



URBOS TRAMS

SUSTAINABILITY in Motion

TRANSPORT SYSTEMS
TRAINS
BUSES
SIGNALLING
COMPONENTS
SERVICES

Your Way
to Future Mobility

www.caf.net

URBAN DESIGN COSMOPOLITAN SPIRIT



The search for efficient and environmentally friendly mobility systems is a major challenge for cities in the 21st century. Growing urban mobility and levels of air pollution make it increasingly necessary to seek out sustainable public transport that provides a comfortable, safe and reliable service for citizens.

CAF's trams combine state-of-the-art technology with modern design and a high level of passenger comfort.

At the same time, they offer transportation operators optimal capacity at an optimised cost and ensure exceptional reliability throughout the vehicle's entire life cycle.

CAF's Urbos modular platform can be adapted to meet the specific needs of any city and any operator in terms of configuration, interior layout and performance.

In addition to supplying rolling stock, CAF provides comprehensive solutions including systems design and civil engineering, electrification, signalling systems, maintenance and operation.

CAF guarantees the integration and compatibility of all subsystems to provide a unique global solution for clients.



URBOS SOLUTION

Backed by years of experience in the implementation of green urban transport systems, CAF offers a range of trams that meet the most demanding needs of users and operators.

CAF trams bring a unique identity to any city through state-of-the-art design and flexibility.

The Urbos family of innovative, high-end trams and LRVs are specially designed to offer passengers a memorable experience.

CREATING SUSTAINABLE CITIES

The Urbos tram represents a decisive commitment to sustainable mobility and energy efficiency, minimising costs during the vehicle's entire life cycle. Reduced energy consumption is possible through high-performance traction equipment, weight reduction, adopting efficient driving strategies and the reuse of braking energy. Urbos also has a low-mass suspended bogie system that reduces infrastructure noise and wear.

Additionally, CAF implements a maintenance strategy focused on vehicle safety, reliability and availability to generate maintenance cost savings.

Implementing eco-design methodologies in the engineering processes, CAF optimises and controls the environmental impact and sustainability of products from conception and throughout their life cycle.

As a result, CAF developed the world's first Environmental Product Declaration (EPD®) for a tram; the Urbos 100 for the Spanish city of Zaragoza. The environmental impact study verified the Urbos' high level of recyclability and recovery.



PRIORITISING HEALTH & SAFETY

The health and safety of passengers is an absolute priority for CAF. The Urbos family's extensive equipment and systems include:

- Air purification systems.
- LeadMind real-time data monitoring (capacity control).
- Command and control system: self-diagnostic and tracks system failures.
- Passenger information: PA system, intercom system between cabs and emergency cab intercom system and video information via TFT monitors/LED displays.
- CCTV.
- Event recorder.
- Forward Collision Warning System.
- Systems adapted to extreme weather conditions.
- Crash energy absorption and pedestrian protection measures integrated in cab ends.
- Driver fatigue detection.
- Overspeed protection.



DESIGNED FOR EVERYONE

Urbos is the leader in traveller accessibility for the tramway sector.

The Urbos has been designed to facilitate access for people with varying levels of disability.

VEHICLE ACCESS

100% low floor, due to the optimised bogie system, the height above the platform is minimal, including access areas, preventing passengers

from tripping. The gap between the platform and the tram has also been reduced to make it easier and safer for passengers boarding and disembarking.

PRM AREAS

Designated areas for people with reduced mobility are strategically located near doors. Additional

integrated facilities, including hearing loops, NaviLens Codes and extra-wide seating, provide for specific passenger requirements.

ONBOARD COMFORT

Passenger comfort and safety are the starting point for the Urbos design.

The Urbos full low-floor tram is at the same height as the platform, making boarding and disembarking quick and easy.

Wide, step-free passages allow passengers to move comfortably throughout the vehicle. While large windows offer more light inside the car to enable passengers to enjoy the views during their journey.

Large doors, which can be configured in a variety of sizes and number, also assist in rapid access and exit, ensuring a flexible and punctual service for users.

Seating has been specially designed to be light, modular, anti-vandal and comfortable, perfect for daily use in urban and tramway transport.

Urbos trams are equipped with heating and air conditioning systems to ensure maximum passenger comfort.

The Urbos is fitted with interior TFT monitors and/or LED information displays to keep passengers informed about the route and other essential details such as arrival times, next stops, connections.

There is also the opportunity to integrate a WiFi service for passengers to access the Internet on their devices while travelling.

The Urbos cabin is fully ergonomic with excellent visibility, providing a comfortable working environment for the driver and ease of operation and interaction with passengers.





URBOS IS FLEXIBILITY

The Urbos tram family offers a modular solution which can be tailored to the needs of any city and any type of operation.

FLEXIBLE CONFIGURATION

The customer can choose trams of different configurations, from units of 3 to 9 cars, depending on their network's passenger demand. Units can also be coupled to increase capacity.

