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**Report Nr.** WOCN21030034-1

**Project Nr.** WOCN21030034

## **FUEL CONSUMPTION TEST ACCORDING TO THE 2014 SORT PROCEDURE**

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Approved by:



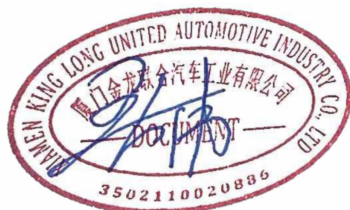
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Powertrain Department



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Project Engineer  
Powertrain Department

Test period: 16th to 18th March 2021

Issue date: 29st of March 2021



This report contains 19 pages, including this cover and 1 annex.

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## 1. OBJECTIVE

The purpose of this project was to realise SORT fuel consumption tests carried out by IDIADA in cooperation with KingLong Bus at their facilities, following SORT procedure. KingLong Bus was in charge of the test equipment correctly functioning and correctly measuring and for driving the tested bus under supervision of an IDIADA's engineer. The IDIADA's engineer was responsible for realization of the whole test according to the SORT standard.

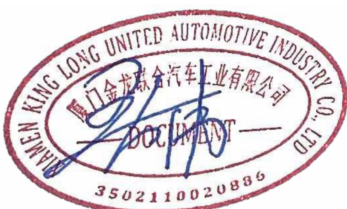
## 2. VEHICLE INFORMATION

### 2.1. Basic vehicle information

The table below shows the vehicle characteristics:



<b>Test applicant</b>	KING LONG
<b>Manufacturer</b>	KING LONG
<b>Vehicle</b>	Diesel vehicle
<b>Type</b>	B12
<b>Reception date</b>	2021/3/15
<b>Chassis n°</b>	LA6C1KBJ7MB301344
<b>Engine</b>	ISL 320 51
<b>Gearbox</b>	T375R
<b>Tyres</b>	275/70R22.5



### 3. TEST RESULTS

#### 3.1. SORT fuel consumption results

The table below shows the vehicle fuel consumption for the SORT protocol:

	Fuel consumption	
	Cycle SORT 1	l/100km
Cycle SORT 2	l/100km	47.3
Cycle SORT 3	l/100km	41.9

#### 3.2. Vehicle test weight

The table below shows the vehicle weights for the SORT tests:

<b>Total weight</b>	(kg)	<b>14360</b>
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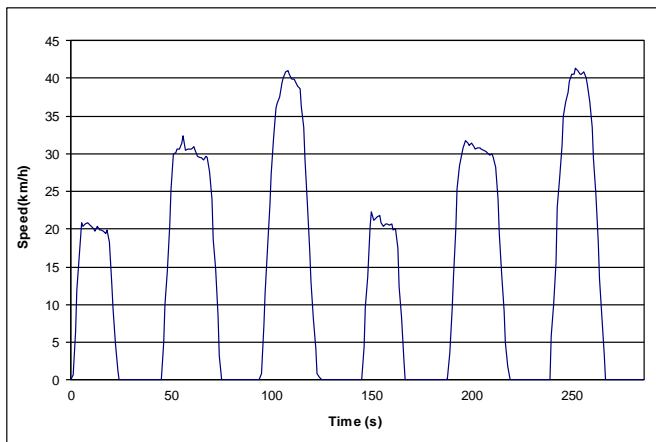
### 3.3. Test cycle SORT 1

The tables below show test characteristics in both directions of SORT1 cycles:

#### SORT 1 - Test 1

##### DIRECTION 1

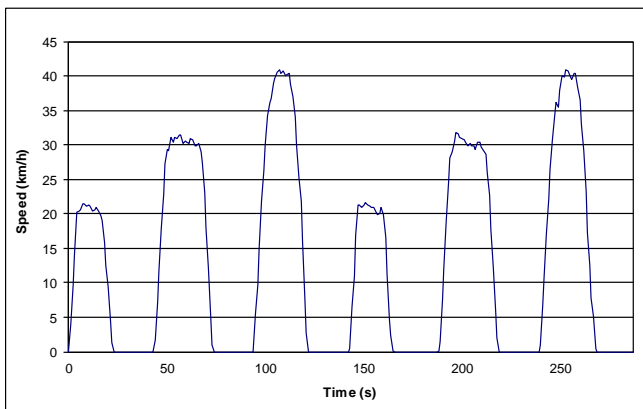
Date
2021/3/18 10:56



Total test distance	(m)	1,043.1
Total test time	(s)	286.0
Fuel consumption	(l/100km)	55.0
Cycle speed	(km/h)	13.1

