



## 115 TYPE MX3000 THREE-CAR UNITS

# Metro Oslo, Norway

Siemens was awarded the contract to supply 33 new three-car trains to the Norwegian capital Oslo in September 2003. The first option for an additional 30 trains was ordered in September 2005, and a second option for 20 trains was ordered in September 2008. The third and last option for 32 trains followed in December 2010.

After tests were performed on a pre-series of two trains in Rail Tec Arsenal's climatic chamber in Vienna and Siemens' test center in Wegberg-Wildenrath, delivery was started at the end of 2005. The last train was handed over to the customer in February 2014.

The train was designed by the Porsche Design Studio in Zell am See, Austria.

The smallest operable unit of an Oslo MX3000 train consists of two end motor cars with cab and one intermediate motor car. For normal passenger operation, two of these three-car trains can be coupled to form one train with six cars.

Each three-car train is capable of carrying 678 passengers, with seating for 124 and standing room for 554.

The train is designed as a lightweight aluminum construction. All materials used in the train were chosen with a view to minimizing environmental impact and enhancing recyclability. According to the Environmental Product Declaration in accordance with ISO 14021, the total recycling rate is 94.7 percent.

Each traction motor in a tractor unit is powered by a proven Sibac® traction container. Sitrac™ control allows electrodynamic braking until standstill. This offers the advantage of a non-wearing service brake under normal conditions and particularly increases stopping accuracy.

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# SIEMENS



- Lightweight aluminum-profile construction
- 100% motorized for optimum traction
- Recycling rate of 94.7% according to the Environmental Product Declaration according to ISO 14021
- Traction motors without speed sensors for increased reliability
- Battery operation in depot
- Electrodynamic braking until standstill for wear-free braking and high stopping accuracy
- Magnetic track brakes in the intermediate car support braking in case of unfavorable weather conditions or challenging topography
- Sensitive door edges on the passenger doors detect the smallest trapped objects

#### Technical data

Train configuration	Mc-M-Mc
Wheel arrangement	Bo'Bo'+Bo'Bo'+Bo'Bo'
Car body material	Aluminum
Track gauge	1,435 mm
Length over couplers	54,340 mm
Width of car	3,160 mm
Floor height above top of rail	1,120 mm
Wheel diameter new / worn	850 / 770 mm
Tare weight / total weight	94 / 141.5 t
Maximum axle load	12.5 t
Number of seats / flap seats	124 / 14
Train capacity (6 passengers/m <sup>2</sup> )	678
Passenger doors per car	6
Minimum curve radius service line / depot	100 / 50 m
Maximum gradient	6.2%
Maximum speed	80 km/h
Power supply	750 V DC / third rail

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Otto-Hahn-Ring 6  
81739 Munich  
Germany

[contact.mobility@siemens.com](mailto:contact.mobility@siemens.com)

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