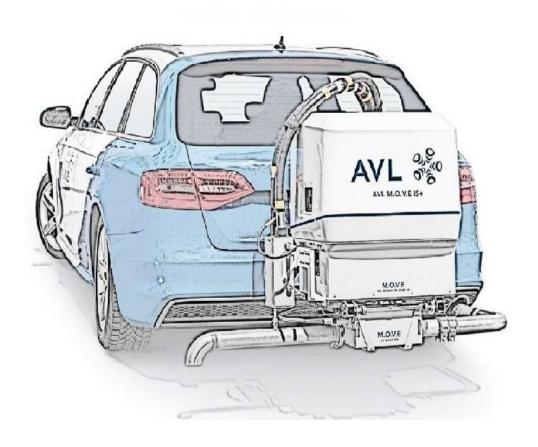
## COMMISSION REGULATION (UN) 168



#### Measurement Files:

LD\_MOVE\_plus\_37\_9.ctf LD\_MOVE\_PRE.001 LD\_MOVE\_MAIN.001 LD\_MOVE\_POST.001





Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278)

Concerto Serial Number: 998.00 MOVE Version: V2.9 234

Windows Version: MicrosoftWindows11Enterprise

Test Id: Test\_AVL / XXX Engine: Demo Engine / Type Engine at test start: cold / fuel: Diesel

Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000

extended cond.: 0.00 % (0.00 % cold start)

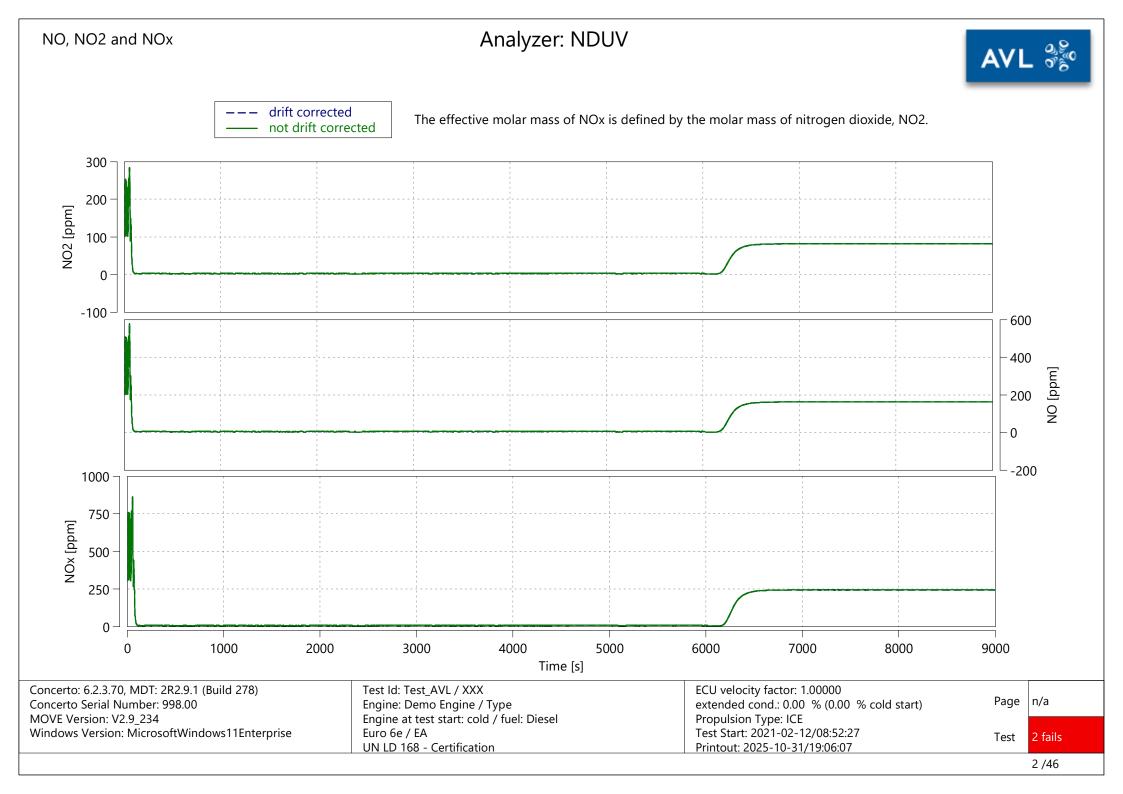
Propulsion Type: ICE

Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07

Page n/a

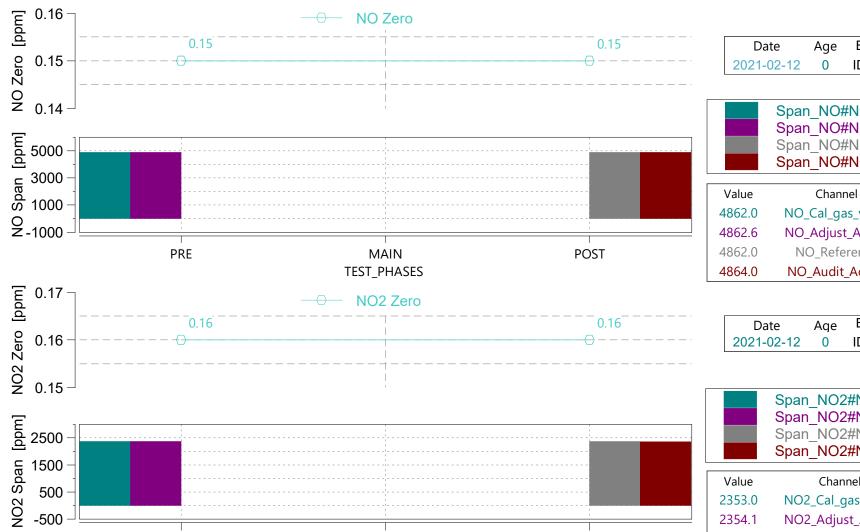
Test

2 fails



## Calibration: Span - Zero: NO/NO2



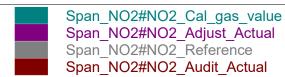


Date	Age	Bottle ID
2021-02-12	0	IDBOTT1

Span_NO#NO_Cal_gas_value
Span_NO#NO_Adjust_Actual
Span_NO#NO_Reference
Span_NO#NO_Audit_Actual

Value	Channel	Date	Age
4862.0	NO_Cal_gas_value	2021-02-12	1
4862.6	NO_Adjust_Actual	2021-02-12	1
4862.0	NO_Reference	2021-02-12	1
4864.0	NO_Audit_Actual	2021-02-12	1

Date	Age	Bottle ID
2021-02-12	0	IDBOTT4



Value	Channel	Date	Age
2353.0	NO2_Cal_gas_value	2021-02-12	1
2354.1	NO2_Adjust_Actual	2021-02-12	1
2353.0	NO2_Reference	2021-02-12	1
2351.9	NO2_Audit_Actual	2021-02-12	1

Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278)	
6 . 6 . 1 . 1 . 000 00	

Concerto Serial Number: 998.00 MOVE Version: V2.9 234

Windows Version: MicrosoftWindows11Enterprise

PRE

Test Id: Test\_AVL / XXX Engine: Demo Engine / Type

MAIN

TEST PHASES

Engine at test start: cold / fuel: Diesel

Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000

extended cond.: 0.00 % (0.00 % cold start)

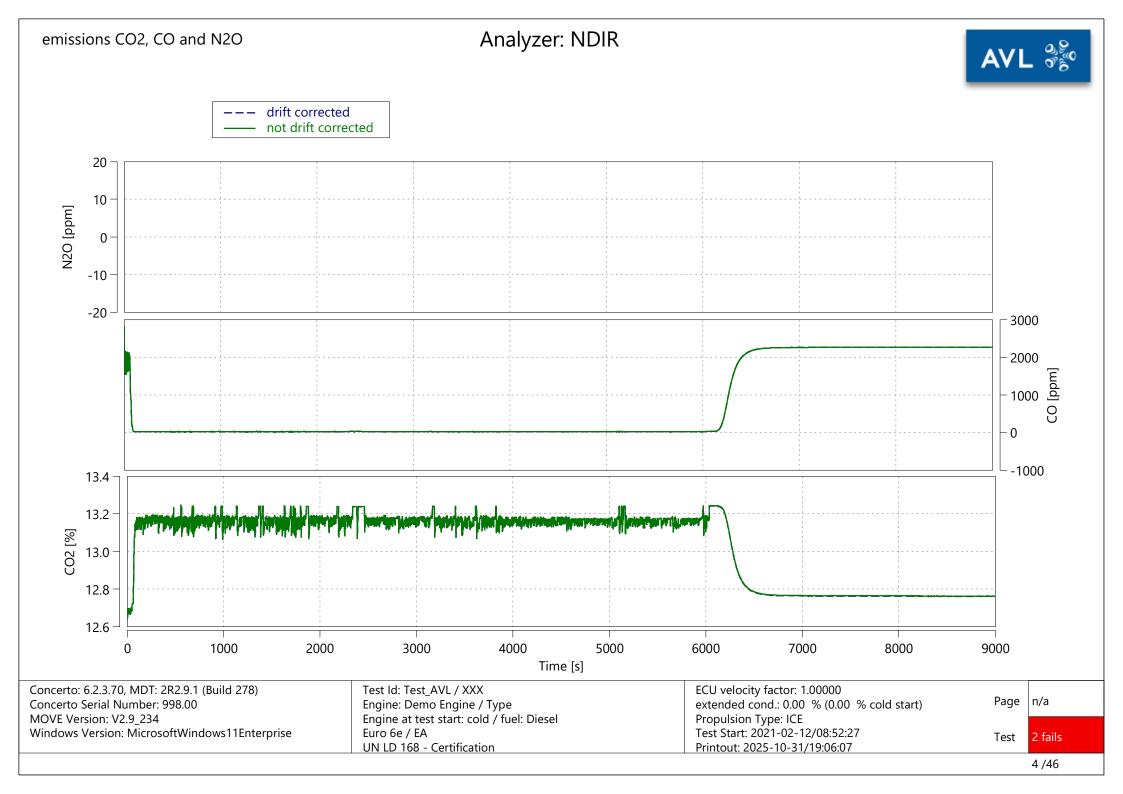
Propulsion Type: ICE

**POST** 

Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07

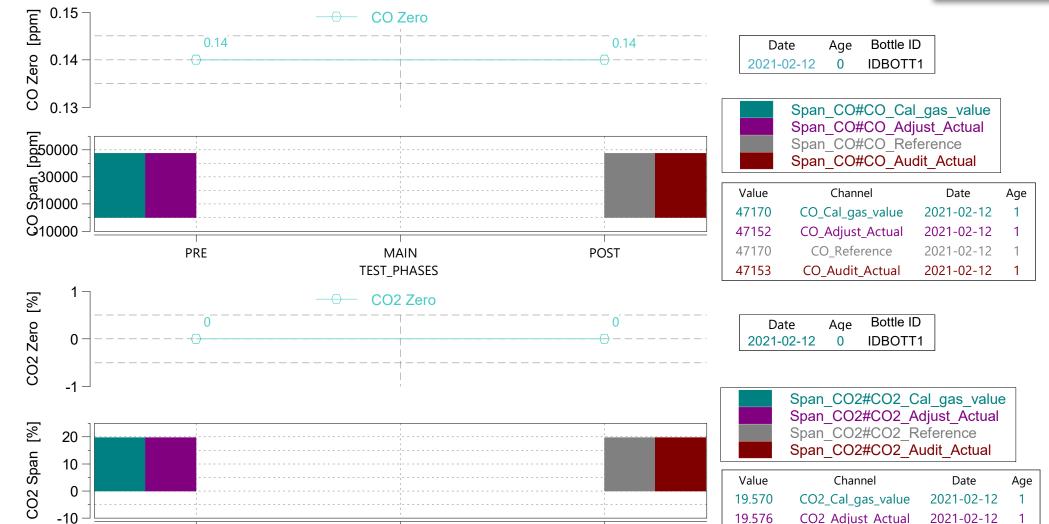
Page | n/a

Test 2 fails



## Calibration: Span - Zero: CO/CO2





Concerto:	6.2	2.3.	70,	MDT:	2R2.9.1	(Build 278)
_	_					

Concerto Serial Number: 998.00

MOVE Version: V2.9 234

Windows Version: MicrosoftWindows11Enterprise

PRE

Test Id: Test AVL / XXX Engine: Demo Engine / Type

Engine at test start: cold / fuel: Diesel

Euro 6e / EA

UN LD 168 - Certification

MAIN

TEST PHASES

ECU velocity factor: 1.00000

19.570

19.570

extended cond.: 0.00 % (0.00 % cold start)