##### DIRECTION 2

Date
2021/3/18 11:05



Total test distance	(m)	1,039.6
Total test time	(s)	288.0
Fuel consumption	(l/100km)	58.4
Cycle speed	(km/h)	13.0

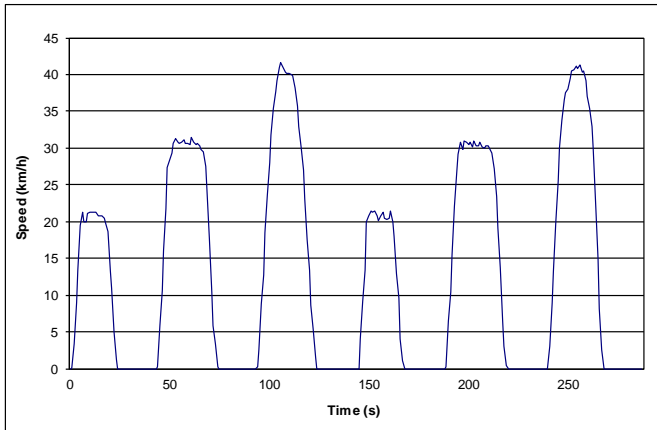
Speed average	(km/h)	13.1
Fuel consumption average	(l/100km)	56.7



**SORT 1 - Test 2**

**DIRECTION 1**

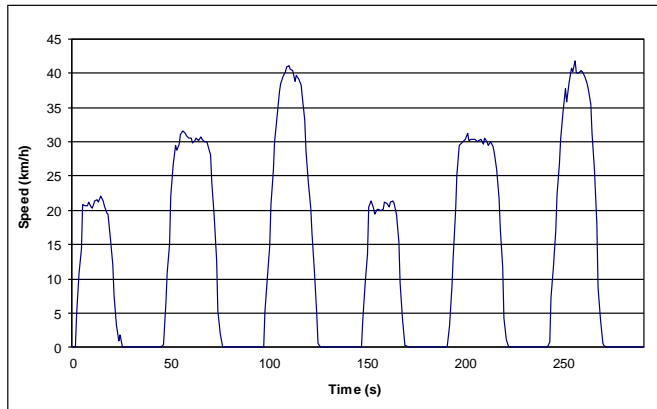
Date
2021/3/18 11:12



Total test distance	(m)	1,043.4
Total test time	(s)	287.0
Fuel consumption	(l/100km)	55.0
Cycle speed	(km/h)	13.1

**DIRECTION 2**

Date
2021/3/18 11:41



Total test distance	(m)	1,039.6
Total test time	(s)	291.0
Fuel consumption	(l/100km)	58.6
Cycle speed	(km/h)	12.9

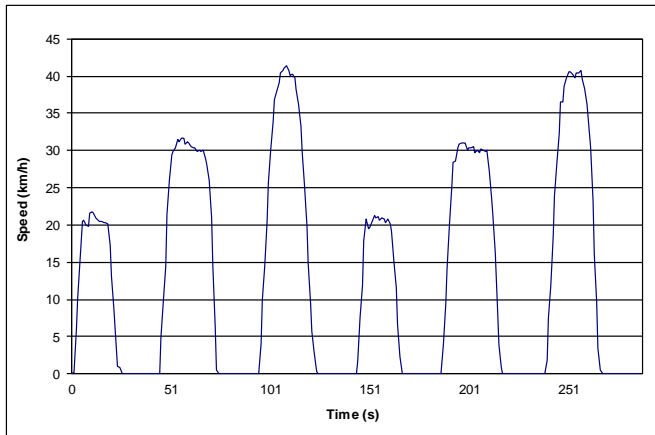
<b>Speed average</b>	<b>(km/h)</b>	<b>13.0</b>
<b>Fuel consumption average</b>	<b>(l/100km)</b>	<b>56.8</b>



