vossloh KIEPE

High-floor Light Rail Vehicles for Bielefeld

GTZ8-B

GTZ8-B High-floor Light Rail Vehicles

For the first time as consortium leaders, Vossloh Kiepe delivers 16 light rail vehicles for moBiel in Bielefeld

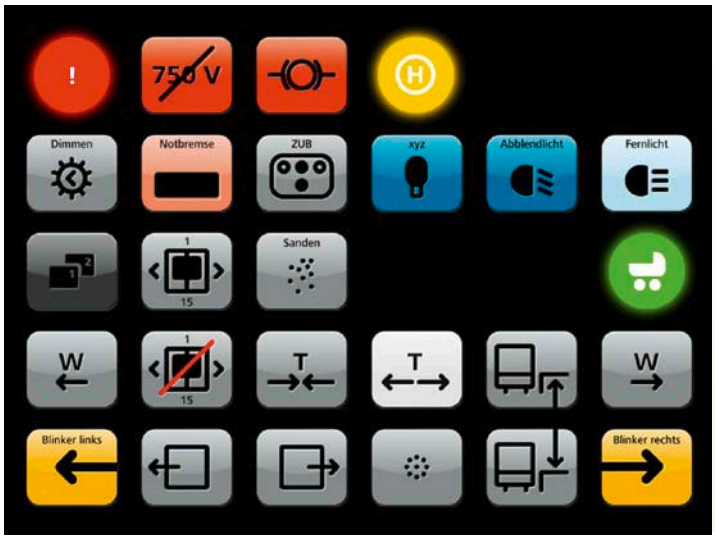
Main features

- **First delivery of complete light rail vehicles with Vossloh Kiepe as consortium leader**
- **Modern display in the driver's cab**
- **Environmentally friendly and modern drive technology**
- **Compact state-of-the-art traction converter**
- **Air-conditioning**
- **Modern passenger information system with real time transfer information**
- **Video monitoring system**
- **Electronic side view mirror by means of video camera and TFT monitor**

In January 2009, moBiel GmbH in Bielefeld awarded the order for 16 modern high-floor light rail vehicles to the consortium of Vossloh Kiepe and the streetcar manufacturers HeiterBlick located in Leipzig. Being the consortium leader Vossloh Kiepe is responsible for managing the overall project and providing the electric equipment for the light rail vehicles.

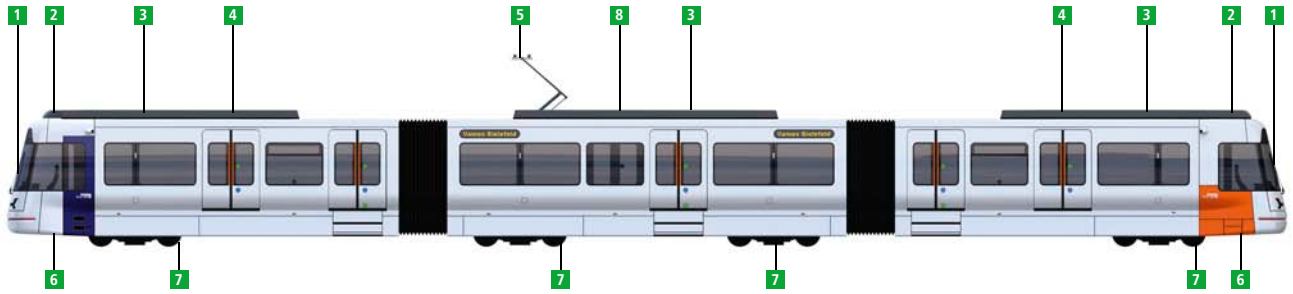
The project is of particular importance as the vehicles will be fitted out with several new types of technical equipment. The constructive design of the vehicle's configuration is also special: On the one hand the vehicle matches the infrastructure in Bielefeld with a one metre track and platforms for 2.30 metre wide vehicles. On the other hand the vehicle's width (2.65 metres) changes into a convex form above the platforms. This solution creates space for 230 passengers in spite of the narrow track width.