CO<sub>2</sub> Reference

CO<sub>2</sub> Audit Actual

Propulsion Type: ICE

**POST** 

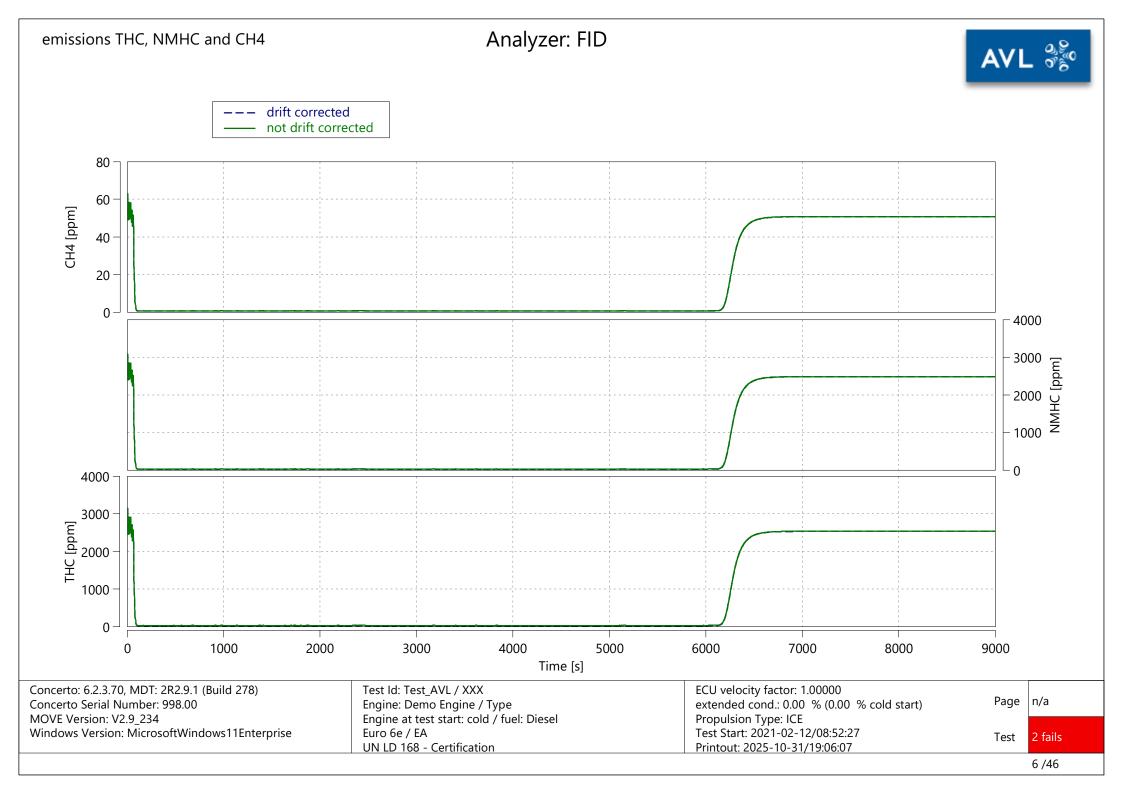
Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07

Page | n/a

2021-02-12

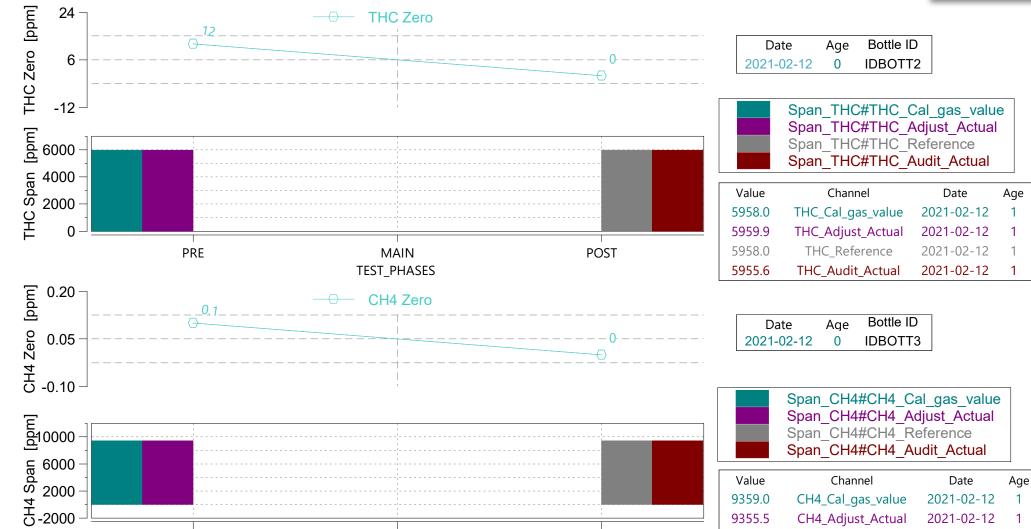
2021-02-12

2 fails Test



## Calibration: Span - Zero: THC/CH4





Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278)	
Concerto Serial Number: 998.00	

MOVE Version: V2.9 234

Windows Version: MicrosoftWindows11Enterprise

PRE

Test Id: Test AVL / XXX Engine: Demo Engine / Type Engine at test start: cold / fuel: Diesel

Euro 6e / EA

UN LD 168 - Certification

MAIN

TEST PHASES

ECU velocity factor: 1.00000

9355.5

9359.0

9359.4

extended cond.: 0.00 % (0.00 % cold start)

CH4 Adjust Actual

CH4 Reference

CH4 Audit Actual

Propulsion Type: ICE

**POST** 

Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07

Page | n/a

2021-02-12

2021-02-12

2021-02-12

2 fails Test

Windows Version: MicrosoftWindows11Enterprise

Analyzer: PN, O2, NH3



Test

2 fails

8 /46



Euro 6e / EA

UN LD 168 - Certification

Test Start: 2021-02-12/08:52:27

Printout: 2025-10-31/19:06:07

# Summary



	urban	rural	expressway	trip	
Duration	3810	****	1435	5245	S
Distance	33.47	****	30.85	64.31	km
Avg. Velocity	31.62	***	77.39	44.14	km/h
Fuel	1.90	***	0.90	2.80	kg
Exhaust Mass	26.78	***	12.66	39.44	kg

	total					distance	specific				
	urban	rural	expressway	trip		urban	rural	expressway	trip	avg.	
CO [g]	1.08	****	0.24	1.32	CO [mg/km]	32.30	****	7.69	20.49	41.74	ppm
CO2 [g]	5345.04	****	2527.36	7872.41	CO2 [g/km]	159.71	***	81.93	122.41	13.16	%
N2O [g]					N2O [mg/km]						ppm
NO [g]	0.43	***	0.12	0.55	NO [mg/km]	12.73	***	3.96	8.52	9.82	ppm
NO2 [g]	0.21	***	0.06	0.28	NO2 [mg/km]	6.42	***	1.98	4.29	4.92	ppm
NOx [g]	0.64	****	0.18	0.82	NOx [mg/km]	19.16	****	5.94	12.82	14.740	ppm
PN [#]	6.613e+10	****	3.162e+10	9.775e+10	PN [#/km]	1.976e+09	***	1.025e+09	1.520e+09	3.087e+03	#/cm³
THC [g]	0.7622	***	0.1636	0.9258	THC [mg/km]	22.7751	***	5.3032	14.3949	59.2628	ppm
CH4 [g]	0.0175	***	0.0038	0.0212	CH4 [mg/km]	0.5226	***	0.1217	0.3303	1.1853	ppm
NMHC [g]	0.7470	***	0.1603	0.9073	NMHC [mg/km]	22.3196	***	5.1971	14.1070	58.0775	ppm

Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278)

Concerto Serial Number: 998.00

MOVE Version: V2.9\_234

Windows Version: MicrosoftWindows11Enterprise

Test Id: Test\_AVL / XXX

Engine: Demo Engine / Type Engine at test start: cold / fuel: Diesel

Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000

extended cond.: 0.00 % (0.00 % cold start)

Propulsion Type: ICE

Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07

Page n/a

Test

2 fails

# **Summary Drift Corrected**

emissions corrected by calibrations



	total					distance specific					
	urban	rural	expressway	trip		urban	rural	expressway	trip	avg.	
CO [g]	1.08	****	0.24	1.31	CO [mg/km]	32.22	****	7.64	20.43	41.63	ppm
CO2 [g]	5344.25	****	2526.99	7871.24	CO2 [g/km]	159.69	***	81.92	122.39	13.16	%
N2O [g]					N2O [mg/km]						ppm
NO [g]	0.42	****	0.12	0.54	NO [mg/km]	12.56	****	3.87	8.39	9.69	ppm
NO2 [g]	0.21	****	0.06	0.27	NO2 [mg/km]	6.24	****	1.89	4.16	4.78	ppm
NOx [g]	0.63	****	0.18	0.81	NOx [mg/km]	18.81	****	5.76	12.55	14.465	ppm
THC [g]	0.6855	****	0.1271	0.8126	THC [mg/km]	20.4826	****	4.1207	12.6348	59.2628	ppm
CH4 [g]	0.0168	****	0.0034	0.0202	CH4 [mg/km]	0.5006	****	0.1104	0.3134	1.1354	ppm
NMHC [g]	0.6718	****	0.1246	0.7963	NMHC [mg/km]	20.0729	****	4.0383	12.3821	52.2525	ppm

Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278)

Concerto Serial Number: 998.00

MOVE Version: V2.9\_234

Windows Version: MicrosoftWindows11Enterprise

Test Id: Test\_AVL / XXX

Engine: Demo Engine / Type

Engine at test start: cold / fuel: Diesel

Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000

extended cond.: 0.00 % (0.00 % cold start)

