Moving with Ease. Designing with Style.

Low-Floor Light Rail Vehicles

usa.siemens.com/mobility

1 LIGHT RAIL has the ability to replace = **920 CARS** off the road

Strengthen City Cores

Public transportation is experiencing a resurgence.

The American Public Transportation Association (APTA) released their 2018 Public Transit Ridership report showing Americans took 9.9 billion trips on public transportation in 2018. Overall public transit ridership grew by 27 percent, surpassing the U.S. population growth of 23 percent. Additionally, passenger miles traveled on public transportation grew by 39 percent. This is more than the growth of vehicles miles traveled on the roads, which only grew by 33 percent.

Many of today's younger professionals want to live and work in vibrant city centers. More cities are reclaiming their centers by encouraging more transportation and development of areas that have lain dormant. Cities are working to strengthen their cores and revive a sense of community in downtown areas again.

Economic Driver

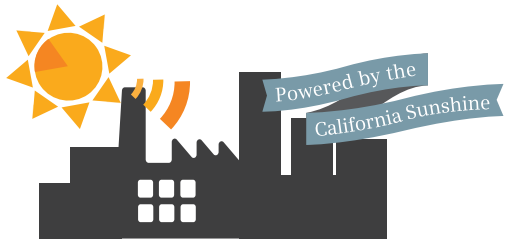
Light rail has long been known to be a strong economic driver.

As we've seen in other cities, the installation of rail tracks spurs economic development. In Portland, streetcars have helped bring development of some 140 real estate projects worth $3.5 billion, leading to an approximately 50 percent increase in land values. Charlotte has seen a $1.6 billion economic impact along its Lynx Blue Line since announcing its light rail project in 2003. Minneapolis' new Green Line has seen more than $1.2 billion in development along the Central Corridor LRT line even before its trains began to carry passengers in June 2014.

A Cleaner, Greener Way to Travel

Reduced traffic congestion translates into lower levels of pollution and a higher quality of life.

We are not only building lower emission transportation solutions but also using renewable energy and sustainable manufacturing processes at our Sacramento, Calif. plant. An all-round environmentally friendly design, the low-floor light rail vehicles have a direct correlation between the light-weight design, energy consumption and operating costs.



Offering Tailored Service

Efficiency counts – everywhere in the United States.

As an operator, you are completely focused on the business of service and transportation. You not only need easy-to-maintain vehicles, but an expert service partner.

Effective operations require maximum availability, which can only be ensured through service and maintenance, precisely tailored to your needs. Siemens customer service and maintenance programs will support all the operations and service plans your business requires. After all, putting great things in motion means having reliable vehicles available – at all times.

A New Passenger Experience - S700

Modular Design Fits your City

The latest innovation in Siemens low-floor light rail technology – the S700. Updating the 15-year-old S70 platform, the new and improved modern design of Siemens low-floor LRV has a new name and a new passenger experience.

The S700 will maintain the many proven and reliable aspects of the S70. The technological innovations throughout the new vehicle design and an innovative open low-floor configuration makes 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 sight-lines for security allows for noticeably improved passenger flow and comfort, safety and efficiency.

Reliability

The S700 has proven reliable in several demanding climates from Houston to Minneapolis, Phoenix to Seattle.
A robust climate control system ensures customer comfort across a wide range of temperatures and humidity levels.

American-made

One thing that makes rail great for America is that we are putting people to work across the U.S. with our strong commitment to the Buy America requirement by continuously going above and beyond. The S700 far exceeds Buy America requirements with nearly 80% of the components being American-sourced.

Siemens permanent light rail manufacturing plant allows our customers to have the confidence that your light rail manufacturing partner is not far away for support.

Maintenance

The S700 has been designed with ease of maintenance as a prime factor intended to minimize turnaround times. Several service-proven features are included in the S700 standard design that will make maintenance, cleaning and repairs easier. Simplified truck and tire maintenance reduce downtime.

Smart Technology

A remote diagnostic tool and rail remote service desk allows the end user remote access to view active and historic vehicle fault data. Data is sent in real time when traveling on the alignment, at station platforms or vehicle staging locations. On-board energy storage systems provide energy to the propulsions system via a roof mounted unit.

Keeping on Track Since 2004 – with More Than 600 Vehicles Ordered in Eleven Cities Across the U.S.

Atlanta, Ga.
Atlanta's streetcar system marks the inauguration of Siemens first US built S70 Streetcar based on the service proven 70% low-floor light rail vehicle platform.

Charlotte, N.C.
Currently the LYNX Blue line, is the only light rail system in the United States that runs through a Convention Center.

