TRAILERS
LIGHTING AND WIRING

www.hella.com/trailer

WE GET THE BEST ON THE ROAD WITH YOU

The new HELLA products for trailers are summarised in this brochure. Thanks to the new, modular design, a flexible composition of your individual light solution is possible, as the slogan goes: illuminating quality with modular systematics. HELLA allows you a great deal of freedom when first selecting the basics you need and then countless ways of easily converting or quickly acquiring spare parts. We present you with the various wiring systems and the comprehensive range of HELLA accessories.

Your HELLA Team
wish you an enjoyable read.

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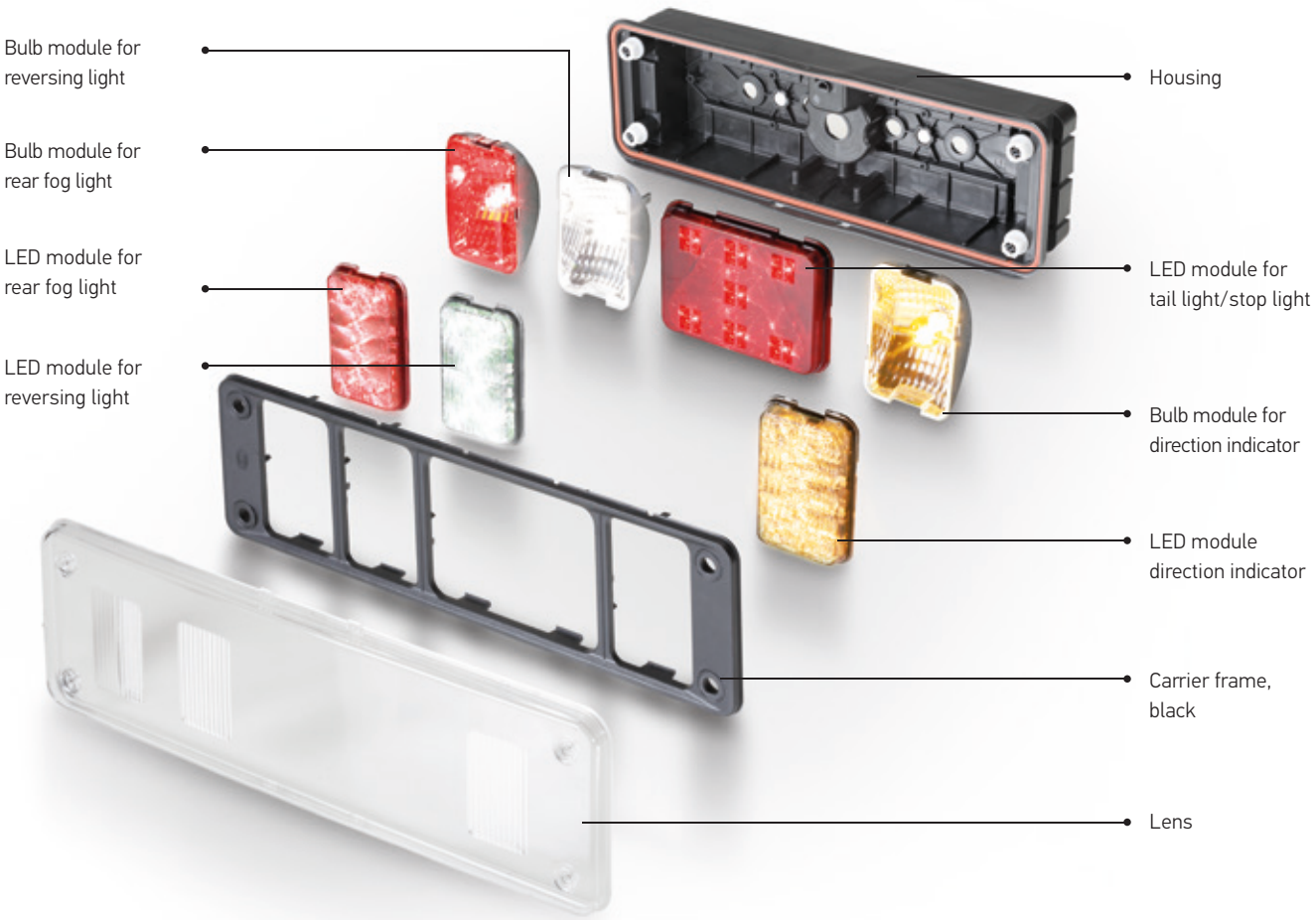
This brochure relates to a selection of our entire product portfolio. Further articles and accessories from the areas listed are available on request.

THE LED HYBRID REAR COMBINATION LAMP



The modular 24 V trailer lamp by HELLA incorporates hybrid technology and is extremely versatile. Owing to the modular system and associated modularity of light sources and housing parts, the trailer lamp can be adapted flexibly to the requirements in each case. Several light functions, such as the tail, stop, direction indicator, rear fog and back-up light are combined in one single light.

While the design of the tail lamp and stop lamp is essentially based on an LED module, all other functions can be implemented in LED or classic filament bulb technology. The combination options available are almost limitless.

A changeover from filament bulb to highly energy-efficient LED technology is possible retrospectively at any time with no special tools required which offers plenty of scope for future conversions – the same applies for the replaceable lens which can be changed independently of the light source. A further highlight is the junction box function with additional outputs on the rear of the housing. This means that further auxiliary or light functions, such as a side marker light or clearance light, can be easily connected.

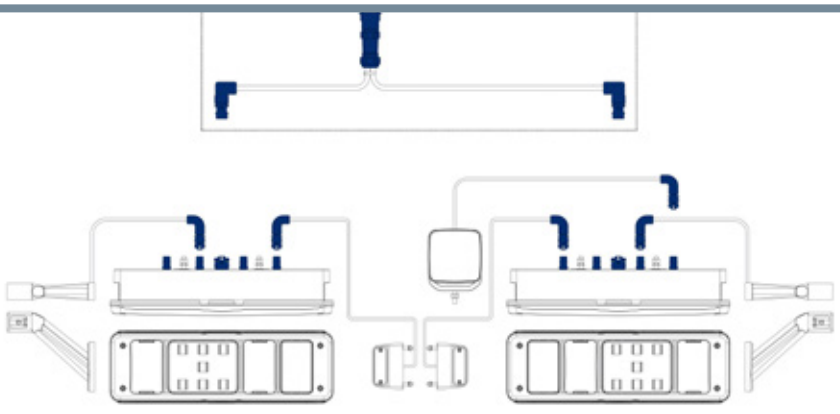
HELLA offers a selection of multi-function lights specifically designed to meet trailer requirements.

Modular principle of the multi-function lights

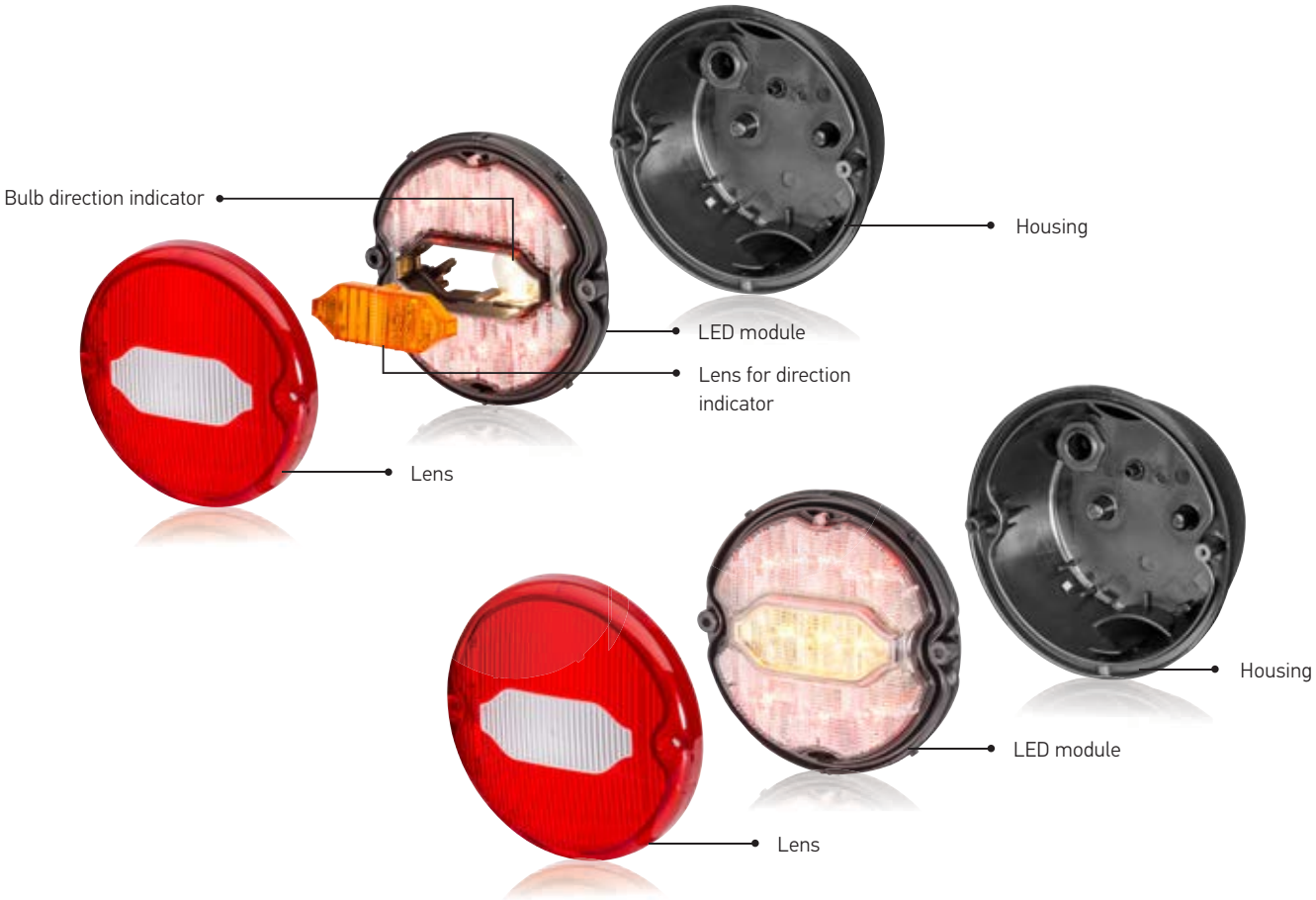
Multi-function light with rubber arm

Multi-function light with side marker light

Wiring example for multi-function light with EasyConn



THE LED HYBRID ROUND LIGHT



The new generation of the old favourite! The round light series comprises a tail light/stop light/direction indicator light and a rear fog/reversing light combination. The lamps have a 140 mm diameter and are either available as a hybrid version (direction indicator as bulb) or as a full LED version. All versions are optionally available with integrated resistor to ensure the comfort function in the vehicle is available (for the stop light function). The light is downward compatible to the 001 685 series.

The excellent level of product quality guarantees characteristics such as easy replacement of lenses in the event of damage or straightforward mounting, that can be done either on the left or right. The series fulfills the ECE standard and is also permitted for double mounting. The direction indicator failure pulse according to ISO 13207 is integrated in the LED versions. The light has integrated short-circuit protection. All the most common groups of cables are available.

Thanks to the new round light series, HELLA offers a highly-efficient, extremely economical, long-lasting light, due to thermal management.

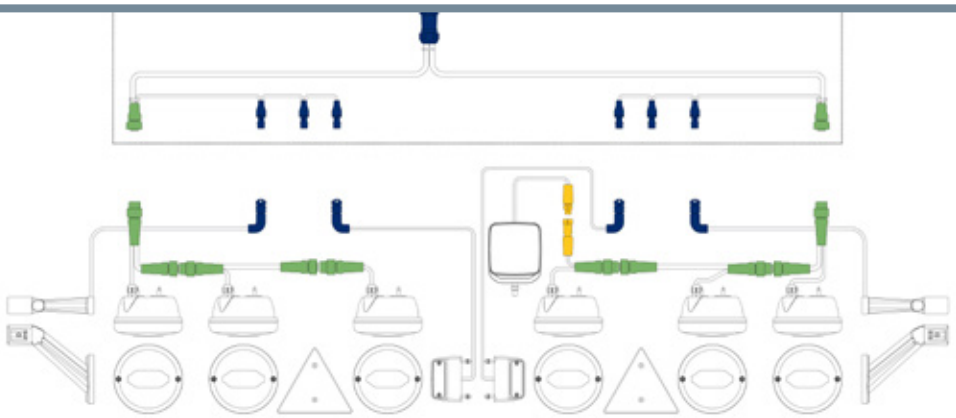
FUNCTIONS

Hybrid
Stop light, direction indicator, tail light

LED
Stop light, direction indicator, tail light

LED
Fog light, reversing light

Wiring example for round lamp with EasyConn



WIRING SYSTEMS – THE HIDDEN TECHNOLOGY

The connector systems

The EasyConn connector system is made up of 2, 7, and 15-pin connector housings and female connector housings. For even easier mounting on trailers, their diameter has been drastically reduced. SUPERSEAL and 7-pin DIN bayonet plug connectors can be used to expand the system. This provides customers with even greater flexibility when assembling, retrofitting, or converting the lighting system for their trailer. The 15-pin front, central and rear main cables in the wiring are still treated as a constituent part of the tried-and-tested EasyConn system. The wiring system makes it quick and easy to connect new products to various systems that are already present. This not only saves time and increases flexibility, but also minimises storage costs for the aftermarket, for garages, and for fleet operators.

15-pin EasyConn connector
The 15-pin EasyConn connector housing and female connector housing connect the front adapter, the main supply cable, and the rear adapter to one another.

15-pin EasyConn connector II
The proven 15-pin plug connectors are also available as a connector set, through which customer-specific requests as well as repairs can be easily implemented.

Exploded view of 15-pin EasyConn connector II

The plug connections are tested in compliance with degree of protection **IP 6K9K** and guarantee absolute leak tightness. **6K** = dustproof, **9K** = resistant to high pressure/steam cleaning

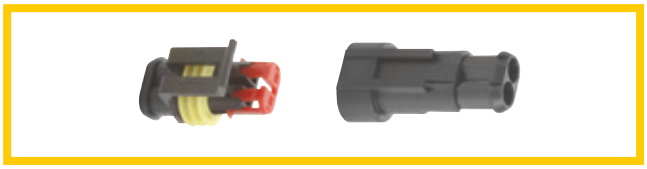
Systematic colours

Straightforward connection of all components with process reliability, thanks to the colour system from HELLA.

7-pin EasyConn connector
Rear lamps are connected to the EasyConn system using the 7-pin connector housing and female connector housing.

7-pin DIN bayonet connector
Our round light system as well as third-party products can be connected via a 7-pin DIN bayonet connector.

2-pin EasyConn connector*
The 2-pin EasyConn connector housing and female connector housing make it possible to connect e.g. SMLR, position lights, and clearance lights as well as 2-pin auxiliary functions.



2-pin SUPERSEAL connector
With the 2-pin SUPERSEAL connection, customers can fall back on another reliable product to connect single-function lights.

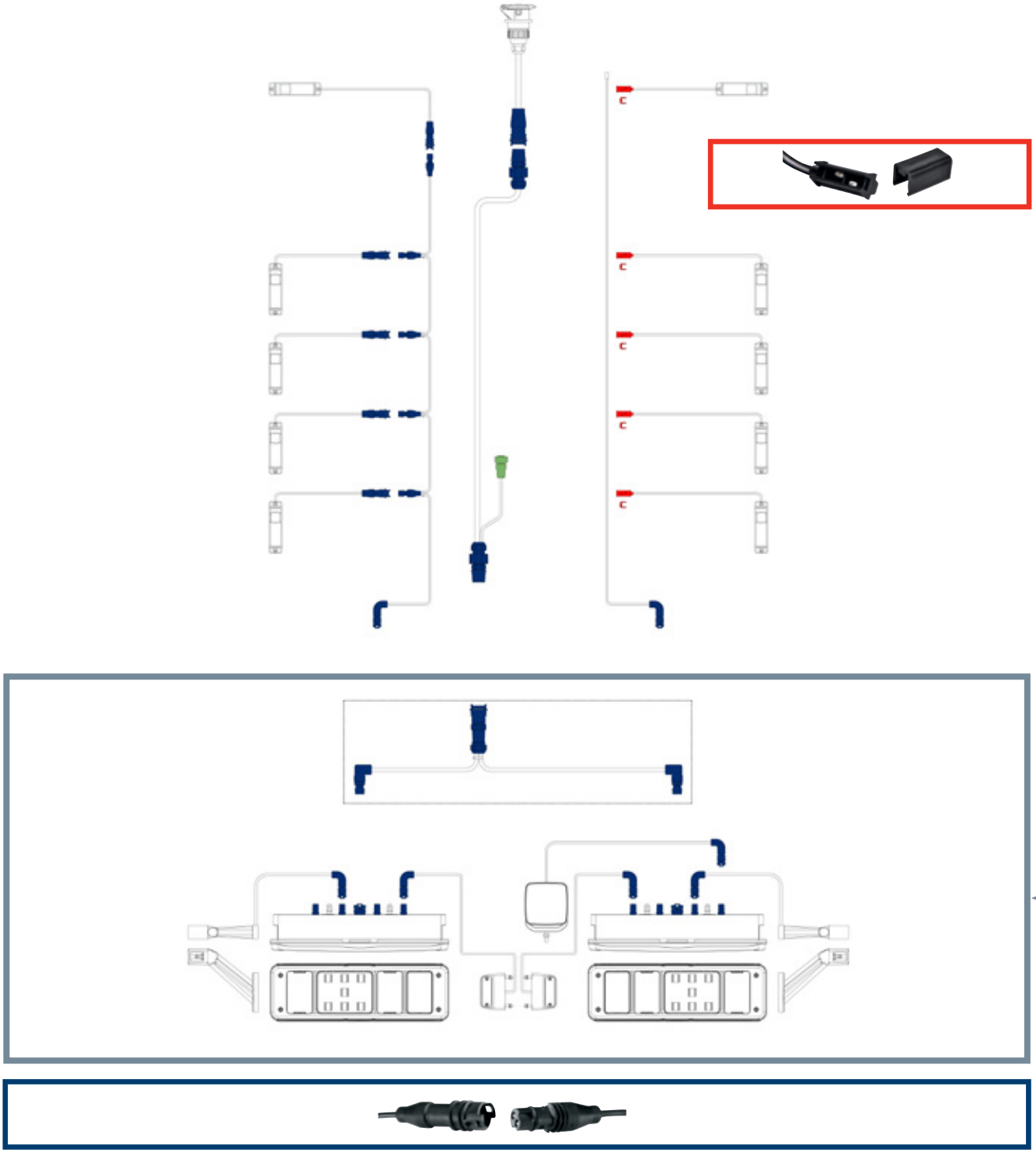
Quick link
Our quick link press connection: flexible and secure mounting of single-function lights on our HELLA flat conductor.

