

ELECTRIC MULTIPLE UNIT (IMU 160/SMU 260 Class)

for QR



Downer EDI Rail and Bombardier Transportation Joint Venture has designed 16 Inter-urban Multiple Units, designated the IMU 160 and 8 Suburban Multiple Units, designated the SMU260 for QR.

Based closely on the highly successful "Series B" EMU delivered to PTA of Western Australia's new Metro rail, the new QR vehicles represent the next generation of passenger rollingstock for Brisbane and South East Queensland.

The design has been tailored to meet the specific needs of QR's operations and will offer fast and comfortable services for passengers. Both vehicles comply with the latest Disability Standards for Accessible Public Transport and the IMU version includes a wheelchair accessible toilet.

The cars are fully air-conditioned and the driver's compartments have independent air-conditioning which allows the driver to adjust the cab temperature to suit.

The vehicles are of stainless steel construction with high impact resistant glass and Kevlar reinforced plastic cab front. Side windows are mounted in frames for rapid glass replacement and comply with FRA II impact standards.

The vehicles are permanently coupled into double ended three car sets with a driving car at each end and a central trailer car (DM-T-DM). The units will run as either three car units or coupled to form six car sets.

The propulsion system is the latest generation of water cooled propulsion from Bombardier and will give the vehicle a maximum service speed of 130 km/h under all loading conditions. The propulsion equipment is virtually identical to the proven and reliable Western Australian PTA vehicles.

The vehicle is equipped with the latest cross blended Electro-Pneumatic (EP) braking which is wheel slide protected. The vehicle includes electrically activated emergency braking which does not rely on the traditional method of discharging air from a brake pipe. This gives almost instant stopping effort without delay, resulting in shorter stopping distances.

The high regenerative braking effort produced by the AC propulsion system gives smooth and efficient braking under wet and dry conditions.

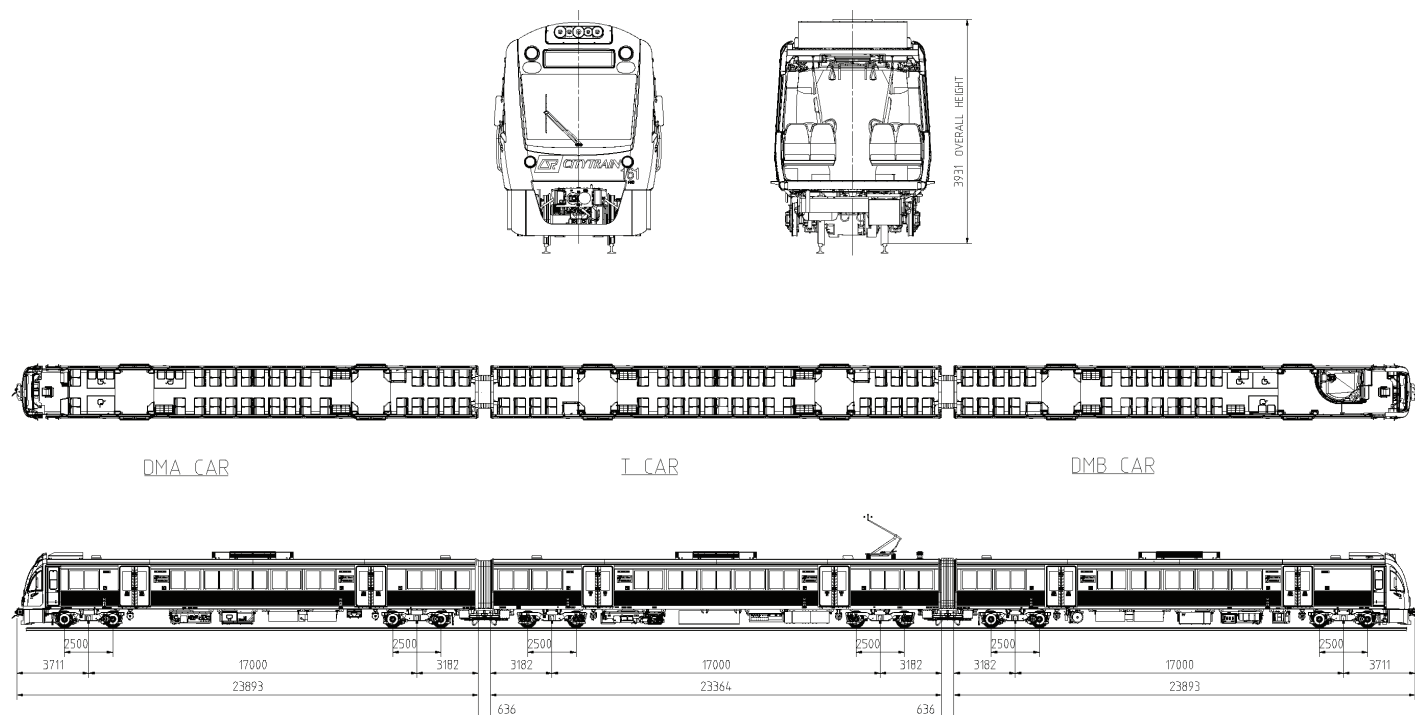
The narrow gauge bogie design is the same as the proven Western Australian PTA vehicle except that suspension air reservoirs are located on the car body underframe.

The interior design includes a mix of 2 x 2 fully cantilevered seats and longitudinal seating. Self retracting fold up seats are provided to maximise seating places when wheelchair spaces are not in use. The car body design allows for operator reconfiguration of the layout at any time to suit changing needs. All seats, luggage racks and handrails are fixed to the body on rails running the length of the vehicle.

The latest design electrically powered bi-parting passenger doors give quiet and reliable operation with sensitive obstruction sensing traction interlock protection.

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Gauge

Narrow Gauge 1067mm

Body Width

2732mm

Maximum Body Height

3931mm above rail height

Overhead Line Voltage

25kv, 50Hz Nominal

Maximum Service Speed

130 km/h

Tare Weight

127.5t (SMU) and 128t (IMU)

Propulsion System

On line transformer, mounted on trailer car, feeding two separate IGBT water cooled converters each supplying 4 parallel traction motors per motor car

Traction Motors

8x195kw per 3 car set

Saloon Air Conditioning

Dual system, Saloon AC units with 48kw cooling and 18kw heating

Toilets

Inter-Urban Multiple Unit (IMU 160) is fitted with toilets. Suburban Multiple Unit (SMU 26) has no toilet

Driver's Cab Air Conditioning

Drivers Cab AC Units with 5kw cooling and 6kw heating with driver fan speed and set point control

Acceleration Max

0.83 m/s/s

Service braking rate

1.12 m/s/s

Emergency braking rate

1.20 m/s/s

Passenger Side Doors

4 sets of 1300mm wide electrically powered 110V DC Bi-parting plug doors per car curved to match body profile

Cab Side Doors

Hinged, manually opening doors, curved to match body profile with sliding drop down window

Passenger Capacity

SMU 260

Driving motor car (DMA)

Seated	74
Standing	73
Wheelchair spaces	3

Trailer car (T)

Seated	88
Standing	76
Wheelchair spaces	0

Driving motor car (DMB)

Seated	74
Standing	73
Wheelchair spaces	3

IMU 160

Driving motor car (DMA)

Seated	72
Standing	73
Wheelchair spaces	3

Trailer car (T)

Seated	84
Standing	78
Wheelchair spaces	0

Driving motor car (DMB)

Seated	61
Standing	72
Wheelchair spaces	3

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