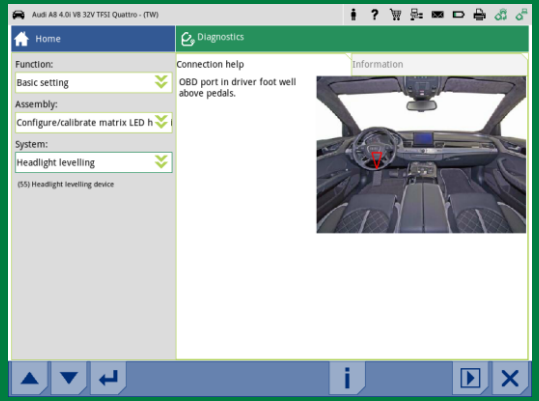


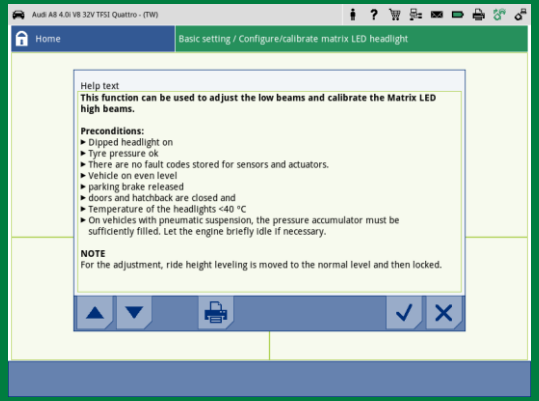
Once the SEG V Headlight aimer is correctly setup to the Vehicle,

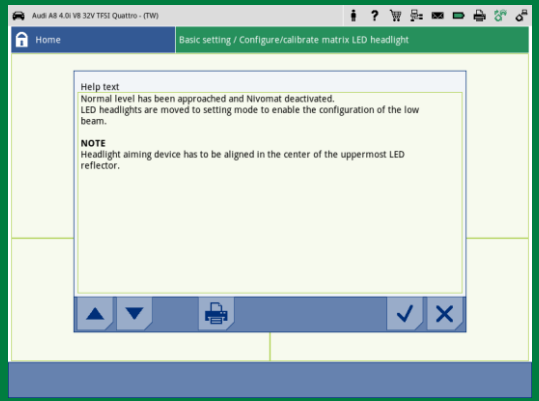
Proceed with a Mega Macs Diagnostic tool to perform the Adjustment & Calibration.