**SORT 1 - Test 3**

**DIRECTION 1**

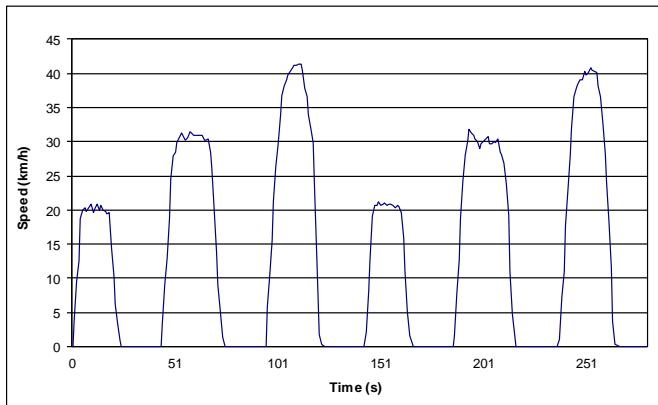
Date
2021/3/18 11:48



Total test distance	(m)	1,041.4
Total test time	(s)	287.0
Fuel consumption	(l/100km)	55.5
Cycle speed	(km/h)	13.1

**DIRECTION 2**

Date
2021/3/18 11:58



Total test distance	(m)	1,041.4
Total test time	(s)	286.0
Fuel consumption	(l/100km)	58.4
Cycle speed	(km/h)	13.1

Speed average	(km/h)	13.1
Fuel consumption average	(l/100km)	56.9

Final electrical consumption SORT1.

<b>Fuel consumption average SORT 1</b>	<b>(l/100km)</b>	<b>56.8</b>
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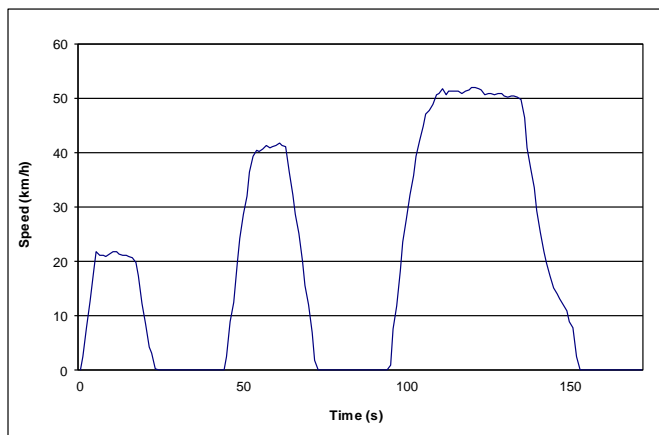
### 3.4. Test cycle SORT 2

The tables below show test characteristics in both directions of SORT2 cycles:

#### SORT 2 - Test 1

##### DIRECTION 1

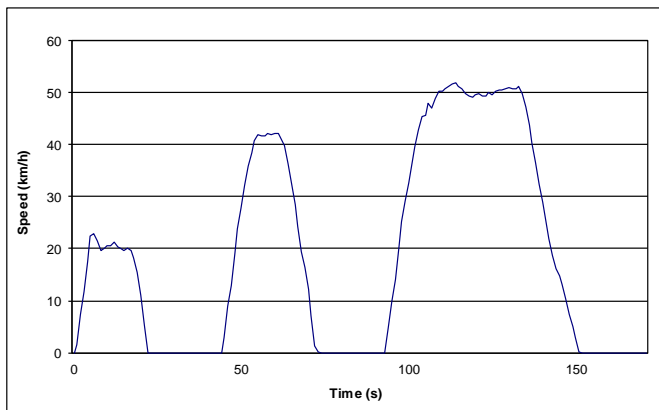
Date
2021/3/16 16:07



Total test distance	(m)	922.9
Total test time	(s)	172.0
Fuel consumption	(l/100km)	47.1
Cycle speed	(km/h)	19.3

##### DIRECTION 2

Date
2021/3/16 16:15



Total test distance	(m)	921.5
Total test time	(s)	171.0
Fuel consumption	(l/100km)	47.5
Cycle speed	(km/h)	19.4

<b>Speed average</b>	<b>(km/h)</b>	<b>19.4</b>
<b>Fuel consumption average</b>	<b>(l/100km)</b>	<b>47.3</b>

