



**PRODUCT OVERVIEW**  
CARAVANS AND  
MOTORHOMES







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**CUSTOMER SATISFACTION**

**QUALITY PRODUCTS**

**INNOVATIVE PRODUCTS**

**LOYALTY** SAFETY  
SPARE PARTS

**INSTALLATION MATERIAL**

**COMPETENCE**

**SUSTAINABILITY**

**RELIABILITY**

**INTERIOR LIGHTING** GLOBAL NETWORK

**LOW LIFE CYCLE COSTS**

ENERGY EFFICIENCY **REAR LIGHTS**

**ECE** ANGULAR POSITION SENSORS

**OPTICAL WARNING SYSTEMS**

**BEACONS** TOOLS

**THERMAL MANAGEMENT**

**HUMANITY**

**VISION**



PROFESSIONALISM

**SERVICES** CUSTOMER-ORIENTED SOLUTIONS

LED-TECHNOLOGY

WIPER BLADES

**PRODUCT VARIETY**

INNOVATION

ACTUATORS

**WORK LIGHTS**

COMPETENT PARTNER

FRONT LIGHTING

WEAR AND MAINTENANCE-FREE PRODUCTS

DUST AND WATER RESISTANCE

FUNCTIONAL SAFETY

EMC

LONG SERVICE LIFE

EFFICIENT ENERGY MANAGEMENT

**SIDE MARKER LIGHTS**

DAYTIME RUNNING LIGHT

REDUCED CO<sub>2</sub> EMISSION

ENVIRONMENTAL FRIENDLINESS

ELECTRONICS COMPETENCE



## ESCAPE FROM EVERYDAY LIFE – EXPERIENCE A NEW ADVENTURE

Those who travel with campers or motorhomes want to experience independence and maintain their individual flair at the same time. Those who develop, design and produce these homes on wheels have to set technological and design trends with every new model series.

Anyone with HELLA on board as a partner has boundless possibilities – as developer, manufacturer or user. HELLA means real freedom.

### **Depth of innovation. Modular concepts. Technological leadership.**

HELLA has acquired a leading position internationally thanks to diligence, creativity and precision quality – for over 100 years. HELLA and modern camping have also been a persistently successful combination. We offer an advantage in safety and cost-effectiveness through innovations in light technology, e.g. Xenon and LED technology. Our integrated electrical and electronics components ensure reliable and customised intelligence. We offer our customers an abundance of equipment variants, for example through our extraordinarily deep product range and modular systems that you can use to set trends and emphasise a brand type of your own.

Benefit from the HELLA expertise with in-house mass production and the associated problem-free installation in your vehicles.

Benefit from original equipment manufacturer quality, synergies from the developments for the international automotive industry and from zero-defects quality management.

### **On-site HELLA support.**

We don't only see ourselves as a quality supplier, but also as a development partner. If required, our developers and engineers can work on the optimum solution for your application with your teams on your premises. This speeds up workflows and clears the way for new standards. More technological freedom and room to style and streamline: This is HELLA.

### **Have a good trip to the future.**







## WE ARE THE 100 % SERVICE PROVIDER FOR INNOVATIVE CUSTOMISING AND 100 % RELIABILITY.

### **New dimensions in the lighting segment:**

After decades when only standard solutions were available, HELLA has been entering new territories and has become number 1 in customer-specific solutions. The lead is growing. Because there are future-proof solutions that only HELLA offers. We are able to cover applications for all global brands thanks to the work done in our own lighting laboratory.

### **New dimensions in the field of modular concepts:**

Engineers, designers and controllers are equally delighted with our modular system. It provides you with the whole spectrum of design possibilities – from futuristic through dynamic, sporty, business-like, elegant and classic to retro.

Our range offers solutions that no one else can offer.

At HELLA, you can take your pick from our entire line of modern headlights and lights, ranging from: Halogen, Bi-Halogen®, Xenon and Bi-Xenon® to LED, light transmitters, Ellipsoid and FreeForm FF. You give us the installation opening and select the design, we will build your module. In small production runs too, of course.

### **New dimensions of modular speed:**

we want to be faster than everyone else. An optimised time-to-market process from the first lines on a notebook through to series delivery allows us to create your custom design in no time.

### **New dimensions in the electronics industry:**

We cover a large range of options where increasing energy efficiency, minimizing CO<sub>2</sub> emissions and increasing safety and comfort is our mantra. In this context, HELLA offers a wide range of innovative solutions, such as the smart battery sensor that serves as the centerpiece for energy management in vehicles. HELLA provides you with the ideal combination of energy management, drivetrain and components – little helpers that make it possible for all electronic systems to work precisely.

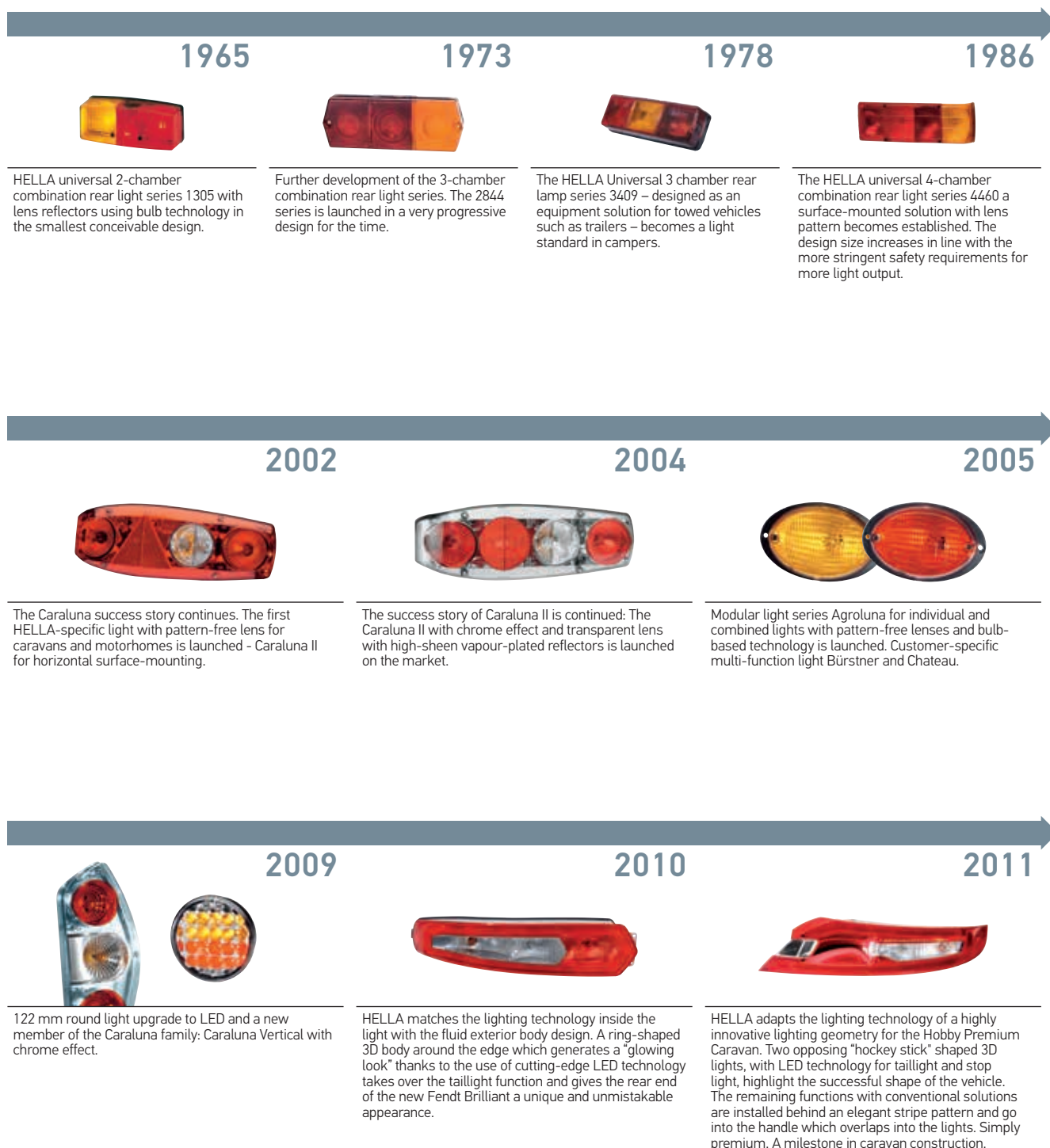
Also new: the HELLA modular switch configurator. Configure your switch to meet your own needs.

**So take us with you on your journey to the future.  
Because like you, we love real freedom.**

## QUICK TRIP TO THE PAST

The first “touring cars” appeared as early as the mid-19th century. The sometimes quite luxuriously equipped predecessors of the modern caravan were invented in Britain. Initially they were horse-drawn, but shortly after the invention of the motor vehicle the first petrol-driven coaches were hitched to the touring cars. There has been a close relationship between HELLA and the automobile for over 100 hundred years, and this naturally includes caravans and motorhomes.

Here is a quick look at our most recent shared past.







1989



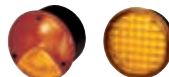
The HELLA universal 3-chamber combination rear light series 6459 with lens pattern finds its way into the caravan industry. The light sweep means it can be flush-mounted near the outer edges. This design effect gives a whole new dimension to motorhome and caravan contours.

1996



Birth of the first multi-function light for the motorhome and caravan industry. As well as integrating all the light functions, the required triangular reflector is also integrated horizontally surface-mounted. The HELLA Caraluna I becomes a sign of quality and a recognised brand for a whole industry.

1998



The market launch of the modular 122 mm light series for individual and combination lights. The series will undergo permanent further development in the next few years through non-patterned lights and LED lights.

2000



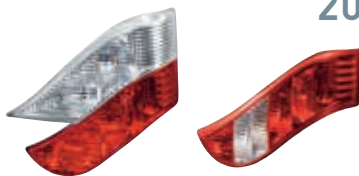
The customer-specific multi-function light with pattern-free lens adorns hobby caravans.

2006



Customer-specific developments for hobby caravans and motorhomes, Hymer motorhomes and Fendt caravans and motorhomes. Upgrade to Caraluna multi-function light series: Caraluna II Plus with combined indicator/reversing spotlight.

2006



Two more variants are added to the modular and customer-specific rear light generation: the single and double swing arms for Hymer motorhomes.

2008



Ongoing development of a success story: The Caraluna family is being extended by adding the Caraluna Modular for vertical flush-mounting. A non-patterned and colour-adjustable lens with modular reflector inserts that enable a customer-specific appearance, installation in light bulb or LED technology and horizontal installation.

2011



Two opposite positioning lights, implemented with innovative light-guide technology in LED technology for the tail lamp, give the latest generation of Knaus motorhomes an unmistakable face. The lights are impressive due to the sophisticated detailing inside. You will see motorhomes through different eyes.

2012



Lighting technology made to measure – HELLA uses innovative LED light transmitter technology for the taillight of the new generation of Adria Caravans.

The light transmitters produce a particularly sophisticated night-time signature, giving Adria Caravans a distinctive rear design.

2013



A milestone. HELLA develops the vertically aligned, customer-specific multi-functioning rear lamps for Carthago using glowing body technology.

# IP PROTECTION CATEGORY

## What does IP protection category mean?

IP stands for International Protection. The IP protection categories are determined according to DIN 40 050, Part 9. The purpose of the standard is the exact definition of electrical vehicle equipment against the penetration of solid materials including dust and against water penetration. The different degrees of protection important for signalling systems are explained below.

## Protective category IP 5K4K

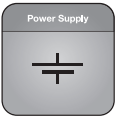


Dust may only penetrate to the extent that function and safety are not impaired. Water that is sprayed from every direction at increased pressure against the housing must not have any damaging effect: water pressure approx. 4 bar.

## Protection class IP 9K

Water that is directed from high-pressure / steam-cleaning equipment onto the housing must not have any damaging effect: water pressure approx. 80 – 100 bar.

## Protection class IP 6K7

Dust must not penetrate. No water may penetrate, even if the device is submersed for some time. HELLA products meet the highest requirements and are ideally protected against all kinds of weather conditions.

FEATURES	DESCRIPTION	COMMENTS
<p>Power consumption of LED lights</p>	<p><b>Advantages of the LED:</b> Generally, LED lights consume less power than a light with an incandescent lamp. Savings of up to 90 % are possible, which also helps to reduce CO<sub>2</sub>.</p>	
<p>Vehicle electrical system voltage</p> 	<p>Defines the voltage supply of the light. Whether 12 V, 24 V or for a multi-voltage range (8 – 33 V).</p>	<p>Multivolt is the most flexible: Requires fewer versions, but has more electronic circuit components and is therefore more expensive.</p>
<p>Dust and water protection IP</p> 	<p>International Protection (IP) as per DIN 40050, Part 9. Specific definition for road vehicles. 5K = Dust protected 6K = Dust protection 9K = Protection against water during pressure / steam cleaning.</p>	<p>The higher the protective category, the better the protection against penetrating media. IP 67 maximum value → Completely sealed against dust and water.</p>
	<p>Resistant to high-pressure jet cleaners</p>	

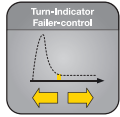


**FEATURES**

**DESCRIPTION**

**COMMENTS**

**Turn indicator failure check according to ECE-R48**



**Regulation according to ECE-R48:**  
The driver must be informed if the indicator function fails. To remain legally compliant, this requirement must also be met for LED lights. This requirement is met by an integrated self-diagnostic unit on the PCB of the LED and an electrical pulse. Since the end of 2011, this HELLA failure check with a pulse has been ISO Standard: ISO 13207.

If the indicator failure check is not ensured, the general vehicle type approval becomes void. This means it is illegal to operate vehicles without indicator failure check in countries affiliated to ECE-R48.

The indicator failure check is ensured in combination with ballasts HELLA part no. 5DS 009 552.

**Electronic circuit**

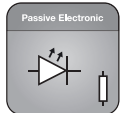


**Active**

Basically, two different circuits are possible for LED lamps:

**Active:**  
LED current regulation through active electronics

**Active:**  
Higher expenditure during development because of complex circuit and necessary EMC approval. Higher price because of electronic components, but optimal current regulation allows maximum LED design life.

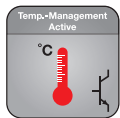


**Passive**

**Passive:**  
A specific voltage range is preset for the LED by a dropping resistor.

**Passive:**  
Cost-effective solution without complex protection measures. Shorter LED design life in case of failure. No EMC approval required.

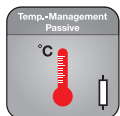
**Thermal Management**



**Active**

**Active:**  
Electronic power control of LEDs in the event of impermissibly high ambient temperatures. This ensures the LEDs are protected against destruction caused by overheating.

**Active:**  
More development overhead with active thermal management and higher parts prices ensure optimal conditions for maximum design life.



**Passive**

**Passive:**  
Optimum layout of the components for even temperature distribution and temperature spreading.

**Passive:**  
The warmer the LED gets through exterior factors or heat generated by its own operation, the shorter the service life.

**Overvoltage protection**



Supplement to the electronics for protecting the LED against high voltage / current in the vehicle's electric system as per ISO 7637-2.

Overloading of the LEDs can be caused by voltage peaks in the vehicle because of:

- Jump-starting
- Defective control units
- Load dump impulse (incorrect battery contact)

They stress / damage the LEDs, which can cause the function to fail or the service life to be reduced. Adding additional components to the circuit protects the circuit and can extend the service life or even prevent an outage.

# INTRODUCTION

## FEATURES

## DESCRIPTION

## COMMENTS

### Bi-polarity of the light



Even if the connecting cable is attached with reverse polarity, the LED functions fully.

The semi-conductor in an LED must always be operated with the correct polarity. Inverse polarity damages the LED, so that LED lamps are generally equipped with reverse polarity protection (diode). However this function only works if "+" and "-" are correctly connected. If a lamp has a bi-polar circuit, then it will work independently of the contact connections. This ensures poka-yoke (avoiding faulty installations) in connection with indentation clamping technology, for example. However, the additional components on the PCB also increase the costs.

### Reverse polarity protection



Even if the connecting cable is connected the wrong way round, there is still no danger to the electronics.

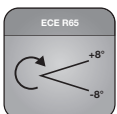
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### ECE



Product is licensed according to ECE guidelines.






### ECE-R65



Defines the light values, light distribution and colour location of beacons that are to be achieved.

Only beacons that fulfil ECE-R65 can be used on public roads.



FEATURES	DESCRIPTION	COMMENTS
<p><b>Approval for transport of dangerous goods</b></p> 	<p>Lamp approved for transport of dangerous goods according to the European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR; in German, GGVS).</p>	<p>Generally required for truck and trailer lighting. Prerequisite for receiving approval: damage to the light source must not cause explosive media to ignite.</p>
<p><b>Electromagnetic compatibility</b></p>   	<p>Electromagnetic compatibility (EMC) tested and EC type approval obtained.</p>	<p>If the light is not constructed according to EMC specifications, and thus is not certified, then interaction between it and other safety-relevant electronic systems may occur.</p> <p><b>Examples:</b> Interference in a radio loudspeaker, impairment of ABS electronics, or failure of the lamp due to sensitivity to interference.</p>
<p><b>Automotive Electronic Council</b></p> 	<p>Components qualified according to automotive standard.</p>	<p>Electronic components (LEDs, diodes, ...) are more robust and safer than electronic components for industry thanks to automotive specifications.</p> <p>By using certified suppliers, a more robust design of the circuit is possible - even for longer periods of time with consistent quality. Thus slight additional costs for the components improve the service life of LED lighting functions.</p>

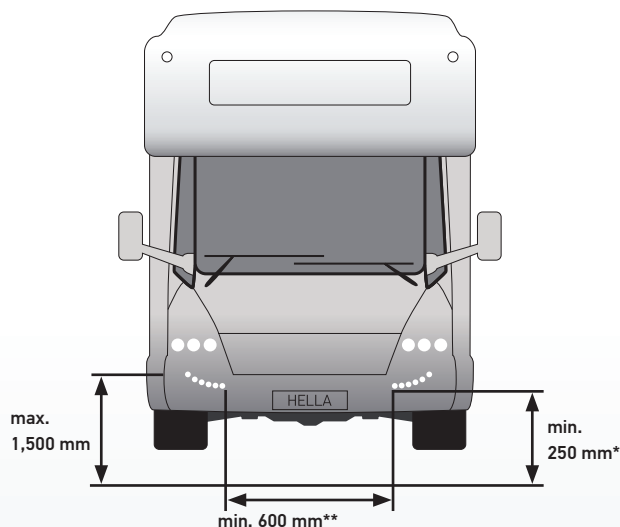
### **Functional safety, fitting accuracy and durability**

HELLA original part quality ensures these three factors in each of our products. Along with low beams, high beams, blinkers, parking lights, fog lamps, cornering lights and daytime running lights, our 90 mm modular headlamps, in particular, are also used in different areas of application with maximum requirements.

They are small, but powerful. They stand for quality, practicality, safety and cost-efficiency. Their modular design enables a customizable front design. Our total of 5 different series allows us to offer an extraordinarily wide range of products. Our L 4060 LED product group gives your vehicle a desired, distinctive appearance. The new shape of the lens (40 x 60 mm) and colored covers make this possible. These new headlamps have a very compact design but still allow three light functions to be implemented in one module.

Give your vehicle an individual appearance and combine to your preference.

## DAYTIME RUNNING LIGHTS



- Daytime running lights provide a decisive safety advantage on the roads and help prevent approx. 58% of accidents which result in serious injuries.
- It is much easier to see than normal low beam.
- A vehicle's own visibility is significantly increased.
- The vehicle can be seen earlier on, which provides a few more seconds of vital reaction time.
- Fuel consumption significantly reduced compared to driving with low beam

### Required by law:

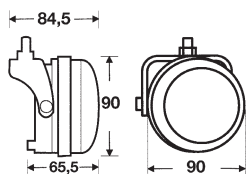
The law has recognised the advantages of daytime running lights: From 2012 onwards, daytime running lights are obligatory for all new commercial vehicles licensed to use the roads in EU countries. Various installation options are allowed. However, distances and reflected beam angles are specified.

- \* When used as a position light, the minimum attachment height must be 350 mm and the maximum distance from the outside edge must be 400 mm.
- \*\* For vehicles with a width < 1,300 mm, the distance must be at least 400 mm.
- When a daytime running light is used as a position light, the standard position light must be permanently disabled in accordance with ECE-R 48.
- For more information on legal stipulations and attachment regulations, please refer to the Internet or a qualified garage.
- See the relevant assembly instructions for more detailed information.

min. = minimum distance  
max. = maximum distance

This product features the following properties:

### LED daytime running light Ø 90 mm



#### LED daytime running light Ø 90 mm

Daytime running lights, set	2PT 009 599-811
Daytime running light, left	2PT 009 599-111
Daytime running light, right	2PT 009 599-121
Daytime running light with position light, left	2PT 009 599-131
Daytime running light with position light, right	2PT 009 599-141

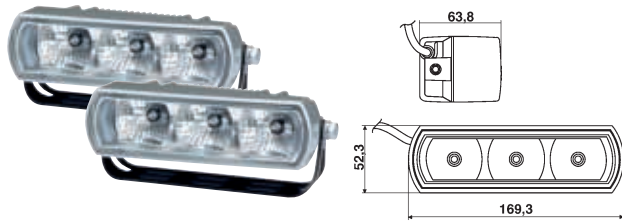
Type approval: ECE

#### Optional accessories

Universal carrier frame	9AH 165 968-001
Harness, pre-assembled	8KA 165 959-001

- Multivolt 9–33 V
- Three LEDs per light
- With a black aluminum housing
- With an integrated relay
- Harness with AMP SUPERSEAL plug
- For upright and suspended mounting in/on the front apron
- Set complete with hoop bracket and professional harness





This product features the following properties:



**LED DAYTIME RUNNING LIGHT, RECTANGULAR**

Daytime running lights, set 2PT 009 496-801  
**Type approval:** ECE and SAE

- Multivolt 9 – 33 V
- Three LEDs per light
- With silver-grey aluminum housing
- Integrated relay
- Harness with AMP-SUPERSEAL plug, hoop bracket
- For upright and suspended mounting in/on the front apron



This product features the following properties:

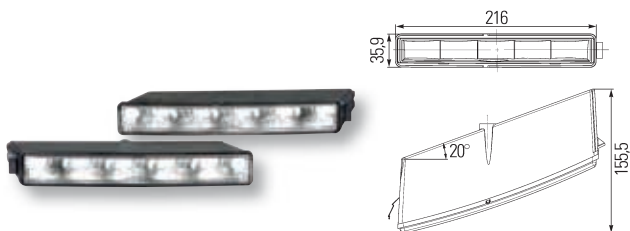


**LED MULTI-FUNCTION LIGHT**

Individual lights  
 12 V, 83 mm-LED-3 functional luminaire 2BE 980 691-001  
 24 V, 83 mm-LED-3 functional luminaire 2BE 980 690-001

Optional accessories  
 Adapter ring 90 mm 9GD 980 696-001  
**Type approval:** ECE

- 83 mm LED 3-function lights: direction indicator, position light, daytime running lights
- The integrated electronics are configured so that the daytime running lights switch off during flashing, pre-cabled with a 2.5 m long wrapped four-wire cable.



This product features the following properties:



**LED DAYTIME RUNNING LIGHT SET LEDayLine® WITH POSITION LIGHT FUNCTION**

2 lights with five LED diodes per light and integrated relay for fully automatic switch-on, inc. professional harness and attachment material, multi-voltage 9-32 V, 12 V max. 5.5 W  
 Set for surface-mounting, 12 V 2PT 010 043-801  
 12 V, left 2PT 010 043-011  
 12 V, right 2PT 010 043-021

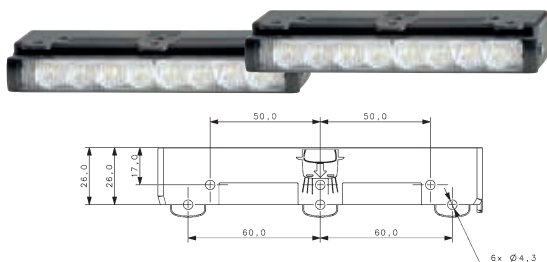
**Type approval:** E 2578

**VEHICLE-SPECIFIC FINISHER, BLACK (ONLY DAYTIME RUNNING LIGHT)**

Fits Fiat Ducato, Citroën Jumper, Peugeot Boxer.  
 Includes connector cable set, assembly material and assembly instructions  
2PT 010 043-811



This product features the following properties:



- For horizontal installation
- 8 high-performance LEDs per daytime running light
- Suitable for vehicles with no angle at installation location
- Power consumption 2 W
- IP 6K7 / IP 6K9K
- High vibration resistance
- Reverse polarity protection



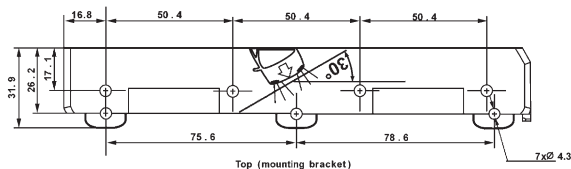
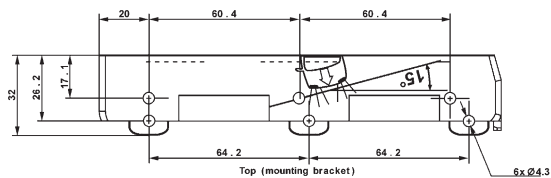
#### LEDayLine Zero

12 V, daytime running light set 2PT 980 970-821

24 V, daytime running light set 2PT 980 970-871

**Type approval:** ECE approved and SAE pending

This product features the following properties:



- For horizontal installation
- 8 LEDs per daytime running light
- Power consumption: 2 W
- 2 versions for horizontal installation in different vehicle fronts:

#### LEDayLine 15:

suitable for vehicles with a 15° angle at the installation location

#### LEDayLine 30:

suitable for vehicles with a 30° angle at the installation location.



#### LEDayLine 15 and LEDayLine 30 with position light

##### LEDayLine 15

suitable for vehicles with a 15° angle at the installation location

12 V, light module daytime running light/position light 2PT 980 860-001

24 V, light module daytime running light/position light 2PT 980 860-501

Brackets (set right/left) 8HG 980 864-101

##### LEDayLine 30

suitable for vehicles with a 30° angle at the installation location

12 V, light module daytime running light/position light 2PT 980 850-001

24 V, light module daytime running light/position light 2PT 980 850-501

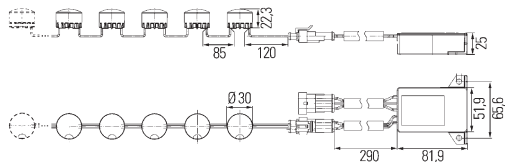
Brackets (set right/left) 8HG 980 854-101

##### Control units

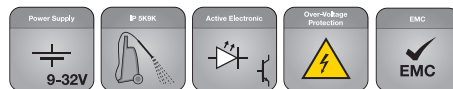
12 V, with connecting cables 8KA 959 186-801

24 V, with connecting cables 8KA 959 186-811

**Type approval:** ECE and SAE



This product features the following properties:



**LED DAYTIME RUNNING LIGHT SET LEDayFlex**

Set consisting of two pre-wired module chains with 5 – 8 round light modules and two electronics boxes for activating the daytime running lights, available with or without position light. The system is connected to the vehicle electric system via a 3-pin AMP-SUPERSEAL plug. 12/24 V multi-voltage

5 LED light modules for daytime running light	2PT 010 458-801
5 LED light modules for daytime running light with position light	2PT 010 458-811
6 LED light modules for daytime running light	2PT 010 458-821
6 LED light modules for daytime running light with position light	2PT 010 458-831
7 LED light modules for daytime running light	2PT 010 458-841
7 LED light modules for daytime running light with position light	2PT 010 458-851
8 LED light modules for daytime running light	2PT 010 458-861
8 LED light modules for daytime running light with position light	2PT 010 458-871

Type approval: ECE 5852

**Accessories**

12/24 V, control unit	5DS 010 668-001
12/24 V, control unit for position light	5DS 010 668-011
Harness (not included)	8KA 165 959-001

This product features the following properties:

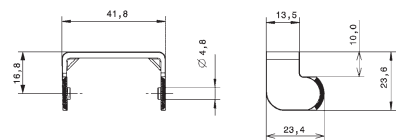
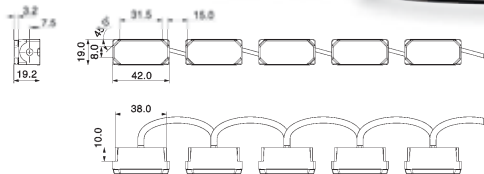


**LED DAYTIME RUNNING LIGHT SET LEDayFlex II**

LEDayFlex II has expanded the system of flexibly connected module chains since 2012. The two square LED daytime running light chains with five or six pre-wire light modules make new designs possible.

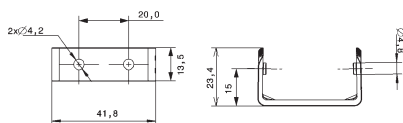
12 V, 5 LED light module	2PT 980 789-851
12 V, 6 LED light module	2PT 980 789-861

Type approval: ECE



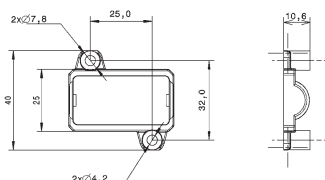
**Bracket for screw attachment, above**  
Included

for 5-module chain (10 units)	8HG 980 797-801
for 6-module chain (12 units)	8HG 980 797-811



**Bracket for screw attachment, rear**  
Optional accessories

for 5-module chain (10 units)	8HG 980 793-801
for 6-module chain (12 units)	8HG 980 793-811



**Bracket for screw attachment, front**  
Optional accessories

for 5-module chain (10 units)	8HG 980 795-008
for 6-module chain (12 units)	8HG 980 795-007



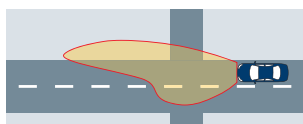
## DynaView® Evo2

### A new lighting era

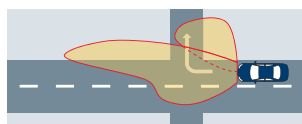
DynaView® Evo2 combines the cornering light and fog light safety functions in compact round auxiliary lights, which can be universally installed in many different vehicles. When the low beam is switched on, the right or left cornering light is activated automatically and immediately when the indicator is actuated or when the vehicle drives round a bend at a speed of less than 40 km/h.

A yaw rate sensor measures the vehicle's angular acceleration and triggers the turn-on signal when the car drives through a curve. At the end of the curve, a dimmer softly fades the extra light. If the reverse gear is engaged, both cornering lights are switched on and ensure broad and bright illumination of the areas along the left and right of the vehicle.

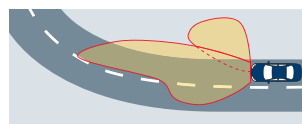
### Driving situation



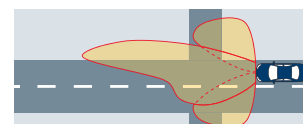
"The cornering light is switched off during a normal driving situation on a straight path."



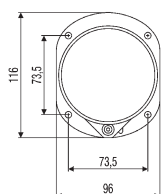
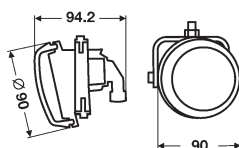
"When turning a corner or driving slowly through a curve (up to a speed of 40 km/h), the cornering light is turned on automatically."



"When driving round a bend up to a speed of 40 km/h, the respective headlight is switched on automatically."



"In foggy conditions, the cornering light can be switched on manually (both sides) as a fog light."



#### DynaView® Evo2 inc. H7 bulb

with handrail holder

12 V, set including control electronics and cable set	<b>1N0 009 295-801</b>
12 V, individual left	<b>1N0 009 295-011</b>
12 V, individual right	<b>1N0 009 295-021</b>
24 V, individual left	<b>1N0 009 295-057</b>
24 V, individual right	<b>1N0 009 295-067</b>

**Type approval** E 1951,  
ECE R119 cornering light,  
ECE R19 fog light B series 02 / B series 03

#### CONNECTOR PLUG SET

DynaView® Evo2	
for 20 headlights	<b>8JD 156 151-807</b>
Harness	<b>8KB 163 160-801</b>
Control electronics	<b>5DF 009 244-007</b>

## 90 MM MODULES - PRODUCT OVERVIEW

	LED	Halogen (conventional lighting technology)	Xenon
<b>Main light functions</b>	<ul style="list-style-type: none"> <li>→ Low beam</li> <li>→ High beam</li> <li>→ Low beam and high beam</li> <li>→ High beam, daytime running light and position light</li> <li>→ Dipped beam and indicator</li> </ul>	<ul style="list-style-type: none"> <li>→ Low beam</li> <li>→ High beam</li> <li>→ Low beam and high beam</li> <li>→ High beam and daytime running light</li> </ul>	<ul style="list-style-type: none"> <li>→ Low beam</li> <li>→ High beam</li> <li>→ Dipped beam and high beam</li> </ul>
<b>Auxiliary light functions</b>	<ul style="list-style-type: none"> <li>→ Fog light</li> <li>→ Fog light and cornering light</li> <li>→ Fog light, daytime running light and position light</li> <li>→ Daytime running lights</li> </ul>	<ul style="list-style-type: none"> <li>→ Fog light</li> <li>→ Fog light and cornering light</li> <li>→ Fog and daytime running light</li> <li>→ Daytime running light and position light</li> <li>→ Position light</li> <li>→ Indicator and position light</li> <li>→ Indicator</li> <li>→ Indicator, daytime running light and position light</li> </ul>	

## 90 MM BROCHURE AND CONFIGURATOR WWW.HELLA.COM / 90MM-MODULES

90 mm modules are used in almost all vehicles. They are small, but powerful. They stand for quality, practicality, safety and cost-efficiency. Their modular design allows individual front design. This tool is aimed at original equipment fitters, vehicle fleet operators and end customers in the community sector, agriculture, sports vehicles, electric cars, mobile homes, and bus companies.

### It offers the following benefits:

→ Original Equipment

In our 90 mm configurator, you can design and put together your own front lighting. This process is aided by a simple menu guide. This results in a parts list, which you can then send to HELLA directly from the tool.

→ Illumination comparison

You can compare the lighting technologies for selected main light functions. See the difference between halogen and LED with realistic images from Europe's largest light testing facility! Compare light distribution to make the right decision for your application. You will also receive all the relevant technical data information. The complete range is clearly described in a PDF.



**Note:** You will find additional information on the 90 mm modules in our separate brochure.

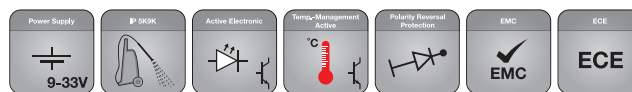
## 90 MM: L 4060 LED HIGH BEAM

**High-end illumination. High beam, daytime running and position lights in one module or as a separate high beam module.**

40 x 60 mm PC lens with new design. Pattern-free and hardened plastic cover lens. Spotlight with either pre-mounted carrier frame or as a 90 mm performance module mount for 1:1 conversion.

Integrated FEP plug and control electronics.