In addition, the fully air-conditioned driver's cabs have been spaciously designed and have somewhat of a futuristic touch to them. An all-new concept has been employed here: Instead of featuring the usual vehicle controls with only closed operating boards and dashboards, the driver's cabs are equipped with open consoles. They feature a redundant system consisting of two ergonomic Kiepe driver's cab displays with touch screens (Type: KFD 102). Practically the entire vehicle operation can be carried out via these displays. Only a few traditional switching elements are placed under the armrest and on a secondary operator's panel.



Kiepe Driver's Display KFD

Arrangement of equipment



1 Driver's cab
2 Driver's cab air-conditioning unit
3 Passenger heating unit
4 Brake resistor
5 Current collector
6 Battery
7 Pressurised bogie frame
8 Fuse box

The security functions operated via the driver's cab display offer the same high level of security as is present in traditional mechanical switching elements.

Additionally, the light rail vehicles will be equipped with a state-of-the-art passenger information system. The passengers can attain information on their current transfer options in real time and local ads can be shown.

Vossloh Kiepe uses the CAN-Bus with supporting individual control lines for train operation. Here, the central control unit (CCU) provides the communication channel for all connected devices.

A hierarchically organized architecture with a train bus and a car bus are used. Received data on events and state of the devices and subsystems are also recorded and selected information is provided via the Kiepe data server (DSV).

UTA 104 Underfloor Container

Technical Data	
Model	Three-part articulated railcar for bidirectional operation, capable of trainset operation
Type	GTZ8-B
Track width	1,000 mm
Maximum speed	80 km/h
Starting acceleration	1.2 m/s²
Line voltage	DC 750 V (-30% / +20%)
Wheel arrangement	Bo´+ Bo´Bo´+ Bo´
Vehicle body length over coupling	34,300 mm
Width / Lower indent	2,650 mm / 2,300 mm
Height over top of rail	5,500 mm
Pivotal distance	6,800 mm
Bogie axle base	1,900 mm
Boarding height over top of rail	920 mm
Vehicle mass in compliance with DIN	55,905 kg
Seats / Folding seats	52 / 16
Standing area (4 Persons/m²)	162
No. of passengers total	230
Wheel diameter new / worn	681 / 600 mm
Drive Concept	8 traction motors, 2 each in group operation with a traction converter
Brakes	electrodynamic brakes to standstill, electronically released spring brake / magnetic
Traction Converter	Kiepe DPU 102
Features	air cooled, forced-air cooled
Rated output	approx. 170 kW
Filter voltage (max)	1100 V
Control equipment	ASM (Traction Drive Control Module), USM (Static Inverter Drive Control Module)
Traction Motor	air cooled, forced-air cooled asynchronous motor
Rated output	80 kW / 430 Nm
Rotation speed (rated/max)	1,777 min⁻¹ / 5,303 min⁻¹
On-board Power Supply	
Type	Kiepe BNU 533
Input voltage	DC 750 V (525 – 1000)
Output continuous power	approx. 35 kVA (50 Hz, 400 V)
Battery charge	approx. 200 A (DC 24 V)
Train Control Equipment	modular control devices
Central control unit	ZLG
Modular control modules	BSM, ASM, USM
Transmission rate vehicle bus / train bus	250 kBit/s / 125 kBit/s
	Multi-master structure, freely definable telegram hierarchy
Train safety system	ZUB222c
Heating / Ventilation / Air Conditioning	
Driver's cab	
Type	Kiepe HKL 304
Air flow rate	760 m³/h
Cooling capacity	4.8 kW
Heating capacity	7.2 kW
Passenger room	
Type	Kiepe HKL 361 (3 per vehicle)
Air flow rate (max)	approx. 2,350 m³/h at 150 Pa
Cooling capacity	16 kW
Heating capacity	22 kW

Subject to change without notice.

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