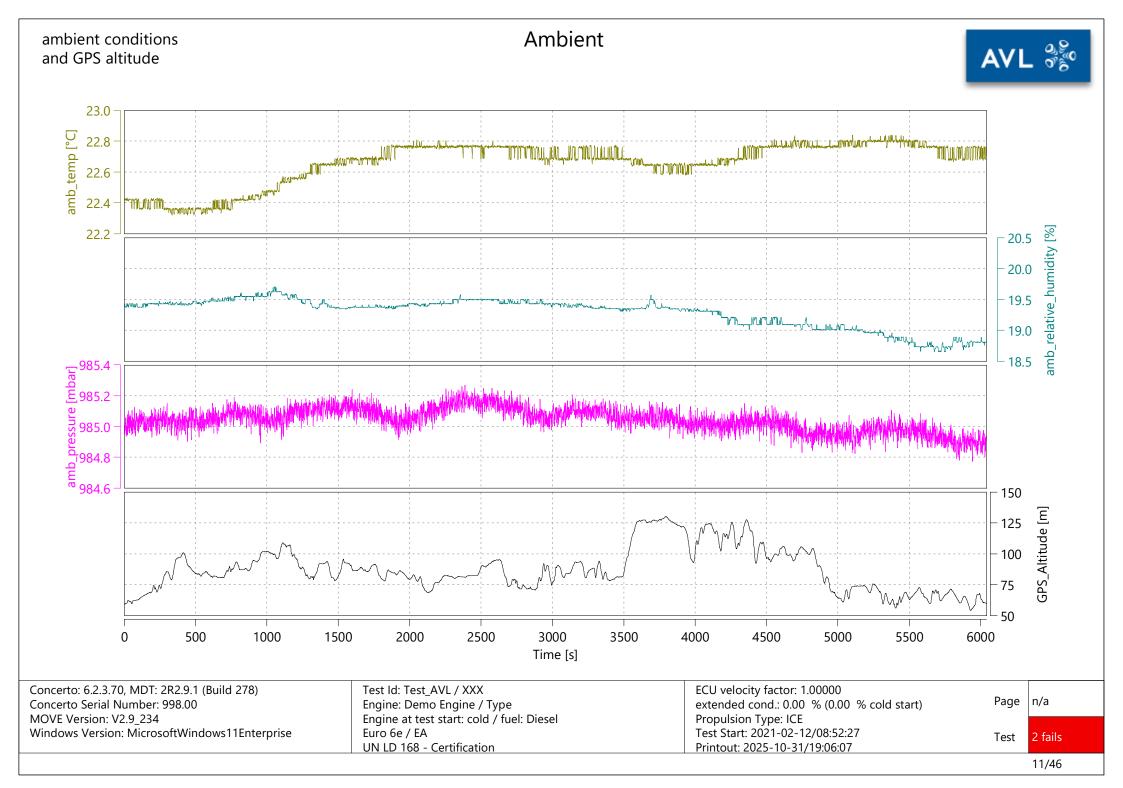
Propulsion Type: ICE

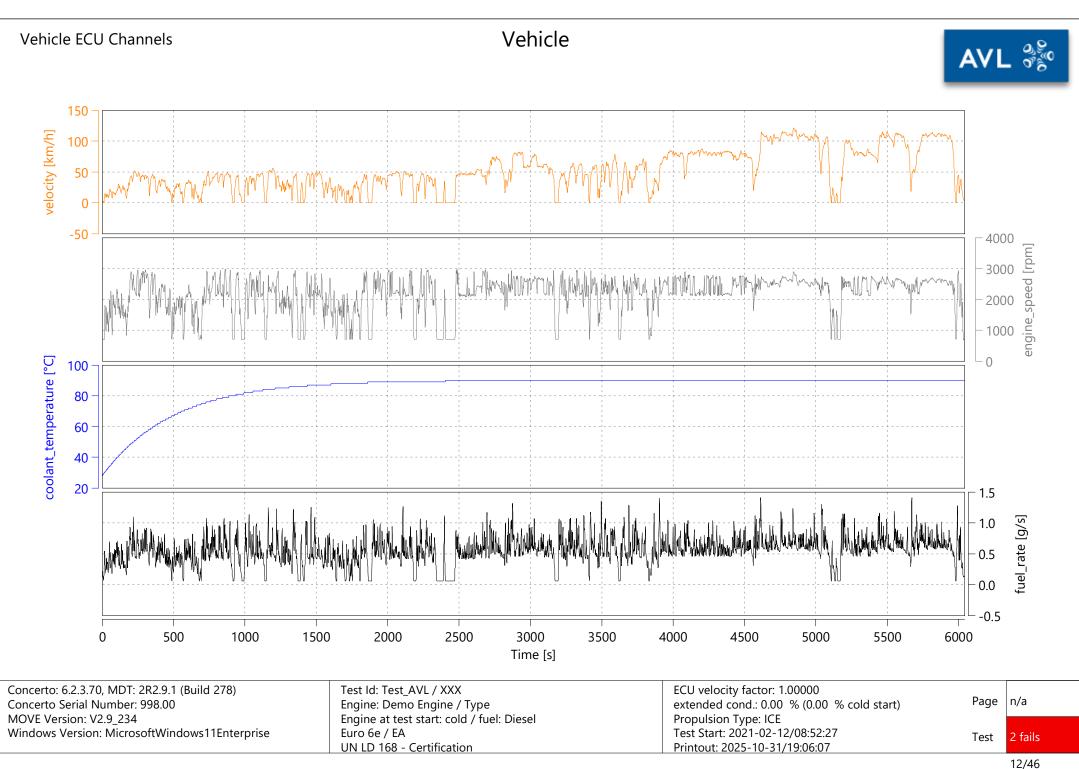
Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07

Page n/a

Test

2 fails





#### Zero and Span Drift

# Zero/Span



§	criterion	condition	value	unit	pass/
6.1	Permissible analyser abs zero response drift CO2	abs zero response drift <= 2000 ppm	0.0	ppm	pa
	Permissible analyser abs span response drift CO2	abs span response drift <= 3914 ppm	64.0	ppm	р
	Permissible analyser abs zero response drift CO	abs zero response drift <= 75 ppm	0.0	ppm	p
		1:6			
	Permissible analyser abs span response drift CO	abs span response drift <= 943.4 ppm	0.7	ppm	þ
	Permissible analyser abs zero response drift NOx	abs zero response drift <= 3 ppm	0.0	ppm	р
	. communication analyses and zero response armenter	ало деле теоретно атте то ррт		PP	P
	Permissible analyser abs span response drift NOx	abs span response drift <= 144.3 ppm	0.8	ppm	р
	pre test, zero check PN:the final concentration shall not exceed 5 000				
4.6	particles per cubic-centimetre	PN pre zero check <= 5000 #/cm3	1235	#/cm3	р
	post test, zero check PN:the final concentration shall not exceed 5 000				
	particles per cubic-centimetre	PN post zero check <= 5000 #/cm3	1235	#/cm3	р

Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278) Concerto Serial Number: 998.00

MOVE Version: V2.9\_234

Windows Version: MicrosoftWindows11Enterprise

Test Id: Test\_AVL / XXX Engine: Demo Engine / Type

Engine at test start: cold / fuel: Diesel

Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000

extended cond.: 0.00 % (0.00 % cold start)

Propulsion Type: ICE

Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07

Page pass

2 fails Test

## Validity of calibration gas

# Span Gases



§	criterion	condition	value	unit	pass/fail
	Span gas shall cover at least 90% of the conc. values from 99% of the				
6.3	valid parts of the emissions test CO2	span gas CO2 > 12 %	19.6	%	pass
	It is permissible that 1 % of the total number of measurements exceeds	(span gas < perc. measurement points <= (2 *			
	the used span gas by up to a factor of two CO2	span gas)) <= 1%	0.0	%	pass
	If measurement exceeds the used span gas by up to a factor of two, the				
	test must be voided - CO2	(perc. measurement points > (2 * span gas))	0.0	%	pass
	Span gas shall cover at least 90% of the conc. values from 99% of the				
	valid parts of the emissions test CO	span gas CO > 1391 ppm	47170.0	ppm	pass
	It is permissible that 1 % of the total number of measurements exceeds	(span gas < perc. measurement points <= (2 *			
	the used span gas by up to a factor of two CO	span gas)) <= 1%	0.0	%	pass
	If measurement exceeds the used span gas by up to a factor of two, the				
	test must be voided - CO	(perc. measurement points > (2 * span gas))	0.0	%	pass
	Span gas shall cover at least 90% of the conc. values from 99% of the				
	valid parts of the emissions test NOx	span gas NOx > 275 ppm	7215.0	ppm	pass
	It is permissible that 1 % of the total number of measurements exceeds	(span gas < perc. measurement points <= (2 *			
	the used span gas by up to a factor of two NOx	span gas)) <= 1%	0.0	%	pass
	If measurement exceeds the used span gas by up to a factor of two, the				
	test must be voided - NOx	(perc. measurement points > (2 * span gas))	0.0	%	pass

Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278)	
Concerto Serial Number: 998 00	

MOVE Version: V2.9\_234

Windows Version: MicrosoftWindows11Enterprise

Test Id: Test\_AVL / XXX Engine: Demo Engine / Type Engine at test start: cold / fuel: Diesel Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000 extended cond.: 0.00 % (0.00 % cold start) Propulsion Type: ICE Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07

Page pass

2 fails Test

#### PRECON and SOAK

#### Vehicle conditioning for cold engine-start testing



§	criterion	condition	value	unit	pass/fail
8.3.2	The vehicle shall be driven on public roads, preferably on the same route as the planned RDE testing or for at least 10 min per type of operation	for at least 10 min per type of operation (urban, expressway) *	0 min 0 min	urban expressway	fail
	parked with doors and bonnet closed and kept in engine-off status between 6 and 72 hours	6h <= time soak phase <= 72h	13:21	hh:mm	pass
	vehicle conditioning for cold engine start shall be within moderate or extended temperatures conditions	-7°C <= ambient temperature during soak phase <=38°C	22.1 23.2	°C	pass
10.6	If the vehicle was conditioned for the last three hours prior to the test at an average temperature that falls within the extended range, cold start emissions are divided by 1.6	if during last 3 hours of the soak phase, avg. amb. temperature has been in extended conditions [-7/0] or [35/38] °C, then a correction of 1.6 is applied to cold start	22.3	°C	not applied

Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278) Concerto Serial Number: 998.00

MOVE Version: V2.9\_234

Windows Version: MicrosoftWindows11Enterprise

Test Id: Test\_AVL / XXX Engine: Demo Engine / Type Engine at test start: cold / fuel: Diesel Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000 extended cond.: 0.00 % (0.00 % cold start)

Propulsion Type: ICE

Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07

Page fail

2 fails

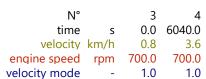
Test

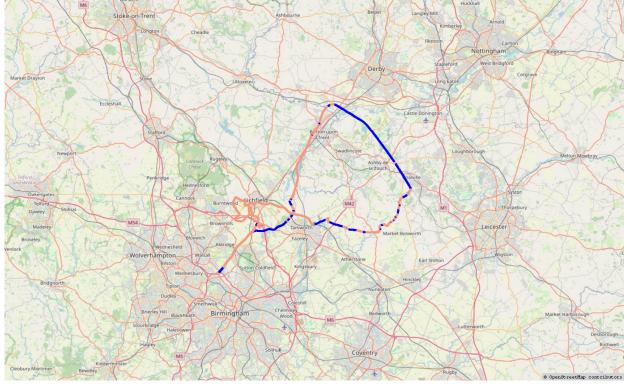
\* PRECON test data shall be created with MOVE Suite version >= 19

# Vehicle with internal combustion engine criterium test start: ignition on/engine up criterium test end: trip end

#### Test Start/End

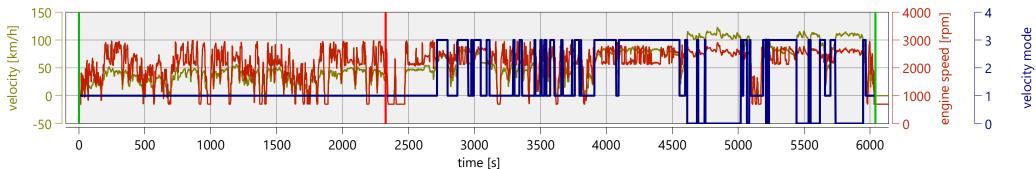






TEST END s 6040

TEST START s



Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278)

Concerto Serial Number: 998.00

MOVE Version: V2.9\_234

Windows Version: MicrosoftWindows11Enterprise

Test Id: Test\_AVL / XXX Engine: Demo Engine / Type

Engine at test start: cold / fuel: Diesel

Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000

extended cond.: 0.00 % (0.00 % cold start)

Propulsion Type: ICE

Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07 Page r

e n/a

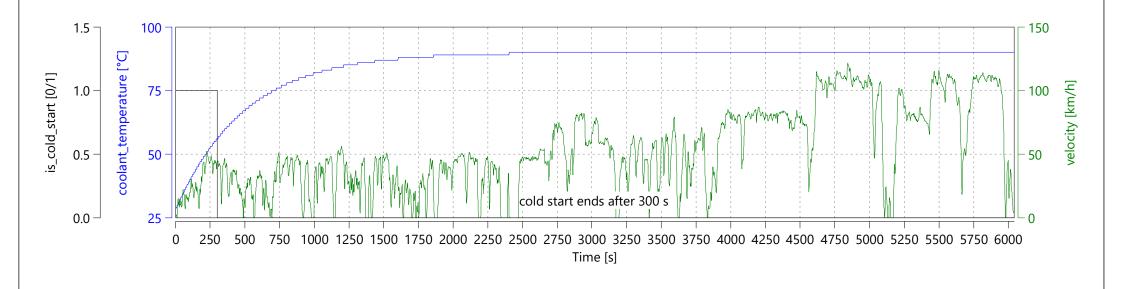
Test 2 fails

#### **Cold Start**

#### cold or hot start



§	criterion	condition	value	unit	pass/fail
	The average speed (including stops) during cold start period shall be	15 km/h <= velocity during cold start <= 40			
9.3.4	between 15 and 40 km/h.	km/h	26.19	km/h	pass
	The maximum speed during the cold start period shall not exceed 60				
	km/h.	max velocity during cold start <= 60 km/h	51.57	km/h	pass
	At the test start the vehicle shall move within 15 seconds.	vehicle stop @test start <= 15s	2	s	pass
	The vehicle stop during the entire cold start period shall be kept to the	sum of vehicle stop times during cold start <=			
	minimum possible and it shall not exceed in total 90s.	90 seconds	4	s	pass
	shall be tested with a warm engine with engine coolant temperature				
3.8.2	and/or engine oil temperature above 70 °C	coolant temperature @test start >= 70 °C	27.67	°C	n/a



Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278)

Concerto Serial Number: 998.00

MOVE Version: V2.9 234

Windows Version: MicrosoftWindows11Enterprise

Test Id: Test\_AVL / XXX

Engine: Demo Engine / Type

Engine at test start: cold / fuel: Diesel

Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000

extended cond.: 0.00 % (0.00 % cold start)