The products on this page have the following features:

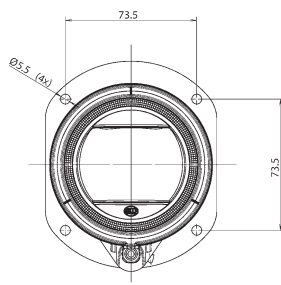


### LED SPOTLIGHT L 4060

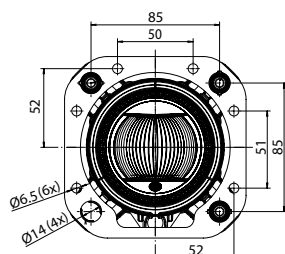
Modular headlight with 40 x 60 mm polycarbonate lens, sturdy die-cast aluminum housing, silver design cover (black design cover on request)  
Multivolt 9 – 33 V

Pre-mounted carrier frame	1F0 011 988-021
Performance mount	1F0 011 988-121

With pre-mounted carrier frame



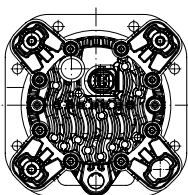
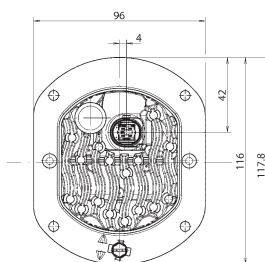
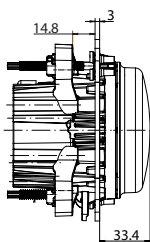
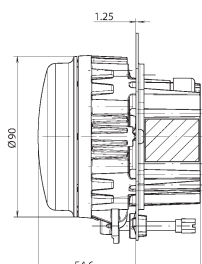
Performance module mount for 1:1 conversion of existing halogen versions



### LED SPOTLIGHT L 4060 WITH DAYTIME RUNNING LIGHT / POSITION LIGHT

Modular headlight with 40 x 60 mm polycarbonate lens, sturdy die-cast aluminum housing, silver design cover (black design cover on request)  
Multivolt 9 – 33 V

Pre-mounted carrier frame	1F0 011 988-031
Performance mount	1F0 011 988-131



### LED SPOTLIGHT L 4060 WITH INDICATOR

Modular headlight with 40 x 60 mm polycarbonate lens, sturdy die-cast aluminum housing, silver design cover (black design cover on request)  
Multivolt 9 – 33 V

Pre-mounted carrier frame, with control unit	1F0 011 988-081*
Performance mount, with control unit	1F0 011 988-181*
Pre-mounted carrier frame, without control unit	1F0 011 988-071
Performance mount, without control unit	1F0 011 988-171

\* For the LED turn indicator and LED lamp failure check, please note the instructions on pages 70 to 73.

## 90 MM: L 4060 LED FOG LIGHT

Uniform illumination similar to daylight.

Fog light in various combinations as a separate module, with daytime running light, position light and cornering light. 40 x 60 mm PC lens, pattern-free hardened plastic cover lens, integrated FEP plug.

The products on this page have the following features:

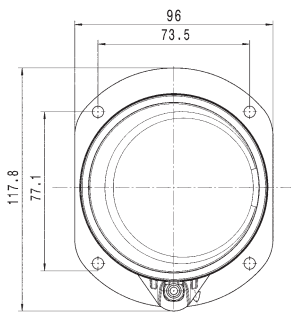


### LED FOG LIGHT L 4060

Modular headlight with 40 x 60 mm polycarbonate lens, sturdy die-cast aluminum housing, silver design cover (black design cover on request)  
Multivolt 9 – 33 V

1N0 011 988-001

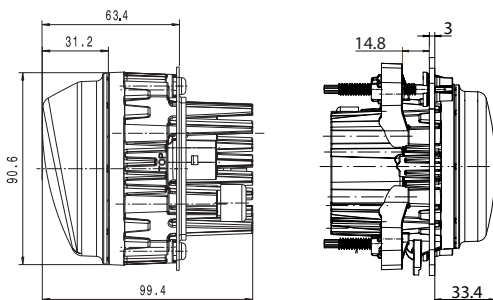
With pre-mounted carrier frame



### LED FOG LIGHT L 4060, WITH DAYTIME RUNNING LIGHT AND POSITION LIGHT

Modular headlight with 40 x 60 mm polycarbonate lens, sturdy die-cast aluminum housing, silver design cover (black design cover on request)  
Multivolt 9 – 33 V

1N0 011 988-011



### L 4060 LED FRONT FOG LAMP, WITH CORNERING LIGHT

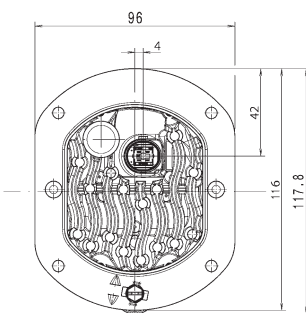
Modular headlight with 40 x 60 mm polycarbonate lens, sturdy die-cast aluminum housing, silver design cover (black design cover on request)  
Multivolt 9 – 33 V

On the right

1N0 011 988-061

On the left

1N0 011 988-051





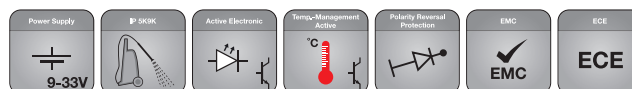
## 90 MM: L 70 LED LOW BEAMS AND HIGH BEAMS

The products on this page have the following features:

The light colour, which is similar to daylight, offers more safety and comfortable, fatigue-free driving. Three white high-power LEDs provide the light source for each light function. The light is homogeneously projected through the 70 mm DE lens on the street. The design life of the headlamp, normally more than 15,000\* real operating hours, allows huge cost savings when it comes to maintenance and repair costs compared to other lighting systems\*\*.

Exclusive automobiles distinguish themselves through their cutting-edge technology.

The HELLA LED low beam or low beam/high beam module is so high-tech that it shows its obvious technological advancement every time it is switched on, creating visible distance from the mass market.



### 90 MM PREMIUM LED MODULE

Maintenance-free module normally for more than 15,000 operating hours, very homogeneous light and rapid start time, 35 watt power consumption, no movable parts, passive cooling system, plastic cover lens, vehicle security system: 5 A, Multivolt

Mono LED, right-hand traffic	<b>1BL 010 820-001</b>
Mono LED, left-hand traffic	<b>1ML 010 820-011</b>
Bi-LED, right-hand traffic	<b>1AL 010 820-021</b>
Bi-LED, left-hand traffic	<b>1LL 010 820-031</b>

**Type approval:** Mono-LED (E) ES 3159 and LES 3160,  
Bi-LED (E) ES 3351 and LES 3352

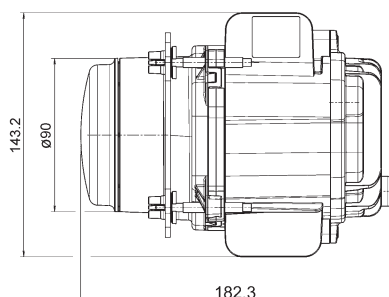
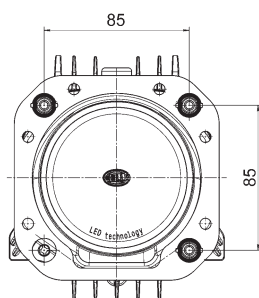
### Set packaging

(One headlamp and one 12 V control unit for functional monitoring)

Mono LED, right-hand traffic	<b>1BL 010 820-801</b>
Mono LED, left-hand traffic	<b>1ML 010 820-821</b>
Bi-LED, right-hand traffic	<b>1AL 010 820-841</b>
Bi-LED, left-hand traffic	<b>1LL 010 820-861</b>

### Accessories

12 V, for failure check - function monitoring device	<b>5DS 011 630-001</b>
Carrier frame	<b>9AH 169 580-011</b>



\* at an ambient temperature of around 50°C

\*\* In the ECE-R48's range of validity, due to the legal situation, it is necessary to ensure a failure check of an LED headlamp in the vehicle's electric system by taking suitable measures. Failure check is no longer necessary from 06 / 2014 onwards for vehicles in accordance with ECE-R48 Series 06 Supplement 3.

## 90 MM: LED ACCESSORIES (L 4060)

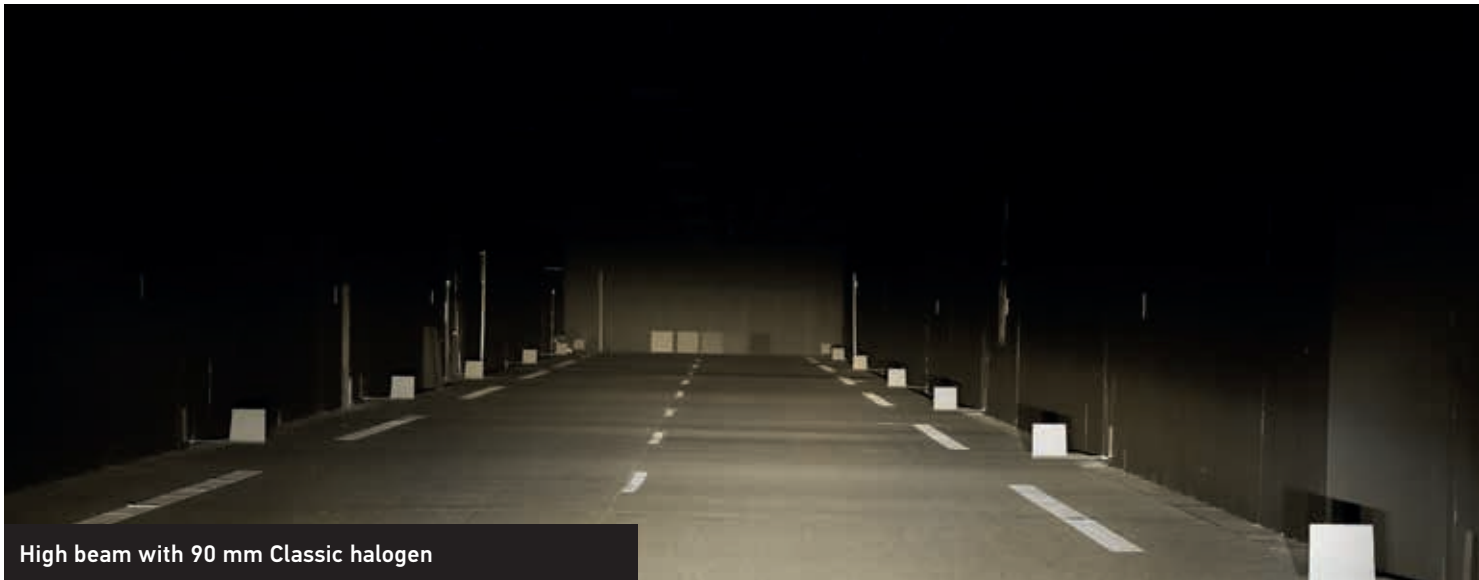
### Legend

- ) Accessories required for proper connection
- ) Optional accessories, custom-developed for headlamps.
- \*\*) Required for Xenon low-beam headlamps, optional for halogen and LED.
- ) Required for Xenon low-beam headlamps and, in certain countries, in accordance with local approval regulations. Permitted as an option for halogen and LED.

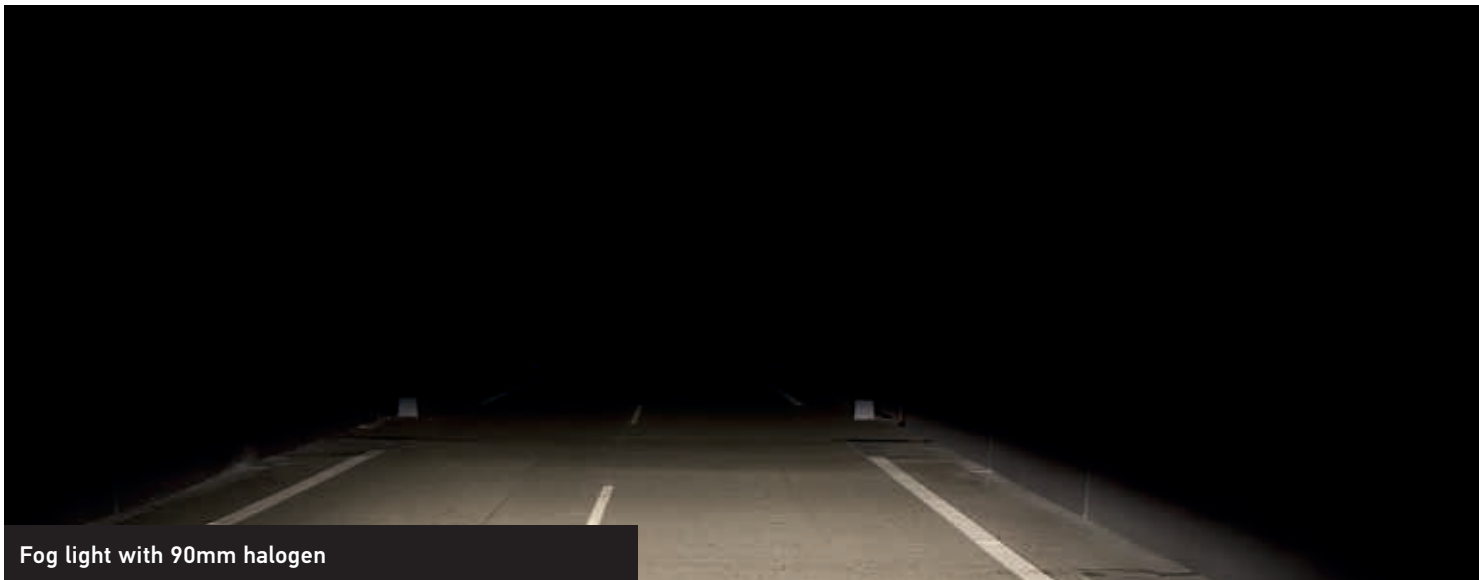
ACCESSORY COMPONENTS	PART NUMBER	FEATURES
<b>CARRIER FRAME</b>		
	9AH 169 580-011	black
<b>SURPLUS SUPPLY, SUPERSEALED LED AMP, 3-PIN</b>		
Housing	8JA 746 184-032	10 units
Female socket connector	8KW 744 837-002	50 units
Strand insulation	9GD 746 185-002	50 units
<b>SURPLUS SUPPLY, LED FEP PLUG, 4-PIN</b>		
Housing	8JA 202 231-002	
Flat contact	8KW 863 933-013	50 units
Strand sealing 0.35 – 0.5 mm <sup>2</sup> or	9GD 863 952-022	50 units
Strand sealing 0.75 mm <sup>2</sup>	9GD 863 952-012	50 units
Blind plug	9GD 863 952-002	50 units
<b>SURPLUS SUPPLY, LED DEUTSCH PLUG, 4-PIN (ONLY TOGETHER WITH THE ADAPTER CABLE, SEE1)</b>		
Male connector housing	8JA 201 022-042	10 units
Lock / wedgelock	9NB 201 024-042	10 units
Contact sleeve 0.5 - 1.5 mm <sup>2</sup>	9NB 201 025-112	50 units
Blind plug	9NB 201 026-012	50 units
Dummy plug set packaging (consists of 1 male connector housing, 1 lock, 5 contact sleeves and 3 dummy plugs)	8JA 201 022-821	
<b>HEADLIGHT BEAM THROW ADJUSTMENT SYSTEM</b>		
Headlamp leveling system	6NM 007 282-221	
Bracket for right-side mounting of actuator	8HG 138 619-007	
Bracket for left-side mounting of actuator	8HG 138 620-007	
<b>HEADLIGHT CLEANING SYSTEMS</b>		
Headlamp cleaning set with fixed nozzles	8WS 008 549-001	4 nozzles
Headlight cleaning system set with telescoping single nozzles	8WT 008 549-101	Two single nozzles
Headlight cleaning system set with telescoping double nozzles	8WT 008 549-201	Two double nozzles
<b>BEND LIGHTING ACCESSORIES</b>		
LED Module connection cable - bend lighting control unit	8KB 163-160-011	1 unit
Bend lighting control unit	5DF 009 244-007	24 units
<b>ADAPTER CABLE</b>		
1) Adapter from FEP plug to DEUTSCH plug (4-pin)	8KA 202 117-001	1 unit
Adapter from FEP plug to Performance module (247 043) or DynaView (009 295)"	8KA 202 117-011	1 unit



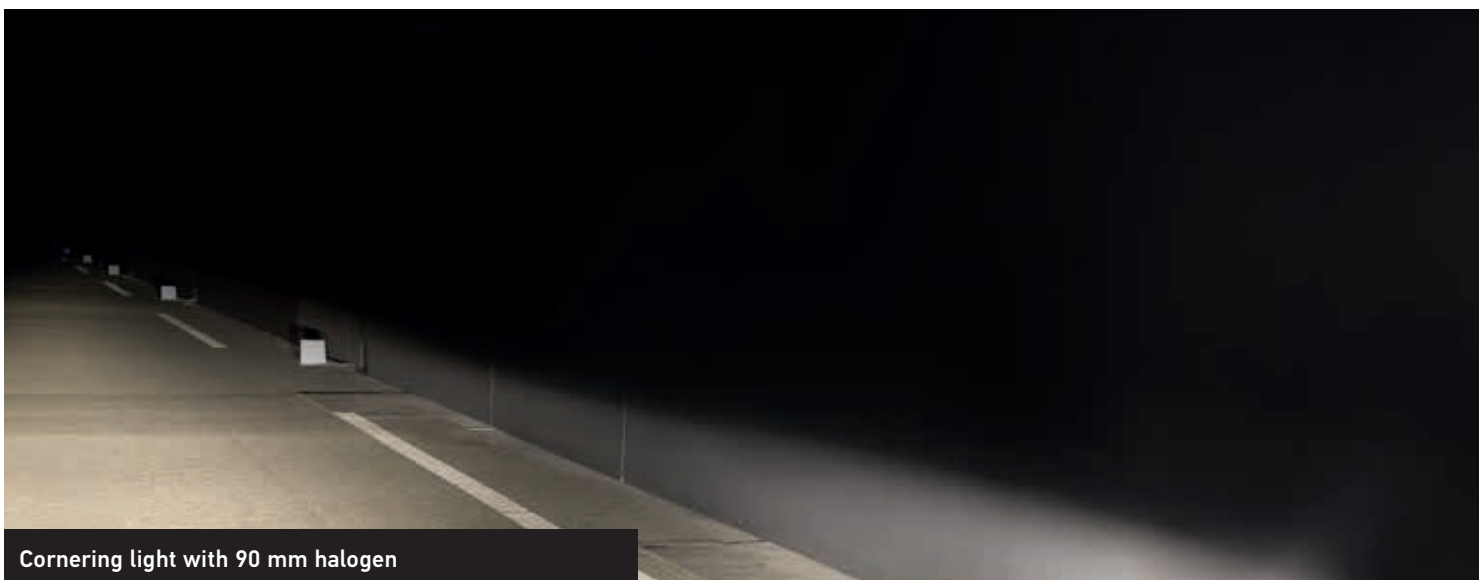
## 90 MM: ILLUMINATION COMPARISONS AT THE HELLA LIGHT TESTING FACILITY



High beam with 90 mm Classic halogen



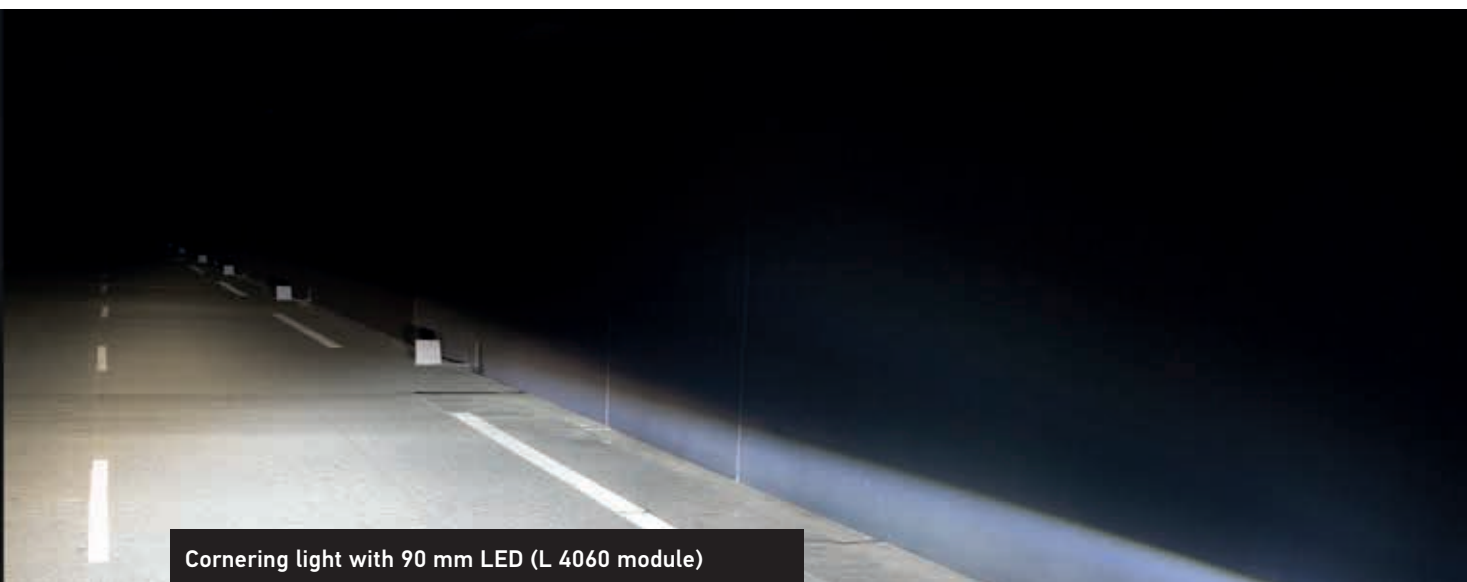
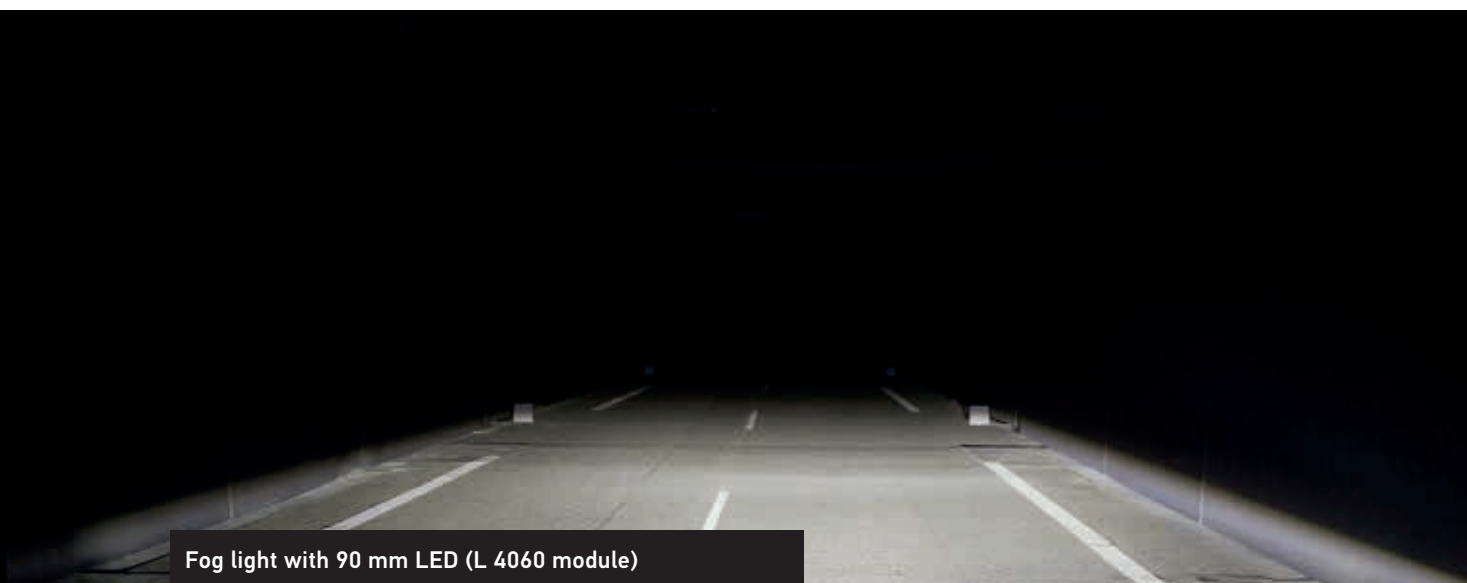
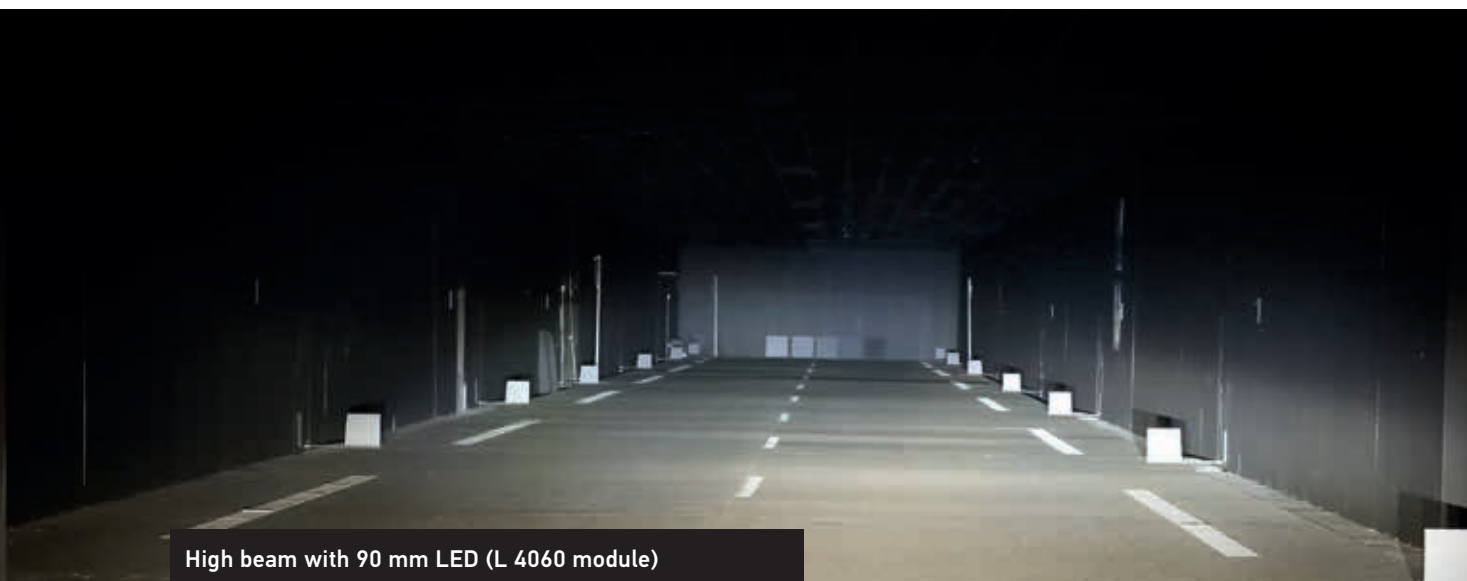
Fog light with 90mm halogen




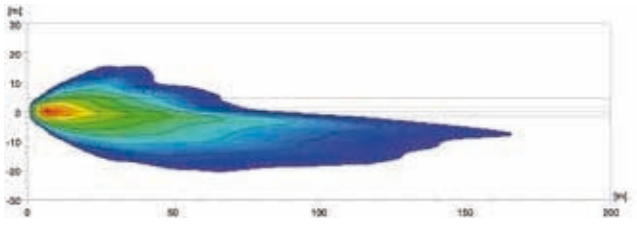

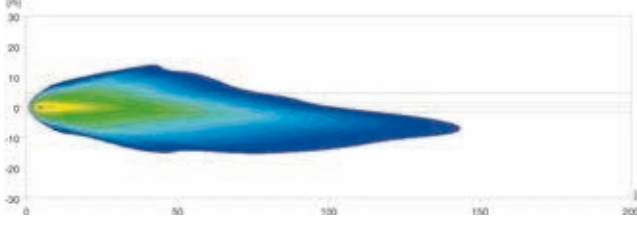

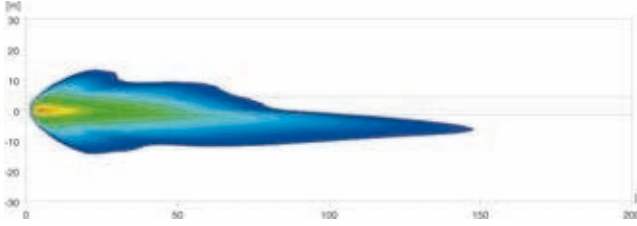

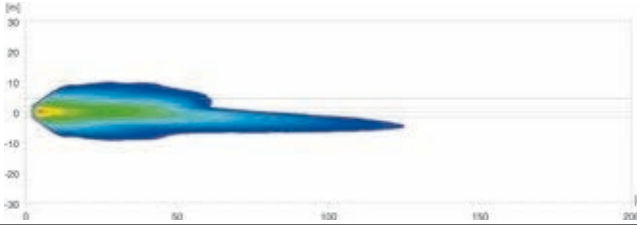

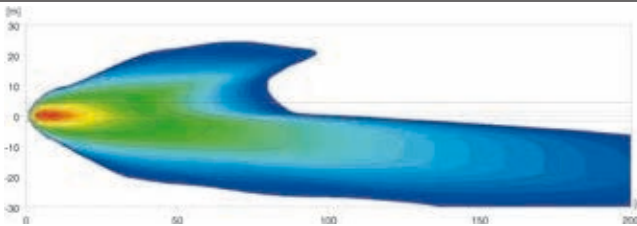

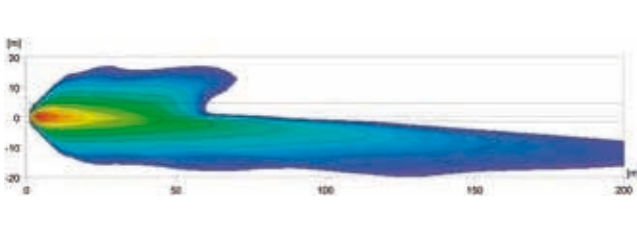


Cornering light with 90 mm halogen




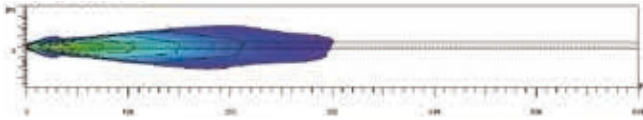

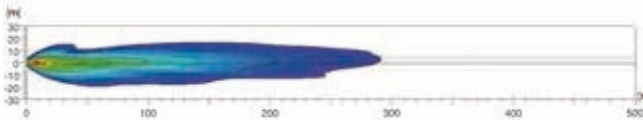

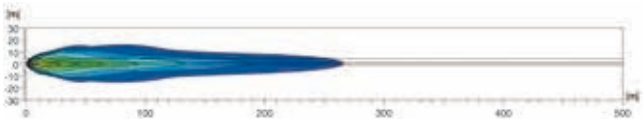





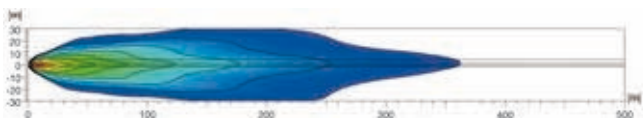




ITY



# LOW-BEAM: COMPARISON OF LED, HALOGEN AND XENON

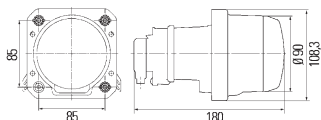
	PRODUCT IMAGE	DESCRIPTION	LIGHT DISTRIBUTION
LED		L 70 LED low beam page 23	
HALOGEN		Premium Halogen and Bi-Halogen® low beam page 30	
		Performance Halogen low beam page 31	
		Classic Halogen low beam on request	
XENON		Premium Bi-Xenon® low beam page 30	
		Classic Xenon low beam on request	
		Classic Bi-Xenon® low beam on request	

# HIGH BEAM: COMPARISON OF LED, HALOGEN AND XENON

	PRODUCT IMAGE	DESCRIPTION	LIGHT DISTRIBUTION
LED		L 4060 LED high beam light Page 21	
		L 70 LED high beam page 23	
HALOGEN		Premium Bi-Halogen® high beam page 30	
		Performance Halogen high beam page 31	
		Classic Halogen high beam on request	
XENON		Premium Bi-Xenon® high beam page 30	
		Classic Xenon high beam on request	
		Classic Bi-Xenon® high beam on request	

## 90 MM PREMIUM

High-end illumination. Low beam and high beam from a single headlight module, choice of Xenon or Halogen technology. Pattern-free glass cover lens. High-quality aluminium reflector. With Xenon, waterproof ballast. Connection using 0.5 m shielded supply cable with detachable plug-type connection.



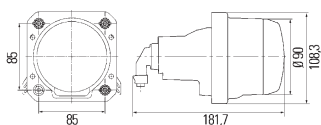
### BI-XENON® MAIN HEADLIGHT LOW BEAM AND SPOTLIGHT

Xenon low beam and high beam in one lamp unit, Xenon low beam only permitted with headlight range adjustment and lens cleaning system.

12 V, right-hand traffic, D2S, ECE	<b>1AL 009 997-001*</b>
12 V, left-hand traffic, D2S, ECE	<b>1LL 009 997-011*</b>
12 V, right-hand traffic, D2S, SAE	<b>1AL 009 997-021*</b>
24 V, right-hand traffic, D2S, ECE	<b>1AL 009 997-041</b>
24 V, left-hand traffic, D2S, ECE	<b>1LL 009 997-051</b>

**Type approval:** E 2484 and E 2485

\* Only allowed for replacement purposes in M1 and N1 vehicles.

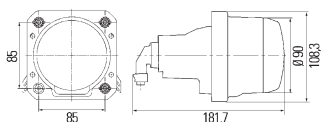


### BI-HALOGEN® HEADLAMP LOW BEAM AND SPOTLIGHT

Halogen, low beam and high beam in one headlamp, metal reflectors with a clear DE lens. Ideal in combination with the matching spotlights and fog lights. Inc. light source.

12 V, right-hand traffic, H7, ECE	<b>1AL 009 998-001</b>
12 V, left-hand traffic, H7, ECE	<b>1LL 009 998-011</b>
12 V, right-hand traffic, H9, SAE	<b>1AL 009 998-021</b>
24 V, right-hand traffic, H7, ECE	<b>1AL 009 998-041</b>
24 V, left-hand traffic, H7, ECE	<b>1LL 009 998-051</b>

**Type approval:** E 2484 and E 2485



### HALOGEN LOW BEAM HEADLAMP

Metal reflectors with clear DE lens. Ideal in combination with the matching spotlights and fog lights, including light source.

