



BRIEF INFORMATION

Modular LED Hybrid Trailer Lamp 2VP 340 960-... / 2VP 340 961-...

- Modular multi-function rear light 24 V
- Full LED version, long service life with low power consumption

PRODUCT FEATURES

Function:

- Tail light/brake light always in LED
- All other functions with bulb or LED technology possible
- Replaceable lens
(regardless of light source)

Innovation:

- Modularity of illuminants and housing components
("Modular principle")

Aftermarket relevance

- Replacement /conversion of the individual parts and modules
("Up- & Downgrade" of the illuminants) as required and
customer application.

Contribution to environmental protection, resource conservation and sustainability!

- LED indirectly reduces CO₂ emission
- Only defective parts are replaced and are individually
recyclable.

Polarity reversal protection:

- In case of incorrect contacting it is ensured that the light is not
damaged.

Indicator failure check:

- Due to the HELLA patented system for the monitoring of the
indicator lights, the lamp can be used in compliance with the
requirements of ECE-R 48.

LED LIGHT TECHNOLOGY

As the innovation leader in the automotive original equipment, HELLA sets standards by means of LED light technology.

Overview of the advantages of modern LED light technology:

Extremely of low power consumption

Due to the combination of efficient light-emitting diodes (LEDs) and precision optic, HELLA rear lights achieve the statutory light distribution – with 67 % less power compared to lamps with bulbs!

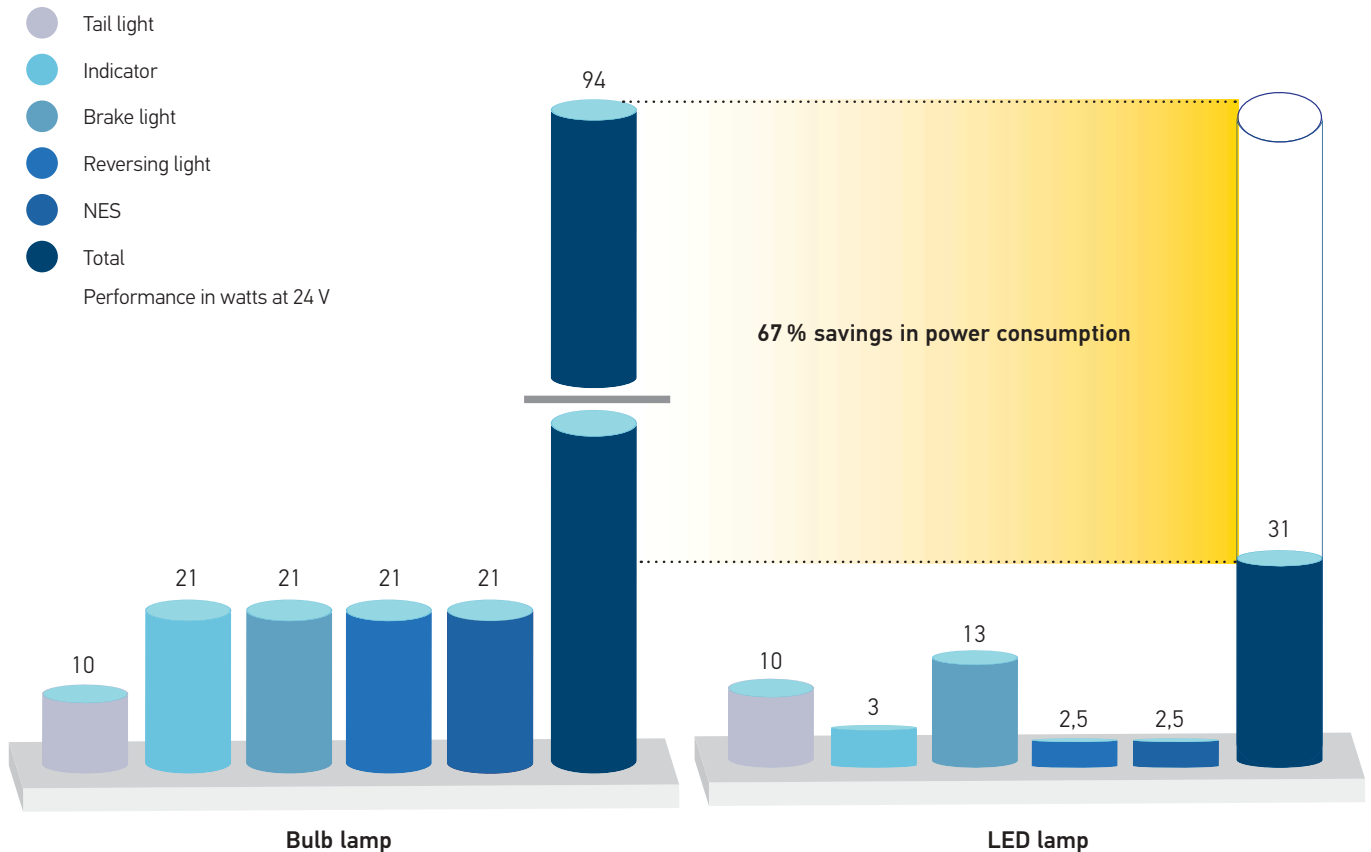
No bulb changing, no maintenance and extremely long service life due to competent thermal management

