

## CONTACT



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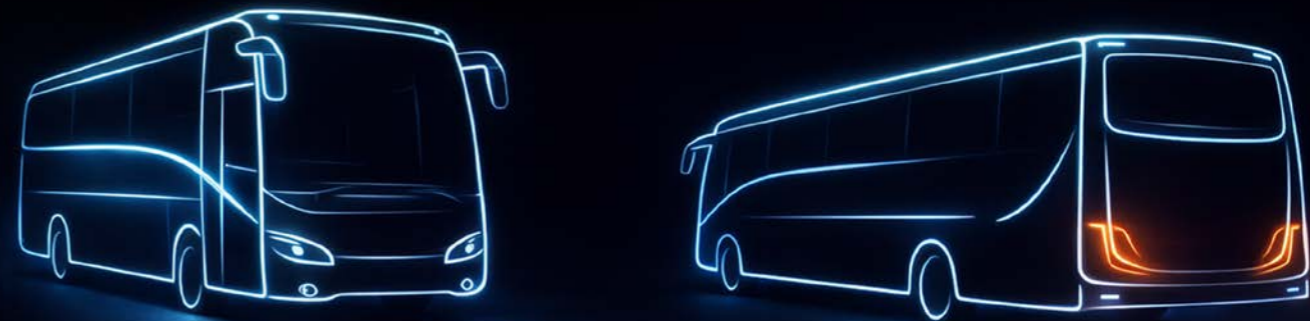
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# Product Solutions for Modern Bus Concepts

The bus market is evolving – and with it the requirements for lighting, electronics, and system architectures. Design, efficiency, and electrification open up new opportunities for differentiation and functional integration. **Discover selected product solutions and shape future vehicle concepts with us.**

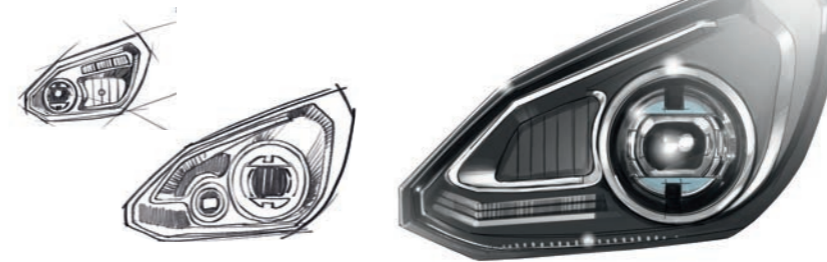




**HELLA – PARTNER TO BUS MANUFACTURERS  
SINCE THE 1950s!**

### SEMI CUSTOMIZED LIGHTING – FROM SCRATCH TO DESIGN

With semi customized product development, individuality meets efficiency. Proven modular system components are intelligently adapted to create distinctive designs with reduced development time and risk. This approach enables brand specific styling, seamless integration, and a fast time to market – while maintaining cost and technical efficiency.



### CUSTOM ELECTRONICS SOLUTIONS

Customized electronics for optimal vehicle integration:  
From sensor parameters to interfaces and housing designs –  
for maximum efficiency, comfort, and safety – up to ASIL D.



## 90 MM MODULES

The HELLA 90 mm front lighting modules are a well-established solution in the bus market. Designed to meet the specific requirements of city buses and coaches, they combine compact dimensions with high lighting performance. Their modular design enables maximum flexibility in vehicle integration and supports a wide range of applications and customized front designs.



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

Module headlamp with 40 x 60 mm polycarbonate lens, rugged diecast aluminium housing



**Bi-LED low beam and high beam headlamp L 4565 Performance**

Excellent light performance of low beam and high beam from a single headlamp module. "Zero Tolerance Integration" creates new design freedom.



**LED high beam headlamp L 4060**  
with daytime running light/position light or with direction indicator light

Module headlamp with 40x60 mm polycarbonate lens, rugged diecast aluminium housing.

OUTLOOK: THE NEW LIGHTING KIT  
70% LESS WEIGHT. 100% PERFORMANCE.

COMING SOON

Building on the proven modularity of the 90 mm modules, the new FORVIA HELLA Lighting Kit marks the next step toward even greater flexibility and integration. With an ultra-compact design and high energy efficiency, it is tailored for modern bus front-end concepts.

