

S Stock

Sub-Surface Railway (Metropolitan, District, and Circle & Hammersmith Lines)



Built by Bombardier Transportation UK, Derby 2008-2014

Due to enter service in 2010

Maintained by Metronet Rail SSL (TfL Nominee)

Principal characteristics (emerging design)

Track gauge:	4ft 8½ inches/1435mm
Current system:	630v dc 3 rd and 4 th rail (capable of 750v operation), shoe gear fitted to DM and MS cars
Types of vehicle:	Driving Motor Car (DM), Non Driving Motor (M1, M2, MS), some Non Driving Motor cars are fitted with de-icing equipment (M2D)
Formation per unit:	8 car or 7 car permanent formations
Formation per train (8):	DM/M1/M2/MS/MS/M2/M1/DM
Formation per train (7):	DM/M1/M2/MS/MS/M1/DM or DM/M1/MS/MS/M2/M1/DM
Number of trains (Met):	58 8 Car trains
Number of trains (C&H):	53 7 Car trains
Number of trains (District):	80 7 Car trains
Operation (Pre Migration):	Conventional OPO driving with doors operated by Train Operator in leading cab
Operation (Post Migration):	Full ATO Non Automatic driving (Protected Manual (ATP)) Emergency driving (Restricted Manual) One Person Operated

Information sheet date: July 2010

Paul Bloomfield (Upgrade Operations Manager)

Vehicle Details

Dimensions here are as designed in metric units. The drawings also show metric.

	DM	M1	M2	MS
Length over body ends:	17439mm	15434mm	15434mm	15434mm
Width of body:	2820mm	2820mm	2820mm	2820mm
Width of body (over doors):	2920mm	2920mm	2920mm	2920mm

Car height:	3682mm
Tare weight of 8 car train:	242.6 tons
Tare weight of 7 car train:	213.7 tons
Passenger door open width (1 st set):	1210mm
Passenger door open width (others):	1610mm

Estimated vehicles in stock:	382	382	249	382
Estimated grand total in stock:			1395	

Car number series:

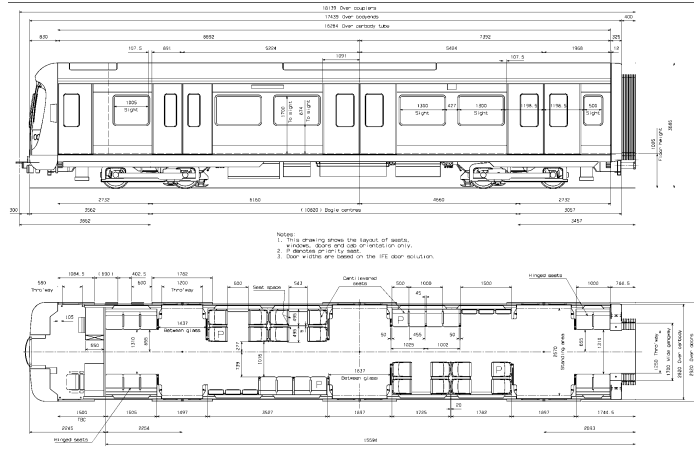
8 car trains (Deicers) start:	21001DM-22001M1-23001M2-24001MS-24002MS-25002M2D-22002M1-21002DM
8 Car trains start:	21057DM-22057M1-23057M2-24057MS-24058MS-23058M2-22058M1-21058DM
8 Car trains end:	21115DM-22115M1-23115M2-24115MS-24116MS-23116M2-22116M1-21116DM
7 Car trains (Deicers) start:	21301DM-22301M1-24301MS-24302MS-25302M2D-22302M1-21302DM
7 Car trains starts:	21387DM-22387M1-24387MS-24388MS-23388M2-22388M1-21388DM
7 Car trains end:	21565DM-22565M1-24565MS-24566MS-23566M2-22566M1-21566DM

Customer accommodation

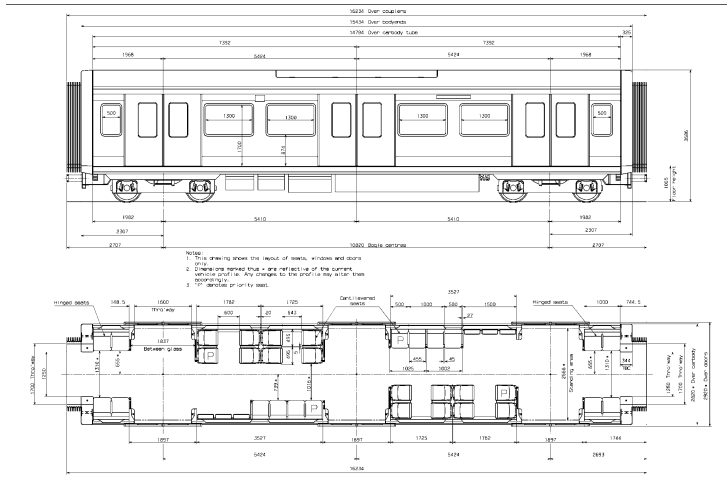
Please note that standing capacity figures exclude seating capacity