All components are coordinated with regard to temperature-optimisation to prolong the service life of the light. This avoids an overload of the LEDs at extremely high ambient temperatures. Due to the use of high-quality LEDs and good thermal management, these products are designed to last as long as the service life of a vehicle and are hence a convincing, economical and environmentally friendly "Fit and Forget" solution.

Indicator failure check

The indicator light function is monitored by the electronic system. It generates a current impulse for the indicator light input, which is generated at a defined time. For each indicator impulse, the upstream indicator encoder in the on-board vehicle network requests this impulse after 100 ms – for at least 20 ms. If components or LEDs of the indicator light function are defective, this is detected by the electronic system: The impulse is not given. Therefore, the driver is informed of the indicator failure in any case. The serves for the statutory indicator failure detection (acc. to ECE regulation). The following ballast units cover almost any application case: 5DS 009 552-001/-011.

PERFORMANCE COMPARISON BULB AND LED LIGHT

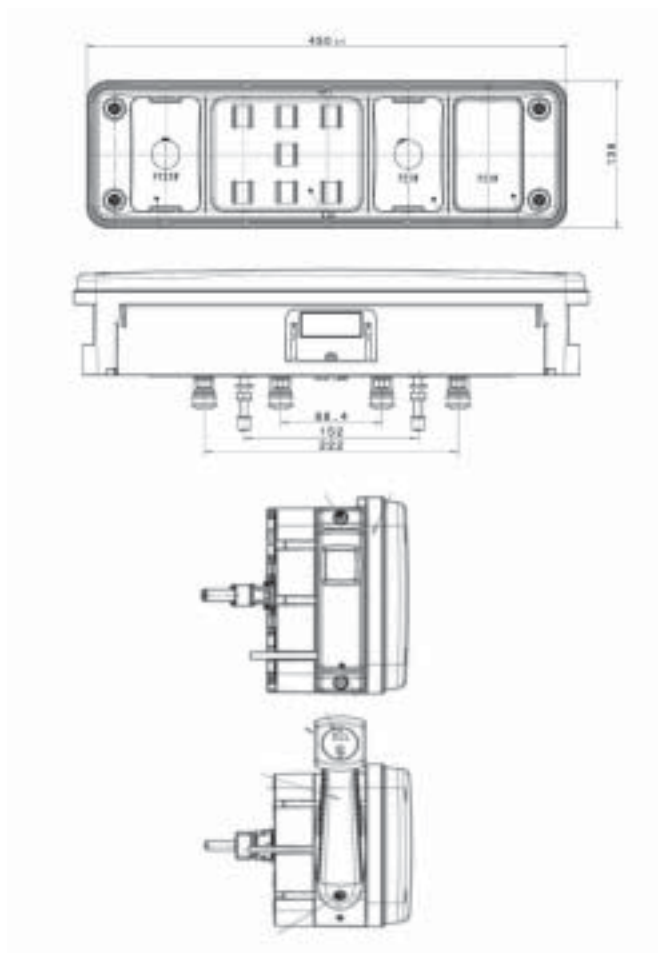


TECHNICAL DETAILS

Technical data	
Type approval	ECE GGVS / ADR: only full LED 2VP 340 960- ...
Functions	Tail, brake light 7 red LEDs Indicator light 7 yellow LEDs Reversing light 6 white LEDs Rear fog light 7 red LEDs
Dimensions (L x W x H)	450 x 138 x 93.6 mm
Specification	HELLA standard 67101 Class 5.1 Trailer
Power consumption at 24 V	Tail light: 10 W = 0.42 A Brake light: 13 W = 0.54 A Indicator light: 3 W = 0.13 A Reversing light: 2.5 W = 0.10 A Rear fog light: 2.5 W = 0.10 A Clearance light: 1.2 W = 0.05 A Side marker rear reflector light: 1 W = 0.04 A
Operating temperature	-40°C – approx. 50°C
IP protection class	for light IP 5K4K for LED modules IP 6K9K
EMC approval for LED modules with active electronics	
Reversing light:	Ⓜ 035912
Indicator light:	Ⓜ 035683