Houston, Texas
Siemens low-floor vehicles carry an extraordinary 45,000 passengers per day over METRO's 7.5 mile track, making Houston's light rail system the nation's most heavily traveled per track mile.

Minneapolis / St. Paul, Minn.
Linking downtown St. Paul and downtown Minneapolis with stops at the University of Minnesota and the State Capital as well as connecting with the Hiawatha line serving the Mall of America and Target Field.

Norfolk, Va.
The Tide, has spurred over $500 million in transit-oriented development since the project began in 2007.

Orange County, Calif.
The OC Streetcar will serve the historic downtown SantaAna and Civic Center which includes government offices, federal, state and local courthouses, unique restaurants and shops, an artists' village, several schools and a variety of community enrichment organizations.

Phoenix, Ariz.
Phoenix Valley Metro Rail tapped Siemens to build 11 new S700 light rail vehicles to help meet growing ridership needs and the next expansion of the 26-mile rail line.

Portland, Ore.
In 1998 the Westside light rail extension opened with North America's first fleet of 46 low-floor vehicles from Siemens. An increase in ridership over the years has prompted Portland to expand their system to nearly 60 miles of track and operate in excess of 100 LRV's.

Salt Lake City, Utah
Population growth, swelling congestion, and a successful bid to host the 2002 Winter Olympics landed Salt Lake City with its very own light rail system in 1999, opening with a base fleet of 23 Siemens vehicles. Today an excess of 117 Siemens LRVs are in operation.

Seattle, Wash.
Sound Transit is adding 30 miles of new light rail to create about a 50-mile regional system and ordered 152 new S70 light rail vehicles.

San Diego, Calif.
"The relationship with Siemens goes back as far as our system itself. We have 100% Siemens cars that have performed admirably over the last 30 years; we are very happy with Siemens, not only the equipment, but the team that stands behind them. These next-generation vehicles represent the true partnership that exists between MTS and Siemens."

Paul Jablonski, Metropolitan Transit System

An American Made Mobility Solution

The Siemens S700 LRV has been specially designed to meet the specific needs of Sound Transit and the Puget Sound region and to fit all commuters needs; whether it's a ride to the airport, a ride from your neighborhood to downtown or perhaps a ride to the big game. The S700 will be a fully-accessible, bicycle-friendly transportation option for all and will provide the Puget Sound region's passengers with a safe, comfortable ride that gets commuters to their destination reliably.

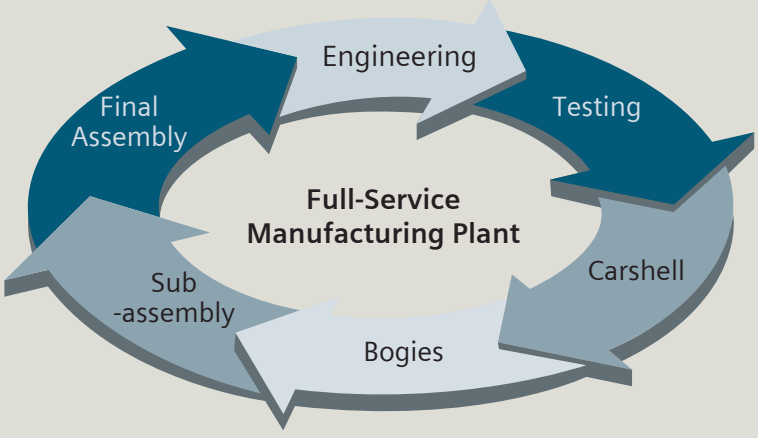
Manufacturing in North America

Moving cities forward with Light Rail Vehicles for more than 40 years.

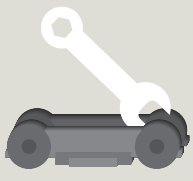
Siemens has expertise in the areas of urban, commuter and long distance transportation. The Sacramento full-service manufacturing plant builds rolling stock from start to finish optimizing project management and quality.

With an industry-leading U.S. supply chain and dependable delivery, Siemens offers environmentally friendly, efficient and reliable rail vehicles.

From pre-installation to ongoing maintenance, Siemens Customer Service goes the extra mile to extend and enhance the service life of all rail vehicles.



- **87** suppliers
- **27** states
  for CATS
- **97** suppliers
- **28** states
  for Tri-Met



SERVICES
to Support
THE LIFE
of Your Vehicle

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S70 Streetcar

Atlanta, Georgia

For the first time since 1949, Atlanta has revitalized their streetcar project with a 2.62 mile system running along the streets of the downtown area. Atlanta's streetcar system marks the inauguration of Siemens' first US built S70 Streetcar based on the service proven 70% low-floor S70 light rail vehicle platform. With a base fleet of four vehicles these streetcars are complementary elements of the City's Connect Atlanta Plan to increase urban mobility, sustainable development and livability of the city of Atlanta.

