



UNIVERSAL HEADLAMP MODULES



60, 90 AND 133 MM MODULES – Powerful and reliable

HELLA headlamp modules stand for the highest quality, reliability and cost efficiency.

Whether a bus, tractor, truck, motorhome or motorbike: HELLA's robust headlamp modules are used in many vehicle types. Thanks to their modular design, they offer maximum flexibility and a wide range of possible applications. The headlamp module range offers a choice between halogen and LED technology depending on requirements, so enabling an easy switch from halogen to LED. All modules impress with their robust construction and can therefore be used in demanding work environments. They are all powerful, durable and reliable and thus stand for safety.

The difference lies in the detail: The 60 mm module is one of our smallest modules and ensures a simple, clean vehicle design. In the 90 mm series, the L 4060 LED modules in particular outshine others with their outstanding light output and additional lighting functions. The Bi-LED modules combine low beam and high beam in a single headlamp module – ideal for vehicles with limited space or special designs. Our largest, the 133 mm module, is optionally available as a Bi-LED or Bi-halogen version. This means that low beam and high beam come from a single module, with either symmetrical or asymmetrical light distribution.

**Whether you opt for 60, 90 or 133 mm modules:
You can rely on HELLA expertise when selecting the right headlamp module. All our products guarantee a high level of safety and quality while being cost-efficient at the same time.**



TABLE OF CONTENTS

Introduction	2
The module selector	4
Legend for icons	5
Product overview	6
60 mm modules	
LED – Low beam and high beam	8
Halogen – Low beam and high beam	10
90 mm modules	
LED – Low beam	12
LED – High beam	14
LED – Fog light	16
Bi-LED – low beam and high beam	18
Halogen – Low beam and high beam	22
Bi-halogen - low beam and high beam	24
133 mm modules	
Bi-LED – low beam and high beam	28
Bi-halogen – low beam and high beam	30
Light distributions	
90 mm modules	32
60 mm modules	34
133 mm modules	34
Mounting kits and carrier frames	36
Accessories	38
Type approvals	40
FAQ	42
Contact	43

A SOPHISTICATED SOLUTION: the smart module selector

Find the right headlamp module with just a few clicks:

Our smart module selector will make your search easier. Simply use the filter to select the required criteria such as the lighting function or homologation and you'll see suitable products right away.

www.hella.com/headlamp-modules



+ Simple menu structure and use

Our module selector is easy to use and makes it simple for original equipment manufacturers and end customers to find the right module - just like its predecessor, which has already proved its worth in practical use. We have built on this and added further module types to the configurator.

+ Illumination comparison

You can compare the lighting technology for selected main lighting functions. Spot the difference between halogen and LED with realistic images from Europe's largest light testing facility! Compare the light distribution and make the right decision for your application.

+ Upgrade to modern LED technology

Existing halogen versions can be easily converted to LED modules. More detailed information is found in the assembly instructions supplied with the LED modules.

+ It's easy to order parts

Use the selector to easily create your order list and send it to HELLA.

+ Precise comparison











All key technical details for each module can be found in the detailed overview - including optional accessories!

LEGEND Icons at a glance








- 
ECE
 This product is approved in accordance with ECE guidelines.
- 
Asymmetrical light distribution
 The product complies with ECE regulation R112, which regulates asymmetrical low beam for passenger cars, buses, commercial vehicles and most larger vehicles.
- 
Symmetrical light distribution
 The product complies with ECE regulation R113, which regulates symmetrical low beam for many agricultural vehicles and lighter vehicles (2, 3 or 4 wheels).
- 
SAE
 The product meets the FMVSS 108 or the ASABE S0608 type approval.
- 
CCC
 Please contact us for the current certificate.
- 
Vehicle electrical system voltage
 Defines the power supply of the light. This can be 12 V, 24 V or a flexible voltage range for multi-voltage (e.g. 8 – 33 V).
- 
Operating temperature
 Thermal management and an optimised housing design guarantee full functionality for all operating temperatures through product testing e.g. from -40°C to 60°C.
- 
Dust and water protection class IP
 International Protection (IP) according to DIN 40050 Part 9. Specific definition for road vehicles:
 First digit: Protection against dust and dirt
 5K = dust protection
 6K = dust-tight
 Second digit: Protection against water
 4K = protection against splashing water from any direction with increased pressure
 7 = protection against temporary immersion
 9K = protection against water during high-pressure/steam-jet cleaning
- 
Electronic circuit
 2 different circuits are basically possible for LED lamps.
 Active:
 LED current regulation via active electronics.
- 
Passive:
 Setting a specific voltage range for the LED by means of a series resistor.
- 
Thermal management
 Active:
 Electronic power control of the LEDs at high ambient temperatures exceeding permitted levels. This ensures the LEDs are protected against destruction caused by overheating.
- 
Passive:
 Optimised layout of the components for even temperature distribution and dissipation.
- 
Reverse polarity protection
 Even if the connecting cable is connected the wrong way round, there is still no danger for the electronics.
- 
Electromagnetic compatibility
 Electromagnetic compatibility (EMC) tested and EU type approval issued.
- 
Tourist solution (passive)
 The light can be used without adjustments for a short time in countries with left-hand traffic.

Universal headlamp modules at a glance

LED

60 MM MODULES		90 MM MODULES			133 MM MODULES		
LOW BEAM	HIGH BEAM	LOW BEAM	HIGH BEAM	LOW BEAM AND HIGH BEAM	FOG LIGHT	LOW BEAM AND HIGH BEAM	
 <p>Module 60 LED Page 8</p>	 <p>Module 60 LED Page 9</p>	<p>Performance:</p>  <p>L 4060 Page 12</p>	 <p>L 4060 Page 14</p>	 <p>Bi-LED L 5570 Page 18</p>	 <p>Bi-LED L 70 Page 19</p>	 <p>L 4060 Page 16</p>	 <p>M133 LED Page 28</p>
		<p>Essential:</p>  <p>R 80 Page 20</p>	 <p>R 80 Page 20</p>				

HALOGEN

 <p>Module 60 Page 10</p>	 <p>Module 60 Page 11</p>	<p>Performance:</p>  <p>Page 22</p>	 <p>Page 23</p>	 <p>Page 24</p>			 <p>M133 Page 30</p>
		<p>Essential:</p>  <p>Page 26</p>	 <p>Page 27</p>				

LOW BEAM AND HIGH BEAM

SPECIFICATIONS

- Especially compact LED headlamp series
- Specially developed lens system for homogeneous illumination
- Enables an easy switch from halogen to LED technology
- Sturdy die-cast aluminium housing

LED low and high beam headlamp Module 60 LED



LED low beam headlamp Module 60 LED

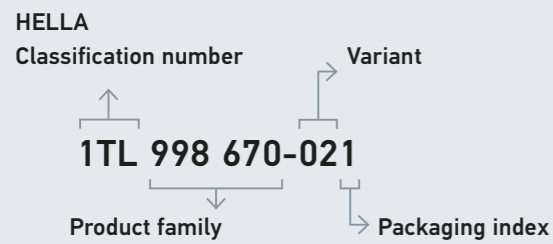


LED high beam headlamp Module 60 LED

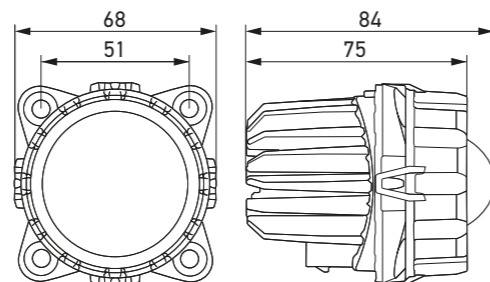


For further information on each product, see general overview on page 40

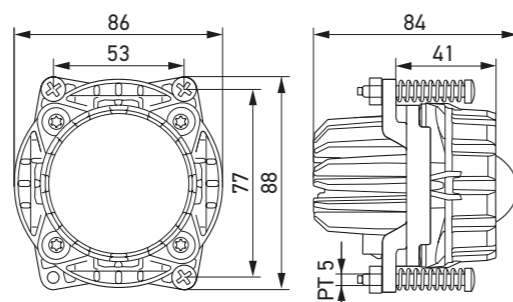
HOW IS THE HELLA ARTICLE NUMBER MADE UP?



Dimensional sketches of the LED low beam headlamp Module 60 LED



Without carrier frame



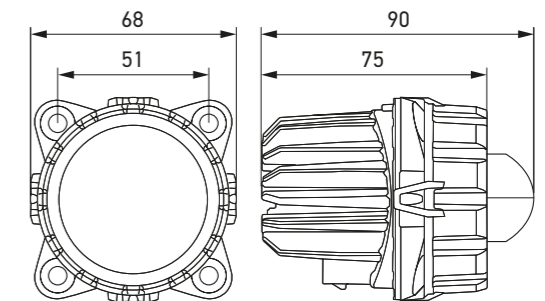
With carrier frame, vertical (horizontal mounting also possible)

LED low beam headlamp Module 60 LED

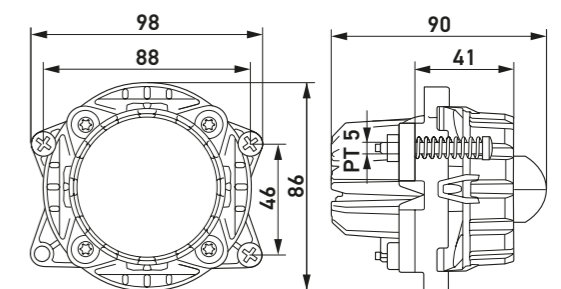
ECE-R113, SAE	1TL 998 670-021
ECE-R113, SAE, with pre-assembled carrier frame	1TL 998 670-041



Dimensional sketches of the LED high beam headlamp Module 60 LED



Without carrier frame



With carrier frame, horizontal (vertical mounting also possible)

LED high beam headlamp Module 60 LED

ECE-R113	1KL 998 670-031
ECE-R113, SAE, with pre-assembled carrier frame	1KL 998 670-051
ECE-R112	1KL 998 670-017

Photo: Traktorenwerk Lindner GmbH

60 MM MODULES

LOW BEAM AND HIGH BEAM

SPECIFICATIONS

- Incorporation in customer-specific design solutions is simple thanks to compact dimensions
- Excellent light output and homogeneous road illumination despite ultra-compact size
- Mounting via installation frame, so can be adjusted from the front or rear
- Low weight
- With HB3 bulb