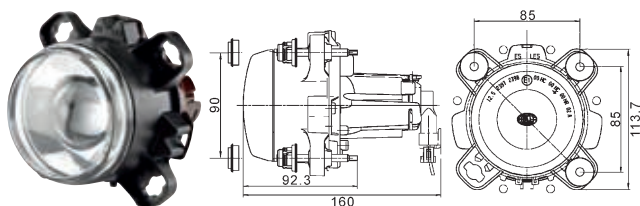
12 V, right-hand traffic, H7, ECE	<b>1BL 009 999-001</b>
12 V, left-hand traffic, H7, ECE	<b>1ML 009 999-011</b>
12 V, right-hand traffic, H7, SAE	<b>1BL 009 999-021</b>
24 V, right-hand traffic, H7, ECE	<b>1BL 009 999-041</b>
24 V, left-hand traffic, H7, ECE	<b>1ML 009 999-051</b>

**Type approval:** E 2486 and E 2487



## 90 MM PERFORMANCE

Optimal illumination Modules in high quality for use during long trips.  
With splashwater-proof plug-type connector.



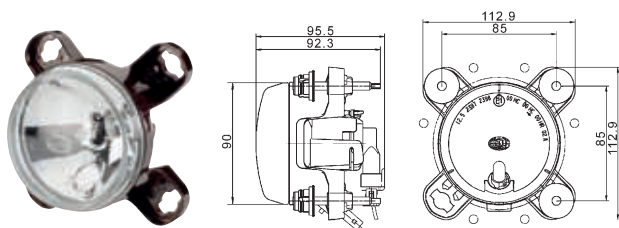
### HALOGEN LOW BEAM HEADLAMP

Module headlamp with an aluminum reflector and clear DE lens behind a non-patterned glass cover lens, incl. light source.

12 V, right-hand traffic, H1	<b>1BL 247 042-007*</b> <b>1BL 247 042-001*</b>
12 V, left-hand traffic, H1	<b>1ML 247 042-027</b>
24 V, right-hand traffic, H1	<b>1BL 247 042-017</b>
24 V, left-hand traffic, H1	<b>1ML 247 042-037</b>

**Type approval:** E 2397 and E 2398

\* With a technical solution for tourists for temporary use in left-hand traffic countries or, for the left-hand traffic versions, in right-hand traffic countries.



### HALOGEN SPOTLIGHT

Module headlamp with an aluminum free-form reflector and a non-patterned glass cover lens, incl. light source.

12 V, with position light, H1	<b>1K0 247 043-007</b> <b>1K0 247 043-001</b>
12 V, without position light	<b>1K0 247 043-017</b> <b>1K0 247 043-011</b>
24 V, with position light, H1 heavy duty long life	<b>1K0 247 043-027</b>
24 V, without position light	<b>1K0 247 043-037</b>

**Type approval:** E 2397

### Information

If you have been using Classic modules so far (except Bi-Xenon®), you can easily upgrade these to Performance modules.

The following Performance modules have the same module attachment as the Classic module and are therefore compatible and easy to replace – without having to modify the existing Classic carrier frame structure first.

Would you like to combine modules from the Premium and Performance series without having to commit yourself right at the start of the vehicle design process?

Then use the tried-and-trusted Premium carrier frame structure as a basis.

Alongside the complete Premium range, the following modules from the Performance series that are compatible with a Premium carrier frame can also be used.

#### CLASSIC MOUNTINGS FOR PERFORMANCE HEADLAMPS

90 mm high beam with PO, 12 V light bulb	<b>1K0 247 043-157</b>
90 mm high beam with 12 V light bulb	<b>1K0 247 043-167</b>
90 mm spotlight 12 V bulb, Right-hand traffic	<b>1BL 247 042-217</b>
Left-hand traffic	<b>1ML 247 042-227</b>

24 V versions on request

#### PREMIUM MOUNTINGS FOR PERFORMANCE HEADLAMPS

90 mm high beam with PO, 12 V light bulb	<b>1K0 247 043-117</b>
90 mm high beam with 12 V light bulb	<b>1K0 247 043-127</b>
90 mm spotlight 12 V bulb, Right-hand traffic	<b>1BL 247 042-177</b>
Left-hand traffic	<b>1ML 247 042-187</b>

24 V versions on request

## 90 MM: HALOGEN/XENON ACCESSORIES

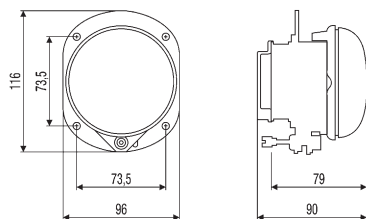
### Legend

- ) Accessories required for proper connection
- ) Optional accessories, custom-developed for headlamps.
- \*\*) Required for Xenon low-beam headlamps, optional for halogen and LED.
- ) Required for Xenon low-beam headlamps and, in certain countries, in accordance with local approval regulations. Permitted as an option for halogen and LED.

ACCESSORY COMPONENTS	PART NUMBER	FEATURES
<b>CARRIER FRAME</b>		
	9AH 169 580-011	black
	9AH 157 659-007	silver
<b>PLUG (VEHICLE SIDE)</b>		
Surplus supply H1 / H7 / Xenon	8JD 156 151-807	20 systems
Surplus supply H9	8JD 158 175-807	20 systems
Parking lights	8JD 156 150-807	20 systems
<b>Toggle high beam, AMP-SUPERSEALED 2-pin</b>		
Housing	8JA 746 184-022	10 units
Female socket connector	8KW 744 837-002	50 units
Strand insulation	9GD 746 185-002	50 units
<b>Version with fording capability</b>		
Venting hose	9GS 190 794-002	50 m
10 T units for venting hose	9XL 190 733-002	10 units
<b>HEADLIGHT RANGE ADJUSTMENT SYSTEMS</b>		
12 V, for halogen	6NM 007 282-221	
12 V, for Xenon versions	6NM 007 282-231	
24 V, for halogen	6NM 008 299-501	
Mounting set for actuator	8HG 183 586-001	1 set
Bracket for right-side mounting of actuator	8HG 138 619-007	
Bracket for left-side mounting of actuator	8HG 138 620-007	
Automatic headlamp leveling system, 12 V •**)	8XX 010 315-001	1 sensor
Automatic headlamp leveling system, 24 V	8XX 010 315-011	2 sensors
Motorhome version headlamp leveling system, 12 V	8XX 010 315-101	1 sensor
<b>LENS WIPER SYSTEM ■)</b>		
12 V, headlamp cleaning set with fixed nozzles	8WS 008 549-001	4 nozzles
24 V, headlamp cleaning set with fixed nozzles	8WS 008 549-501	4 nozzles
12 V, headlamp cleaning set with telescoping single nozzles	8WT 008 549-101	Two single nozzles
24 V, headlamp cleaning set with telescoping single nozzles	8WT 008 549-601	Two single nozzles
12 V, headlamp cleaning set with telescoping double nozzles	8WT 008 549-201	Two double nozzles
24 V, headlamp cleaning set with telescoping double nozzles	8WT 008 549-701	Two double nozzles



## 90 MM INDICATORS, POSITION LIGHTS, FOG LIGHTS AND DAYTIME RUNNING LIGHTS



### FOG LIGHT 90 MM

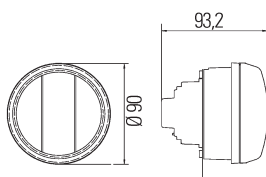
Minimum installation dimensions for a discreetly convincing lighting design. Aluminium reflectors with clear lens. Ideal in combination with the matching 90 mm spotlights and low beam headlights.

12 V, halogen	1N0 008 582-007
24 V, halogen	1N0 008 582-017

Type approval: Ⓔ 1342, ECE-R19 B series 02, B series 03

### Accessories

Rubber cap	9GH 158 051-007
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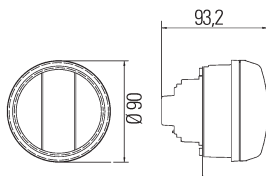


### 90 MM INDICATOR/ POSITION LIGHT COMBINATION

Module with Kartoval® LED position light and non-patterned glass cover lens.

12 V, indicator/position light	2BE 010 102-001
24 V, indicator/position light, with a silver-coloured PY21W light bulb	2BE 010 102-011

Type approval: Ⓔ 2586, ECE R6, ECE R7

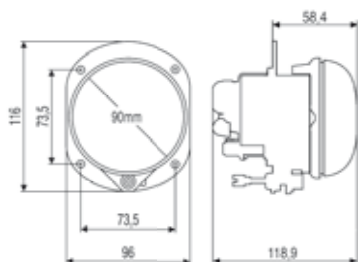


### 90 MM DAYTIME DRIVING / POSITION LIGHT COMBINATION

Module with Kartoval® LED position light and non-patterned glass cover lens with a P21W longlife light bulb.

12 V, with daytime driving/position light	2BE 010 102-101
24 V, with daytime driving/position light	2PT 010 102-111

Type approval: Ⓔ 2586, ECE-R87, ECE-R7

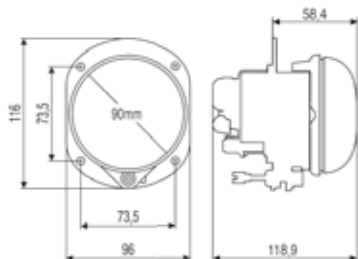


### 90 MM DAYTIME RUNNING LIGHT / SPOTLIGHT COMBINATION

Module headlamp with non-patterned glass cover lens and an H15 light bulb, with carrier frame

12 V (55 W / 15 W), with daytime driving/high beam light	1F0 010 293-001
24 V (70 W / 20 W), with daytime driving/high beam light	1F0 010 293-011

Type approval: Ⓔ 2680, ECE-R87, ECE-R112



### 90 MM DAYTIME RUNNING LIGHT / FOG LIGHT COMBINATION

Module headlamp with non-patterned glass cover lens and an H15 light bulb, with carrier frame

12 V (55 W / 15 W), with daytime driving/fog light	1N0 010 294-001
24 V (70 W / 20 W), with daytime driving/fog light	1N0 010 294-011

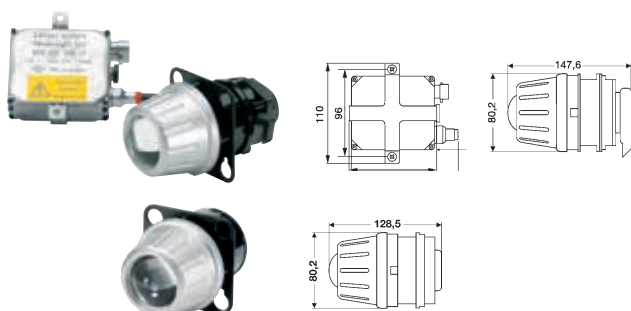
Type approval: Ⓔ 2681, ECE-R19 B series 02, B series 03, ECE-R87

### ACCESSORIES FOR COMBINATIONS

Connector plug set 3-pin (20 systems)	8JD 162 581-802
Male connector housing 3-pin (250 units)	8JA 179 631-002



## 50 MM PREMIUM



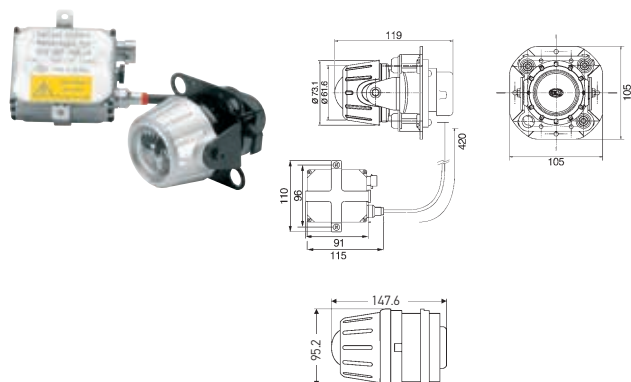
### LOW-BEAM HEADLAMP

Installation frame for 3-point attachment, adjustable from the front and rear

<b>Xenon</b> 12 V, right-hand traffic, D2S including D2S Xenon bulb and separate Xenon electronic ballast	<b>1BL 009 071-047</b>
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<b>Halogen</b> 12 V, right-hand traffic, H7	<b>1BL 009 071-007</b>
12 V, left-hand traffic, H7	<b>1ML 009 071-017</b>
24 V, right-hand traffic, H7	<b>1BL 009 071-027</b>
24 V, left-hand traffic, H7	<b>1ML 009 071-037</b>

Type approval: Ⓔ 1903 and Ⓔ 1904



### HIGH-BEAM HEADLAMP

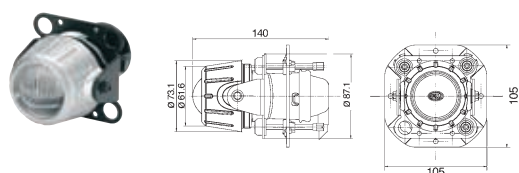
3-point holder, adjustable using setting screw

<b>Xenon</b> back carrier frame not included in delivery (see Accessories), D2S 12 V, including D2S-Xenon bulb and separate Xenon electronic ballast	<b>1FO 008 390-317</b>
24 V, including a D2S-Xenon bulb and separate Xenon electronic ballast	<b>1FO 008 390-327</b>

Type approval: Ⓔ 1120

<b>Halogen</b> 12 V, H9	<b>1KL 009 486-001</b>
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Type approval: Ⓔ 2198



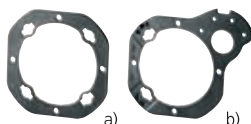
### FOG LIGHT

3-point holder, adjustable with adjustment screw, back carrier frame not included in delivery (see Accessories)

12 V, H7	<b>1NL 008 090-317</b>
24 V, H7	<b>1NL 008 090-327</b>

Type approval: Ⓔ 877, ECE-R19 B series 02, B series 03

### Accessories



#### CARRIER FRAME (not for H9 halogen spotlights)

a) without headlamp range adjustment holder	<b>9AH 161 786-017</b>
b) with headlamp range adjustment holder	<b>9AH 161 784-017</b>



#### CAPS FOR THE DETECTION RANGE

Plastic cap with waterproof external plug connector (not illustrated)	<b>9HD 149 253-007</b>
a) Rubber cap for halogen low-beam headlamps	<b>9GH 152 654-007</b>
b) Rubber cap for halogen fog headlamps	<b>9GH 147 009-007</b>



#### CONNECTOR PLUG SET

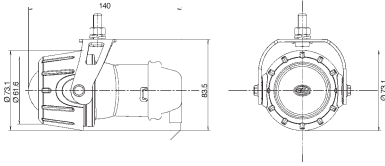
2-pin for plastic cap (for 20 headlamps)	<b>8JD 156 150-807</b>
H9 plug for 20 headlights (not shown)	<b>8JD 158 175-807</b>



#### ACTUATOR MOTORS FOR HEADLIGHT RANGE ADJUSTMENT

for 12 V Halogen	<b>6NM 007 282-221</b>
24 V actuator	<b>6NM 008 299-501</b>
Actuator assembly set	<b>8HG 183 586-001</b>

## MICRO DE HEADLIGHTS

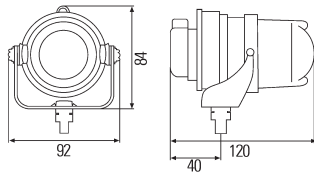


## MICRO DE PREMIUM EDITION: FOG LIGHT

Individual fog lights, with an H3 12 V light bulb, aluminum design panel  
Rubber cap included in delivery

1NL 008 090-301

Type approval: E 877, ECE-R19 B series 02 and B series 03



## DE XENON PREMIUM EDITION: XENON SPOTLIGHT

Ref. 17.5, 12 V, black housing colour, inc. D2S Xenon bulb and separate electronic ballast, aluminium design finisher

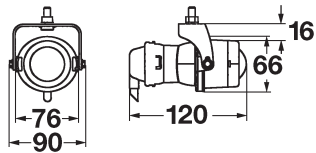
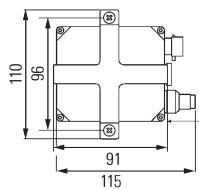
Set with harness and relay

1F0 008 390-821

Individual

1F0 008 390-301

Type approval: E 1120



## DE XENON SPOTLIGHT

DE high-beam headlamps, with black decorative rings, HID lamps and 12 V ballast, universal handrail holder included in delivery

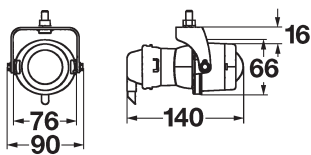
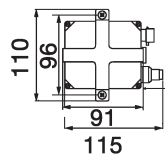
Set with 2 headlamps, harness and relay

1F0 008 390-801

Individual

1F0 008 390-001

Type approval: E 1120



## DE FOG LIGHT

Fog headlamp with black decorative ring, H3 12 V light bulb, rubber cap and universal handrail holder

Set with 2 headlamps, harness and relay

1NL 008 090-821

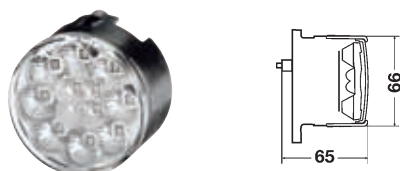
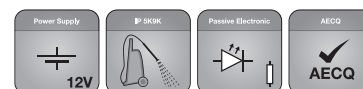
Individual

1NL 008 090-031

Type approval: E 877, ECE-R19 B series 02, B series 03

## INDICATOR AND POSITION LIGHTS

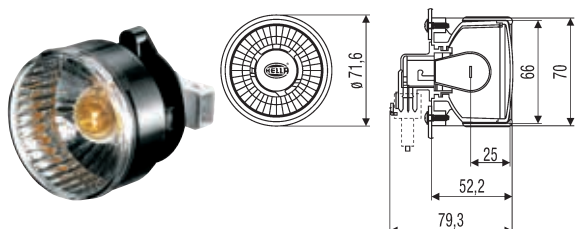
This product features the following properties:



### Premium LED light, 60 mm diameter

		ECE	SAE (USA)
Position light, for flush-mounting, with 12 LEDs	2PF 009 001-421	X	■

Type approval: 12390



### PREMIUM LIGHTS, 60 MM DIAMETER

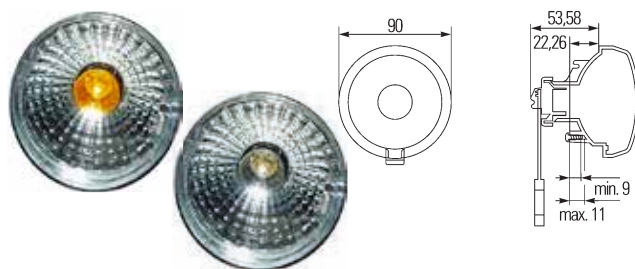
12 V / 21 W, with clear lens, indicator with ...		ECE	SAE (USA)
Amber bulb	2BA 009 001-071	1, 1a, 1b X, D	
Amber bulb	2BA 009 001-091		■ 1)
Silver-coloured bulb	2BA 009 001-201	1, 1a, 1b X	

Position light		ECE	SAE (USA)
with P21/5 W bulb	2PF 009 001-081	X	■

Type approval: 6546 and 7613

### Accessories for Ø 60 mm

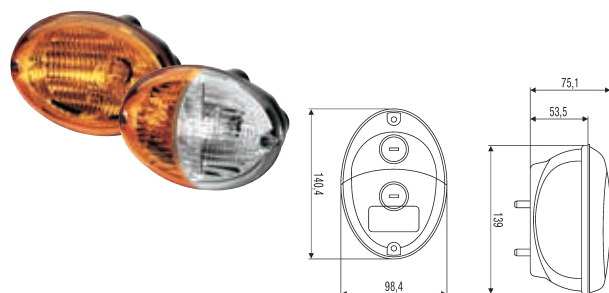
2-pin connector plug set	8JD 156 150-807
Male connector housing (250 units)	8JA 179 631-002



### INDICATOR/POSITION LIGHT, 90 MM DIAMETER

12 V		ECE	SAE (USA)
Indicator with amber bulb	2BA 965 039-061	x, 1, 1a, 1b	■ ●

Type approval: 10215



### OVAL LIGHT SERIES

12 / 24 V, for horizontal or vertical surface-mounting, with grommet.

		ECE	SAE (USA)
<b>Attention:</b> Depending on the installation position, the water drain opening must be broken out.			
Indicator, without bulb	2BA 343 130-057	1, X	● 1)
Indicator/position light, without bulb	2BE 343 130-007	X	

Type approval: 6550 and 10202

### ECE note: Turn indicator approval by category

- 1 Distance > 40 mm to low beam headlamp/fog lamp
- 1a Distance < 40 mm to low beam headlamp/fog lamp
- 1b Distance > 20 mm to low beam headlamp/fog lamp
- D ECE approval as twin indicators

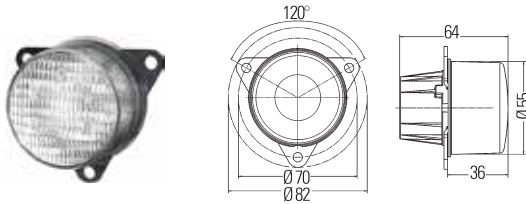
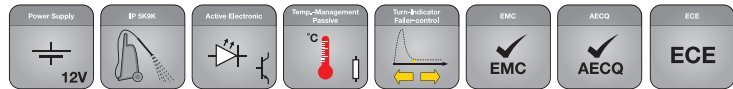
### SAE type approval for vehicles

- < 2032 mm wide
- <sup>1)</sup> < 2032 mm wide, distance to low beam headlamp > 75 – 100 mm
- > 2031 mm wide
- <sup>1)</sup> > 2,031 mm wide, distance to low beam headlamp > 100 mm

Note: Please see pages 71-73 regarding LED direction indicators and LED direction indicator failure check.

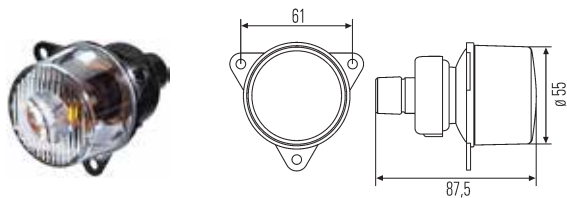
## INDICATOR AND POSITION LIGHTS

This product features the following properties:

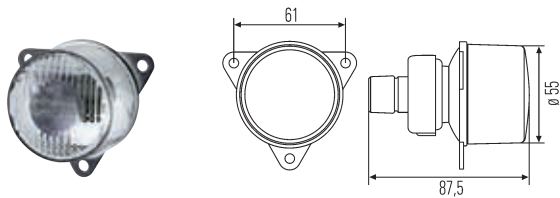
**MODULAR LED LIGHT, 55 MM DIAMETER**

and a crystal clear lens with optics and a 500 mm connecting cable (Category 1a) for front installation

Indicator, without DI pulse	<b>2BA 011 172-001/-007</b>
Indicator, with DI pulse	<b>2BA 011 172-011/-017</b>
Position lamp with heat sink	<b>in progress</b>

**Type approval:** BL (E) 3284 and CCC**INDICATOR**

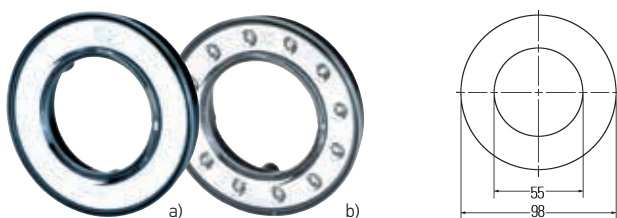
with an installed, 12 V / 21 W amber light bulb, Category 1a

**2BA 008 221-107****Type approval:** (E) 878, ECE**POSITION LIGHT**

for 12 V/5 W bulb

**2PF 008 221-011****Type approval:** (E) 879**Accessories for light series 008 221-...**

Harness with grommet	<b>8KA 152 134-007</b>
Grommet separate	<b>9GT 137 236-007</b>

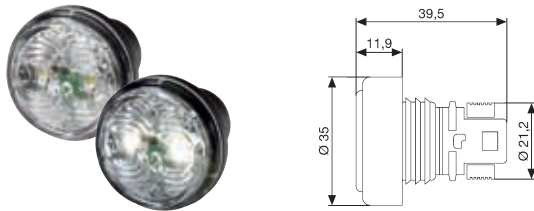
**A) CHROME-PLATED CIRCULAR FINISHER**

suitable for light series 008 221-... and 011 172-...

for surface-mounting **8XU 008 405-031****LED POSITION LIGHT**for surface-mounting, suitable for light series 008 221-... and 011 172-...  
12 V/1.8 W, current consumption = approx. 0.15 Awith 12 LEDs **2PF 008 405-061****Type approval:** (E) 1696, (E) 2295

# POSITION LIGHTS

This product features the following properties:



## LED POSITION LIGHT WITHOUT REFLECTOR

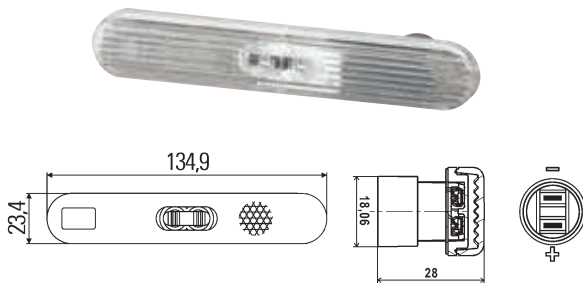
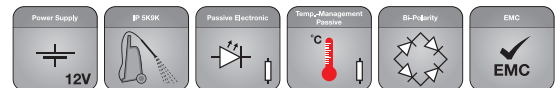
for flush-mounting, clear lens, black plastic housing with adhesive film for sticking to the body. 2-pin cable, 150 mm long, open cable ends, with 2 white LEDs

12 V/0.6 W, current consumption = approx. 0.05 A

2PF 340 825-041

Type approval: 11371

This product features the following properties:



## LED POSITION LIGHT

for surface-mounting, self-adhesive with 6.3 mm contacts and counterplug grommet

Current consumption = 0.04 A

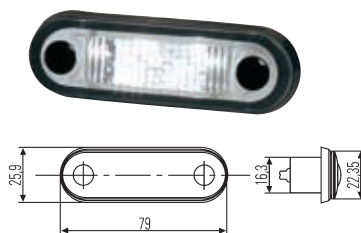
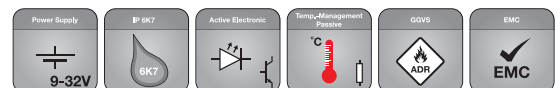
12 V

2PF 009 226-097

Counterplug grommet (order separately)

9GT 186 597-007

This product features the following properties:



## LED POSITION LIGHT

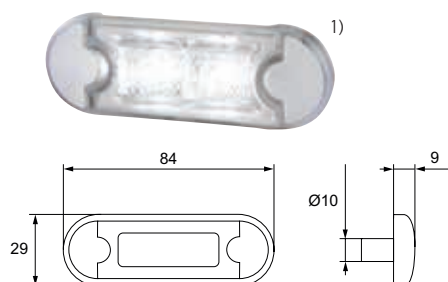
for horizontal or vertical flush-mounting, 12 V/0.5 W, current consumption = approx. 0.04 A

with 0.5 m cable, 10–33 V

2PF 959 590-401

Type approval: 7597 and 031721

This product features the following properties:



## LED POSITION LIGHT

Multivolt, with 2 white LEDs for horizontal and vertical installation, crystal clear lens, with a black cap for screw closure

with 500 mm cable

2PF 959 855-207

with 2500 mm cable

2PF 959 855-247

Type approval: ECE

### Accessories

Stainless steel housing, polished

9AB 959 685-201

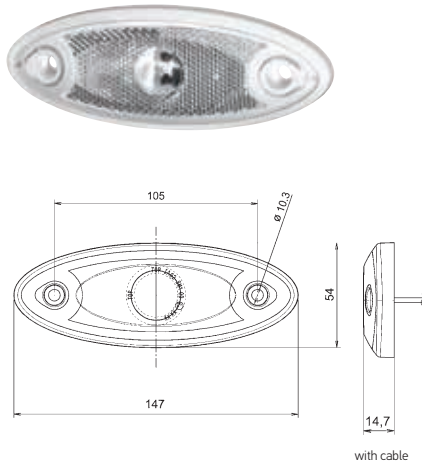
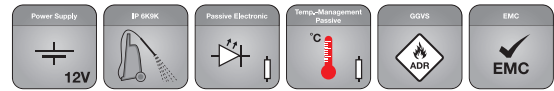
1) Cap for screw closure, white

9HD 980 858-018



## POSITION LIGHTS

This product features the following properties:



### LED POSITION LIGHT

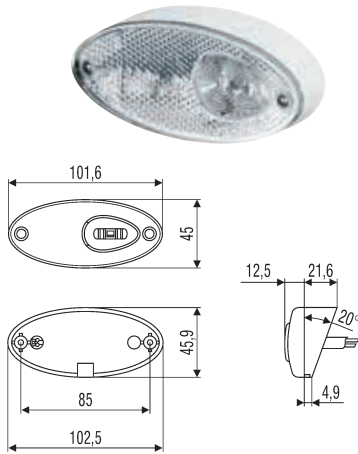
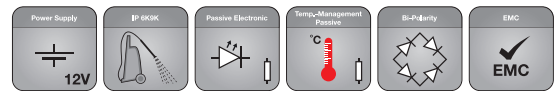
for horizontal surface-mounting, with 500 mm cable, modern night-time design and high level of safety thanks to maximum illuminated area

12 V

2PG 344 690-307

Type approval: E24 5853

This product features the following properties:



### LED POSITION LIGHT

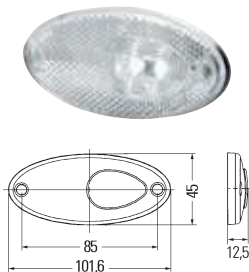
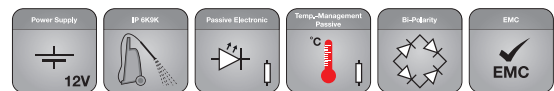
for horizontal surface-mounting, with 20° adapter base included loose

12 V/0.3 W, current consumption = approx. 0.03 A

2PF 964 295-257

Type approval: E27 817

This product features the following properties:



### LED POSITION LIGHT WITH REFLECTOR

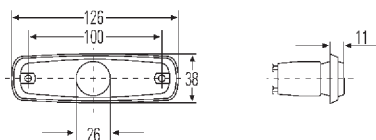
for horizontal surface-mounting, with 2 LEDs

12 V/0.3 W, current consumption = approx. 0.03 A

2PG 964 295-121

Type approval: E27 0301

## POSITION LIGHTS



### POSITION LIGHT WITH REFLECTOR

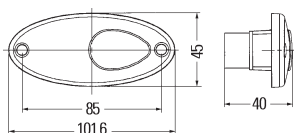
for horizontal or vertical flush-mounting,  
with pre-fitted 12 V/3 W bulb

12 V 2PG 962 964-041

Seal (order separately) 9GD 963 281-001

Grommet (order separately) 9GT 963 129-001

Type approval: 7499 and 3153



### Position light with reflector

for horizontal flush-mounting,  
with pre-fitted 12 V/5 W bulb and seal

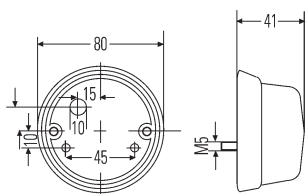
12 V 2PG 964 295-011

Position light without reflector (not shown)

for horizontal or vertical flush-mounting

12 V 2PF 964 295-021

Type approval: 9806 and 811



### POSITION LIGHT

for surface-mounting, clear lens, 2 x M5 fastening screws

12 V 2PF 001 259-631

Intermediate piece  
for surface-mounting at 45° (order separately) 8HG 002 247-001

Type approval: 21624





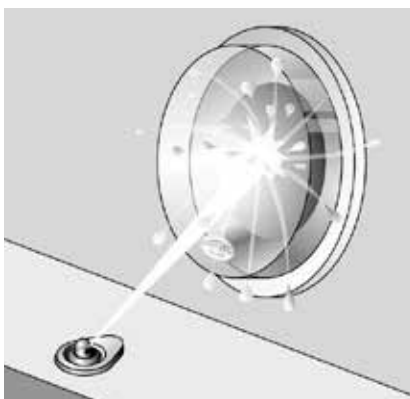
## HEADLIGHT CLEANING SYSTEMS

Legislation prescribes the use of a lens wiper system when Xenon low beam headlights are used. (This can also be used on halogen headlamps, high beams and LED headlamps.)

HELLA cleaning systems work according to the water jet principle, which manages without wipers and brushes by using the kinetic energy from thick water drops to loosen and rinse away dirt particles from the lens.

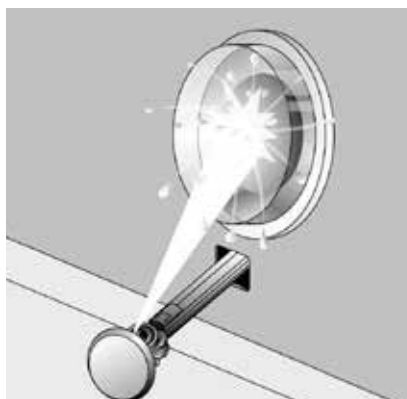
Ø 50 mm	Ø 90 mm	Ø 90 mm
1BL 009 071-...	1KO 008 191-...	1LL 009 997-...
1ML 009 071-...	1KO 008 192-...	1BL 010 820-...
1FO 008 390-...	1BL 008 193-...	1ML 010 820-...
	1BL 008 194-...	1BL 247 042-...
	1AL 009 997-...	1ML 247 042-...
	1LL 009 997-...	1KO 247 043-...

These headlight cleaning systems are ECE type-approved for the following HELLA headlight series when installed in accordance with the enclosed assembly instructions.



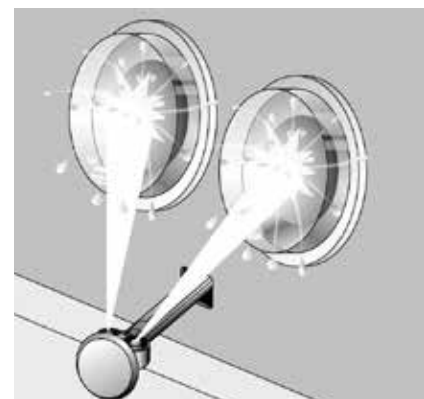
WITH FIXED NOZZLES

12 V	8WS 008 549-001
24 V	8WS 008 549-501



WITH TELESCOPIC INDIVIDUAL NOZZLES

12 V	8WT 008 549-101
24 V	8WT 008 549-601



WITH TELESCOPIC DOUBLE NOZZLES

12 V	8WT 008 549-201
24 V	8WT 008 549-701

## ULTRASOUND HEADLAMP LEVELING SYSTEM

The ultrasonic system is a headlight range adjustment system for 50 mm and 90 mm headlight modules for original equipment and upgrades for vehicles with Xenon headlights.

