CHARLOTTE, NORTH CAROLINA

S700 Streetcar

In 2018 Siemens Mobility introduced the latest innovation in low-floor light rail technology – the S700. Updating the 15-year-old S70 platform, the new and improved modern design of Siemens Mobility's low-floor light rail vehicle (LRV) has a new name and a new passenger experience.

Charlotte Area Transit System has tapped Siemens Mobility to build six new S700 streetcars to help meet growing ridership and the next expansion of what will soon be a 10-mile rail line. Improving the riding experience, the streetcar has been specially designed to meet the particular needs of the Charlotte region. The new streetcar will run wireless through Tryon Street, the heart of Uptown maintaining a catenary free zone.

A steel carbody construction, fully bi-directional, double articulated, low-floor vehicle, ideal for street-level operation and built in North America. Each six-axle streetcar is equipped with two power trucks (one under each end) and a non-powered center truck.

The interior of the new S700 will maintain the many proven and reliable aspects of the S70. The technological innovations throughout the new vehicle design and an open low-floor configuration make it one of the most accessible vehicles of its kind in today's market. The end-to-end low-floor access for all passengers including those in the ADA community and better sightlines for security allows for noticeably improved passenger flow and comfort, safety and efficiency.

Performance and Capacity

Maximum operational speed	25 mph	40 km/h
Service acceleration and deceleration	3.0 mphps	1.34 m/s²
Emergency braking rate	4.9 mphps	2.2 m/s²
Passenger capacity	54 seats Approx. 195 total passengers @ 6 p/m² 4 wheelchair spaces and 2 bicycle racks	
Maximum operational gradient	7%	
Motor power rating	174 hp x 4	130 kW x 4
Catenary supply voltage	750 Vdc	

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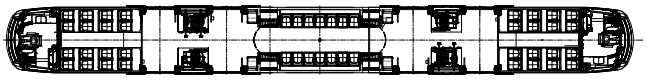
Each S700 streetcar is equipped with eight wide opening sliding plug doors all located in the low-floor area, with four to each side of the vehicle. The vehicle is also equipped with four designated wheelchair spaces allowing for priority seating to disabled passengers and doorway ramps to assist in the boarding and exiting of disabled passengers. The door spacing has been optimized to allow for greater passenger flow entering and exiting the vehicle, which ultimately decreases the station dwell times.

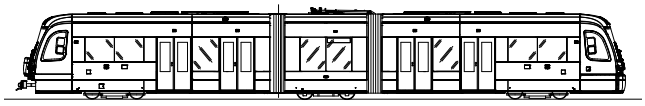
To maximize passenger comfort, each vehicle is equipped with two roof-mounted HVAC units per LRV.

The S700 utilizes a passenger information system consisting of operator and automated announcements, passenger-operator intercoms and interior and exterior electronic destination signs, as well as interior surveillance system for increased passenger safety.

For Charlotte, each new streetcar features a hybrid wireless technology that will allow the vehicle to run both on wire and off wire via an On Board Energy Storage System (OESS) at speeds up to 25 mph, carrying close to 195 passengers in each vehicle. The OESS includes an expandable and modular design that can be updated as battery technology evolves.

When running on-wire, each streetcar is electrically powered from an overhead catenary system (OCS). These streetcars remove automobiles off the road, in turn helping cities decrease their CO2 emissions.





Vehicle Dimensions and Weight

Length over coupler	85.25 ft	25984 mm
Width	8.7 ft	2650 mm
Height with pantograph (locked down)	12.7 ft	3860 mm
Maximum pantograph height	22.5 ft	6858 mm
Vehicle empty weight	101081 lbs (AW0)	45849 kg
High-floor section above TOR	2.8 ft (with 1 step plus slight ramp)	855 mm
Low-floor section above TOR	1.16 ft (threshold) 1.25 ft (center)	356 mm (threshold) 381 mm (center)
Minimum turning radius	82 ft	25 m
Vertical curve, crest	820 ft	250 m
Vertical curve, sag	1150 ft	350 m
Track gauge	4.7 ft	1435 mm
Wheel base (power trucks) (center truck)	6.2 ft 5.9 ft	1900 mm 1800 mm

Certified System
Quality
ISO 9001

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