Halogen low and high beam headlamp Module 60



Halogen low beam headlamp Module 60



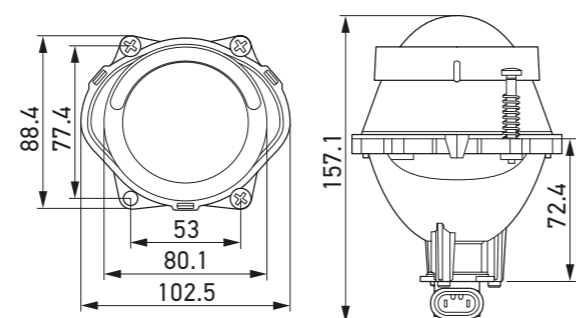
Halogen high beam headlamp Module 60



For further information on each product, see general overview on page 40



Dimensional sketches of the halogen low beam headlamp Module 60

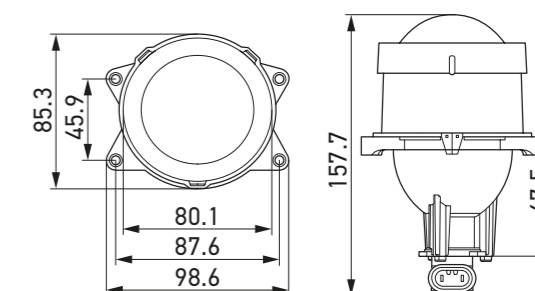


Halogen low beam headlamp Module 60

ECE-R113, SAE	1TL 998 570-641
Right-hand traffic, ECE-R112, SAE	1BL 998 570-601
Left-hand traffic, ECE-R112, SAE	1ML 998 570-611



Dimensional sketches of the halogen high beam headlamp Module 60



Halogen high beam headlamp Module 60

ECE-R112, SAE, without position light	1KL 998 570-621
ECE-R112, SAE, with position light	1KL 998 570-631

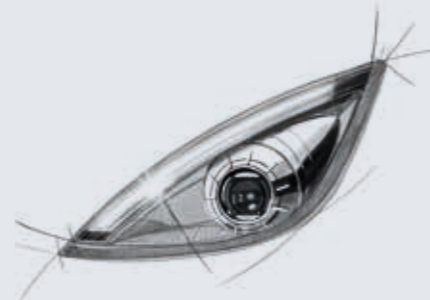
90 MM MODULES – PERFORMANCE LOW BEAM



FAR EXCEEDING THE STANDARD

Are you interested in a customised lighting solution that is perfectly suited to your vehicle? Then we're the ideal partner for you!

Just get in touch with us. More information on p. 43.



SPECIFICATIONS

- Homogenous high-end illumination similar to daylight thanks to innovative LED technology
- Low beam, daytime running light and position light in one module or as a separate low beam
- Simple conversion from halogen to LED possible
- Optionally FEP or DEUTSCH connector
- Individual front design thanks to modular design of the 90 mm series



For further information on each product, see general overview on page 40



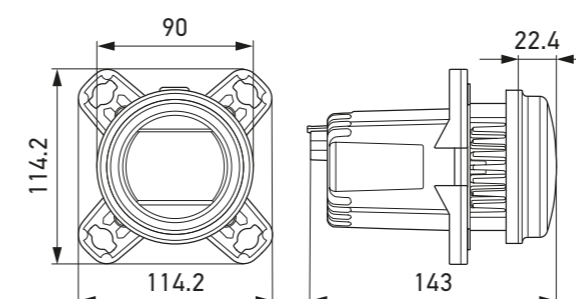
LED low beam headlamp L 4060*

Right-hand traffic, ECE, SAE, FEP connector	1BL 012 488-001
Left-hand traffic, ECE, FEP connector	1ML 012 488-011
Right-hand traffic, ECE, SAE, DEUTSCH connector	1BL 012 488-101
Left-hand traffic, ECE, DEUTSCH connector	1ML 012 488-111

LED low beam headlamp L 4060 with daytime running/position light*

Right-hand traffic, ECE, SAE, FEP connector	1BL 012 488-021
Left-hand traffic, ECE, FEP connector	1ML 012 488-031
Right-hand traffic, ECE, SAE, DEUTSCH connector	1BL 012 488-121
Left-hand traffic, ECE, DEUTSCH connector	1ML 012 488-131
Right-hand traffic, ECE, FEP connector, with fording ability**	1BL 012 488-041

Dimensional sketches of the LED low beam headlamp L 4060



* Mounting kit 9XX 254 163-02 and 9XX 254 163-00 included in delivery.
** More information on p. 42.

90 MM MODULES – PERFORMANCE HIGH BEAM



DID YOU KNOW?

Malfunctions of the high beam (HB) with direction indicator (DI) module can normally be detected with the vehicle control unit. The stages of detection are as follows: DI: < 400 mA // HB: < 800 mA

If your control unit cannot detect stage < 400 mA for DI, the pulse generator will increase the amperage in an interval of 100 to 120 ms to simulate the level consistent with a standard 12 V (21 W) bulb.

SPECIFICATIONS

- High-end illumination thanks to innovative LED technology
- High beam, daytime running and position lights in one module, a high beam/direction indicator light combination or high beam as a separate module
- Simple conversion from halogen to LED possible
- Robust die-cast aluminium housing with integrated driver electronics and FEP connector
- Individual front design thanks to modular design of the 90 mm series



For further information on each product, see general overview on page 40



LED high beam headlamp L 4060

With pre-assembled carrier frame	1F0 011 988-021
For Performance mounting	1F0 011 988-121*



LED high beam headlamp L 4060 with daytime running/ position light

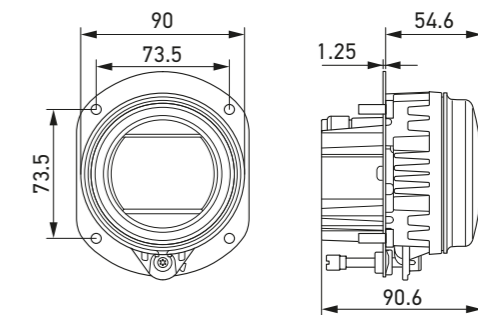
With pre-assembled carrier frame	1F0 011 988-031
For Performance mounting	1F0 011 988-131*



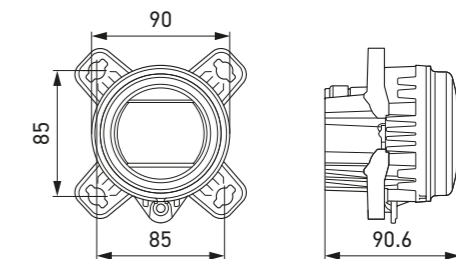
LED high beam headlamp L 4060 with direction indicator

With pulse generator and pre-assembled carrier frame	1F0 011 988-081
With pulse generator, for Performance mounting	1F0 011 988-181*
Without pulse generator and with pre-assembled carrier frame	1F0 011 988-071
Without pulse generator, for Performance mounting	1F0 011 988-171*
With pulse generator, for Performance mounting, with fording ability**	1F0 011 988-191*

Dimensional sketches of the LED high beam headlamp L 4060



With pre-assembled carrier frame



Without carrier frame

* Mounting kit 9XX 254 163-00 and 9XX 254 163-02 included in delivery.
** More information on p. 42.

LED

90 MM MODULES – PERFORMANCE FOG LIGHT



Photo: © RAPIDO Reisemobile

SPECIFICATIONS

- Homogenous illumination, similar to daylight
- Fog light in various combinations or as a separate module, with daytime running light, position light or with cornering light
- Simple conversion from halogen to LED possible
- Robust die-cast aluminium housing with integrated driver electronics and FEP connector
- Weight saving thanks to polycarbonate lens
- Individual front design thanks to modular design of the 90 mm series
- With pre-assembled carrier frame

ECE	R112	SAE	9-32V	-40 - +60°C	IP X9K IP X4K IP 5KX	AE
PT	PRP	EMC CLASS 4				

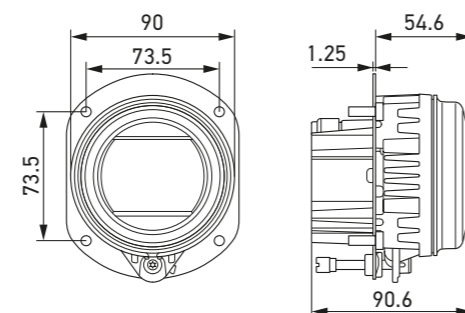
For further information on each product, see general overview on page 40



LED fog light L 4060

Without daytime running/position light	1N0 011 988-001
With daytime running/position light	1N0 011 988-011

Dimensional sketches of the LED fog lamp L 4060



With pre-assembled carrier frame



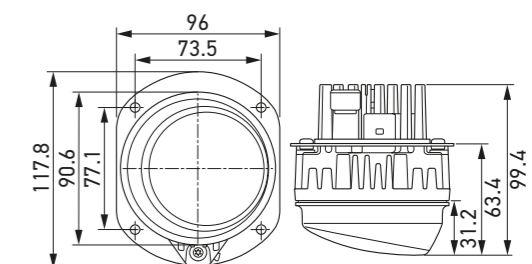
LED fog lamp L 4060 with cornering light

Left headlamp	1N0 011 988-051
Right headlamp	1N0 011 988-061

Optional accessories

Cornering light control unit, PU: 24	5DF 009 244-007
Termination cable LED module control unit, length: 2,600 mm	8KB 163 160-811

Dimensional sketches of the LED fog lamp L 4060 with cornering light



With pre-assembled carrier frame



BI-LED

90 MM MODULES – PERFORMANCE

LOW BEAM AND HIGH BEAM

SPECIFICATIONS

- Excellent low beam and high beam from a single headlamp module
- Non-patterned projection of light through polycarbonate lens from the reflector in the required direction
- Bi-LED module L5570 with advanced lighting electronics
- Optionally FEP or DEUTSCH connector for L 5570 modules

L 5570 and L 70



L 5570



L 70

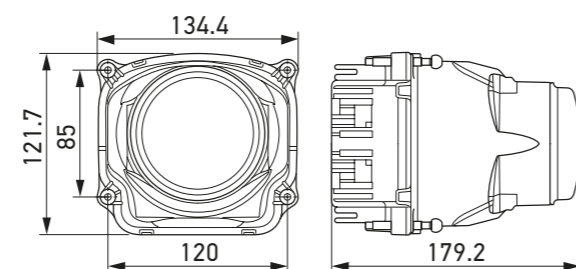


For further information on each product, see general overview on page 40



The L 5570 modules are equipped with an integrated function monitoring system that monitors power consumption as an alternative to the vehicle. There is a separate PIN for the function confirmation signal.