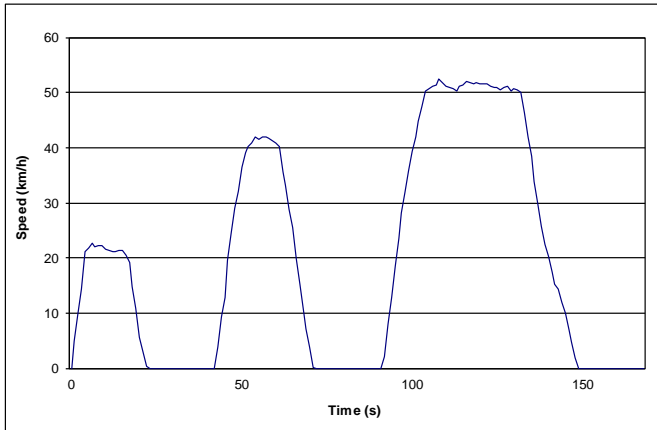




**SORT 2 - Test 2**

**DIRECTION 1**

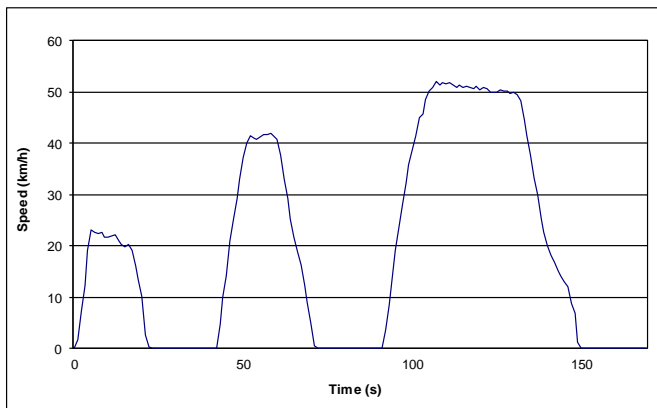
Date
2021/3/16 16:23



Total test distance	(m)	922.4
Total test time	(s)	168.0
Fuel consumption	(l/100km)	47.2
Cycle speed	(km/h)	19.8

**DIRECTION 2**

Date
2021/3/16 16:36



Total test distance	(m)	922.2
Total test time	(s)	169.0
Fuel consumption	(l/100km)	47.4
Cycle speed	(km/h)	19.6

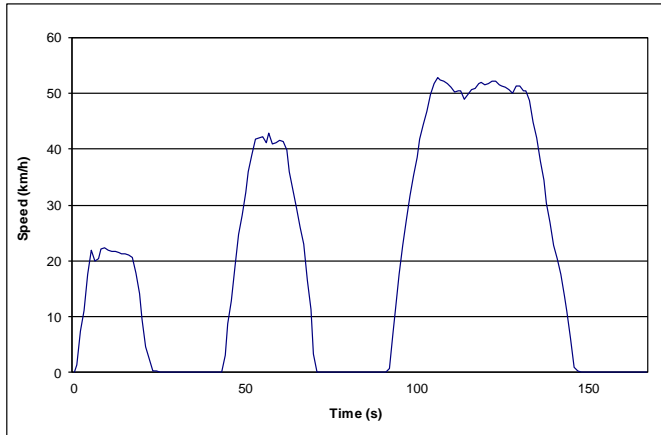
<b>Speed average</b>	<b>(km/h)</b>	<b>19.7</b>
<b>Fuel consumption average</b>	<b>(l/100km)</b>	<b>47.3</b>



**SORT 2 - Test 3**

**DIRECTION 1**

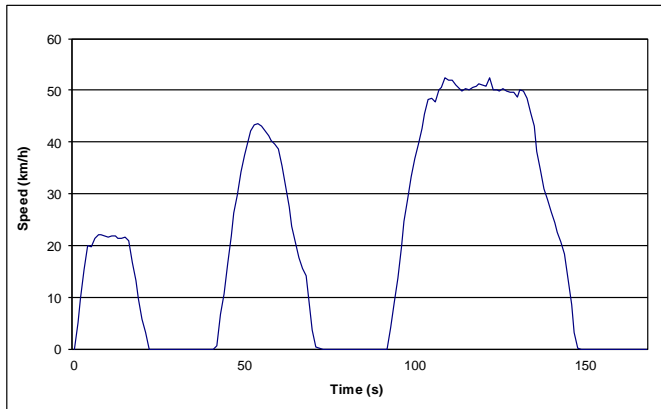
Date
2021/3/16 16:44



Total test distance	(m)	924.0
Total test time	(s)	167.0
Fuel consumption	(l/100km)	47.0
Cycle speed	(km/h)	19.9