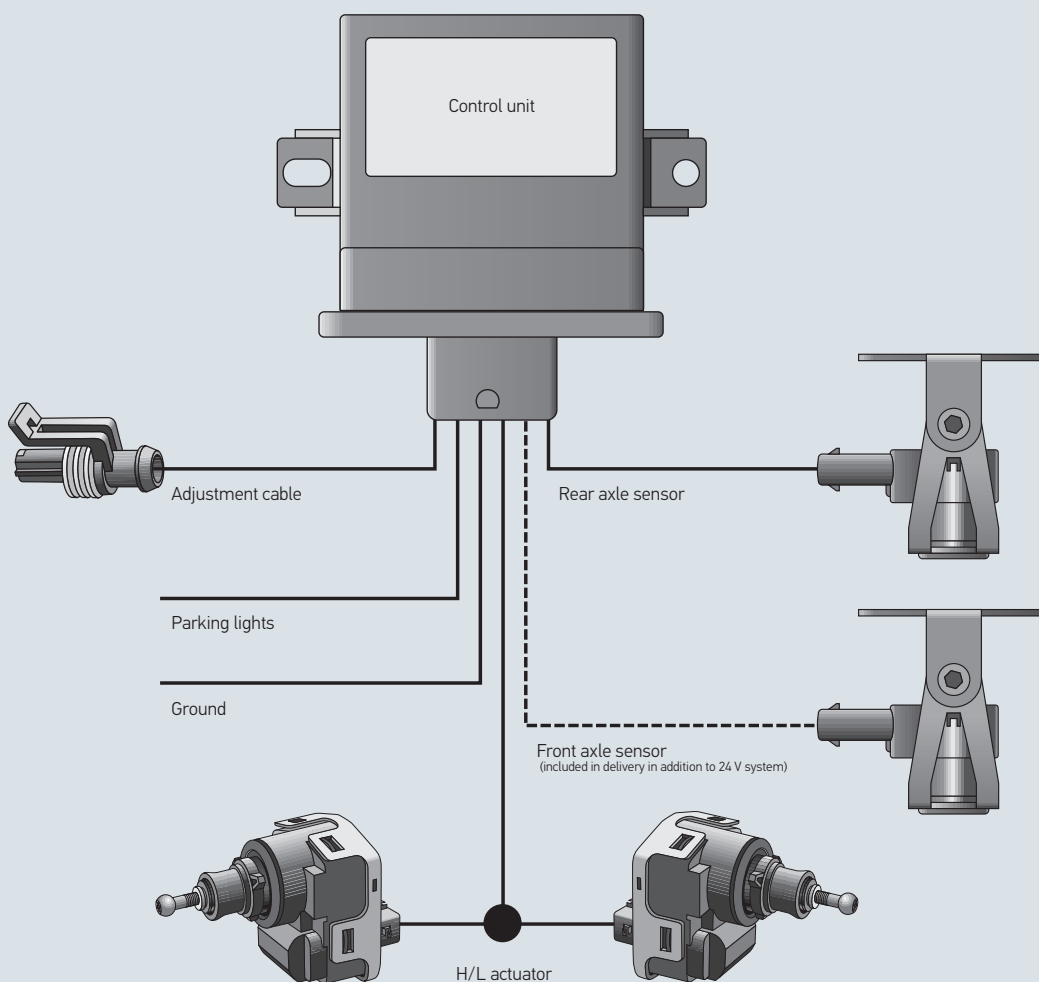
The sensor in this system measures the distance from the vehicle undercarriage to the road and forwards the signal to the central control unit, which then optimally adjusts the headlights via the actuator motors on the Xenon headlights.

For more detailed information, see assembly instructions.

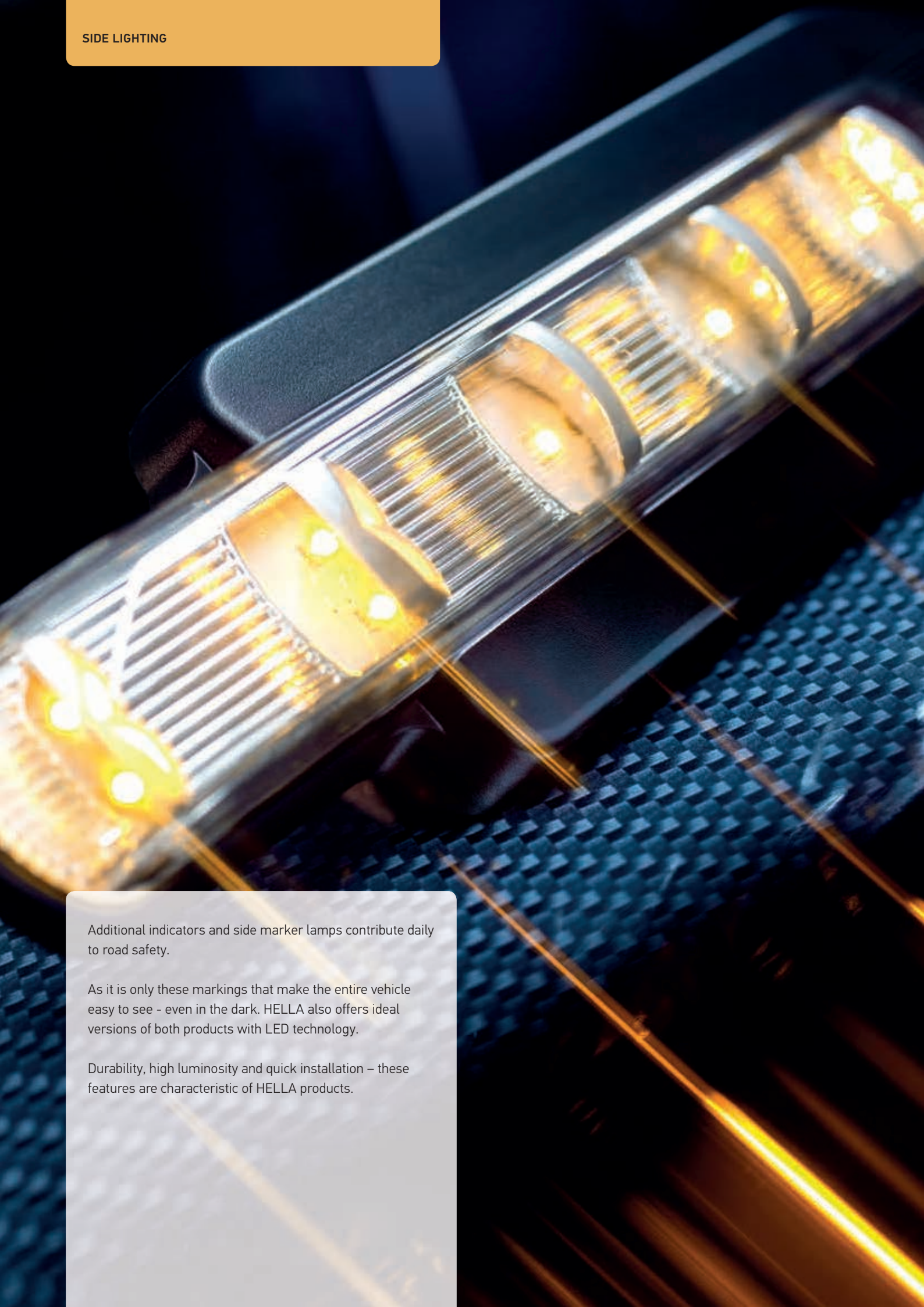
### Headlight range adjustment

12 V, a sensor (passenger car), 4 m cable length to the sensor	<b>8XX 010 315-001</b>
12 V, a sensor (3.5 t), 10 m cable length to the sensor	<b>8XX 010 315-101</b>
24 V, two sensors, 2 m and 10 m cable lengths to the sensors (incl. 24 V to 12 V voltage reduction unit with 2 A)	<b>8XX 010 315-011</b>

### ULTRASONIC SYSTEM FOR HEADLIGHT RANGE ADJUSTMENT – OVERVIEW







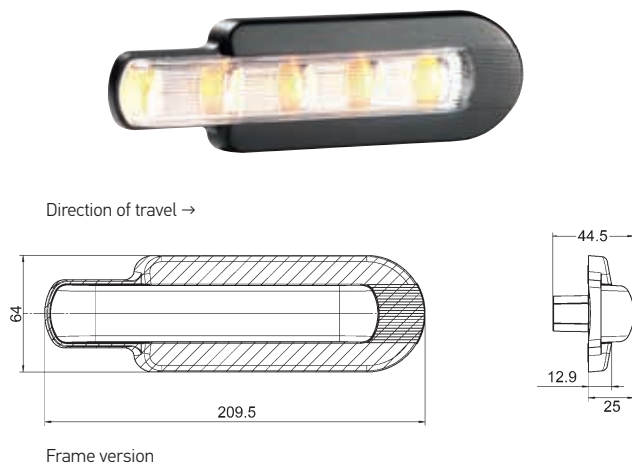
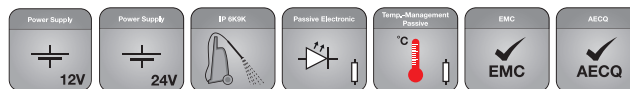
Additional indicators and side marker lamps contribute daily to road safety.

As it is only these markings that make the entire vehicle easy to see - even in the dark. HELLA also offers ideal versions of both products with LED technology.

Durability, high luminosity and quick installation – these features are characteristic of HELLA products.



This product features the following properties:



Frame version

#### ADDITIONAL LED INDICATORS CATEGORY 6, WITH FRAME

12 V/3.5 W, current consumption = approx. 0.29 A  
24V/3.5W, current consumption = approx. 0.15 A

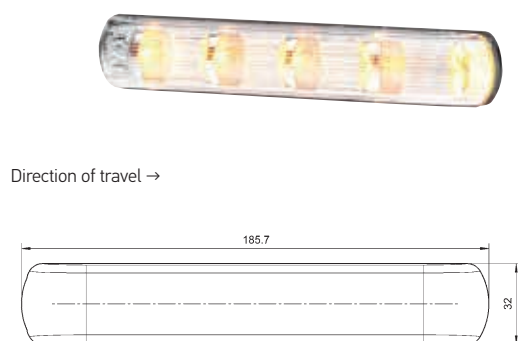
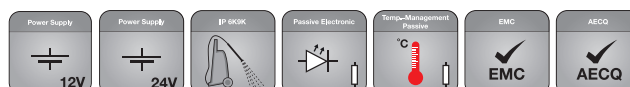
12 V, thread rolling screw AMP SUPERSEAL with black frame	2BM 011 788-011
12 V, thread rolling screw 500 mm cable, with open cable end and black frame	2BM 011 788-031
24 V, thread rolling screw AMP SUPERSEAL with black frame	2BM 011 788-001
24 V, thread rolling screw 500 mm cable, with open cable end and black frame	2BM 011 788-021

Type approval: ECE (E11) 7506

#### Spare Parts / Accessories

Black frame	9AB 194 559-007
AMP-SUPERSEAL mating connector (AMP No. 282080-1)	8JA 746 184-022

This product features the following properties:



Self-adhesive version

#### ADDITIONAL LED INDICATORS CATEGORY 6, SELF-ADHESIVE

12 V/3.5 W, current consumption = approx. 0.29 A  
24V/3.5W, current consumption = approx. 0.15 A

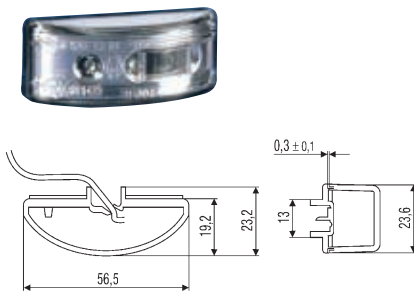
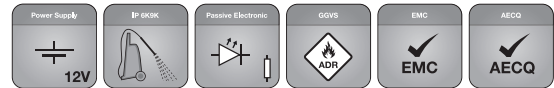
12 V, self-adhesive AMP-SUPERSEAL	2BM 011 788-051
12 V, self-adhesive 500 mm cable, exposed cable end	2BM 011 788-071
24 V, self-adhesive AMP-SUPERSEAL	2BM 011 788-041
24 V, self-adhesive 500 mm cable, exposed cable end	2BM 011 788-061

Type approval: ECE (E11) 7506

#### Spare parts / Accessories

AMP-SUPERSEAL mating connector (AMP No. 282080-1)	8JA 746 184-022
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This product features the following properties:



**LED AUXILIARY INDICATOR**

for horizontal flush-mounting, category 5, simple gluing into prepared mirror, can also be used as a universal auxiliary indicator

	ECE	SAE (USA)
12 V/0.7 W, Current consumption = approx. 0.06 A	X	X

Type approval: E 011423

**AUXILIARY INDICATOR**

for side installation, category 6 for 24 V/21 W, without light bulb, very flat construction

Amber Lens	2BM 008 355-001
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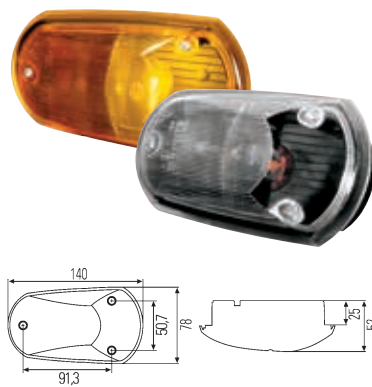
Type approval: SAE E 1059

Crystal-clear lens	2BM 008 355-017
--------------------	-----------------

Type approval: SAE E 1848

**Accessories**

Harness for non splashwater-proof area	8KA 157 425-007
--	-----------------



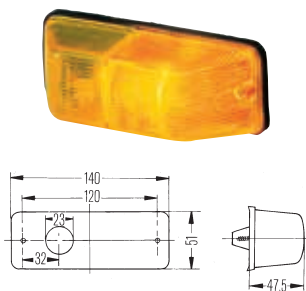
**AUXILIARY INDICATOR**

for surface-mounting on the side, category 5 and 6 for 12 V and 24 V / 21 W, with bulb  
Suitable for GGVs/ADR

On the left	2BM 006 692-017
-------------	-----------------

On the right	2BM 006 692-027
--------------	-----------------

Type approval: E 0152621

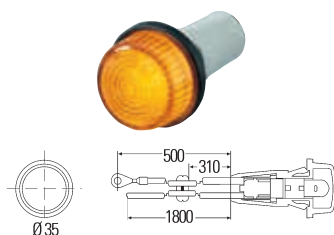


**AUXILIARY INDICATOR**

for flush-mounting on the side, category 5 for 12 V, with bulb

small, space-saving	2BM 003 563-111
---------------------	-----------------

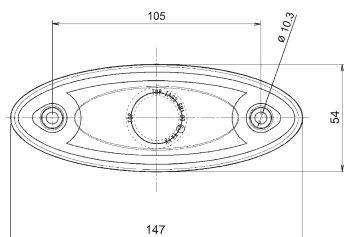
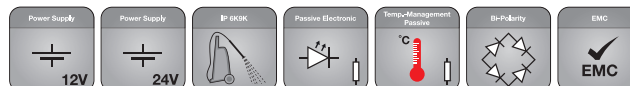
Type approval: E 42621



**Info**

Category 5 auxiliary indicators are required for vehicles < 6 m long and/or < 3.5 t;  
category 6 auxiliary indicators are required for vehicles > 6 m long and / or > 3.5 t.

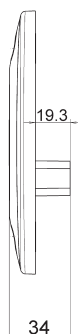
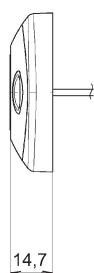
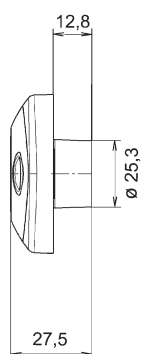
This product features the following properties:



with 6.3 mm contact

with cable

AMP-SUPERSEAL



#### Innovative side marker, position and clearance light

##### with 500 mm cable for horizontal mounting

12 V, white housing	2PG 344 690-307
12 V, red housing	2TM 344 690-357

##### with 6.3 mm contacts for horizontal and vertical installation

12 V, white housing	2PS 344 690-007
12 V, grey housing	2PS 344 690-027
12 V, black housing	2PS 344 690-067
24 V, black housing	2PS 344 690-037

##### with AMP-SUPERSEAL for horizontal and vertical installation

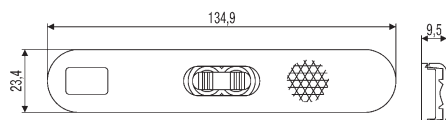
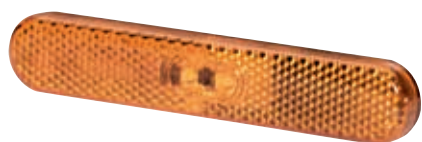
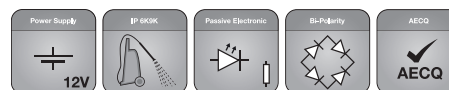
12 V, white housing	2PS 344 690-607
12 V, black housing	2PS 344 690-617
24 V, orange housing	2PS 344 690-687
24 V, black housing	2PS 344 690-627

#### Accessories

Rubber seal	9GD 343 697-007
Grommet	9GT 343 367-002

Type approval: 5853 and 03 0227

This product features the following properties:



#### LED SIDE MARKER LIGHT

for horizontal surface-mounting, with 250 mm cable, self-adhesive

12 V, horizontal	2PS 009 226-021/7
12 V, vertical	2PS 009 226-077

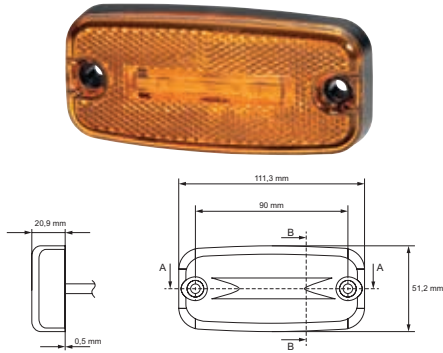
for horizontal surface-mounting, with 6.3 mm contacts and counterplug grommet, self-adhesive

12 V, horizontal	2PS 009 226-067
12 V, horizontal, white lens with position light	2PF 009 226-097
24 V, horizontal	2PS 009 226-037

Type approval: 10236

**Note:** Additional innovative side marker, position and clearance lamps can be found on page 37 and starting on page 74.

This product features the following properties:



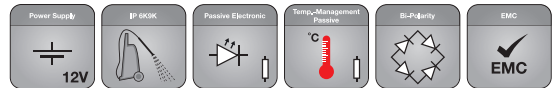
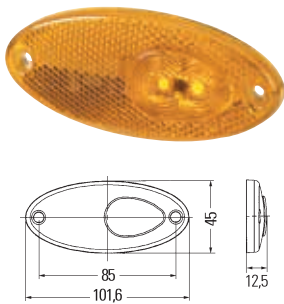
**LED SIDE MARKER LIGHT**

500 mm cable, stripped end  
 12 V/0.6 W, current consumption = approx. 0.04 A  
 24 V/1.2 W, current consumption = approx. 0.04 A

12 V	2PS 345 600-001
24 V	2PS 345 600-011

Type approval: 5881

This product features the following properties:

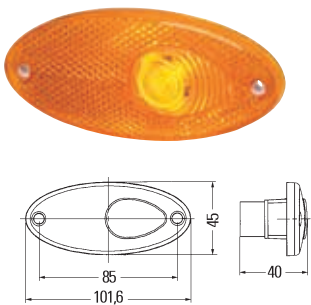


**LED SIDE MARKER LIGHT**

for horizontal flush-mounting, with 2 LEDs, with reflector, with seal and two cables  
 500 mm long, with ECE and SAE type approval  
 12 V / 0.5 W, current consumption = approx. 0.04 A

with fastening screws	2PS 964 295-067
self-adhesive, without seal, with caps for the screw holes	2PS 964 295-081

Type approval: 0202

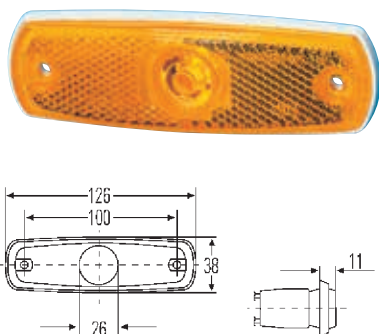


**SIDE MARKER LIGHT**

for horizontal flush-mounting, with reflector, with seal, with 12 V bulb, with ECE and SAE type approval

12 V/5 W, amber	2PS 964 295-001
Red SMLR in accordance with SAE	2XS 964 295-031/-037

Type approval: SMLR 9807, UR 812



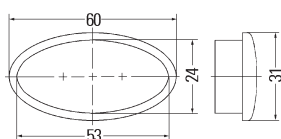
**SIDE MARKER LIGHT**

for horizontal or vertical flush-mounting, with reflector, with 12 V bulb, with white base plate, with ECE and SAE type approval

12 V/3 W	2PS 962 964-037
Seal (order separately)	9GD 963 281-001
Grommet (order separately)	9GT 963 129-001

Type approval: ECE 10236

This product features the following properties:

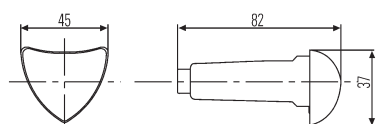
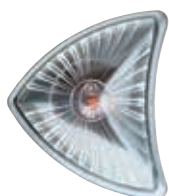


#### LED SIDE MARKER LIGHT SET

for horizontal flush-mounting, for retrofitting to passenger cars < 6 m, 4 units each, with LED technology  
12 V / 0.7 W, current consumption = approx. 0.06 A

		ECE	SAE (USA)
Amber lenses, Silver-grey finishers	2PS 008 138-801	X	X
Grey lenses, Black finishers	2PS 008 138-811	X	X
Grey lenses, Silver-grey finishers	2PS 008 138-821	X	X

Type approval: Ⓔ 9110



#### SIDE MARKER LIGHT SET

for horizontal and vertical flush-mounting, 4 units each, with  
amber 12 V / 5 W bulb

		ECE	SAE (USA)
in arrow design	2PS 008 541-801	X	

Type approval: Ⓔ 1223





### More than a combination of 5 functions

LEDs are not only taking the automotive industry by storm thanks to their energy-saving potential, they also offer a design versatility that plays a decisive role in developing the typical appearance of a car. With respect to the combination rear lights in particular, the many possibilities offered by combining the LEDs with optical systems are being utilised to underscore the specific vehicle design by means of an attractive styling.

The HELLA patented system for monitoring the turn indicator gives HELLA lights the ability to be used in conjunction with the HELLA ballast in accordance with ECE-R48. The lights are currently designed so that no error message is displayed in the vehicle's electrical system. Inverse-polarity protection ensures that the light is not damaged due to accidental contact of the poles. In order to lengthen the service life, all HELLA light components have been matched optimally in terms of temperature to prevent overloading the LEDs in high environmental temperatures. The lights are designed for the service life of a vehicle and are therefore an outstanding, economical and environmentally friendly solution.



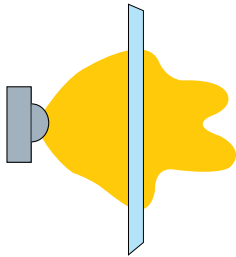
## MORE DESIGN FREEDOM FROM LEDs

The use of LEDs gives design engineers much greater design freedom. Ergonomic aspects can be implemented more easily.

### Diverse technical options from LEDs.

Depending on the product or customer requirements, HELLA installs LEDs in different optical lighting systems. Here are some examples of combination rear lights:

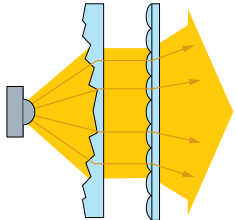
#### Direct light



- Spot-like appearance
- No optical system necessary
- Max. distance of 2 LEDs = 15 mm



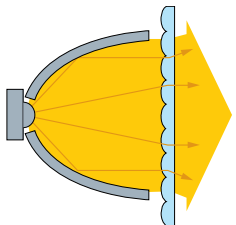
#### Fresnel Systems



- Suitable for all functions
- Homogeneous appearance



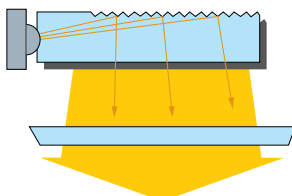
#### Reflector with optics/ lens without optics



- High efficiency
- Brilliant appearance



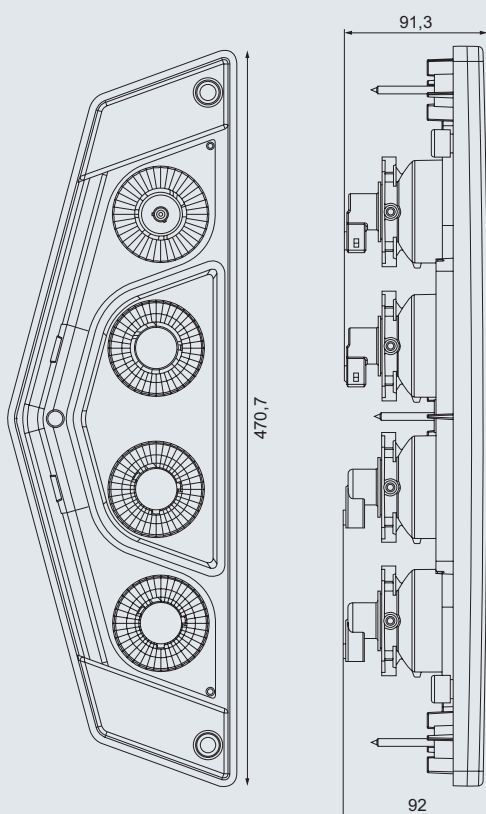
#### Light transmitter systems



- Elongated appearance
- Homogeneous illumination
- Adapted to curved exterior shape



# CARALUNA X



# CARALUNA X – THE INNOVATIVE TAIL LAMP FOR CAMPERS AND MOTORHOMES.

## Our answer to the request for a custom illumination system.

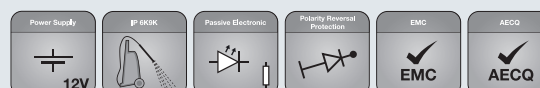
As an innovation leader in original equipment for automobiles, HELLA is setting new standards in lighting technology. HELLA uses the innovative LED light transmitter technology in the combination rear light to implement the tail lamp of a new generation of campers and motorhomes.

Caraluna X features an appealing design with a sculpted angle in the light transmitter, an extremely fine night signature and an unmistakable appearance in the rear design. A particularly large range of attachment options allows you to give your vehicle a custom flair. The Caraluna X rear lamp can be attached vertically (light transmitter towards the interior of the vehicle), horizontally (light transmitter pointing up or down) or at an angle of 13° – see application examples on the left-hand page. The clear design of the cover lens and the silver vacuum-metallised central area with a frosted look generates an impressive 3D depth effect.

The attractive frosting complements the high-quality appearance of Caraluna X. For entry-level modules, HELLA provides the Caraluna X with all light functions in light bulb technology. The upgrade or hybrid versions have a tail lamp using innovative LED light transmitter technology. The side coupling of 4 LEDs produces a homogenous signal characteristic in the light transmitter and, in addition, gives your vehicle a distinctly unique appearance. The innovative LED light transmitter features particularly homogenous illumination, which makes it quite visible in the dark with its tail lamp function. The permanent light function remains wear-free, even when subjected to heavy use.

The LED light guide tail lamp is a universal solution for all series sizes. HELLA continues to enhance road safety.

## This product features the following properties:



### CARALUNA X: LIGHT BULB VERSION

Electrical connection: tail lamp/brake light via a 3-pin AMP plug and indicator, reversing light and rear fog light, each via a 2-pin AMP plug, specification: HELLA Norm 67101 Class 3.2, operating temperature: -40°C to +50°C, mounting: on the front with 3 screws (ST 4.8 mm)

Tail lamp: 12 V/5 W, current consumption = approx. 0.42 A  
 Brake, indicator, rear fog and reversing light:  
 12 V/21 W, current consumption = approx. 1.75 A

vertical, left (light transmitter guide towards the inside of the vehicle)	<b>2VP 012 570-011</b>
vertical, right (light transmitter guide towards the inside of the vehicle)	<b>2VP 012 570-021</b>
horizontal, left (light transmitter guide above)	<b>2VP 012 570-031</b>
horizontal, right (light transmitter guide above)	<b>2VP 012 570-041</b>
horizontal, left (light transmitter guide below)	<b>2VP 012 570-051</b>
horizontal, right (light transmitter guide below)	<b>2VP 012 570-061</b>
13° horizontal, left (light transmitter guide below)	<b>2VP 012 570-071</b>
13° horizontal, right (light transmitter guide below)	<b>2VP 012 570-081</b>

Type approval: ECE

### Spare parts / Accessories

Mating connector set (2-pin)	<b>8JD 156 150-807</b>
Mating connector set (3-pin)	<b>8JD 162 581-802</b>
12 V, tail lamp/brake light (P21/5W)	<b>8GD 002 078-121</b>
12 V, indicator light (PY21W)	<b>8GA 006 841-121</b>
12 V, reversing light (P21W)	<b>8GA 002 073-121</b>
12 V, rear fog light (H21W)	<b>8GH 008 417-001</b>

### CARALUNA X: HYBRID VERSION

Electrical connection: each light function via 2-pin AMP plug, specification: HELLA Norm 67101 Class 3.2, operating temperature: -40°C to +50°C, mounting: on the front with 3 screws (ST 4.8 mm)

Tail lamp: 12 V/1.4 W, current consumption = approx. 0.12 A  
 Brake, indicator, rear fog and reversing light:  
 12 V/21 W, current consumption = approx. 1.75 A

vertical, left (light transmitter guide towards the inside of the vehicle)	<b>2VP 012 570-111</b>
vertical, right (light transmitter guide towards the inside of the vehicle)	<b>2VP 012 570-121</b>
horizontal, left (light transmitter guide above)	<b>2VP 012 570-131</b>
horizontal, right (light transmitter guide above)	<b>2VP 012 570-141</b>
horizontal, left (light transmitter guide below)	<b>2VP 012 570-151</b>
horizontal, right (light transmitter guide below)	<b>2VP 012 570-161</b>
13° horizontal, left (light transmitter guide below)	<b>2VP 012 570-171</b>
13° horizontal, right (light transmitter guide below)	<b>2VP 012 570-181</b>

Type approval: ECE

### Spare parts / Accessories

Mating connector set (2-pin)	<b>8JD 156 150-807</b>
12 V, tail lamp/brake light (P21/5W)	<b>8GD 002 078-121</b>
12 V, indicator light (PY21W)	<b>8GA 006 841-121</b>
12 V, reversing light (P21W)	<b>8GA 002 073-121</b>
12 V, rear fog light (H21W)	<b>8GH 008 417-001</b>



## COMPLETE LED COMBINATION TAIL LAMPS "COLUNA" WITH 5 LIGHT FUNCTIONS FOR 12 V AND 24 V

- Innovative and patent-registered large-surface LED light transmitter for tail lamp function, combined with reflex reflector
- Versions with rectangular reflex reflector = horizontal and vertical use  
versions with triangular reflex reflector = only horizontal
- Long design life, low life cycle costs as well as extremely robust
- Maintenance-free, fully sealed LED light
- Impact-resistant lens
- Mounted from the front (2 screws) or from the back with 2 x M8 fastening bolts



### Product features of "Coluna"

All light functions of the full LED combination rear lamp (tail lamp, stop light, direction indicator, rear fog lamp and back-up lamp) exclusively feature LED technology. The tail lamp is produced by a ground-breaking patent-registered wide-area LED light guide in combination with the reflex reflector. This light transmitter features especially homogeneous illumination. As a result, the tail light function, with its large surface area of around 145 cm<sup>2</sup>, is exceptionally visible in the dark and thus enhances road safety.

Current consumption	with 12 V	with 24 V
Tail light	2.6 W-0.2 A	2.8 W-0.12 A
Stop light	1.8 W-0.15 A	2 W-0.08 A
Indicator	3.3 W-0.28 A	3.8 W-0.16 A
Rear fog light	2.2 W-0.18 A	2.4 W-0.1 A
Back-up light	3.8 W-0.32 A	5.6 W-0.23 A

Type approval: ECE / ADR / EMC, 5879 and 5880, 10R 04 0071

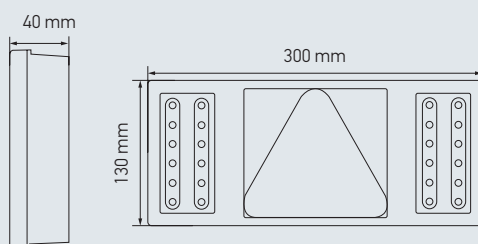
12 V and 24 V versions of this extremely flat surface-mounted full LED light are available for towing vehicles and trailers. A range of different applications on the vehicle are possible using EasyConn or AMP connectors and the front or rear mounting options.

### LEDs for optimum signal pattern

This light combines high-grade LEDs with precision optics to maximise light yield. The tail lamp is implemented as a light curtain with 12 LEDs, and the stop, direction indicator, rear fog and back-up light respectively are implemented with 6 further LEDs. Tested to IP 6K9K, this light is protected from dust and water ingress under constant immersion. This means they are also able to withstand high-pressure cleaning.

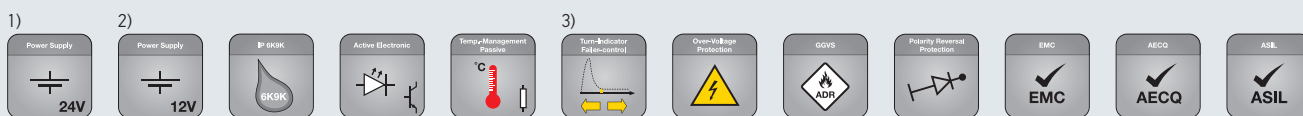


Housing available in silver-gray or red on request.



Note: The individual functions of the light must only be operated with a 3A fuse. Operation of the light with AC voltage or synchronised DC voltage is not permitted.

