



PHOENIX, ARIZONA

S700 Low-Floor Light Rail Vehicle

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.

Phoenix Valley Metro Rail has tapped Siemens Mobility to build 11 new S700 light rail vehicles to help meet growing ridership needs and the next expansion of the 26-mile rail line. The contract also includes an option to purchase up to 67 additional vehicles. Whether it's a ride to the shopping district, a ride to campus, or perhaps a ride to the big game; the S700 is a fully-accessible, bicycle-friendly transportation option for all.

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 light rail vehicle 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	55 mph	88 km/h
Maximum allowable speed	60 mph	97 km/h
Service acceleration and deceleration	3.0 mphps	1.34 m/s ²
Emergency braking rate	4.5 mphps	2 m/s ²
Passenger capacity	62 seats Approx. 210 total passengers @ 6 p/m ² 4 wheelchair spaces and 4 bicycle racks	
Maximum operational gradient	7%	
Motor power rating	174 hp x 4	130 kW x 4
Catenary supply voltage	750 Vdc (nominal)	

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Each LRV 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.

And to accommodate Phoenix’s bicycle population, this S700 incorporates four bicycle racks located adjacent to each doorway. The door spacing has been optimized to allow for greater passenger flow entering and exiting the vehicle, which ultimately decreases the station dwell times.

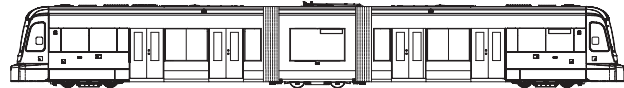
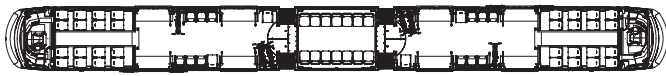
Special attention is paid to the extreme climate conditions in the Phoenix region. Design adjustments to combat the harsh elements, such as sun, heat, and dust, have been made to increase vehicle reliability and comfort.

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.

Each LRV is electrically powered from an overhead catenary system (OCS) and for Phoenix operates at speeds up to 55 mph, carrying 210 passengers in each vehicle with the ability to operate in multiple vehicle consists (up to three). These light rail vehicles remove automobiles off the road, in turn helping cities decrease their CO2 emissions.



Vehicle Dimensions and Weight

Length over coupler	91.5 ft	27900 mm
Width	8.69 ft	2650 mm
Height with pantograph (locked down)	12.7 ft	3870 mm
Maximum pantograph height	23 ft	7010 mm
Projected vehicle empty weight less than	104,800 lbs	47550 kg
High-floor section above TOR	2.89 ft (two "indented" steps up)	881 mm
Low-floor section above TOR	1.2 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	1,150 ft	350 m
Track gauge	4.7 ft	1435 mm
Wheel base (power trucks)	6.23 ft	1900 mm
(center truck)	5.91 ft	1800 mm



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