	8 car train	7 car train
Seating capacity:	306 seats (including 50 tip-up seats)	256 seats (including 44 tip-up seats)
Standing capacities: JTC (5 customers per m2)	853	778
Standing capacities: Crush standing capacity (7 customers per m2)	1218	1112

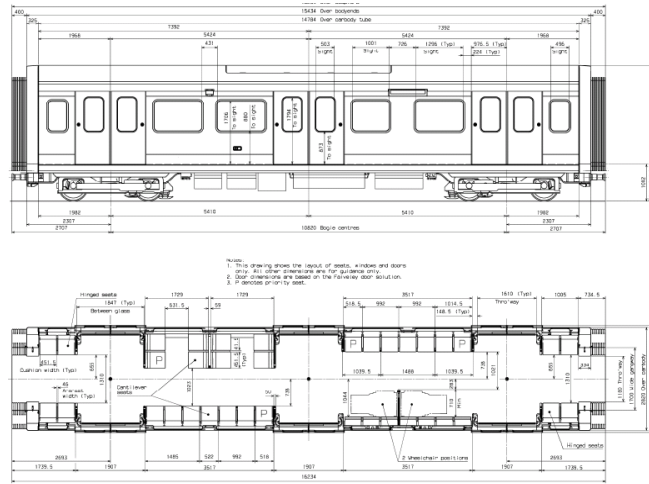
S8 DM Car:



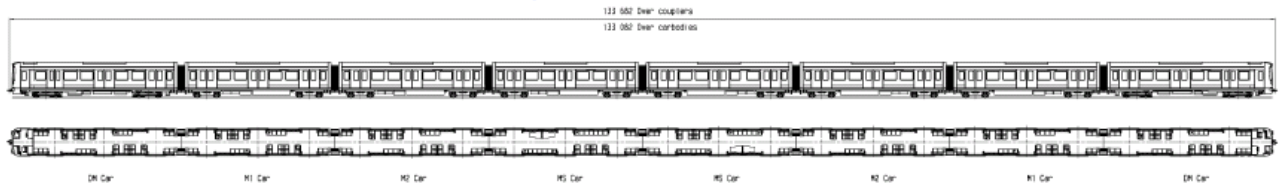
S8 MI/M2 Car:



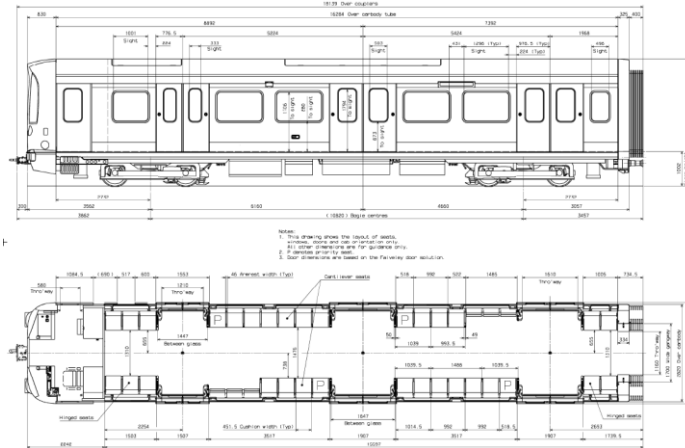
S8 MS Car:



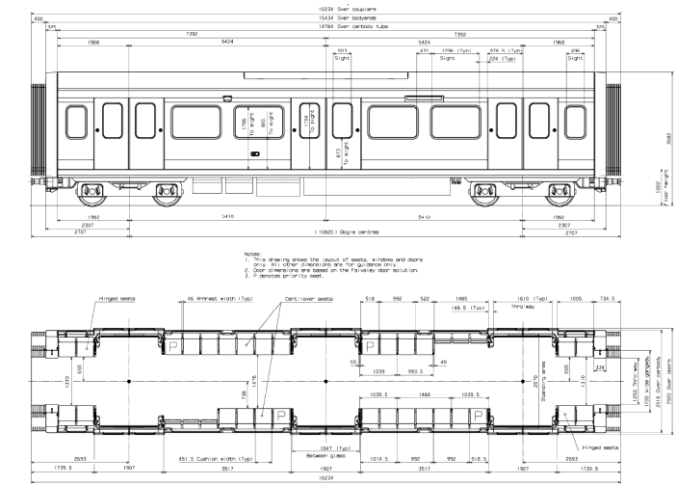
S8 Complete Train:



