



Winner of the  
"Innovation  
Leben Award"



## 30,000 RPM ELECTRIC DRIVE UNIT FOR THE NEXT GENERATION OF ELECTRIC VEHICLES

# AVL HIGH-SPEED E-AXLE

### EXPLORE OUR HIGH-SPEED E-AXLE

We are pushing R&D and our goal is to be innovative. With our highly integrated electric drive unit, we found a way to cut costs of electric powertrains. It is the result of our worldwide footprint and joint development with other AVL locations.

The high-speed e-axle is designed for premium segment vehicles and operates with a 800 V system to reach a maximum speed of 30,000 rpm. The electric drive unit consists of two drive systems (enables torque vectoring), with a total of 400 kW peak power, resulting in 5,500 Nm axle torque. The maximum vehicle speed is targeted to 240 km/h in order to match usual specifications of premium combustion engine vehicles. It is equipped with a fully integrated dual SiC (Silicon Carbide) inverter, two layshaft transmissions and an efficient gear lubrication system.

### ADVANTAGES

- Highest electric drive system power density currently on the market
- Focus on raw material reduction and production cost improvements (layshaft gear and roller bearings)
- Torque vectoring possibility due to independent e-motor per wheel (electronic differential)
- Different e-axle configurations possible (dual or single motor)
- Direct oil cooling of the e-motor for better peak versus continuous performance

### MAIN FEATURES

- High system power: 400 kW peak
- Wheel torque: 5,500 Nm peak
- Vehicle speeds up to 240 km/h
- System voltage up to 850 V
- Dual interleaved SiC-Inverter with common DC-Link
- High system power density of 3.5 kW/kg

Discover AVL high-speed e-axle online  
[www.avl.com/-/e-axle-technology](http://www.avl.com/-/e-axle-technology)



## TECHNICAL DATA

Features	Values
Motor performance	2 x 180 Nm @ 11,000 rpm
	2 x 166 Nm @ 14,000 rpm
	2 x 45 Nm @ 30,000 rpm
Peak system performance	
– Power	400 kW/200 kW mech out per wheel
– Wheel torque	2,750 Nm per wheel
Continuous system performance	
– Power	160 kW/2 x 80 kW output power
Gearing	16.7 : 1

## FIND OUT MORE

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