Dimensional sketches of the Bi-LED low and high beam headlamp L 5570



Bi-LED low and high beam headlamp L 5570*

Right-hand traffic, ECE, 4-pin FEP connector	1AL 012 758-001
Left-hand traffic, ECE, 4-pin FEP connector	1LL 012 758-011
Right-hand traffic, SAE, 4-pin FEP connector	1AL 012 758-021
Right-hand traffic, ECE, 4-pin DEUTSCH connector	1AL 012 758-101
Left-hand traffic, ECE, 4-pin DEUTSCH connector	1LL 012 758-111
Right-hand traffic, SAE, 4-pin DEUTSCH connector	1AL 012 758-121

* Mounting kit 9XX 202 748-00 included in delivery.



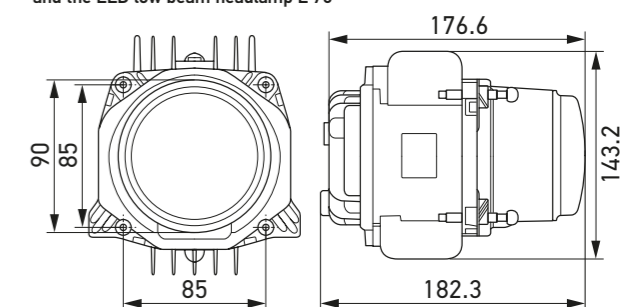
Bi-LED low and high beam headlamp L 70*

Right-hand traffic, ECE, 3-pin AMP SUPERSEAL connector	1AL 010 820-021
Left-hand traffic, ECE, 3-pin AMP SUPERSEAL connector	1LL 010 820-031

LED low beam headlamp L 70*

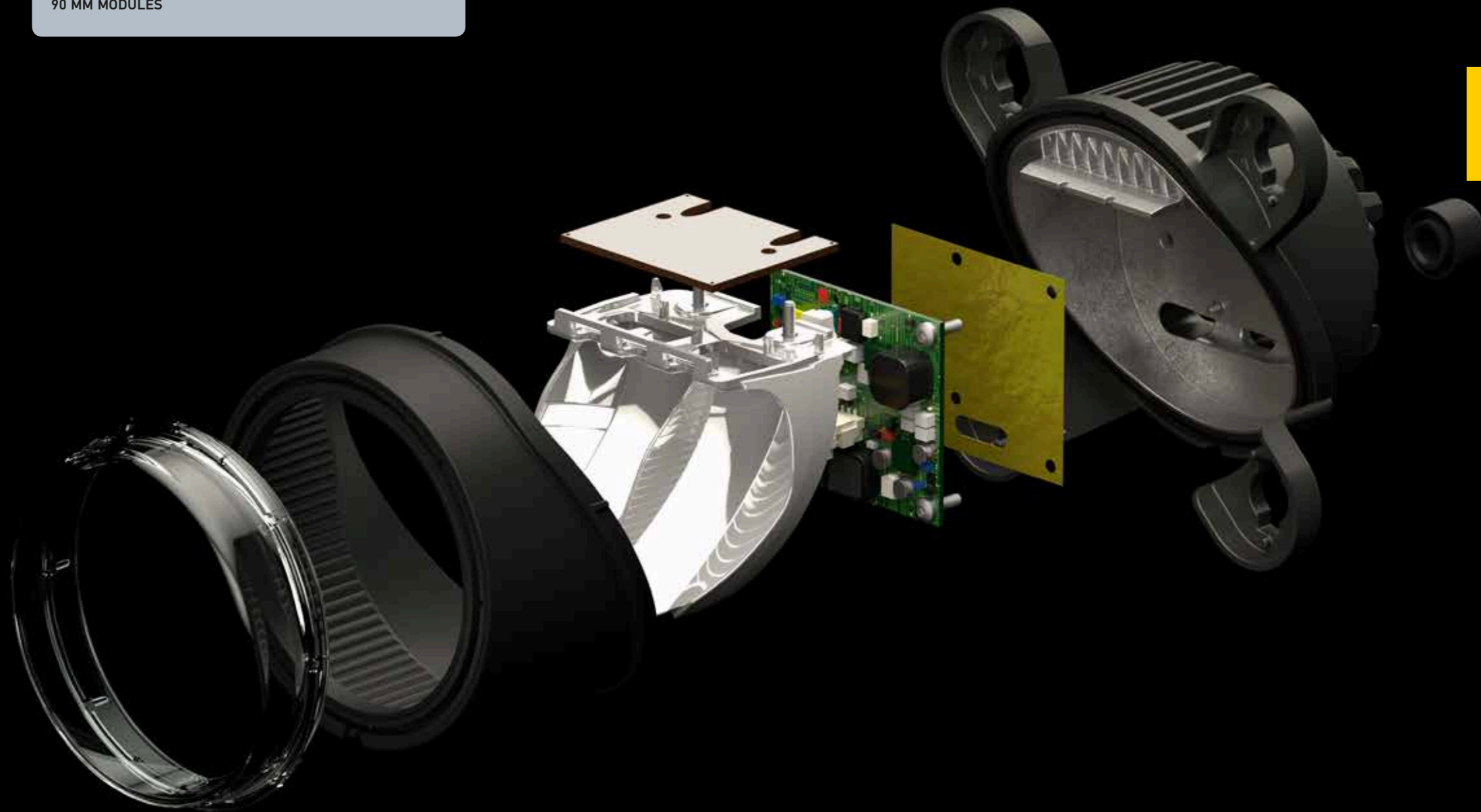
Right-hand traffic, ECE, 3-pin AMP SUPERSEAL connector	1BL 010 820-001
Left-hand traffic, ECE, 3-pin AMP SUPERSEAL connector	1ML 010 820-011

Dimensional sketches of the Bi-LED low and high beam headlamp L 70 and the LED low beam headlamp L 70



LED

90 MM MODULES – ESSENTIAL LOW BEAM AND HIGH BEAM



SPECIFICATIONS

- Specially developed reflector design for homogeneous illumination
- Compact and robust design
- Enables cost-effective switch from halogen to LED
- Optionally FEP or DEUTSCH connector

ECE	R112	SAE	9-32V	-40 - +60°C	IP X9K IP X4K IP 5KX	PT
PT	PRP	EMC CLASS 5				

For further information on each product, see general overview on page 40



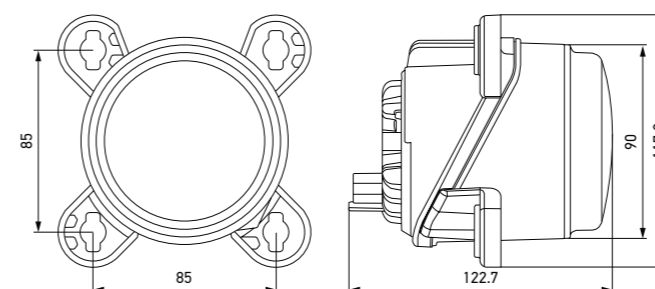
LED low beam headlamp R 80*

Right-hand traffic, ECE, DEUTSCH connector	1B0 015 050-001
Right-hand traffic, SAE, DEUTSCH connector	1B0 015 050-031
Left-hand traffic, ECE, DEUTSCH connector	1M0 015 050-011
Right-hand traffic, ECE, FEP connector	1B0 015 050-101
Right-hand traffic, SAE, FEP connector	1B0 015 050-131
Left-hand traffic, ECE, FEP connector	1M0 015 050-111

LED high beam headlamp R 80*

ECE, SAE, DEUTSCH connector	1K0 015 050-021
ECE, SAE, FEP connector	1K0 015 050-121

Dimensional sketches of the low and high beam headlamp R 80



To the product video

* Mounting kit 9XX 254 163-00 not included in delivery.

90 MM MODULES – PERFORMANCE LOW BEAM AND HIGH BEAM

SPECIFICATIONS

- Optimised light output and homogenous illumination with little scattered light
- Low beam with 50 mm DE lens, high beam with free-form reflector
- Water-protected standard connector system for bulbs
- With H1 bulb

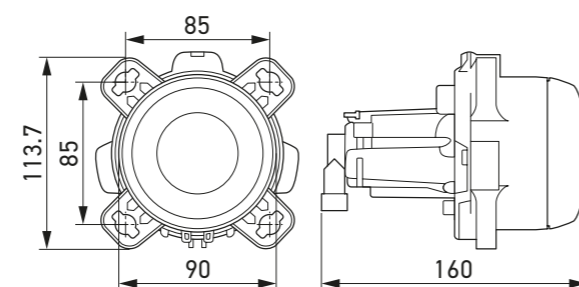
Photo: MAN Truck & Bus AG



For further information on each product, see general overview on page 41



Dimensional sketches of the halogen low beam headlamp

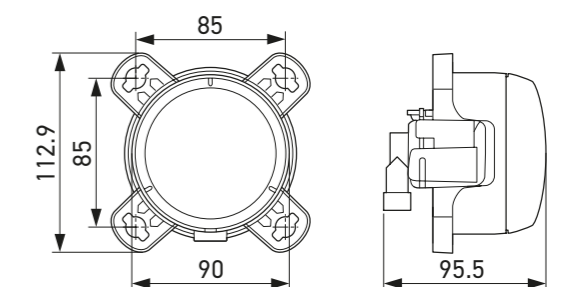


Halogen low beam headlamp

12 V, right-hand traffic, for Performance mounting	1BL 247 042-007*
12 V, left-hand traffic, for Performance mounting	1ML 247 042-027*
12 V, right-hand traffic, for Premium mounting	1BL 247 042-177**
12 V, left-hand traffic, for Premium mounting	1ML 247 042-187**
24 V, right-hand traffic, for Premium mounting	1BL 247 042-197**
24 V, left-hand traffic, for Premium mounting	1ML 247 042-207**
24 V, right-hand traffic, for replacement halogen Essential	1BL 247 042-157***
24 V, left-hand traffic, for replacement halogen Essential	1ML 247 042-167***



Dimensional sketches of the halogen high beam headlamp



Halogen high beam headlamp

12 V, with position light, for Performance mounting	1K0 247 043-007*
12 V, without position light, for Performance mounting	1K0 247 043-017*
12 V, with position light, for Premium mounting	1K0 247 043-117**
12 V, without position light, for Premium mounting	1K0 247 043-127**
24 V, with position light, for Premium mounting	1K0 247 043-137**
24 V, without position light, for Premium mounting	1K0 247 043-147**
24 V, with position light, for replacement halogen Essential	1K0 247 043-097***
24 V, without position light, for replacement halogen Essential	1K0 247 043-107***

* Mounting kit 9XX 254 163-00 included in delivery.
 ** Mounting kit 9XX 254 163-02 included in delivery.
 *** Mounting kit 9XX 254 163-01 included in delivery.