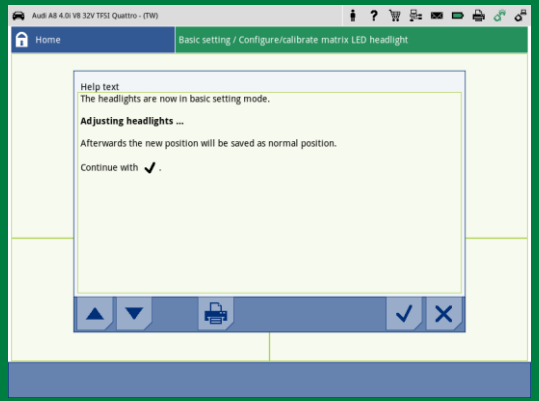
+

Beamsetter Training

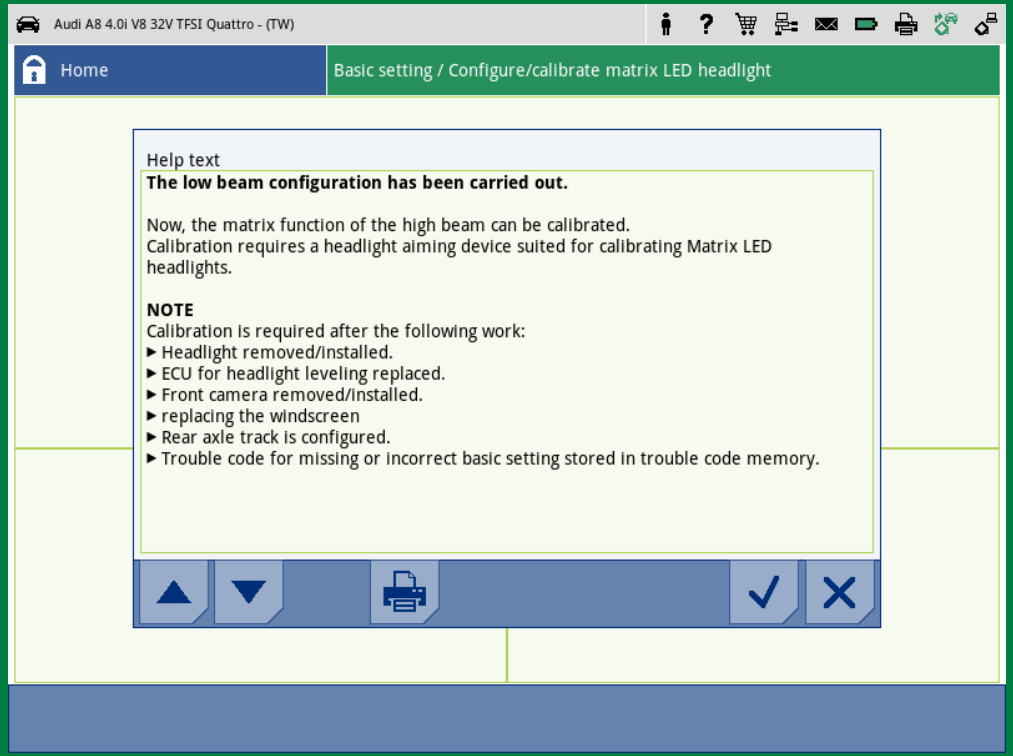








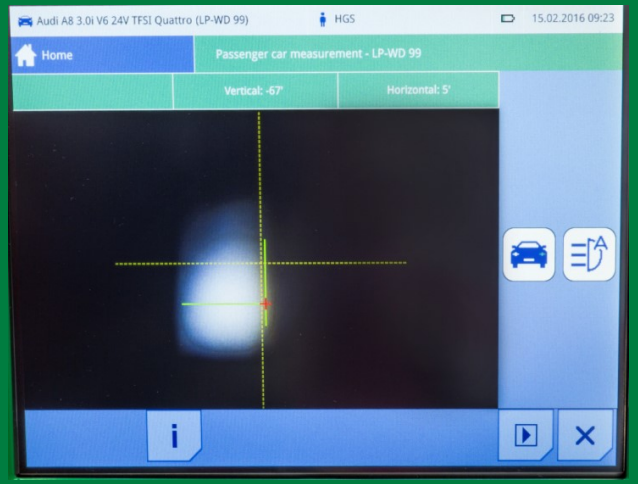
Beamsetter Training



Master-LED activated

...Now continue with Calibration

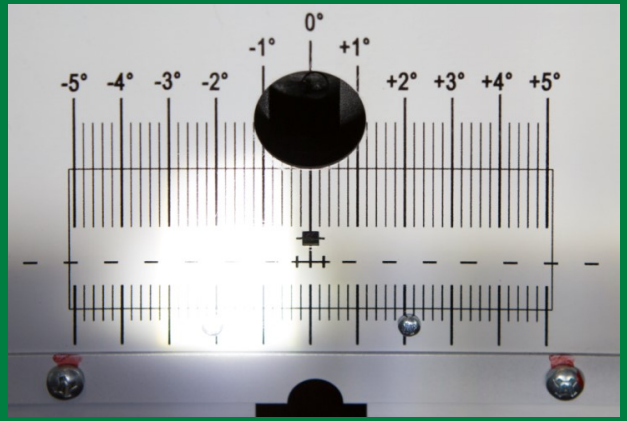
Beamsetter Training



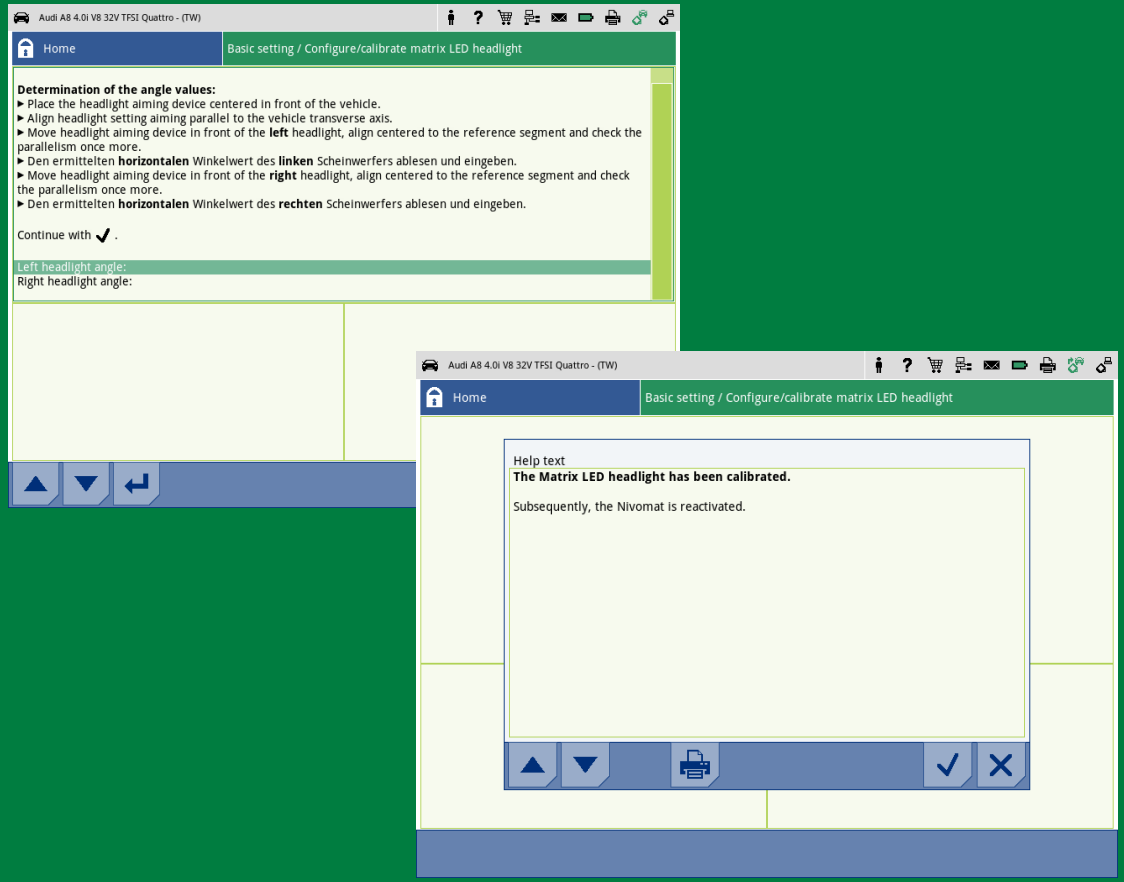
Master LED Shown on – SEG V

Master-LED activated

Master LED Show on – SEG IV



Beamsetter Training



Job Completed – Reports Generated

Company data

Hella Australia
4 Hargrave Place
3194 Mentone
Phone: 0447 919 883
Fax:
E-mail: jon.loughron@forvia.com
Web:

Customer and vehicle data

Customer name: Harry
Vehicle type: Toyota Hilux 2.8 16V D-4D
VIN:
Model year: 20-
License number: HARRY
Checked: 25.07.2024 14:31
Harry Liaros

Printout date

21.10.2025

Report about the headlight adjustment test

Make/model: Hella Gutmann Solutions GmbH / SEG-V
Device number: 13100