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

The interior of this streetcar has been designed to maximize passenger space, incorporating wide doorways and a predominately knee-to-back seating arrangement.

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 door spacing has been optimized to allow for greater passenger flow entering and exiting the vehicle, which ultimately decreases the station dwell times.

The vehicle is also equipped with four designated wheelchair spaces allowing for priority seating to disabled passengers and hydraulic height control system to permit level boarding and exiting of the vehicle.

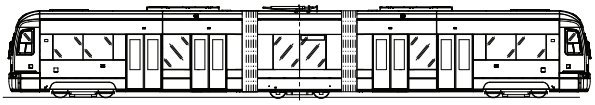
Performance and Capacity

Maximum operational speed	35 mph	56 km/h
Service acceleration / deceleration	3.0 mphps	1.34 m/s²
Emergency braking rate	4.8 mphps	2.25 m/s²
Passenger capacity	60 seats Approx. 195 total passengers @ 6 p/m² 4 wheelchair spaces	
Maximum operational gradient	7%	
Motor power rating	174 hp x 4	130 kW x 4
Catenary supply voltage	750 Vdc	

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

The streetcar 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 and exterior surveillance system for increased passenger safety.

Each S70 Streetcar is electrically powered from an overhead catenary system (OCS) and for Atlanta operates at speeds up to 35 mph while carrying close to 200 passengers in each vehicle. These light rail vehicles remove automobiles off the road in turn helping cities decrease their CO_2 emissions.



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Vehicle Dimensions and Weight

Length over anticlimbers	79.1 ft	24110 mm
Width	8.7 ft	2654 mm
Height with pantograph (locked down)	12.6 ft	3840 mm
Maximum pantograph height	up to 23 ft	7000 mm
Vehicle empty weight	96500 lbs (AW0)	43700 kg
High-floor section above TOR	3.2 ft	985 mm
Low-floor section above TOR	1.2 ft	356 mm
Minimum turning radius (standard)	82 ft	25 m
Minimum turning radius (option)	59 ft	18 m
Vertical curve, crest	820 ft	250 m
Vertical curve, sag	1150 ft	350 m
Track gauge	4.7 ft	1435 mm
Wheel base	6.2 ft (power trucks) 5.9 ft (center truck)	1900 mm 1800 mm

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S70 Low-Floor Light Rail Vehicle

Charlotte, North Carolina

The state of North Carolina became the first south eastern state to start a modern-era light rail system. Charlotte Area Transit System, commonly referred to as CATS opened its first light rail line in the fall of 2007 to an overwhelming crowd of transit supporters with a base fleet of 16 Siemens vehicles running on 9.6 miles of track. The success of that initial order and the increase in overall ridership over the years has prompted Charlotte to expand their system to include 19.3 miles of track and operate in excess of 42 Siemens 70% low-floor light rail vehicles (LRV).

A steel carbody construction, fully bi-directional, double articulated, low-floor vehicle, ideal for street-level operation and built in the USA. 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 this S70 LRV has been designed to maximize passenger space, incorporating wide doorways and a predominately knee-to-back seating arrangement.

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 door spacing has been optimized to allow for greater passenger flow entering and exiting the vehicle, which ultimately decreases the station dwell times.

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 Charlotte's bicycle population, this S70 incorporates four bicycle racks located adjacent to each doorway.

Performance and Capacity

Maximum operational speed	66 mph	106 km/h
Maximum allowable speed	71.5 mph	120 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	68 seats Approx. 230 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	

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

The S70 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 and exterior surveillance system for increased passenger safety.

Each LRV is electrically powered from an overhead catenary system (OCS) and for Charlotte operates at speeds up to 66 mph, carrying close to 230 passengers in each vehicle with the ability to operate in multiple vehicle consists (up to four). These light rail vehicles remove automobiles off the road in turn helping cities decrease their CO2 emissions.