Propulsion Type: ICE

Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07

Page pass

Test

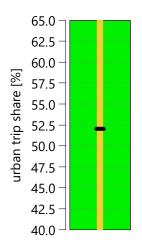
2 fails

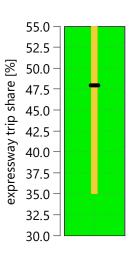
# **Trip Shares**

#### trip shares urban/rural/motorway



§	criterion	condition	value	unit	pass/fail
	The trip shall always start with urban driving followed by rural and				
9.3.2	motorway driving (avg. velocity of first 16km max. 40 km/h)	urban first	YES		pass
9.2	The minimum distance of the urban operation shall be 16 km.	distance urban min 16km	33	km	pass
	The minimum distance of the expressway operation shall be 16 km.	distance expressway min 16km	31	km	pass
	The trip shall consist of approximately 55 ±10% urban. The urban				
	driving shall however never be less than 40%.	share distance urban	52.04	%	pass
	The trip shall consist of 45 ±10% expressway	share distance expressway	47.96	%	pass





Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278)

Concerto Serial Number: 998.00

MOVE Version: V2.9\_234

Windows Version: MicrosoftWindows11Enterprise

Test Id: Test\_AVL / XXX Engine: Demo Engine / Type

Engine at test start: cold / fuel: Diesel

Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000

extended cond.: 0.00 % (0.00 % cold start)

Propulsion Type: ICE

Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07

Page pass

2 fails Test

# **Trip Requirements**



§	criterion	condition	value	unit	pass
	The average speed (including stops) of the urban driving part of the trip	0			
9.3.4	should be between 15 and 40 km/h.	urban driving average speed 15 -40 km/h	31.62	km/h	p
	Stop periods, defined by vehicle speed of less than 1 km/h, shall				
9.3.3	account for 6-30 % of the time duration of urban operation.	urban time share vehicle stop 6-30%	8.69	%	р
	Stop periods shall not exceed 300 consecutive seconds or 30 percent	vehicle stop max time 300s consecutive or 30%	66	S	
	urban driving time; final emissions under limit	urban	9	%	p
9.3.3	The trip duration shall be between 90 and 120 minutes.	trip duration 90 - 120 minutes	87	min	f
	The start and the end point shall not differ in their elevation above sea				
	level by more than 100 m.	trip start/end altitude diff max 100m	1	m	р
	The proportional cumulative positive altitude gain over the entire trip	cumulative pos elevation gain trip max 1200m		m/	
	shall be less than 1200 m/100 km.	m/100 km	558	100km	р
	The proportional cumulative positive altitude gain over the urban part	cumulative pos elevation gain urban part max		m/	
	of the trip shall be less than 1200 m/100 km.	1200 m/100 km.	540	100km	p
	Test outside ext. cond., shall be invalid only when final emissions are	test performed outside extended conditions in			
8.1	greater than emission limits; final emissions under limit	terms of ambient temperature and altitude	NO	YES/NO	р

Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278) Concerto Serial Number: 998.00

MOVE Version: V2.9\_234

Windows Version: MicrosoftWindows11Enterprise

Test Id: Test\_AVL / XXX Engine: Demo Engine / Type Engine at test start: cold / fuel: Diesel Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000 extended cond.: 0.00 % (0.00 % cold start)

Propulsion Type: ICE

Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07

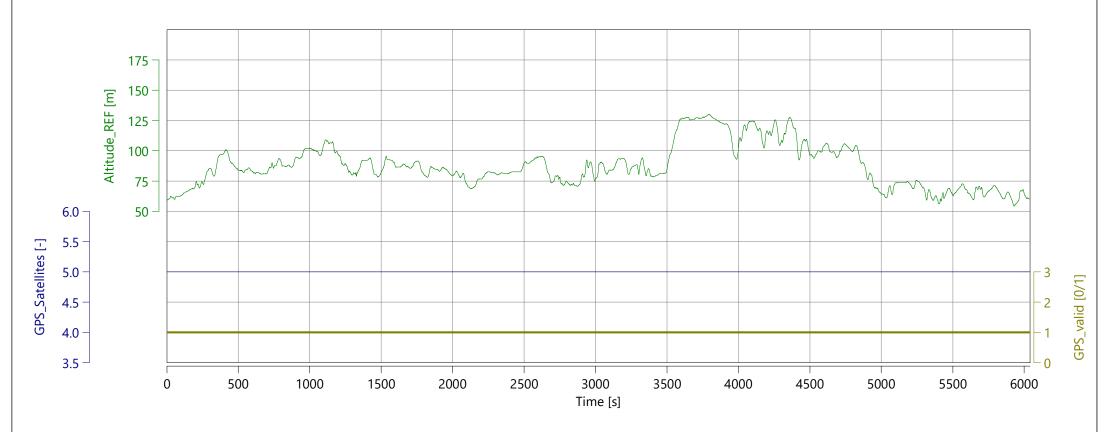
Page fail

2 fails Test

## Consistency check of Vehicle Altitude







(\*) according to EU 2017/1151 - ANNEX IIIA App. 4 (6)

Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278)

Concerto Serial Number: 998.00

MOVE Version: V2.9\_234

Windows Version: MicrosoftWindows11Enterprise

Test Id: Test\_AVL / XXX

Engine: Demo Engine / Type

Engine at test start: cold / fuel: Diesel

Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000

extended cond.: 0.00 % (0.00 % cold start)

Propulsion Type: ICE

Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07 Page

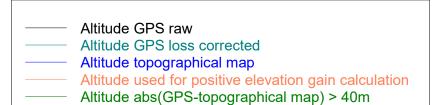
je n/a

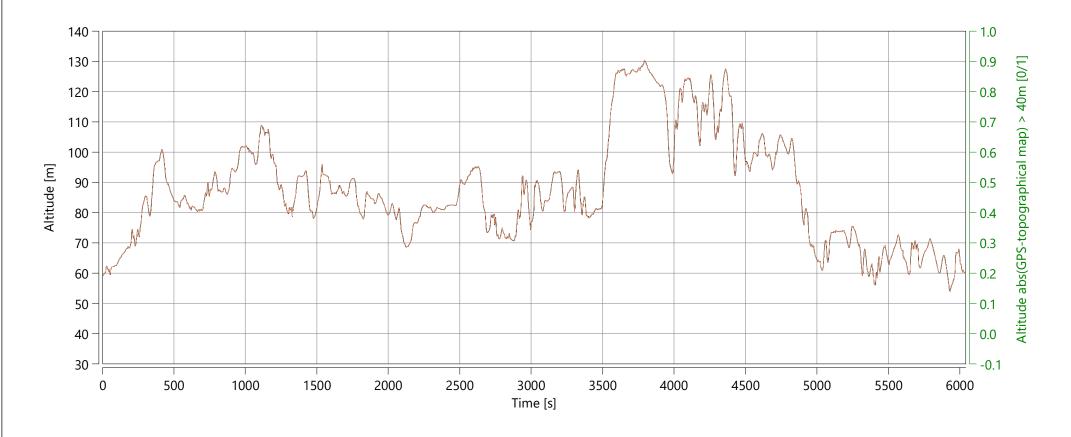
Test

t 2 fails

## Consistency check of Vehicle Altitude







Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278)

Concerto Serial Number: 998.00

MOVE Version: V2.9\_234

Windows Version: MicrosoftWindows11Enterprise

Test Id: Test\_AVL / XXX Engine: Demo Engine / Type

Engine at test start: cold / fuel: Diesel

Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000

extended cond.: 0.00 % (0.00 % cold start)

Propulsion Type: ICE

Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07 Page

ge |n/a

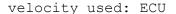
Test

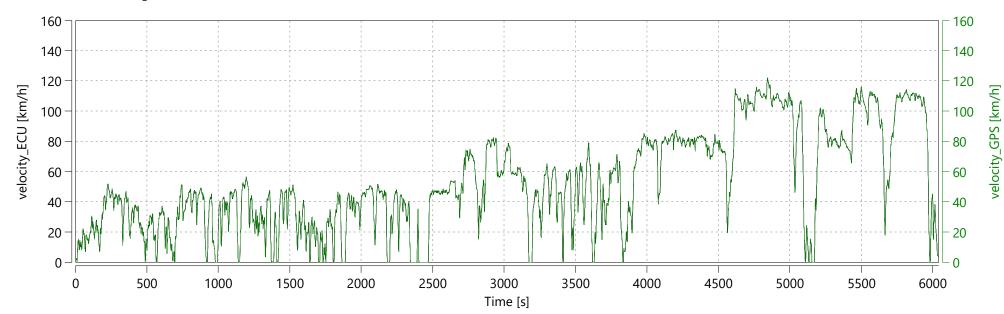
st 2 fails

# Consistency check of GPS Vehicle Speed



§	criterion	condition	value	unit	pass/fail
	The total trip distance as calculated from the corrected GPS data shall	difference GPS distance (64.299 km) vs. ECU			
4.7	deviate by no more than 4 % from the reference.	distance (64.314 km) <= 4%	0.0	%	pass
	The corrected GPS data shall not exceed an uninterrupted time period				
6.5	of 120 s.	GPS loss max time <= 120s	0	s	pass
	The corrected GPS data shall not exceed a total of 300 s	GPS loss toal time <= 300 s	0	S	pass





Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278)

Concerto Serial Number: 998.00

MOVE Version: V2.9 234

Windows Version: MicrosoftWindows11Enterprise

Test Id: Test\_AVL / XXX

Engine: Demo Engine / Type

Engine at test start: cold / fuel: Diesel

Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000

extended cond.: 0.00 % (0.00 % cold start)

Propulsion Type: ICE

Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07

Page

pass

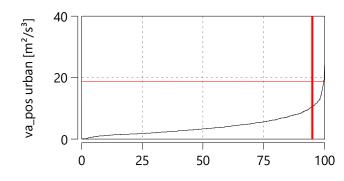
Test 2 fails

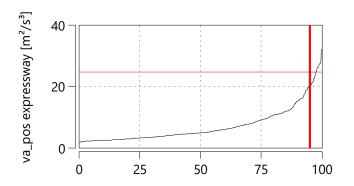
# **Trip Dynamics**



Verification of trip dynamics based on vehicle velocity and acceleration

§	criterion	condition		unit	pass/fail
	The number of datasets with acceleration values ai>0.1m/s2 shall be				
3.1.3.1	bigger or equal to 100 in the urban speed bin.	npoints(a_pos) >= 100	1429		pass
	The number of datasets with acceleration values ai>0.1m/s2 shall be				
	bigger or equal to 100 in the expressway speed bin.	npoints(a_pos) >= 100	448		pass
4.1.1	Verification of va_pos95 per speed bin.	$va_pos urban <= 18.741 [m^2/s^3]$	10.433	m²/s³	pass
	Verification of va_pos95 per speed bin.	va_pos expressway <= 24.708 [m²/s³]	19.965	m²/s³	pass
4.1.2	Verification of RPA per speed bin.	RPA urban >= 0.125 [m/s²]	0.176	m/s²	pass
	Verification of RPA per speed bin.	RPA expressway >= 0.052 [m/s²]	0.104	m/s²	pass





Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278)

Concerto Serial Number: 998.00

MOVE Version: V2.9 234

Windows Version: MicrosoftWindows11Enterprise

Test Id: Test\_AVL / XXX Engine: Demo Engine / Type

Engine at test start: cold / fuel: Diesel

Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000

extended cond.: 0.00 % (0.00 % cold start)

Propulsion Type: ICE

Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07

Page pass

Test

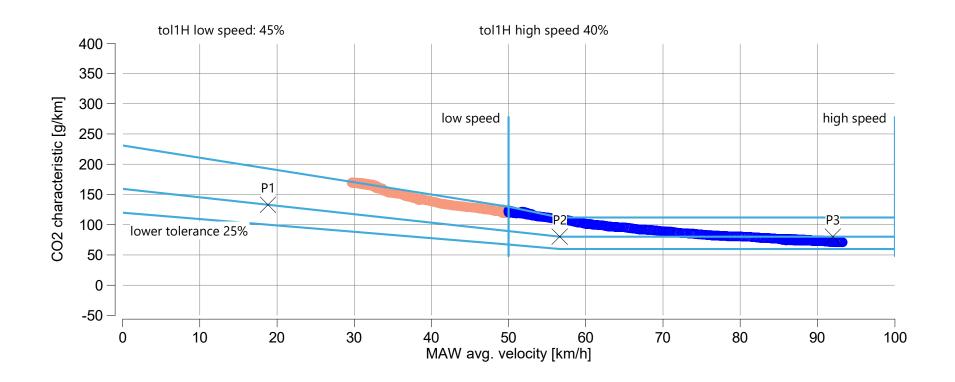
2 fails

## **Test Validity**



Verification of overall trip dynamics using the moving averaging window method

§	criterion	condition	value	unit	pass/fail
	At least 50% of the low speed windows shall be within the tolerances				
App8 4.5.1.2	defined for the CO2 characteristic.	50% valid low speed windows	85.31	%	pass
	At least 50% of the high speed windows shall be within the tolerances				
	defined for the CO2 characteristic.	50% valid high speed	99.62	%	pass





