



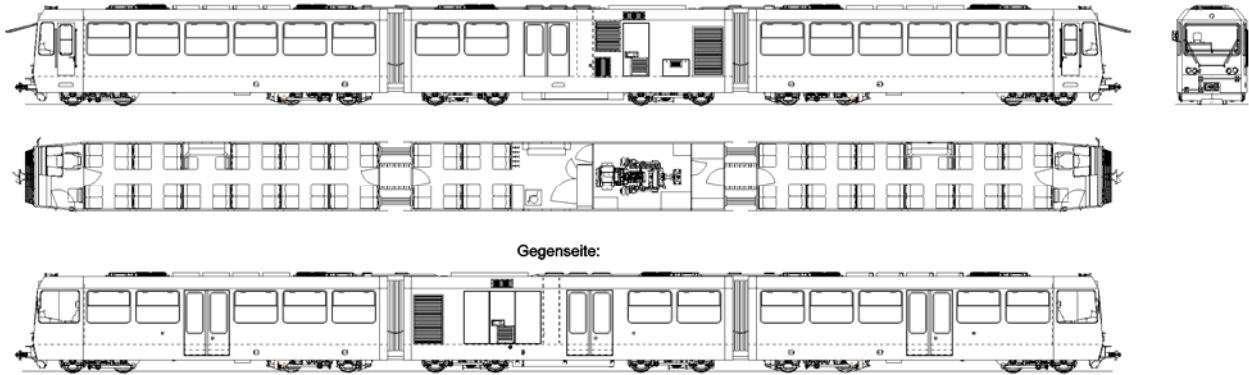
Diesel electric BDmh 2Z+4A/12 Rack-wheel train for the Hellenic Railways Organisation S.A. (OSE), Greece

The Hellenic Railways Organisation (OSE) will obtain 4 new Diesel electric trains for their rack rail line in the north of the Peloponnese. The new 3 car units will replace the existing rolling stock, in operation for more than 40 years. The trains will operate on the 22.3 km long line from Diakofto, a city located at the sea side, to Kalavrita, a village in the heart of a very attractive tourist area in the mountains. The line has been built in an unusually narrow gauge standard of 750mm, overcoming the difference of altitude of 700 meters in a mixed adhesion / rack system. As a result of the ambitious conditions on the rack railway, the design of the diesel train became tailor-made and unique. Furthermore the fully air-conditioned and spaciouly designed passenger compartments contribute to an optimal ride quality.

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Technical features

- Car body dimensions optimized for given loading gauge
- Attractive passenger compartments equipped with half drop windows
- Transparent driver's cab rear panel to view attractive landscape
- Generous luggage compartment with ski rack and luggage loading doors in the middle car
- Wheelchair space in the middle car
- Air-conditioned passenger and driver compartments
- Light weight steel car body design
- Minimum curve radius of 30 meter
- High-performance traction equipment system with a diesel engine, a three-phase asynchronous generator, an IGBT power converter and four self-ventilated asynchronous drive motors
- 3 different type of bogies: rack-wheel motor bogie, adhesion motor bogie, and trailer bogie with cog-wheel brakes
- Control and communication system with can open bus and a diagnostic display in the driver's cab
- Fire detecting system in the engine room and at the fuel system
- Vehicle front-end with special windshield for frontal emergency exit

Vehicle data

Customer	Hellenic Railways Organisation (OSE), Greece	
Lines operated	Diakofto to Kalavrita, Peloponnes	
Gauge	750 mm	
Designation	BDmh 2Z+4A12	
Axle arrangement	2'B'+2'2'+B'2' (Adhesion) 2'2'+1A'1A'+2'2' (Rack-wheel)	
Number of vehicles	4	
Service start-up	2008	
Seating capacity	104	
Fold up seats	4	
Floor height		
Low floor	850 mm	
High floor	1'200 mm	
Longitudinal strength	400 kN	
Overall length	34'950 mm	
Vehicle width	2'200 mm	
Vehicle height	3'100 mm	
Tare weight	55 t	
Bogie wheelbase		
Adhesion bogie	1'800 mm	
Rack-wheel bogie	1'900 mm	
Trailer bogie	1'600 mm	
Trailer wheel diameter (new)	675 mm	
Diesel engine	MAN, 12 Zyl., 588 kW, Euro 2	
Maximum output at wheel	4 x 105 kW	
Starting tractive power	40 kN (Adh.) / 80 kN (Rack.)	
Maximum speed	25 km/h uphill 16.5 km/h downhill 60 km/h adhesion	
Maximum gradient	152 ‰	

