



## ELECTRIC LOW-FLOOR MULTIPLE-UNIT FLIRT

Nederlandse Spoorwegen NS, The Netherlands

In April 2015, Dutch rail company NS ordered 58 three- and four-car low-floor multiple-unit FLIRTs from Stadler. The trains are operated by NS Reizigers, serve regional routes and are designed for a speed of 160 km/h. The new-generation FLIRT fulfils the Technical Specifications for Interoperability (TSI), including the standards regarding crash requirements in accordance with EN 15227. The trains have pneumatic suspension and offer high levels of comfort and attractive seating for up to 158 or 214 passengers (depending on the train length) in air-conditioned, colourful interiors. There is plenty of space for bicycles, prams and wheelchairs. The highlight was the roll-in of the first trains on 13 April 2016 in Maastricht – just a year after the order – which underlines Stadler's excellent performance.

[www.stadlerrail.com](http://www.stadlerrail.com)

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## Technical features

### Technology

- Lightweight aluminum carbody design according to the newest crashworthiness (EN 15227) and structural strength (EN 12663) standards
- Air-suspended motor and trailer bogies
- Multiple-unit control for up to three vehicles

### Comfort

- Bright, friendly interior with large window areas
- Interior and exterior design in acc. with TSI PRM
- Passenger compartment with wide doors, low floor section > 90%
- 2 entrance doors per carbody/side
- First class compartment
- Electric sockets
- Space for wheelchairs
- WLAN access
- Air-conditioned passenger compartments
- Closed toilet system
- Ethernet based passenger information system with wide TFT screens

### Personnel

- Air-conditioned driver's cab
- Ergonomically and comfortable designed working environment to prevent inattention of driver
- Easy access for maintenance

### Reliability/Availability/Maintainability/Safety

- Prepared for installation of ETCS
- Vehicle control system with train bus and diagnostics computer (CAN-open bus)
- Redundant traction chain with water-cooled IGBT power converter and asynchronous drive motor

## Vehicle data

	3-car	4-car
<b>Customer</b>	NS	NS
<b>Lines operated</b>	The Netherlands	The Netherlands
<b>Gauge</b>	1435 mm	1435 mm
<b>Supply voltage</b>	1.5 kV DC	1.5 kV DC
<b>Axle arrangement</b>	Bo'2'2'Bo'	Bo'2'2'2'Bo'
<b>Number of units</b>	33	25
<b>Service start-up</b>	2016	2016
<b>Seating capacity 2<sup>nd</sup> Class</b>	114	170
<b>Seating capacity 1<sup>st</sup> Class</b>	32	32
<b>Fold-up seats</b>	12	12
<b>Floor height</b>		
Low-floor	780 mm	780 mm
Low-floor PRM area	808 mm	808 mm
High-floor	1180 mm	1180 mm
<b>Door width</b>	1300 mm	1300 mm
<b>Longitudinal strength</b>	1500 kN	1500 kN
<b>Overall length</b>	63200 mm	80700 mm
<b>Vehicle width</b>	2820 mm	2820 mm
<b>Vehicle height</b>	4120 mm	4120 mm
<b>Bogie wheelbase</b>		
Motor bogie	2500 mm	2500 mm
Trailer bogie	2700 mm	2700 mm
<b>Driving wheel diameter (new)</b>	920 mm	920 mm
<b>Trailer wheel diameter (new)</b>	760 mm	760 mm
<b>Maximum power at wheel</b>	2550 kW	3000 kW
<b>Starting tractive effort</b>	150–200 kN	200 kN
<b>Maximum speed</b>	160 km/h	160 km/h