UP TO  
-70%  
WEIGHT\*

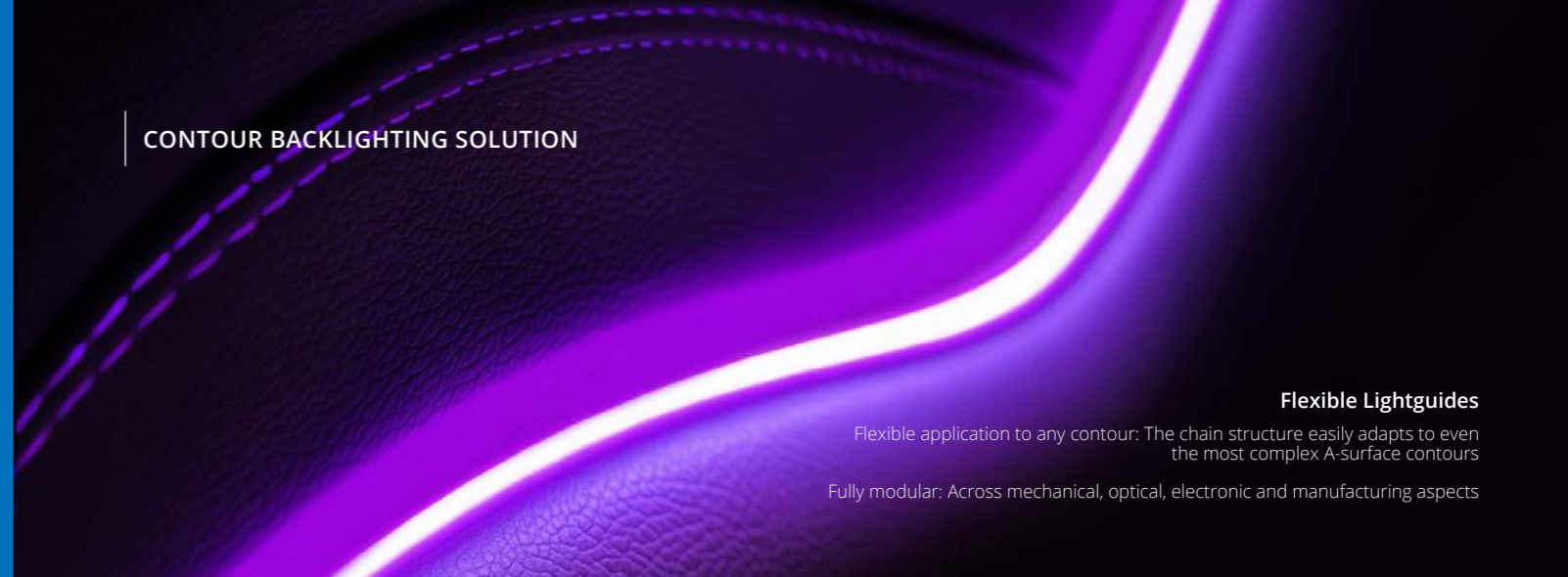


Ultra-compact design for tight spaces and smart integrations.

With the new FORVIA HELLA Lighting Kit the iconic 90 mm design gets a revolutionary twist: Stay tuned for a completely new design and multiple lighting possibilities. **Symmetrical or Asymmetrical beam patterns, low beam, high beam, Bi-LED and high-performance precisely aligned to On- or Off-Highway requirements.**

\* Compared to Bi-LED Gen. 3

CONTOUR BACKLIGHTING SOLUTION



Flexible Lightguides

Flexible application to any contour: The chain structure easily adapts to even the most complex A-surface contours