* Version also available in angled design

- → Simply connect the coupling to the flat cable.
- → Fix with the clamping piece.
- → Press together with the mounting pliers.
- → Finished.

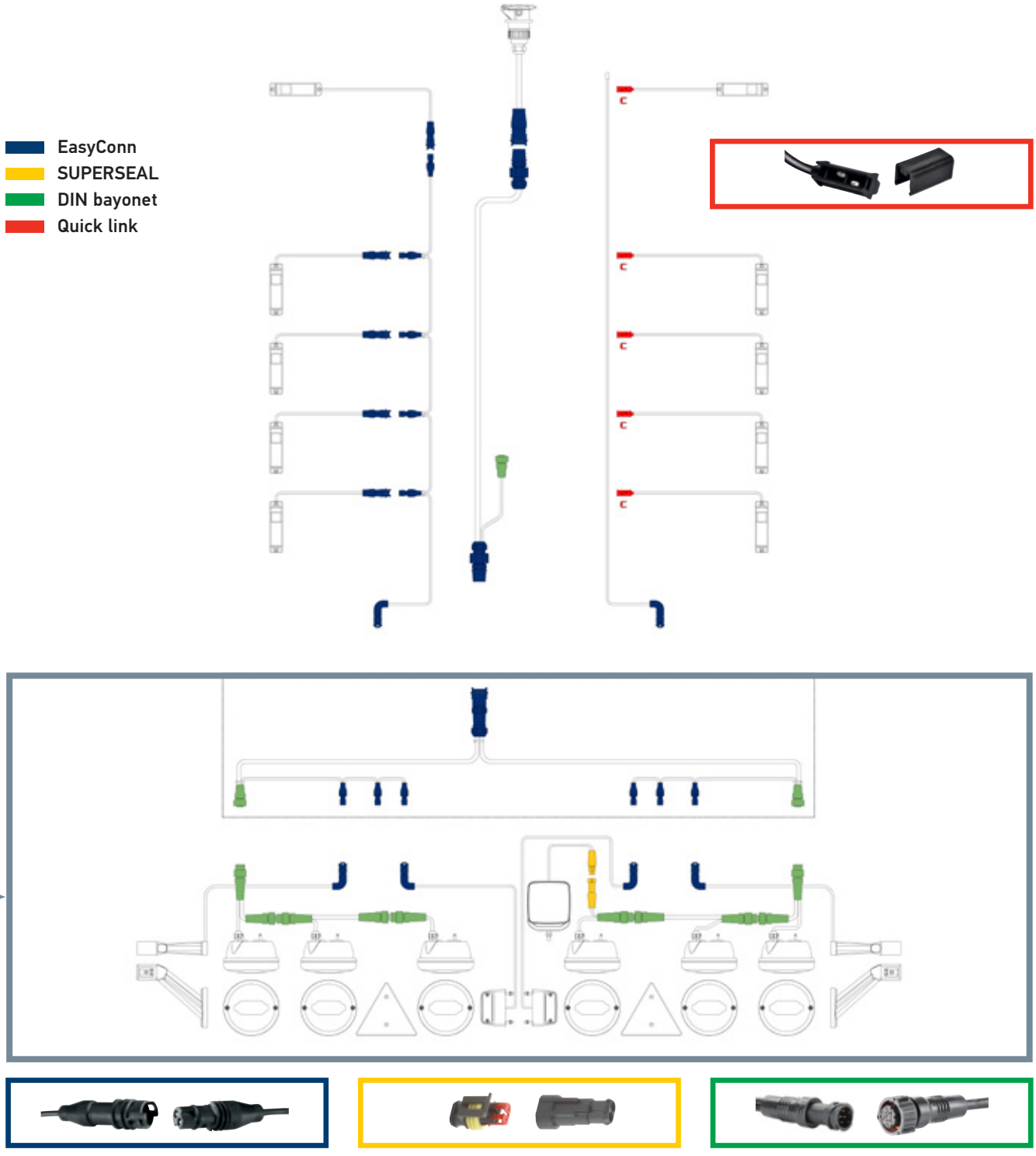
Quick link wiring: flexible and secure mounting
The quick link wiring system is a further contact option that stands out thanks to fast and straightforward installation. Lamps fitted with HELLA quick link wiring consist of a cable with a coupling. The cables are delivered in different lengths depending on requirements. These lamps can contact a 2-wire flat cable in any place. They may also be used for dangerous goods transport (GGVS / ADR).

WIRING AND LIGHTING SYSTEM WITH EASYCONN



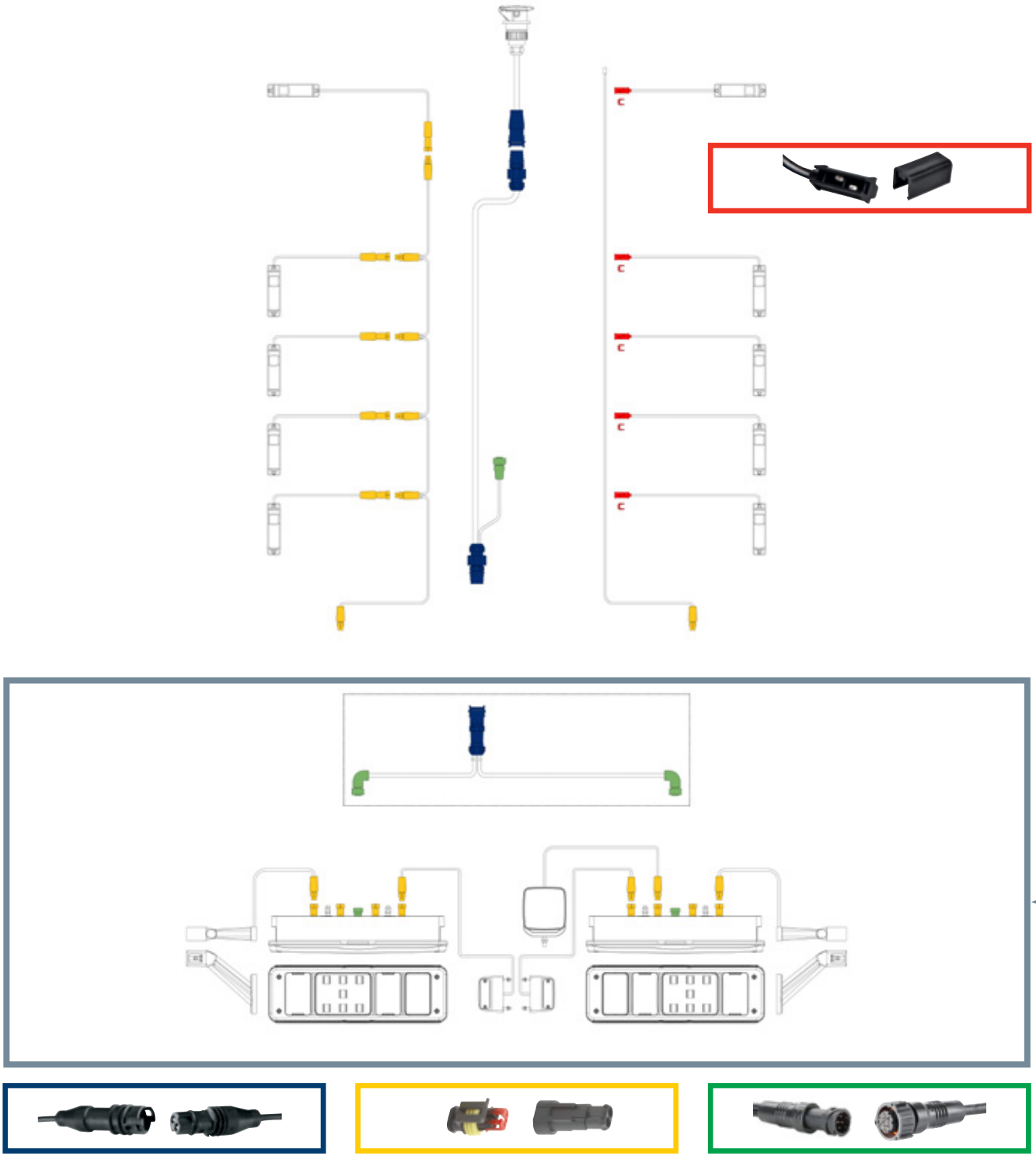
EasyConn wiring system for multi-function light example

The modular hybrid rear lamp takes over the distributor function for all the lighting functions required according to the German road traffic registration ordinance StVZO. These are strictly separated from other special lighting and auxiliary functions by a dedicated distributor circuit. This provides the advantage of a cost-effective, easy to install lighting system with a modular structure as well as hassle-free subsequent expansion of the standard system with additional EasyConn components and other lighting and special functions. Only the rear adapter is replaced to use our new round light system. All other cable components such as the main power supply and the front adapter remain the same. Connection is via DIN bayonet. All single-function lights remain unchanged with an EasyConn connection and can therefore be integrated into a round light system.



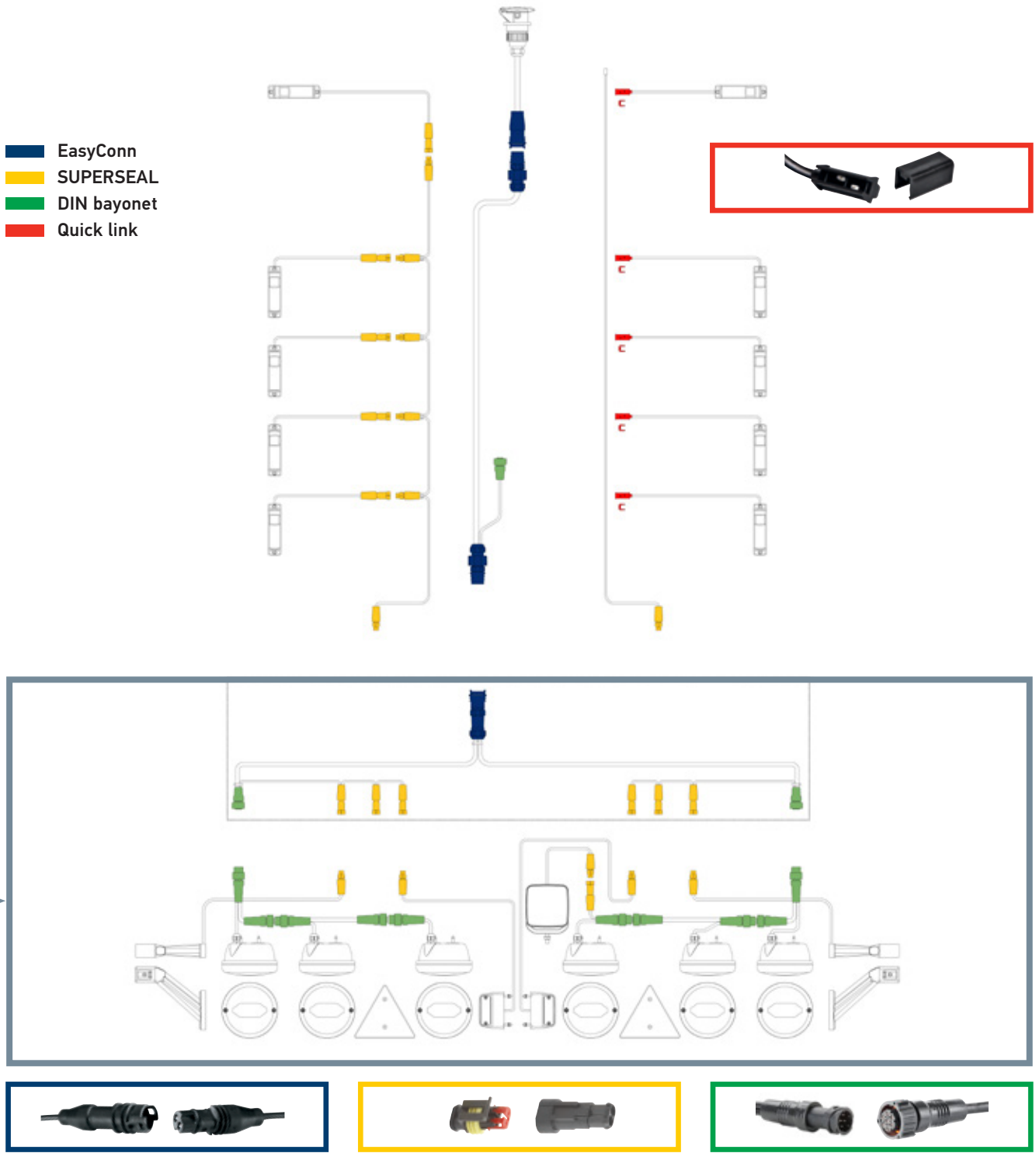
EasyConn wiring system for round light example

WIRING AND LIGHTING SYSTEM WITH SUPERSEAL



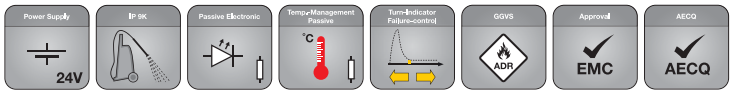
SUPERSEAL wiring system for multi-function light example

The modular hybrid rear combination lamp also serves as a distributor for our DIN bayonet and SUPERSEAL versions. Here, all the lighting functions required according to the German road traffic registration ordinance StVZO are connected. Special and auxiliary functions are also strictly separated from the standard by means of a dedicated distributor circuit. This provides the advantage of a cost-effective, easy to install lighting system with a modular structure as well as hassle-free subsequent expansion of the standard system with additional EasyConn, DIN bayonet and SUPERSEAL components. Only the rear adapter must be replaced to use our new round light system. All other cable components such as the main power supply and the front adapter remain the same. Connection is via DIN bayonet. All single-function lights are now connected with a SUPERSEAL connector.

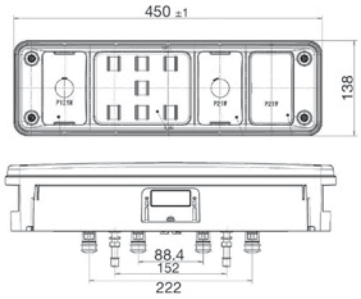


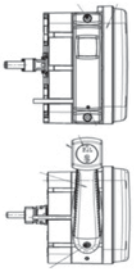
SUPERSEAL wiring system for round light example

MULTI-FUNCTION LIGHTS



Part Number	Connector type on the light				LED function					Auxiliary		Mounting		
	 7-pin EasyConn pin housing	 2-pin EasyConn socket housing	 7-pin DIN pin housing	 2-pin SUPERSEAL pin housing	Back-up light	Rear fog light	Direction indicator lamp	Stop light	Tail light	Rubber arm	Licence plate light	Right	Left	
2VP 340 961-017	■	■						■	■				■	
2VP 340 961-027	■	■						■	■			■		
2VP 340 961-057	■	■			■	■		■	■				■	
2VP 340 961-067	■	■			■	■		■	■			■		
2VP 340 961-117	■	■						■	■	■			■	
2VP 340 961-127	■	■						■	■	■		■		
2VD 340 961-327	■	■						■	■		■	■		
2VD 340 961-337	■	■						■	■		■		■	
2VD 340 961-357	■	■			■	■		■	■		■		■	
2VP 340 961-417			■	■				■	■				■	
2VP 340 961-427			■	■				■	■			■		
2VP 340 961-437			■	■				■	■	■			■	
2VP 340 961-447			■	■				■	■	■		■		
2VP 340 961-477			■	■	■	■		■	■	■			■	
2VP 340 961-487			■	■	■	■		■	■	■		■		
2VP 340 960-017	■	■			■	■	■	■	■				■	
2VP 340 960-027	■	■			■	■	■	■	■			■		
2VD 340 960-037	■	■			■	■	■	■	■		■		■	
2VD 340 960-047	■	■			■	■	■	■	■		■	■		
2VP 340 960-117	■	■			■	■	■	■	■	■			■	
2VP 340 960-127	■	■			■	■	■	■	■	■		■		
2VP 340 960-277			■	■	■	■	■	■	■				■	
2VP 340 960-287			■	■	■	■	■	■	■			■		





	Cat 5	Flash SMLR
		
		340 965-057
		340 965-067
	340 963-117	340 965-117
	340 963-127	340 965-127
		340 965-357
	340 963-437	340 965-437
	340 963-447	340 965-447
		340 964-117
		340 964-127

LED hybrid rear lamp

Modular multi-function rear lamp for horizontal mounting with the functions: tail light, stop light, direction indicator, triangular, rear fog, and reversing light, whereby the stop and tail light function is integrated as standard into the LED. It is possible to mount a clearance light as well as side marker light with reflex reflector. Other versions with integrated licence plate light are also available.