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Vehicle Dimensions and Weight

Length over coupler	93.6 ft	28530 mm
Width	8.7 ft	2650 mm
Height with pantograph (locked down)	12.7 ft	3870 mm
Maximum pantograph height	up to 23 ft	7010 mm
Vehicle empty weight	99500 lbs (AW0)	45130 kg
High-floor section above TOR	2.2 ft (with 1 step plus slight ramp)	670 mm
Low-floor section above TOR	1.2 ft (threshold) 1.3 ft (center)	356 mm (threshold) 396 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

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S70 Low-Floor Light Rail Vehicle

Houston, Texas

In preparation for the 2004 Super Bowl Game, Houston opened its light rail system with a base fleet of 18 Siemens vehicles. On Super Bowl Sunday 2004 over 64,000 people rode the METRO light rail vehicles. Well ahead of ridership expectations, the Siemens S70 vehicles carry an extraordinary 45,000 passengers per day with METRO'sinitial Red Lines 7.5 mile track, making Houston's light rail system the nation's most heavily traveled per track mile. In 2011, METRO expanded their fleet by adding an additional 19 Siemens S70 light rail vehicles (LRV).

A steel carbody construction, fully bi-directional, double articulated, low-floor vehicle, ideal for street-level operation and built in the USA. 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 this S70 LRV has been designed to maximize passenger space, incorporating a predominately knee-to-back seating arrangement.

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 door spacing has been optimized to allow for greater passenger flow entering and exiting the vehicle, which ultimately decreases the station dwell times.

In addition to the maximized passenger space and wide doorways the vehicle is also equipped with two designated wheelchair spaces allowing for priority seating to disabled passengers and hydraulic height control system to permit level boarding and exiting of the vehicle. And to accommodate Houston's

Performance and Capacity

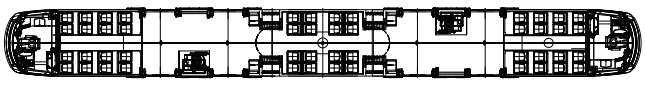
Maximum operational speed	55 mph	88 km/h
Maximum allowable speed	59 mph	95 km/h
Service acceleration and deceleration	3.0 mphps	1.34 m/s²
Emergency braking rate	4.8 mphps	2.18 m/s²
Passenger capacity	60 seats Approx. 225 total passengers @ 6 p/m² 2 wheelchair spaces or bicycle areas	
Maximum operational gradient	7%	
Motor power rating	174 hp x 4	130 kW x 4
Catenary supply voltage	600 Vdc	

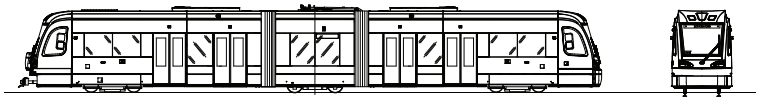
bicycle population, this S70 incorporates two bicycle racks located adjacent to each doorway.

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

The S70 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 and exterior surveillance system for increased passenger safety.

Each LRV is electrically powered from an overhead catenary system (OCS) and for Houston operates at speeds up to 55 mph, carrying close to 230 passengers in each vehicle with the ability to operate in multiple vehicle consists (up to four). The S70 removes automobiles off the road in turn helping cities decrease their CO2 emissions. These light rail vehicles remove automobiles off the road in turn helping cities decrease their CO2 emissions.





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Vehicle Dimensions and Weight

Length over coupler	85.3 ft	25990 mm
Width	8.7 ft	2650 mm
Height with pantograph (locked down)	12.3 ft	43771 mm
Maximum pantograph height	up to 23 ft	7000 mm
Vehicle empty weight	98200 lbs (AW0)	44540 kg
High-floor section above TOR	2.8 ft	855 mm
Low-floor section above TOR	1.2 ft (threshold)	356 mm (threshold)
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

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S70 Low-Floor Light Rail Vehicle

Norfolk, Virginia

Virginia's first light rail system opened in Norfolk in August 2011 with a base fleet of 9 Siemens 70% low-floor light rail vehicles (LRV) running on 7.5 miles of track. The Tide, has spurred $509 million in transit-oriented development since the project began in 2007 with more development projects under way.

A steel carbody construction, fully bi-directional, double articulated, low-floor vehicle, ideal for street-level operation and built in the USA. 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 this S70 LRV has been designed to maximize passenger space, incorporating wide doorways and a predominately knee-to-back seating arrangement.

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 door spacing has been optimized to allow for greater passenger flow entering and exiting the vehicle, which ultimately decreases the station dwell times.

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 Norfolk's bicycle population, this S70 incorporates four bicycle racks located adjacent to each doorway.

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

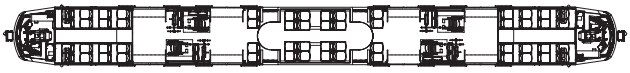
The S70 utilizes a passenger information system consisting of operator and automated announcements, passenger-operator intercoms and interior and exterior electronic destination signs, as

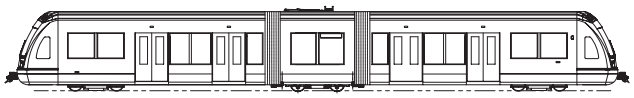
Performance and Capacity

Maximum operational speed	55 mph	88.5 km/h
Maximum allowable speed	71.5 mph	120 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	68 seats Approx. 230 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	

well as interior and exterior surveillance system for increased passenger safety.

