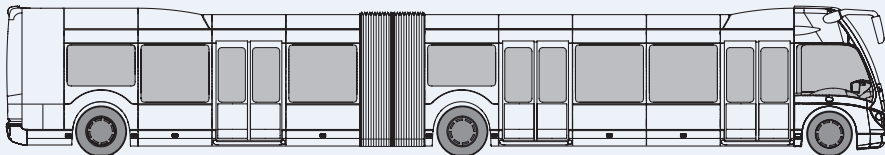
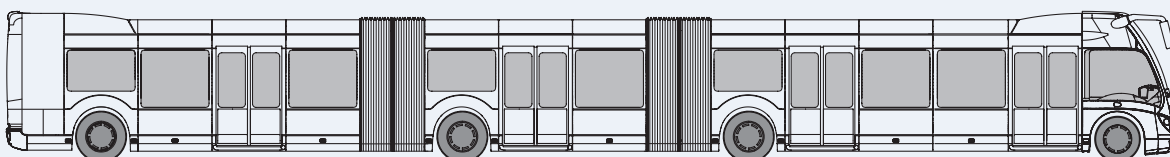


# phileas



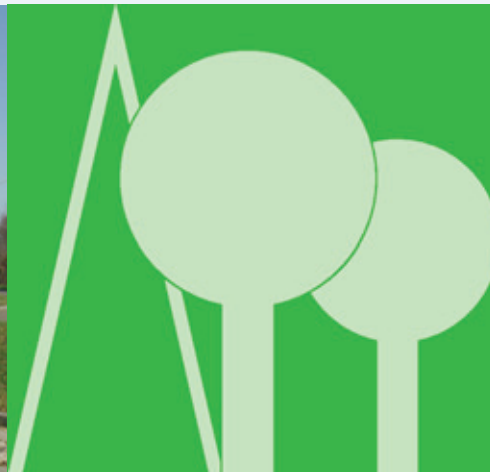
Phileas 18 m



Phileas 24 m



Phileas 26 m



#### Advanced Public Transport Systems bv (APTS)

The Phileas was developed and built by APTS, a Dutch company which got its start in the early 1990s designing an innovative public transport system for the region of Eindhoven. The lack of an existing vehicle gave APTS the advantage that they could give free reign to their ideas. APTS is part of VDL Bus & Coach in the Netherlands. VDL Bus & Coach produces 2000 buses and coaches and 1300 chassis modules per year.



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**VDL BUS & COACH**



The product range may vary from country to country.  
Data subject to change without notice.

