

## FORMULA STUDENT – ADS-DV - SPECIFICATION

This document contains the Vehicle Specification for the Formula Student Autonomous Driving System Dedicated Vehicle FS ADS-DV.

The Vehicle specification is as follows:

### Drive System:

Drive motors	Saietta 119R-68 (x2)
Peak motor torque	55.7Nm
Peak motor power @ 48V	17.0 kW
Continuous motor torque	27.2 Nm
Continuous motor power @ 48V	8.8 kW
Maximum motor speed	4,000 rpm
Belt drive ratio	3.5:1
Peak motor current	400 A
Motor controllers	Sevcon Gen4 DC (x2)
Operating voltage range	31-90 V
Peak current rating	550 A

### Steering System:

Steering Motor	Shiftec ZZ011-1
Steering Controller	Shiftec ZE102-1

### Traction Battery:

Cells	CALB CA100AHA
Cell chemistry	Lithium iron phosphate (LiFePO <sub>4</sub> )
Cell capacity rating	100 Ah
Pack configuration	16S1P
Nominal pack energy capacity	5.1 kWh
Nominal pack voltage	51.2 V
Operating voltage range	41.6-58.4 V
Peak discharge current	800 A (up to 10 secs)
Continuous discharge current	300 A
BMS	Proprietary Hypermotive BMS
Charger	TC Charger 3.3 kW (HK-J-H66-40)

The vehicle dimensions can be found here:  
Formula Student ADS\_DV Dimensions and Locations

The vehicle has the following space available for an AI computer to be installed: TBD

The vehicle is provided with an umbilical connection to the AI computer which includes the CANBus communication which is detailed in the ADS-DV Software Interface Specification and power for the AI computer and AI sensors.

The connector and pin-out information is located in the ADS-DV AI-Interface - Electrical Document