Each LRV is electrically powered from an overhead catenary system (OCS) and for Norfolk operates at speeds up to 55 mph, carrying close to 230 passengers in each vehicle with the ability to operate in multiple vehicle consists (up to four). These light rail vehicles remove automobiles off the road in turn helping cities decrease their CO2 emissions.





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Vehicle Dimensions and Weight

Length over coupler	93.6 ft	28530 mm
Width	8.7 ft	2650 mm
Height with pantograph (locked down)	12.7 ft	3870 mm
Maximum pantograph height	up to 23 ft	7010 mm
Vehicle empty weight	99500 lbs (AW0)	45130 kg
High-floor section above TOR	2.2 ft (with 1 step plus slight ramp)	670 mm
Low-floor section above TOR	1.2 ft (threshold) 1.3 ft (center)	356 mm (threshold) 396 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

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S70 Low-Floor Light Rail Vehicle

Salt Lake City, Utah

Population growth, swelling congestion, and a successful bid to host the 2002 Winter Olympics landed Salt Lake City with its very own light rail system in 1999, opening with a base fleet of 23 Siemens vehicles. The success of that initial order and the increase in overall ridership over the years has prompted Salt Lake City to expand their system to include 44.8 mile of track and operate in excess of 117 Siemens light rail vehicles (LRV). In 2010 Siemens introduced the latest edition of light rail vehicles for the growing Salt Lake City system; the 70% low-floor Siemens S70 light rail vehicle.

A steel carbody construction, fully bi-directional, double articulated, low-floor vehicle, ideal for street-level operation and built in the USA. 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 this S70 LRV has been designed to maximize passenger space, incorporating wide doorways and a predominately knee-to-back seating arrangement.

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 door spacing has been optimized to allow for greater passenger flow entering and exiting the vehicle, which ultimately decreases the station dwell times.

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Performance and Capacity

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Maximum allowable speed	59 mph	95 km/h
Service acceleration and deceleration	3.0 mphps	1.34 m/s²
Emergency braking rate	4.8 mphps	2.18 m/s²
Passenger capacity	60 seats Approx. 225 total passengers @ 6 p/m² 2 wheelchair spaces or bicycle areas	
Maximum operational gradient	7%	
Motor power rating	174 hp x 4	130 kW x 4
Catenary supply voltage	600 Vdc	

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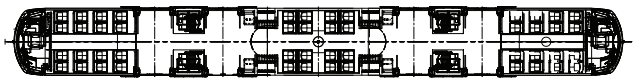

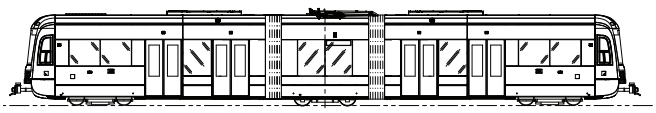

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Vehicle Dimensions and Weight

Length over coupler	81.4 ft	24810 mm
Width	8.7 ft	2650 mm
Height with pantograph (locked down)	12.3 ft	43771 mm
Maximum pantograph height	up to 23 ft	7000 mm
Vehicle empty weight	96500 lbs (AW0)	43771 kg
High-floor section above TOR	2.8 ft	855 mm
Low-floor section above TOR	1.2 ft (threshold)	356 mm (threshold)
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	6.2 ft (power trucks)	1900 mm (power trucks)
	5.9 ft (center truck)	1800 mm (center truck)

S700 Streetcar

Charlotte, North Carolina

Siemens introduced the latest innovation in Siemens low-floor light rail technology – the S700. Updating the 15-year-old S70 platform, the new and improved modern design of Siemens' low-floor LRV has a new name and a new passenger experience. Charlotte Area Transit System has tapped Siemens to build 6 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 Siemens streetcar has been specially designed to meet the specific needs of the Charlotte region. The new streetcar will run wireless through Tryon Street, the heart of Uptown maintaining a catenary free zone. The first streetcar is expected to arrive in 2019.

A steel carbody construction, fully bi-directional, double articulated, low-floor vehicle, ideal for street-level operation and built in the 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 innovative open low-floor configuration makes 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.