LOW BEAM AND HIGH BEAM

SPECIFICATIONS

- Excellent light output and homogenous illumination with little scattered light thanks to non-patterned 70 mm lens
- Low beam and high beam from a single headlamp module
- Pattern-free and hardened glass cover lens for a direct view of the lens
- High-quality aluminium reflector
- Pre-assembled adjusting screws for easy assembly
- High beam activated by simultaneous control of high beam shutter and bulb



For further information on each product, see general overview on page 41

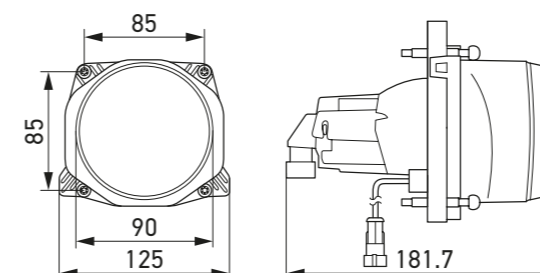


Bi-halogen low and high beam headlamp

12 V, H7, right-hand traffic, ECE	1AL 009 998-001*
12 V, H7, left-hand traffic, ECE	1LL 009 998-011*
12 V, H9, right-hand traffic, SAE	1AL 009 998-021**
24 V, H7, right-hand traffic, ECE	1AL 009 998-041***
24 V, H7, left-hand traffic, ECE	1LL 009 998-051***
24 V, H7, right-hand traffic, ECE, with fording ability	1AL 009 998-201*
24 V, H7, left-hand traffic, ECE, with fording ability	1LL 009 998-221*

* Mounting kit 9XX 202 748-00 included in delivery.
 ** Mounting kit 9XX 169 098-01 included in delivery.
 *** Mounting kit 9XX 169 098-00 included in delivery.

Dimensional sketches of the Bi-halogen low and high beam headlamp



90 MM MODULES – ESSENTIAL LOW BEAM AND HIGH BEAM

SPECIFICATIONS

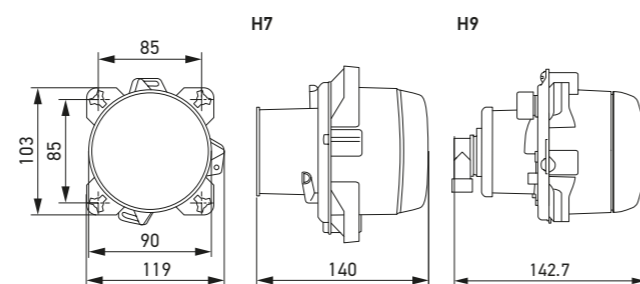
- Proven illumination
- Pattern-free and hardened glass cover lens
- Magnesium reflector
- Low beam with 50 mm DE lens, high beam with free-form reflector



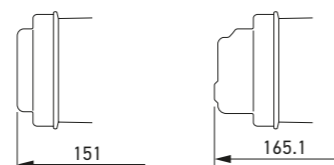
For further information on each product, see general overview on page 41



Dimensional sketches of the halogen low beam headlamp



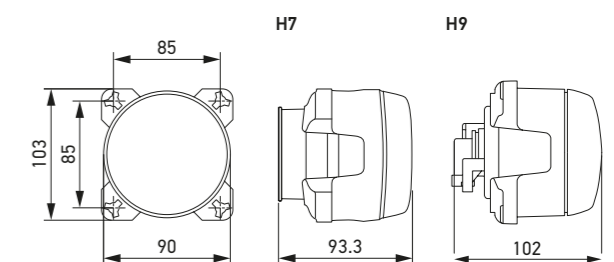
Dimensional sketches of the caps for H7 versions (not included in delivery, but necessary accessories; for more information see p. 39)



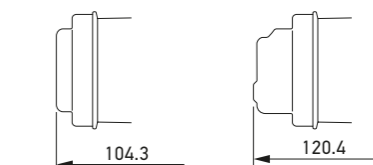
9GH 145 943-001

9GH 145 943-012

Dimensional sketches of the halogen high beam headlamp



Dimensional sketches of the caps for H7 versions (not included in delivery, but necessary accessories; for more information see p. 39)



9GH 152 654-007

9GH 152 654-012



Halogen low beam headlamp

12 V, H7, right-hand traffic, ECE	1BL 008 193-001*
12 V, H9, right-hand traffic, SAE	1BL 008 193-021**
12 V, H7, left-hand traffic, ECE	1LL 008 193-111*
24 V, H7, right-hand traffic, ECE	1BL 008 193-011*
24 V, H7, left-hand traffic, ECE	1LL 008 193-121*

* Mounting kit 9XB 152 977-00 included in delivery.
 ** Mounting kit 9XB 152 977-02 included in delivery.



Halogen high beam headlamp

12 V, H7, ECE, with position light	1K0 008 191-001*
12 V, H7, ECE, without position light	1K0 008 191-011*
12 V, H9, SAE, with position light	1K0 008 191-131*
12 V, H9, SAE, without position light	1K0 008 191-051*
24 V, H7, ECE, with position light	1K0 008 191-021*
24 V, H7, ECE, without position light	1K0 008 191-041*

BI-LED

133 MM MODULES

LOW BEAM AND HIGH BEAM

SPECIFICATIONS

- LED headlamp for easy conversion from halogen to LED
- Low beam, high beam and position light in a single headlamp
- Available as installation and surface-mounting version
- Sturdy die-cast aluminium housing
- With 4-pin DEUTSCH connector

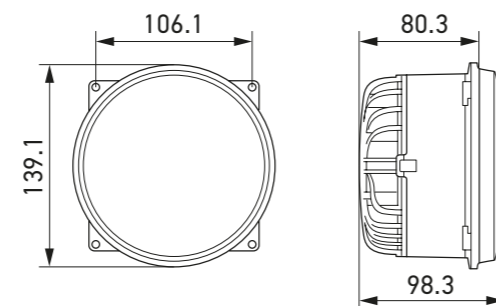
ECE	R112	R113	SAE	12V	IP 6K9K IP 6K7	AE
°C PT	PRP					

For further information on each product, see general overview on page 41

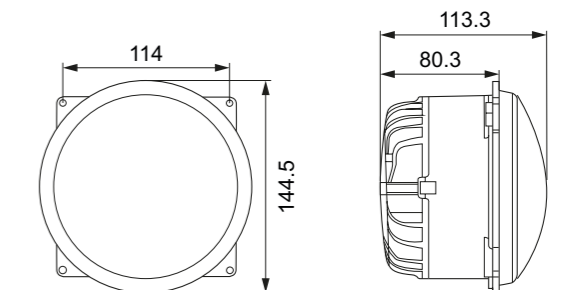
Photo: SAME DEUTZ-FAHR Deutschland GmbH



Dimensional sketches of the Bi-LED low and high beam headlamp M133 LED, integrated



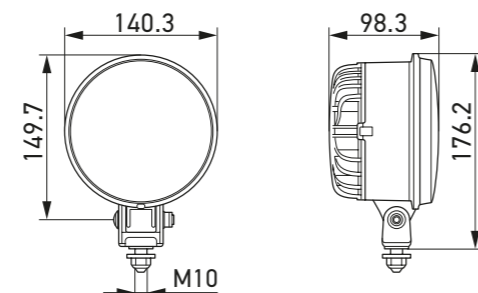
Dimensional sketches of the Bi-LED low and high beam headlamp M133 LED (R112), integrated



Bi-LED low and high beam headlamp M133 LED R113

Simultaneous*, ECE, SAE, for integration	153 996 362-101
Independent**, ECE, for integration	153 996 362-111
Simultaneous* with position light, ECE, SAE, for integration	153 996 362-001
Independent** with position light, ECE, for integration	153 996 362-011
Simultaneous*, ECE, SAE, for surface mounting	153 996 362-301
Independent**, ECE, for surface mounting	153 996 362-311
Simultaneous* with position light, ECE, SAE, for surface mounting	153 996 362-201
Independent** with position light, ECE, for surface mounting	153 996 362-211

Dimensional sketches of the Bi-LED low and high beam headlamp M133 LED, surface mounted



Available soon

Bi-LED low and high beam headlamp M133 LED R112

Independent**, ECE, for integration	1A3 997 362-037
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* Simultaneous control: High beam can only be switched in combination with low beam. Low beam can also be switched on alone. Position light can be switched on at any time.

** Independent control: Low beam and high beam can only be switched interdependently. Position light can be switched on at any time.

LOW BEAM AND HIGH BEAM

SPECIFICATIONS

- Low beam and high beam in one headlamp
- Low weight
- Classic, compact design

Photo: e.GO Mobile AG



For further information on each product, see general overview on page 41

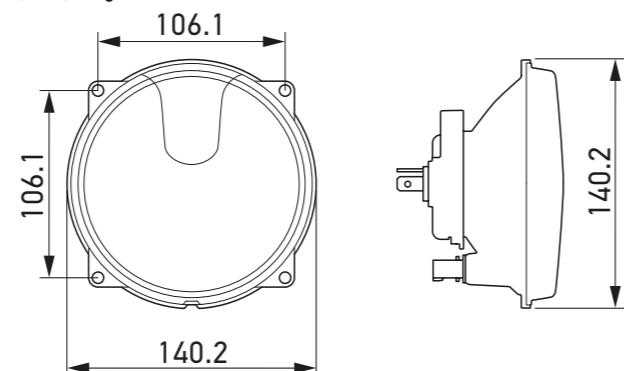


Bi-halogen low and high beam headlamp M133 R113

H4, ECE, SAE, for integration, with position light 1S3 996 262-037

H4, ECE, SAE, for integration, with position light, pre-assembled carrier frame 1S3 996 262-097

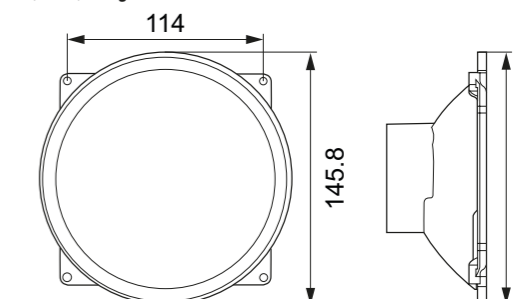
Dimensional sketches of the Bi-halogen low and high beam headlamp M133, (R113) integrated