Concerto Serial Number: 998.00

MOVE Version: V2.9 234

Windows Version: MicrosoftWindows11Enterprise

Test Id: Test\_AVL / XXX

Engine: Demo Engine / Type

Engine at test start: cold / fuel: Diesel

Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000

extended cond.: 0.00 % (0.00 % cold start)

Propulsion Type: ICE

Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07

Page pass

Test 2 fails

# Conformity of Emissions

#### Final RDE emissions results



§	criterion	condition	value	unit	pass/fail
App11 4	Final NOX RDE urban emission result below WLTP limit	Final NOx urban <= 60 mg/km	13.87	mg/km	pass
	Final NOX RDE trip emission result below WLTP limit	Final NOx trip <= 60 mg/km	11.41	mg/km	pass
	Final PN RDE urban emission result below WLTP limit	Final PN urban <= 6.000e+11 #/km	1.197e+09	#/km	pass
	Final PN RDE trip emission result below WLTP limit	Final PN trip <= 6.000e+11 #/km	1.134e+09	#/km	pass

urban		CO2	со	NOx	PN
correction	factor	g/km	mg/km	mg/km	#/km
none		159.71	32.30	19.16	1.976e+09
drift correc	tion applied	159.69	32.22	18.81	1.976e+09
EXTC	1.60		32.22	18.81	1.976e+09
RF	0.81		26.14	15.26	1.604e+09
CF	1/1.1;1/1.34			13.87	1.197e+09
ki				13.87	
final result *				13.87	1.197e+09
WLTP limit			1000.0	60.00	6.000e+11

trip		CO2	со	NOx	PN
correction	factor	g/km	mg/km	mg/km	#/km
none		122.41	20.49	12.82	1.520e+09
drift corre	ction applied	122.39	20.43	12.55	1.520e+09
EXTC	1.60		20.43	12.55	1.520e+09
RF	1.00		20.43	12.55	1.520e+09
CF	1/1.1;1/1.34		20.43	11.41	1.134e+09
ki			20.43	11.41	
final result *			20.43	11.41	1.134e+09
WLTP limit			1000.0	60.00	6.000e+11

Ki Offset	
Ki factor	

CO2 [g/km]	CO [mg/km]	NOx [mg/km]	
CO2	СО	NOx	

Concerto: 6.2.3.70, MD1: 2R2.9.1 (Build 278)
Concerto Serial Number: 998.00

MOVE Version: V2.9\_234

Windows Version: MicrosoftWindows11Enterprise

Test Id: Test\_AVL / XXX

Engine: Demo Engine / Type

Engine at test start: cold / fuel: Diesel

Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000

extended cond.: 0.00 % (0.00 % cold start)

Propulsion Type: ICE

Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07

Page pass

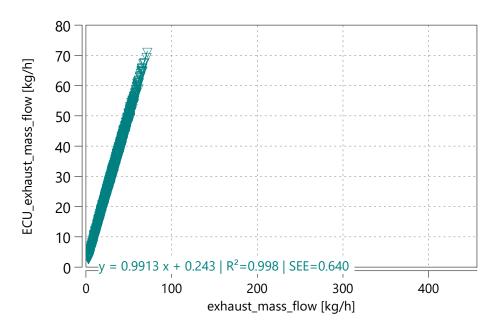
Test

2 fails

\* According to UN 168 2024/211 ANNEX 11.4: Any negative final results shall be set to zero.

## EFM vs. ECU exhaust mass flow regression

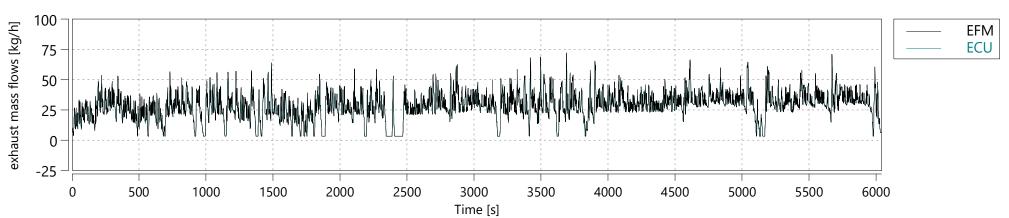




ECU\_ExhaustMassFlow\_TS s -38.100

Data from - to [% of Maximum]

from [%]: 0 to [%]: 100



Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278)

Concerto Serial Number: 998.00

MOVE Version: V2.9\_234

Windows Version: MicrosoftWindows11Enterprise

Test Id: Test AVL / XXX

Engine: Demo Engine / Type

Engine at test start: cold / fuel: Diesel

Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000

extended cond.: 0.00 % (0.00 % cold start)

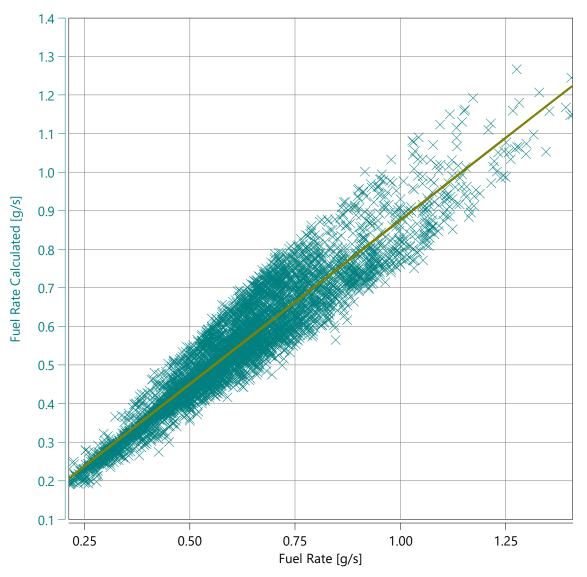
Propulsion Type: ICE

Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07

#### Fuel rate calculated vs. fuel rate







Data from - to [% of Maximum]

from [%]: 15 to [%]: 100

Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278)

Concerto Serial Number: 998.00 MOVE Version: V2.9\_234

Windows Version: MicrosoftWindows11Enterprise

Test Id: Test\_AVL / XXX Engine: Demo Engine / Type

Engine at test start: cold / fuel: Diesel

Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000

extended cond.: 0.00 % (0.00 % cold start)

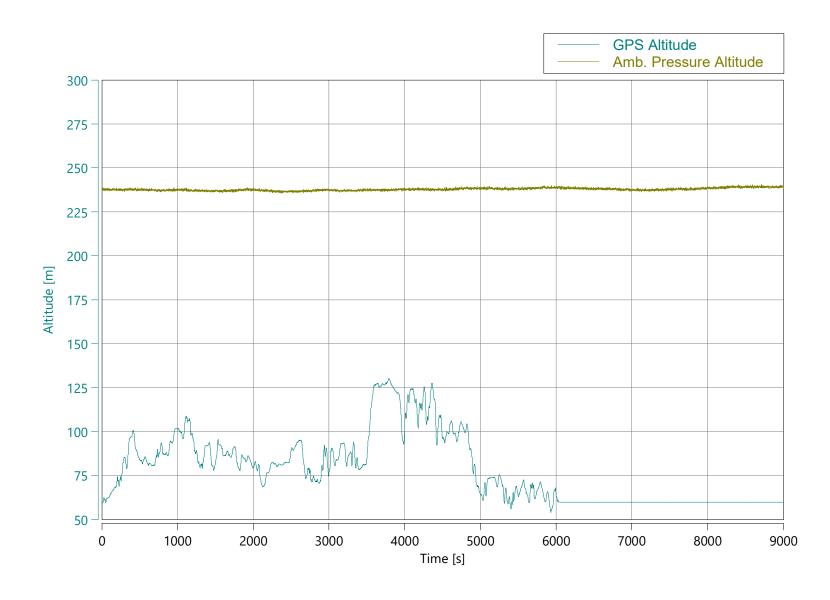
Propulsion Type: ICE

Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07

#### Test Confirmation - Altitude

#### **GPS Altitude vs Pressure**





Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278)

Concerto Serial Number: 998.00 MOVE Version: V2.9\_234

Windows Version: MicrosoftWindows11Enterprise

Test Id: Test\_AVL / XXX Engine: Demo Engine / Type

Engine at test start: cold / fuel: Diesel

Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000

extended cond.: 0.00 % (0.00 % cold start)

Propulsion Type: ICE

Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07

## Leak Check and Errors



§	criterion	condition	value	unit	pass/fail
GAS Leak Check	The leakage rate on the vacuum side shall not exceed 0.5 per cent of the in-use flow rate for the portion of the system being checked.	The leakage rate <= 0.5%	0.12	%	pass
PN Leak Check Dilution	The pressure increase in the system shall not exceed 30 mbar/10s.	Delta p <= 30 mbar/10s	0.13	mbar/ 10s	pass
PN Leak Check Sample	The pressure increase in the system shall not exceed 30 mbar/10s.	Delta p <= 30 mbar/10s	0.11	mbar/ 10s	pass
Devices Main Errors	If any error signal(s) appear during the test, the test shall be voided.	No error signals during Main Test	0	-	pass

Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278)

Concerto Serial Number: 998.00

MOVE Version: V2.9\_234

Windows Version: MicrosoftWindows11Enterprise

Test Id: Test\_AVL / XXX

Engine: Demo Engine / Type Engine at test start: cold / fuel: Diesel

Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000

extended cond.: 0.00 % (0.00 % cold start)

Propulsion Type: ICE

Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07

Page pass

Test

2 fails

#### Device Info



GAS PEMS		PN Advanced	
Device ID	492	Device ID	496
Serial Number	124	Serial Number	33
Firmware Version	1.10	Sensor Serial Number	882
Leak Check Time	08:38:43	Firmware Version	2.080
Leak Check Date	2021-02-12	Leak Check Dilute Time	00:00:00
Main Test Date	2021-02-12	Leak Check Dilute Date	00-00-00
Leak Check Age [days]	0	Leak Check Sample Time	00:00:00
		Leak Check Sample Date	00-00-00
System Control		Dilute Check Date	18670
SC Version	V2.9_234	PN_CutPoint	n/a
SC Serial Number	60300996		
MOVE_VALIDATION_CHECK	n/a	FIDIS	
		Device ID	4925iS
EFM		Serial Number	2003
Device ID	n/a	Firmware Version	1.0
Serial Number	n/a	Leak Check Date	2021-02-12
Serial Number Tube	n/a	Leak Check Age	0
Firmware Version	n/a		

Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278)

Concerto Serial Number: 998.00 MOVE Version: V2.9\_234

Windows Version: MicrosoftWindows11Enterprise

Test Id: Test\_AVL / XXX
Engine: Demo Engine / Type
Engine at test start: cold / fuel: Diesel
Euro 6e / EA

UN LD 168 - Certification

ECU velocity factor: 1.00000

extended cond.: 0.00 % (0.00 % cold start)