Full LED combination rear light

Modular multi-function rear lamp for horizontal mounting, clear lens, with pulse for direction indicator failure monitor. Tail light/stop light with 7 red LEDs, direction indicator with 7 amber LEDs, reversing light with 6 white LEDs, rear fog light with 7 red LEDs, clearance light 1 red LED, side marker reflex reflector light 1 amber.

Cat5 / flash SMLR rear combination lamp

In order to meet current legal and technical requirements, we offer our standard lights with the auxiliary flasher functions for the lateral area. The lateral marker lamps can be optionally equipped with a flasher function. As such, corresponding encoders are required in the rear combination lamps, which we have already integrated into some versions.

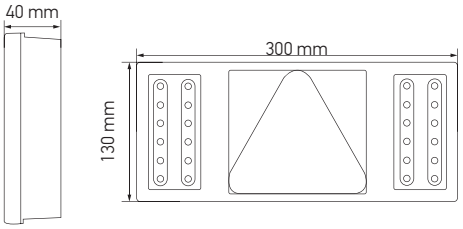
ACCESSORIES REQUIRED

Cover	8XS 340 092-01 must be used
EasyConn lock	9HV 340 812-00 open connections must be closed
SUPERSEAL lock	9XX 340 814-00 open connections must be closed

MULTI-FUNCTION LIGHTS

"COLUNA" full LED rear combination lamp

Full LED 5-chamber light with tail light, stop light, direction indicator, rear fog light, and reversing light. With triangular reflex reflector for horizontal mounting on 24 V trailers. 12 white LEDs for tail light function arranged as a light curtain. With fastening bolts from the rear. With pulse for direction indicator failure monitor.

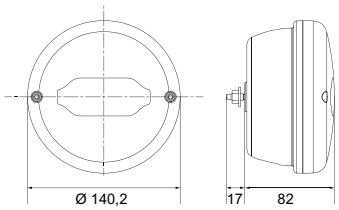


Part Number	Connector type on the light			Cable	LED function					Mounting	
	 7-pin EasyConn pin housing	 7-pin DIN pin housing	 6.3 mm flat receptacles	Length in mm	Back-up light	Rear fog light	Direction indicator lamp	Stop light	Tail light	Right	Left
2VP 345 900-017	■			1,000	■	■	■	■	■		■
2VP 345 900-027	■			1,000	■	■	■	■	■	■	
2VP 345 900-097		■		1,000	■	■	■	■	■		■
2VP 345 900-107		■		1,000	■	■	■	■	■	■	
2VP 345 900-137			■	3,000	■	■	■	■	■		■
2VP 345 900-147			■	3,000	■	■	■	■	■	■	

ROUND LIGHTS

Hybrid and full LED rear combination lamp

The series comprises a hybrid tail, stop, direction indicator light combination (direction indicator function executed with bulb) a full LED tail, stop, and direction indicator combination and a full LED rear fog and reversing light combination. Tail light function each with 6 LEDs. Lens can be replaced in the event of damage. Suitable for lateral mounting, left and right.



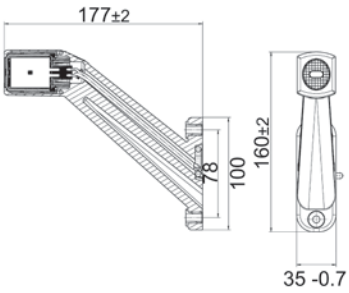
Part Number	Connector type on the light				Cable	LED function				
	7-pin DIN pin housing	2-pin SUPERSEAL pin housing	6.3 mm flat receptacles	Resistance	Length in mm	Back-up light	Rear fog light	Direction indicator lamp	Stop light	Tail light
2SD 013 155-007	■			■	300				■	■
2SD 013 155-017	■				300				■	■
2SD 013 155-027			■	■	3,000				■	■
2SD 013 155-037			■		3,000				■	■
2SD 013 155-107	■				300			■	■	■
2SD 013 155-117			■		3,000			■	■	■
2NR 013 155-207	■	■		■	300	■	■			
2NR 013 155-217	■			■	300	■	■			
2NR 013 155-227			■	■	3,000	■	■			

Find the right reversing light on page 26.

CLEARANCE LIGHTS

LED rubber arm clearance light

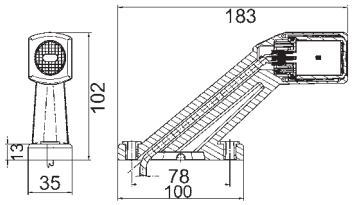
with 3 LEDs, vertical mounting, side marker light, position light, clearance light, power consumption 24 V / 1.8 W



Part Number	Connector type on the light						Cable
	 2-pin EasyConn 90°	 2-pin SUPERSEAL socket housing	 2-pin EasyConn socket housing	 2-pin quick link	 6.3 mm flat receptacles	 2-pin SUPERSEAL pin housing	Length in mm
2XS 011 744-017	■						500
2XS 011 744-027	■						500
2XS 011 744-037					■		3,000
2XS 011 744-047					■		3,000
2XS 011 744-057		■					2,000
2XS 011 744-067		■					2,000
2XS 011 744-077				■			500
2XS 011 744-087				■			500
2XS 011 744-107			■				500
2XS 011 744-117			■				500
2XS 011 744-127			■				1,500
2XS 011 744-137			■				1,500
2XS 011 744-187				■			1,000
2XS 011 744-197				■			1,000
2XS 011 744-207		■					800
2XS 011 744-217		■					800

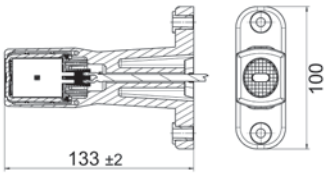
LED rubber arm clearance light

with 3 LEDs, horizontal mounting, side marker light, position light, clearance light, power consumption 24 V / 1.8 W



Part Number	Connector type on the light						Cable
	 2-pin EasyConn 90°	 2-pin SUPERSEAL socket housing	 2-pin EasyConn socket housing	 2-pin quick link	 6.3 mm flat receptacles	 2-pin SUPERSEAL pin housing	Length in mm
2XS 011 769-017			■				500
2XS 011 769-027			■				500
2XS 011 769-037	■						500
2XS 011 769-047	■						500
2XS 011 769-057		■					2,000
2XS 011 769-067		■					2,000

with 3 LEDs, vertical mounting, side marker light, position light, clearance light, power consumption 24 V / 1.8 W

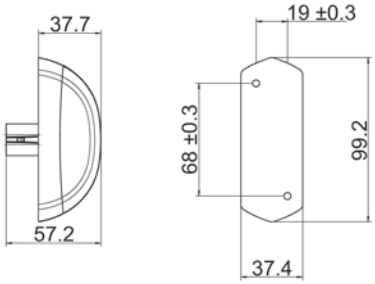


Part Number	Connector type on the light						Cable
	2-pin EasyConn 90°	2-pin SUPERSEAL socket housing	2-pin EasyConn socket housing	2-pin quick link	6.3 mm flat receptacles	2-pin SUPERSEAL pin housing	
2XS 011 768-007				■			500
2XS 011 768-017	■						500
2XS 011 768-027			■				500
2XS 011 768-037		■					2,000
2XS 011 768-077					■		2,000

CLEARANCE LIGHTS

LED clearance light

Attractive design – clear alignment and no visible external attachment Red/clear lens with direct screw coupling, black frame for direct connection. Error-free contacting thanks to bipolarity (+ / – can be inverted). Universal attachment frame – same light can be installed left and right. Theft protection thanks to the "fit and forget" system. 1:1 replacement with bulb version 2XS 008 497 and 2XS 005 020

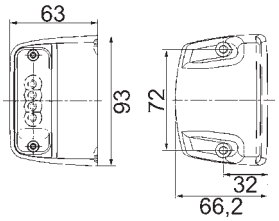


Part Number	Connector type on the light						Cable	Auxiliary
	 2-pin EasyConn 90°	 2-pin SUPERSEAL socket housing	 2-pin EasyConn socket housing	 2-pin quick link	 6.3 mm flat receptacles	 2-pin SUPERSEAL pin housing	Length in mm	Rubber bracket
2XS 205 020-137						■		■
2XS 205 020-177					■		3,000	■

LICENCE PLATE LIGHTS

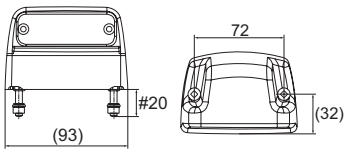
LED licence plate light

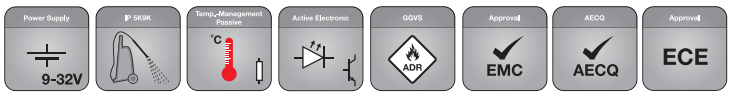
For mounting on the right or left next to the licence plate
(520 x 120 mm), only 1 light needed for illumination.
Clear lens, with 4 LEDs, black plastic housing,
2 fastening screws M5 x 35.



Part Number	Connector type on the light					Cable	Mounting	
	 2-pin EasyConn 90°	 2-pin SUPERSEAL socket housing	 2-pin EasyConn socket housing	 2-pin quick link	 6.3 mm flat receptacles	Length in mm	Single	Double
2KA 010 278-037					■	2,000	■	
2KA 010 278-047				■		500	■	
2KA 010 278-057			■			500	■	
2KA 010 278-097		■				1,350	■	
2KA 010 278-077	■					1,300	■	

For mounting on the right and left next to the licence plate
(520 x 120 mm), two lights required for illumination.
Clear lens with optics, 2 LEDs, grey plastic housing.
2 fastening screws M5 x 35.





Part Number	Connector type on the light					Cable	Mounting	
	2-pin EasyConn 90°	2-pin SUPERSEAL socket housing	2-pin EasyConn socket housing	2-pin quick link	6.3 mm flat receptacles			
2KA 012 271-037					■	2,000		■
2KA 012 271-047				■		500		■
2KA 012 271-057			■			500		■
2KA 012 271-067		■				1,300		■
2KA 012 271-077	■					1,300		■

CONTOUR MARKINGS

LED position lights with reflex reflector

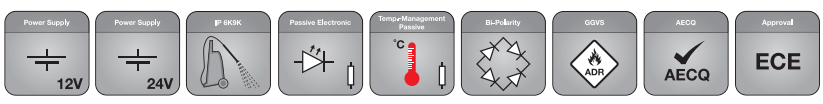
Suitable for horizontal and vertical mounting. With 1 white LED, white light, and black housing. With horizontal mounting, the LED field must point to the outer edge of the vehicle. The light is fixed using the lateral mounting holes or using a bracket.

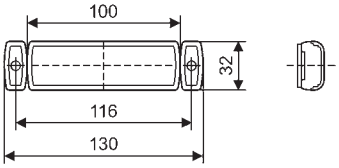
LED side marker light with reflex reflector

Suitable for horizontal and vertical mounting. With 1 yellow LED, yellow light, and black housing. The light is fixed using the lateral mounting holes or using a bracket.

LED tail light with reflex reflector

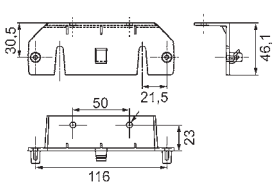
Suitable for horizontal and vertical mounting. With 1 red LED, red light, and black housing. With horizontal mounting, the LED field must point to the outer edge of the vehicle. The light is fixed using the lateral mounting holes or using a bracket.



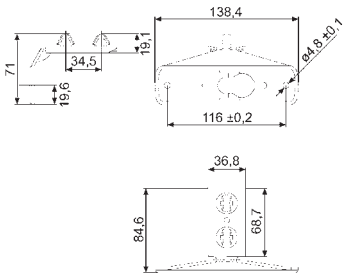


Other versions, fixing material, brackets and reflex reflectors can be found under accessories.

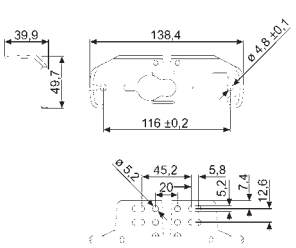
Part Number	Connector type on the light						Cable	Mounting		
	 2-pin SUPERSEAL pin housing	 2-pin SUPERSEAL socket housing	 2-pin EasyConn socket housing	 2-pin quick link	 6.3 mm flat receptacles	 Open contacts	Length in mm	Horizontal	Vertical	
2PG 008 645-107					■		2,130	■	■	
2PG 008 645-127					■		4,930	■	■	
2PG 008 645-337			■				1,300	■	■	
2PG 008 645-637				■			300	■	■	
2PG 008 645-837		■					450	■	■	
2PG 011 422-027		■					5,000	■	■	
2PS 008 645-307			■				300	■		
2PS 008 645-317			■				1,300	■		
2PS 008 645-367			■				2,000	■		
2PS 008 645-847			■				1,300	■		c)
2PS 008 645-587				■			300	■		b)
2PS 008 645-607				■			150	■		
2PS 008 645-617				■			300	■		
2PS 008 645-627				■			1,300	■		
2PS 008 645-717				■			1,600	■		b)
2PS 008 645-787				■			1,300	■		d)
2PS 008 645-797				■			150	■		d)
2PS 011 422-077	■						1,300	■		a)
2PS 011 422-267	■						450	■		
2TM 008 645-947						■	5,000	■	■	



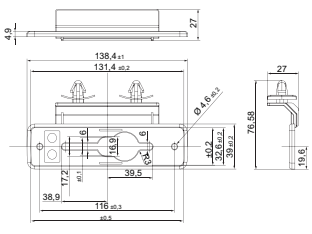
a) **8HG 160 409-00**



b) **8HG 340 413-00**



c) **8HG 340 489-00**



d) **8HG 340 488-03**

CONTOUR MARKINGS

LED marker light with reflex reflector

2 white LEDs, horizontal and vertical mounting, dark grey housing, dimension: 130 x 32 x 12.4 mm, power consumption: 0.5 W, type test: ECE-R7, ECE-R3, ECE-R10. The light is fixed using the lateral mounting holes (for B4.2 screws) or using a bracket (must be ordered separately). Protection class IP 67

LED side marker light with reflex reflector

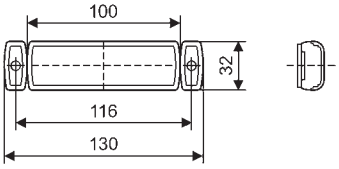
2 yellow LEDs, horizontal mounting, dark grey housing, dimension: 130 x 32 x 12.4 mm power consumption 0.8 W, type test: ECE-R6, ECE-R3, ECE-R91, ECE-R10, protection class: IP 67. With cellular rubber seal and 2 holes for fastening screws B4.2, or via a bracket (ordered separately). With horizontal mounting, the optical field must point to the outer edge of the vehicle.

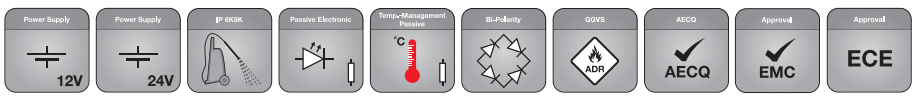
LED side marker light with additional indicator and reflex reflector

4 yellow LEDs (2SMLR, 2 ZBL), horizontal mounting, orange housing, dimension: 130 x 32 x 12.4 mm, power consumption 0.8 W, type test: ECE-R6, ECE-R3, ECE-R91, ECE-R10, protection class: IP 67. With cellular rubber seal and 2 holes for fastening screws B4.2, or via a bracket (ordered separately). With horizontal mounting, the optical field must point to the outer edge of the vehicle.

LED control unit

The module controls the entire system and can easily be inserted into the junction box or multi functional lamp . Dimension: 93.4 x 56 x 12 mm, type test: ECE-R10, protection class: IP 67

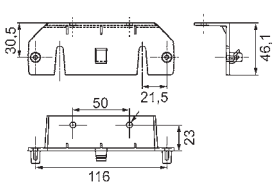




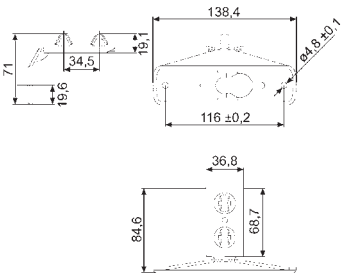
Other versions are available on request.