Bi-halogen low and high beam headlamp M133 R112

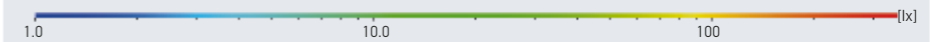
H19, ECE, for integration 1A3 997 262-037

Dimensional sketches of the Bi-halogen low and high beam headlamp M133, (R112) integrated



Light distributions 90 mm modules

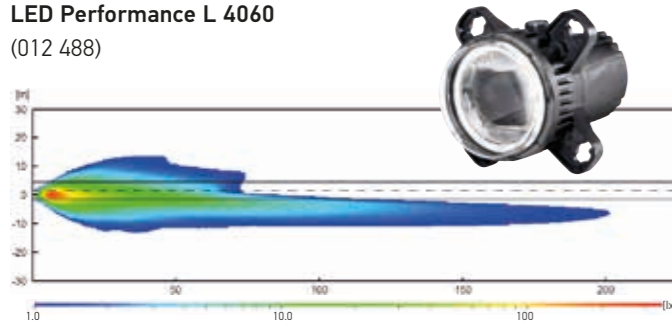
Legend, isolux diagram (1 - 350 lux)



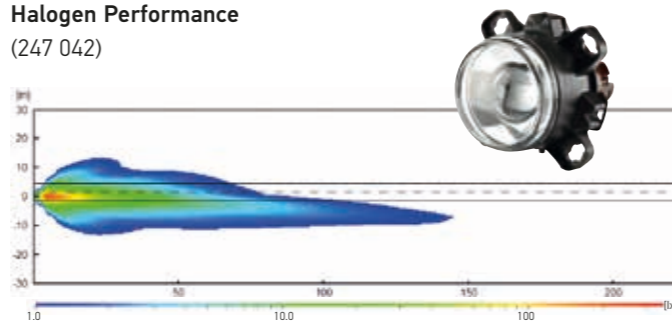
Remarks
Headlamp mounting height: 0.65 m
Spacing between the headlamps: 1.20 m

Low beam comparison

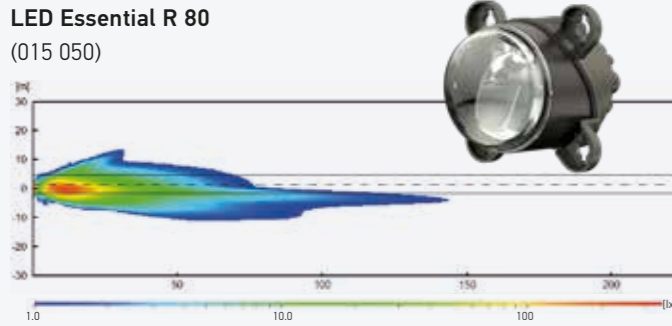
LED Performance L 4060
(012 488)



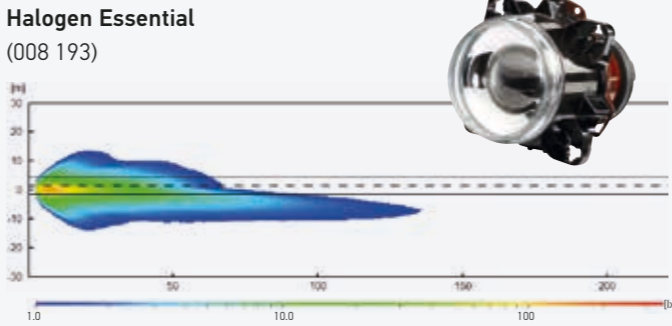
Halogen Performance
(247 042)



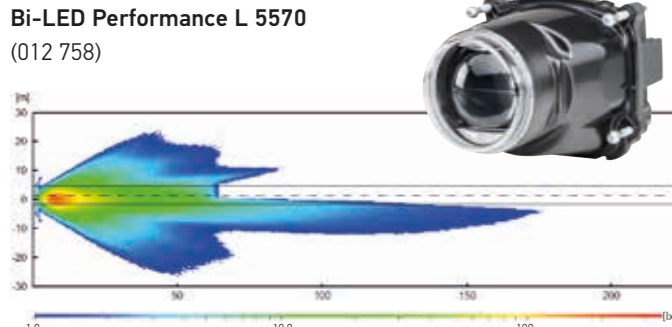
LED Essential R 80
(015 050)



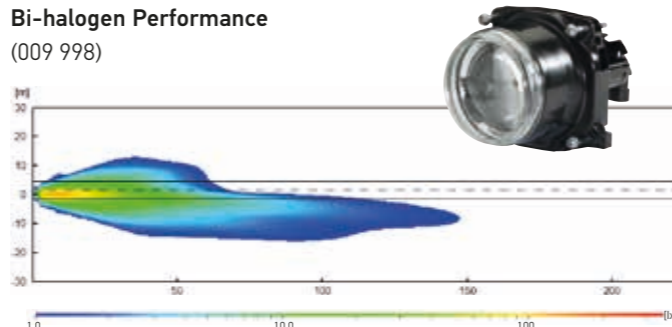
Halogen Essential
(008 193)



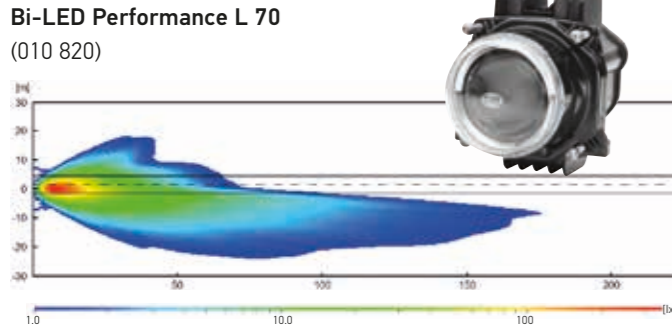
Bi-LED Performance L 5570
(012 758)



Bi-halogen Performance
(009 998)

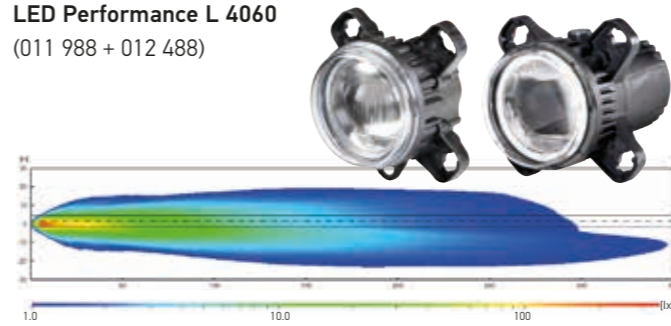


Bi-LED Performance L 70
(010 820)

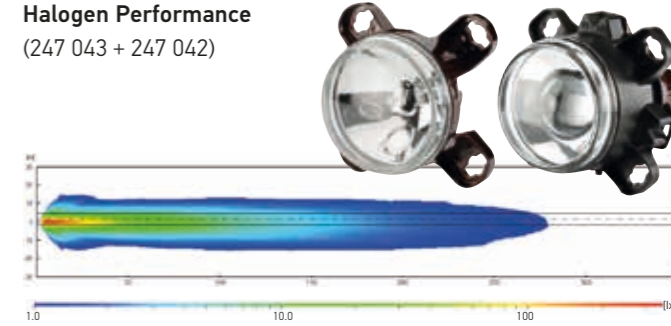


High beam comparison (incl. low beam)

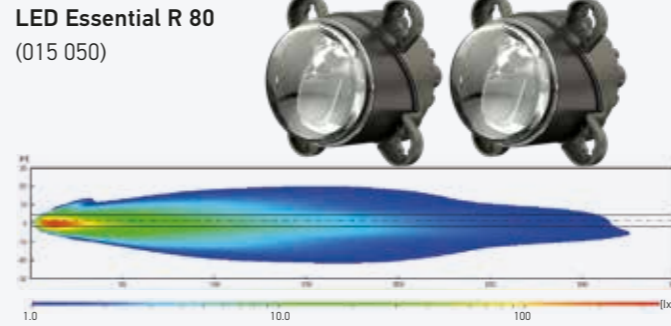
LED Performance L 4060
(011 988 + 012 488)



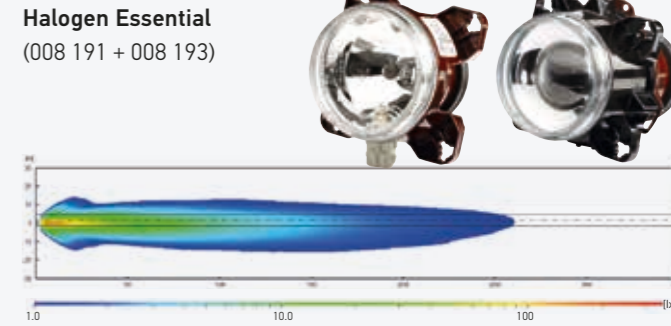
Halogen Performance
(247 043 + 247 042)



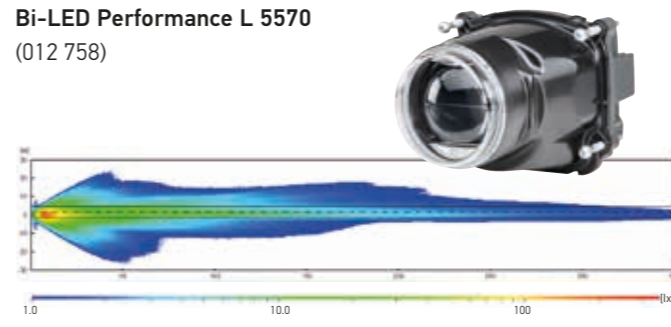
LED Essential R 80
(015 050)



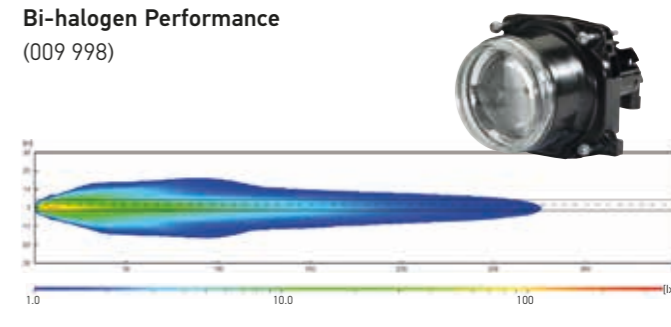
Halogen Essential
(008 191 + 008 193)



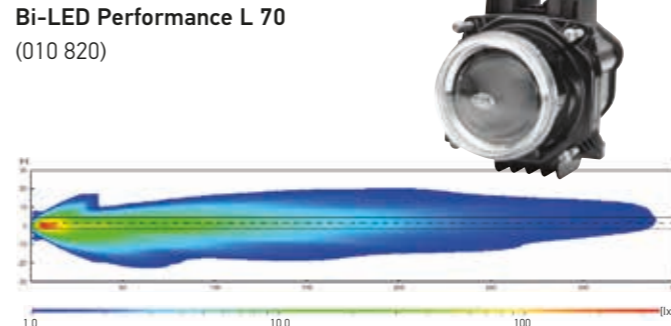
Bi-LED Performance L 5570
(012 758)



Bi-halogen Performance
(009 998)



Bi-LED Performance L 70
(010 820)



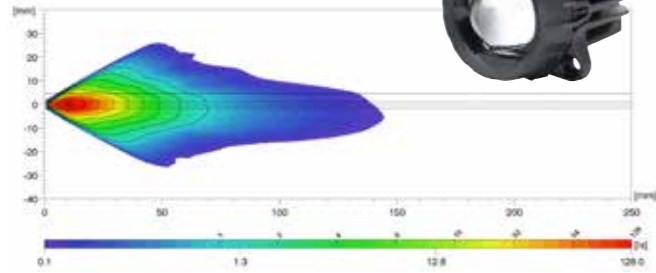
Important:

Representation of high beam including low beam as high beam is supplemented by low beam during driving. Bi-light distributions are generated when low beam is switched on and are only available as a bi-version.