Propulsion Type: ICE

Test Start: 2021-02-12/08:52:27 Printout: 2025-10-31/19:06:07

[CAIC DADAMEMED]			
[CALC_PARAMETER]			
1277 hattary gapagity CUAN			
12V_battery_capacity_CHAN	:		
12V_ECU_elect_current_CHAN	:		
12V_ECU_elect_current_TS	:	0	
12V_ECU_SOC_CHAN	:		
12V_ECU_SOC_TS	:	0	
12V_ECU_voltage_CHAN	:		
12V_ECU_voltage_TS	:	0	
12V_Xmeter_battery_energy_CHAN	:		
12V_Xmeter_battery_energy_TS	:	0	
12V_Xmeter_battery_power_CHAN	:		
12V_Xmeter_battery_power_TS	:	0	
3PH_WLTP_PHASE_1	:	3.0945	
3PH_WLTP_PHASE_2	:	4.7559	
3PH_WLTP_PHASE_3	:	7.1618	
$492\overline{9}$ _PEM $\overline{S}$ _Chec $\overline{k}$	:	YES	
Activate_12V_Xmeter	:	NO	
Activate_HV_Xmeter	:	NO	
Activate NH3	:	NO	
Activate plutron	:	NO	
Activate_torque_sensor	:	NO	
active systems disable	:		
add_params_ctf	:	NO	
ADD REGRESSION KPI	:	NO	
add_rep_formula_dkey1	:		
add_rep_formula_dkey2	<u>:</u>		
add_rep_formula_dkey3	:		
add_rep_formula_path1	•		
add_rep_formula_path2	•		
add_rep_formula_path3	•		
add_rep_layout_path	•		
add_rep_name	•		
add rep script path	•		
AHC CHAN	•		
AHC TS	:	0	
	•	V	
AIR_FLOW_CHAN	•	0 40000	
AIR_FLOW_TS	:	0.40000	
AIR_FLOW_TYPE	:	1.0000	
AMB_Humidity_CHAN	:	IFILE1:TM'AMB_Humidity	
AMB_Humidity_TS	:	0.10000	
AMB_Pressure_CHAN	:	IFILE1:TM'AMB_Pressure	
AMB_Pressure_TS	:	0.10000	
AMB_Temperature_CHAN	:	<pre>IFILE1:TM'AMB_Temperature</pre>	
AMB_Temperature_TS	:	0.10000	
Amiga	:	NO	
angular_speed_1_CHAN	:		
angular_speed_1_TS	:	0	
angular_speed_2_CHAN	:		
angular speed 2 TS	:	0	
angular_speed_3_CHAN	:		
angular speed 3 TS	:	0	
angular speed 4 CHAN	:		
angular speed 4 TS	:	0	

auto_HL_chkbox	: YES	
Aux_ref_1	: 12.000	
Aux ref 10	1.0000	
Aux ref 2	1.0000	
Aux ref 3	1.0000	
Aux ref 4	1.0000	
Aux ref 5	: 8.0000	
Aux ref 6	: 1.0000	
Aux ref 7	: 1.0000	
Aux ref 8	1.0000	
Aux ref 9	1.0000	
Aux TS 1		
	: 0	
Aux_TS_10	: 0	
Aux_TS_2	: 0	
Aux_TS_3	: 0	
Aux_TS_4	: 0	
Aux_TS_5	: 0	
Aux TS 6	: 0	
Aux_TS_7	: 0	
Aux TS 8	: 0	
Aux TS 9	: 0	
AuxChannels 1	•	
AuxChannels 10	•	
AuxChannels 2	•	
AuxChannels 3	•	
AuxChannels 4	•	
	•	
AuxChannels_5	:	
AuxChannels_6	:	
AuxChannels_7	:	
AuxChannels_8	:	
AuxChannels_9	:	
AVL FT	: NO	
AVL FT Check	: NO	
C2HZ CHAN	:	
C2H2 <sup>T</sup> S	: 0	
C2H4 CHAN	:	
C2H4 TS	: 0	
C2H6 CHAN	•	
C2H6 TS	· : 0	
C3H6 CHAN	•	
C3H6 TS	· : 0	
C3H8 CHAN		
CONO_CHAN	•	
C3H8_TS	: 0	
c_air_conditioning	1.0000	
c_Dual_Fuel_type	1.0000	
c_EMISSION_STANDARD	: 53.000	
c_Engine_Stop_def	: 2.0000	
c Engine Stop def value	: Engine Speed	
c_exhaust_mol_mass_constant	: YES	
c_fuel_system	1.0000	
c_fuel_type	: 2.0000	
c_fuel_type_value	: 2 - Diesel (B7)	
c humidity type	: 2 Bicsci (B7)	
	1.0000	
c_ignition_type	. 1.0000	

TMD Laws	2.000	0
c_IMP_type	: 2.000	
c_PM_type	1.000	
c_start_stop_active	: 1.000	
c_type_altitude	: 1.000	
c_type_bodywork	1.000	0
c_type_CO2_ref_mass	: 1.000	
c unit system	: 1.000	
CALC DATE	: 2025-10-31/19:06:0	
CALC PM		0
CALC PN	· ·	
CD_PEMS_DS_CH4	: 300.0	
CD_PEMS_DS_CH4_ratio	: n,	
CD_PEMS_DS_CO	: 1000	
CD PEMS DS CO2	: 200.0	0
CD PEMS DS CO2 ratio	: n,	a
CD PEMS DS CO ratio	: n,	a
CD PEMS DS NMHC	: 150.0	
CD PEMS DS NMHC ratio	: n,	
CD PEMS DS NO	: 50.00	
CD PEMS DS NO2	: 30.00	
CD_PEMS_DS_NO2_ratio	: n,	
CD_PEMS_DS_NO_ratio	: n,	
CD_PEMS_DS_NOx	: 60.00	
CD_PEMS_DS_NOx_ratio	: n,	
CD PEMS DS PN	: 25000	0
CD PEMS DS PN ratio	: n,	a
CD PEMS DS THC	: 200.0	0
CD PEMS DS THC ratio	: n,	a
Certification Mode	: YI	
CH4 Adjust Actual	9355.	
CH4 Audit Actual	<b>:</b> 9359.	
CH4_Cal_gas_value	• 9359.	
CH4 CHAN	: IFILE1:TM'FIDIS CH4 (	
CH4_Reference	: 9359	
CH4_Std		0
CH4_Std_Adjust_Actual	: n,	
CH4_Std_Audit_Actual	: n,	
CH4_Std_Cal_gas_value	: n,	a
CH4_Std_CHAN	:	
CH4_Std_Reference	: n,	a
CH4 Std TS	:	0
CH4_Std_zero_post	: n,	a
CH4_Std_zero_pre	: n,	a
CH4 TS	-7.500	
CH4_zero_post	: N/	
CH4 zero pre	: 0.1000	
CO2 Adjust Actual	: 19.5	
CO2_Adjust_Actual		
CO2_Audit_Actual	: 19.5	
CO2_Cal_gas_value	: 19.5	
CO2_CHAN	: IFILE1:TM'GPiS_CC	
CO2_Reference	: 19.5	
CO2_Refmass	: 1.800	
CO2_Std		0
CO2_Std_Adjust_Actual	: n,	a
	, , , , , , , , , , , , , , , , , , ,	

CO2_Std_Audit_Actual	: n/a	
CO2_Std_Cal_gas_value	: n/a	
CO2 Std CHAN	:	
CO2 Std Reference	: n/a	
CO2_Std_TS	: 0	
CO2_Std_zero_post	: n/a	
CO2_Std_zero_pre	: n/a	
CO2 total input	: NO	
CO2 TS	-8.1000	
CO2 urban input	: NO	
CO2 zero post	: 0	
	· :	
CO2_zero_pre		
CO_Adjust_Actual	47152	
CO_Audit_Actual	<b>:</b> 47153	
CO Cal gas value	<b>:</b> 47170	
CO CHAN	: IFILE1:TM'GPiS CO	
CO <sup>-</sup> Reference	<b>:</b> 47170	
CO Std	: NO	
CO_Std_Adjust_Actual	: n/a	
CO_Std_Audit_Actual	: n/a	
CO_Std_Cal_gas_value	: n/a	
CO Std CHAN	:	
CO Std Reference	: n/a	
CO Std TS	: 0	
	n/a	
CO_Std_zero_post		
CO_Std_zero_pre	: n/a	
CO_TS	-8.1000	
CO_zero_post	0.14000	
CO_zero_pre	: 0.14000	
Combo GPHTL GP iS	1.0000	
Combo HL 4929	1.0000	
Combo_HL_FID	1.0000	
Combo_HL_FT	5.0000	
Combo HL GP	1.0000	
Combo HL GP iS	2.0000	
Combo_HL_PM_	: 5.0000	
Combo HL PN	1.0000	
Combo_HL_PN2	1.0000	
ComboBoxPNCutPoint	1.0000	
ComboBoxPNCutPoint_value	: 10.000	
comment engine info	: Type	
comment_engine_type	: Demo Engine	
comment vehicle info	: YYY	
comment_vehicle_type	: XXX	
Concerto_build	: B70	
Concerto_version	: 602.00	
ConcertoSerialNumber	998.00	
CONFIG	: 14.000	
COOLANT TEMP CHAN	:IFILE1:TM'OBD Engine Coolant Temperature (PID 05)	
COOLANT TEMP TS	: 0.40000	
CRITERIA_POR	: NO	
CS_RESULT_FILE_PATH	:	
CTF result folder path	:	
Curb_Idle_Load	: 0	
' '- '''	<u> </u>	

Customer_reps	:	
data_paths	: LD_MOVE_POST.001	
date_time	: 2021-02-12708:52:27	
drive_mode_ICE	:	
drive_mode_PHEV	:	
driver_mass	: 0	
DRY AHC	:	
DRY C2H2	:	
DRY C2H4	:	
DRY C2H6	:	
DRY C3H6	:	
DRY C3H8	:	
DRY CH4	: NO	
DRY CH4 Std	•	
DRY CO	: YES	
DRY CO2	: YES	
DRY CO2 Std	•	
DRY CO Std	•	
DRY ETOH	•	
DRY H20	•	
DRY HCHO	•	
DRY HCOOH	•	
DRY IC5	•	
	•	
DRY_MECHO		
DRY_MEOH DRY_N2O	· VEC	
	: YES	
DRY_N2O_Std DRY_NC4	•	
DRY_NC5		
DRY_NC8	:	
DRY_NH3	: NO	
DRY_NH3_Sensor	: NO	
DRY_NH3_Std		
DRY_NMHC_Std	;	
DRY_NMOG	:	
DRY_NO	: SEMI	
DRY_NO2	: SEMI	
DRY_NO2_Std	:	
DRY_NO_Std	:	
DRY_NOx_Std	:	
DRY_02	: YES	
DRY_THC	: NO	
DRY_THC_Std	:	
Dual_Fuel_Alpha	2.5250	
Dual_Fuel_Beta	1.0000	
Dual_Fuel_Delta	: 0	
Dual_Fuel_Epsilon	: 0	
Dual_Fuel_Density	500.00	
Dual_Fuel_Gamma	: 0	
Dual Fuel rho exhaust	1.2811	
Dual_Fuel_U_CH4	: 0.55900	
Dual_Fuel_U_CO	: 0.97600	
Dual_Fuel_U_CO2	1.5330	
Dual_Fuel_U_HC	: 0.51000	

Dual_Fuel_U_N2O :	1.5330	
Dual_Fuel_U_NMHC :	0.78000	
Dual Fuel U NO :	1.6020	
Dual Fuel U NO2 :	1.6020	
Dual Fuel U NOx :	1.6020	
Dual Fuel U 02 :	1.1150	
Dual Fuel X C :	82.500	
Dual Fuel X H :	17.300	
Dual Fuel X N :	0	
Dual Fuel X O :	0	
Dual Fuel X S :	0	
Duel fuel c exhaust mol mass constant:	YES	
ECU ExhaustMassFlow CHAN :	CTFFILE1:1Hz'exhaust mass flow	
ECU ExhaustMassFlow TS :	-38.100	
ECU IMP CHAN :	-30.100	
ECU_IMP_TS :	0	
ECU_IMT_CHAN : ECU_IMT_TS :	0	
	TETTE 1. TIMI CODD Washing a Constant Constant (DID CO)	
ECU_Velocity_CHAN :	IFILE1:TM'OBD_Vehicle_Speed_Sensor_(PID_0D)	
ECU_Velocity_Factor :	1.0000	
ECU_Velocity_TS :	0.40000	
EFM_ExhaustTemperature_CHAN :	IFILE1:TM'EFM_ExhaustGasTemp	
EFM_ExhaustTemperature_TS :	-0.10000	
EFM_ExhaustVolumeFlow_CHAN :	IFILE1:TM'EFM_ExhaustGasFlowVol	
EFM_ExhaustVolumeFlow_TS :	-0.10000	
EFM_Sensor_Type :	Pitot	
electric_motor_power :		
EMISSION_STANDARD :	Euro 6e / EA	
EndTime_MainTest :	11:22	
EndTime PreTest :	08:41	
EndTimePostTest :	13:04	
Engine displacement :		
ENGINE SPEED CHAN :	IFILE1:TM'OBD Engine RPM (PID 0C)	
ENGINE SPEED TS :	$-$ 0.4 $\overline{0}$ 000	
Engine Torque CHAN :	ASCII1:TM'C	
Error Page Plots :	NO	
ETOH CHAN :		
ETOH TS:	0	
evaluation routine :	Internal-Road	
EXCL Vehicle Stop :	YES	
EXHAUST FLOW AVL EFM :	YES	
EXHAUST FLOW SENSORS EFM :	NO NO	
EXHAUST FLOW TYPE :	2.0000	
exhaust mass flow idle :	0	
exhaust rho :	1.2943	
Export Results :	YES	
EXTC CORR FAC :	1.6000	
EXTC From Altitude :	700.00	
EXTC From High Temp :	35.000	
EXTC From Low Temp :	-7.0000	
EXTC_To_Altitude :	1300.0	
EXTC_To_High_Temp :	38.000	
EXTC To Low Temp :	0	
FilterID_fromFile :	YES	