**DIRECTION 2**

Date
2021/3/16 16:52



Total test distance	(m)	921.9
Total test time	(s)	168.0
Fuel consumption	(l/100km)	47.5
Cycle speed	(km/h)	19.8

<b>Speed average</b>	<b>(km/h)</b>	<b>19.8</b>
<b>Fuel consumption average</b>	<b>(l/100km)</b>	<b>47.2</b>

**Final electrical consumption SORT2**

<b>Fuel consumption average SORT 2</b>	<b>(l/100km)</b>	<b>47.3</b>
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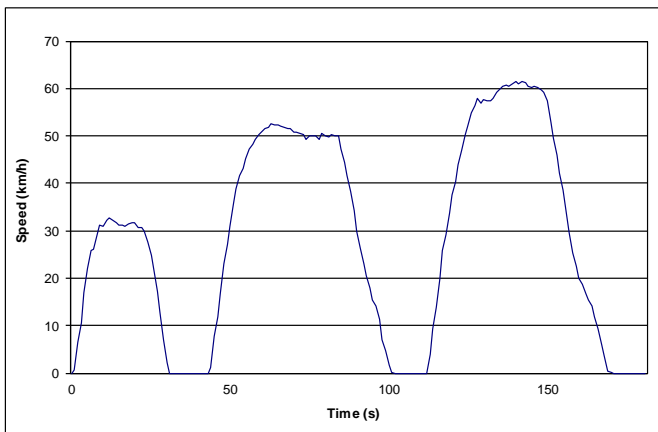
### 3.5. Test cycle SORT 3

The tables below show test characteristics in both directions of SORT3 cycles:

#### SORT 3 - Test 1

##### DIRECTION 1

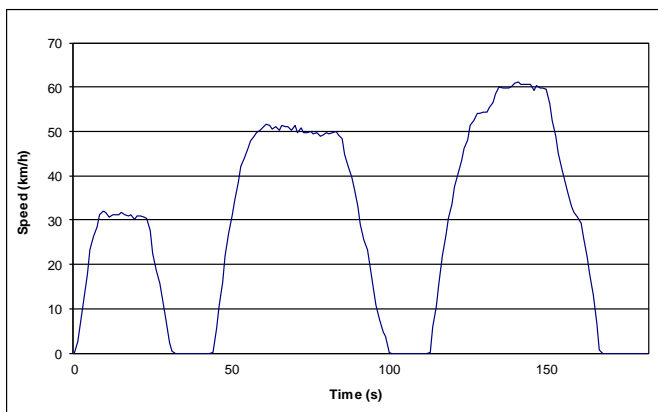
Date
2021/3/17 10:47



Total test distance	(m)	1,454.5
Total test time	(s)	189.0
Fuel consumption	(l/100km)	41.9
Cycle speed	(km/h)	27.7

##### DIRECTION 2

Date
2021/3/17 10:54



Total test distance	(m)	1,450.8
Total test time	(s)	187.0
Fuel consumption	(l/100km)	42.1
Cycle speed	(km/h)	27.9

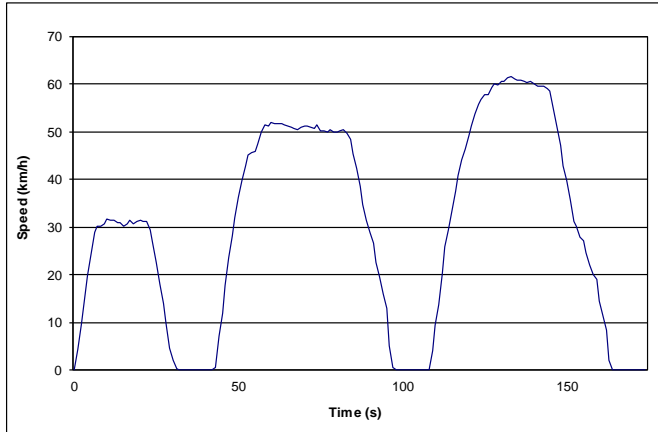
<b>Speed average</b>	<b>(km/h)</b>	<b>27.8</b>
<b>Fuel consumption average</b>	<b>(l/100km)</b>	<b>42.0</b>