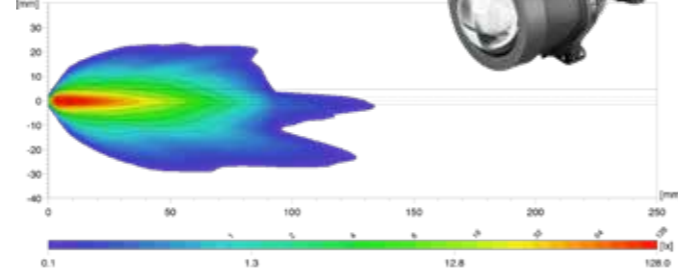
Light distributions 60 mm modules

Low beam comparison

Module 60 LED (R113)
(998 670)

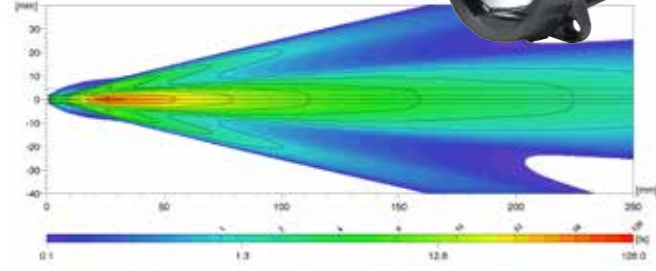


Module 60 Halogen (R113)
(998 570)

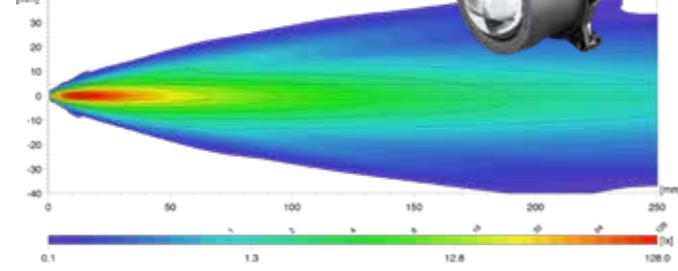


High beam comparison

Module 60 LED (R113)
(998 670)



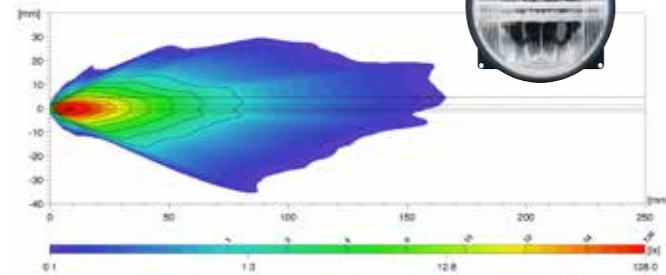
Module 60 Halogen (R113)
(998 570)



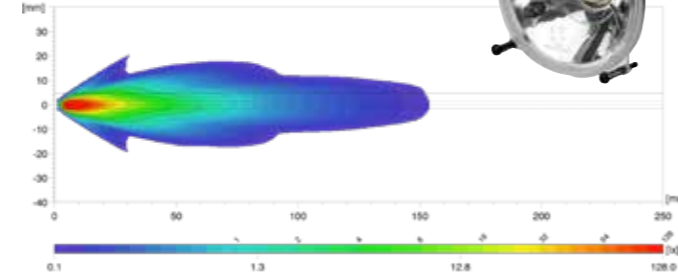
Light distributions 133 mm modules (R113)

Low beam comparison

M133 LED (R113)
(996 362)

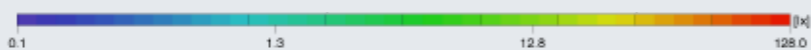


M133 Halogen (R113)
(996 262)



Simultaneous and independent switching

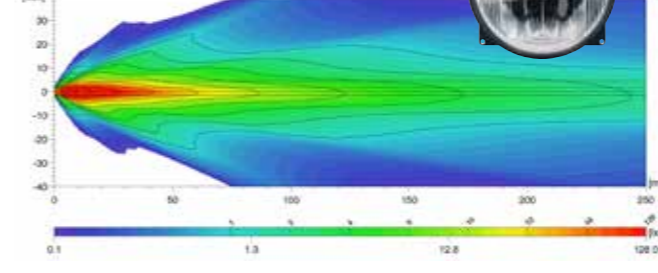
Legend, isolux diagram (0.1 – 128 Lux)



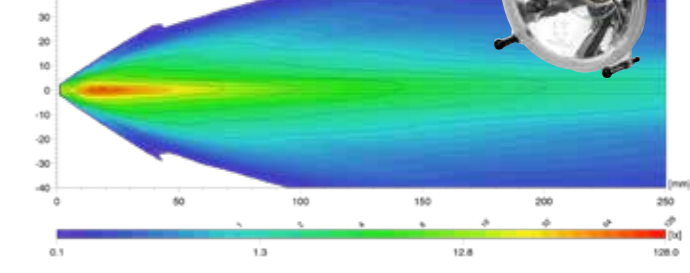
Remarks
Headlamp mounting height: 0.65 m
Spacing between the headlamps: 1.20 m

High beam comparison

M133 LED (R113)
(996 362)



M133 Halogen (R113)
(996 262)

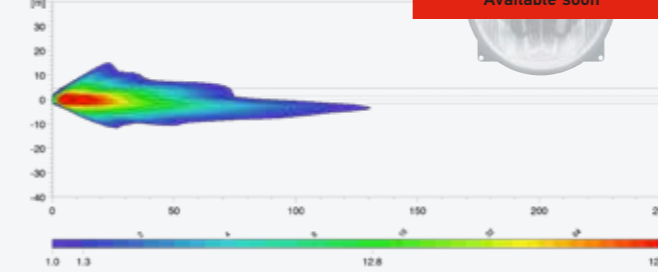


Simultaneous switching – representation of high beam including low beam

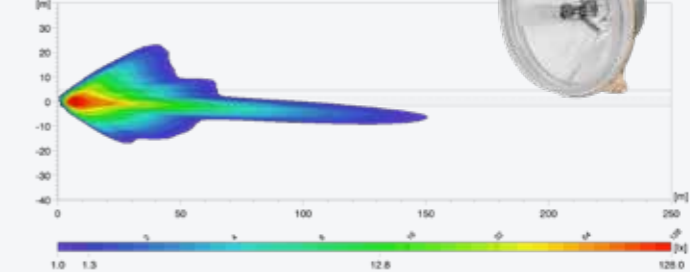
Light distributions 133 mm modules (R112)

Low beam comparison

M133 LED (R112)
(997 362)



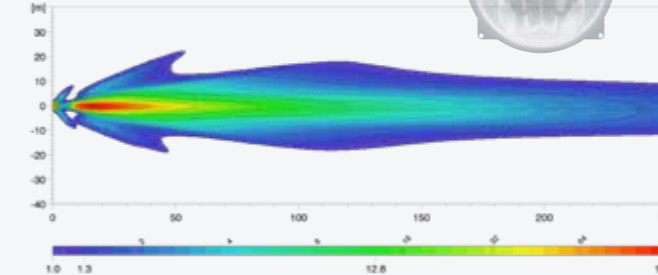
M133 Halogen (R112)
(997 262)



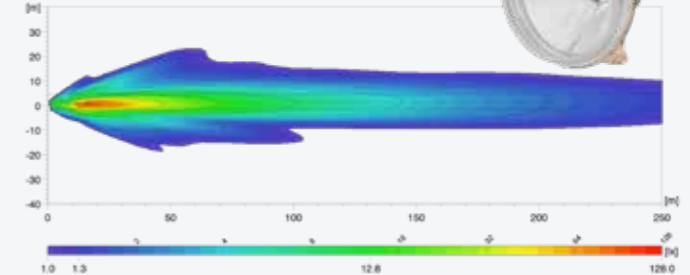
Independent switching

High beam comparison

M133 LED (R112)
(997 362)

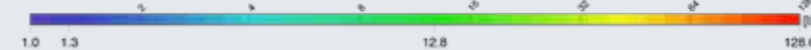


M133 Halogen (R112)
(997 262)



Independent switching – representation of high beam including low beam

Legend, isolux diagram (1.0 – 128 Lux)



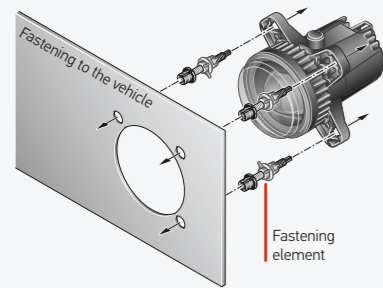
Remarks
Headlamp mounting height: 0.65 m
Spacing between the headlamps: 1.20 m

Overview of mounting kits for 90 mm modules

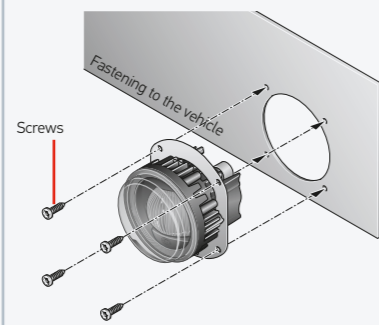
Article number	Product image	PU	Article number	Product image	PU
9XX 254 163-007		200 units	9XX 169 098-007		200 units
9XX 254 163-017		200 units	9XX 169 098-017		100 units Locking element for SAE version
9XX 254 163-027		200 units	9XB 152 977-001/-007		1 unit/ 200 units
9XX 202 748-001		1 unit	9XX 152 977-02	See 9XB 152 977-001/-007 plus USA assembly instructions; to reorder please use 9XB 152 977-001/-007	
9XX 236 655-001		200 units			

INSTALLATION EXAMPLES

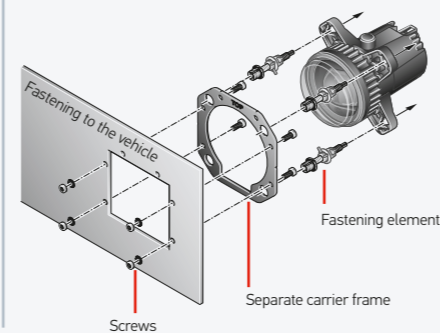
Installation example 1
Without carrier frame



Installation example 2
With pre-assembled carrier frame



Installation example 3
With additional carrier frame



Important note:

The relevant country-specific statutory specifications and regulations for motor vehicles must be observed when installing headlamps!