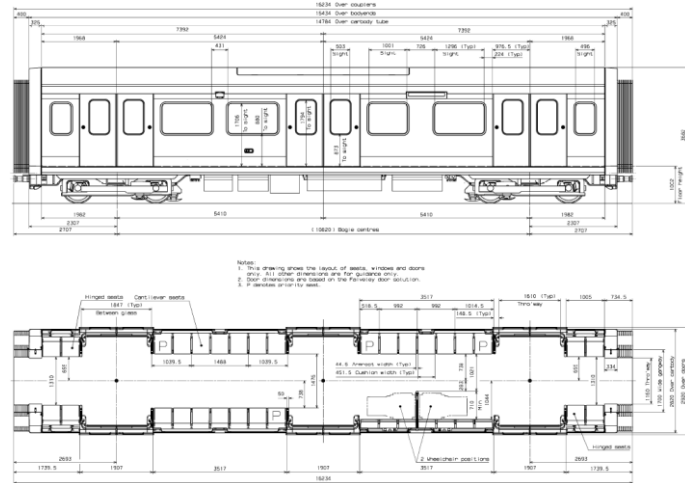
S7 DM Car:



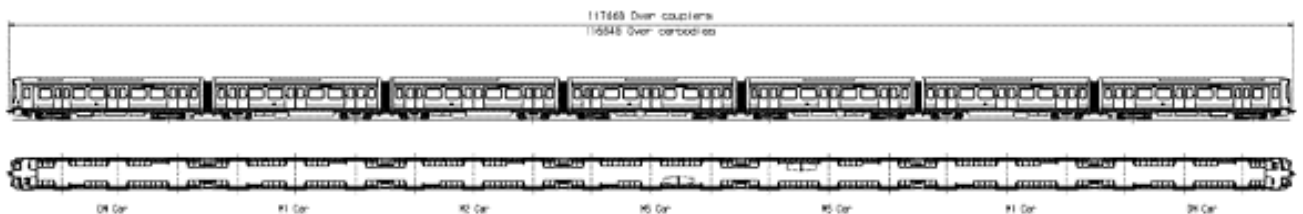
S7 M1/M2 Car:



S7 MS Car:



S7 Complete Train:



Equipment details (emerging design)

Bodies:	Constructed by using aluminium extrusions friction stir welded and huckbolted together. Exteriors painted in London Underground corporate red, white, and blue livery. Through Gangways provided between cars with internal and external bellows and overlapping sliding plates.
Bogies:	Bombardier flexible frame
Couplers:	LU Wedglock with pneumatic connections only on DM cars, semi permanent bolted flange between cars within a 7/8 car formation.
Traction System:	Bombardier 3 phase AC with all axles motored and one inverter per car. M1 car converters are powered from the adjacent DM car high voltage supply, and M2 car converters are powered from the adjacent MS car high voltage supply.
Compressors:	Knorr-Bremse oil free (reciprocating) with air drier.
Brakes:	Knorr-Bremse EP2002 friction brake with regenerative and rheostatic braking. Automatically controlled SAPB, air released parking brake.
ATO:	Initially Conventional Tripcock protection.
ATP:	Initially Conventional Tripcock protection.
Auxiliary power Supplies:	Bombardier static converter, two per 8 or 7 car train.
Saloon lighting:	21 fluorescent T5 Tubes via individual inverters per car.
Emergency lighting:	Five battery-fed fluorescent T5 Tubes via individual inverters per car and normally forming part of the main saloon lighting.
HVAC:	Single roof mounted saloon air conditioning module with dual refrigeration circuits supplying ceiling mounted air ducts. Separate module supplied on DM cars for cab air conditioning with fallback air conditioning from the saloon module. Internal and external smoke detection.
Passenger Information:	An LED external facing front destination display with integrated train number display fitted to each Train front An external facing side destination LED display fitted to each side of each Vehicle. Two double sided internal facing Saloon LED displays fitted in the outer vestibules of the Saloon.
CCTV :	OPO TTCCTV displayed on 2 off 12" monitors in cab via microwave transmission. Saloon CCTV system viewable in cab when stationary and is recorded digitally.
Doors:	Six pairs of electrically operated sliding doors, externally hung, and fitted with, both obstacle detection and sensitive edge, threshold lighting when doors open.