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

Performance and Capacity

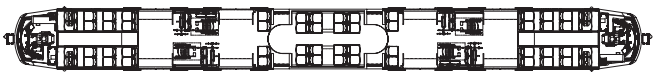
Maximum operational speed	25 mph	40 km/h
Service acceleration and deceleration	3.0 mphps	1.34 m/s²
Emergency braking rate	4.9 mphps	2.2 m/s²
Passenger capacity	54 seats Approx. 195 total passengers @ 6 p/m² 4 wheelchair spaces and 2 bicycle racks	
Maximum operational gradient	7%	
Motor power rating	174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

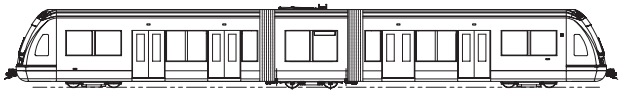
seating to disabled passengers and doorway ramps to assist in the boarding and exiting of disabled passengers. The door spacing has been optimized to allow for greater passenger flow entering and exiting the vehicle, which ultimately decreases the station dwell times.

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.





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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

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S700 Low-Floor Light Rail Vehicle

Minneapolis/ St. Paul, Minnesota

According to US Industry data the Twin Cities are cited as one of the top 12 cities ranked among the best in the country for public transportation. The Twin Cities opened their second light rail project with a base fleet of 59 Siemens vehicles running on 11 miles of track and linking downtown St. Paul and downtown Minneapolis. The new line added stops at the University of Minnesota and the State Capital as well as connecting with the Hiawatha line serving the Mall of America and Target Field. In 2015, an additional 5 vehicles were ordered by Twin Cities. In 2018 Siemens introduced the latest innovation in Siemens low-floor light rail technology – the S700. Updating the 15-year-old S70 platform, the new and improved modern design of Siemens low-floor LRV has a new name and a new passenger experience. The S700 brand will be applied to Twin Cities' latest contract of 27 light rail vehicles ordered in 2016.

A steel carbody construction, fully bi-directional, double articulated, low-floor vehicle, ideal for street-level operation and built in the 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 innovative open low-floor configuration makes 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	59 mph	95 km/h
Service acceleration and deceleration	3.0 mphps	1.34 m/s²
Emergency braking rate	5.0 mphps	2.2 m/s²
Passenger capacity	61 seats Approx. 235 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	

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 hydraulic height control system to permit level boarding and exiting of the vehicle. And to accommodate Minneapolis' bicycle population, this S700 incorporates one bicycle rack located by the flip seats at each end of the vehicle. 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 combat the extreme winter conditions in Minneapolis the S700 features improved sidewall heaters in the passenger area and increased thermal insulation throughout the vehicle. And will feature new, full-width, removable steel snow plows at each cab end of the light rail vehicle. The new design allows for full functionality of the coupler and anticlimbers without any impediment to the normal operation. To maximize passenger comfort each vehicle is also equipped with two roof-mounted HVAC units per LRV.

Each LRV is electrically powered from an overhead catenary system (OCS) and for Minneapolis operates at speeds up to 55 mph, carrying close to 235 passengers in each vehicle with the ability to operate in multiple vehicle consists (up to four). These light rail vehicles remove automobiles off the road in turn helping cities decrease their CO2 emissions.

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Vehicle Dimensions and Weight

Length over coupler	94.3 ft	28742 mm
Width	8.7 ft	2650 mm
Height with pantograph (locked down)	12.7 ft	3870 mm
Maximum pantograph height	up to 23 ft	7010 mm
Vehicle empty weight	102500 lbs (AW0)	46500 kg
High-floor section above TOR	2.2 ft (with 1 step plus slight ramp)	670 mm
Low-floor section above TOR	1.2 ft (threshold) 1.3 ft (center)	356 mm (threshold) 396 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

S700 Low-Floor Light Rail Vehicle

Phoenix, Arizona

In 2018 Siemens introduced the latest innovation in Siemens low-floor light rail technology – the S700. Updating the 15-year-old S70 platform, the new and improved modern design of Siemens low-floor LRV has a new name and a new passenger experience. Phoenix Valley Metro Rail has tapped Siemens 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 will be a fully-accessible, bicycle-friendly transportation option for all. The first light rail vehicle is expected to arrive in 2019.

A steel carbody construction, fully bi-directional, double articulated, low-floor vehicle, ideal for street-level operation and built in the 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 innovative open low-floor configuration makes 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.