Carrier frames for 90 mm modules

Product family	Matching carrier frame	Dimensions	Panel thickness	Matching mounting kit	Product family	Matching carrier frame	Dimensions	Panel thickness	Matching mounting kit
Halogen / Essential					LED / Performance				
	008 191 9AH 157 659-007		1.25 to 1.5 mm	9XB 152 997-001		011 988 9AH 254 228-012*		3 mm	9XX 254 163-007 9XX 254 163-027
	008 193 9AH 157 659-007		1.25 to 1.5 mm	9XB 152 997-001		012 488 9AH 169 580-011*		3 mm	9XX 254 163-007 9XX 254 163-027
Halogen / Performance					LED / Performance				
	247 042 9AH 254 228-012		3 mm	9XX 254 163-007 9XX 254 163-017 9XX 254 163-027		012 488 9AH 169 580-011*		3 mm	9XX 254 163-007 9XX 254 163-027
	247 043 9AH 254 228-012		3 mm	9XX 254 163-007 9XX 254 163-017 9XX 254 163-027		009 998 9AH 169 580-011		3 mm	9XX 169 098-007 9XX 202 748-001
	009 998 9AH 169 580-011		3 mm	9XX 169 098-007 9XX 202 748-001		009 998 9AH 169 580-011		3 mm	9XX 169 098-007 9XX 202 748-001
	015 050 9AH 254 228-012		3 mm	9XX 254 163-007		012 758 9AH 205 652-111*		3 mm	9XX 202 748-001
						010 820 9AH 169 580-011		3 mm	9XX 202 748-001
						010 820 9AH 169 580-011		3 mm	9XX 202 748-001
						010 820 9AH 169 580-011		3 mm	9XX 202 748-001
						010 820 9AH 169 580-011		3 mm	9XX 202 748-001

* For simple replacement with other products in the 90 mm series.

Accessories for 90 mm modules

(not included in delivery)

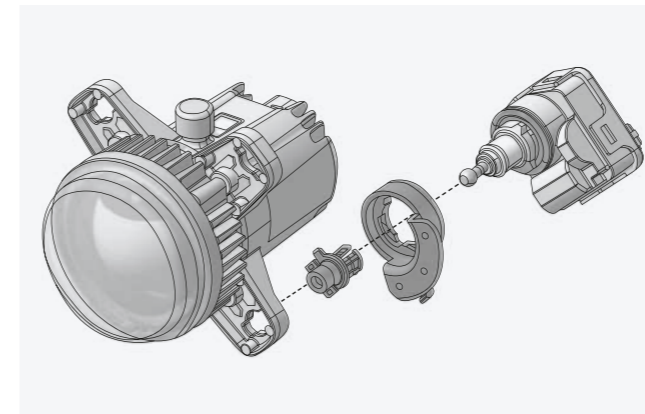
Connectors

Product image	Description	Article number	PU
Surplus supply LED: AMP SUPERSEAL connector, 3-pin			
	Housing	8JA 746 184-032	10 units
	Female socket connector	8KW 744 837-002	50 units
	Strand insulation	9GD 746 185-002	50 units
Surplus supply LED: FEP connector, 4-pin			
	Housing	8JA 202 231-002	10 units
	Flat contact	8KW 863 933-013	50 units
	Strand insulation 0.35 – 0.5 mm²	9GD 863 952-022	50 units
	Strand insulation 0.75 mm²	9GD 863 952-012	50 units
	Blind plug	9GD 863 952-002	50 units
Surplus supply LED: DEUTSCH connector, 4-pin (in conjunction with adapter cable 8KA 202 117-001, except for 012 488-1xx and 012 758-1xx)			
	Male connector housing	8JA 201 022-042	10 units
	Lock / wedgelock	9NB 201 024-042	10 units
	Contact sleeve 0.5 – 1.5 mm²	8KW 201 025-112	50 units
	Blind plug	9NB 201 026-012	50 units
	Set packaging	8JA 201 022-821	

Product image	Description	Article number	PU
Surplus supply halogen: connector			
	Surplus supply H1 / H7	8JD 156 151-807	20 systems
	Surplus supply H9	8JD 158 175-807	20 systems
	Parking light	8JD 156 150-807	20 systems
	Housing	8JA 746 184-022	10 units
	Female socket connector	8KW 744 837-002	50 units
	Strand insulation	9GD 746 185-002	50 units





Headlamp levelling system

Product image	Description	Article number	PU
	Headlamp levelling system, 12 V	6NM 007 282-221	1 unit
	Headlamp levelling system, 24 V	6NM 008 299-501	1 unit
	Holder for left-side mounting of actuator	8HG 138 619-007	100 units
	Holder for right-side mounting of actuator	8HG 138 620-007	100 units
	Assembly kit for headlamp levelling actuator (holder for left-side mounting of actuator and articulated element)	8HG 183 586-001	10 units
	Left holder/interface for headlamp levelling actuator for connecting to module	9XX 208 791-011	1 unit
	Right holder/interface for headlamp levelling actuator for connecting to module	9XX 208 791-001	1 unit



Installation example

Caps

Product image	Description	Article number	PU
Flat version for angled connectors			
	Vented	9GH 152 654-007	252 units
	Non-vented	9GH 152 654-012	36 units
Deep version for female connector housing			
	Vented	9GH 145 943-001	24 units
	Non-vented	9GH 145 943-012	36 units

Type approvals

	Article number	Main light functions	Auxiliary light functions	Variant	Weight	Voltage	Light source	ECE test mark	Approval		
									ECE		SAE
									R112 B	R113 D	
60 mm modules LED	1TL 998 670-021	LB	-	-	278 g	12 V	LED	Ⓔ 0311		x	x
	1TL 998 670-041	LB	-	-	278 g	12 V	LED	Ⓔ 0311		x	
	1KL 998 670-031	HB	-	-	278 g	12 V	LED	Ⓔ 0313		x	
	1KL 998 670-051	HB	-	-	278 g	12 V	LED	Ⓔ 0313		x	
	1KL 998 670-017	HB	-	-	278 g	12 V	LED	Ⓔ 0536	x		
60 mm modules Halogen	1TL 998 570-641	LB	-	-	374 g	12 V	Halogen HB3	Ⓔ 0237		x	x
	1BL 998 570-601	LB	-	ES	374 g	12 V	Halogen HB3		x		
	1ML 998 570-611	LB	-	LES	374 g	12 V	Halogen HB3		x		
	1KL 998 570-621	HB	-	-	338 g	12 V	Halogen HB3	Ⓔ 24910	x		x
	1KL 998 570-631	HB	PO	-	330 g	12 V	Halogen HB3	Ⓔ 26353	x		x
90 mm modules LED - Performance	1BL 012 488-001	LB	-	ES	763 g	Multi-voltage	LED	Ⓔ 3831	x		x
	1ML 012 488-011	LB	-	LES	763 g	Multi-voltage	LED	Ⓔ 4090	x		
	1BL 012 488-101	LB	-	ES	764 g	Multi-voltage	LED	Ⓔ 3881	x		x
	1ML 012 488-111	LB	-	LES	764 g	Multi-voltage	LED	Ⓔ 4090	x		
	1BL 012 488-021	LB	DRL / PO	ES	782 g	Multi-voltage	LED	Ⓔ 3831	x		x
	1ML 012 488-031	LB	DRL / PO	LES	780 g	Multi-voltage	LED	Ⓔ 4090	x		
	1BL 012 488-121	LB	DRL / PO	ES	783 g	Multi-voltage	LED	Ⓔ 3881	x		x
	1ML 012 488-131	LB	DRL / PO	LES	781 g	Multi-voltage	LED	Ⓔ 4090	x		
	1BL 012 488-041	LB	DRL / PO	ES	824 g	Multi-voltage	LED	Ⓔ 3831	x		
	1FO 011 988-021	HB	-	-	519 g	Multi-voltage	LED	Ⓔ 3831	x		x
	1FO 011 988-121	HB	-	-	552 g	Multi-voltage	LED	Ⓔ 3831	x		x
	1FO 011 988-031	HB	DRL / PO	-	524 g	Multi-voltage	LED	Ⓔ 3831	x		x
	1FO 011 988-131	HB	DRL / PO	-	556 g	Multi-voltage	LED	Ⓔ 3831	x		x
	1FO 011 988-081	HB	DI	-	584 g	Multi-voltage	LED	Ⓔ 3831	x		x
	1FO 011 988-181	HB	DI	-	616 g	Multi-voltage	LED	Ⓔ 3831	x		x
	1FO 011 988-071	HB	DI	-	524 g	Multi-voltage	LED	Ⓔ 3831	x		x
	1FO 011 988-171	HB	DI	-	556 g	Multi-voltage	LED	Ⓔ 3831	x		x
	1FO 011 988-191	HB	DI	-	624 g	Multi-voltage	LED	Ⓔ 3831	x		x
	1NO 011 988-001	FL	-	-	521 g	Multi-voltage	LED	Ⓔ 3831	x		x
	1NO 011 988-011	FL	DRL / PO	-	527 g	Multi-voltage	LED	Ⓔ 3831	x		x
1NO 011 988-051	FL	CL L	-	516 g	Multi-voltage	LED	Ⓔ 3832	x		x	
1NO 011 988-061	FL	CL R	-	516 g	Multi-voltage	LED	Ⓔ 3832	x		x	
133 mm modules LED	1AL 012 758-001	Bi	-	ES	1.280 g	Multi-voltage	LED	Ⓔ 4208	x		
	1LL 012 758-011	Bi	-	LES	1.280 g	Multi-voltage	LED	Ⓔ 4209	x		
	1AL 012 758-021	Bi	-	ES	1.280 g	Multi-voltage	LED				x
	1AL 012 758-101	Bi	-	ES	1.280 g	Multi-voltage	LED	Ⓔ 4208	x		
	1LL 012 758-111	Bi	-	LES	1.280 g	Multi-voltage	LED	Ⓔ 4209	x		
	1AL 012 758-121	Bi	-	ES	1.280 g	Multi-voltage	LED				x
	1AL 010 820-021	Bi	-	ES	1.172 g	Multi-voltage	LED	Ⓔ 3351 / Ⓔ 6189	x		
	1LL 010 820-031	Bi	-	LES	1.172 g	Multi-voltage	LED	Ⓔ 3352 / Ⓔ 6189	x		
	1BL 010 820-001	LB	-	ES	1.170 g	Multi-voltage	LED	Ⓔ 3159 / Ⓔ 6189	x		
	1ML 010 820-011	LB	-	LES	1.172 g	Multi-voltage	LED	Ⓔ 3160 / Ⓔ 6189	x		
90 mm modules LED - Essential	1B0 015 050-001	LB	-	ES	445 g	Multi-voltage	LED		x		
	1M0 015 050-011	LB	-	LES	445 g	Multi-voltage	LED		x		
	1B0 015 050-101	LB	-	ES	445 g	Multi-voltage	LED		x		
	1M0 015 050-111	LB	-	LES	445 g	Multi-voltage	LED		x		
	1B0 015 050-031	LB	-	ES	445 g	Multi-voltage	LED				x
	1B0 015 050-131	LB	-	ES	445 g	Multi-voltage	LED				x
	1K0 015 050-021	HB	-	-	445 g	Multi-voltage	LED		x		x
	1K0 015 050-121	HB	-	-	445 g	Multi-voltage	LED		x		x