**SORT 3 - Test 2**

**DIRECTION 1**

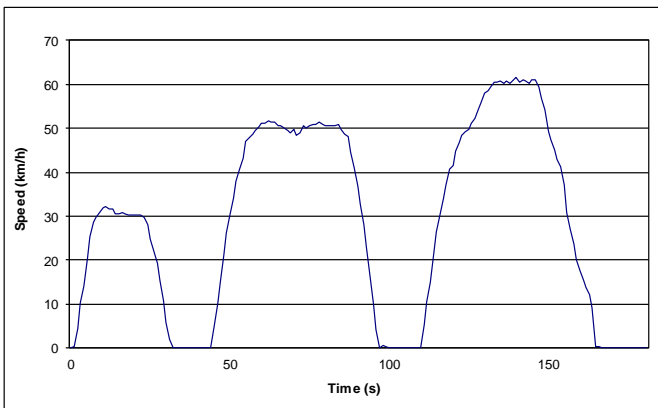
Date
2021/3/17 11:17



Total test distance	(m)	1,453.8
Total test time	(s)	184.0
Fuel consumption	(l/100km)	41.4
Cycle speed	(km/h)	28.4

**DIRECTION 2**

Date
2021/3/17 11:22



Total test distance	(m)	1,450.0
Total test time	(s)	187.0
Fuel consumption	(l/100km)	41.9
Cycle speed	(km/h)	27.9

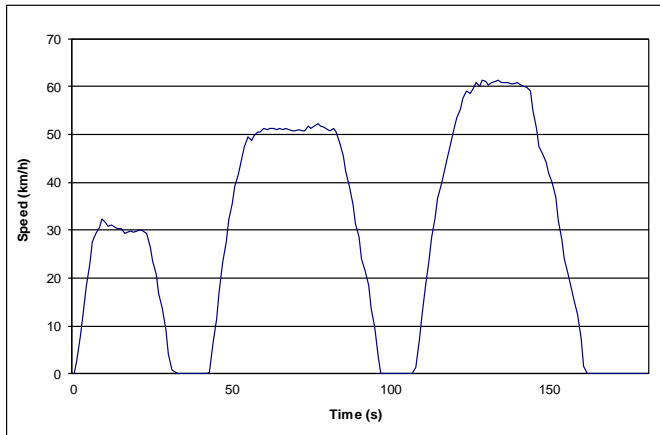
Speed average	(km/h)	28.2
Fuel consumption average	(l/100km)	41.6



**SORT 3 - Test 3**

**DIRECTION 1**

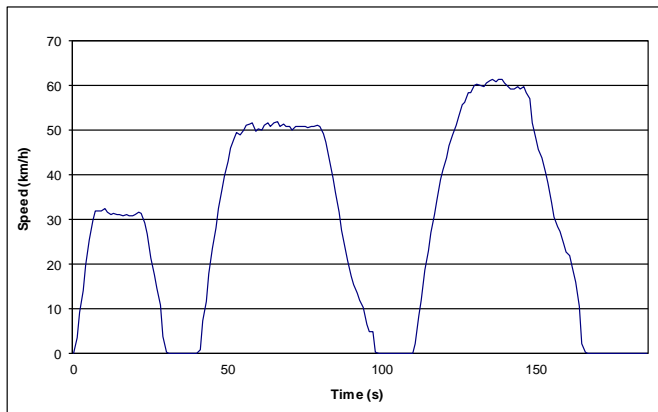
Date
2021/3/17 11:41



Total test distance (m)	1,453.3
Total test time (s)	181.0
Fuel consumption (l/100km)	41.9
Cycle speed (km/h)	28.9

**DIRECTION 2**

Date
2021/3/17 11:52



Total test distance (m)	1,455.5
Total test time (s)	186.0
Fuel consumption (l/100km)	42.0
Cycle speed (km/h)	28.2

**Final electrical consumption SORT3**

<b>Fuel consumption average SORT 3</b>	<b>(l/100km)</b>	<b>41.9</b>
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#### 4. VEHICLE INSTRUMENTATION

The vehicle instrumentation used during the test was as follows:

Equipment	Brand	Model	Serial Number
Speed sensor	Racelogic	VBoxX3i	038925
Fuel consumption	Gregory	SE8005D	01133
Digital Anemometer	Kestrel	NK5920	LY11417
Digital Temperature&Humidity meter	Kestrel	NK5920	LY11417
Tyre pressure gauge	PCL	G74529	151292
Caliper	Sata	91512	S181010765