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

Performance and Capacity

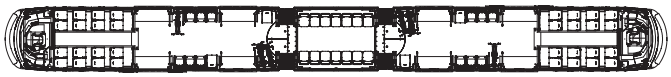
Maximum Operational Speed	55 mph	88 km/h
Maximum Allowable Speed	60 mph	97 km/h
Service Acceleration and Deceleration	3.0 mphps	1.34 m/s²
Emergency Braking Rate	4.5 mphps	2 m/s²
Passenger Capacity	62 seats Approx. 210 total passengers @ 6 p/m2	
Maximum Operational Gradient	7%	
Motor Power Rating	174 hp x 4	130 kW x 4
Catenary Supply Voltage	750 Vdc (nominal)	

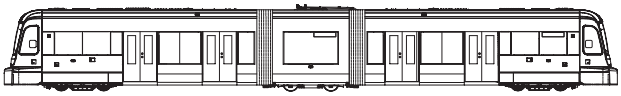
equipped with four designated wheelchair spaces allowing for priority seating to disabled passengers and doorway ramps to assist in the boarding and exiting of disabled passengers. And to accommodate Phoenix's bicycle population, this S700 incorporates four bicycle racks located adjacent to each doorway. 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.





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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	104800 lbs	47550 kg
High-floor section above TOR	2.89 ft (two "indented" steps up)	881 mm
Low-floor section above TOR (threshold)	1.2 ft (threshold)	356 mm
	1.25 ft (center)	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)	6.23 ft	1900 mm
(center truck)	5.91 ft	1800 mm

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S700 Low-Floor Light Rail Vehicle

Portland, Oregon

Portland opened its Westside light rail extension in 1998 with North America's first fleet of 46 low-floor vehicles from Siemens. The success of that initial order and the increase in overall ridership over the years has prompted Portland to expand their system to nearly 60 miles of track and operate in excess of 100 light rail vehicles (LRV), which Siemens has delivered over the past 20 years. In 2018 Siemens introduced the latest innovation in Siemens low-floor light rail technology – the S700. Updating the 15-year-old S70 platform, the new and improved modern design of Siemens low-floor LRV has a new name and a new passenger experience. The S700 brand will be applied to Portland's latest order of 18 light rail vehicles.

A steel carbody construction, fully bi-directional, double articulated, low-floor vehicle, ideal for street-level operation and built in the 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 innovative open low-floor configuration makes 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.

Each S700 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

Performance and Capacity

Maximum operational speed	55 mph	88.5 km/h
Maximum allowable speed	65 mph	105 km/h
Service acceleration and deceleration	3.0 mphps	1.34 m/s²
Emergency braking rate	4.9 mphps	2.23 m/s²
Passenger capacity	66 seats Approx. 234 total passengers @ 6 p/m² 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	

seating to disabled passengers and doorway ramps to assist in the boarding and exiting of disabled passengers. And to accommodate Portland's extensive bicycle population, this S700 incorporates four permanent bicycle racks located adjacent to each forward 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.

The vehicle's HVAC systems now include fresh air dampers that automatically adjust based on the number of people in the vehicle, keeping compartments more comfortable for riders and increasing the HVAC system's efficiency.

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 and exterior surveillance system for increased passenger safety.

Maintenance improvements were also made, including rearrangement of systems to increase access to key components on the vehicles. The diagnostic systems have also been improved to allow maintenance employees to troubleshoot and test each system from one point rather than visiting every device along the rail vehicle.

The S700 LRV is electrically powered from an overhead catenary system (OCS) and for Portland operates at speeds up to 55 mph, carrying close to 234 passengers in each vehicle with the ability to operate in multiple vehicle consists called married pairs. These light rail vehicles remove automobiles off the road in turn helping cities decrease their CO2 emissions.

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Vehicle Dimensions and Weight

Length over coupler	96.4 ft	29400 mm
Width	8.7 ft	2650 mm
Height with pantograph (locked down)	12.8 ft	3915 mm
Maximum pantograph height	up to 23 ft	7010 mm
Vehicle empty weight	101412 lbs (AW0)	46000 kg
High-floor section above TOR	2.2 ft (with 1 step plus slight ramp)	680 mm
Low-floor section above TOR	1.2 ft (threshold) 1.3 ft (center)	371 mm (threshold) 396 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

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S700 Low-Floor Light Rail Vehicle

San Diego, California

The resurgence of light rail in the United States began in 1981 when the first modern era light rail system took its inaugural trip in San Diego when its system opened with a base fleet of 14 U2 Siemens vehicles. The success of that initial order and the increase in overall ridership over the years has prompted San Diego to expand their system to include 54 miles of track and operate in excess of 200 Siemens light rail vehicles (LRV). In 2018 Siemens introduced the latest innovation in Siemens low-floor light rail technology – the S700. Updating the 15-year-old S70 platform, the new and improved modern design of Siemens low-floor LRV has a new name and a new passenger experience. The S700 brand will be applied to San Diego's latest order of 45 light rail vehicles.