	Article number	Main light functions	Auxiliary light functions	Variant	Weight	Voltage	Light source	ECE test mark	Approval		
									ECE		SAE
									R112 B	R113 D	
90 mm modules Halogen - Performance	1AL 009 998-001	Bi	-	ES	783 g	12 V	Halogen H7	Ⓔ 2484	x		
	1LL 009 998-011	Bi	-	LES	820 g	12 V	Halogen H7	Ⓔ 2485	x		
	1AL 009 998-021	Bi	-	ES	794 g	12 V	Halogen H9				x
	1AL 009 998-041	Bi	-	ES	820 g	24 V	Halogen H7	Ⓔ 2484	x		
	1LL 009 998-051	Bi	-	LES	820 g	24 V	Halogen H7	Ⓔ 2485	x		
	1AL 009 998-201	Bi	-	ES	820 g	24 V	Halogen H7	Ⓔ 2484	x		
	1LL 009 998-221	Bi	-	LES	820 g	24 V	Halogen H7	Ⓔ 2485	x		
	1BL 247 042-007	LB	-	ES	513 g	12 V	Halogen H1	Ⓔ 2397	x		
	1ML 247 042-027	LB	-	LES	513 g	12 V	Halogen H1	Ⓔ 2398	x		
	1BL 247 042-177	LB	-	ES	513 g	12 V	Halogen H1	Ⓔ 2397	x		
	1ML 247 042-187	LB	-	LES	513 g	12 V	Halogen H1	Ⓔ 2398	x		
	1BL 247 042-197	LB	-	ES	513 g	24 V	Halogen H1	Ⓔ 2397	x		
	1ML 247 042-207	LB	-	LES	513 g	24 V	Halogen H1	Ⓔ 2398	x		
	1BL 247 042-157	LB	-	ES	513 g	24 V	Halogen H1	Ⓔ 2397	x		
	1ML 247 042-167	LB	-	LES	513 g	24 V	Halogen H1	Ⓔ 2398	x		
	1K0 247 043-007	HB	PO	-	360 g	12 V	Halogen H1	Ⓔ 2397	x		
	1K0 247 043-017	HB	-	-	335 g	12 V	Halogen H1	Ⓔ 2397	x		
	1K0 247 043-117	HB	PO	-	288 g	12 V	Halogen H1	Ⓔ 2397	x		
	1K0 247 043-127	HB	-	-	340 g	12 V	Halogen H1	Ⓔ 2397	x		
	1K0 247 043-137	HB	PO	-	288 g	24 V	Halogen H1	Ⓔ 2397	x		
1K0 247 043-147	HB	-	-	281 g	24 V	Halogen H1	Ⓔ 2397	x			
1K0 247 043-097	HB	PO	-	288 g	24 V	Halogen H1	Ⓔ 2397	x			
1K0 247 043-107	HB	-	-	281 g	24 V	Halogen H1	Ⓔ 2397	x			
90 mm modules Halogen - Essential	1BL 008 193-001	LB	-	ES	475 g	12 V	Halogen H7	Ⓔ 917	x		
	1BL 008 193-021	LB	-	ES	448 g	12 V	Halogen H9				x
	1LL 008 193-111	LB	-	LES	475 g	12 V	Halogen H7	Ⓔ 917	x		
	1BL 008 193-011	LB	-	ES	479 g	24 V	Halogen H7	Ⓔ 917	x		
	1LL 008 193-121	LB	-	LES	393 g	24 V	Halogen H7	Ⓔ 917	x		
	1K0 008 191-001	HB	PO	-	264 g	12 V	Halogen H7	Ⓔ 917	x		
	1K0 008 191-011	HB	-	-	278 g	12 V	Halogen H7	Ⓔ 917	x		
	1K0 008 191-131	HB	PO	-	311 g	12 V	Halogen H9	Ⓔ 1265	x		x
	1K0 008 191-051	HB	-	-	291 g	12 V	Halogen H9	Ⓔ 1265	x		x
	1K0 008 191-021	HB	PO	-	291 g	24 V	Halogen H7	Ⓔ 917	x		
1K0 008 191-041	HB	-	-	287 g	24 V	Halogen H7	Ⓔ 917	x			
133 mm modules LED	1S3 996 362-001	Bi	PO	-	860 g	12 V	LED	Ⓔ 4989		x	x
	1S3 996 362-011	Bi	PO	-	860 g	12 V	LED	Ⓔ 4884		x	
	1S3 996 362-101	Bi	-	-	860 g	12 V	LED	Ⓔ 4989		x	x
	1S3 996 362-111	Bi	-	-	860 g	12 V	LED	Ⓔ 4884		x	
	1S3 996 362-201	Bi	PO	-	1.055 g	12 V	LED	Ⓔ 4989		x	x
	1S3 996 362-211	Bi	PO	-	1.055 g	12 V	LED	Ⓔ 4884		x	
	1S3 996 362-301	Bi	-	-	1.055 g	12 V	LED	Ⓔ 4989		x	x
	1S3 996 362-311	Bi	-	-	1.055 g	12 V	LED	Ⓔ 4884		x	
1A3 997 362-037	Bi	-	-	970 g	12 V	LED		x			
133 mm modules Halogen	1S3 996 262-037	Bi	PO	-	323 g	12 V	Halogen H4	Ⓔ 15315		x	x
	1S3 996 262-097	Bi	PO	-	376 g	12 V	Halogen H4	Ⓔ 15315		x	x
	1A3 997 262-037	Bi	-	-	380 g	12 V	Halogen H19		x		

LB: Low beam
HB: High beam
Bi: Low and high beam

PO: Position light
DRL: Daytime running light
DI: Direction indicator light

ES: Right-hand traffic
LES: Left-hand traffic
SAE: USA

FL: Fog light
CL: Cornering light

FAQ

Important information at a glance

→ Do HELLA headlamps satisfy functional safety requirements?

All HELLA LED low beam headlamps (and front direction indicators) have been developed in accordance with the ISO 26262 functional safety standard.

→ Do I need a headlamp levelling system for low beam?

This varies, depending on the vehicle. The decisive factor is the extent to which the light cone of the headlamp changes when the vehicle is loaded. If regulation is necessary, this can be controlled either manually using a rotary switch or automatically using inclination sensors. If however the low beam headlamp produces more than 2,000 lumens, control must always be automatic.

→ Which headlamp levelling system can be used?

Further information can be found on page 39 of this brochure.

→ How many adjustments must be possible for a headlamp?

If a headlamp levelling system is necessary, the extent of movement of the headlamp must cover the full range of the anticipated inclination of the vehicle.

→ What characterises a product with fording ability?

Lighting products with fording ability are used on vehicles that briefly drive through waterways, streams or rivers in off-road situations. Here the vehicle can be immersed in water up to the maximum fording depth (water depth) specified in each case, or the bow wave may briefly wash over the front of the vehicle up to the maximum fording depth. A suitably designed seal prevents damage to headlamps with fording ability through the ingress of water up to a specified water pressure (e.g. up to 0.6 bar).

→ Can the LED lamps be used with pulse width modulation?

Our LED modules have not been developed for pulse width modulation. Please ask about our accessories here.

→ How many lumens do the LED modules produce?

All our LED modules have a lumen output of < 2,000 lumens so that no regulator is necessary.

→ Can halogen modules be upgraded to LED?

HELLA's LED modules are similar to the halogen modules in terms of physical structure so that they can be easily replaced or upgraded. Consideration should however be given to electronic modifications required due to the reduced power requirements of LED modules and fault monitoring by the vehicle lighting control system.

→ What do the abbreviations R112 and R113 mean?

The abbreviations R112 and R113 stand for specific ECE vehicle headlamp standards. These statutory provisions must be observed to equip or retrofit parts to a vehicle to optimum effect. The specifications of ECE Regulation 48 include requirements for front lighting. Also ECE-R112 is required for most road vehicles. For light and slow-moving vehicles there is a separate standard, ECE-R113. Acceptance of the R133 standard varies within the ECE regulatory region, and the vehicle classifications indicating when this standard can be used likewise vary. The most noticeable feature of R113 is the symmetrical cut-off line for low beam (in contrast to R112 with a stepped cut-off line, which directs more light to the vehicle side of the road and less towards oncoming traffic).

Not all countries that follow the ECE regulations observe the provisions in every detail. There are some special extensions. We therefore recommend that every vehicle manufacturer checks all local requirements.

CONTACT

HELLA worldwide – a global network

Contact persons who would be pleased to answer any questions and offer assistance are available at the addresses listed below. We are looking forward to exciting, groundbreaking projects.

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