This product features the following properties:



Part number 2VP 345 900-...	Triangular reflex reflector	Rectangular reflex reflector	Horizontal mounting position	Vertical mounting position	Fixing screws inserted from the front	Fixing bolts inserted from the rear	Cable, 500 mm with open ends	Cable, 3,000 mm with 6.3 mm flat receptacles	Cable, 1,000 mm with 7-pin Easy-Conn plug	Cable, 1,000 mm with 7-pin DIN-AMP-bayonet connector	Left-hand version	Right-hand version	With pulse	Without pulse	Trade packaging, 1 piece
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24 V motorhomes

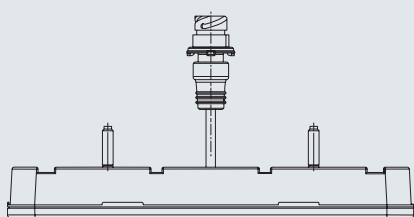
-201 <sup>1), 3)</sup>	-	X	X	X	X	-	X	-	-	-	X	X	X	-	X
-211 <sup>1)</sup>	-	X	X	X	X	-	X	-	-	-	X	X	-	X	X
-221 <sup>1), 3)</sup>	-	X	X	X	-	X	X	-	-	-	X	X	X	-	X
-231 <sup>1)</sup>	-	X	X	X	-	X	X	-	-	-	X	X	-	X	X
-241 <sup>1), 3)</sup>	-	X	X	X	X	-	-	X	-	-	X	X	X	-	X
-251 <sup>1)</sup>	-	X	X	X	X	-	-	X	-	-	X	X	-	X	X
-261 <sup>1), 3)</sup>	-	X	X	X	-	X	-	X	-	-	X	X	X	-	X
-271 <sup>1)</sup>	-	X	X	X	-	X	-	X	-	-	X	X	-	X	X

12 V campers

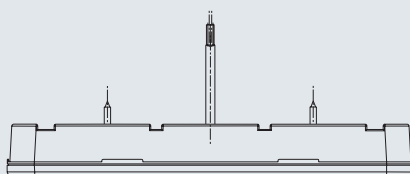
-331 <sup>2)</sup>	X	-	X	-	-	X	X	-	-	-	X	-	-	X	X
-341 <sup>2)</sup>	X	-	X	-	-	X	X	-	-	-	-	X	-	X	X

12 V motorhomes

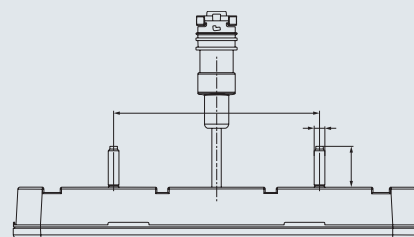
-401 <sup>2), 3)</sup>	-	X	X	X	X	-	X	-	-	-	X	X	X	-	X
-411 <sup>2)</sup>	-	X	X	X	X	-	X	-	-	-	X	X	-	X	X
-421 <sup>2), 3)</sup>	-	X	X	X	-	X	X	-	-	-	X	X	X	-	X
-431 <sup>2)</sup>	-	X	X	X	-	X	X	-	-	-	X	X	-	X	X
-441 <sup>2), 3)</sup>	-	X	X	X	X	-	-	X	-	-	X	X	X	-	X
-451 <sup>2)</sup>	-	X	X	X	X	-	-	X	-	-	X	X	-	X	X
-461 <sup>2), 3)</sup>	-	X	X	X	-	X	-	X	-	-	X	X	X	-	X
-471 <sup>2)</sup>	-	X	X	X	-	X	-	X	-	-	X	X	-	X	X



Fixing to vehicle with 7-pin DIN connector

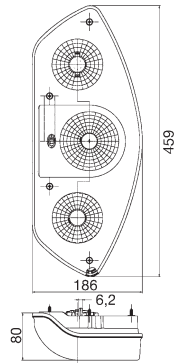


Mounting on vehicle with fixing screws from the front, cable with open ends



Mounting on vehicle with fixing screws from the rear, cable with EC connector





**CARALUNA VERTICAL**

for vertical flush-mounting, with 12 V bulbs

ECE SAE (USA)

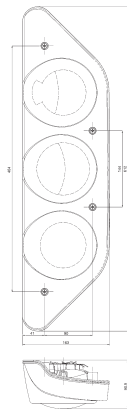
Right-hand traffic

On the left	<b>2SD 343 440-017</b>	①②③④	X	
On the right	<b>2SK 343 440-027</b>	①②③⑤	X	

Left-hand traffic

On the left	<b>2SK 343 440-037</b>	①②③⑤	X	
On the right	<b>2SD 343 440-047</b>	①②③④	X	

Type approval: E 0501



**MODULAR CARALUNA COMBINATION REAR LIGHT**

for vertical flush-mounting, with 12 V bulbs, with combined indicator and reverse light module and with integrated red side marker light

ECE SAE (USA)

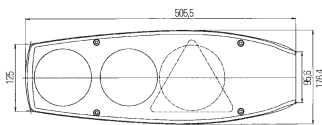
Red lens

On the left	<b>2VP 343 520-017/-011</b>	①②③④⑤⑦	X	
On the right	<b>2VP 343 520-027/-021</b>	①②③④⑤⑦	X	

Crystal-clear lens

On the left	<b>2VP 343 520-057/-051</b>	①②③④⑤⑦	X	
On the right	<b>2VP 343 520-067/-061</b>	①②③④⑤⑦	X	

Type approval: E 12677



**CARALUNA II COMBINATION REAR LIGHT**

for horizontal flush-mounting, with 12 V bulbs

ECE SAE (USA)

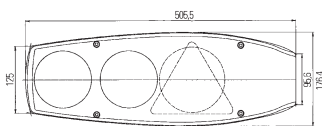
with triangular reflector

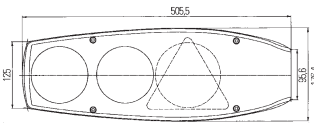
On the left	<b>2VA 341 419-011</b>	①②③④⑥⑦	X	X ■ ●
On the right	<b>2VA 341 419-021</b>	①②③⑥⑦	X	X ■ ●

with round reflector

On the left	<b>2VA 341 419-117/-111</b>	①②③④⑥⑦	X	X ■ ●
On the right	<b>2VA 341 419-147</b>	①②③④⑥⑦	X	X ■ ●
On the right	<b>2VP 341 419-127/-121</b>	①②③⑤⑥⑦	X	X ■ ●
On the left	<b>2VP 341 419-137</b>	①②③⑤⑥⑦	X	X ■ ●

Type approval: E 9836





#### CARALUNA II CHROMIUM COMBINATION REAR LIGHT

for horizontal flush-mounting, with 12 V brilliant-finish bulbs, without side marker reflector light

ECE SAE (USA)

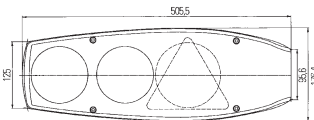
with triangular reflector

On the left	<b>2VA 341 419-097</b>	①②③④⑥	X
On the right	<b>2VP 341 419-107</b>	①②③⑤⑥	X
On the left	<b>2VP 341 419-157</b>	①②③⑤⑥	X
On the right	<b>2VA 341 419-167</b>	①②③④⑥	X

with round reflector

On the left	<b>2VA 341 419-077</b>	①②③④⑥	X
On the right	<b>2VP 341 419-087</b>	①②③⑤⑥	X
On the left	<b>2VP 341 419-177</b>	①②③⑤⑥	X
On the right	<b>2VA 341 419-187</b>	①②③④⑥	X

Type approval: 10217



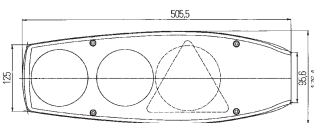
#### CARALUNA II PLUS COMBINATION REAR LIGHT

for horizontal flush-mounting, with 12 V bulbs, triangular reflector and combined indicator and reverse light module, can also be used as an upgrade of the basic version 2.. 343 419-...

ECE SAE (USA)

On the left	<b>2VP 343 590-017</b>	①②③④⑤⑥⑦	X
On the right	<b>2VP 343 590-027</b>	①②③④⑤⑥⑦	X

Type approval: 9836



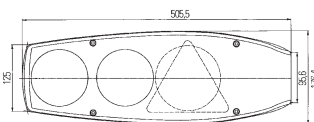
#### CARALUNA II PLUS CHROMIUM COMBINATION REAR LIGHT

for horizontal flush-mounting, with 12 V brilliant-finish bulbs, triangular reflector and combined indicator and reverse light module, can also be used as an upgrade of the basic version 2.. 343 419-..., without side marker reflector light

ECE SAE (USA)

On the left	<b>2VP 343 590-057</b>	①②③④⑤⑥	X
On the right	<b>2VP 343 590-067</b>	①②③④⑤⑥	X

Type approval: 10217



■ SAE type approval for vehicles <2,032 mm wide

● SAE type approval for vehicles > 2031 mm wide

① Tail light

② Stop light

③ Indicator

④ Rear fog light

⑤ Back-up light

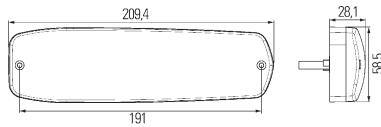
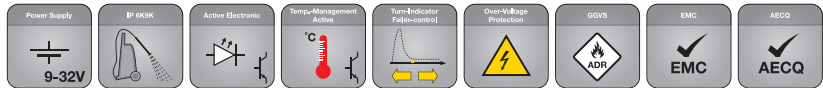
⑥ Reflectors

⑦ Side marker light with reflex reflector

⑧ Licence plate light

⑨ Position light

This product features the following properties:



**LeanLED COMBINATION REAR LIGHT**

**Current consumption:**

Tail lamp: 12 V/0.5 W, current consumption = approx. 0.04 A  
 Brake light: 12 V/1 W, current consumption = approx. 0.08 A  
 Direction indicator: 12 V/1.5 W, current consumption = approx. 0.12 A

Tail light/stop light/indicator for horizontal and vertical mounting, with 24 LEDs, clear lens, with pulse for indicator failure check, Multivolt 9 – 32 V, part-metallised, other frame colours available upon request.

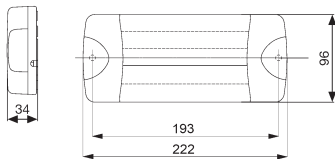
silver, with 500 mm cable and exposed ends	<b>2SD 343 910-001</b>
with 200 mm cable and 4-pin 282 106-1 AMP plug to appropriate AMP 282 088-1 AMP plug	<b>2SD 343 910-017</b>
silver, with integrated 4-pin AMP plug	<b>2SD 343 910-027</b>
red, with 100 mm cable and 4-pin DEUTSCH plug	<b>2SD 343 910-057</b>

**Type approval:** ECE Ⓜ 12393, Ⓜ 035109

Without type approval and without pulse for indicator failure check

with 500 mm cable and exposed ends	<b>2SD 343 910-037</b>
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This product features the following properties:



**DuraLED Combi**

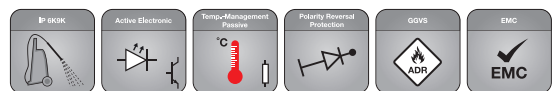
**Current consumption:**

12 V/9.5 W, current consumption = approx. 0.8 A  
 Multivolt 8 – 28 V, rear brake light indicator can also be installed vertically, 2500 mm cable with stripped ends, 40 LEDs

**2SD 959 050-401**

**Type approval:** ECE Ⓜ 10176, Ⓜ 03 1586

This product features the following properties:



**DuraLED**

12 / 24 V, rear, reversing brake light indicator, painted grey, DEUTSCH plug, 30 LEDs

**2SK 980 615-001**

12 / 24 V, rear, reversing brake light indicator, painted grey, 2500 mm cable, 30 LEDs

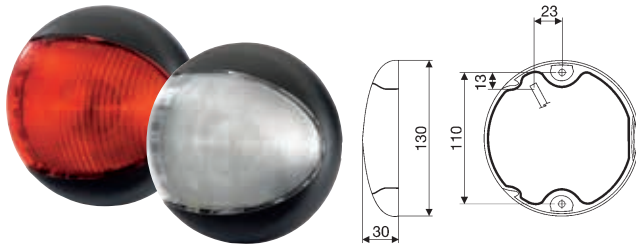
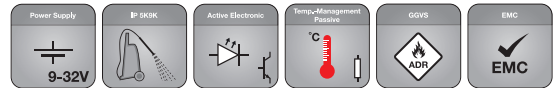
**2SK 980 603-503**

**Type approval:** ECE Ⓜ 5870, ECE Ⓜ 10 R – 04 0958, GGVs / ADR, EMC

- Rectangular LED light for horizontal mounting
- Multivolt for 8 – 28 V and 12 / 24 V
- Long design life with low current consumption
- Crystal-clear lens

This product features the following properties:

**EuroLED**



**EuroLED**

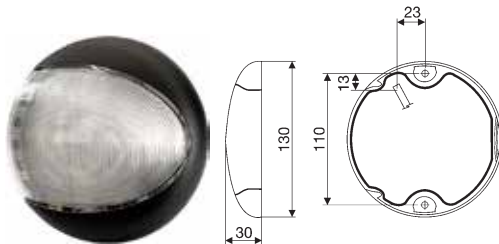
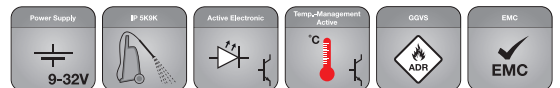
1 power LED, for mounting, sealed shut with black base plate, electrical connection through a 2500 mm long cable

			ECE	SAE (USA)
12 V/2.5 W, current consumption = approx. 0.21 A (SAE versions on request)				
Red lens	<b>2SB 959 821-601</b>	① ②	X	
12 V/4 W, current consumption = approx. 0.33 A				
Clear lens	<b>2NE 959 821-201</b>	④	X	

Type approval: 10208, 031135

This product features the following properties:

**EuroLED**



**EuroLED**

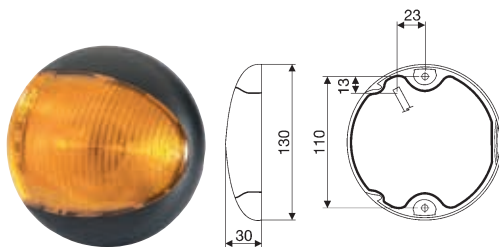
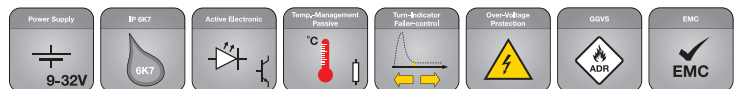
1 Power LED for mounting, sealed shut with black base plate, electrical connection through a 2500 mm long cable

			ECE	SAE (USA)
12 V/5 W, current consumption = approx. 0.42 A				
Clear lens	<b>2ZR 959 820-601</b>	⑤	X	

Type approval: 10208, 031135

This product features the following properties:

**EuroLED**



**EuroLED**

1 Power LED, for surface-mounting, cast in one piece with black base plate, electrical connection through a 2,500 mm long cable with a pulse for indicator failure check

			ECE	SAE (USA)
12 V/2.5 W, current consumption = approx. 0.21 A (SAE versions on request)				
	<b>2BA 959 822-601</b>	③	X	

Type approval: 10208, 031728

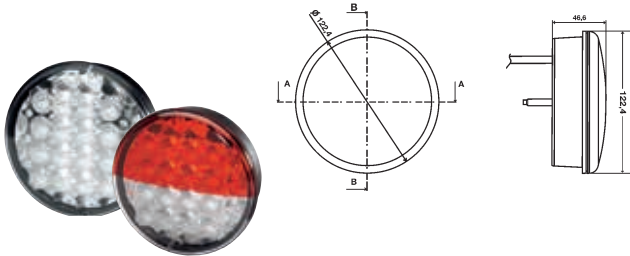
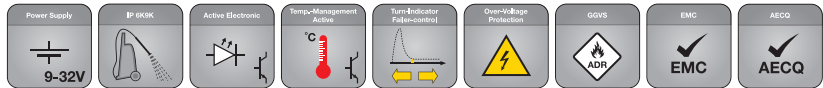
- SAE type approval for vehicles <2,032 mm wide
- SAE type approval for vehicles > 2031 mm wide

- ① Tail light
- ② Stop light
- ③ Indicator
- ④ Rear fog light
- ⑤ Back-up light
- ⑥ Reflectors
- ⑦ Side marker light with reflex reflector
- ⑧ Licence plate light
- ⑨ Position light

- D ECE approval as twin indicators

Note: Please see pages 71-73 regarding LED direction indicators and LED direction indicator failure check.

This product features the following properties:



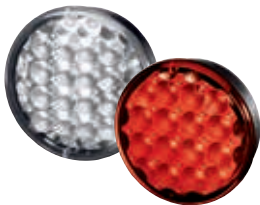
**LED TAIL LIGHT STOP LIGHT DIRECTION INDICATOR**

for surface-mounting, redesign of series 964 169, 24 LEDs  
 Tail light: 12 V/1 W, current consumption = approx. 0.08 A  
 Stop light: 12 V/ 2 W, current consumption = approx. 0.17 A  
 Direction indicator: 12 V/ 2 W, current consumption = approx. 0.17 A

		ECE
with clear lens	<b>2SD 344 200-001</b>	①②③ X
with red/transparent lens	<b>2SD 344 200-071</b>	①②③ X

Type approval: Ⓔ 12371, Ⓔ 12658 and Ⓔ 03 4895

This product features the following properties:



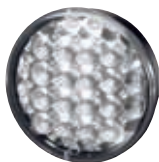
**LED TAIL STOP LIGHT**

for surface-mounting  
 Tail light: 12 V/1 W, current consumption = approx. 0.08 A  
 Stop light: 12 V/ 3 W, current consumption = approx. 0.25 A

		ECE
with clear lens	<b>2SB 344 200-027</b>	①② X
with red lens	<b>2SB 344 200-081</b>	①② X

Type approval: Ⓔ 12658 and Ⓔ 03 4895

This product features the following properties:



**LED INDICATOR**

for rear surface-mounting  
 Direction indicator: 12 V/ 3 W, current consumption = approx. 0.25 A

		ECE
with clear lens	<b>2BA 344 200-037</b>	③ X

Type approval: Ⓔ 12658 and Ⓔ 03 4895

This product features the following properties:



**LED REAR FOG LIGHT**

for surface-mounting  
 Rear fog light: 12 V/ 2 W, current consumption = approx. 0.17 A

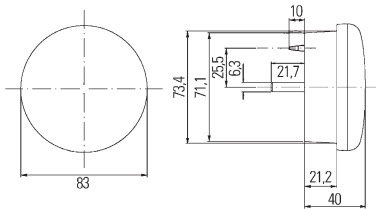
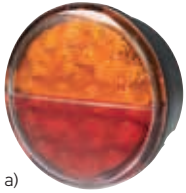
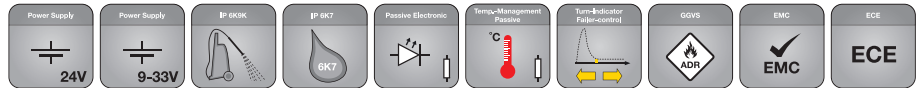
		ECE
with clear lens	<b>2NE 344 200-061</b>	④ X
with red lens	<b>2NE 344 200-091</b>	④ X

Type approval: Ⓔ 14198 and Ⓔ 03 4895





This product features the following properties:



**LED MULTI-FUNCTION LIGHT**

for installation, with 2,500 cable and pulse for indicator failure check, protection class IP 6K6, IP 6K7.

**a) LED tail lamp/brake lamp/indicator, 24 V, 24 V/5 W, current consumption = approx. 0.2 A**

with clear cover lens, 16 LEDs. **2SD 959 010-401**

Type approval: Ⓜ 1538, Ⓜ 031671

**b) LED tail lamp/brake lamp, 24 V, 24 V/4 W, current consumption = approx. 0.17 A**

with red lens, 12 LEDs **2SB 959 010-301**

Type approval: Ⓜ 12373, Ⓜ 031671

**c) LED back-up lamp, Multivolt, 12 V/3 W current consumption = approx. 0.33 A 24 V/3 W, current consumption = approx. 0.17 A**

with clear lens, 24 LEDs **2ZR 959 010-501**

Type approval: Ⓜ 11391, Ⓜ 031671

**d) LED rear fog lamp, Multivolt, 12 V/3 W, current consumption = approx. 0.25 A 24 V/3 W, current consumption = approx. 0.13 A**

with clear lens, 24 LEDs **2NE 959 011-501**

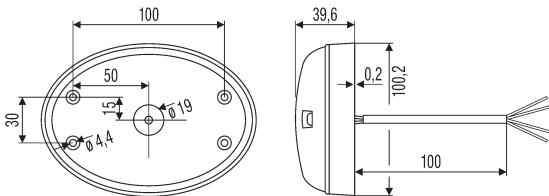
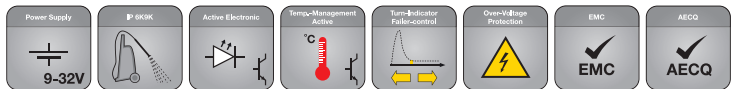
Type approval: Ⓜ 11391, Ⓜ 031671

**e) LED indicator 24 V, 24 V/3 W, current consumption = approx. 0.13 A**

with amber lens, 12 LEDs **2BA 959 011-301**

Type approval: Ⓜ 12373, Ⓜ 031671

This product features the following properties:



**"OVAL" LED COMBINATION REAR LIGHT**

for horizontal and vertical surface-mounting, clear lens, 24 LEDs, can be used on the right and left, can be turned through 180°, 2 bodywork fastening screws (diagonal arrangement) with 100 mm harness, multi-voltage 9–32 V

ECE SAE (USA)

**2SD 343 390-011** Ⓜ ①②③ X

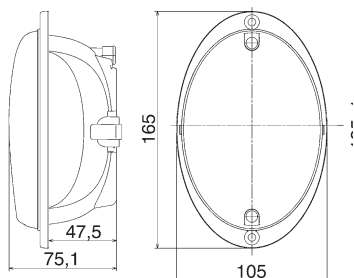
12 yellow LEDs for indicator light: 12 V/1.5 W, current consumption = approx. 0.13 A  
12 red LEDs for brake light: 12 V/1 W, current consumption = approx. 0.08 A  
12 red LEDs for stop light (reduced power):  
12 V/0.2 W, current consumption = approx. 0.02 A

**2BA 343 390-071** Ⓜ ③ X

24 yellow LEDs for indicator light: 12 V/1.5 W, current consumption = approx. 0.13 A

**2SB 343 390-091** Ⓜ ①② X

Without indicator failure check  
Stop light: 12 V / 1 W, current consumption = approx. 0.08 A  
Tail light: 12 V/0.2 W, current consumption = approx. 0.02 A (reduced power)



**"OVAL" LED COMBINATION REAR LIGHT**

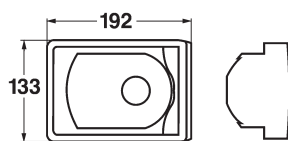
only for vertical flush-mounting, with 24 LEDs, 12 red LEDs for stop light, with 4-pole DEUTSCH plug integrated in the housing

ECE SAE (USA)

**2SD 343 390-401** X

**2SD 343 390-407** X

12 yellow LEDs for indicator light: 12 V/1.5 W, current consumption = approx. 0.13 A  
12 red LEDs for brake light: 12 V/1 W, current consumption = approx. 0.08 A  
12 red LEDs for tail lamp (reduced output):  
12 V/0.2 W, current consumption = approx. 0.02 A

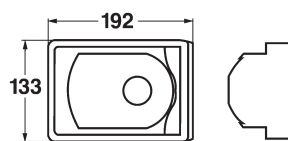
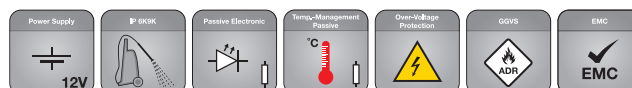


#### REAR LIGHT

12 V, for horizontal flush-mounting, brilliant finish			ECE	SAE (USA)
	<b>2SA 008 805-007</b>	①	X	X ■ ●
for double attachment	<b>2DA 008 805-017</b>	②	X	X ●
for double attachment	<b>2SB 008 805-027</b>	①②	X	X ●
	<b>2NE 008 805-037</b>	④	X	
with clear lens	<b>2ZR 008 805-047</b>	⑤	X	X ■ ●
for double attachment, with clear lens	<b>2BA 008 805-057</b>	③	X	

Type approval: Ⓔ 10151

This product features the following properties:

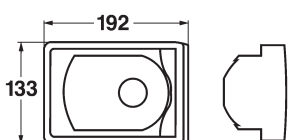
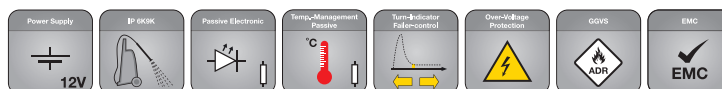


#### LED TAIL STOP LIGHT

for horizontal flush-mounting, with brilliant-finish clear lens			ECE	SAE (USA)
12 V / 3 W, current consumption = approx. 0.25 A	<b>2SB 008 982-367</b>	①②	X	

Type approval: Ⓔ 10880

This product features the following properties:



#### LED INDICATOR

for horizontal flush-mounting, with brilliant-finish clear lens			ECE	SAE (USA)
12 V / 2 W, current consumption = approx. 0.17 A	<b>2BA 008 982-347</b>	③	X	

Type approval: Ⓔ 10880, Ⓔ 034046

■ SAE type approval for vehicles < 2,032 mm wide

● SAE type approval for vehicles > 2031 mm wide

① Tail light

② Stop light

③ Indicator

④ Rear fog light

⑤ Back-up light

Ⓞ Reflectors

⑦ Side marker light with reflex reflector

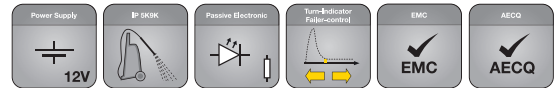
⑧ Licence plate light

⑨ Position light

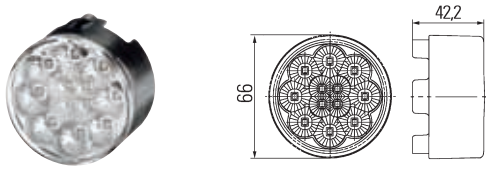
- D ECE approval as twin indicators

Note: Please see pages 71-73 regarding LED direction indicators and LED direction indicator failure check.

This product features the following properties:



### 60 mm Premium lights



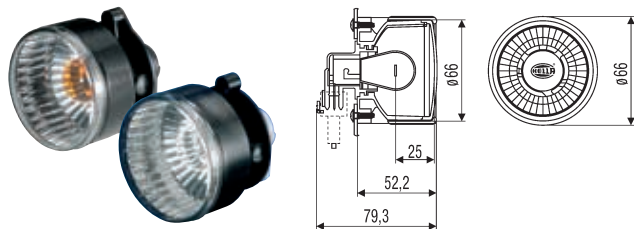
#### PREMIUM LED LIGHT, 60 MM DIAMETER

			ECE	SAE (USA)
with transparent lens, 12 LEDs and an AMP plug				
12 V	<b>2SB 009 001-401</b>	①②	X	
12 V without pulse	<b>2BA 009 001-411</b>	③	X	
12 V with pulse	<b>2BA 009 001-431</b>	③	X	

Type approval: 12390

#### ACCESSORIES FOR 60 MM

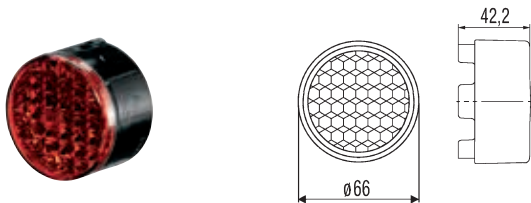
2-pin mating connector	<b>2JD 156 150-807</b>
3-pin mating connector	<b>2JD 162 581-802</b>



#### 60 MM PREMIUM LIGHTS

			ECE	SAE (USA)
with pre-fitted bulbs 12 V, inc. design ring				
Red lens	<b>2SA 009 001-047</b>	①	X, D	
Red lens	<b>2DA 009 001-057</b>	②	X, D	
Red lens	<b>2SB 009 001-067</b>	①②	X, D	
Grey lens	<b>2BA 009 001-007</b>	③	X, D	
with Silvertvision bulb	<b>2BA 009 001-191</b>	③	X, D	
Red lens	<b>2NE 009 001-027</b>	④	X	X ■ ●
Grey lens	<b>2ZR 009 001-017</b>	⑤	X	X ■ ●

Type approval: 3917, 6546, 7613 and 23255



Macro reflector, 12 V, red	<b>8RA 009 001-037</b>	⑥	X	X ■ ●
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Type approval: 3189



#### DESIGN RING

suitable for 60 mm light modules with  $\varnothing$  71.6 mm (Part number ... 009 001-... except LED versions), perfect high-sheen finish with one "click"

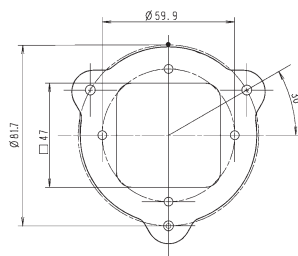
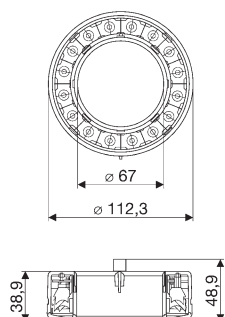
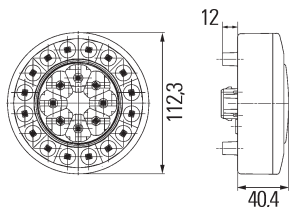
High-sheen chrome-plated	<b>9HB 161 122-012</b>
Silver	<b>9HB 161 122-007</b>
Premium silver	<b>9HB 164 168-002</b>



#### COMBINATION EXAMPLE

for a combination rearlight	<b>... 009 001-...</b>
with design ring $\varnothing$ 71.6 mm high-sheen chrome-plated	<b>9HB 161 122-012</b>

## 60 mm Premium lights



This product features the following properties:



### COMBINED LED TAIL LIGHT STOP LIGHT INDICATOR

for rear installation, crystal clear lens, with 24 red LEDs, suitable for light series ... 009 362-..., ... 009 001-...

12 V/4.8 W, current consumption = approx. 0.4 A

2SD 009 362-201

ECE SAE (USA)



### LED CIRCULAR MODULES

available with a choice of clear or red cover lens

			ECE	SAE (USA)
Red lens	2SB 009 362-041	① ②	X, D	
Crystal-clear lens	2SB 009 362-021	① ②	X, D	
Red lens	8RA 009 362-001	⑥	X	

Type approval: ☹ 7747 and ☹ 7748

### DESIGN RING Ø 118 MM

suitable for ring modulator ... 009 362 ... perfect high-shine finish with one "click"

High-shine chrome-plated	9HB 163 085-012
Silver	9HB 163 085-001

### ACCESSORIES FOR 60 MM COMBINATION REAR LIGHTS

#### Adapter ring for

frontal screw attachment for combination rear lights Ø 60 mm, direct assembly and assembly in circular module, black

9XD 161 119-007

#### Adapter ring

to attach LED lights or the reflector in the circular module series 009 362-..., black (not shown)

9XD 161 119-017

- SAE type approval for vehicles < 2,032 mm wide
- SAE type approval for vehicles < 2,031 mm wide

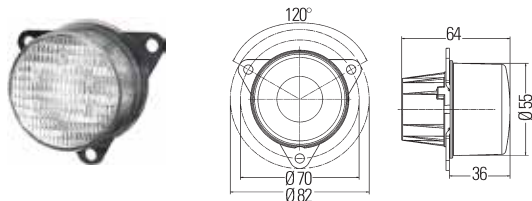
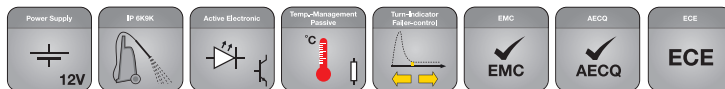
- ① Tail light
- ② Stop light
- ③ Indicator
- ④ Rear fog light
- ⑤ Back-up light
- ⑥ Reflectors
- ⑦ Side marker light with reflex reflector
- ⑧ Licence plate light
- ⑨ Position light

- D ECE approval as twin indicators

Note: Please see pages 71-73 regarding LED direction indicators and LED direction indicator failure check.

This product features the following properties:

Modular LED lights, Ø 55 mm



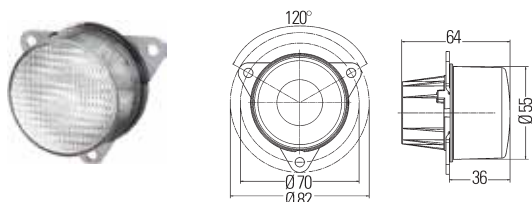
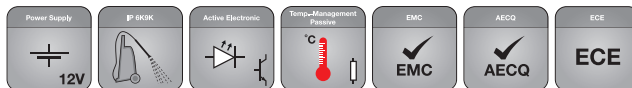
MODULAR LED LIGHT, 55 MM DIAMETER

crystal clear lens with optics and a 12 V/1.1 W  
500 mm connecting cable for rear installation, current consumption = 0.09 A

12 V	<b>2BA 011 172-021/-027</b>	③
12 V with pulse	<b>2BA 011 172-031/-037</b>	③
12 V	<b>2SA 011 172-041/-047</b>	①
12 V	<b>2DA 011 172-061/-067</b>	②

Type approval: ① 3283, CCC, ② 3284, ③ 10R-036317

This product features the following properties:



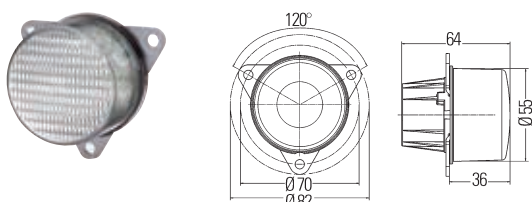
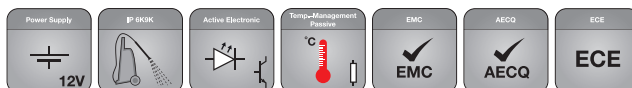
MODULAR LED LIGHT, 55 MM DIAMETER

for rear installation, crystal clear lens with optics and  
500 mm connection cable, 12 V/2.5 W, current consumption = 0.21 A

<b>2NE 011 172-081/-087</b>	④
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Type approval: ④ 3286, CCC, ⑤ 10R036317

This product features the following properties:



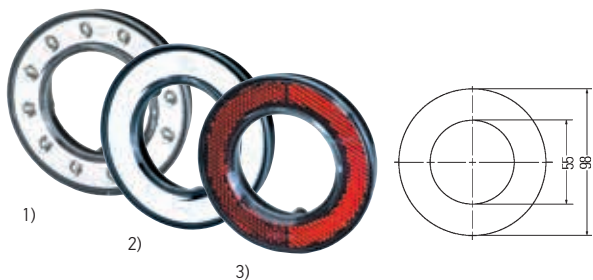
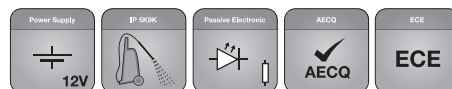
MODULAR LED LIGHT, 55 MM DIAMETER

a back-up lamp, crystal clear lens with optics and a  
500 mm connection cable, 12 V/2.5 W for rear installation, current consumption = 0.21 A

<b>2ZR 011 172-101/-107</b>	⑤
-----------------------------	---

Type approval: ⑤ 3285, CCC, ⑥ 10R036317

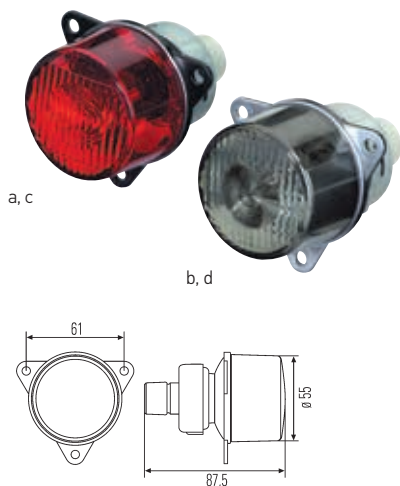
This product features the following properties:



1) 12 V, LED tail lamp/clearance lamp for installation, with 12 red LEDs, crystal clear lens, 1.8 W, 12 V/1.8 W, current consumption = approx. 0.15 A	<b>2SA 008 405-021</b>
1) LED tail lamp/brake lamp, 12 V for installation, with 12 red LEDs, crystal clear lens, 2.1 W with passive thermo managements, 12 V/1.8 W, current consumption = approx. 0.15 A	<b>2SB 008 405-101</b>
1) LED position light, 12 V, 12 V/1.8 W, current consumption = approx. 0.15 A	<b>2PF 008 405-061</b>
2) Chrome-plated finisher, 12 V	<b>8XU 008 405-031</b>
3) Reflector, 12 V	<b>8RA 008 405-001</b>

Type approval: ⑥ 1197, ⑦ 1196 and ⑧ 1892





### COMBINATION REAR LIGHTS

a) for flush-mounting with red lens

12 / 24 V	2XA 008 221-021	①
with fitted 12 V / 5 W bulb	2SA 008 221-127	①
12 / 24 V	2XA 008 221-021	②
with a mounted 12 V / 21 W light bulb	2DA 008 221-167	②

**Type approval:** E 1048 and E 1049

b) for flush-mounting with grey lens

12 / 24 V	2BA 008 221-041	③
with fitted 12 V / 21 W amber bulb	2BA 008 221-147	③

**Type approval:** E 1051, E 878 and E 879

c) for flush-mounting with red lens

12 / 24 V	2NE 008 221-031	④
with a mounted 12 V / 21 W light bulb	2NE 008 221-137	④

**Type approval:** E 1050

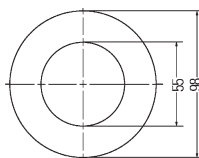
d) for flush-mounting with grey lens

12 / 24 V	2ZR 008 221-051	⑤ ■ ●
with fitted 12 V / 21 W bulb	2ZR 008 221-157	⑤ ■ ●

**Type approval:** E 1052

Accessories for light series 008 221-...