A steel carbody construction, fully bi-directional, double articulated, low-floor vehicle, ideal for street-level operation and built in the North America. Each six-axle light rail vehicle (LRV) 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 innovative open low-floor configuration makes 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.

Each S700 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

Performance and Capacity

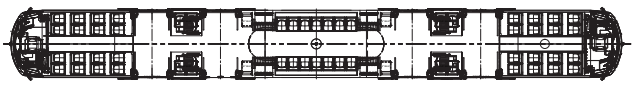
Maximum operational speed	55 mph	88 km/h
Maximum allowable speed	65 mph	105 km/h
Service acceleration and deceleration	3.0 mphps	1.34 m/s²
Emergency braking rate	4.8 mphps	2.18 m/s²
Passenger capacity	58 seats Approx. 184 total passengers @ 6 p/m² 4 wheelchair spaces or bicycle areas	
Maximum operational gradient	7%	
Motor power rating	174 hp x 4	130 kW x 4
Catenary supply voltage	600 Vdc	

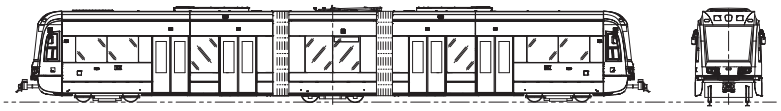
is also equipped with four designated wheelchair spaces allowing for priority seating to disabled passengers and doorway ramps to assist in the boarding and exiting of disabled passengers. The door spacing has been optimized to allow for greater passenger flow entering and exiting the vehicle, which 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.

Each LRV is electrically powered from an overhead catenary system (OCS) and for San Diego operates at speeds up to 55 mph, carrying close to 184 passengers in each vehicle with the ability to operate in multiple vehicle consists (up to four). These light rail vehicles remove automobiles off the road in turn helping cities decrease their CO2 emissions.





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Vehicle Dimensions and Weight

Length over coupler	81.4 ft	24810 mm
Width	8.7 ft	2650 mm
Height with pantograph (locked down)	12.3 ft	3755 mm
Maximum pantograph height	up to 23 ft	7000 mm
Vehicle empty weight	97100 lbs (AW0)	44044 kg
High-floor section above TOR	2.8 ft	855 mm
Low-floor section above TOR	1.2 ft (threshold)	356 mm (threshold)
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	6.2 ft (power trucks)	1900 mm (power trucks)
	5.9 ft (center truck)	1800 mm (center truck)

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S700 Low-Floor Light Rail Vehicle

Seattle, Washington

In 2018 Siemens introduced the latest innovation in Siemens low-floor light rail technology – the S700. Updating the 15-year-old S70 platform, the new and improved modern design of Siemens low-floor LRV has a new name and a new passenger experience. Seattle's Sound Transit has tapped Siemens to build 122 new S700 light rail vehicles to help meet growing ridership needs and the next expansion of what will soon be a 116-mile rail line. Another 30 vehicles were added to the order in 2017, bringing the total number of vehicles ordered to 152. The Siemens LRV for Seattle has been specially designed to meet the specific needs of Sound Transit and the Puget Sound region. The S700 will provide the Puget Sound region's passengers with a safe, comfortable ride that gets commuters to their destination reliably. The first light rail vehicle is expected to arrive in 2019.

A steel carbody construction; single operator's cab; double articulated; low-floor vehicle, ideal for street-level operation and built in the USA. Each six-axle S700 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 innovative open low-floor configuration makes 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	65 mph	105 km/h
Maximum allowable speed	55 mph	88 km/h
Service acceleration and deceleration	3.0 mphps	1.34 m/s²
Emergency braking rate	5.0 mphps	2.23 m/s²
Passenger capacity	74 seats Approx. 225 total passengers @ 6 p/m² Approx. 276 total passengers @ 8 p/m²	
Maximum operational gradient	7%	
Motor power rating	174 hp x 4	130 kW x 4
Catenary supply voltage	1500 Vdc (nominal)	

Each S700 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. 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.

The S700 LRV is electrically powered from an overhead catenary system (OCS) and for Seattle operates at speeds up to 55 mph, carrying 240 passengers in each vehicle with the ability to operate in multiple vehicle consists (up to four). The S700 removes automobiles off the road in turn helping cities decrease their CO2 emissions.

Vehicle Dimensions and Weight

Length over coupler	95 ft	28942 mm
Width	8.69 ft	2650 mm
Height with pantograph (locked down)	12.7 ft	3870 mm
Maximum pantograph height	22.3 ft	6800 mm
Projected vehicle empty weight	103400 lbs	46900 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)	366 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)	6.23 ft 5.91 ft	1900 mm 1800 mm

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