Plug connection	7-pole EasyConn plug connection left hand light yellow right hand light blue
3 X 2-pole connector	for the connection of the reversing, clearance, side marker and number plate light functions
1 X 2-pole connector	optionally allocable As standard: Tail light
Fixing	2 x hexagon screw M 8 x 30 caulked in the housing With spring washer and hexagon nut
Service life	30,000 h*

* depending on the ambient temperature

Technical drawing



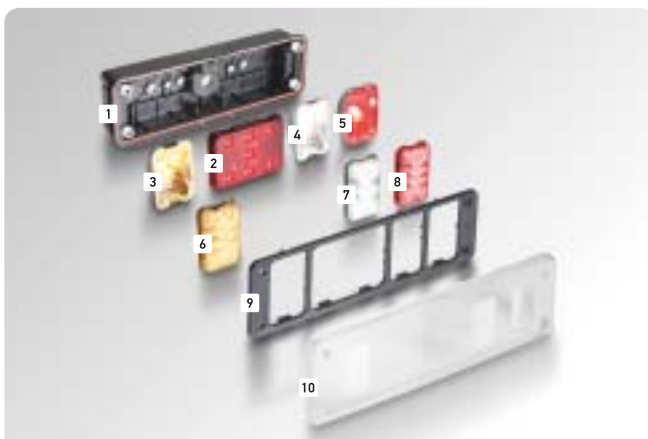
Note:

The braking, stop, rear fog, side marking and clearance light functions include passive electronics with series resistors. This means that no EMC test is required here. The light (also the complete LED version) is designed so that, according to the current condition, no error message is displayed in the vehicle's electrical system. The individual LED functions of the lamp must only be operated with a 3 A fuse. Operation of the light with AC voltage or synchronised DC voltage is not permitted.

PROGRAM OVERVIEW

Part number	Variants				Functions						
	Full LED	Hybrid	Left	Right	Tail reflector-Triangle reflector-Retro-reflector-Brake light	Indicator light	Rear fog light	Reversing light	Clearance light	Side marker light	
2VP 340 960-011	X	-	X	-	LED	LED	LED	LED	-	-	
2VP 340 960-021	X	-	-	X	LED	LED	LED	LED	-	-	
2VP 340 960-111	X	-	X	-	LED	LED	LED	LED	LED	-	
2VP 340 960-121	X	-	-	X	LED	LED	LED	LED	LED	-	
2VP 340 961-011	-	X	X	-	LED	Bulb	Bulb	Bulb	-	-	
2VP 340 961-021	-	X	-	X	LED	Bulb	Bulb	Bulb	-	-	
2VP 340 961-031	-	X	X	-	LED	Bulb	LED	Bulb	-	-	
2VP 340 961-041	-	X	-	X	LED	Bulb	LED	Bulb	-	-	
2VP 340 961-111	-	X	X	-	LED	Bulb	Bulb	Bulb	LED	-	
2VP 340 961-121	-	X	-	X	LED	Bulb	Bulb	Bulb	LED	-	
2VP 340 961-131	-	X	X	-	LED	Bulb	LED	Bulb	LED	-	
2VP 340 961-141	-	X	-	X	LED	Bulb	LED	Bulb	LED	-	
2VP 340 961-151	-	X	X	-	LED	Bulb	LED	LED	LED	-	
2VP 340 961-161	-	X	-	X	LED	Bulb	LED	LED	LED	-	
2VP 340 961-211	-	X	X	-	LED	Bulb	Bulb	Bulb	-	LED	
2VP 340 961-221	-	X	-	X	LED	Bulb	Bulb	Bulb	-	LED	

