

**newag**  
GROUP



**NEVELO  
TRAM**



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TRAM

# nevelo

Modern, low-floored, air-conditioned

This three-unit, articulated, one-way, low-floor tram accommodating 252 passengers, is the first tram manufactured by NEWAG S.A.

Modern solutions ensure the tram's high quality and reliability as well as low running costs. Nevelo was created with financial support from the Polish National Research and Development Centre.





## Nevelo 126 N tram is unique due to its panoramic windscreen and a four bogies support.

For this vehicle, brand new bogies were designed, in particular both motor and trailing bogies have their own internal frames fitted with:

- typical wheel and axle sets with rims and rubber stoppers which provide high levels of ride comfort and reduced noise levels;
- a swing bolster attached to the bogie frame through a set of metal and rubber springs;
- individual drive to each axle provided by an independent power unit, each consisting of an asynchronous traction motor and an intersecting axis gear with flexible coupling suspended on the bogie frame;
- modern active and passive electro-hydraulic disc brakes.





## Operating and maintenance costs

Using four pivoting bogies with large-size bearings allowed for a significant reduction in operating and maintenance costs of both the vehicle and the infrastructure. The bogie arrangement minimises the axle load on the rails, which significantly reduces wheel and rail wear.

The modern drive system with asynchronous traction engines and the electronic controls ensure the tram's smooth start and energy recovery to the overhead system while braking. The vehicle is equipped with a modern on-board diagnostic system. Vehicle fronts have in-built elements absorbing energy created in the event of collisions and crashes.







## Passenger area

- modern, comfortable interior,
- 100% low-floor,
- air-conditioned interior,
- passenger information system,
- monitoring system,
- electrically operated ramp for the disabled,
- dedicated space for wheelchairs,
- sliding plug exterior doors allowing for fast and convenient passenger boarding and de-boarding at tram stops, equipped with two independent mechanisms preventing passengers being entrapped by the door