Part Number	Connector type on the light						Cable	Mounting		LED function	
	 2-pin SUPERSEAL pin housing	 2-pin SUPERSEAL socket housing	 2-pin EasyConn socket housing	 2-pin quick link	 6.3 mm flat receptacles	 Open contacts	Length in mm	Horizontal	Vertical	Direction indicator lamp	Cat 5
2PG 012 845-607			■				3,000	■	■		■
2PG 012 845-617	■						5,000	■	■		■
2PG 012 845-627				■			5,000	■	■		■
2PS 012 845-007			■				2,000	■		■	■
2PS 012 845-017	■						2,000	■		■	■
2PS 012 845-027				■			1,300	■		■	■
2PS 012 845-307			■				2,000	■			■
2PS 012 845-317	■						2,000	■			■
2PS 012 845-327				■			1,300	■			■

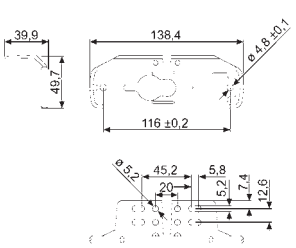
Notice: the control unit for the above mentioned lamps is integrated into the modular rear lamp (see page 17). For round light systems, the control units must be installed in a separate distributor. Further information on request.



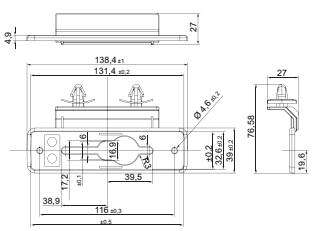
a) **8HG 160 409-00**



b) **8HG 340 413-00**



c) **8HG 340 489-00**

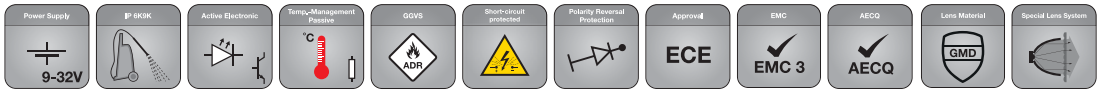


d) **8HG 340 488-03**

REVERSING LIGHT

LED Repulse Pro reversing light

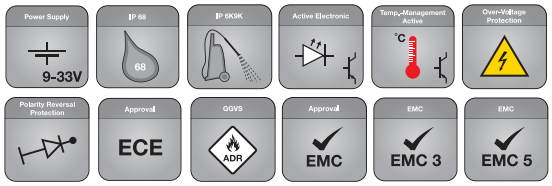
with 3 LEDs, light output (measured): 900 lumens, power requirement: 17 watts, colour temperature: 5,500° Kelvin, multivolt, polarity reversal protection, overvoltage protection, mounting: upright, suspended or from the rear, bracket width 86 mm, surrounding bracket for upright, suspended and rear mounting.

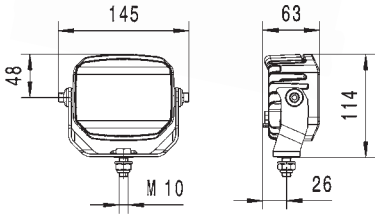


Part Number	Connector type on the light				Cable
	 2-pin EasyConn 90°	 2-pin SUPERSEAL socket housing	 2-pin EasyConn socket housing	 6.3 mm flat receptacles	Length in mm
2ZR 012 456-207		■			2,000
2ZR 012 456-217	■				1,000
2ZR 012 456-227				■	3,500

Power Beam 1000 reversing light

Light output (measured): 850 lumens, power requirement: 14 watts, colour temperature: 6,500° Kelvin. High-quality aluminium housing with CoroSafe coating. Upright and suspended mounting possible. Bracket width 116 mm. Electrical connection: connector type on the light "Deutsch" pin housing.



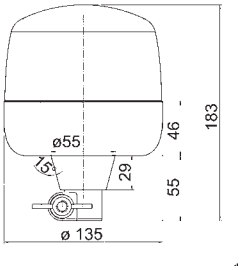


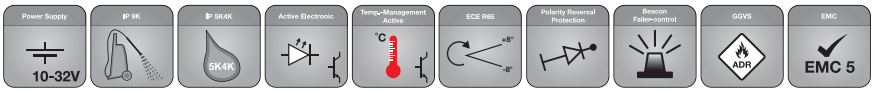
Close-Range Illumination **2ZR 996 188-121**

AUXILIARY LIGHT

Rota LED Beacon

The Rota LED impresses due to its high efficiency, flat and compact design, and the rotating LED light function. The Rota LED is highly robust and extremely efficient. Because of the shock-absorbing rubber foot, it boasts a high resilience against vibration and is thus perfectly suited for challenging applications.

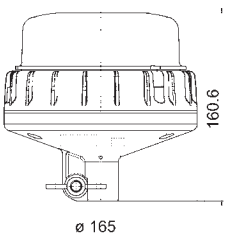


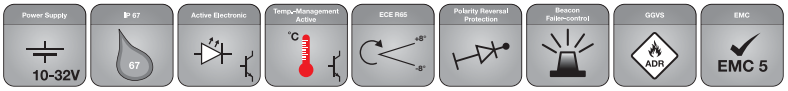


Flexible pipe-socket mounting **2RL 010 979-011**

K-LED 2.0 Beacon

The HELLA K-LED 2.0 ensures the best possible warning effect and therefore optimum safety since it automatically provides 2.3 times more illumination during the day than at night. It is also the first HELLA beacon where you can choose between rotating or flashing warning signals either simply by switching over or by programming the required effect. This offers you the right warning signal for any application and is also extremely robust and highly compact.



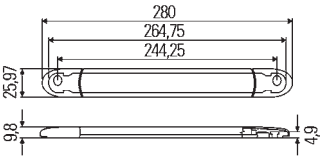


Flexible pipe-socket mounting **2XD 011 557-201**

AUXILIARY LIGHT

LED additional stop lamp

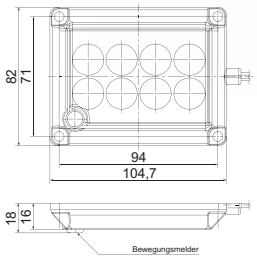
High-mounted LED stop light 24 V, with 10 SMD LEDs and 3 m connecting cable.
ECE and SAE tested, suitable for horizontal and vertical mounting.
Passive electronics, passive temperature management, EMC tested.



Open cable ends **2DA 343 106-011**

LED interior light

Homogenous illumination with approx. 145 lux at centre and approx. 125 lux at a distance of 0.6 m from the centre in all directions. Clear lens made from polycarbonate. Screw mounting as mounting variant. Ideal for flat installation conditions (16 mm). Multivolt circuits keep the light output constant over a voltage range of 10 – 31 V.

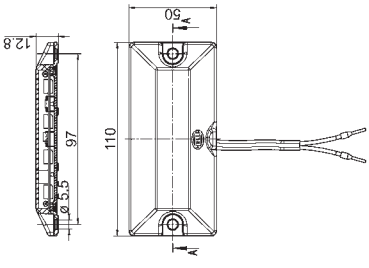


2,400 mm cable with movement sensor (IP54 open cable ends) **2JA 012 557-001**

3,400 mm cable without movement sensor (IP69 open cable ends) **2JA 012 557-011**

LED ceiling light

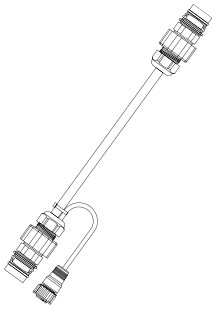
4 white LEDs, beam angle of the LEDs 40°, illuminance in 2.5 m equates to 8 lux (average value/ measuring point: floor), power consumption 1.5 watts (0.06 A at 24 V), voltage 24 V.

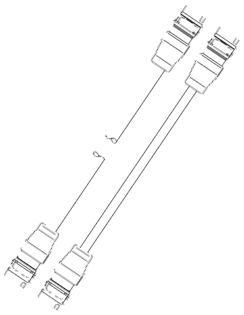


1,288 mm cable length, open cable ends **2JA 010 838-011**

MAIN POWER SUPPLY CABLE

The cables are pre-fitted and over-molded with two 15-pin EasyConn female connector housings. Standard versions are also pre-fitted with the new EasyConn II connector set. The main supply cables are available with and without an additional outlet for the respective braking system. The design always has a DIN bayonet 4-pin female connector housing.
All cables are ADR tested and approved.



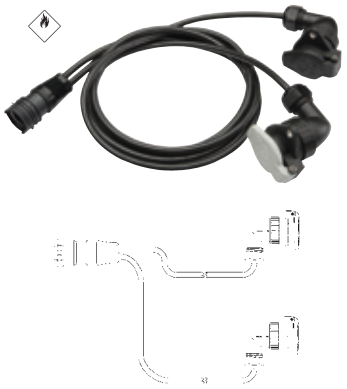


Part Number	Connector type on the light			Cable	Wire count	Function
	 Overmolded	 Connector set II	 Breakout 4-pin DIN bayonet	Length in mm		
8KA 340 817-387		■	500	15,000	15	7/8/12
8KA 340 815-027	■			12,000	15	
8KA 340 815-018	■			10,000	15	
8KA 340 817-397		■	500	10,000	15	7/8/12
8KA 340 817-367		■	500	15,000	10	7/8/12
8KA 340 816-027	■			14,000	10	
8KA 340 817-377		■	500	10,000	10	7/8/12
8KA 340 816-007	■			9,000	10	
8KA 340 913-007	■			15,000	8	

FRONT ADAPTER

For semi-trailers and trailers with EasyConn connector housing, (15-pin), socket and connector (15-pin DIN-ISO 12098) as well as 7N and 7S socket and connector (7-pin, ISO 1185 and ISO 3731). However also available in combination with EC, 12098 and 7N/7S.

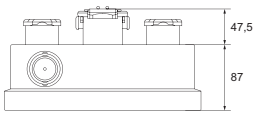
Suitable for the main supply cables from the series:
8KA 340 815-...
8KA 340 816-...
8KA 340 817-...

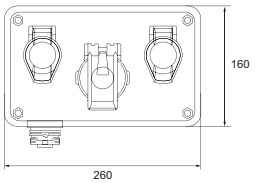


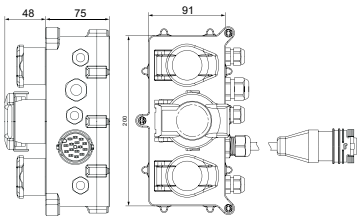
Part Number	Connector type on the light						Cable
	Connector	Socket	ISO 12098	7N 1185	7S 3731	ADR (ISO 12098)	Length in mm
8KA 340 842-007		■	■			■	600
8KA 340 842-017		■	■			■	1,700
8KA 340 843-007	■		■			■	3,500
8KA 340 843-027	■		■			■	6,000
8KA 340 818-007		■		■	■		1,700
8KA 340 818-017		■		■	■		600
8KA 340 841-007	■			■	■		3,500
8KA 340 841-037	■			■	■		6,000
8KA 340 886-027		■	■	■	■		600 + 300
8KA 340 886-077		■	■	■	■		600 + 800

FRONT DISTRIBUTOR

For semi-trailers and a direct connection to the EasyConn system, with 3 combined sockets (1 x socket DIN ISO 12098, 1 x 7-N socket DIN ISO 1185, and 1 x 7-S socket DIN ISO 3731) and 1 EasyConn connection (15-pin, for the main power supply).



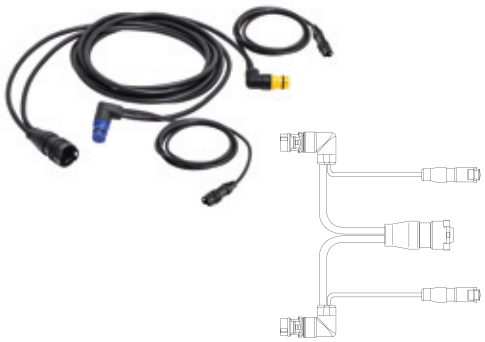


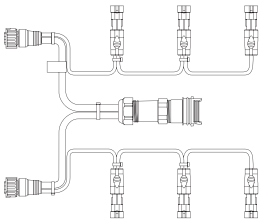


Part Number	Connector type on the light						Cable
	Connector	Socket	ISO 12098	7N 1185	7S 3731	ADR (ISO 12098)	Length in mm
8JE 340 898-007		■	■	■	■	■	
8JE 340 898-027		■	■	■	■	■	
8JE 340 898-107		■	■	■	■	■	500

REAR ADAPTER

Rear adapter cable with EasyConn connector housing (15-pin). Suitable for the main supply cables from the series:
8KA 340 815-...
8KA 340 816-...
8KA 340 817-...

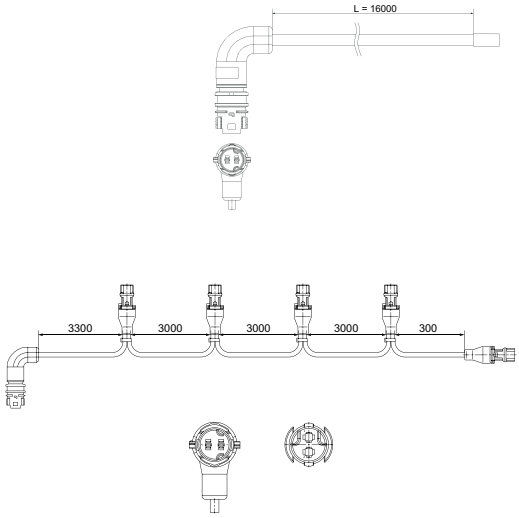



Part Number	Connector type on the cable			Number of break outs				Connector type on the light				Cable
	 7-pin EasyConn pin housing	 7-pin DIN pin housing	90° angle	1	2	4	6	 2-pin EasyConn socket housing	 2-pin SUPERSEAL pin housing	Flat cable for quick link connection	Assignment	Length in mm
8KA 340 819-007	■						■	6x500			58	1300/1300
8KA 340 819-017	■					■		4x500			58	1300/1300
8KA 340 819-067	■						■	6x500			58	2000/2000
8KA 340 819-127	■		■		■			2x1000			58	3000/3000
8KA 340 819-157	■		■		■					2x17000	58	1300/1300
8KA 340 819-197	■		■									1500/2500
8KA 340 819-217	■		■									3000/3000
8KA 340 819-238	■		■	■						1x1500	58	3000/3000
8KA 340 819-427		■	■									2000/2000
8KA 340 819-437		■					■		6x500		58	2000/2000

CHAINS AND CABLES

Our SMLR chains and supply cable (2 x 1.5 mm²) to connect side marker lights with reflex reflector and position lights with EasyConn, SUPERSEAL or via quick link indentation clamping technology.



Part Number	Connector type on the light			Cable	Signal and sundry lamps
	 2-pin EasyConn socket housing	 2-pin EasyConn 90°	 2-pin SUPERSEAL socket housing	Length in mm	Number
8KB 340 820-257	■				5
8KB 340 820-327	■				4
8KB 340 820-277	■				6
8KB 340 820-297	■				8
8KB 340 820-427		■			5
8KB 340 820-397		■			4
8KB 340 820-437		■			8
8KB 340 927-027			■		8
8KB 340 927-017			■		5
8KB 340 927-007			■		4
8KA 340 822-067	■			15,000	
8KA 340 822-087	■			10,000	
8KA 340 822-007	■			21,000	
8KA 340 822-207		■		16,000	
8KA 340 822-217		■		9,000	
8KA 340 822-227		■		21,000	
8KA 340 038-208			■	8,000	
8KA 340 038-228			■	12,000	
8KA 340 038-247			■	16,000	

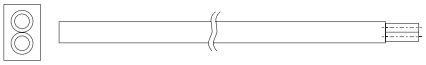
CABLES

Cables without plug connection for individual system connection.
Corresponding connector and service sets can be found on page 39.

2-pin, cable FLRYY (2 x 1 mm²)	**8KL 340 009-001**
2-pin, wiring harness (1 mm²)	**8KL 340 052-001**
2-pin, wiring harness (0.5 mm²)	**8KL 340 055-021**
7-pin, cable FLRYY (6 x 1.0 mm² / 1 x 1.5 mm²)	**8KL 340 412-001**
7-pin, wiring harness (2.5 mm²)	**8KL 340 054-001**
10-pin, wiring harness (2.5 mm²)	**8KL 340 093-011**
15-pin, cable FLRYY (12 x 1.0 mm² / 3 x 2.5 mm²)	**8KL 340 059-001**

Cable

Flat cable, with 2 x 1.5 mm cross section.
Suitable for quick link connections.

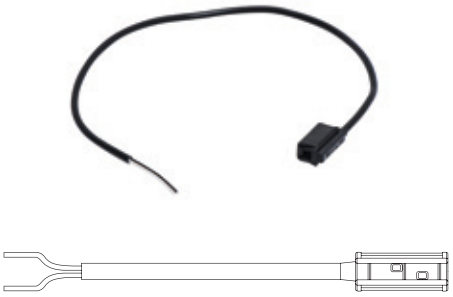


8KL 340 050-001

ADAPTER

Cable

Round cable, with 2 x 1 mm cross section, 250 mm cable length with open end, and quick link connector including clamping piece.