Harness with grommet	8KA 152 134-007
Grommet separate	9GT 137 236-007



### Examples of combination possibilities

1) Rear lighting	2BA 008 221-041 and 2SA 008 405-021	③ ①
2) Rear lighting	2XA 008 221-021 and 8RA 008 405-001	② ⑥
Heat baffle plate (required at ambient temperature > 50°C)	9XB 161 749-007	

■ SAE type approval for vehicles < 2,032 mm wide

● SAE type approval for vehicles < 2,031 mm wide

① Tail light

② Stop light

③ Indicator

④ Rear fog light

⑤ Back-up light

⑥ Reflectors

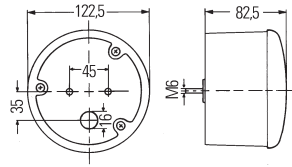
⑦ Side marker light with reflex reflector

⑧ Licence plate light

⑨ Position light

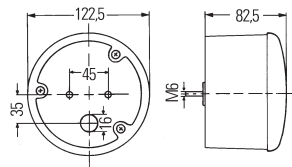
- D ECE approval as twin indicators

Note: Please see pages 71-73 regarding LED direction indicators and LED direction indicator failure check.



REAR LIGHT

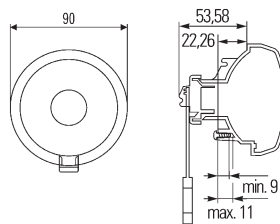
12 V, for surface or flush-mounting, brilliant finish			ECE	SAE (USA)
<b>2BA 964 169-507 / -501</b>	Ⓔ 653	③	X, D	X ■ ●
<b>2SB 964 169-537 / -531</b>	Ⓔ 816	①②	X	X ■ ●
<b>2ZR 964 169-517 / -511</b>	Ⓔ 2312	⑤	X	X ■ ●
<b>2NE 964 169-527 / -521</b>	Ⓔ 3809	④	X	X ■ ●



REAR LIGHT

12 V, for mounting or installing, depending on the mounting position, the water drain opening might need to be punched out.			ECE	SAE (USA)
<b>2DA 964 169-001</b>	Ⓔ 808	②	X, D	X ■ ●
<b>2BA 964 169-011</b>	Ⓔ 648	③	X, D	X ■ ●
<b>2NE 964 169-021</b>	Ⓔ 3808	④	X	X ■ ●
<b>2ZR 964 169-031</b>	Ⓔ 2311	⑤	X	X ■ ●
<b>2BA 964 169-041</b>	Ⓔ 9804	③④	X	
<b>2BN 964 169-051</b>	Ⓔ 9801	③⑤	X	X ■
<b>2TA 964 169-061</b>	Ⓔ 9805	①②⑥	X	X ■
<b>2BE 964 169-071**</b>	Ⓔ 9802	③⑨	X	
<b>2SW 964 169-081</b>	Ⓔ 9803	①③	X	X ■
<b>2SA 964 169-091</b>	Ⓔ 810	①	X	X ■ ●
<b>2SD 964 169-111</b>	Ⓔ 9903	①②③	X	
<b>2TA 964 169-147</b>		①②⑥		■
<b>2SB 964 169-287</b>	Ⓔ 815	①②	X	X ■ ●

\*\* Indicator/position light for front surface-mounting, Category 1a



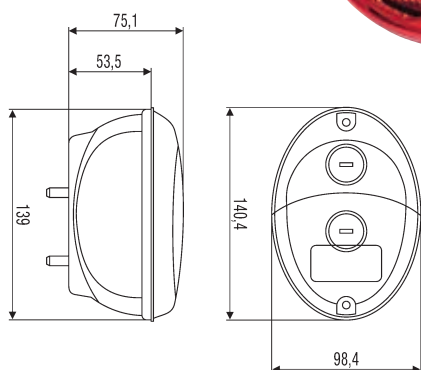
COMBINATION REAR LIGHT Ø 90 MM

for flush-mounting, with fitted bulbs, back-up lamp and rear indicators with smoked glass lens, also available as daytime running lights with a built-in bulb			ECE	SAE (USA)
Attachment possible from the front using the enclosed clips or from the rear using screws				
12 V / 5W	<b>2SA 965 039-001</b>	①	X	X ■ ●
12 V PY21W	<b>2BA 965 039-021/7</b>	③	X	X ■
12 V / 21W	<b>2ZR 965 039-041/7</b>	⑤	X	X ■ ●
12 V / PY21W	<b>2SB 965 039-051/7</b>	①②	X	X ■

with mounted attachment clips

12 V / 5W	<b>2SA 965 039-307</b>	①	X	X ■ ●
12 V / 21W	<b>2DA 965 039-317</b>	②	X	X ■
12 V / PY21W	<b>2BA 965 039-347</b>	③	X	X ■
12 V / 21W	<b>2NE 965 039-327</b>	④	X	X ■ ●
12 V / 21W	<b>2ZR 965 039-337</b>	⑤	X	X ■ ●
12 V / 21/5W	<b>2SB 965 039-357</b>	①②	X	X ■

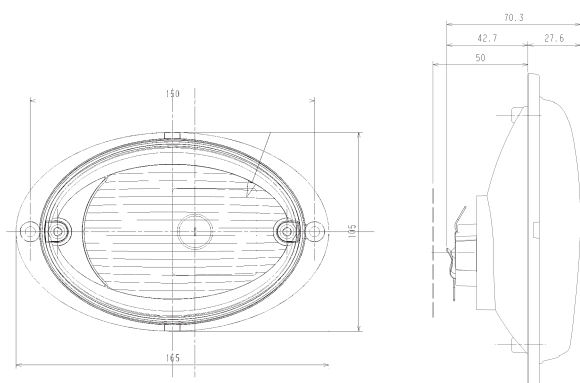
Type approval: Ⓔ 10215



#### "OVAL" COMBINATION REAR LIGHT

with its brilliant appearance, ideal for horizontal and vertical installation and mounting, on the right or left (rotate light 180°), can be used for 12 V and 24 V operation, punch out the water drain hole before installation and put on the seal, black housing colour, clear cover lens

			ECE	SAE (USA)
<b>2SB 343 130-021/7</b>	Ⓔ 7698	①②	X	■ ●
<b>2BA 343 130-051/7</b>	Ⓔ 6550	③	X	■ ●
<b>2NE 343 130-031/7</b>	Ⓔ 3919	④	X	
<b>2ZR 343 130-041/7</b>	Ⓔ 23257	⑤	X	■ ●



#### "OVAL LIGHT" COMBINATION REAR LIGHT

for horizontal and vertical installation, lens with stripe design, housing with circumferential, black rim, completely pre-mounted, with 100 mm cable and mountable 12 V light bulb

				ECE	SAE (USA)
On the left	<b>2SA 343 400-217</b>	Ⓔ 823	①	X	
On the right	<b>2SA 343 400-227</b>	Ⓔ 823	①	X	
On the left	<b>2DA 343 400-237</b>	Ⓔ 821	②	X	
On the right	<b>2DA 343 400-247</b>	Ⓔ 821	②	X	
On the left	<b>2ZR 343 400-297</b>	Ⓔ 2314	⑤	X	
On the right	<b>2ZR 343 400-307</b>	Ⓔ 2314	⑤	X	
On the left	<b>2NE 343 400-277</b>	Ⓔ 3812	④	X	
On the right	<b>2NE 343 400-287</b>	Ⓔ 3812	④	X	
On the left	<b>2BA 343 400-257</b>	Ⓔ 655	③	X	
On the right	<b>2BA 343 400-267</b>	Ⓔ 655	③	X	
On the left	<b>2SB 343 400-317</b>	Ⓔ 822	①②	X	
On the right	<b>2SB 343 400-327</b>	Ⓔ 822	①②	X	

Can also be used as a front indicator in accordance with Category 1.

■ SAE type approval for vehicles < 2,032 mm wide

● SAE type approval for vehicles > 2031 mm wide

① Tail light

② Stop light

③ Indicator

④ Rear fog light

⑤ Back-up light

⊙ Reflectors

⊙ Side marker light with reflex reflector

⊙ Licence plate light

⊙ Position light

- D ECE approval as twin indicators

Note: Please see pages 71-73 regarding LED direction indicators and LED direction indicator failure check.



## LED TURN INDICATORS AND THE PATENTED FAILURE CHECK

### Legal requirement in all ECE states

The indicators on vehicles registered for use on public roads must be monitored. An indicator failure must be communicated to the driver visually or acoustically. This applies in all ECE states. A potential failure of the indicator must therefore be monitored by the vehicle. Manufacturers use different control methods for this purpose. However, the failure controls in use today cannot detect simple LED lights and display an error when they are used. All HELLA LED indicators have integrated electronics for failure control. The indicators monitor themselves. They generate an impulse that is evaluated by the electronic ballast. This ballast simulates a 21W bulb which means it can be used with conventional indicators.

If just a single LED fails, the light is faulty and the pulse is no longer generated. In this case, the ballast switches off bulb simulation and the indicator reports the fault to the driver.

### Safe conversion to LED indicators is now possible using patented HELLA electronics

HELLA supplies electronic ballasts for all HELLA LED indicators which make it possible to retrofit the indicator failure display on various vehicles. This is necessary if the vehicle manufacturer does not guarantee an indicator bulb failure check via the vehicle's electrical system.

The method is patented by HELLA. There are currently three different ballasts and several different LED indicators available.

### LED-light failure check and correct electrical connection

Operation of the LED light with AC voltage or synchronised DC voltage is not permitted. The individual light functions may only be operated with a vehicle fuse of max. 3 A.

Due to the low watt output of LED lights, which are distinctly different from a bulb version, problems can arise in bulb failure control when operating traction vehicles.

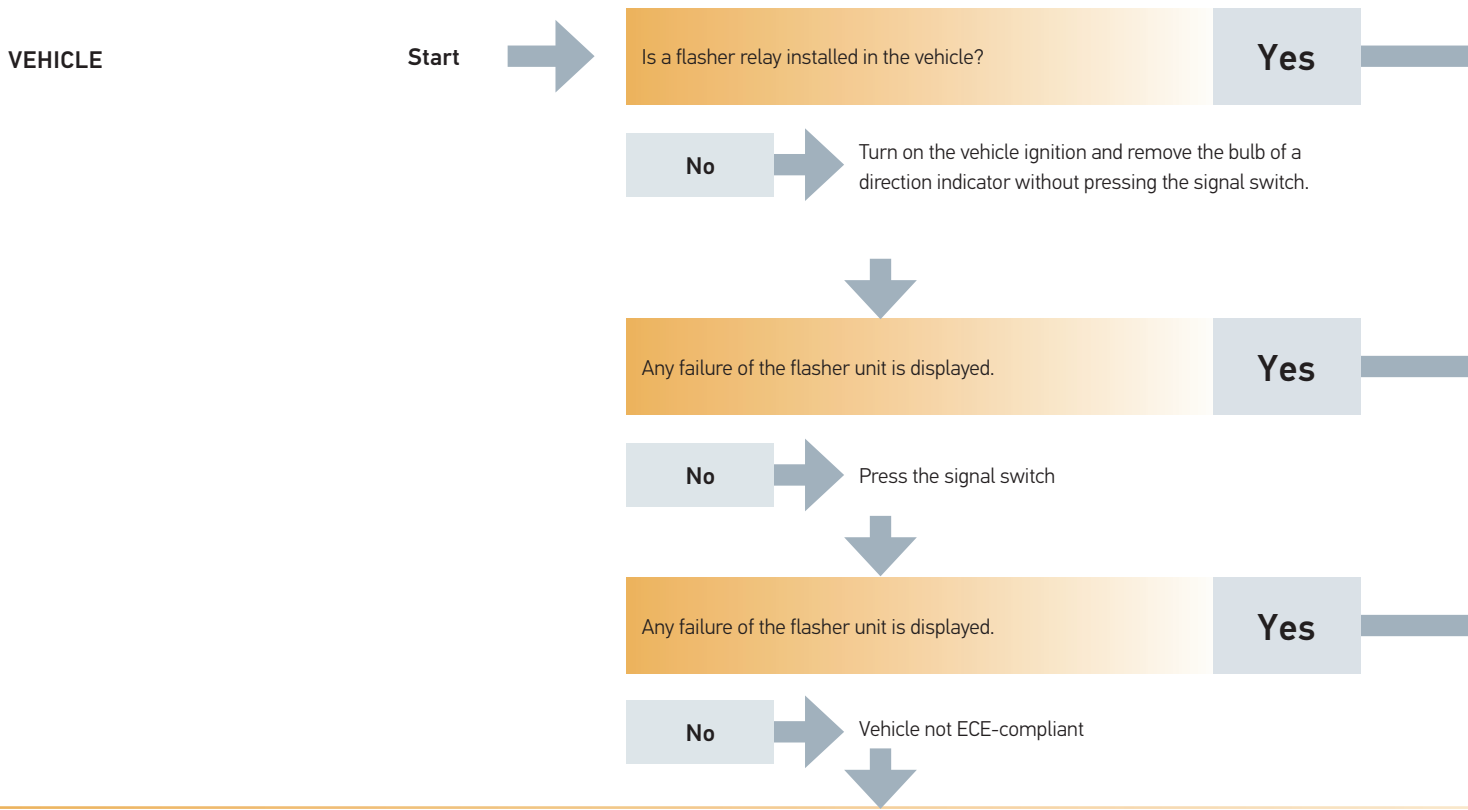
Since checking the indicator lights is required by law, we recommend only using the light in conjunction with an indicator light control unit.

Some traction vehicles also detect other light functions. This is a vehicle convenience function that is not required by law and does not exempt the driver from his or her obligation to visually inspect the lighting equipment. Even in this case, low outputs can lead to misdiagnoses (instrument panel in the cab shows a light failure even though it is working fine).

In case of diagnostic error during operation of your towing vehicle type, as described above, please contact the towing vehicle manufacturer.



The right solution for your vehicle electronics



**UNIVERSAL TRAILER SOLUTION**  
independent of vehicle

**ISO 13207-1 TRAILER SOLUTION**



**Solution 1:  
LED flasher unit**

	12 V	24 V
Operating voltage	10 – 15 V	18 – 32 V
Functional voltage	11 – 14 V	20 – 28 V
Operating temperature	– 40 °C to + 85 °C	– 40 °C to + 85 °C
Protection category	P 53 (contacts below)	P 53 (contacts below)
<b>LED flasher unit 3 + 1</b>		
3 Indicators on the vehicle / tractor vehicle 1 Indicator on optional trailer	<b>4DW 009 492-111</b>	<b>4DW 009 492-011</b>
<b>LED flasher unit 2 + 1   2 + 1 + 1+1</b>		
2 indicators on the vehicle / tractor vehicle 1 flasher light on max. two optional trailers	<b>4DM 009 492-101 (2 + 1 + 1)</b>	<b>4DM 009 492-001 (2 + 1)</b>



**Solution 2:  
Simulation device for cold checking**

	12 V	24 V
Operating voltage	9 – 16 V	18 – 32 V
Rated current	1.5 A	1.5 A
Operating temperature	– 40 °C to + 85 °C	– 40 °C to + 85 °C
Protection category	IP 54 (contacts underneath)	IP 54 (contacts underneath)
<b>Simulation device</b>		
for cold checking	<b>5DS 009 602-101</b>	<b>5DS 009 602-001</b>

**Solution 1:**

Replace the existing indicator unit with an LED indicator unit from HELLA with an ISO pin basis



One flasher unit per vehicle required. Any possible combination of bulbs and HELLA LED direction indicators is permitted: from a full package with bulbs through mixed versions to a full package with LED lights. Bulbs or HELLA LED direction indicators are also permitted on trailers.

**Solution 2:**

Through simulation unit for cold check



One simulation device is required per LED light.

**Solution 3:**

By LED indicator control unit



Two LED indicators can be monitored per vehicle using one simulation device. (Only one simulation device per vehicle can be used.)

**Solution 3:**

By LED indicator control unit



**Solution 4:**

By monitoring in compliance with ISO 13207-1 in the vehicle manufacturer's vehicle electric system.



Failure pulse in accordance with ISO 13207-1

2BA 959 070-631



2BA 959 050-401



2BA 959 822-601



2BA 344.200-...



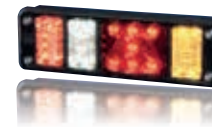
2BA 343 390-...



2SD 343 910-...



2VP 340 961-...



**Solution 3:**

**Indicator control unit**

Universal trailer solution, independent from the truck



**Solution 4:**

**Light control unit** with integrated check of the failure pulse in accordance with ISO 13207-1

	<b>24 V</b>
Operating voltage	18 – 32 V
Reverse-polarity protection voltage	- 28 V
On-board voltage input Flasher unit left / right	24 V
Operating temperature	-40 to + 50 °C
Extended operating temperature*	- 40 °C to + 80 °C
Storage temperature	- 40 °C to + 90 °C
With female blade connectors	<b>5DS 009 552-011</b>
For EasyConn connectors	<b>5DS 009 552-001</b>

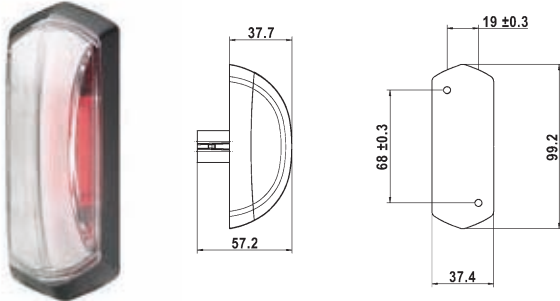
\* At temperatures of 50 °C or higher, the light bulb simulation is deactivated due to thermal factors.

In future, vehicle manufacturers' light control units will be able to check the failure pulse in a standardised and unified manner in accordance with ISO 13207-1.

Therefore interim solutions 1 - 3 will not be necessary as communication will take place directly with the indicators. HELLA recommends this solution.

As trailers do not currently have their own vehicle electric system, this solution must be integrated in the tractor vehicle.

This product features the following properties:



**LED CLEARANCE LIGHT**

red / clear lens, with direct screw coupling and AMP SS black  
Black frame for direct screw coupling

12 V	2XS 205 020-001
24 V	2XS 205 020-011

Type approval: ECE 3011

red / clear lens, with direct screw coupling and 500 mm cable, welded, without  
male connector housing, black frame for direction connection

12 V	2XS 205 020-041
24 V	2XS 205 020-051

Type approval: ECE 3011

**CLEARANCE LIGHT**

for vertical mounting

**a) red/white with grey base plate**

left, with 12 V bulb	2XS 008 479-001
right, with 12 V bulb	2XS 008 479-011
left, without bulb	2XS 008 479-061
right, without bulb	2XS 008 479-071

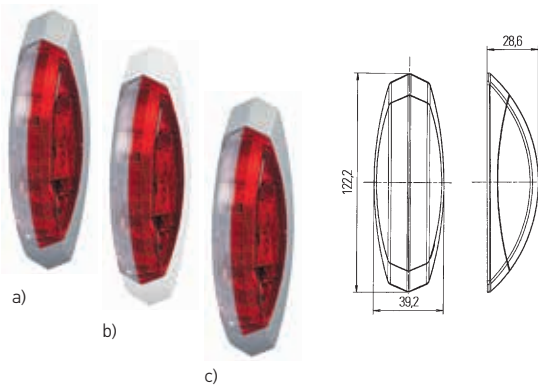
**a) red/white with white base plate**

On the left	2XS 008 479-081
On the right	2XS 008 479-091

**c) red with grey base plate, PO function silver-coloured, opaque**

On the left	2XS 008 479-107
On the right	2XS 008 479-117

Type approval: 3011



This product features the following properties:

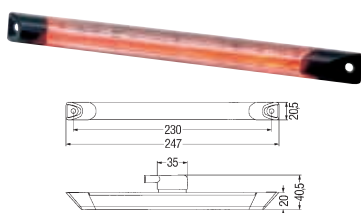


**LED CLEARANCE LIGHT**

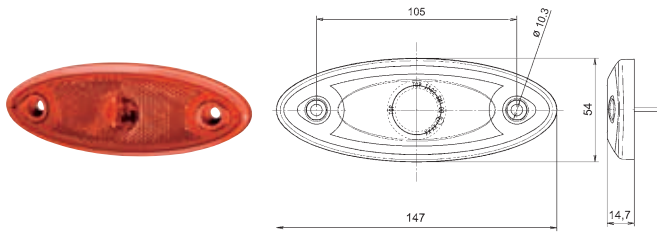
for horizontal or vertical surface-mounting, with 2 LEDs and light guide strip in red,  
2 screw holes  $\varnothing$  5.4 mm for fastening screws  
12 V / 0.7 W, current consumption = approx. 0.06 A

12 V	2XS 008 078-011
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Type approval: 0515



This product features the following properties:



#### LED CLEARANCE LIGHT

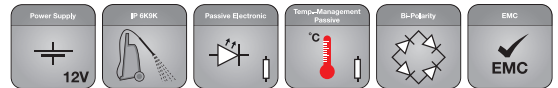
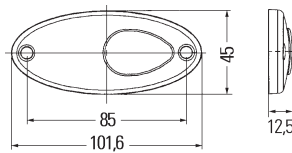
for surface-mounting, modern night-time design and high level of safety thanks to maximum illuminated area, 12 V

500 mm cable, horizontal

**2TM 344 690-357**

Type approval: 7597 and 031721

This product features the following properties:



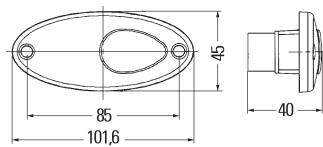
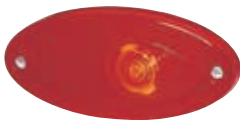
#### LED CLEARANCE LIGHT

for horizontal surface-mounting, 2 LEDs, 12 V with seal and cable 5,000 mm long  
12 V / 0.5 W, current consumption = approx. 0.04 A

oval

**2TM 964 295-101**

Type approval: 0302



#### CLEARANCE LIGHT

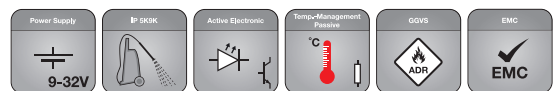
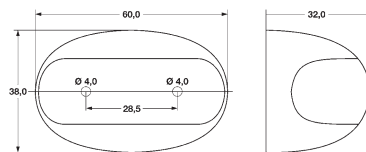
with pre-fitted 12 V bulb and seal, for horizontal or vertical flush-mounting

oval

**2XS 964 295-031**

Type approval: 812

This product features the following properties:



#### LED CLEARANCE LIGHT

for horizontal surface-mounting, 2 LEDs, 8-28 V  
12 V / 0.5 W, current consumption = approx. 0.04 A

500 mm cable

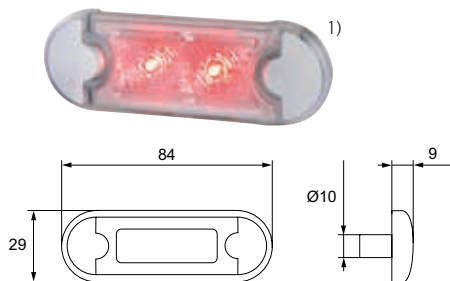
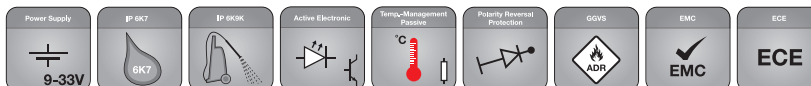
**2XA 959 560-401**

5,000 mm cable

**2XA 959 560-411**

Type approval: 7574 and 031721

This product features the following properties:



**LED CLEARANCE LIGHT**

Multivolt, with 2 white LEDs for horizontal and vertical installation, crystal clear lens, with a black cap for screw closure

12 V/0.5 W, current consumption = approx. 0.04 A

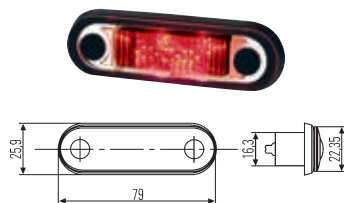
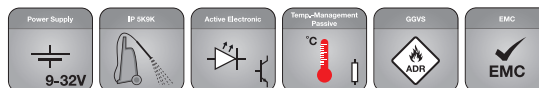
with 500 mm cable	2XA 959 855-407
with 2500 mm cable	2XA 959 855-447

Type approval: ECE

**Accessories**

Stainless steel housing, polished	9AB 959 685-201
1) Cap for screw closure, white	9HD 980 858-018

This product features the following properties:



**LED CLEARANCE LIGHT**

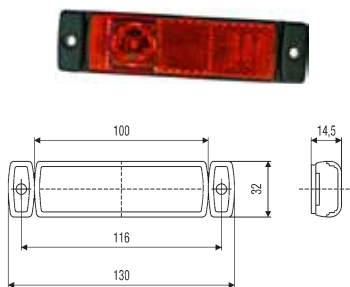
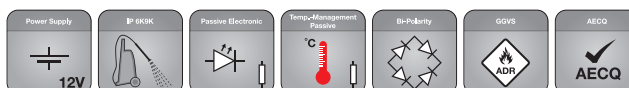
for horizontal or vertical flush-mounting, clear lens with 2 red LEDs can be used as tail light or clearance light, 8-28 V

12 V / 0.5 W, current consumption = approx. 0.04 A

500 mm cable with caps	2XA 959 790-401
5,000 mm cable with caps	2XA 959 790-411

Type approval: E4 7597 and E1 031721

This product features the following properties:



**LED CLEARANCE LIGHT**

for horizontal or vertical surface-mounting, with reflector, 12 V, 2 holes for fastening screws B 4.2

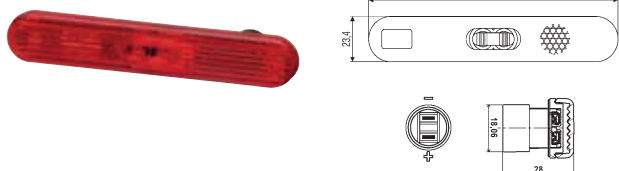
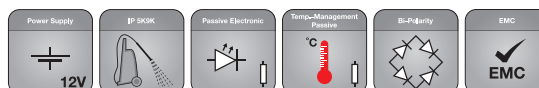
12 V / 0.6 W, current consumption = approx. 0.05 A

500 mm cable	2TM 008 645-931
5,000 mm cable	2TM 008 645-921

For horizontal surface-mounting, the LED field must point to the outer vehicle edge.  
For vertical surface-mounting, the LED field may point upwards or downwards.  
(Clearance light can also be used as a tail light with reflector.)

Type approval: E1 1395 and E1 1398

This product features the following properties:

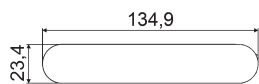


**LED CLEARANCE LIGHT**

for horizontal surface-mounting, with 2 LEDs, self-adhesive, with 6.3 mm contacts and counterplug grommet

2XS 009 226-107





#### REFLECTORS

for horizontal or vertical surface-mounting

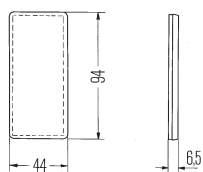
red, self-adhesive	8RA 009 226-137
amber, self-adhesive	8RA 009 226-127
white, self-adhesive	8RA 009 226-117



#### REFLECTORS

red, self-adhesive	8RA 002 014-281
amber, self-adhesive	8RA 002 014-301
white, self-adhesive	8RA 002 014-291

Type approval: ECE E 3535

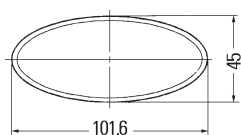
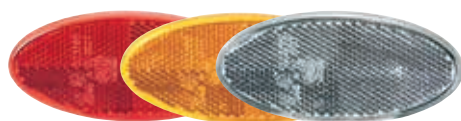


#### REFLECTORS

for horizontal or vertical surface-mounting

red, self-adhesive	8RA 003 326-031
amber, self-adhesive	8RA 003 326-041
white, self-adhesive	8RA 003 326-051

Type approval: E 0292031



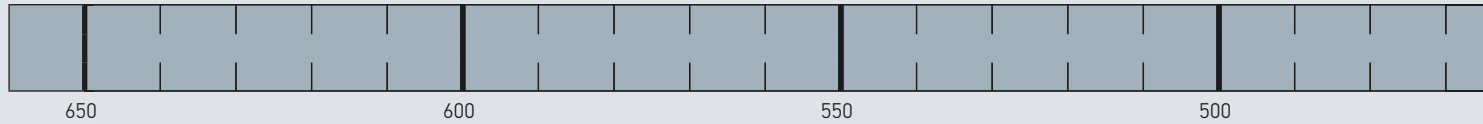
#### REFLECTORS

for horizontal or vertical surface-mounting, suitable for light series 9642

red, self-adhesive	8RA 343 160-007
amber, self-adhesive	8RA 343 160-027
white, self-adhesive	8RA 343 160-017

Type approval: E 3190

## THE NEW LED AUXILIARY BRAKE LIGHT



### An attribute for individual design requirements

Exciting design and greater road safety – no problem with HELLA. Those who travel with campers or motorhomes want to experience independence and maintain their individual flair. With HELLA on board, not only does light technology open all avenues to you in terms of innovation – we also provide you with the very latest design trends. Our wide range of products allows you to develop your own brand features and use these to set your own personal trends – all of this comes with top quality you expect from HELLA. HELLA and modern camping have also been a persistently successful combination.

The slim design and clear optics of the new LED auxiliary brake lamp give it impressive appeal. The innovative HELLA LED light line, a style-defining design element, gives your vehicle a distinctive presence. It features exceptionally homogenous illumination, which provides exceptionally clear visibility as a brake light.

The innovative, state-of-the-art fibre optic technology conveys the brake signal from the LED-equipped central section to the volume endpoints and produces a distinctive appearance in the rear design. Thanks to its long life cycle of 15,000 hours, the integrated automotive LEDs provide you with travel that is simultaneously safe and maintenance free.

Available in two sizes, one 445 mm version and the super long, 637 mm version, allow you to precisely coordinate the new design concept with your own vehicle. A screwless, adhesive assembly rounds out a harmonious appearance and produces a uniform vehicle design.

With the new LED auxiliary brake light, HELLA has created an ideal solution for new, innovative illumination systems used in campers and motorhomes. They are energy-efficient, economical and visually appealing. HELLA provides an advantage in both safety and individuality.

