Velaro Novo

Proven suchassingy

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Reduced energy consumption.

Velaro Novo delivers on all targets with its key qualities



Aerodynamic excellence

Bogie housing

Streamlined intercar gangway Housed

pantograph

Covered high voltage roof equipment



Aerodynamic drag is one major driver for energy consumption in high-speed trains



Effect on energy consumption

Bogie housing

-15%





Aerodynamic drag is one major driver for energy consumption in high-speed trains



Effect on energy consumption

Streamlined vehicle roof -10%



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Reduced total costs

Mass

- Advanced car body profile design and friction stir welding
- Auxiliary converter with silicium carbide

Maintenance

High-performance electrical brake with brake resistors

Energy Permanent magnetic synchronous motor

Velaro Novo conserves resources - 30% lower energy consumption



- 30% energy savings compared to Velaro
- This reduces carbon dioxide emissions by 1,375 tons per train and year



Train performance simulation on Cologne – Frankfurt high-speed line



Intelligent motion

Mass Bogie with inbound bearings

Energy Flexible, innovative drive system



New permanent magnet motor (PMM) drive enables pure electrical braking during normal operation



+10%

+70%

+5%

Traction power

Efficiency

Braking power



PMM 12-month field testing results in Russia: -5%

- V_IST (km/h) - E_16ASM (kWh) E_12PMM (kWh) - DeltaE (16ASM-12PMM) (kWh)

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Variable train

Empty tube New TCN architecture

The empty tube concept offers a perfect balance of flexibility and economic efficiency





Variable train

 Elimination of technical equipment that adversely influences interior flexibility

+10%

• Standardized fixations for interior fittings







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Velaro Novo – Maximum interior width facilitates higher capacity without comprising on comfort





Higher comfort by increased interior width

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Velaro Novo – Interior Flexibility







- from economy...

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Velaro Novo – Interior Flexibility





- from economy... to premium...

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Velaro Novo – Interior Flexibility





- from economy... to premium... from present to future

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Proven technology

#seeitnovo testcar on track since April 2018

2 billion kilometer experience Global reference projects



The #seeitnovo testcar takes its first test run





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Stringent validation program to mitigate project risks and ensure reliability





Lead with experience Recently reached 331km/h in the ICE S







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The Velaro platform – Proven track record with 1 million km experience per day!





Operational experience is the key to innovation: 2 billion km in operation and never stopping

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Mobility Division

Velaro Novo – Achievements





Note: Compared to Velaro at 320 km/h

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Thank you



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