8KA 998 229-017

Cable

With 6,000 mm cable length, 2 x 1.0 mm cross section, and AMP SUPERSEAL pin housing over-molded.

8KA 340 954-007

Cable

With 2,000 mm cable length, 2 x 1.0 mm cross section, DEUTSCH connector, bush housing (2-pin), and open end.

8KA 340 038-131

ADAPTER

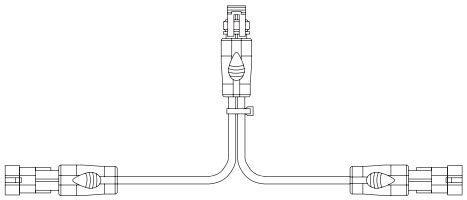
Cable

With 1,300 mm cable length, 2 x 1.0 mm cross section, EasyConn connector housing (2-pin) over-molded, and DEUTSCH connector (2-pin)

8KA 340 854-127

Cable adapter "Y"

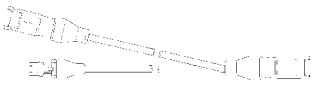
With 150 mm cable length, 2 x 1.0 mm cross section, AMP SUPERSEAL pin housing (2 x 2-pin) over-molded, and AMP SUPERSEAL bush housing (1 x 2-pin) over-molded.



8KA 340 859-047

Intermediate adapter

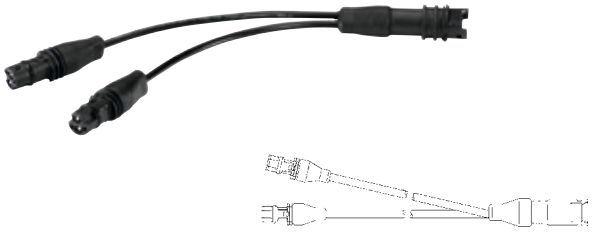
Y adapter cable 2-wire (2 x 0.5 mm²) with EasyConn female connector housing (2-pin), and two 150 mm long outlets with 1 EasyConn connector housing (2-pin) and 1 EasyConn female connector housing (2-pin).



8KA 340 859-007

Intermediate adapter

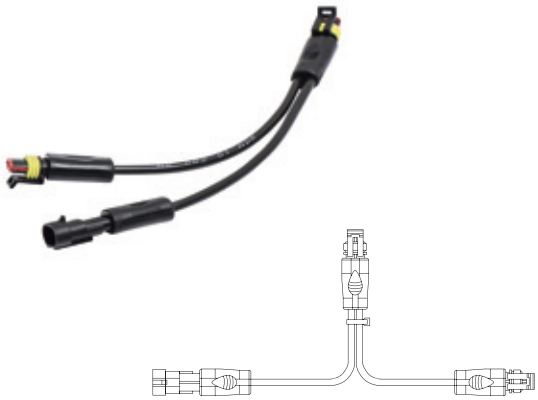
Y adapter cable 2-wire (2 x 0.5 mm²) with EasyConn female connector housing (2-pin), and two 150 mm long outlets each with 1 EasyConn female connector housing (2-pin).



8KA 340 859-017

Intermediate adapter

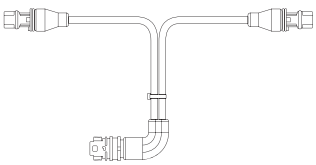
With 2 x 150 mm cable length, 2 x 1.0 mm cross section, AMP SUPERSEAL bush housing (2 x 2-pin), and AMP SUPERSEAL pin housing (1 x 2-pin) over-molded.



8KA 340 859-027

Intermediate adapter

With 2 x 150 mm cable length, 2 x 1.0 mm cross section, AMP SUPERSEAL female connector housing (2 x 2-pin) over-molded, and AMP SUPERSEAL connector housing (1 x 2-pin) over-molded.

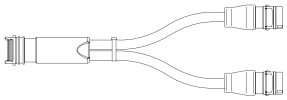


8KA 340 859-037

ADAPTER

Intermediate adapter

With 500 mm cable length, 12 x 1.5 mm and 3 x 2.5 mm cross section, EasyConn connector housing (1 x 15-pin) over-molded, and EasyConn female connector housing (2 x 15-pin) over-molded.

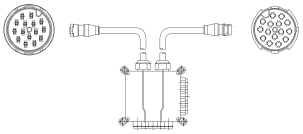


8KA 340 864-017

DISTRIBUTORS

Distributor box

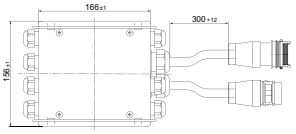
Distributor box with M16 and two M25 screwed cable glands as well as two 15-wire cables (12 x 1.0 mm²/3 x 2.5 mm²) with a 15-pin EasyConn connector housing and a 15-pin EasyConn female connector housing, fully assembled on the plug board.



8JE 340 847-007

Distributor box

Distributor box with seven PG 9, seven PG 13.5 and two PG 21 screwed cable glands, two 15-wire cables (12 x 1.0 mm²/ 3 x 2.5 mm²) with a 15-pin EasyConn connector housing and a 15-pin EasyConn female connector housing, fully assembled on the plug board.



8JE 340 867-057

CONNECTOR SET

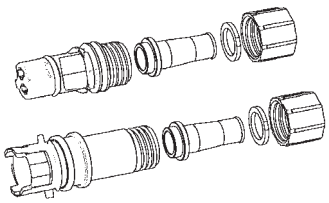
SUPERSEAL plug housing set

SUPERSEAL plug connectors comply with IEC 529 regulations and DIN ISO 40050, and come with protection class IP 67, which offers the maximum level of water and dust proofing. Where other interconnection systems reach their limits due to adverse pressure or humidity conditions, SUPERSEAL is ideally suited.

2-pin (pin)	**9XX 744 806-812**
2-pin (bush)	**9XX 744 806-822**
4-pin (pin)	**9XX 744 806-832**
4-pin (bush)	**9XX 744 806-842**

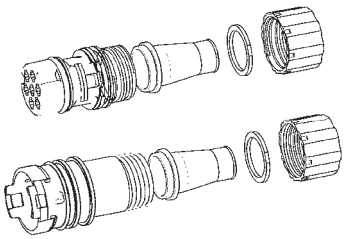
EasyConn connector/EasyConn mating connector

With EasyConn female connector housing (2-pin)
(mating connector for 2-pin EasyConn connector housing)



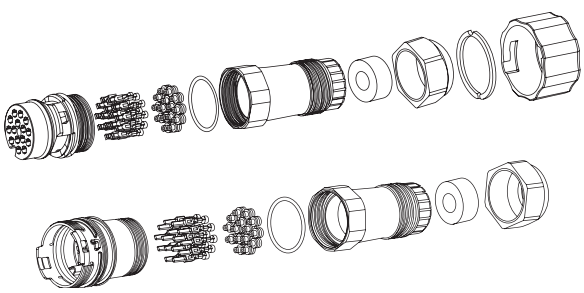
Dia.: 19.5 mm	**9XX 340 879-007**
Dia.: 24.5 mm	**9XX 340 882-007**

With EasyConn female connector housing (7-pin)
(mating connector for 7-pin EasyConn connector housing)



Dia.: 28.0 mm	**9XX 340 880-007**
Dia.: 33.0 mm	**9XX 340 883-007**

With EasyConn connector set (15-pin, male)
With EasyConn connector set (15-pin, female)

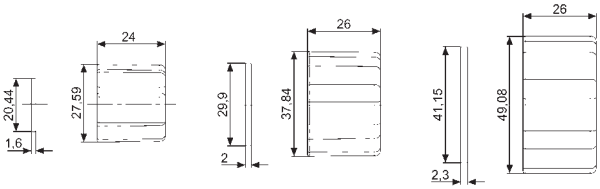


Dia.: 39.0 mm	**9XX 340 981-001**
Dia.: 44.0 mm	**9XX 340 984-001**

FUSE SET

Fuse sets

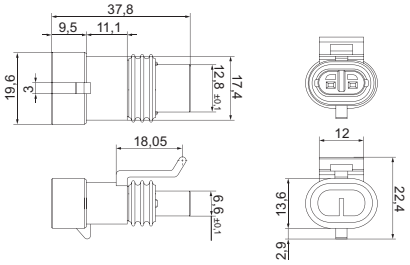
For additional protection of EasyConn plug connections with high tensile loads with sliding ring and union nut, EasyConn connector housing.



2-pin (VPE 20)	**9XX 340 876-007**
7-pin (VPE 10)	**9XX 340 877-007**
15-pin (VPE 5)	**9XX 340 878-007**

Cap

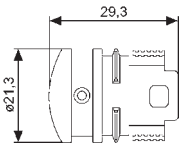
For connecting the 2-pin SUPERSEAL connector and female connector housing.



2-pin (VPE 100)	**9XX 340 814-017**

Cap

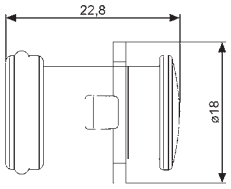
For female connector housing, for airtight sealing of any EasyConn female connector housing that is not required.



2-pin (VPE 20)	**9HV 340 812-007**

Plug sets

For connector housing, for airtight sealing of any EasyConn connector housing that is not required with an O-ring.



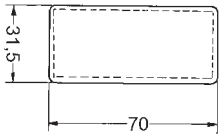
2-pin (VPE 20)	**9XX 340 870-007**
7-pin (VPE 10)	**9XX 340 871-007**
15-pin (VPE 5)	**9XX 340 872-007**

Spare parts

Quick link clamping piece	**8KW 998 602-002**
Retractable end cap with cable diameter up to a maximum of 11 mm (7-pin)	**9GS 340 051-001**

REFLEX REFLECTOR

Reflex reflector with clear PMMA base plate and self-adhesive tape. 31.5 mm x 70 mm dimensions, approved for ECE and SAE.

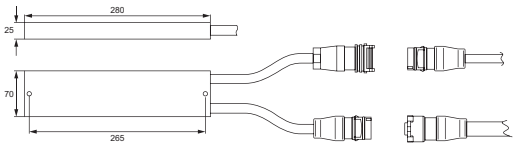


Clear reflex reflector	**8RA 004 412-011**
Amber reflex reflector	**8RA 004 412-007**
Reflex-reflector, red	**8RA 004 412-027**

INDICATOR FAILURE CONTROL

LED indicator failure control

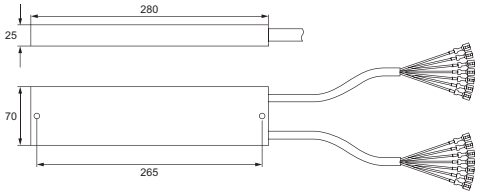
For 24 V range, with a 15-pin EasyConn connector housing on one side and a 15-pin female connector housing on the other side, plus a 1,300 mm cable length per plug connection, 12 x 1.5 + 3 x 2.5 mm cross section.



24 V direction indicator ECU **5DS 009 552-047**

LED indicator failure control

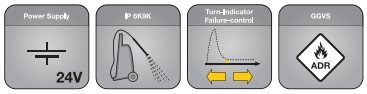
For 24 V range, 1,500 mm cable length, with 6.3 mm flat receptacles and 300 mm cable length, with 6.3 mm flat receptacles, each with 7 x 1 + 1 x 2.5 mm cross section.



24 V direction indicator ECU **5DS 009 552-037**

LED indicator failure control

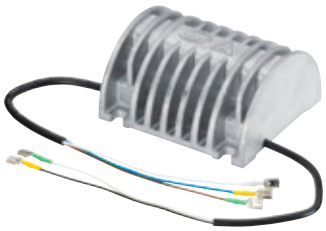
For 24 V trailer, with a 15-pin EasyConn connector housing on one side and a 15-pin EasyConn female connector housing on the other side. No separate voltage supply required, with EMC approval.

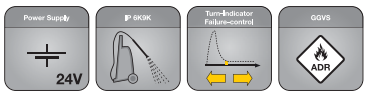


24 V direction indicator ECU **5DS 009 552-007**

LED indicator failure control

24 V operating voltage 18-32 V, polarity reversal protection voltage 28 V, on-board voltage input for flasher unit left / right 24 V, operating temperature -40°C to +50°C, extended operating temperature* -40°C to +80°C, storage temperature -40 to +90°C.





24 V direction indicator ECU **5DS 009 552-017**

* Simulation of the bulb is deactivated for thermal reasons if the temperature exceeds 50°C.

Manual "quick link" pliers

Special quick link crimping pliers, suitable for the two-pin "Click-in" contact system

Quick link pliers **8PE 008 932-001**

IP PROTECTION CLASSES EXPLAINED

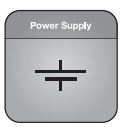
The protection classes

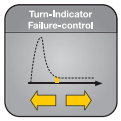
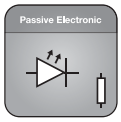
What does IP protection category mean?
IP stands for International Protection. The IP protection categories are determined according to DIN 40 050, Part 9. The purpose of the standard is to provide an exact definition of the electrical equipment of vehicles against the ingress of solid foreign objects including dust, and against the ingress of water. The different degrees of protection important for signalling systems are explained below.

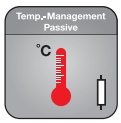
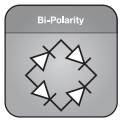
Degree of protection IP 5K4K
Dust may only penetrate to such an extent that function and safety are not impaired. Water that is sprayed from every direction at increased pressure against the housing must not have any damaging effect: water pressure approx. 4 bar.

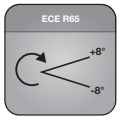
Protection class IP 9K
Water that is directed from high-pressure / steam-cleaning equipment onto the housing must not have any damaging effect: water pressure approx. 80 – 100 bar.

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.

CHARACTERISTICS	DESCRIPTION	COMMENTS
Power consumption of LED lights	**Advantages of the LED:** Generally, LED lights need less power than bulb lighting. Savings of up to 90 % are possible, which also helps to reduce CO_2.	
Vehicle electrical system voltage 	Defines the power supply for the lamp. This can be 12 V, 24 V or a flexible voltage range for Multivolt (8 – 33 V).	Multivolt is the most flexible: Requires fewer versions, but has more electronic circuit components and is therefore more expensive.

CHARACTERISTICS	DESCRIPTION	COMMENTS
Dust and water protection IP 	International Protection (IP) according to DIN 40050 Part 9. Specific definition for road vehicles. 5K = Dust protected 6K= Dustproof 9K = Water resistance during high-pressure/ steam cleaning.	The higher the protective class, the better the protection against penetrating media. IP 67 maximum value → Completely sealed against dust and water.
	Resistant to high-pressure jet cleaners	
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 fulfilled for LED lights. This requirement is fulfilled by means of 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**  **Passive**	Basically, two different circuits are possible for LED lamps: **Active:** LED current regulation through active electronics. **Passive:** Setting a specific voltage range for the LED by means of a series resistor.	**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:** Cost-effective solution without complex protection measures. Shorter LED design life in case of failure. No EMC approval required.

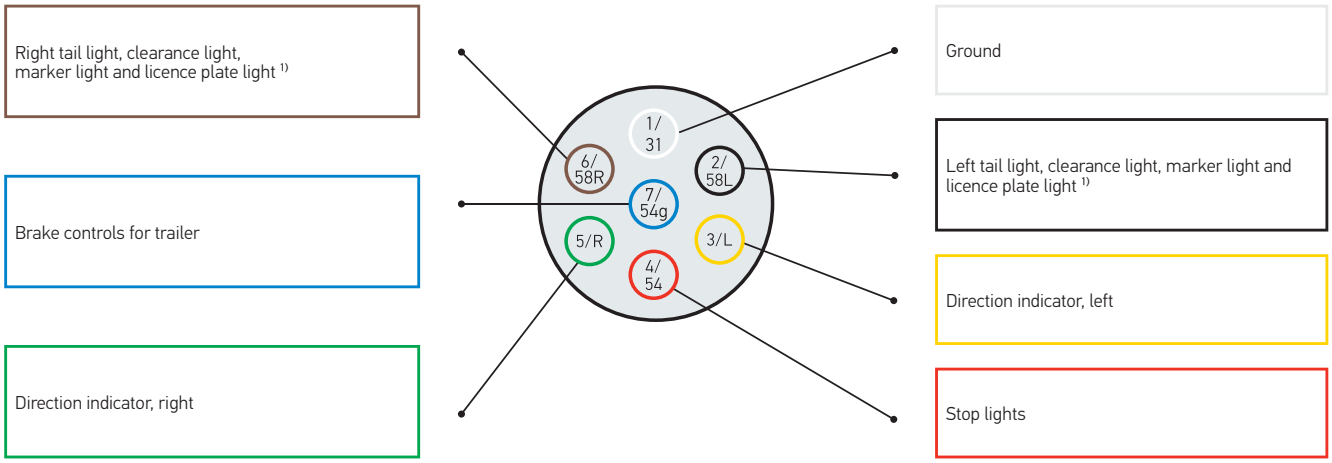
CHARACTERISTICS	DESCRIPTION	COMMENTS
Thermal management  **Active**	**Active:** Electronic power control of the LED in case of impermissible high ambient temperatures. This ensures the LEDs are protected against destruction caused by overheating.	**Active:** More development overheads with active thermal management and higher parts prices ensure optimal conditions for maximum service 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.
Bi-polarity of the light 	Even if the connecting cable is attached with reverse polarity, the LED functions fully.	The semiconductor in an LED must always be operated with the correct polarity. Inverse polarity damages the LED, so that LED lights are generally equipped with reverse polarity protection (diode). This function only works when "+" and "-" are correctly connected, though. If a lamp has a bi-polar circuit, the functioning is independent 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.
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 → Faulty 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.
Short-circuit protected 	Protected against short circuit by means of an amp fuse	

CHARACTERISTICS	DESCRIPTION	COMMENTS
Polarity reversal protection 	Even if the connecting cable is connected the wrong way round, there is still no danger for the electronics.	The semiconductor in an LED must always be operated with the correct polarity. Inverse polarity damages the LED, so that LED lights are generally equipped with reverse polarity protection (diode). This function only works when "+" and "-" are correctly connected, though. If a lamp has a bi-polar circuit, the functioning is independent 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.
ECE-R65 	Defines the light distribution, light values and colour location of beacons that are to be achieved.	Only beacons that fulfil ECE-R65 can be used on public roads.
Beacon failure check (DIN 14630 – Blue) 	Beacons for preferential road use.	A function monitoring system must be provided.
Approval for transport of dangerous goods 	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).	Generally required for truck and trailer lighting. Precondition for approval: damage of the light source must not cause explosive media to ignite.
GMD 	Shock-resistant lens material made of Grilamid.	