The customer can also specify the number of doors and their position.

VARIABLE WIDTH

Suitable for all types of urban environments, the Urbos is offered in three standard widths: 2300mm, 2400mm and 2650mm. If required, it is also possible to provide a bespoke width.

DRIVING

The Urbos range comprises unidirectional or bidirectional trams to suit individual operator's infrastructure.

CUSTOMISED INTERIOR DESIGN

The tram features multi-purpose modules for seating areas, including reclining seats, PRM-designated sections, areas for strollers or bicycles and baggage. The Urbos platform enables the number of seats in the wheelchair areas or the rear body ends, located in the suspended modules, to be increased or decreased.

This allows the seats to be arranged in a row or face-to-face layout.

In addition, the majority of the interior design elements can be configured to customer preferences, with wall and ceiling coverings available in a variety of colours and designs.

Lights can be adapted to various configurations for different technologies, including LED.

The model, colour and seating design are determined by individual operator requirements. Platform and rear body end handles are also available in different shapes and colours.

THERE IS AN URBOS FOR EVERY CITY

With more than 1,900 Urbos operating in more than 50 cities across five continents, CAF's proven expertise in supplying reliable trams, LRVs and tram-trains is visible around the globe.

Every city is different and every transportation authority has specific infrastructure and operational requirements. The Urbos family offers versions which can be tailored to the specific needs of individual operators.

But they all have three things in common: meeting the most demanding eco-design requirements, integrating into the architectural environment and maintaining a high standard of performance.



URBOS 100 / 100X

100% low floor, the Urbos 100 provides easy access for all passengers, without any steps or obstacles. The Urbos 100X model also enables 100% low-floor trams with axles.

URBOS AXL

The URBOS AXL tram is equipped with bogies that allow a full rotation with their car body, enabling improved curve negotiation and an increased maximum operating speed.

URBOS 70

The central area of the Urbos 70 passenger saloon, 70% of the unit's entire length, is low floor with doors located in this section.

URBOS TT

The URBOS TT tram-train is specifically designed to optimise the connection between the city centre and suburbs, providing a fast link to nearby towns and villages.

Universal platform for every kind of city

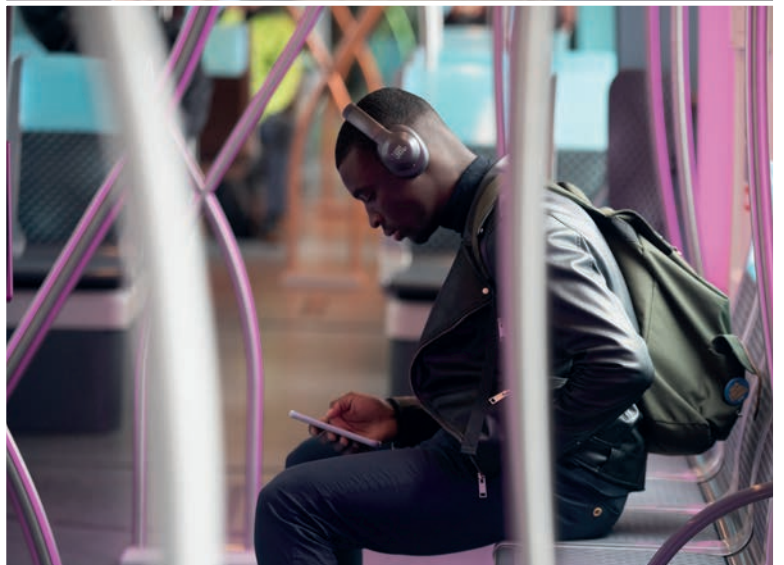
Modular, flexible design

Versatile and suitable for different passenger flows

Flexible configuration: comprising 3 to 9 cars to suit passenger demand

Variable gauge adapted for customer infrastructure

Greentech OESS integration option for catenary-free operation



CATENARY FREE URBOS

Greentech Freedrive technology is CAF's Onboard Energy Storage System (OESS) product range based on lithium-ion batteries, supercapacitors, or a combination of the two to meet the power needs of the tramway.

This innovative technology allows catenary-free operation through sections of cities, partially in certain areas or fully with charging points in stations.

Eliminating electrification significantly reduces new track extension infrastructure costs and visual impact in city centres.

CAF has successfully supplied catenary-free trams in cities around the globe including Luxembourg, Seville, Zaragoza and Granada in Spain, Newcastle and Parramatta in Australia, Tallinn in Estonia, Kaohsiung in Taiwan, Liège in Belgium and Birmingham in the UK.



AUTONOMOUS DRIVING

The Urbos tram responds to future needs by offering a safe, reliable and sustainable solution with self-driving modes.

Features that can be adjusted include:

Safe vehicle positioning

ADAS system

Environment recognition

Risk identification

Remote driving

V2X communications

Autonomous movement

Passenger area safety checking





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