

Mireo Plus B and Mireo Plus H: New paths taken in train design

- **Siemens Mobility and Niederbarnimer Eisenbahn (NEB) present the Mireo Plus B and Plus H train design**
- **Exterior and interior break new ground for design and passenger services**
- **Fleet of 38 trains to be delivered in the fall of 2024 and enter service on the Heidekrautbahn (RB27) and East Brandenburg networks in December 2024**

Rolling stock manufacturer Siemens Mobility and Niederbarnimer Eisenbahn (NEB) today presented the final design of the Mireo Plus, which will enter service on the Heidekrautbahn and East Brandenburg rail networks in December 2024. Both the exterior and interior design of the high-performance and sustainably conceived train reflect the innovations that went into the climate-friendly hybrid drives as well as the extensive added value provided by the equipment, passenger services, comfort, and convenience.

“We are especially pleased that we are manufacturing climate-friendly and sustainable trains powered by hydrogen or batteries for NEB,” said Elmar Zeiler, Head of Regional Trains at Siemens Mobility. “The Mireo Plus B and Mireo Plus H trainsets combine innovation and sustainability on rail routes where electrification with overhead lines is neither possible nor economical. Only by providing a strong rail presence and alternative types of drives will we be able to make a significant contribution to combating climate change.”

Exterior design

Graphic artist Sebastian Büsching drew on elements of NEB’s corporate design to liven up the “conventional” exterior design of regional trains in a playful way. Rather than displaying

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continuous stripes or the rigid, symmetrical shapes typically featured on regional trains, the NEB variant for the Mireo works with informally arranged colored flecks that are only remotely reminiscent of the familiar striped look. Emerging from the solidly colored driver's cab, blue flecks are increasingly absorbed by light gray flecks moving rearward to the middle of the train. The design is inspired by the idea that regional trains transport passengers virtually around the clock – and the pattern of changing colors symbolizes the transition from night to day.

The horizontal flow of angled, colored flecks reflects the dynamic movement of the train and suggest speed. In effect, the Mireo Plus exterior design symbolizes the coming technological innovations at NEB as well as in the East Brandenburg and Heidekrautbahn networks.

Doors

The two-car trainsets are equipped with three doors on each side, and each door is 1.3 meters wide. This generous size and the boarding heights of 600 or 800 mm enable passengers in wheelchairs or with strollers to easily board or exit, even on lower platforms. The doors are framed with yellow and dark blue borders, meeting the technical specifications for interoperability for persons with reduced mobility (TSI-PRM).

“A special train deserves a special design,” noted Detlef Bröcker, CEO of Niederbarnimer Eisenbahn. “The unusual, fresh exterior and interior design of the Mireo Plus stands for a technologically and ecologically renewed railway and an attractive, high-performance regional transport system that operates without CO2 emissions. The Mireo Plus will be a rolling symbol of innovation, climate protection and the transportation transition in Berlin and Brandenburg – showing our home is on the move!”

Interior design

Routing & multipurpose areas

The interior design of the Mireo Plus for the NEB begins outside the doors: A new type of signage helps speed up passenger flows, especially when there are large numbers of passengers and bicycles. Entry is primarily through the front and rear doors, each leading to one of two multipurpose areas (recognizable by the low-set windows). Bicycles are

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channeled to exit through the middle door, avoiding interference with boarding passengers in the front and rear. Large bicycle and wheelchair pictograms outside indicate the direction of the entry doors. Inside, passengers are guided by double arrows along the floor.

Seats & family area

The seat upholstery also incorporates two elements of NEB's corporate design with its distinctive color scheme and double arrow pattern and reflects the exterior design on the inside. A family area offers a variety of activities for children and information for parents, and features a table embossed with a game.

The Mireo Plus B has 127 seats and standing room for 155 passengers. Both train types provide twelve bicycle spaces and room for two wheelchairs.

Mireo Plus H and Mireo Plus B: Technological advances for Brandenburg's regional rail

Both the Mireo Plus H and the Plus B are state-of-the-art trainsets operating with hydrogen or battery hybrid drives. They feature a 1.7-MW powered traction system capable of acceleration of up to 1.1 m/s² and have a maximum speed of 140 km/h. The Mireo Plus H and Plus B trainsets are designed to be energy-efficient and environmentally friendly: Their monocoque, welded lightweight aluminum structure, improved aerodynamics, energy-efficient components, and intelligent electrical system management effectively reduce the use of resources as well as emissions.