9-2008 - EN 30011304

# phileas



**VDL BUS & COACH**





## TECHNICAL SPECIFICATIONS

Model	Phileas 18 m	Phileas 24 m	Phileas 26 m
<b>Dimensions</b>			
Length	18.48 m	24.49 m	26.04 m
Width	2.55 m	2.55 m	2.55 m
Height	3.20 m	3.20 m	3.20 m
<b>Accessibility</b>			
Kneeling	-70 mm	-70 mm	-70 mm
Floor height	340 mm	340 mm	340 mm
Interior height	2.25 m	2.25 m	2.25 m
Aisle width (minimum)	730-900 mm	730-900 mm	730-900 mm
Position of the doors	flexible	flexible	flexible
<i>Option</i>	both sides	both sides	both sides
Dimensions doors (W x H)	1.20 x 2.00 m	1.20 x 2.00 m	1.20 x 2.00 m
<b>Drivability</b>			
Turning radius	< 12.50 m	< 12.50 m	< 12.50 m
Swept-path	< 4.40 m	< 4.40 m	< 4.40 m
Track-width (double lane)	6.80 m	6.80 m	6.80 m
<b>Guidance (whole line)</b>			
Principle	electronic	electronic	electronic
Reference of the guidance system	magnetic markers	magnetic markers	magnetic markers
Distance gap (door - platform)	< 50 mm	< 50 mm	< 50 mm
Maximum speed in guided mode	depends on road width	depends on road width	depends on road width
<b>Light weight body</b>			
Side modules	composite polyester	composite polyester	composite polyester
Floor, roof and bulkheads	composite aluminium	composite aluminium	composite aluminium
<b>Tyres</b>			
Tyres front wheels	275/70 R22.5	275/70 R22.5	275/70 R22.5
Tyres wheels of the other axles	385/65 R22.5	385/65 R22.5	385/65 R22.5
<b>Interior seat arrangement</b>	adaptable	adaptable	adaptable
<b>4 persons/m<sup>2</sup></b> (seats/disabled/standees) - total	29/1/74 - 103	46/1/83 - 129	52/1/89 - 141
<b>6 persons/m<sup>2</sup></b> (seats/disabled/standees) - total	29/1/111 - 140	46/2/125 - 171	52/1/133 - 185
<b>Weight (Allison hybrid)</b>			
Empty	16.650 kg	21.600 kg	22.490 kg
4 persons/m <sup>2</sup>	23.350 kg	30.495 kg	31.660 kg
6 persons/m <sup>2</sup>	25.800 kg	33.202 kg	34.560 kg
<b>Propulsion system</b>	hybrid	hybrid	hybrid
Continuous Variable Transmission (CVT)	Allison Ep system	Allison Ep system	Allison Ep system
Diesel engine Euro 4	Cummins ISLe 340	Cummins ISLe 340	Cummins ISLe 340
Diesel engine EEV (option 18 m)	Cummins ISBe 250		
Trolley version	Vossloh-Kiepe	Vossloh-Kiepe	Vossloh-Kiepe
Fuel-Cell version	NedStack - Vossloh-Kiepe	NedStack - Vossloh-Kiepe	NedStack - Vossloh-Kiepe
Driven axles	rear axle	rear axle	rear axle
<i>Option</i>		second axle	second axle
<b>Performance</b>			
Topspeed	> 90 km/h	> 90 km/h	> 90 km/h
Maximum acceleration	1.4 m/s <sup>2</sup>	1.4 m/s <sup>2</sup>	1.4 m/s <sup>2</sup>
Grade	> 14%	> 14%	> 14%

# A FLEXIBLE TRAM ON TYRES

*Quiet, high-capacity, safe, environmentally friendly, futuristic and flexible, Phileas is the new generation of tramway. Easy and quick to implement as well as economical, Phileas is a long-term solution providing sustainable urban mobility. Phileas allows municipalities and operators to realize a tramway at a reasonable cost.*



## The Phileas – a modern tramway

The Phileas possesses all the characteristics of a modern tramway, with:

- Attractive modern and adaptable front- and rear-end design.
- Full and permanent computer guidance meeting higher safety regulations than conventional tram systems, and with more advanced features.
- High transportation capacity, up to 200 persons for the 26 m Phileas vehicle (based on 6 persons/m<sup>2</sup>).
- 100% low floor and level boarding, with optional doors on both sides of the vehicle, giving excellent accessibility.
- Very light weight and strong body, using the 'sandwich' materials and bonding of aircraft technologies.
- Several options for propulsion:
  - A parallel hybrid version with diesel engine.
  - A trolley version for cities wanting purely electrical drive.
  - For the future APTS is in the process of developing a fuel cell hybrid system with the energy stored in a combination of batteries and super capacitors. This is the introduction of vehicles driven on 100% renewable energy.

## The Phileas - a tramway on tyres

The independent wheel suspension offers many advantages over the steel bogies of a traditional tramway:

- Less noise and vibration for the surroundings because of the use of rubber tyres instead of iron wheels on steel rail.
- Easy to integrate in the infrastructure because of the flexibility of the system:
  - Small turning radius < 12.5 m.
  - Narrow swept path < 4.4 m.
  - Small dynamic envelope.
  - A gradient ability of over 14% fully loaded.
- High braking efficiency of 7 m/sec<sup>2</sup> (emergency), electric braking (energy recuperation) and EBS on all wheels.
- Flexibility in design and construction of the infrastructure because of the manoeuvrability of the Phileas and the flexibility in body design (such as doors on both sides).
- In case of an accident or road construction works the Phileas can leave the 'virtual rail' without any problems.
- Lightweight infrastructure because of low axle weights.

## The Phileas - an economical tramway

- Reduced infrastructure costs; the Phileas can be implemented easy and quick and requires no more construction for infrastructure than a normal bus. It can even be used on existing roads with minor adaptations for the guidance system.
- No costs for the overhead wires and electrical stations.
- No costs for a new depot; existing bus depots can be used.
- No need to displace the underground electricity, water, telephone or sewerage networks.
- Low maintenance costs of the infrastructure and vehicles.

