



RACK-AND-PINION RAILCAR, BHE 2/2

Pilatus-Bahnen AG, Switzerland

In July 2018, Pilatus-Bahnen AG ordered eight electrical rack railcars from Stadler. These passenger railcars run on the steepest rack railroad in the world between Alpnachstad (440 m above sea level) and Pilatus Kulm (2073 m above sea level). The maximum gradient on the route is 480%. The new multiple units replace the 86-year-old multiple units, operating on infrastructure built 130 years ago. The passenger carriages are constructed for a maximum uphill speed of 15 km/h and the descent in accordance with row 3. They operate in double traction and can accommodate 46 passengers in the vehicle at the front, and 48 people in the one at the back.

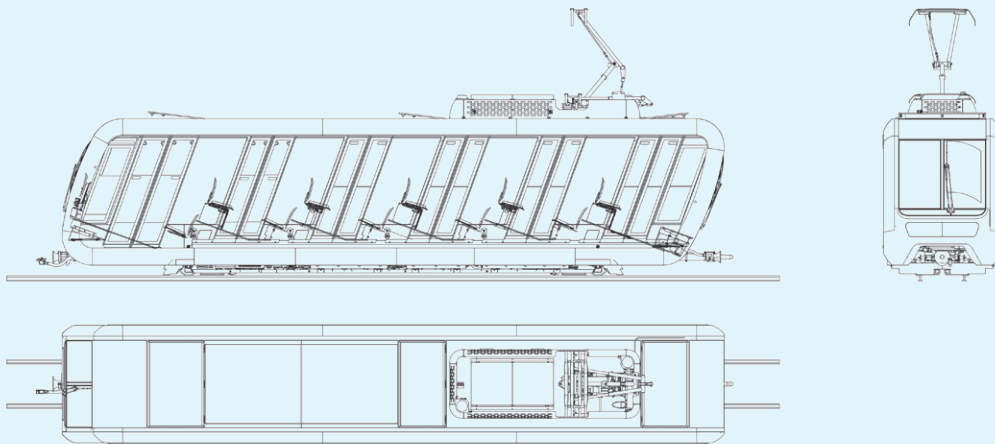
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Technical features

Technology

- Rack railroad with the steepest passenger transport in the world
- Unique perforator rack system
- Double traction

Comfort

- 12 entrance doors for efficient entry/exit of passengers
- Good visibility from the vehicle, with windows along the side and a glazed roof
- Sash windows in all door wings
- Wheelchair compartment

Reliability/Availability/Maintainability/Safety

- Train operates from May to November
- 98% availability during operating times

Vehicle data

Customer	Pilatus-Bahnen AG
Operated networks	Alpnachstad – Pilatus Kulm
Track gage	800 mm
Designation	Bhe 2/2
Operating voltage	1500 V OC
Axle arrangement	1{zz}1
Number of vehicles	8
Commissioning	2023
Seats	
Leading vehicle	46
Trailing vehicle tip-up	48
Folding seats	None
Standing capacity	None
Entrance width	
Wheelchair compartment	850 mm
Remaining compartments	650 mm
Axial thrust	200 kN
Length over coupling	12 344 mm
Vehicle width	2130 mm
Vehicle height	3353 mm
Gear wheel distance	6560 mm
Driving wheel diameter, new	400 mm
continuous output at wheel	358 kW
Max. Output at wheel	358 kW
Starting tractive effort	85 kN
Starting acceleration, gross	0.4 m/s ² down
Starting acceleration, gross	0.8 m/s ² up
Maximum speed	15 km/h