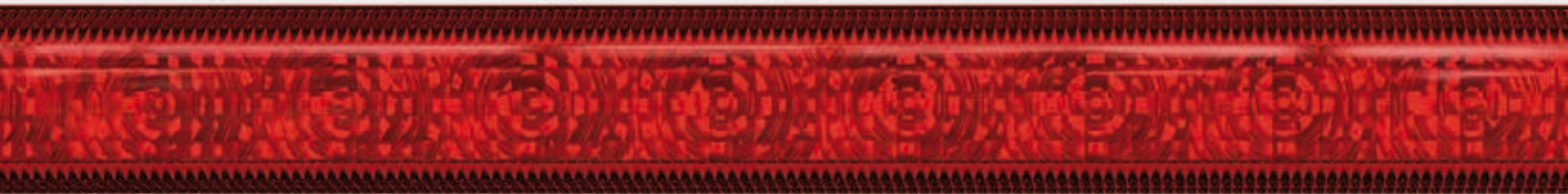
450

400

350

300

Information in mm, 1:1 scale, full size of diagram not shown



This product features the following properties:



#### LED AUXILIARY STOP LIGHT

for horizontal mounting

Short version (445 mm):  
 12 V/1.5 W, current consumption = approx. 0.12 A  
 24 V/1 W, current consumption = approx. 0.04 A

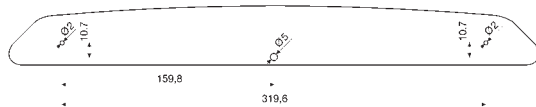
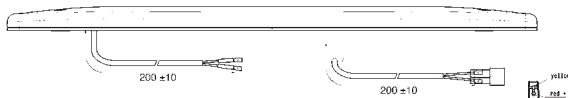
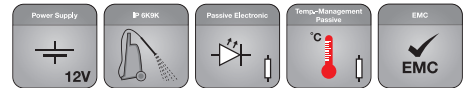
Long version (637 mm):  
 12 V/2.8 W, current consumption = approx. 0.22 A  
 24 V/1.5 W, current consumption = approx. 0.06 A

12 V, length 445 mm	2DA 012 596-007
24 V, length 445 mm	2DA 012 596-017
12 V, length 637 mm	2DA 012 596-027
24 V, length 637 mm	2DA 012 596-037

Type approval: ECE, SAE, CCC



This product features the following properties:



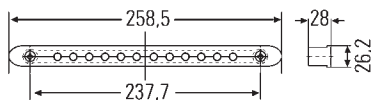
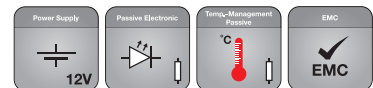
**LED AUXILIARY STOP LIGHT**

for horizontal mounting, with 12 red LEDs, in brilliant optics, with 3D depth effect through embedding, each LED in a separate reflector, with 200 mm cable  
12 V / 1.8 W, current consumption = approx. 0.15 A

12 V, red lens (single)	2DA 343 800-001
12 V, red lens	2DA 343 800-007
12 V, with rubber base	2DA 343 800-057

Type approval: E4 7715

This product features the following properties:



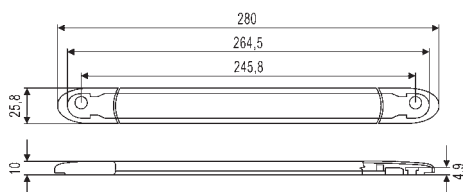
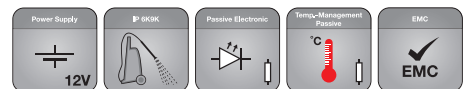
**LED AUXILIARY STOP LIGHT**

for horizontal surface-mounting, 12 LEDs, 2,500 mm cable and open cable ends  
12 V / 2 W, current consumption = approx. 0.16 A

12 V, red lens	2DA 959 071-537
12 V, clear lens	2DA 959 071-037

Type approval: E4 7547

This product features the following properties:



**LED AUXILIARY STOP LIGHT**

for horizontal or vertical mounting, with 10 red LEDs, with 3000 mm cable, installation height 9.5 mm (built-in status)  
12 V / 0.7 W, current consumption = approx. 0.06 A

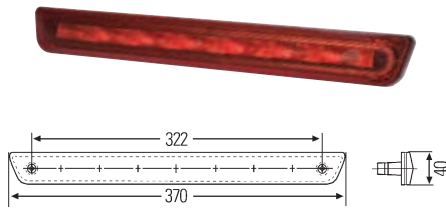
**Red lens**

for screw attachment	2DA 343 106-007
self-adhesive for smooth and clean surfaces	2DA 343 106-207

**Smoked glass lens**

for screw attachment	2DA 343 106-021
self-adhesive for smooth and clean surfaces	2DA 343 106-221

Type approval: E4 7696

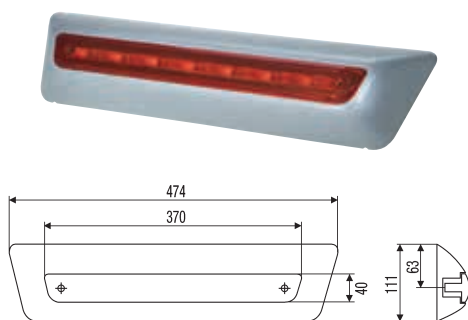
**AUXILIARY STOP LIGHT**

for horizontal flush-mounting, red lens,  
with pre-fitted 12 V bulbs, 2.3 W

with PE foam seal, coated on both sides with adhesive **2DA 008 136-027**

Screw attachment from the front through the lens (screws  
are not included) **2DA 008 136-017**

Type approval: E23 02799

**AUXILIARY STOP LIGHT**

for horizontal surface-mounting, with 12 V bulbs,  
2.3 W, cable 146 751-00 included loose

**2DA 008 136-031**

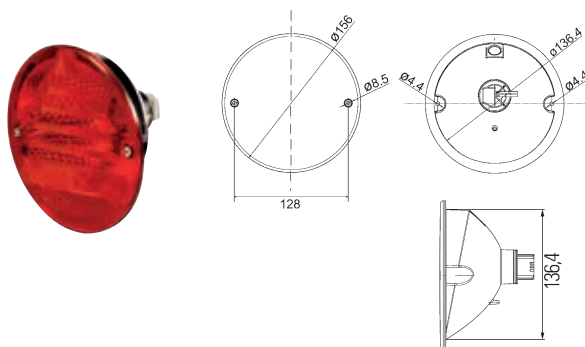
Type approval: E1 02799

Accessories (order separately):

Cable with grommet **8KA 146 751-007**

Cable without grommet **8KA 144 707-007**

Grommet only **9GT 146 757-007**

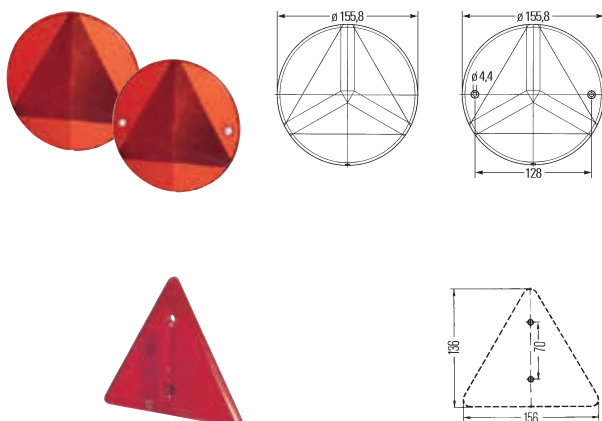
**REAR FOG LIGHT**

with integrated reflector

12 V, inc. bulb **2NE 344 610-007**

12 V, without bulb **8RA 344 610-017**

Type approval: E24 5857

**REFLECTORS**

red, self-adhesive **8RA 343 220-007**

red, with 2 holes for fastening screws **8RA 343 220-017**

Type approval: E4 023191

**REFLECTORS**

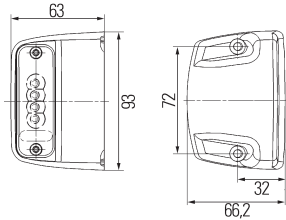
2 holes, Ø 6 mm, for fastening screws

red **8RA 002 020-001**

Type approval: E17 02346



This product features the following properties:



**LED LICENCE PLATE LIGHT**

for surface-mounting on the right or left next to the licence plate, only 1 light needed for illumination. Clear lens, with 4 LEDs, black plastic housing.

**Licence plate 520 x 120 mm**

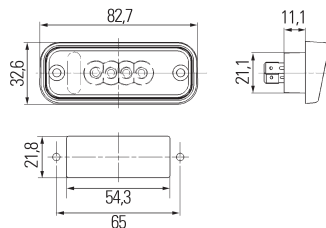
12 V, with blade terminal 6.3 x 0.8 mm	2KA 010 278-321
12 V, with blade terminal 6.3 x 0.8 mm	2KA 010 278-327
24 V, with blade terminal 6.3 x 0.8 mm	2KA 010 278-021
24 V, with blade terminal 6.3 x 0.8 mm	2KA 010 278-027
24 V, with 500 mm cable and a 2 pin EasyConn plug	2KA 010 278-051
24 V, with 500 mm cable and quick link connector	2KA 010 278-041
24 V, with 2,000 mm cable and 6.3 x 0.8 mm flat plug	2KA 010 278-031

**Licence plate 340 x 240 mm or 280 x 200 mm**

12 V, with blade terminal 6.3 x 0.8 mm	2KA 010 278-421
24 V, with blade terminal 6.3 x 0.8 mm	2KA 010 278-121

Type approval: ECE 2609

This product features the following properties:



**LED LICENCE PLATE LIGHT**

for installation above the licence plate, 2 lights required to illuminate the licence plate.

**Licence plate 520 x 120 mm, with blade terminal 6.3 x 0.8 mm**

12 V	2KA 010 278-311
24 V	2KA 010 278-011

**Licence plate 520 x 120 mm, Light contacts firmly bonded, with 1,000 mm cable with exposed cable ends**

12 V	2KA 010 278-617
24 V	2KA 010 278-607

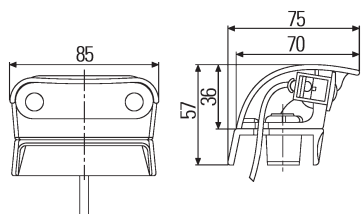
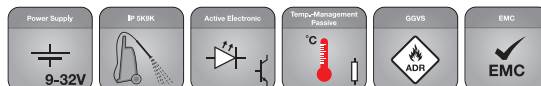
**Licence plate 340 x 240 mm or 280 x 200 mm, with blade terminal 6.3 x 0.8 mm**

1 light required for illuminating the licence plate

12 V	2KA 010 278-411
24 V	2KA 010 278-111

Type approval: ECE 2609

This product features the following properties:



#### LED LICENCE PLATE LIGHT

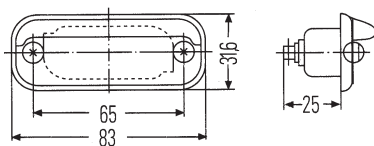
for surface-mounting left and right next to the licence plate 520 x 120 mm, with 2.5 m cable, bracket for mounting the light to the body, cover, fastening screws, cover caps for screws as well as a spacer for different mounting situations, multi-voltage 10-33 V; with 2 LEDs 0.5 W

12 V / 0.55 W, current consumption = approx. 0.04 A

clear lens, black housing

**2KA 959 640-607**

Type approval: 4068 and 031721



#### LICENCE PLATE LIGHT

for flush-mounting above or below licence plates 520 x 120 mm (2 or 3 lights) and 340 x 240 mm (2 lights), 2 x M4 fastening screws, installation depth: approx. 25 mm, clear lens

with chrome brilliant-finish edge

**2KA 001 378-001**

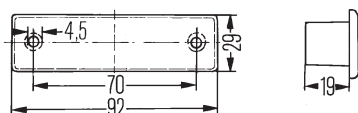
with silver-coloured edge, without fastening screws

**2KA 001 378-041**

with black edge and 12 V bulb

**2KA 001 378-127**

Type approval: 12958



#### LICENCE PLATE LIGHT

for flush-mounting above or below (2 lights) the licence plate 520 x 120 mm, 2 holes for fastening screws, installation depth: approx. 20 mm, Clear lens

with 12 V bulb

**2KA 004 331-061**

Type approval: 22890

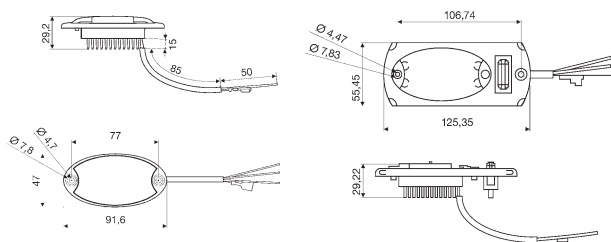
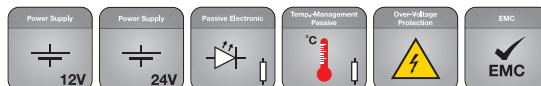


HELLA offers a comprehensive range of interior lighting for various vehicle applications and vehicle types.

Our product range includes, among other things, ambient lighting in the form of light transmitters and LED modules, integrated lighting systems/modules for roof systems, service sets (operating units) and step lighting.

If you have any questions, please contact our field staff or our Customer Service Centre.

This product features the following properties:



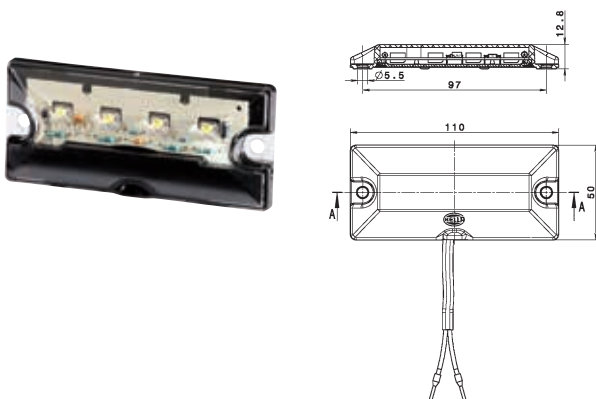
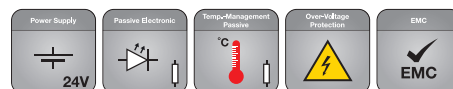
**MINI OVAL LED**

Number of LEDs	4 white LEDs, 1 ambient LED
Illumination angle	50°
Illumination	side driver or instrument range
Illuminance at 1 m	Standard = 14,5 lux, Power = 54 lux
Function	Ambient illumination can be activated
IP Class (Protection)	6K9K (without frame/switch), 40 (with frame/switch)
Power consumption	Standard = 1.7 Watt (0.14 A at 12 V) Power = 3.6 Watt (0.30 A at 12 V)
Lens	brilliant and clear
Installation	Flush-mounting
Current consumption	3.6 W = approx. 0.30 A (12 V) 3.6 W = approx. 0.15 A (24 V)
Voltage	12 V or 24 V
Temperature range	-40° to +60°C

LED equipment	without frame and switch	with frame and switch
4 white power LEDs, 12 V, blue	<b>2JA 343 570-117</b>	<b>2JA 343 570-157</b>
4 white power LEDs, 24 V, blue	<b>2JA 343 570-101</b>	<b>2JA 343 570-141</b>
4 white Power LEDs, 12 V, red	<b>2JA 343 570-011</b>	<b>2JA 343 570-051</b>
4 white power LEDs, 24 V, red	<b>2JA 343 570-001</b>	<b>2JA 343 570-041</b>
4 white standard LEDs, 12 V, red	<b>2JA 343 570-031</b>	-
4 white standard LEDs, 24 V, red	-	<b>2JA 343 570-061</b>

Other versions are available on request

This product features the following properties:

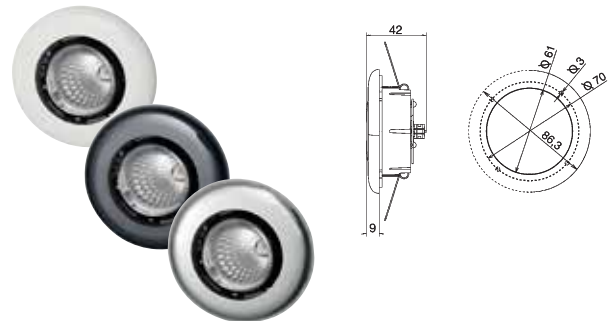
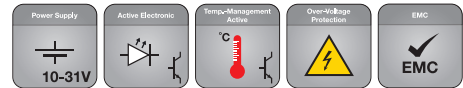


**LED LIGHT**

Number of LEDs	4 white LEDs
LED angle of radiation	40°
Illuminance at 2.5 m	8 lux (average value/ measuring points: floor)
IP Class (Protection)	6K9K
Power consumption	1.5 W (0.06 A at 24 V)
Voltage	24 V

**2JA 010 838-017**

These products have the following features:



**STANDARD LED SPOTLIGHTS, FIXED**

Number of Power LEDs: 1 white  
 Illumination angle: 40° or 20°  
 Illuminance at 1 m: 156 lux (20°), 65 lux (40°)  
 IP protection class: 3 x  
 Power consumption: 2 W (0.16 A at 12 V)  
 Lens: glass-clear  
 Installation: choice between screw- or spring-assisted mounting  
 Spotlight current consumption at 12 V/2.5 W = approx. 0.20 A

**Flush-mounting, fixed, wide illumination (40°)**

Finisher colour\*:

white	2JA 344 040-701
black	2JA 344 040-711
silver	2JA 344 040-721

**Flush-mounting, fixed, spot-type illumination (20°)**

Finisher colour\*:

white	2JA 344 040-741
black	2JA 344 040-751
silver	2JA 344 040-761

**Accessories**

**Round finisher with angled edges**

chrome	9AB 344 057-061
gold	9AB 344 057-071

**Round finisher with rounded edges**

chrome	9AB 344 045-061
gold	9AB 344 045-071
Stainless metal frame, polished	9AB 959 505-501
Stainless metal frame, satined	9AB 959 505-561

**Square finisher with angled edges**

chrome	9AB 344 058-061
gold	9AB 344 058-071

\* Further finisher colours (e.g. real wood optics) or ambient Celis® lighting ring (e.g. blue, red) on request

**STANDARD LED SPOTLIGHTS, ADJUSTABLE**

Number of Power LEDs: 1 white  
 Illumination angle: 40° or 20°  
 Illuminance at 1 m: 156 lux (20°), 65 lux (40°)  
 IP protection class: 3 x  
 Power consumption: 2 W (0.16 A at 12 V)  
 Lens: glass-clear  
 Installation: choice between screw- or spring-assisted mounting  
 Spotlight current consumption at 12 V/2.5 W = approx. 0.20 A

**Flush-mounting, adjustable, wide illumination (40°)**

Finisher colour\*:

white	2JA 343 790-301
black	2JA 343 790-311
silver	2JA 343 790-341

**Flush-mounting, adjustable, spot-type illumination (20°)**

Finisher colour\*:

white	2JA 343 790-401
silver	2JA 343 790-441

additional with white, ambient Celis® light guide ring, current consumption of the Celis® light guide ring at 12 V / 0.5 W = approx. 0.04 A

**Flush-mounting, adjustable, wide illumination (40°)**

Finisher colour\*:

white	2JA 343 790-701
black	2JA 343 790-711
silver	2JA 343 790-741

**Flush-mounting, adjustable, spot-type illumination (20°)**

Finisher colour\*:

white	2JA 343 790-601
black	2JA 343 790-611
silver	2JA 343 790-641

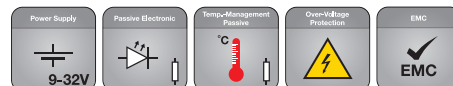
\* Further finisher colours (e.g. real wood optics) or ambient Celis® lighting ring (e.g. blue, red) on request

**Accessories**

Finisher chrome	9AB 343 792-061
Finisher gold	9AB 343 792-071

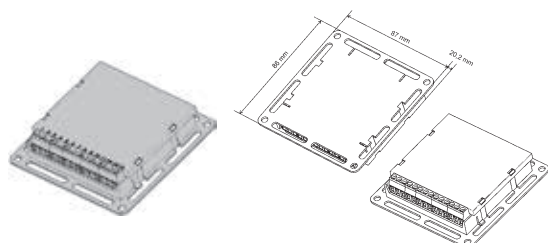
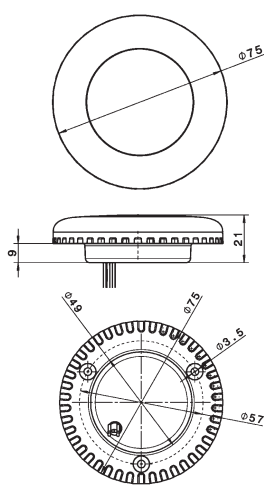
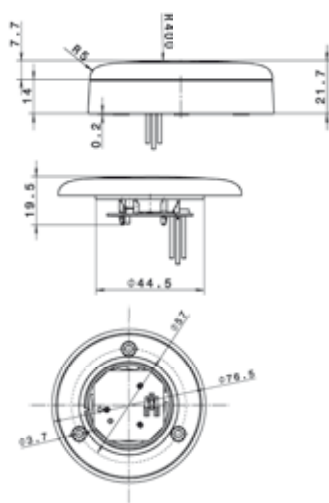


This product features the following properties:



Standard LED spotlight

High-power LED spotlight



#### LED SPOTLIGHTS ROUND, FLAT FLUSH-MOUNTING/SURFACE-MOUNTING

Illumination angle:	35°
Illuminance at 1 m:	45 lux (Standard), 105 lux (high power)
IP protection class:	20
Power consumption:	Standard 1.5 W (0.12 A at 12 V) High power 2.6 W (0.21 A at 12 V)
Dimensions:	Flush-mounting variant only 14 mm Surface-mounting variant only 22 mm
Voltage:	5 VDC (connection possible only with control unit)
Individual packaging	consisting of 1 spotlight LED, 1 colour light frame, 1 coloured installation frame, 1 seal ring for flush-mounting

Flush-mounting, fixed Finisher colour**	Standard LED Spotlight, 1.5 W	High-Power LED spotlight 2.6 W (double light power with cooling element)
<b>without Celis®</b>		
white	2JA 344 199-001	2JA 344 599-001
black	–	2JA 344 599-011
silver	2JA 344 199-021	2JA 344 599-021
<b>with Celis® warm-white ambient</b>		
white	2JA 344 199-101	2JA 344 599-101
black	–	2JA 344 599-111
silver	2JA 344 199-121	2JA 344 599-121
<b>with Celis® blue ambient</b>		
white	2JA 344 199-201	2JA 344 599-201
black	2JA 344 199-211	2JA 344 599-211
silver	2JA 344 199-221	2JA 344 599-221
<b>with Celis® red ambient</b>		
white	–	2JA 344 599-301
black	2JA 344 199-311	2JA 344 599-311
silver	2JA 344 199-321	2JA 344 599-321
<b>with Celis® orange ambient</b>		
white	2JA 344 199-351	2JA 344 599-351
black	–	2JA 344 599-361
silver	2JA 344 199-371	2JA 344 599-371

#### Accessories

Installation frame, the overall height with frame is 22 mm

chrome	9AB 344 192-061
gold	9AB 344 192-071

#### A control unit is required for the use of more than one spotlight

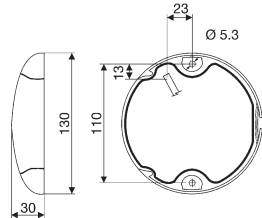
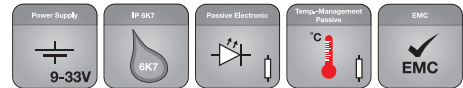
Number of circuits:	max. 8 spotlight LEDs in 1 or 2 dimming circuits
IP protection class:	30
Power consumption:	1–16 W
Voltage:	Multi-voltage (9 – 32 VDC)

for 4 Standard or High-Power spotlights please use ...	5XA 344 150-001
for 8 Standard or 5 high power spotlights please use ...	5XA 344 150-011

\* Connection possible only with control unit (5XA 344 150-001/011)

\*\* Further finisher colours (e.g. real-wood look) available on request

This product features the following properties:

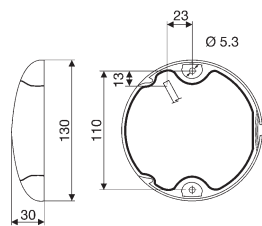
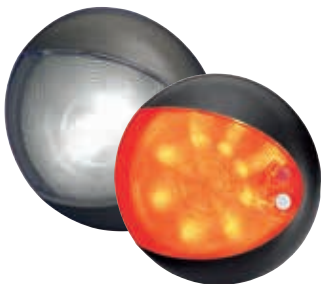
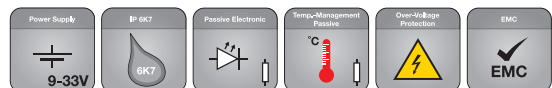


**EUROLED**

Number of LEDs	1 white Power LED
Electrical connection	electrical connection through a cable 2,500 mm long
Lens	White
Power consumption	4 W (0.33 A for 12 V), white <2.5 W (0.20 A for 12 V), red
Installation	Surface-mounting, permanently bonded with base plate

**2JA 959 820-501**

This product features the following properties:



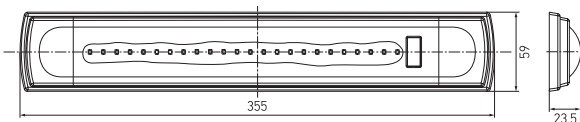
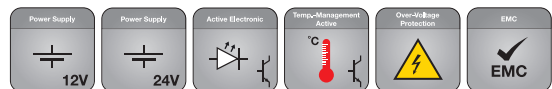
**EUROLED TOUCH**

Number of LEDs	1 white and 8 red
Electrical connection	electrical connection through a 2,500 mm long cable
Function	with sensitive switch, for ON/OFF and dimming as well as switching between red and white light
Lens	White
Power consumption	4 W (0.33 A for 12 V), white <2.5 W (0.20 A for 12 V), red
Installation	Surface-mounting, permanently bonded with base plate

black finisher

**2JA 959 950-031**

This product features the following properties:



**LED SURFACE-MOUNTED LAMP**

Number of LEDs	24 LEDs
Illuminance at 1 m	approx. 200 lux (24 LEDs)
Length	355 mm
Light colour	4,000 K (neutral white)
Nominal output	4.8 W
Current consumption	approx. 0.40 A at 12 V approx. 0.20 A for 24 V

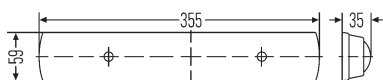
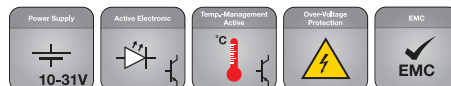
12 V with switch **2JA 007 373-301**

12 V without switch **2JA 007 373-321**

24 V with switch **2JA 007 373-311**

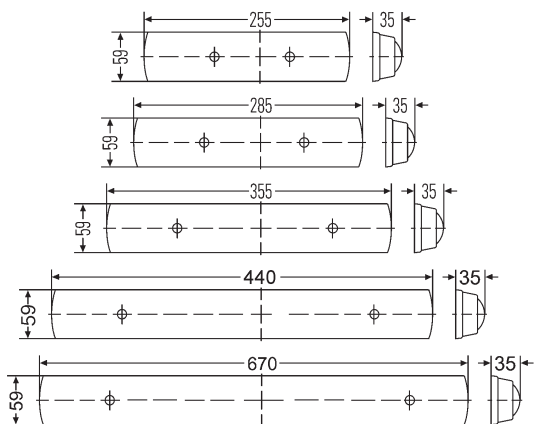
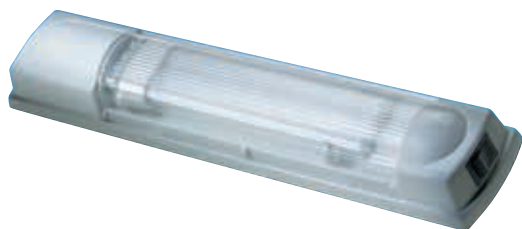
24 V without switch **2JA 007 373-331**

This product features the following properties:



#### LED LIGHTS WITH SWITCH

Number of LEDs	12 or 24 LEDs
Illuminance at 1 m	approx. 100 lux (12 LEDs) approx. 200 lux (24 LEDs)
Length	355 mm
Light colour	4,000 K (neutral white)
Material description	Lens and frame made of impact-resistant material
Installation	Surface-mounting
Nominal output	3.5 W (12 LEDs) 7 W (24 LEDs)
Current consumption	12 LEDs: approx. 0.30 A (12 V), approx. 0.15 A (24 V) 24 LEDs: approx. 0.58 A (12 V), approx. 0.29 A (24 V)
12 LEDs	<b>2JA 007 373-151</b>
24 LEDs	<b>2JA 007 373-161</b>



#### TRANSISTOR CEILING LIGHT

Lighting material	Bulb
Feature	fully interference suppressed, compact fluorescent light with switch
IP Class (Protection)	43
Lens	Clear
Installation	Surface-mounting
Voltage	12 V
7 W, 255 mm	<b>2JA 007 373-001</b>
9 W, 285 mm	<b>2JA 007 373-031</b>
11 W, 355 mm	<b>2JA 007 373-061</b>
8 W, 440 mm	<b>2JA 007 372-001</b>
13 W, 670 mm	<b>2JA 007 372-041</b>

#### Spare parts

Fluorescent bulb, 7 W, 255 mm, white	<b>8GS 861 955-001</b>
Fluorescent bulb, 9 W, 285 mm, white	<b>8GS 861 955-011</b>
Fluorescent bulb, 11 W, 355 mm, white	<b>8GS 861 955-021</b>
Fluorescent bulb, 8 W, 440 mm, warm white	<b>8GS 002 296-101</b>
Fluorescent bulb, 8 W, 440 mm, white	<b>8GS 002 296-111</b>
Fluorescent bulb, 13 W, 670 mm, white	<b>8GS 861 953-011</b>

This product features the following properties:



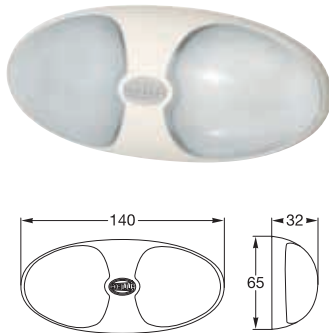
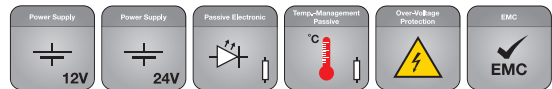
**CARGOLED**

Number of LEDs	4 white Power LEDs
Electrical connection	electrical, using a 310 mm cable
Illumination angle	44° (wide illumination at close range)
Illuminance at 1 m	180 lux
Power consumption	6 W (0.5 A at 12 V)
Lens	Clear
Installation	Flush-mounting (aluminium installation frame)
Temperature range	-40°C to +60°C
cold white	<b>2JB 343 227-001</b>
warm white	<b>2JB 343 227-041</b>

**Accessories**

Installation frame, grey	<b>9XD 344 118-101</b>
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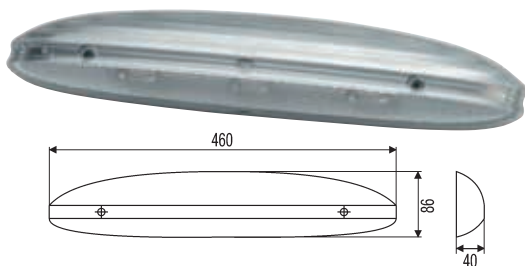
This product features the following properties:



**DURALED OVAL**

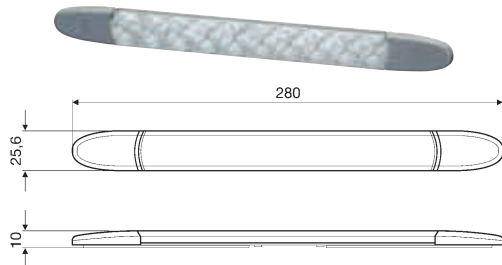
Number of LEDs	4 white LEDs
LED angle of radiation	120°
Illuminance at 1 m	60 lux
IP Class (Protection)	6K6 6K7
Power consumption	3 W (0.25 A at 12 V)
Voltage	Dualvolt 12 and 24 V
	<b>2JA 959 700-102</b>

**ENTRY LIGHT AND AWNING LIGHT**



Number of light sources	3 tubular bulbs at 5 W
Illumination	optimal in and in front of the step area
Illuminance at 1 m	23 lux
Colouring	Housing painted in silver
Installation	Surface-mounting
Voltage	12 V
12 V	<b>2XT 008 929-001</b>
Spare parts	
12 V bulb C5W	8GM 002 092-121

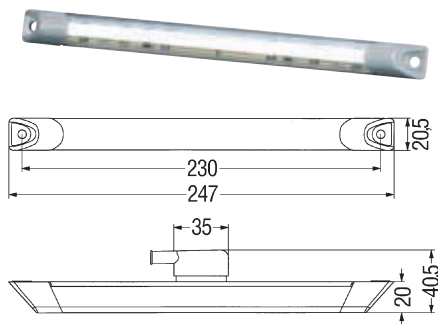
This product features the following properties:



#### FLAT LED SURFACE-MOUNTED LIGHT

Number of LEDs	10 white LEDs
Electrical connection	electrical connection through a cable 500 mm long
Illumination angle	38°
Illuminance at 1 m	32 lux
Power consumption	1.8 W (0.15 A at 12 V)
Lens	Clear
Installation	Surface-mounting, permanently bonded with base plate
Temperature range	- 40° to + 60°C
12 V, white LEDs	<b>2JA 343 606-001/-007</b>
12 V, blue LEDs	<b>2JA 343 606-201</b>

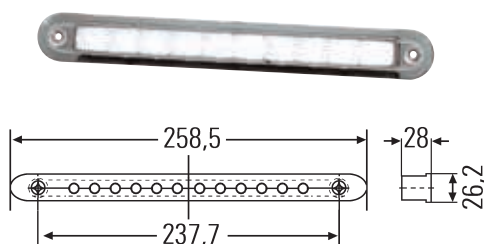
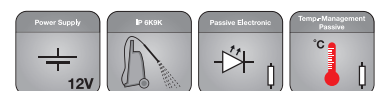
This product features the following properties:



#### LED STEP LIGHT

Number of LEDs	2 white LEDs
Electrical connection	electrical, via flat plug and grommet
Feature	with prism rod as a light aperture body
Colouring	Grey housing
Power consumption	0.7 W (0.05 A at 12 V)
Lens	Clear
Installation	Surface-mounted (horizontally or vertically)
	<b>2JA 008 078-031</b>

This product features the following properties:

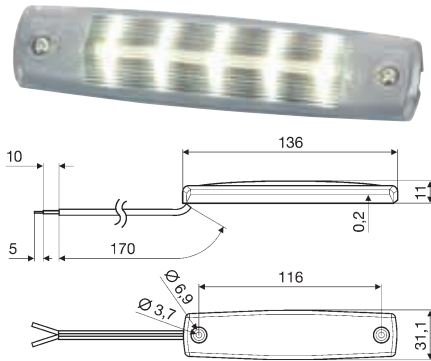


#### LED STEP LIGHT

Number of LEDs	10 white LEDs
Electrical connection	2,500 mm cable
Illumination angle	24°
Illuminance at 1 m	130 lux
Feature	cast in one piece
Power consumption	2 W (0.16 A at 12 V)
Lens	Clear
Scope of supply	with screws, screw caps, seal, and cable connector
Installation	Flush-mounting
	<b>2JA 959 073-001</b>



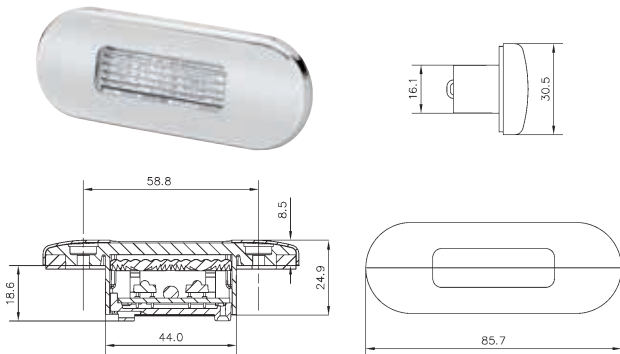
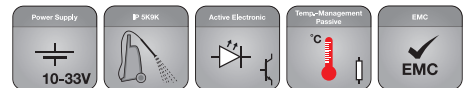
This product features the following properties:



**MINI THINLED**

Number of LEDs	5 white LEDs
Electrical connection	electrical connection through a cable 170 mm long
Illumination angle	34°
Illuminance at 1 m	7.2 lux
IP Class (Protection)	6K9K
Power consumption	2.8 W (0.23 A at 12 V) 2.8 W (0.11 A at 24 V)
Voltage	12 V or 24 V
12 V	<b>2JA 343 660-101</b>
24 V	<b>2JA 343 660-117</b>

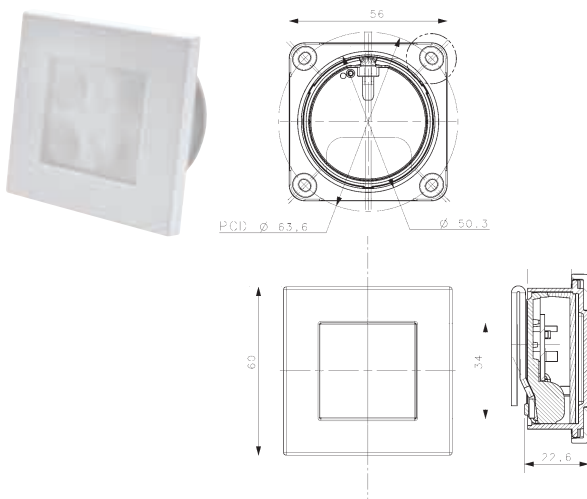
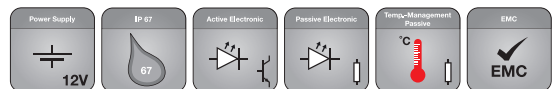
This product features the following properties:



**LED STEP LIGHT**

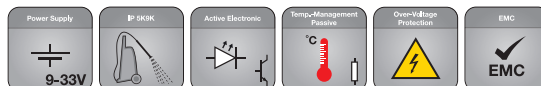
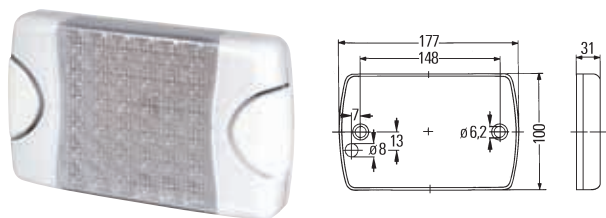
Number of LEDs	1 LED
Feature	with polished steel frame
Installation	Flush-mounting
1 blue LED	<b>2XT 959 680-612</b>
1 white LED	<b>2XT 959 680-812</b>

This product features the following properties:



**LED STEP LIGHT**

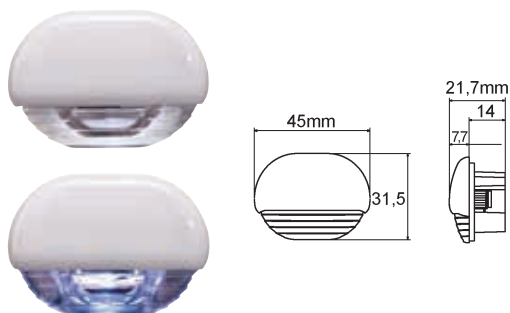
Number of LEDs	4 white LEDs
Feature	with square white frame
Power consumption	0.5 W (0.04 A at 12 V)
Lens	White
Installation	Flush-mounting
12 V, passive electronics	<b>2XT 980 580-052</b>
12 V, active electronics	<b>2XT 980 596-002</b>



**DURALED**

Number of LEDs	36 white LEDs
Electrical connection	electrical connection through a 2500 mm long cable
Illumination angle	70°, wide horizontal and narrow vertical illumination
Illuminance	720 lux
Power consumption	9 W (0.75 A at 12 V)
Lens	Clear
Material description	impact-resistant plastic, UV-resistant
Installation	Surface-mounting, permanently bonded with white base plate
<b>2JA 959 037-511</b>	

This product features the following properties:



**LED STEP LIGHT**

Number of LEDs	1 LED
Electrical connection	electrical, using a 100 mm potted cable wide in close range areas
Illumination	wide in close range areas
Illuminance at 1 m	< 10 lux
Colouring	White cover cap
Power consumption	0.5 W (0.04 A at 12 V)
Lens	Clear
Scope of supply	with seal
Installation	Flush-mounting, choice with 2 screws or with snap-on fastening
white LED	<b>2JA 998 560-017</b>
blue LED	<b>2JA 998 560-057</b>

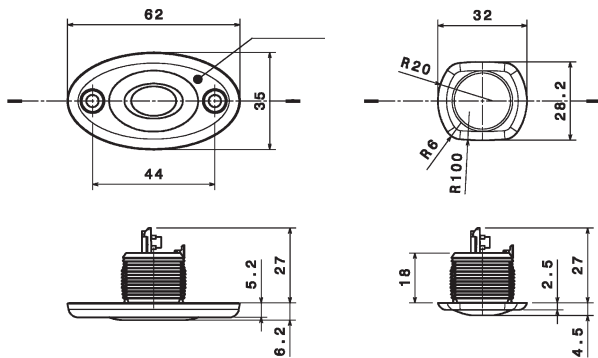
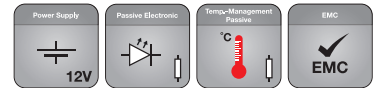
This product features the following properties:



**LED STEP LIGHT**

Number of LEDs	2 LEDs
Electrical connection	electrical connection through a cable 120 mm long
Illumination angle	30°
Illuminance at 1 m	15 lux
Feature	with reverse polarity protection
Power consumption	0.5 W (0.04 A at 12 V)
Lens	Clear
Scope of supply	Seal, fastening screws and screw caps
Installation	Flush-mounting
white LEDs	<b>2XT 959 510-427</b>
blue LEDs	<b>2XT 959 510-657</b>

This product features the following properties:

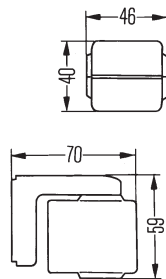


**AMBIENT LED-SPOT**

Number of LEDs	1 LED
Illuminance at 1 m	5 lux
IP Class (Protection)	20
Power consumption	0.3 W (0.02 A at 12 V)
Lens	Clear
Scope of supply	3 frames (white, grey and black)
Installation	Surface-mounting via attachment element
LED red	<b>2JA 344 170-001</b>
LED blue	<b>2JA 344 170-011</b>
LED white	<b>2JA 344 170-021</b>
LED amber	<b>2JA 344 170-031</b>

**Variant**

White LED, with a silver instead of a grey frame	<b>2JA 344 170-201</b>
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**READING LIGHT**

Number of light sources	1 halogen bulb
Electrical connection	250 mm long cable
Feature	integrated ON/OFF switch in light head, can be turned (340°), can be pivoted (330°)
Housing	black
Power consumption	5 W (0.42 A at 12 V)
Lens	red or white replaceable
Installation	Surface-mounting
Voltage	12 V
	<b>2AB 004 532-102</b>





Electronic components – benefit from our unique experience and innovative power.

