

SIEMENS

SD160 Next Generation Light Rail Vehicle

Edmonton, Alberta

Rail Systems



Over two decades ago, Edmonton, Alberta became the first North American city to open a light rail system with a base fleet of 37 U2 Siemens light rail vehicles (LRV). Thirty years later, a new generation of vehicle was born and the city of Edmonton expanded their network by 2.1 km and purchased 57 SD160 Next Generation light rail vehicles (LRV).

A steel carbody construction; fully bi-directional; single articulated; high floor vehicle, ideal for high platform operation and built in North America. Each six-axle SD160 light rail vehicle is equipped with two power trucks (one under each end) and a non-powered center truck.

The interior of this next generation SD160 LRV has been designed to maximize passenger space, incorporating a predominately knee-to-knee and back-to-back seating arrangement. Each SD160 LRV is equipped with eight wide opening sliding plug doors, 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 doorway ramps to assist in the boarding and exiting of disabled passengers.

Performance and Capacity

Maximum operational speed	80 km/h	50 mph
Maximum allowable speed	80 km/h	50 mph
Service acceleration	1.07 m/s ²	2.37 mphps
Service deceleration	1.31 m/s ²	2.95 mphps
Emergency braking rate	2.63 m/s ²	5.9 mphps
Passenger capacity	60 seats	
	Approx. 190 total passengers @ 6 p/m ²	
	2 wheelchair spaces	
Maximum operational gradient	7%	
Motor power rating	145 kW x 4	194 hp x 4
Catenary supply voltage	600 Vdc	

To combat the extreme winter conditions in Edmonton the SD160 features sidewall heaters in the passenger area, dual pane insulated windows and increased thermal insulation throughout the vehicle. To maximize passenger comfort each vehicle is also equipped with two roof-mounted HVAC units per LRV.

The SD160 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.

The SD160 LRV is electrically powered from an overhead wire system (catenary) and for Edmonton operates at speeds up to 80 km/h, carrying close to 200 passengers in each vehicle with the ability to operate in multiple vehicle consists (up to five). The SD160 removes automobiles off the road in turn helping cities decrease their CO₂ emissions.

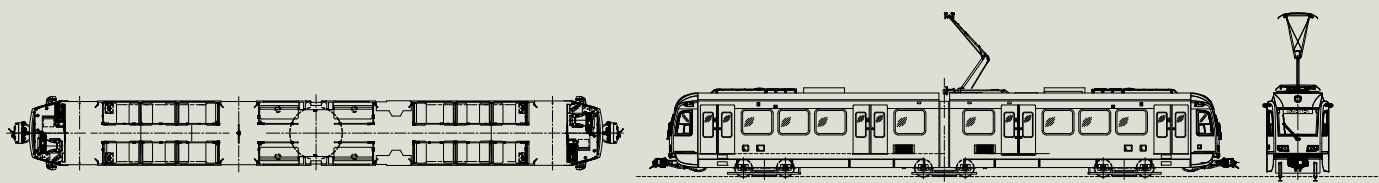
More than 20 million Canadians are served by public transit, more than at any time in the past. These passengers make an average of 78 transit trips each year, totaling more than 1.5 billion trips nationwide. More than 75% of urban

Canadians rely on transit to meet their daily needs. In the country's largest metropolitan areas, about 15% of commuters (or 1.35 million people) take transit to work, which outnumbers the number of people walking, cycling, or driving to work – combined.

(Source, Canadian Urban Transportation Association)

Vehicle Dimensions and Weight

Length over coupler	24820 mm	81.4 ft
Width	2654 mm	8.7 ft
Height with pantograph (locked down)	3840 mm	12.6 ft
Maximum pantograph height	7010 mm	up to 23 ft
Vehicle empty weight	41500 kg	91500 lbs (AWO)
High floor section above TOR	985 mm	3.2 ft
Low floor section above TOR	n/a	n/a
Minimum turning radius	25 m	82 ft
Vertical curve, crest	250 m	820 ft
Vertical curve, sag	350 m	1150 ft
Track gauge	1435 mm	4.7 ft
Wheel base	1800 mm	5.9 ft



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