DESIGN OF A MODULAR HYBRID REAR LIGHT



- 1) Housing
- 2) LED module tail-brake light
- 3) Bulb module indicator light
- 4) Bulb module reversing light
- 5) Bulb module rear fog light
- 6) LED module indicator light
- 7) LED module reversing light
- 8) LED module rear fog light
- 9) Support frame, black
- 10) Lens

SPARE PARTS PROGRAM / CONVERSION TO LED

Part number	Tail reflector- Triangle reflector- Retro-reflector- Brake light LED 9DW 178 904-001	Indicator light, LED 9DW 178 909-001	Indicator light, bulb 9DE 179 677-001	Rear fog light, LED 9DW 178 909-021	Rear fog light, bulb 9DE 179 677-021	Reversing light, LED 9DW 178 909-011	Reversing light, bulb 9DE 179 677-011	Clearance light, LED, left 2XS 011 744-011	Clearance light, LED, right 2XS 011 744-021	Side marker light 2PS 008 645-801	Lens 9EL 183 432-001	Cover 8XS 340 092-011
2VP 340 960-011	X	X	X ¹	X	X	X	X	-	-	-	X	X
2VP 340 960-021	X	X	X ¹	X	X	X	X	-	-	-	X	X
2VP 340 960-111	X	X	X ¹	X	X	X	X	X	-	-	X	X
2VP 340 960-121	X	X	X ¹	X	X	X	X	-	X	-	X	X
2VP 340 961-011	X	X ²	X	X	X	X	X	-	-	-	X	X
2VP 340 961-021	X	X ²	X	X	X	X	X	-	-	-	X	X
2VP 340 961-031	X	X ²	X	X	X	X	X	-	-	-	X	X
2VP 340 961-041	X	X ²	X	X	X	X	X	-	-	-	X	X
2VP 340 961-111	X	X ²	X	X	X	X	X	X	-	-	X	X
2VP 340 961-121	X	X ²	X	X	X	X	X	-	X	-	X	X
2VP 340 961-131	X	X ²	X	X	X	X	X	X	-	-	X	X
2VP 340 961-141	X	X ²	X	X	X	X	X	-	X	-	X	X
2VP 340 961-151	X	X ²	X	X	X	X	X	X	X	-	X	X
2VP 340 961-161	X	X ²	X	X	X	X	X	X	X	-	X	X
2VP 340 961-211	X	X ²	X	X	X	X	X	-	-	X	X	X
2VP 340 961-221	X	X ²	X	X	X	X	X	-	-	X	X	X

X¹: In case of later conversion of the indicator light LED module to a bulb, the ballast unit must be disconnected. Hence, the function of the on-board electronic system is guaranteed.

X²: In case of conversion of the indicator light function to LED, ballast unit 5DS 009 552- ... is to be used.

WIRE COLOURS (INTERNAL WIRING)

Design	Function	Colour
7-pole connector	Brake light Tail light, left Tail light, right Reversing light Rear fog light Indicator light, left Indicator light, right Ground	red black brown pink blue yellow/green green/yellow white
2-pole connector for reversing light, right hand light	Reversing light Ground	pink white
2-pole connector for clearance light, right hand light	Tail light, left Ground	black white
2-pole connector for clearance light, left hand light	Tail light, right Ground	brown White
2-pole connector for side marker light, right hand light	Tail light, right Ground	brown White
2-pole connector for side marker light, left hand light	Tail light, left Ground	black white
2-pole connector, right and left hand light	Tail light Ground	grey white
2-pole connector for number plate light	Tail light, left Ground	black white

ADDITIONAL FUNCTIONS



Individually selectable, quickly and easily replaceable.

- The side marker lamp and clearance lamp can generally be mounted on the rear light.
- Contacting takes place via a 2-pole connector on the rear side of the housing.
- Easy connection and low risk of corrosion.