Front roar turo prossuro			
Front_rear_tyre_pressure Front_rear_tyre_size	•		
fuel alpha		1.8600	
fuel_dipha	•	1.0000	
fuel_beta fuel_delta	•		
	:	0	
fuel_density	:	840.00	
fuel_epsilon	:	0.0070000	
fuel_gamma	:	0	
fuel_norm	:		
FUEL_RATE_CHAN	:	<pre>IFILE1:TM'OBD_Engine_Fuel_Rate_(PID_5E)</pre>	
FUEL_RATE_FM_CHAN	:		
FUEL_RATE_FM_TS	:	-1.0000	
FUEL_RATE_FM_TYPE	:	1.0000	
FUEL_RATE_GAS_CHAN	:	0	
FUEL_RATE_GAS_TS	:	0	
FUEL RATE GAS TYPE	:	1.0000	
FUEL RATE TS	:	-0.50000	
FUEL RATE TYPE	:	2.0000	
fuel_type2	:	n/a	
fuel type name	:	Diesel	
fuel u AHC	:	3.1760	
fuel_u_C2H2	:	0.89800	
fuel u C2H4	:	0.96700	
fuel u C2H6	:	1.0370	
fuel u C3H6	•	1.4510	
fuel u C3H8	•	1.5200	
fuel u CH4	:	0.55300	
fuel u CO	•	0.96600	
fuel u CO2	•	1.5170	
fuel u ETOH	•	1.5880	
fuel u H2O	•	0.62100	
fuel u HCHO	•	1.0340	
fuel u HCOOH	•	1.0340	
fuel u IC5	•	2.4870	
	•		
fuel_u_MECHO	•	1.5200	
fuel_u_MEOH	:	1.1040	
fuel_u_N2O	:	1.5170	
fuel_u_NC4	:	2.0030	
fuel_u_NC5	:	2.4870	
fuel_u_NC8	:	3.9380	
fuel_u_NH3	:	0.58700	
fuel_u_NMHC	:	0.48200	
fuel_u_NMOG	:	0	
fuel_u_NO	:	1.5860	
fuel_u_NO2	:	1.5860	
fuel_u_NOx	:	1.5860	
fuel_u_02	:	1.1030	
fuel_u_THC	:	0.48200	
fuel used	:		
fuel w ALPHA	:	13.300	
fuel w BETA	:	85.800	
fuel w DELTA	:	0	
fuel w EPSILON	:	0.80000	
fuel_w_GAMMA	:	0	
I — — -	-	· ·	

```
Concerto: 6.2.3.70, MDT: 2R2.9.1 (Build 278)
FullVersionString
GAS PEMS Ethane Efficency
                                                                                 0.11000
GAS PEMS GAS HUMIDITY CHAN
                                                             IFILE1: TM'GPiS Gas Humidity
GAS PEMS GAS TEMP CHAN
                                                                IFILE1:TM'GPis Gas Temp
GAS PEMS Methane Efficency
                                                                                 0.\overline{1}1000
GAS PEMS Methane Response Factor :
                                                                                 0.11000
GAS PEMS P TEC1 ABS P CHAN
                                                             IFILE1:TM'GPiS P Tec1 abs
                                                            IFILE1:TM'GPiS P_Tec2_abs
GAS PEMS P TEC2 ABS P CHAN
                                                         IFILE1:TM'GPIS_T_Tec1_PT100
GAS PEMS T TEC1 PT100 CHAN
GAS PEMS T TEC2 PT100 CHAN
                                                            IFILE1:TM'GPiS T Tec2 PT100
GASPEMS AVL492
GASPEMS AVL4925
                                                                                     YES
GASPEMS AVL4929
                                                                                      NO
GASPEMS AVL493
                                                                                      NO
GASPEMS AVL493 iX
                                                                                      NO
gen excl cold start
                                                                                      NO
gen excl cold start cool temp min
                                                                                  70.000
gen excl cold start max time
                                                                                  300.00
gen excl engine stop
                                                                                     YES
gen excl engine stop exhmf
                                                                                  3.0000
gen excl engine stop rpm
                                                                                  50.000
gen excl vehicle stop
                                                                                      NO
gen excl vehicle stop velo max
                                                                                  1.0000
gp Teak Check date
                                                                              2021-02-12
gp leak check result
                                                                                 0.12000
gp leak check time
                                                                                08:38:43
GP SerialNumber
                                                                                  124.00
GP STATE CHAN
                                                                    IFILE1:TM'GPiS STATE
                                                                                 -\overline{5}, 5000
GP STATE TS
gp Std leak check date
                                                                                     n/a
gp Std leak check result
                                                                                     n/a
gp Std leak check time
GPS Altitude CHAN
                                                                  IFILE1:TM'GPS Altitude
GPS Altitude topo CHAN
GPS Altitude topo TS
                                                                                       0
GPS Altitude TS
                                                                                 0.10000
GPS Groundspeed CHAN
                                                               IFILE1:TM'GPS GroundSpeed
GPS Groundspeed TS
                                                                                 0.10000
GPS Latitude CHAN
                                                                  IFILE1:TM'GPS Latitude
GPS Latitude TS
                                                                                 0.10000
GPS Longitude CHAN
                                                                IFILE1:TM'GPS Longitude
GPS Longitude TS
                                                                                 0.10000
                                                                IFILE1:TM'GPS Satellites
GPS Satellites CHAN
GPS Satellites TS
                                                                                 0.10000
H2O CHAN
H20 TS
                                                                                       0
HCCOAftertreatmentTemp CHAN
HCCOAftertreatmentTemp TS
                                                                                       0
HCHO Adjust Actual
                                                                                     n/a
HCHO Audit Actual
                                                                                     n/a
HCHO Cal gas value
                                                                                     n/a
HCHO CHAN
HCHO Reference
                                                                                     n/a
HCHO TS
                                                                                       0
```

HCHO zero post	: n/a	
HCHO zero pre	: n/a	
HCOOH CHAN	:	
HCOOH TS	: 0	
HL FT Delay	: 5.1000	
	•	
HV_battery_capacity_CHAN	•	
HV_ECU_elect_current_CHAN	:	
HV_ECU_elect_current_TS	: 0	
HV_ECU_SOC_CHAN	:	
HV ECU SOC TS	: 0	
HV ECU voltage CHAN	:	
HV ECU voltage TS	: 0	
HV_Xmeter_battery_energy_CHAN	:	
HV_Xmeter_battery_energy_TS	: 0	
HV_Xmeter_battery_power_CHAN	: :	
IIV_Xmeter_battery_power_chan	: :	
HV_Xmeter_battery_power_TS	:	
IC5_CHAN	:	
IC5_TS	: 0	
Idle_speed	: 0	
iGEM_ODS_iVERSION	:	
iGEM ODS NAME	:	
iGEM ODS PROJECT	:	
iGEM ODS SERIE	:	
IN PExh CHAN	: IFILE1:TM'EFM AbsolutePressure	
IN PExhDelta CHAN	: IFILE1:TM'EFM ExhaustGasDiffPress	
IN Zero FIDiS CHAN	: IFILE1:TM'FIDIS STATE	
	. IFIDEL: IM FIDIO_STATE	
input_formula_path	·	
Ki_Correction	: NO	
Ki_Factor_CO	1.0000	
Ki_Factor_CO2	1.0000	
Ki_Factor_NOx	: 1.0000	
Ki Offset CO	: 0	
Ki_Offset_CO2	: 0	
Ki_Offset_NOx	: 0	
kpi_plot_extra_pdf	: NO	
LabID fromFile	: YES	
LAMBDA CHAN	•	
LAMBDA TS	· : -0.10000	
Legislation	: 6.0000	
Legislation_value	: UN LD 168	
limit_CF_NOx	: 1.1000	
limit_CF_PN	: 1.3400	
limit_CO_	: 1000.0	
limit CO2	:	
limit_NO	:	
limit_NO2	: **	
limit NOx	: 60.000	
limit PN	: 60000000000	
Lubricant	•	
MAW bin moway max kmh	: 100.00	
MAM bin mousty min limb		
MAW_bin_moway_min_kmh	50.000	
MAW_bin_rural_max_kmh	: 80.000	
MAW_bin_rural_min_kmh	: 45.000	
MAW_bin_urban_max_kmh	: 50.000	

MAW_bin_urban_min_kmh	:	0	
MECHO_CHAN	:		
MECHO TS	:	0	
MEOH CHAN	:		
MEOH TS	:	0	
MOVE VERSION	:	V2.9_234	
MSS2	:	_ NO	
N2O Adjust Actual	•	0	
N20 Audit Actual	•	0	
N20_Cal_gas_value	•	1000.0	
N20 CHAN	•	IFILE1:TM'GPiS N2O	
N20 Reference	•	1000.0	
N20 Std	•	NO NO	
	•	n/a	
N20_Std_Adjust_Actual	:	n/a n/a	
N20_Std_Audit_Actual	:		
N2O_Std_Cal_gas_value	:	n/a	
N2O_std_CHAN	:		
N20_Std_Reference	:	n/a	
N2O_Std_TS	:	0	
N2O_Std_zero_post	:	n/a	
N2O_Std_zero_pre	:	n/a	
N2O_TS	:	0	
N2O_zero_post	:	0.11000	
N2O_zero_pre	:	0.11000	
NC4 CHAN	:		
NC4 <sup>T</sup> S	:	0	
NC5 CHAN	:		
NC5 TS	:	0	
NC8 CHAN	:		
NC8 TS	:	0	
NH3_Adjust_Actual	•	n/a	
NH3 Audit Actual	•	n/a	
NH3_Cal_gas_value	•	n/a	
NH3 CHAN	•	IFILE1:TM'NP NH3	
NH3 Reference	•	n/a	
NH3 Sensor CHAN	•	IFILE1:TM'NH3	
NH3_Sensor_TS	•	0 U	
NH3_Sensor_is	•		
	•	NO	
NH3_Std_Adjust_Actual	:	n/a	
NH3_Std_Audit_Actual	:	n/a	
NH3_Std_Cal_gas_value	:	n/a	
NH3_Std_CHAN	:		
NH3_Std_Reference	:	n/a	
NH3_Std_TS	:	0	
NH3_Std_zero_post	:	n/a	
NH3_Std_zero_pre	:	n/a	
NH3_TS	:	0	
NH3_zero_post	:	n/a	
NH3 zero pre	:	n/a	
NMHC Std	:	NO	
NMHC Std CHAN	:		
NMHC Std TS	:	0	
NMHCCalcType	:	1.0000	
NMOG_CHAN	•	1.0000	
	•		