CHARACTERISTICS	DESCRIPTION	COMMENTS
Electromagnetic compatibility 	Electromagnetic compatibility (EMC) tested and EU type approval issued.	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. **Examples:** Interference in the radio loudspeaker, impairment of ABS electronics, or failure of the lamp due to sensitivity to interference.
Automotive Electronic Council 	Components qualified according to automotive standard.	Electronic components (LEDs, diodes, ...) are more robust and safer than electronic components for industry thanks to automotive specifications. 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.
Automotive Safety Integrity Level 	Product electronics are developed using the latest methods and according to the ISO 26262 safety guidelines.	This has been considered the standard for technology since July 2011 and is taken account of in product development.
ECE 	Product is licensed according to ECE guidelines.	
Special Lens System 	Extremely wide light dispersion for illuminating dark items behind and alongside the vehicle.	

PLUG CONNECTIONS AND PIN ASSIGNMENTS

7-PIN PLUG SYSTEM COMPLIANT WITH ISO 11 85 (N-TYPE)



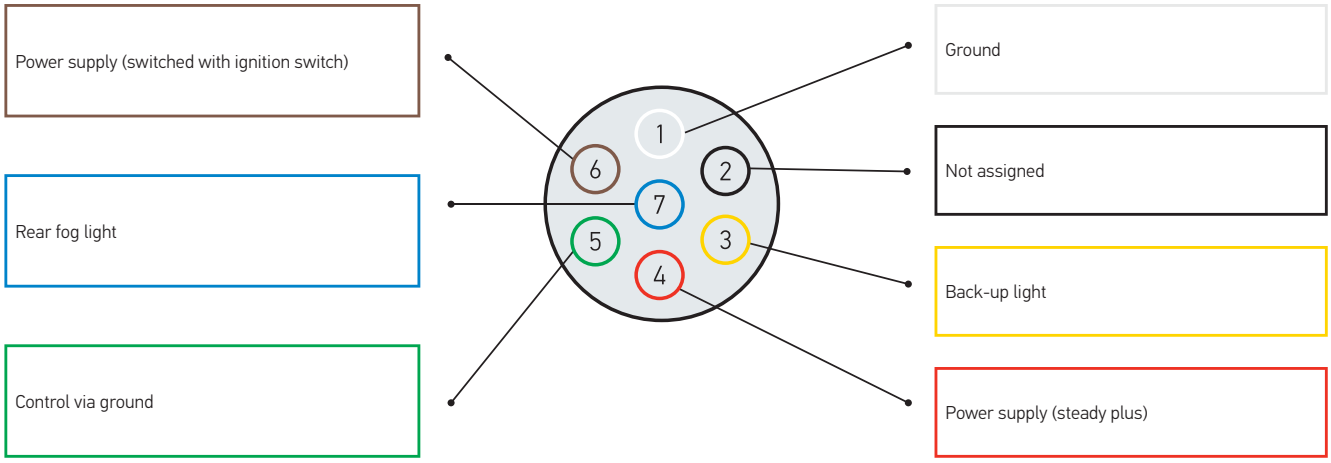
Assignment diagram – trailer plug fitting 24 V/7-pin N type ISO 1185
31 contact/socket – pin; 31 contact/plug – sleeve

Contact assignment for normal plug-type connectors according to ISO 1185, 24 V, 7-pin N

Contact no.	Function	Cable cross-section	Colour of wire insulation
1/31	Ground	2.5 mm²	
2/58L	Left tail light, clearance light, sidelight and licence plate lighting 1)	1.5 mm²	
3/L	Direction indicator, left	1.5 mm²	
4/54	Stop lights	1.5 mm²	
5/R	Indicator, right	1.5 mm²	
6/58R	Right tail light, clearance light, sidelight and licence plate lighting 1)	1.5 mm²	
7/54g	Trailer brake controller	1.5 mm²	

1) The licence plate lighting must be connected in such a way that none of its lamps are connected to the two contacts 2 and 6.

7-PIN PLUG SYSTEM COMPLIANT WITH ISO 37 31 (S-TYPE)

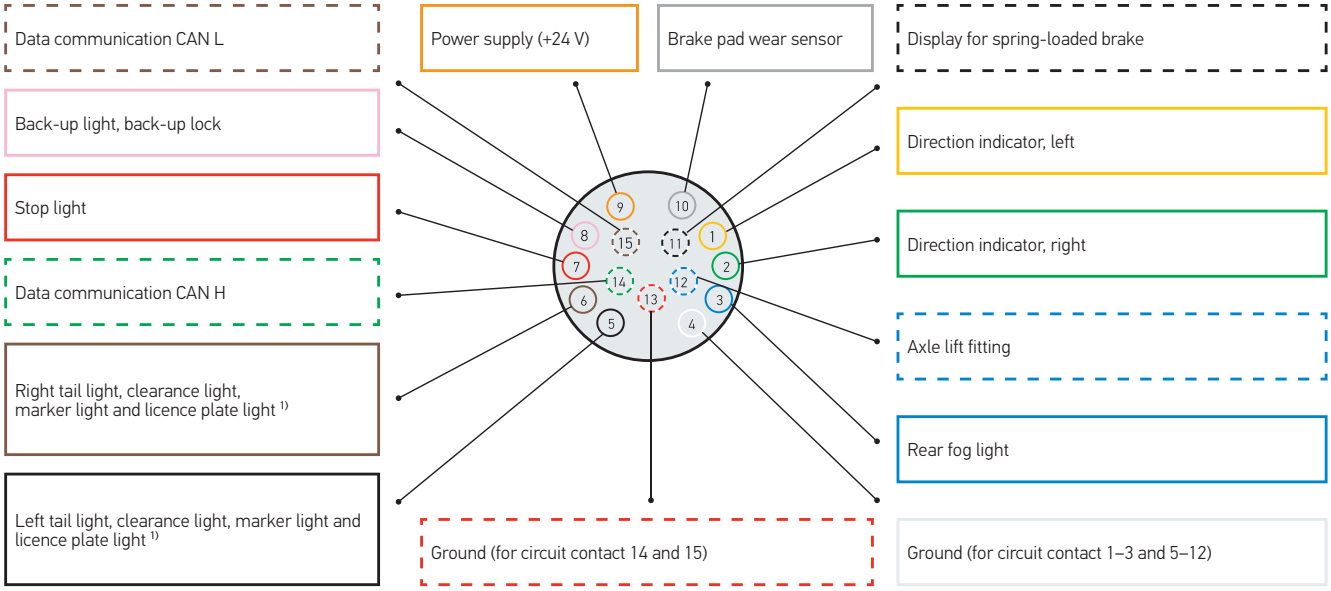


Assignment diagram – trailer plug fitting 24 V/7-pin S type ISO 3731
31 contact/socket – sleeve; 31 contact / plug – pin

Contact assignment for auxiliary plug-type connectors according to ISO 3731, 24 V, 7-pin S

Contact no.	Function	Cable cross-section	Colour of wire insulation
1	Ground	2.5 mm²	
2	Reserved for future applications	1.5 mm²	
3	Back-up light	1.5 mm²	
4	Power supply (steady plus)	2.5 mm²	
5	Control via ground	1.5 mm²	
6	Power supply via the ignition switch	2.5 mm²	
7	Rear fog light	1.5 mm²	

TRAILER PLUG FITTING, 15-PIN, COMPLIANT WITH ISO 12098



Contact assignment for plug connectors according to ISO 12098, 24 V, 15-pin

Contact no.	Function	Ø cable	Colour of wire insulation
1	Direction indicator, left	1.5 mm²	
2	Direction indicator, right	1.5 mm²	
3	Rear fog light	1.5 mm²	
4	Ground for contacts 1–3 and 5–12	2.5 mm²	
5	Left tail light, clearance light, sidelight and licence plate lighting 1)	1.5 mm²	
6	Right tail light, clearance light, sidelight and licence plate lighting 1)	1.5 mm²	
7	Stop lights	1.5 mm²	
8	Back-up light	1.5 mm²	
9	Permanent power supply (24 V)	2.5 mm²	
10	Sensor for brake pad wear indication	1.5 mm²	
11	Display for spring-loaded brake	1.5 mm²	
12	Axle lift	1.5 mm²	
13	Ground for data cables 14 and 15	2.5 mm²	
14	CAN H	1.5 mm²	
15	CAN L	1.5 mm²	

1) The licence plate lighting must be connected in such a way that none of its lamps are connected to the two contacts 5 and 6.

LEGAL REGULATIONS

For rear lighting according to ECE regulation 48

Vehicle classes:
O_1 trailers up to 0.75 t
O_2 trailers over 0.75 t up to 3.5 t
O_3 trailers over 3.5 t up to 10 t
O_4 trailers over 10 t

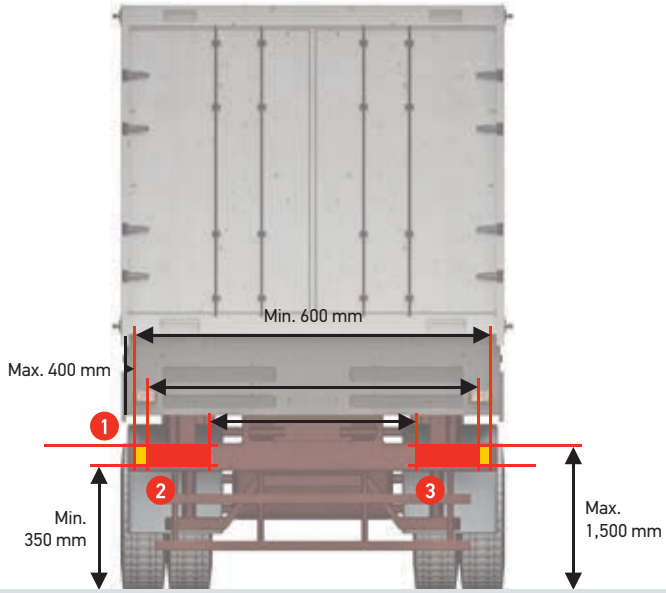
HELLA shall assume no liability for potential deviations from the equipment requirements documented here, as experience shows that statutory regulations are modified at irregular intervals.

Last updated: late 2013 (ECE-R48 series 06 revision 9)

1

Rear direction indicator (indicator) ECE-R48 section 6.5 and ECE-R6	
Attachment ECE R48 Section 6.5.1	Prescribed for all trailers. Category 2a or 2b.
Number ECE R48 Section 6.5.2	2 units, additional 2 optional on O_2, O_3 and O_4 vehicles.
Colour ECE R48 Section 5.15	Amber
Attachment width ECE R48 Section 6.5.4.1	Max. 400 mm from the outermost point of the vehicle width. This does not apply to the additional indicators. Min. 600 mm between the two indicators, but min. 400 mm for vehicle widths < 1,300 mm.
Mounting Height ECE R48 Section 6.5.4.2	Min. 350 mm, max. 1,500 mm (exception: 2,100 mm, only if the vehicle geometry does not allow for an attachment of less than 1,500 mm and 2 additional indicators are not attached). Attachment height of the additional indicators: min. 600 mm above the prescribed indicators.
Geometric angle of visibility ECE R48 Section 6.5.5	Horizontal 45° inside to 80° outside. Vertical ± 15°, but for an attachment height of < 750 mm also 5° downwards. Optionally with an attachment height of 2,100 mm also 5° upwards.
Electrical Circuit ECE R48 Section 6.5.7	It must light up independently of the other lights. They are to be switched on and off on the same side of the vehicle by the same operating device. They must flash synchronously.
Switch-On Control ECE R48 Section 6.5.8	Prescribed. The function control is prescribed for the front and rear direction indicators. Vehicles which are equipped to pull a trailer must feature a special function control for the direction indicator of the trailer. This is unless every malfunction in the direction indicator of the convoy can be signalised via the control unit of the pulling unit. The function control is not necessary for the two additional direction indicators on trailers.

ECE-R6 (6.1)
Category 2a (constant) = luminous intensity min. 50 cd, single light max. 500 cd, type "D" light max. 250 cd
Category 2b (variable) = luminous intensity min. 50 cd, single light max. 1,000 cd, type "D" light max. 500 cd



2

Tail light
ECE-R48 section 6.10 and ECE-R7

Attachment ECE R48 Section 6.10.1	Prescribed for all trailers. Category R, R1 or R2.
Number ECE R48 Section 6.10.2	2 units, further 2 optionally possible for O_2, O_3 and O_4 vehicles if clearance lights are not attached.
Colour ECE R48 Section 5.15	Red
Attachment width ECE R48 Section 6.10.4.1	Max. 400 mm from the outermost point of the vehicle width. This does not apply to the additional tail lights. Min. 600 mm between the two tail lights, but min. 400 mm for vehicle widths < 1,300 mm.
Mounting Height ECE R48 Section 6.10.4.2	Min. 350 mm, max. 1,500 mm (exception: 2,100 mm, only if the vehicle geometry does not allow for an attachment of less than 1,500 mm and 2 additional tail lights are not attached). Attachment height of the additional indicators: min. 600 mm above the prescribed tail lights.
Geometric angle of visibility ECE R48 Section 6.10.5	Horizontal 45° inside to 80° outside. Vertical ± 15°, but for an attachment height of < 750 mm also 5° downwards. Optionally with an attachment height of 2,100 mm also 5° upwards.
Electrical Circuit ECE R48 Section 6.10.7	Must be designed so that the sidelight, tail light, side marker lights and licence plate lights can only be switched on and off simultaneously.
Switch-On Control ECE R48 Section 6.10.8	Prescribed. It must be combined with the control unit for the sidelights.
Other regulations ECE R48 Section 6.10.9	Except if clearance lights are attached, 2 additional sidelights and tail lights can be attached to all trailers of the classes O_2, O_3, O_4.

ECE-R7 § 6.1
Category R, R1 (constant) = luminous intensity min. 4 cd, single light max. 17 cd, type "D" light max. 8.5 cd
Category R2 (variable) = luminous intensity min. 4 cd, single light max. 42 cd, type "D" light max. 21 cd

3

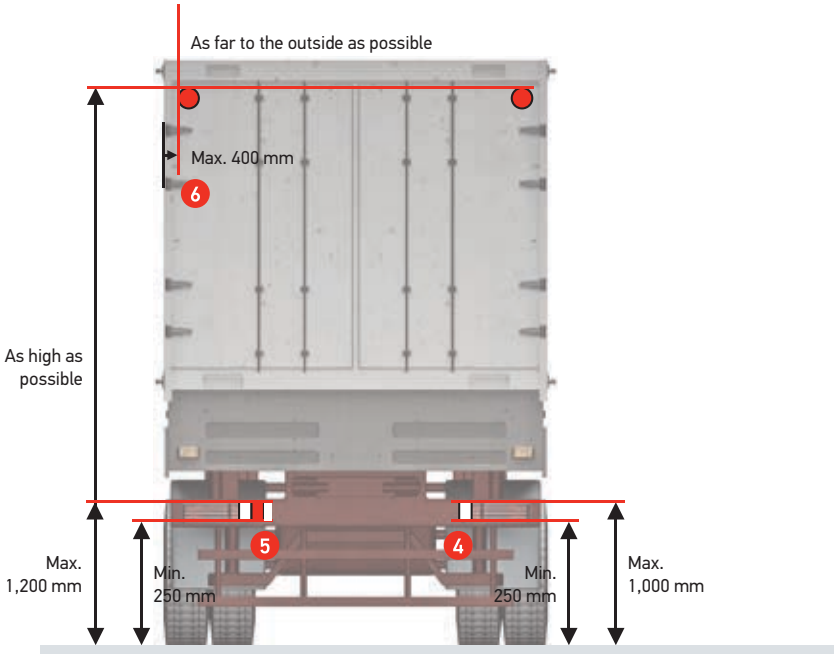
Stop light
ECE-R48 section 6.7 and ECE-R7

Attachment ECE R48 Section 6.7.1	Prescribed for all trailers. Category S1 or S2.
Number ECE R48 Section 6.7.2	2 units Except if stoplights in category S3 or S4 are attached, two additional stoplights in category S1 or S2 can be attached to vehicle classes O_2, O_3 and O_4.
Colour ECE R48 Section 5.15	Red
Attachment width ECE R48 Section 6.7.4.1	For all trailers min. 600 mm between both stoplights, but min. 400 mm for vehicle widths < 1,300 mm.
Mounting Height ECE R48 Section 6.7.4.2	Min. 350 mm, max. 1,500 mm (exception: 2,100 mm, only if the vehicle geometry does not allow for an attachment of less than 1,500 mm and 2 additional stoplights are not attached). Attachment height of the additional stoplights: min. 600 mm above the prescribed stoplights.
Geometric angle of visibility ECE R48 Section 6.7.5	Horizontal ± 45°. Vertical ± 15°, but for an attachment height of < 750 mm also 5° downwards. Optionally with an attachment height of 2,100 mm also 5° upwards.
Electrical Circuit ECE R48 Section 6.7.7	Must shine when the brake is pressed.
Switch-On Control ECE R48 Section 6.7.8	Approved. If there is one, only as a function control light in the form of a non-flashing warning light that shines in the event of a fault.
Other regulations ECE R48 Section 6.7.9	The clearance of the stoplight to the rear fog light must be ≥ 100 mm.