HELLA is one of the first ports of call for the international supplier industry not just in lighting technology but also in electronic components.

One thing all our products have in common is that their quality and performance are carefully optimised to match our customers' special requirements.



# PRODUCT RANGES, SPECIAL OE ELECTRONICS

## Energy Management



Careful use of energy by appropriately influencing the consumer:

These electronic systems make it possible to monitor and plan the energy budget and maintain the power supply.



Intelligent Battery Sensors



Voltage stabilisers

## Components



Provide added convenience with compact solutions in a variety of areas:

These electronic systems are generally invisible little helpers for the various automatic processes within the vehicle.



Angle of rotation sensors



Air-quality sensors



Remote controls



Rain light sensors

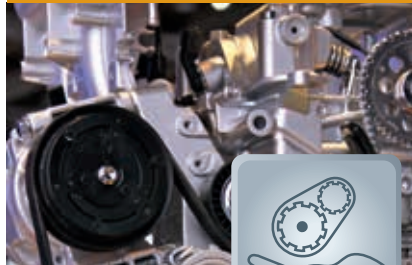


Actuators



Temperature sensors

## Drive Train



Increasing safety and efficiency of the overall system and preventing failures:

These electronic systems make it possible to precisely measure and record measured value in the engine compartment and drive train.



Oil level switch



Oil pressure sensors



Oil level sensors



Accelerator pedal position sensors



Accelerator pedal position sensors

## ENERGY MANAGEMENT

### Intelligent battery sensors 12 V/24 V

#### Product description

- Precise shunt-based measurement of battery current, voltage and temperature
- Battery monitoring of State of Charge (SoC), State of Health (SoH) and State of Function (SoF)

#### Advantages:

- The starting ability of the engine can be guaranteed at all times
- Highest precision for current, voltage and temperature measurement
- Advanced battery algorithm for SoC, SoH and SoF
- Provides cost effective integration
- Worldwide production footprint



## COMPONENTS

### Air quality sensors

#### Product description

- Detects NO<sub>2</sub> and CO which are indicators for exhaust gas outside the vehicle
- Data transmitted to air conditioning system
  - Control of the circulation function of the air conditioning system
  - Prevents loss of air quality inside the vehicle

#### Advantages:

- Using metal oxide gas sensing technology
- PWM output signal for flexible application
- Output of 5 different levels of contamination
- Intelligent software distinguishes between ambient conditions (e. g. city, countryside, motorway)
- Increased driving comfort by air quality inside the vehicle constantly being optimised



## COMPONENTS

### Remote controls

#### Product description

- Allows remote control of vehicle central locking system
- Activation of interior / exterior light
- Optional activation/ deactivation of immobiliser

#### Advantages:

- Reliable and robust design
- All functions in one microcontroller
- Compact form factor (key integration)
- Battery driven (3 V), long service time
- Modular approach with customisable key fob housing



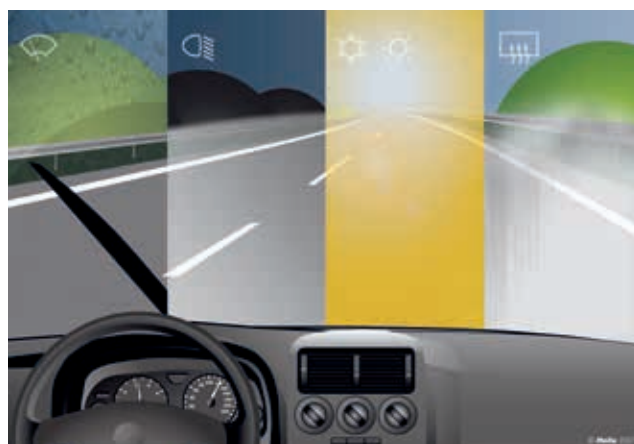
### Rain light sensors

#### Product description

- Complete functional scope (five functions: rain sensor, light sensor, solar sensor, humidity measurement and head-up display) exclusively for use in passenger cars
- Limited use for vehicles with special windshields (thickness, slope, transmission)
- The optics of the second sensor are specially designed for vehicles with steep windshields and combines the rain and light recognition functions (environment and tunnel recognition).

#### Advantages:

- Modular concept allows flexible integration and compact design
- Reduced housing size and less weight
- Cost savings by integrating all functions into one part
- Simple to install without additional installation tools
- Air conditioning system know-how from HELLA
- Leading market position since 1999



## COMPONENTS

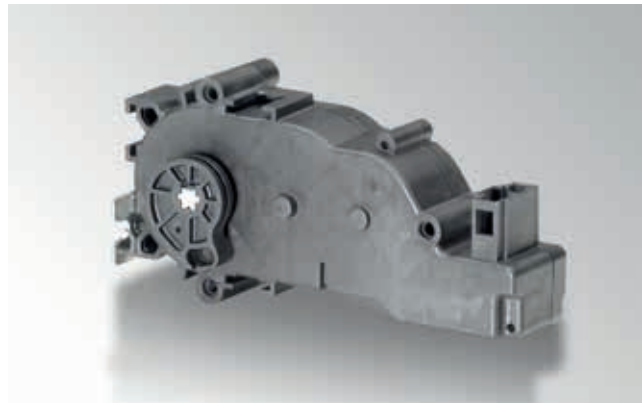
### Actuators

#### Product description

- Applications for body actuators (rotary and linear actuators) are among other things locking or unlocking and control of:
- Central locking
  - Boot lock
  - Window lock
  - Radiator grill flap control
  - Toolbox lock

#### Advantages:

- Compact design and standard interfaces
- Wide range of customised and system-specific tool solutions
- Many years of experience – R&D and production since 1996
- Global development and production locations



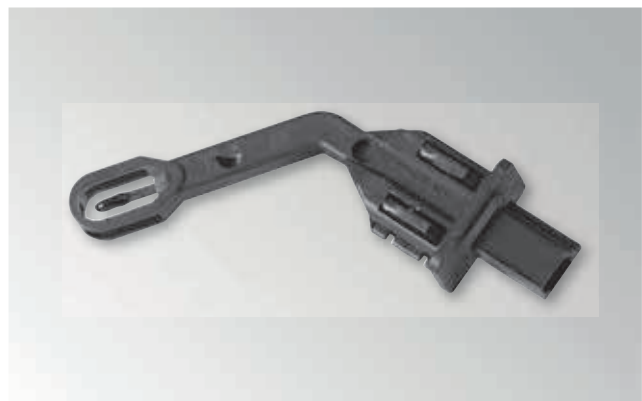
### Temperature sensors

#### Product description

The air temperature sensors measure temperatures in the air current of the air conditioning system. Furthermore, other corresponding versions for measuring outside and inside temperature can be implemented, keeping in mind their respective response times and protection classes in different industrial areas.

#### Advantages:

- Various designs
- EMC stable
- Quick response times



## THE NEW HELLA SWITCH CONFIGURATOR



### HELLA module switch configuration tool

Configure your switches yourself! First, choose between the new waterproof 3100 series (interior and exterior applications) or the 4100 series (interior applications).

You can select any switch functions as well as the operating voltage, combinations of symbols and the corresponding accessories with only a few clicks. They can easily be transferred to a favourites list, printed out or sent as an online request.

Your request will be processed individually with the desired symbol configuration and customer-specific article number on a project-specific basis.



[www.hella.com/switch](http://www.hella.com/switch)



## 3100 SWITCH SERIES

The new waterproof series of rocker switches for electrical systems. It meets the requirements of protection class IP 68. The lasered symbols are lit by integrated LEDs.

### Variety of lasered symbol discs

- IP 68 according to test standard IEC EN 60529
- Extremely reliable in extreme conditions
- Ideal for use in agricultural and construction machinery
- Most diverse switch functions in 12/24 V
  - NO contact/changeover contact
  - Momentary-contact switch / Maintained-contact switch
  - Locking functions
  - Hazard warning light switch
- Wide range of standard and customer-specific laser symbols
- Up to two LED light sources enable direct symbol illumination
- Simple to install, directly in the mounting hole or using a modular mounting frame
- Display lights in the same design for safety-related feedback



### The HELLA switch configurator

You can configure your own switches individually at [www.hella.com/switch](http://www.hella.com/switch).

Select switching functions, symbol combinations and accessories with just a few clicks.

### TECHNICAL SPECIFICATIONS

Mounting opening	21.1 mm x 37.0 mm
Material rocker	PC transparent, painted
Base plate material	PBT
Connecting contacts	6.3 mm x 0.8 mm
Coating of switch contacts	CuZn silver-plated
Light source	max. 2 LEDs 1 x orientation lighting, green 1 x function light, red Warning lights available in amber and green available
Symbol type	lasered
Service life	6 A / 24 V at 150,000 switching cycles
Leak tightness	IP 66 terminal side, IP 68
Operating temperature	-40 °C to +85 °C
Storage temperature	-40 °C to +85 °C
Dashboard thickness	for directly installed switches, 2 mm

### ACCESSORIES

Installation frame	
<b>Modular</b>	
End piece left, right	9AR 169 209-102/-107
Centre piece	9AR 169 208-102/-107
<b>Dummy panel</b>	9HB 172 229-102/-107
<b>Receptacle housing</b>	
Type I	8JD 010 076-102/-107
Type II	8JD 010 076-112/-117
Type III	8JD 010 076-122/-127
<b>Female spade connector, 6.3 mm</b>	
0.5 mm <sup>2</sup> – 1 mm <sup>2</sup>	8KW 744 882-003
1.5 mm <sup>2</sup> – 2.5 mm <sup>2</sup>	8KW 744 820-003
<b>Dismantling tool</b>	8PE 197 631-001

## 4100 SWITCH SERIES

The modular switch series with self-cleaning microswitches is suitable for modern electrical and electronic systems. This ensures reliable switching of small currents as well, without contaminating the contacts. The series features a timeless design, with lasered symbols lit by integrated LEDs.

### The strength of the product range:

- Modular design of the switch
- Realization of a wide variety of 12 V and 24 V switching functions:
  - Contact/changeover contact
  - Momentary-contact switch / maintained-contact switch
  - Locking function
  - Hazard warning light switch
- Wide range of standard and customer-specific symbols
- Selective, reliable and durable illumination of the symbols by using up to 4 LED light sources
- Simple to install, directly in the mounting hole or using a modular mounting frame
- Display lights in the same design for safety-related feedback
- Modern and timeless design
- Pleasant to the touch



### The HELLA switch configurator

You can configure your own switches individually at [www.hella.com/switch](http://www.hella.com/switch).

Select switching functions, symbol combinations and accessories with just a few clicks.

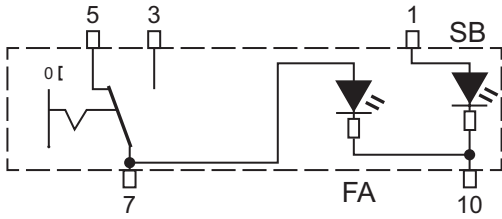
### TECHNICAL SPECIFICATIONS

Mounting opening	19,8 mm x 41,8 mm
Material rocker	PC transparent, painted
Base plate material	PA white, housing PA black
Connecting contacts	3 mm Junior Power Timer
Coating of switch contacts	AgNi
Light source	max. 4 LEDs 2 x orientation lighting, green 2 x function lighting, red Warning lights also available in blue and amber
Symbol type	lasered
Service life	5 mA / 450,000 cycles 5 A / 24 V inductive / 270,000 cycles 4 A / 24 V lamp (75 W) / 90,000 cycles 10 A / 24 V resistive/80,000 cycles
Leak tightness	IP 54
Operating temperature	-40 °C to +85 °C
Storage temperature	-40 °C to +100 °C
Dashboard thickness	For directly installed switches, 2 mm

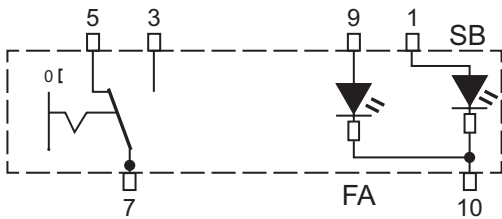
### ACCESSORIES

<b>Installation frame</b>	
1 times	9AR 168 396-002/ -007
<b>Modular</b>	
End piece, left	9AR 169 209-002/ -007
End piece, right	9AR 169 210-002/ -007
Centre piece	9AR 169 208-002/ -007
<b>Dummy panel</b>	9HB 172 229-002/ -007
<b>Cable sachet housing, 10-pin</b>	8JD 010 076-002/ -007
<b>Female spade connector, 2.8 mm</b>	
Junior Power Timer 0.5 mm <sup>2</sup> – 1 mm <sup>2</sup>	8KW 863 934-003
Junior Power Timer 1.5 mm <sup>2</sup> – 2.5 mm <sup>2</sup>	8KW 863 934-023/ -024

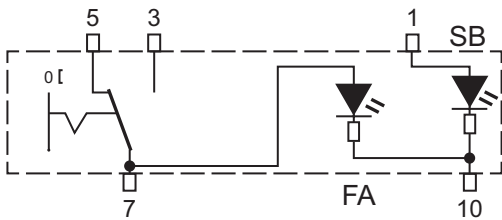
## MODULE SWITCHES SPECIFIC TO CAMPER VANS

**HEATABLE OUTER MIRROR****Locking changeover contact, 1-pin, 2-level**

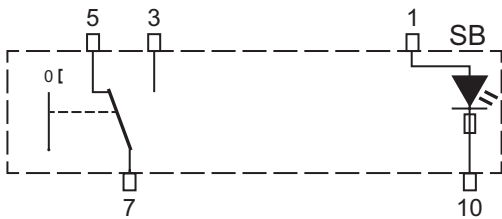
Function	01
Function check	1 x internal
Rated voltage	12 V
Symbol	1: 176
PU	1 unit

**6FH 354 100-671****HEATABLE OUTER MIRROR****Locking changeover contact, 1-pin, 2-level**

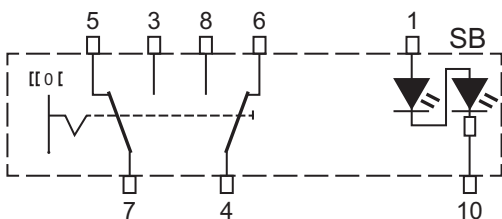
Function	08
Function check	1 x external
Rated voltage	12 V
Symbol	1: 176
PU	12 units

**6FH 354 103-922****INTERIOR LIGHTING****Locking changeover contact, 1-pin, 2-level**

Function	01
Function check	1 x internal
Rated voltage	12 V
Symbol	1: 020
PU	1 unit

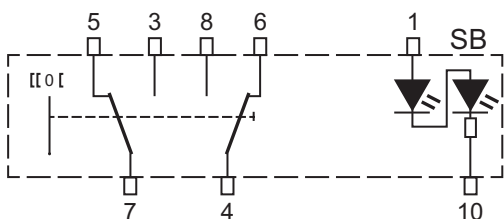
**6FH 354 103-541****STEP****Locking changeover contact, 1-pin, 2-level**

Function	07
Function check	none
Rated voltage	12 V
Symbol	1: 183
PU	12 units

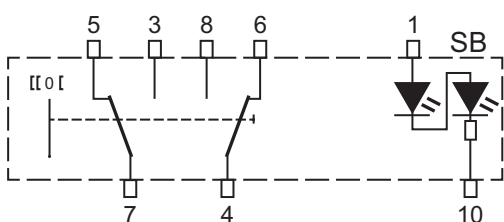
**6FH 354 100-682****AIR CONDITIONING****Locking changeover contact, 2x1-pin, 2-level**

Function	14
Function check	none
Rated voltage	12 V
Symbol	1: 235, 2: 100
PU	1 unit

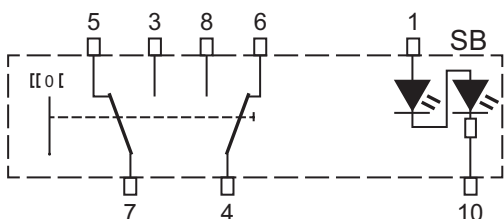
**6FH 354 104-831**

**WINDOW BLIND****Locking changeover contact, 2 x 1-pin, 2-level**

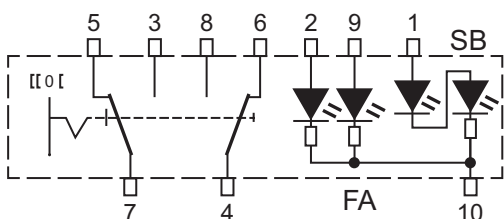
Function	15
Function check	none
Rated voltage	12 V
Symbol	1 : 308, 2 : 307
PU	12 units

**6FH 354 105-762****WINDOW UP/DOWN****Locking changeover contact, 2 x 1-pin, 2-level**

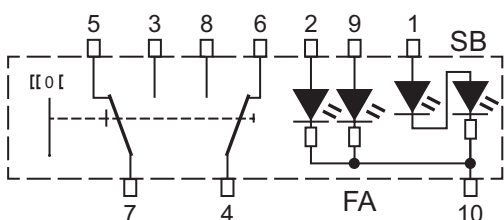
Function	15
Function check	none
Rated voltage	12 V
Symbol	1 : 250, 2 : 249
PU	12 units

**6FH 354 111-392****SUN PROTECTION****Locking changeover contact, 2 x 1-pin, 2-level**

Function	15
Function check	none
Rated voltage	12 V
Symbol	1 : 286, 2 : 285
PU	12 units

**6FH 354 111-412****BLOWER****Locking changeover contact, 2x1-pole, 2-level**

Function	21
Function check	2 x external
Rated voltage	12 V
Symbol	1 : 156, 2 : 155
PU	12 units

**6FH 354 111-402****DEFROSTING WINDSHIELD****Locking changeover contact, 2 x 1-pin, 2-level**

Function	22
Function check	2 x external
Rated voltage	12 V
Symbol	1 : 177
PU	12 units

**6FH 354 112-811**

### Wide electrics range that has grown over the years

As a worldwide partner to the automotive industry, Hella offers system know-how, experience with large volume production and also process know-how for fast implementation of innovative concepts in efficient and reliable serial products.

This is why the Hella electrics range is particularly broad: from A as in "Acoustic signal unit" to W as in "Washer pumps". By continuously expanding and optimising, we offer a wide range of electrical plug connectors.

At HELLA you will find everything that connects: short or super-short, made of plastic or metal. HELLA makes something special even out of standard parts, simple to install or retrofit, in certified quality, in all variations, and suited to almost every special case.



## DEUTSCH "DT SERIES" PLUG CONNECTORS

The concept combines high quality materials with a connecting system characterised by both reliability and easy handling. Thanks to these properties, the product range is particularly suited to applications where maximum performance is required with a minimum number of disruptions, despite tough environmental conditions.

The symmetrical star crimp process allows a gas-tight connection which is characterised by high resistance to temperature and oxidation-based fluctuations in resistance. The housing locking mechanism with integrated click-in function guarantees a quick and secure connection with a strong grip. The "wedgelocks" used for secondary locking facilitate precise, strain-resistant alignment of the contacts and are "clicked" into position on the contact side of the DT housing.



### Range advantages

- environmental sealing – maximum protection from external influences
- high quality housing material
- Strong, gas-tight crimp connections

DESCRIPTION	PIN	PART NUMBER	PU IN PCS.
DT housing	2-pole	8JA 201 021-022	10
DT connector	2-pole	8JA 201 022-022	10
DT "wedgelock" for housing	2-pole	9NB 201 023-022	10
DT "wedgelock" for plug	2-pole	9NB 201 024-022	10
DT housing	3-pin	8JA 201 021-032	10
DT connector	3-pin	8JA 201 022-032	10
DT "wedgelock" for housing	3-pin	9NB 201 023-032	10
DT "wedgelock" for plug	3-pin	9NB 201 024-032	10
DT housing	4-pin	8JA 201 021-042	10
DT connector	4-pin	8JA 201 022-042	10
DT "wedgelock" for housing	4-pin	9NB 201 023-042	10
DT "wedgelock" for plug	4-pin	9NB 201 024-042	10
DT housing	6-pin	8JA 201 021-062	10
DT connector	6-pin	8JA 201 022-062	10
DT "wedgelock" for housing	6-pin	9NB 201 023-062	10
DT "wedgelock" for plug	6-pin	9NB 201 024-062	10
DT housing, coding "A"	8-pin	8JA 201 021-082	10
DT plug, coding "A"	8-pin	8JA 201 022-082	10
DT "wedgelock" for housing	8-pin	8JA 201 023-082	10
DT "wedgelock" for plug	8-pin	8JA 201 024-082	10
DT housing, coding "A"	12-pin	8JA 201 021-122	10
DT plug, coding "A"	12-pin	8JA 201 022-122	10
DT "wedgelock" for housing	12-pin	8JA 201 023-122	10
DT "wedgelock" for plug	12-pin	8JA 201 024-122	10
Contact sleeve	2 mm <sup>2</sup>	9NB 201 025-012	50
Contact pin	2 mm <sup>2</sup>	9NB 201 025-022	50
Contact sleeve	0.5 – 1.5 mm <sup>2</sup>	9NB 201 025-112	50
Contact pin	0.5 – 1.5 mm <sup>2</sup>	9NB 201 025-122	50
Blind plug	-	9NB 201 026-012	50



## SUPERSEAL CONNECTORS

Comply with the guidelines in IEC 529 as well as DIN ISO 40050 and have been given protection rating IP class 67, which guarantees maximum protection from water and dust penetration. The quality of the SUPERSEALS makes them ideal wherever other interconnection systems reach their limits due to adverse pressure or humidity conditions.

### Range advantages

- OEM quality
- Reliable electrical connection
- Maximum protection from external influences



DESCRIPTION	PIN	PART NUMBER	PU IN PCS.
SUPERSEAL pin housing	1-pin	8JA 746 183-012	10
SUPERSEAL socket housing	1-pin	8JA 746 184-012	10
SUPERSEAL pin housing	2-pole	8JA 746 183-022	10
SUPERSEAL socket housing	2-pole	8JA 746 184-022	10
SUPERSEAL pin housing	3-pin	8JA 746 183-032	10
SUPERSEAL socket housing	3-pin	8JA 746 184-032	10
SUPERSEAL pin housing	4-pin	8JA 746 183-042	10
SUPERSEAL socket housing	4-pin	8JA 746 184-042	10
SUPERSEAL pin housing	5-pin	8JA 746 183-052	10
SUPERSEAL socket housing	5-pin	8JA 746 184-052	10
SUPERSEAL pin housing	6-pin	8JA 746 183-062	10
SUPERSEAL socket housing	6-pin	8JA 746 184-062	10
Male pin contact, B 143	1.0 – 1.5 mm <sup>2</sup>	8KW 744 836-002	50
Female contact, B 144	1.0 – 1.5 mm <sup>2</sup>	8KW 744 837-002	50
Strand insulation, B 145	Ø 1.8–2.4 mm	9GD 746 185-002	50
Strand insulation, B 146	Ø 2.6 – 3.3 mm	9GD 746 186-002	50
Blind plug, B 147	–	9GD 746 187-002	50

## CABLE STRAPS WITH EDGE CLIPS

To cleanly attach a cable bundle, this is often required more than the cable strap itself. Our cable straps with integrated edge clips offer a quick and easy to use complete solution with strong holding power. They are weatherproof, flame retardant and resistant to dilute organic acids, oils, petrol, salt water, solvents and greases. They offer perfect purchase even for bundles with the tiniest cross-section, so there is no need for additional padding.

### Range advantages

- Complete attachment solution in a single product
- Suitable for numerous different positions and edge thicknesses
- High-performance specification with original equipment references



DESCRIPTION	PROFILE THICKNESS	CAPACITY	PART NUMBER	PU IN UNITS
Cable strap, black 200 x 4.8 mm	0.7 – 3.0 mm	ø 48 mm	8HL 185 549-001	100
Cable strap, black 200 x 4.8 mm	0.7 – 3.0 mm	ø 48 mm	8HL 185 549-011	100
Cable strap, black 200 x 4.8 mm	0.7 – 3.0 mm	ø 48 mm	8HL 185 549-021	100
Cable strap, black 200 x 4.8 mm	0.7 – 3.0 mm	ø 48 mm	8HL 185 549-031	100
Cable strap, black 200 x 4.8 mm	3.0 – 6.0 mm	ø 48 mm	8HL 185 549-041	100
Cable strap, black 200 x 4.8 mm	3.0 – 6.0 mm	ø 48 mm	8HL 185 549-051	100
Cable strap, black 200 x 4.8 mm	3.0 – 6.0 mm	ø 48 mm	8HL 185 549-061	100
Cable strap, black 200 x 4.8 mm	3.0 – 6.0 mm	ø 48 mm	8HL 185 549-071	100

**For accessories, HELLA is your go-to partner**

Our extensive range of quality accessory components supplement our comprehensive product range and enhance the functionality of individual products.

HELLA offers a continuously growing range of products that includes sophisticated, practical technologies, particularly in the electrical and electronics areas. We make something special from norm parts: easy to install, with tested quality, in all versions and equipped for almost any application.

For many years, our competence has been reflected in our highly diverse innovations. Our wide selection of products makes us one of the leading providers on the market.

## CONNECTORS AND ADAPTERS



### UNIVERSAL CONNECTOR

2-pin with screwed tension relief and 8 A fuse, suitable for cigarette lighters and standard sockets (ISO 4165) screw connection up to 2.5 mm

6–24 V

8JA 007 589-001



### CONNECTOR

2-pin in accordance with ISO 4165

6–24 V

8JA 002 262-001



### CONNECTOR

7-pin in accordance with ISO 1724, plastic version, screw connections

12 V

8JA 001 930-003



### CONNECTOR

13-pin in accordance with ISO 11 446, plastic version, screw connections, with rubber grommet

12 V

8JA 005 951-001



### MINI-SHORT ADAPTER

from 7-pin socket (ISO 1724) on the traction vehicle to 13-pin connector (ISO 11 446) on the trailer

12 V

8JA 008 981-001



### CABLE ADAPTER

from 13-pin socket (ISO 11 446) on the traction vehicle to 7-pin connector (ISO 11 446) on the trailer, with 250 mm cable

12 V

8JA 005 952-001



### SUPER-SHORT ADAPTER

from a 13-pin socket (ISO 11 446) on a towing vehicle to a 7-pin plug (ISO 11 446) on a trailer

12 V

8JA 008 969-001

## SOCKETS

**CONNECTOR SOCKET**

7-pin in accordance with ISO 1724, plastic version, screw connections, 12 V

12 V

8JB 001 943-003

**CONNECTOR SOCKET**

13-pin in accordance with ISO 11 446, plastic version, screw connections, 12 V

with rubber grommet and rubber seal in hinged cover

8JB 005 949-001

with rear fog light switch-off

8JB 005 949-011

**SOCKET**2-pin in accordance with ISO 4165, without cover, 6.3 mm blade-terminals,  
Load capacity: max. 16 A

6–24 V

8JB 001 946-072

**SOCKET**2-pin in accordance with ISO 4165, 6.3 mm blade terminals  
Load capacity: max. 16 A, 6–24 V

with spring-loaded cover

8JB 001 946-082

**SOCKET**2-pin in accordance with ISO 4165, 6.3 mm blade terminals  
Load capacity: max. 16 A, 6–24 V

with snap-on cover

8JB 001 946-092

**SURFACE-MOUNTED SOCKET**2-pin according to ISO 4165, screw connections  
Load capacity: max. 16 A

6–24 V

8JB 004 123-001

**POWER SOCKET**2-pin with cover and clamping sleeve, suitable for cigarette lighter socket, 6.3 mm blade terminals  
Load capacity: max. 16 A

6–24 V

8JB 008 023-001

## ACCESSORIES



### MINI-CHARGER BATTERY CHARGER AUTOMATIC 6/12 V

CE-certified, 230 V/50 Hz/10 W,  
Charging current at 6 V = 0.8 A or at 12 V = 0.6 A, automatic switch-off,  
suitable for gel batteries, with reverse polarity protection

8ES 006 266-011



### POWER CHARGER BATTERY CHARGER 10 AUTOMATIC

CE-certified, 230 V/50 Hz/130 W,  
Normal charge 7 A, fast charge 10 A,  
Automatic switch-off operationally safe due to overload protection

8ES 004 417-051



### TURBO-CHARGER BATTERY CHARGER

CE-certified, 230 V/50 Hz/350 W,  
Normal charge 9 A, fast charge 17 A,  
operationally safe due to overload protection

8ES 004 417-061



### HAZARD WARNING LIGHT MODEL 3003 ACCU

when the engine is running, the rechargeable battery is charged through contacts in the charging bracket. Automatic 12/24 V vehicle electric system voltage changeover, operating time in flashing mode 40 hours or 7 hours with work light, charging bracket and rechargeable lead-gel battery included in delivery

type-tested

2XW 007 146-011



### HAZARD WARNING LIGHT MODEL 3003

with fastening bracket (for battery operation via 5 mono cells, not included)

type-tested

2XW 007 146-001



### BOXES OF SPARE BULBS

A must for every responsible camper. The assortment contains one bulb for each of the most common lighting functions as well as various spare fuses.

H4, 12 V

8GJ 002 525-913

H9, 12 V (not shown)

8GH 007 157-901



### HAND LAMP

with 11 Watt PL tubes, impact-proof protective tube,  
handle and cap made of oil- and petrol-resistant rubber,  
length 44 cm, protective rating IP 64

Protection class II

2XM 001 974-051



### LED HAND LAMP

30 LEDs, 12 V

2XM 001 974-211

60 LEDs, 12 V

2XM 001 974-221





## HELLA WORLDS

Welcome to our Original Equipment worlds.

On this website, you can find information about technology, new products and possibilities for equipping your vehicle:



[www.hella.com/caravan](http://www.hella.com/caravan)

My home is my castle: Learn more about our solutions for a modern temporary home.

## HELLA MOBILE APPS



With our HELLA apps, you can interact with the products and make use of our practical services when using your smartphone or tablet while on the road.

For example, with the HELLA Addlight App you can virtually install additional headlamps from HELLA on your own vehicle and also look at these in a detailed 360° view. You can also drive through the darkness with the HELLA night driving app and discover more about HELLA light systems.

Simply let yourself get carried away to interactive worlds with our range of apps - experience different light technologies, illumination and much more.



[www.hella.com/app](http://www.hella.com/app)



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