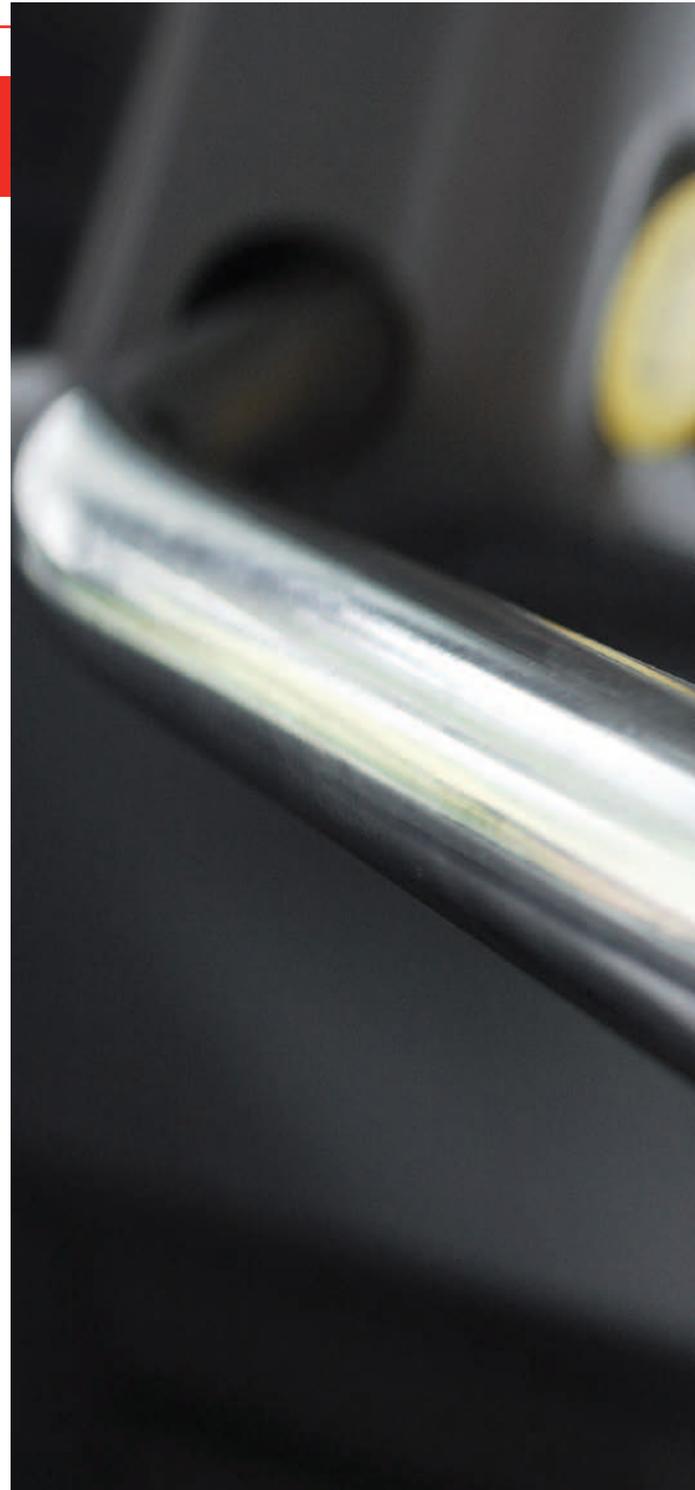






## Driver's cab

- panoramic windscreen,
- air-conditioning independent from the passenger compartment,
- modern interior – additional amenities: mini-fridge and a locker,
- ergonomic driver's control panel.









**NEVELO – TRAM**

Technical data	NEVELO
Number of sections	3
Axle configuration	Bo'+2'+2'+Bo'
Tram's weight	42 500 kg
Tram's allowable total weight	58 000 kg
Length	31 620 mm
Width	2 400 mm
Height	3 690 mm
Gangway width	1 400 mm
Minimum aisle width	550 mm
Number of seats	60 [+4]
Number of standing places [at 0.2 m <sup>2</sup> /person]	175
Allowable number of places [seated plus standing at 0.2 m <sup>2</sup> /person]	235
Floor [low floor percentage]	100%
Floor height at entrance/exits	350 mm
Floor height above bogies	480 mm
Axle load on track at full capacity [axle/load] – axle 1_2 – axle 3_4 – axle 5_6 – axle 7_8	77,4 kn 68,5 kn 65,9 kn 70,9 kn
Traction motor	VEM
Number of motors per tram	4 szt.
Nominal power	105 kw
Average acceleration to 30 km/h without load	1,2 m/s <sup>2</sup>
Air conditioning	Thermoking
Braking system	Hanning & kahl oerlinghausen
Passenger entrance door	Ultimate type sliding plug
Number of doors per tram	5 + 2 single-wing
Effective door width	1 300 mm / 650 mm
Places for the disabled	2



# About Newag

Polish manufacturer Newag S.A.

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<b>Registry data:</b>	KRS0000066315 NIP PL 734 00 09 400 District Court for Kraków-Śródmieście in Kraków, XII Economic Department Paid-up share capital of PLN 11,250,000,25

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**NEWAG S.A.** has existed since 1876. It is one of the biggest and oldest railway companies in Poland, a leader in the production, modernisation and repairing rolling stock. The company has extensive experience in production of modern and fast rolling stock for passenger transport, diesel and electric locomotives, trams and underground trains.

Focusing on customer satisfaction, **NEWAG S.A.** pays particular attention to the quality of its products and services it provides, which is confirmed by the recognition the company has received. The company has been awarded the title "The company that transforms Polish industry" for its spectacular market success in competing with European rail industry giants. In 2017, **NEWAG S.A.** was granted a title of "The Promoter of the Polish Economy" by the "Teraz Polska [Poland Now]" Promotional Emblem Foundation in recognition of the company's achievements in building the Polish brand in Poland and abroad.

**NEWAG S.A.** holds PN-EN ISO 9001:2009 certification which confirms that the company introduced and has implemented the modern quality control system, PN-EN ISO 14001:2005 referring to the implementation of the requirements concerning the environmental management system and PN-EN ISO 50001:2012 confirming effective energy management in every form. **NEWAG S.A.** also holds IRIS Certification Rev. 02.1 that attests to the implementation of the international railway industry standards.







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