ECE-R7 § 6.1
Category S1 (constant) = luminous intensity min. 60 cd, single light max. 260 cd, type "D" light max. 130 cd
Category S2 (variable) = luminous intensity min. 60 cd, single light max. 730 cd, type "D" light max. 365 cd

LEGAL REGULATIONS

For rear lighting according to ECE regulation 48



4

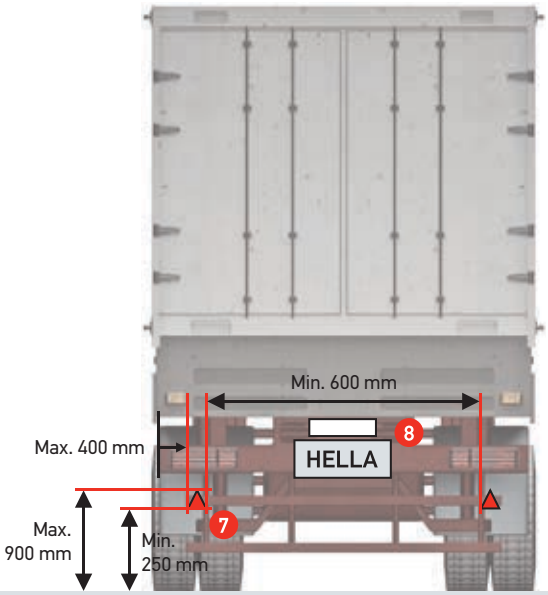
Reversing light ECE-R48 section 6.4 and ECE-R23	
Attachment ECE R48 Section 6.4.1	Prescribed for all trailers of the vehicle classes O_2, O_3 and O_4. Approved for trailers of the vehicle class O_1.
Number ECE R48 Section 6.4.2	1 unit prescribed and a second allowed for trailers with a length of < 6 m. 2 units prescribed for trailers > 6 m and 2 additional allowed.
Colour ECE R48 Section 5.15	White
Attachment width ECE R48 Section 6.4.4.1	No regulations
Mounting Height ECE R48 Section 6.4.4.2	Min. 250 mm, max. 1,200 mm.
Geometric angle of visibility ECE R48 Section 6.4.5	1 light: horizontal ± 45°. 2 lights: Horizontal 30° inside to 45° outside. Vertical 15° above, up to 5° downwards.
Electrical Circuit ECE R48 Section 6.4.7	Only activated when the reverse gear is engaged and the vehicle is in running order. The special conditions in section 6.4.7.2 apply to the optional reversing spotlights.
Switch-On Control ECE R48 Section 6.4.8	Permissible

* Installation of the two optional reversing spotlights also allowed on the vehicle side.

5

Fog-reverse lamp ECE-R48 section 6.11 and ECE-R38	
Attachment ECE R48 Section 6.11.1	Prescribed for all trailers. Category F, F1 or F2.
Number ECE R48 Section 6.11.2	1 or 2 units
Colour ECE R48 Section 5.15	Red
Attachment width ECE R48 Section 6.11.4.1	No regulations
Mounting Height ECE R48 Section 6.11.4.2	Min. 250 mm, max. 1,000 mm or if built together with another function max. 1,200 mm.
General attachment ECE R48 Section 6.11.4.1	With 1 rear fog light: left of centre = right-hand traffic, right of centre = left-hand traffic. Attachment in the middle is allowed.
Geometric angle of visibility ECE R48 Section 6.11.5	Horizontal ± 25°. Vertical ± 5°.
Electrical Circuit ECE R48 Section 6.11.7	Only switched on when the low beam, high beam or fog lights are switched on.
Switch-On Control ECE R48 Section 6.11.8	Prescribed. An independent, non-flashing control light.
Other regulations ECE R48 Section 6.11.9	The clearance to the stoplight must be > 100 mm. The rear fog light of the tractor vehicle can switch off automatically if a trailer is attached and its rear fog light is thereby switched on.

ECE-R38 § 6.1
Category F, F1 (constant) = luminous intensity min. 150 cd, max. 300 cd
Category F2 (variable) = luminous intensity min. 150 cd, max. 840 cd



7

Rear reflectors ECE-R48 section 6.15 and ECE-R3	
Attachment ECE R48 Section 6.15.1	Prescribed for all trailers.
Number ECE R48 Section 6.15.2	Min. 2 units
Colour ECE R48 Section 5.15	Red
Form ECE-R48 § 6.15	Triangular
Attachment method ECE R48 Section 6.15.3	The tip of the triangle must point upwards.
Attachment width ECE R48 Section 6.15.4.1	Max. 400 mm from the most outside point of the vehicle width, min. 600 mm between the two reflex reflectors, but min. 400 mm for vehicle widths of < 1,300 mm.
Mounting Height ECE R48 Section 6.15.4.2	Min. 250 mm, max. 900 mm, max. 1,200 mm if integrated in another light (exception.: 1,500 mm)*.
Geometric angle of visibility ECE R48 Section 6.15.5	Horizontal ± 30°. Vertical ± 15°, but for an attachment height of < 750 mm 5° downwards
Other regulations ECE R48 Section 6.15.9	The shining surface of the reflex reflector may be integrated in any other rear light.

* An exception is only possible if the vehicle geometry does not make standard attachment possible.

6

Rear contour light ECE-R48 section 6.13 and ECE-R7	
Attachment ECE R48 Section 6.13.1	Prescribed for all trailers > 2.1 m wide. Approved for trailers > 1.8 m to ≤ 2.1 m width. Category R, R1, R2, RM1 or RM2.
Number ECE R48 Section 6.13.2	2 units, further 2 clearance lights optionally possible
Colour ECE R48 Section 5.15	Red
Attachment width ECE R48 Section 6.13.4.1	As far outside as possible, max. 400 mm from the outermost point of the vehicle width.
Mounting Height ECE R48 Section 6.13.4.2	As high as possible. Optional and prescribed with the greatest possible clearance.
Geometric angle of visibility ECE R48 Section 6.13.5	Horizontal 80° outwards. Vertical 5° over and 20° below the horizontal line.
Electrical Circuit ECE R48 Section 6.13.7	Must be designed so that the sidelight, tail light, side marker lights and licence plate lights can only be switched on and off simultaneously.
Switch-On Control ECE R48 Section 6.13.8	Approved. If there is a control unit, its function must be satisfied by the prescribed control unit for the sidelights and tail lights.
Other regulations ECE R48 Section 6.13.9	The rear red and front white clearance lights may be combined in one light unit as long as the installation instructions and angle of vision ranges are satisfied. Clearance of the clearance light to the tail light min. 200 mm.

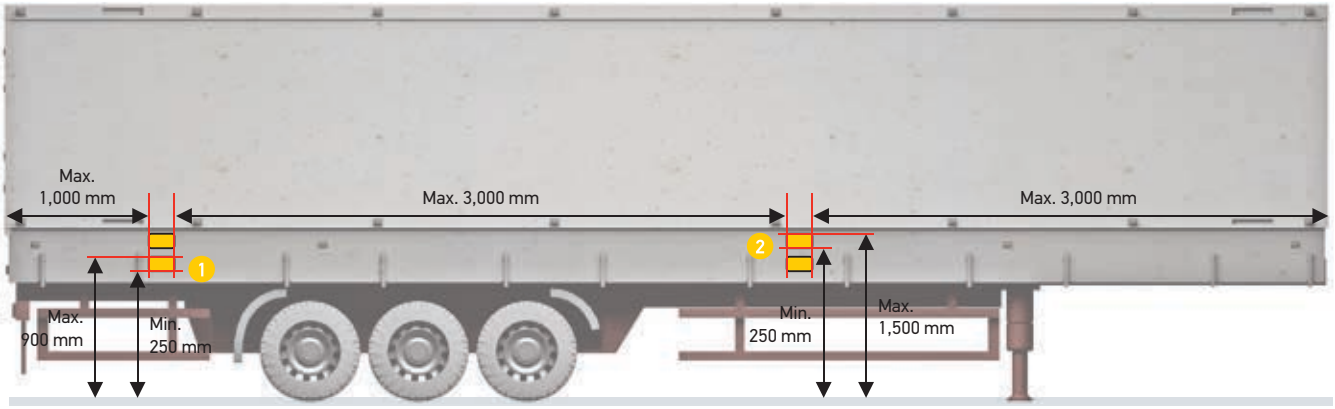
ECE-R7 § 6.1
Category R, R1, RM1 (constant) = luminous intensity min. 4 cd, single light max. 17 cd, type "D" light max. 8.5 cd
Category R2, RM2 (variable) = luminous intensity min. 4 cd, single light max. 42 cd, type "D" light max. 21 cd

8

Licence plate light ECE-R48 section 6.8 and ECE-R4	
Attachment ECE R48 Section 6.8.1	Prescribed for all trailers.
Number ECE R48 Section 6.8.2	1 or more
Colour ECE R48 Section 5.15	White
Attachment of the licence plate ECE R48 Section 6.8.3	In a way that the licence plate is illuminated.
Electrical Circuit ECE R48 Section 6.8.7	Must be designed so that the sidelight, licence plate light, tail light and side marker lights can only be switched on and off simultaneously.
Switch-On Control ECE R48 Section 6.8.8	Approved. If there is a control unit, its function must be satisfied by the prescribed control unit for the sidelights and tail lights.

LEGAL REGULATIONS

For front and side lighting pursuant to ECE regulation 48



1

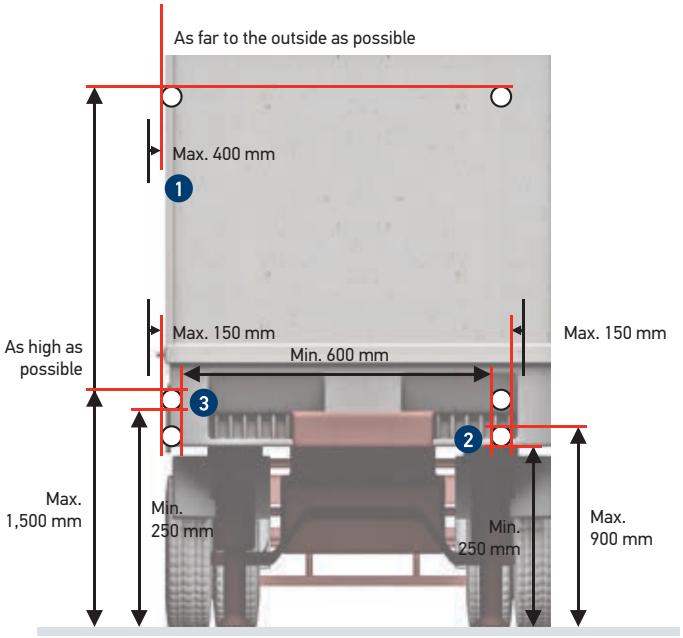
Side reflex reflector ECE-R48 § 6.17 and ECE-R3	
Attachment ECE R48 Section 6.17.1	Prescribed for all trailers.
Number ECE R48 Section 6.17.2	See lengthwise mounting
Colour ECE R48 Section 5.15	Amber
Form ECE-R48 § 6.17	Not triangular
Mounting Height ECE R48 Section 6.17.4.2	Min. 250 mm, max. 900 mm, max. 1,200 mm if integrated in another light (exception.: 1,500 mm).
Lengthwise Mounting ECE R48 Section 6.17.4.3	The reflex reflector attached at the most foremost point must be max. 3 m from the front vehicle point. Max. 3 m between the individual reflex reflectors (exception: 4 m). Max. clearance from rear 1 m. Min. 1 reflex reflector in the middle third.
Geometric angle of visibility ECE R48 Section 6.17.5	Horizontal ± 45°. Vertical ± 10°, but for an attachment height of < 750 mm 5° downwards
Other regulations ECE R48 Section 6.17.9	The shining surface of the reflex reflector may be integrated in any other side light.

2

Side marker light (SM1) ECE-R48 § 6.18 and ECE-R91	
Attachment ECE R48 Section 6.18.1	Prescribed for all trailers > 6 m long. Approved for trailers ≤ 6 m long.
Number ECE R48 Section 6.18.2	See lengthwise mounting
Colour ECE R48 Section 5.15	Front amber, rear amber (in combination with the combination rear light, red is also possible)
Mounting Height ECE R48 Section 6.18.4.2	Min. 250 mm, max. 1,500 mm (exception: 2,100 mm)*.
Lengthwise Mounting ECE R48 Section 6.18.4.3	Front-most side marker light max. 3 m from the front, rear-most side marker light max. 1 m from rear, max. 3 m between the individual side marker lights (exception: 4 m). Min. 1 in the front and / or rear third. For vehicle lengths of ≤ 6 m, alternatively min. one in the middle third.
Geometric angle of visibility ECE R48 Section 6.18.5	Horizontal ± 45°, with optional side marker lights ± 30°. Vertical ± 10°, but for an attachment height of < 750 mm 5° downwards
Electrical Circuit ECE R48 Section 6.18.7	No regulations
Switch-On Control ECE R48 Section 6.18.8	Approved. If there is a control unit, its function must be met by the prescribed control unit for the sidelights and tail lights.
Other regulations ECE R48 Section 6.18.9	The shining surface of the reflector may be integrated into the side indicator light. The max. attachment height of the reflex reflector needs to be observed here. The rear side marker lights must be amber if they flash together with the rear direction indicator.

* An exception is only possible if the vehicle geometry does not make standard attachment possible.

ECE-R91 (7.1)
Category SM1 (use in all vehicle classes) = luminous intensity min. 4 cd, max. 25 cd



1

Front contour light ECE-R48 § 6.13 and ECE-R7	
Attachment ECE R48 Section 6.13.1	Prescribed for all trailers > 2.1 m wide. Approved for trailers > 1.8 m to ≤ 2.1 m width. Category A or AM.
Number ECE R48 Section 6.13.2	2 units, 2 additional units allowed
Colour ECE R48 Section 5.15	White
Attachment width ECE R48 Section 6.13.4.1	Max. 400 mm from the outermost point of the vehicle width.
Mounting Height ECE R48 Section 6.13.4.2	As high as possible.
Geometric angle of visibility ECE R48 Section 6.13.5	Horizontal 80° to the outside, vertical 5° over and 20° below the horizontal plane.
Electrical Circuit ECE R48 Section 6.13.7	Must be designed so that the sidelight, tail light, side marker lights and licence plate lights can only be switched on and off simultaneously.
Switch-On Control ECE R48 Section 6.13.8	Approved. If there is a control unit, its function must be satisfied by the prescribed control unit for the sidelights and tail lights.
Other regulations ECE R48 Section 6.13.9	The front white and rear contour lights may be combined in one light unit as long as the installation instructions and angle of vision ranges are satisfied. Clearance from clearance light to sidelight > 200 mm.

ECE R7 Section 6.1.1
Category A, AM = luminous intensity min. 4 cd, single light max. 140 cd, type "D" light max. 70 cd

2

Front reflex reflector ECE-R48 § 6.16 and ECE-R3	
Attachment ECE R48 Section 6.16.1	Prescribed for all trailers.
Number ECE R48 Section 6.16.2	Min. 2 units, further 2 optional
Colour ECE R48 Section 5.15	White/colourless
Form ECE-R48 § 6.16	Not triangular
Attachment width ECE R48 Section 6.16.4.1	Max. 150 mm, min. 600 mm between both reflex reflectors, but min. 400 mm for vehicle widths < 1,300 mm.
Mounting Height ECE R48 Section 6.16.4.2	Min. 250 mm, max. 900 mm (exception: 1,500 mm).
Geometric angle of visibility ECE R48 Section 6.16.5	Horizontal 10° inside and 30° outside. Additional reflex reflectors can help with the horizontal values. Vertical ± 10°, but for an attachment height of < 750 mm 5° downwards.
Other regulations ECE R48 Section 6.16.9	The shining surface of the reflex reflector may be integrated in any other front light.