Software version: 76 - 76.24.0.3

Measurement results

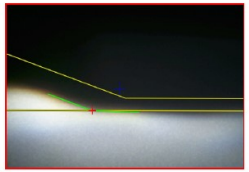
Low beam

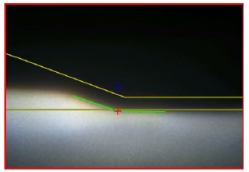
High beam

Measurement results of low beam

Test standard: ECE Inclination: -1.3 ± 0.5% Asymmetry: 0 ± 0.5 %

Left headlamp

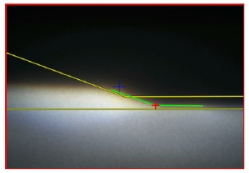


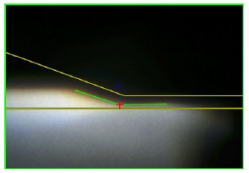


Actual values	Previously
Asymmetry:	-2.20%
Inclination:	-1.79%
Glare value:	1.77 Lux

Actual values	Afterwards	Result
Asymmetry:	-0.06%	OK
Inclination:	-1.94%	Not OK
Glare value:	2.12 Lux	

Right headlamp





Actual values	Previously
Asymmetry:	+2.92%
Inclination:	-1.52%
Glare value:	12.64 Lux

Actual values	Afterwards	Result
Asymmetry:	+0.08%	OK
Inclination:	-1.51%	OK
Glare value:	1.91 Lux	

Come & Visit HELLA Australia!

HELLA Australia Pty Ltd
15D Chifley Drive
Moorabbin Airport
3194, Melbourne, Australia


Thank you for your attention!