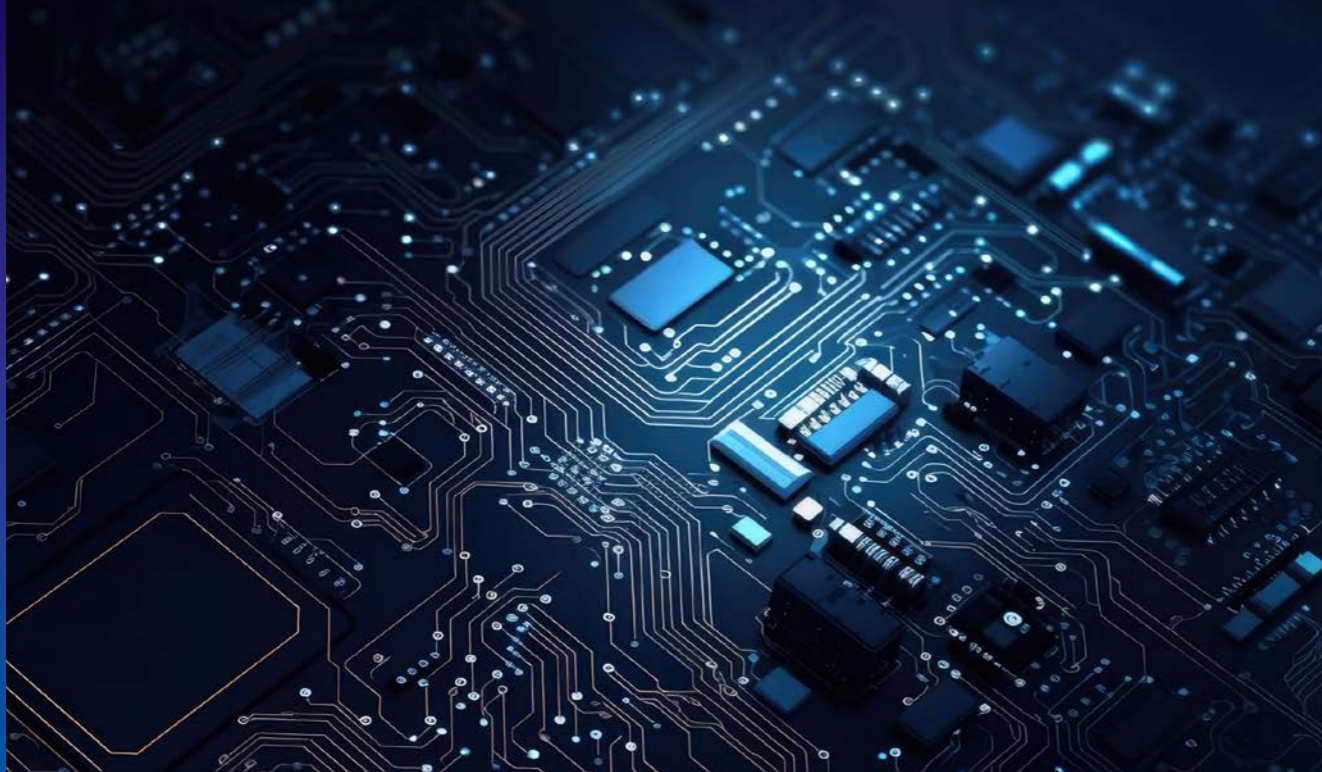
Fully modular: Across mechanical, optical, electronic and manufacturing aspects

AMBIENT INTERIOR LIGHTING (RGB)



Modular light chain

Flexible RGB ambient lighting creates a comfortable, customizable cabin atmosphere and supports modern interior design concepts.



## ENERGY MANAGEMENT



### Intelligent battery sensors (IBS) 24 V

The IBS monitors two 12 V batteries as a battery pack and guarantees accurate measurement of battery condition parameters voltage, current and temperature. High current reading and advanced diagnostic capabilities with ASIL B. IBS data can also be used for cloud services like fleet management.

**COMING SOON**

IBS with Micro Gateway for CAN/LIN communication

## BODY COMPONENTS



### Media Pump MPx

Ensures optimum coolant flow and reliable battery cooling. Thanks to its advanced active cooling concept, it enables efficient heat dissipation, prevents the vehicle components from overheating and thus extends their service life.

## SENSORS & ACTUATORS



### Rain-light sensors for vehicles with steeply raked windshields

Dual function rain and light detection (ambient and tunnel detection)

**COMING SOON**

Additional features such as:  
Cabin humidity measurement



### Acoustic pedestrian alerting system (AVAS)

The AVAS is an acoustic warning system for hybrid and electric vehicles designed to increase the safety of road users. Once a pre-defined speed has been reached, the noise fades in/fades out.

Driving forward

Driving backwards

## SENSORS & ACTUATORS



### Electric Valve Actuator (eVA)

Designed for precise control of multi-way valves within thermal management systems of electric vehicles. Perfectly suited to valve combinations with higher power requirements, delivering a nominal torque of 1.5 Nm at 120° per second. Available in two torque categories (1 Nm for compact installations and 3 Nm for high-performance).



### Short Stroke Pedal

Designed to meet market trends by providing reduced pedal travel and a clean footwell, resulting in an innovative pedal feel for both acceleration and braking.

## NOTES



### MODULE FINDER

You're just a few steps away from the right module headlamp for your bus.

[www.hella.com/headlamp-modules](http://www.hella.com/headlamp-modules)



### ROCKER SWITCH CONFIGURATOR

Put your own individual switches together – quickly and easily by using our rocker switch configurator.

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



### ELECTRONICS TOOL

Electronics products from HELLA for special original equipment designed for city buses and coaches.

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



### WEBSITE FOR CITY BUSES AND COACHES

Our online information is designed to let you efficiently and conveniently identify the latest HELLA products and find out significant details about them.



This is where you will find everything you need to know about new products, technology and options for equipping your vehicle. Find out more about our solutions for modern buses and coaches.

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