3

Front sidelight ECE-R48 § 6.9 and ECE-R7	
Attachment ECE R48 Section 6.9.1	Prescribed for all trailers > 1.6 m wide. Approved for trailers ≤ 1.6 m wide.
Number ECE R48 Section 6.9.2	2 pcs.
Colour ECE R48 Section 5.15	White
Attachment width ECE R48 Section 6.9.4.1	Max. 150 mm from the outermost point of the vehicle width. Min. 600 mm between both sidelights, but min. 400 mm for vehicle widths < 1,300 mm.
Mounting Height ECE R48 Section 6.9.4.2	Min. 250 mm, max. 1,500 mm (exception: 2,100 mm only for trailers in classes O_1 and O_2 or if max. 1,500 mm is not possible for other trailers).
Geometric angle of visibility ECE R48 Section 6.9.5	Horizontal 5° inwards and 80° outwards. Vertical ± 15°, but for an attachment height of < 750 mm also 5° downwards.
Electrical Circuit ECE R48 Section 6.9.7	Must be designed so that the sidelight, tail light, side marker lights and licence plate lights can only be switched on and off simultaneously. Can be switched off when indicating.
Switch-On Control ECE R48 Section 6.9.8	Prescribed. The control light may not flash. Not necessary if the lighting equipment in the dashboard can only be switched on at the same time as the sidelights.

AN OVERVIEW OF THE LED HYBRID REAR COMBINATION LAMPS AND CONNECTOR SYSTEMS

MULTI-FUNCTION LIGHT

Modular principle of the multi-function lights

Multi-function light with rubber arm

Multi-function light with side marker light

ROUND LIGHT

Hybrid
Stop light, direction indicator, tail light

LED
Stop light, direction indicator, tail light

LED
Fog light, reversing light

SYSTEMATIC COLOURS

Straightforward connection of all components with process reliability, thanks to the colour system from HELLA.

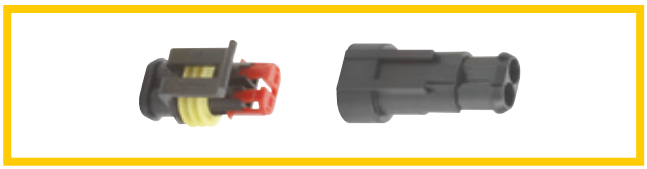
15-pin EasyConn connector
The 15-pin EasyConn connector housing and female connector housing connect the front adapter, the main supply cable, and the rear adapter to one another.

15-pin EasyConn connector II
The proven 15-pin plug connectors are also available as a connector set, through which customer-specific requests as well as repairs can be easily implemented.

7-pin EasyConn connector
Rear lamps are connected to the EasyConn system using the 7-pin connector housing and female connector housing.

7-pin DIN bayonet connector
Our round light system as well as third-party products can be connected via a 7-pin DIN bayonet connector.

2-pin EasyConn connector*
The 2-pin EasyConn connector housing and female connector housing make it possible to connect e.g. SMLR, position lights, and clearance lights as well as 2-pin auxiliary functions.



2-pin SUPERSEAL connector
With the 2-pin SUPERSEAL connection, customers can fall back on another reliable product to connect single-function lights.

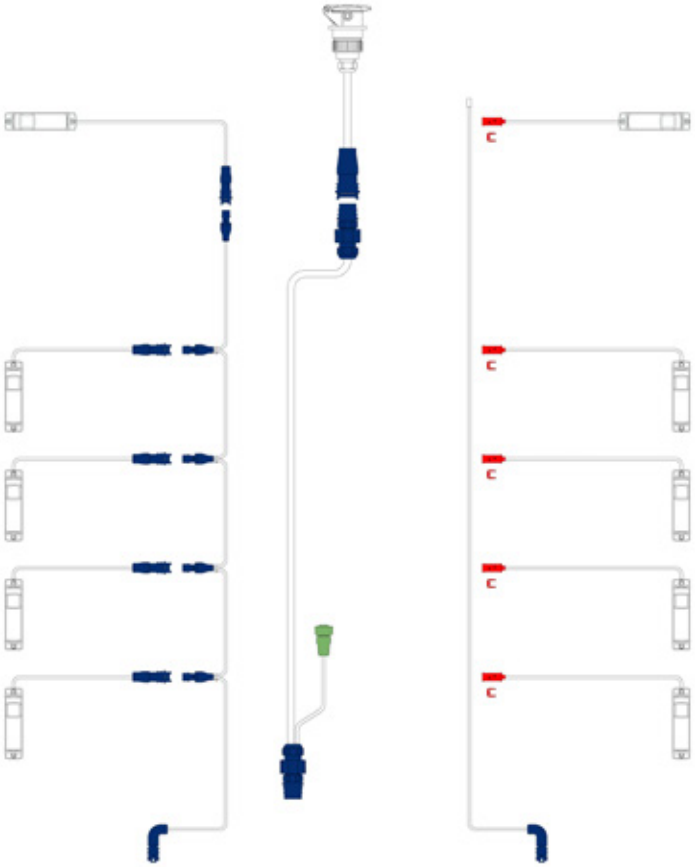
Quick link
Our quick link press connection: flexible and secure mounting of single-function lights on our HELLA flat conductor.

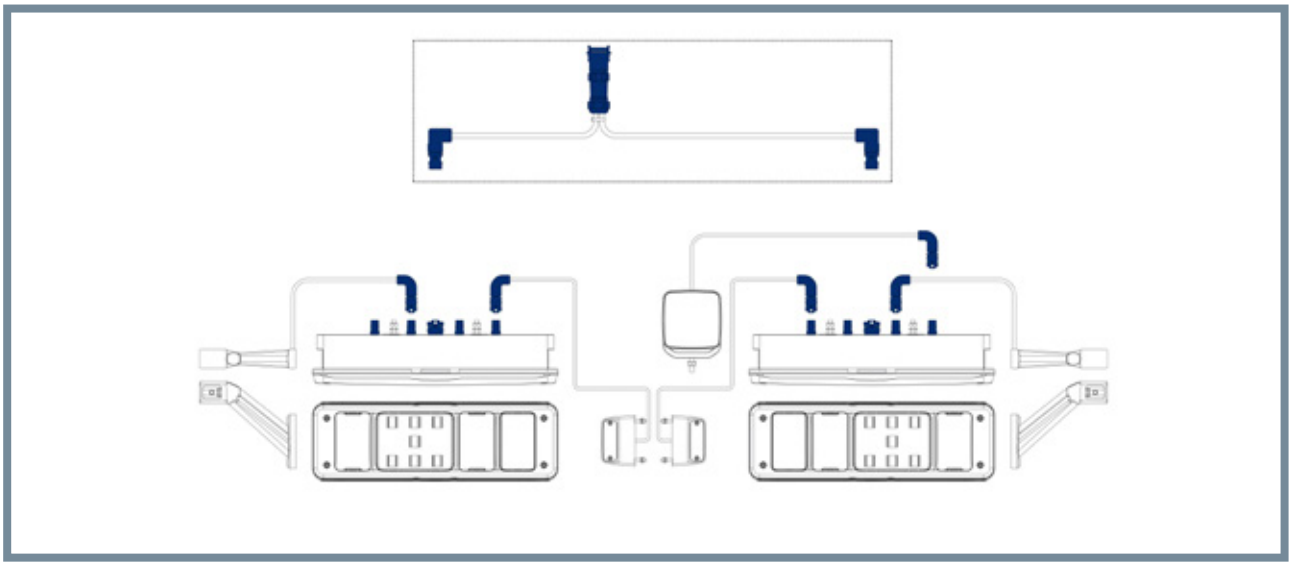
* Version also available in angled design

EasyConn NextGeneration system

Multi-function light concept

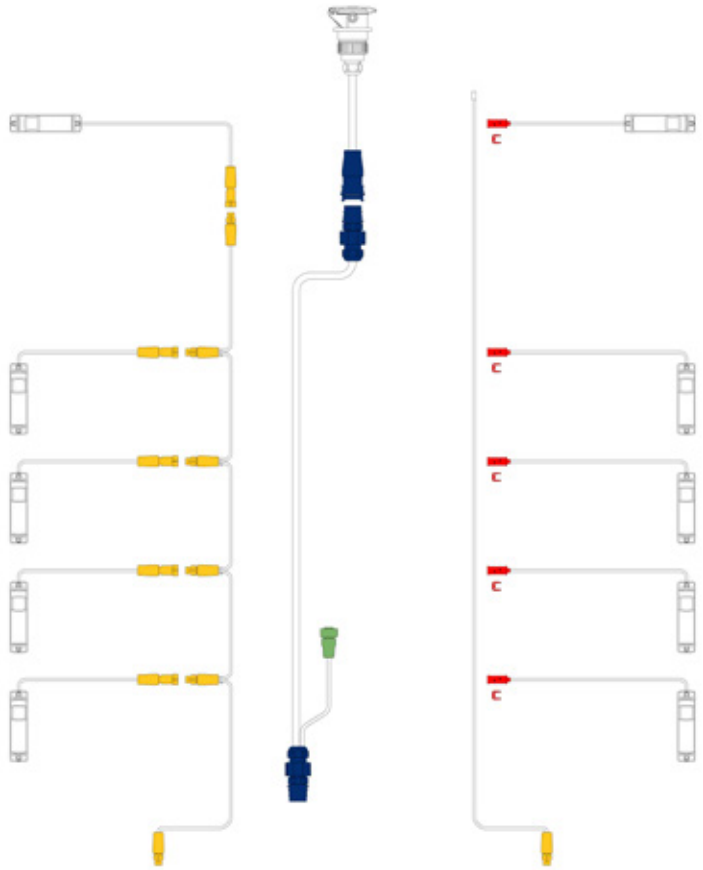
EasyConn
SUPERSEAL
DIN bayonet
Quick link

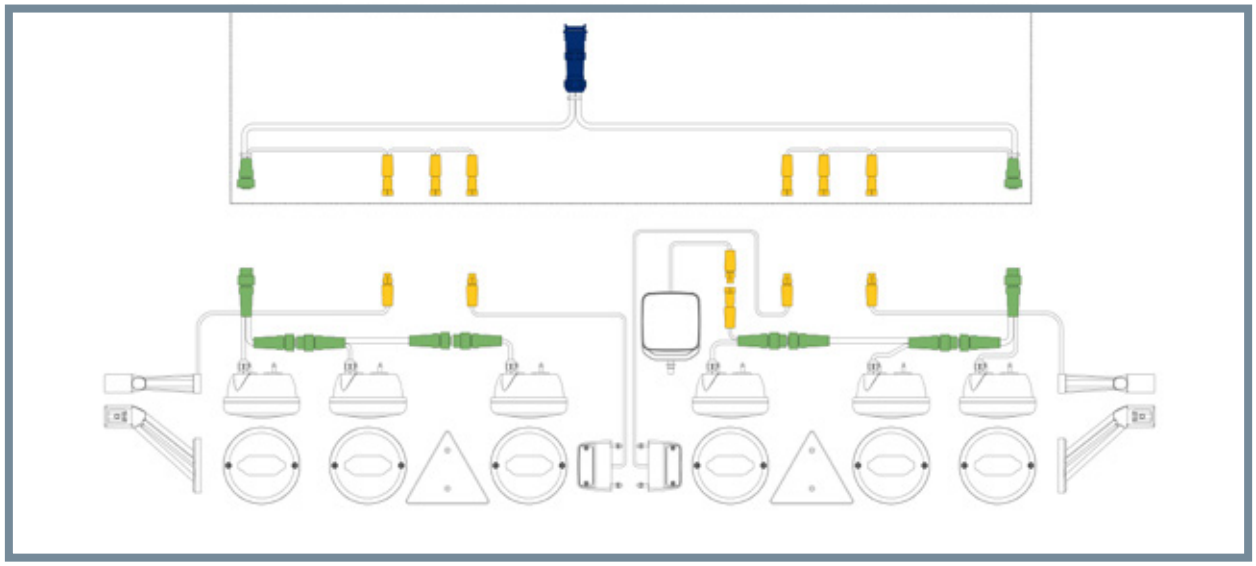




SUPERSEAL DIN bayonet system

Round light concept





FREE INFORMATION, APPS AND SERVICES ON THE INTERNET

Website trailer
Informative, compact, interactive. Here, you can find everything you need to know about products and technologies for commercial use.

www.hella.com/trailer

ELIVER – the light comparison tool
This online tool allows you to compare many HELLA worklights and beacons on the basis of their illumination in a realistic environment.

www.hella.com/eliver

The HELLA Trailer Tool: INTERACTIVE CONFIGURATION

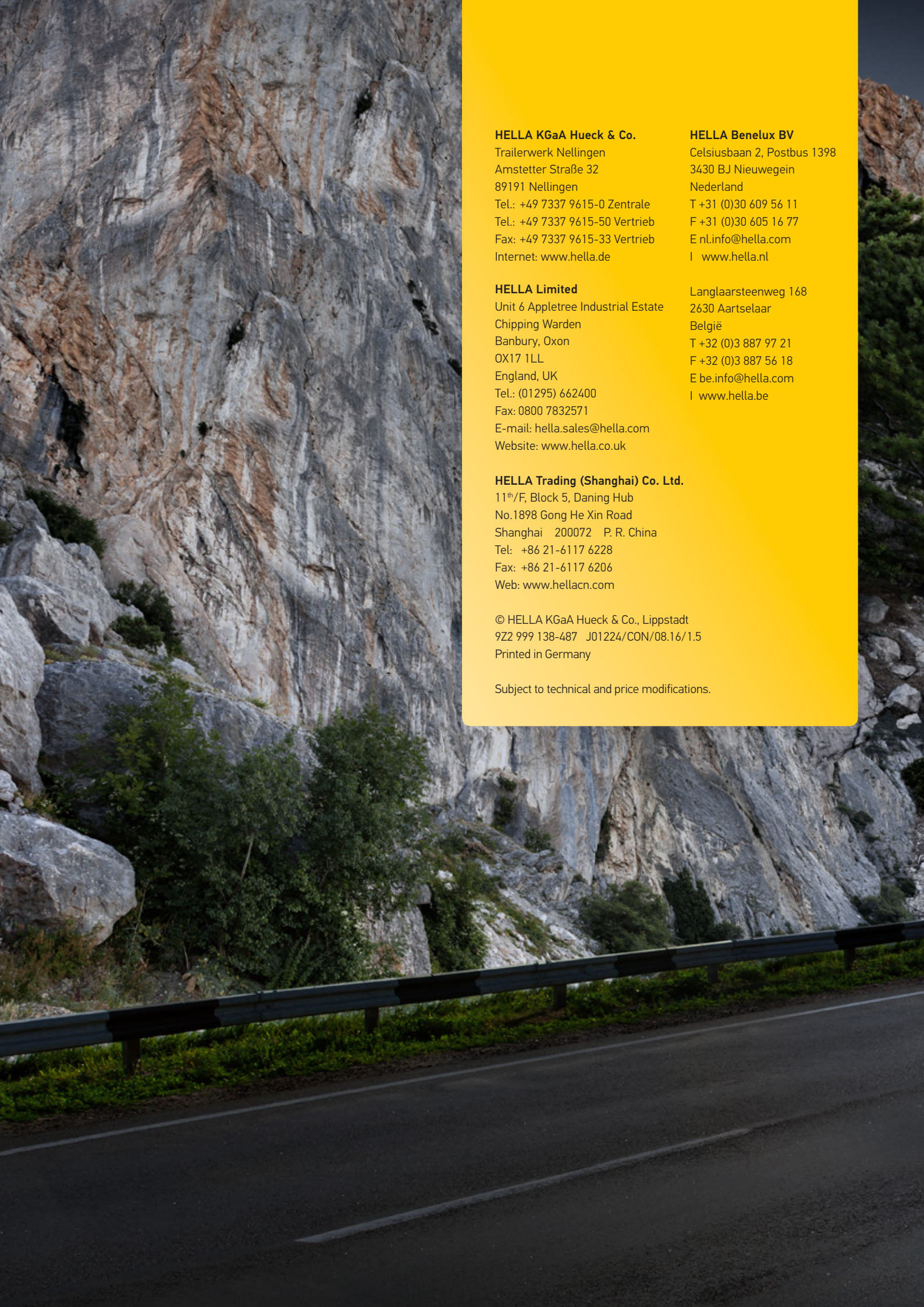
The Trailer Tool from HELLA provides a wide range of information on lighting and wiring systems. The configurator also makes system selection considerably easier.

In only 3 steps, the HELLA trailer tool takes you from the light to the technology selection and finally to your individual system proposal.

The configurator can be used to select a corresponding rear lamp type according to whether a trailer is to be equipped or converted. In this example, two lamp types are available to choose from – rectangular and round lamps. Combined with the corresponding light source (bulb, hybrid, or full LED) and wiring system (EasyConn Next Generation, SUPERSEAL DIN bayonet system), the user is provided with a corresponding system proposal. The matching accessories are also listed.

The user can learn more about the wiring and lighting products from product information, animated videos, and mounting instructions.

Also available on your mobile device:
www.hella.com/trailertool



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