NMOG_TS	:	0	
$\mathtt{NMOGCalcType}$	:	1.0000	
NO2_Adjust_Actual	:	2354.1	
NO2_Audit_Actual	:	2351.9	
NO2_Cal_gas_value	:	2353.0	
NO2_CHAN	:	<pre>IFILE1:TM'GPiS_NO2</pre>	
NO2_Reference	:	2353.0	
NO2 Std	:	NO	
NO2_Std_Adjust_Actual	:	n/a	
NO2 Std Audit Actual	:	n/a	
NO2 Std Cal gas value	:	n/a	
NO2 Std CHAN	:		
NO2 Std Reference	:	n/a	
NO2 Std TS	:	0	
NO2 Std zero post	:	n/a	
NO2 Std zero pre	:	n/a	
NO2 TS	: :	-5.5000	
NO2_zero_post	:	0.16000	
NO2 zero pre	:	0.16000	
NO Adjust Actual	:	4862.6	
NO Audit Actual	• •	4864.0	
NO_Cal_gas_value	•	4862.0	
NO CHAN	•	IFILE1:TM'GPiS NO	
No Cylinders	• •	IFIDEL: IM GIIS_NO	
No Cylinders FM	• •		
NO Reference	• •	4862.0	
NO_Reference NO_Std	:	4002.0 NO	
	•	n/a	
NO_Std_Adjust_Actual	•	n/a	
NO_Std_Audit_Actual	•		
NO_Std_Cal_gas_value	<b>:</b>	n/a	
NO_Std_CHAN	<b>:</b>		
NO_Std_Reference	<b>:</b>	n/a	
NO_Std_TS	<b>:</b>	0	
NO_Std_zero_post	<b>:</b>	n/a	
NO_Std_zero_pre	<b>:</b>	n/a	
NO_TS	:	-6.0000	
NO_zero_post	:	0.15000	
NO_zero_pre	:	0.15000	
NOX_Std	:	NO	
NOx_Std_Adjust_Actual	:	n/a	
NOx_Std_Audit_Actual	:	n/a	
NOx_Std_Cal_gas_value	:	n/a	
NOx_Std_CHAN	:		
NOx Std Reference	:	n/a	
NOx Std TS	:	0	
NOx_Std_zero_post	:	n/a	
NOx_Std_zero_pre	:	n/a	
NOxCalcType	:	1.0000	
NP STATE CHAN	:		
NP STATE TS	:	0	
Number_gears	:		
O2_CHAN	: :	IFILE1:TM'GPiS 02	
O2 TS	: :	-9.0000	
odometer_test_end	•	3.000	
	•		

odometer_test_start	:	
OIL_TEMP_CHAN	:	
OIL_TEMP_TS	: 0.40000	
Org_comm_test	:	
organisation	:	
OS_NAME	: MicrosoftWindows11Enterprise	
OUT_Data_Consistency	: YES	
OUT_Emissions	: YES	
OUT_Raw_Data	: NO	
OUT_Summary	: YES	
OUT_Window_Plots	: YES	
OUT_Zero_Span	: YES	
param_file_path	: UN_168.xml	
PEMS Manufacturer	: AVL Līst GmbH	
PEMS Type	: AVL Gas PEMS iS 492	
PEMS_post_version	: 2R2.9.1 (Build 278)	
PEMS_power_supply	:	
Pexh TS	: 0	
PexhDelta TS	: 0	
plot_add_report	: NO	
plutron_fuel_rate_type_combobox	: 1.0000	
plutron mass fuel rate CHAN	: IFILE1:TM'PLUT_Boost_MassFlow	
plutron_mass_fuel_rate_TS	: 0	
plutron_volume_fuel_rate_CHAN	: IFILE1:TM'PLUT_Boost_VolFlowAtRefTemp	
plutron volume fuel rate TS	: 0	
PM filterDR val CHAN	: IFILE1:TM'PP_ConcSensor	
PM_filterDR_val_TS	:	
PM filterID val	: IDFILT1	
PM filterlab val	: IDFILT3	
PM filtertrigger CHAN	: IFILE1:TM'PP MEASTYPE	
PM_filtertrigger_TS	-2.3000	
PM filtervolflow CHAN	: IFILE1:TM'PP PMF MassFlow	
PM_filtervolflow_TS	: 0	
PM filterweight PostTest	:	
PM filterweight PreTest	:	
PM PEMS Check	: NO	
PM Soot Conc CHAN	: IFILE1:TM'PP_ConcentrationSensor	
PM Soot Conc TS	- 0	
PMPEMS Activate	: NO	
PMPEMS AVL494	: NO	
PN CONC CHAN	: IFILE1:TM'PN_MEAS_ParticleCount_DilCorr	
PN CONC TS	: -4.4000	
PN CorrFactor	: 1.0000	
pn leak check result	: 0.13000	
PN STATE CHAN	: IFILE1:TM'PN STATE	
pn_zero_check_post	$\overline{1}234.6$	
pn zero check pre	: 1234.6	
PNPEMS AVL496	: YES	
PNPEMS AVL4962	: NO	
pos accel points limit	: 100.00	
POST IFile exists	: 1.0000	
post plot csf path	:	
PRE IFile exists	: 1.0000	
PRECON TEST AVG VELOCITY	: **	

	0004/00/44	
PRECON_TEST_DATE	: 2021/02/11	
PRECON_TEST_DUR_MOTORWAY	:	
PRECON TEST DUR RURAL	**	
PRECON TEST DUR URBAN	**	
PRECON TEST DURATION DRIVING	: 5659.4	
PRECON TEST DURATION OK	: OK	
PRECON TEST TIME END	: 18:40:35	
PRECON TEST TIME START	: 16:59:21	
	10.39.21	
precon_type		
RDE_type	: RDE4 certification	
RDE5_TA_EA	: NO	
Regr_Air_Exh_From	: 15.000	
Regr_Air_Exh_To	: 100.00	
Regr_ECU_From	:	
Regr_ECU_To	: 100.00	
Regr Fuel FM From	: 15.000	
Regr Fuel FM To	: 100.00	
Regr Fuel From	: 15.000	
Regr Fuel To	: 100.00	
RFL1	: 1.3000	
RFL2	1.5000	
ROAD LOAD PARAMETERS	•	
SOAK EXTENDED CONDITIONS	: NO	
SOAK_EXTENDED_CONDITIONS_TEMP_AVE	: 22.289	
COAR EXHENDED CONDITIONS TEMP AVE	·	
SOAK EXTENDED CONDITIONS TEMP MAX		
SOAK_EXTENDED_CONDITIONS_TEMP_MIN	22.115	
SOAK_EXTENDED_CONDITIONS_TIME_START	: 0	
soak_options	1.0000	
SOAK_TEST_DATE_END	: 2021/02/12	
SOAK_TEST_DATE_START	: 2021/02/11	
SOAK TEST DURATION OK	: OK	
SOAK TEST GROUNDSPEED AVERAGE	: 0	
SOAK TEST TEMP MAX	<b>:</b> 23.240	
SOAK TEST TEMP MIN	<b>:</b> 22.115	
SOAK TEST TEMP OK	: OK	
SOAK TEST TIME END	: 08:03:52	
SOAK TEST TIME START	: 18:42:01	
SOAK TOTAL RUNTIME	: 48074	
SOAK TOTAL RUNTIME s	• **	
soak type	1.0000	
Soot CHAN	: IFILE1:TM'PP Conc Exhaust	
Soot TS		
500t_15	-2.3000	
Species_input_type	1.0000	
Startdate_tot	: 20210212085227856	
StartTime_MainTest	: 08:52	
StartTime_PostTest	: 13:01	
StartTime_PreTest	: 08:33	
Starttime_tot	<b>:</b> 20210212085227856	
STATE_Std_CHAN	:	
STATE_Std_TS	:	
Submission Documents	: NO	
SW version	: 602/B70/2R2.9.1 (Build 278)	
TA CH4 TA 493iX	: 4.0000	
TA CH4 TA FID	<b>:</b> 4.3000	
	1,000	

ma coo ma co		7 (000	
TA_CO2_TA_GP	:	7.6000	
TA_CO_TA_GP TA_EFM	<b>:</b>	7.6000	
TA_EFM	:	0.10000	
TA_GPHTL_TA_GP	:	0.4000	
TA_HL_GP_HLINE_TA_GP	:	1.0000	
TA HLINE TA 4929	:	2.9600	
TA HLINE TA FID	:	3.2000	
TA HLINE TA PM	•	2.3000	
TA HLINE TA PN	•	1.3000	
TA HTL TA PN	•	1.3000	
	•	0	
TA_N2O_TA_GP	•		
TA_NO2_TA_GP	<b>:</b>	5.0000	
TA_NO_TA_GP	:	5.5000	
TA_O2_TA_GP	:	8.5000	
TA_SENSOR_TA_PN	:	1.8000	
TA STRATEGY	:		
TA THC TA 493	:	1.6000	
TA THC TA FID	:	2.3000	
Test ID -	:	Test_AVL	
test location	•		
THC Adjust Actual	•	5959.9	
THC Audit Actual	•	5955.6	
THC_Cal_gas_value	•	5958.0	
THC CHAN	•		
	•	IFILE1:TM'FIDIS_THC_C1	
THC_Reference	:	_595 <u>8</u> .0	
THC_Std	:	NO	
THC_Std_Adjust_Actual	:	n/a	
THC_Std_Audit_Actual	:	n/a	
THC_Std_Cal_gas_value	:	n/a	
THC Std CHAN	:		
THC Std Reference	:	n/a	
THC Std TS	:	0	
THC Std zero post	:	n/a	
THC Std zero pre	•	n/a	
THC TS	•	-5.5000	
THC_zero_post	•	N/A	
THC Zoro pro	•	12.000	
THC_zero_pre THERMO PHOR CORR	•	YES	
	•	165	
Throttle_pos_CHAN	•	^	
Throttle_pos_TS	:	0	
TIME_END	:	6040.0	
TIME_END_AUTO	:	NO	
Time_Post_to_Main	:	99.033	
Time_Pre_to_Main	:	11.070	
TIME START	:	1.0000	
TIME START AUTO	:	YES	
TimeRef CHAN	:	IFILE1:TM'AcqTime	
TimeShift PN STATE TS	:	-4.4000	
TimeShift Zero FIDiS s	:	0	
TIMESTAMP	•	20210212085227856	
Title_Page_Comments	•	20210212000227000	
tol1H rural moway	•	40.000	
tol1H urban	:	45.000	
	•		
tol1L	•	25.000	

Torque_1_CHAN	:	
Torque_1_TS	: 0	
Torque_2_CHAN	:	
Torque_2_TS	: 0	
Torque_3_CHAN	:	
Torque 3 TS	: 0	
Torque 4 CHAN	:	
Torque 4 TS	: 0	
Torque CHAN	:	
Torque TS	: 1.3000	
Torque Type	: 1.0000	
Transmission	:	
Trip_Ambient_GPS_AVL	: YES	
Trip_Info	: INFO	
Type_approval_cycle	:	
Type_approval_emissions_limit	:	
tyre tread depth	:	
USE DE	: NO	
use_pems_gen2	: NO	
Vehicle category	:	
VEHICLE CLASS 1	: 6.0000	
VEHICLE CLASS value	: 6 - 3 phase	
vehicle driver	:	
Vehicle manufacturer	:	
VEHICLE MASS	: 0	
VEHICLE MASS empty	: 0	
VEHICLE MASS max	: 0	
Vehicle_model_year	:	
VEHICLE PEAK TORQUE	:	
vehicle_production_date	:	
VEHICLE RATED POWER	:	
vehicle type	1.0000	
VELOCITY LIMIT rural	: 100.00	
VELOCITY LIMIT stop	1.0000	
VELOCITY LIMIT urban	: 60.000	
VELOCITY TYPE	: 1.0000	
vin	:	
Wheel drive mode	:	
WLTC EXTRA HIGH SPEED gkm	90.000	
WLTC HIGH SPEED gkm	: 80.000	
WLTC_LOW_SPEED_gkm	: 133.00	
WLTC MEDIUM SPEED gkm	: 100.00	
WLTC_TOTAL_gkm_no_CS	: 0	
WLTP CO2 total	97.261	
WLTP CO2 urban	: 113.01	
WLTP CS CO2 total	: n/a	
WLTP PHASE 1	: 3.0945	
WLTP PHASE 2	÷ 4.7559	
WLTP PHASE 3	7.1618	
WLTP PHASE 4	÷ 8.2541	
WLTP PHASE 5	: 15.012	
Y SPLITTER TA GP	: 0.10000	
[USER SETTINGS]		

AcrRdPath	: Reader
AdaptPageSizeForPdfExport	: YES
CH HD Title Page Pic FilePa	th :
CH LD Title Page Pic FilePa	th :
CH NRMM Title Page Pic File	Path:
CHASSIS Title Page Pic File	
EU7 HD Title Page Pic FileP	ath :
EU HD Title Page Pic FilePa	
ExportResultsTo mf4	: YES
FT DriftCorrection	: YES
GPS MINIMUM SATELLITES	: 4
HD INDIA Title Page Pic Fil	ePath:
IRDE3 Title Page Pic FilePa	
JP LD Title Page Pic FilePa	
NMHCuNumberCalculation	: YES
NRMM Title Page Pic FilePat	h :
PDF READ ONLY	: YES
PrinterName	:MicrosoftPrinttoPDF
RDE4 Title Page Pic FilePat	h :
RDE5 Title Page Pic FilePat	
ShowChannelBrowser	: YES
SK RDE Title Page Pic FileP	ath :
ThresholdInvalidValues	: 1e+100
Title Page Pic Height	: 110
Title Page Pic Left	<b>:</b> 72
Title Page Pic Top	<b>:</b> 56
Title Page Pic Width	: 130
UN 168 Title Page Pic FileP	ath :
UseXMLNameForResults	: NO
ValueNotPresent High	:
ValueNotPresent Low	:
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