"A new era is beginning in Berlin and Brandenburg for the East Brandenburg and Heidekrautbahn rail networks. We will be seeing the shift from conventional diesel-powered trains to extremely ecofriendly trains. The Heidekrautbahn will even be launching CO₂ emission-free operations on non-electrified routes in the Berlin and Brandenburg regional rail transport system. The new train design fits this spirit perfectly," said Thomas Dill, Division Head, Center for Urban Transport and Quality Management, VBB.

NEB ordered a total of 38 Mireo trainsets with alternative and environmentally friendly drives from Siemens Mobility in 2021 and 2022. Beginning in December 2024, 31 battery-powered

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Mireo Plus B trains will serve in the East Brandenburg network, and seven hydrogen-powered Mireo Plus H trainsets will operate on the Heidekrautbahn. This will mark the first time that hydrogen-powered trains are used in Brandenburg and Berlin. The switch from diesel to hydrogen and batteries will reduce CO₂ emissions by around 14.5 million kilograms a year and save around 5.5 million liters of diesel.

The use of hydrogen-powered trains on the Heidekrautbahn is part of the [Heidekrautbahn hydrogen rail system](#), a joint scientific pilot project funded by the federal government and the states of Berlin and Brandenburg. The project is setting up a regional, sustainable hydrogen infrastructure that also includes a hybrid power plant and a tank system. All train operations on the RB27 are to be powered exclusively with renewable, regionally generated green energy.

The project “Use of hydrogen fuel cell drives in local transport in the district of Barnim” is being funded by the federal government as part of the national innovation program for hydrogen and fuel cell technology. The program’s funding is being coordinated by NOW GmbH and implemented by project lead Jülich.

Further information

The Mireo Plus B for NEB is currently in production. Final assembly of the trainsets is scheduled to begin at the Siemens Mobility plant in Krefeld at the end of October 2023. In December, the first train will be delivered to Siemens’ Wegberg-Wildenrath test center. The Mireo Plus H will be manufactured at the Krefeld plant by July 2023 and subsequently transferred to the test center in September. A possible press event may be planned for both trainsets at the North Rhine Westphalian test center at the beginning of 2024.

The new Mireo Plus design will be presented to the public at the NEB Open House on May 13, 2023, in ^{Wasserstoffzug}Basdon. Until then, photos of the design and **press material** are available at the Siemens Mobility website: <https://sie.ag/41KpvsW> and the NEB website: www.NEB.de/_____. You can find more information about the Mireo Plus at: <https://tinyurl.com/2p98wxkz>.

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Siemens Mobility is a separately managed company of Siemens AG. As a leader in intelligent transport solutions for more than 175 years, Siemens Mobility is constantly innovating its portfolio. Its core areas include rolling stock, rail automation and electrification, a comprehensive software portfolio, turnkey systems as well as related services. With digital products and solutions, Siemens Mobility is enabling mobility operators worldwide to make infrastructure intelligent, increase value sustainably over the entire lifecycle, enhance passenger experience and guarantee availability. In fiscal year 2022, which ended on September 30, 2022, Siemens Mobility posted revenue of €9.7 billion and had around 38,200 employees worldwide. Further information is available at: www.siemens.com/mobility.

Niederbarnimer Eisenbahn (NEB) provides passenger rail transport in the Berlin-Brandenburg region. The roots of the more than 120-year-old company lie here and are the motivation for providing environmentally friendly rail service between cities and rural areas. Niederbarnimer Eisenbahn AG owns and operates the Heidekrautbahn network north of Berlin and aims at reactivating the main route of the Heidekrautbahn by 2024. The railway company NEB Betriebsgesellschaft mbH operates eleven regional railway routes in northern and eastern Brandenburg on behalf of the Verkehrsverbund Berlin-Brandenburg (VBB). In 2021, Niederbarnimer Eisenbahn was again awarded the contract to operate the East Brandenburg network (NOB2) until 2036 and the Heidekrautbahn network until 2034. Further information is available at: www.NEB.de.

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