

# URBANAUT® VEHICLES AND GUIDEWAY TECHNICAL DATA FOR AN INTERMEDIATE SIZE SYSTEM

These technical data are general information. For additional information, descriptions and data, see the website, "Urbanaut.com"

## A. Vehicle Type and Adaptation

1. Type of vehicle: Monorail vehicle on top of runway
2. Guideway Layout: Any type of configuration (loops or bi-directional)  
Vehicles are easily switched from one guideway to another, elevated, tunnel or surface.
3. Applications: Freeways, urban areas, city centers, park and ride systems, shopping centers, airports, exhibitions, tourist resorts, sports and recreation.

## B. Vehicle and Train Combinations:

1. Single vehicles with low or high floor
2. Dual vehicles (2 end cars)
3. Standard minimum train: 3 vehicles
4. Components for all trains:  
Front car  
Rear car  
Middle car
5. Example: 7 car train: 2 end cars + 5 middle cars
6. Vehicle combinations: High floor and low floor (Flexible seating for high floor) – Walk through from end-to-end of train.
7. Walking space provided from front to rear end of each train

## C. Vehicle Dimensions:

1. Overall *width* : 2.35m (7.5ft)
2. Single vehicle *lengths*  
Type a (PRT type) 3.0m (10ft)  
Type b: 5.5m (18ft)  
Type c: 7.3m (24ft)  
Type d (Standard type) 9.0m (30ft)  
Middle cars for trains: 5.7m (22ft)
3. Overall *height*:
  - a. PRT Type: 2.0m (6.6ft)
  - b. Low in floor single vehicle: 2.8m (9.3ft)
  - c. High floor in trains: 3.2m (10.5ft)
4. Floor to ceiling height: 2.05m (6.7ft)
5. Doorway opening outside sliders: 2.0m (6.6ft) height x 1.25m (4.1ft) width;
6. Number of doors for end car: 2  
Number of doors for middle car: 2 or 4

## D. Vehicle Weights (Empty)

1. Single Vehicle: Varies with length
2. Train of vehicles:
  - a. End cars: 3,500kg (7,700 lbs)
  - b. Middle cars: 3,200kg (7,000lbs)

## E. Vehicle Components:

1. Car body: Composite, stainless steel and/or Aircraft aluminum
2. Bogie: Aluminum, composite material, or stainless steel
3. Windows: Fixed, tinted safety glass
4. Doors: Laterally moveable, tinted safety glass
5. Tires & Wheels: (Standard) 2 traction tires + 4 guide tires on aluminum wheels for each bogie, special high load capability, easily replaceable, with run flat safety tire inserts.  
Optional: Bogie with steel wheels



## **F. Vehicle Mechanical, Electrical and Control**

1. Primary power: 750 AC, substation line voltage mounted to guide rail or inside of guideway
2. Propulsion: Alt I: Powerful electromagnetic motor, in-wheel direct drive propulsion, with gear  
Alt II: Maglev linear induction motor (MLIM)
3. Service braking: Dynamic regenerative
4. Emergency braking: Drum or electric disk brake
5. Suspension: Pneumatic and springs
6. Air Conditioning: Redundant, high capacity
7. Fire Safety: Design and materials to meet ASTM E-119 and NFPA compliant

## **G. Vehicle Emergency Evacuation**

Special provision for evacuating passenger for elevated guideways

## **H. Automatic Vehicle Control:**

Consists of 3 vital safety sub-systems:

- a. Automatic Vehicle Propulsion
- b. Automatic Vehicle Operation
- c. Automatic Vehicle Supervision

The equipment is distributed along the inside of the guide way and at the central control station.

## **I. Passenger Service and Communication**

Automatic ticketing, Audio-Visual Communication on vehicle and at stations.

- J. Substations Power Supply:** Located along guideway approx. every 2.0 km (1.25 miles)  
Power required at each substation: Standard 15 kv

## **K. Guideway – Elevated Beam way, Concrete Slab for Tunnel and Surface**

Special elevated structures and stations designed off-street, that do not interfere with street traffic.(See website)

1. Foundation:
  - a. Standard spread concrete type
  - b. Standard Pile Foundation
  - c. Special foundations with multiple pilings
2. Width at surface: 1.2m (4.0ft) wide concrete slab (with center rail)
3. Width of elevated prefabricated concrete beam way or hybrid composite structure with concrete running slab: 1.1m (43 in)
4. Height of elevated beam way (normal): 1.0m (40in) + guide rail = 0.4m (15in)
5. Length of spans:; 30m (100ft) to 45m (150ft) depending on local applications.
6. Minimum clearance height under beam and cantilevers: 4.5m (15ft)
7. Gradient (slope): 12%
8. Min. horizontal curve: 38m (125ft)
9. Min. vertical curve: 300m (1000ft)

## **L. Guideway Switches (4 types – depending on application):**

Type a: Multiple High Speed Guideway Switch – Flexing of Guide rail

Type b: Non-flexible swivel (for 2 guide ways crossing at same level)

Type c: On-board switch (for off-line stations and maintenance yard)

Type d: Passive switch for low speed vehicles and service

## **M. Vehicle Performance Characteristics**

Max. Speed (Standard): a. 100 km/hr (60mph) for stations less than 1.6 km (1.0 miles) apart  
b. For stations further apart, the max. speed can be increased (See website)

Max. Acceleration 1.2 m/sec<sup>2</sup> (3.9ft/sec<sup>2</sup>)

Max Deceleration: (Normal) 1.2 m/sec<sup>2</sup> (3.9ft/sec<sup>2</sup>)

Min. vehicle operational turning radius: 38m (125ft) (Smaller turning ability at L: c&d above)

Min. Interval between trains: Standard 1 ½ minutes (90 secs.)

## **N. Vehicle and Train Passenger Capacity:**

Single Vehicle, Type a: 6 Seated + Wheel Chair

Single Vehicle, Type b: 10 Seated + 25 Standees + 1 wheel chair

Single Vehicle, Type c: 18 Seated + 25 Standees + 2 wheel chairs

3-Car train, nominal loading: 58 Seated + 72 Standees

Max. Capacity, Large Train: 25,000 pph or more on single guide way  
50,000 pph or more on dual guide way

