

CONFIDENTIAL



ACCEPT: ☒
Signature: <u>die</u>
Date: <u>08/04/2021</u>

EMISSIONS COMPLIANCE CENTER TEST SUMMARY

Lab Manager: Dan Ogden

Prepared by: Ian Enderby

09/17/2020

The SEMA Emissions Compliance Center is a Certification Ready Automotive Emissions Testing Laboratory located in Diamond Bar, California at 1577 Valley Vista Drive. The lab is equipped with a 48" AVL-Zollner 2 wheel-drive chassis dynamometer, AVL i60 CVS System, AVL i60 AMA emissions analyzer bench with HC, NO_x, CO, CO₂ and CH₄ analyzers, Dilution Tunnel with AVL SPC 478 Particulate Matter (PM) Sampler, and an AVL 4-station Canister Loading Bench.

Client: BD Diesel

Contact: Christian Roth ([REDACTED]@bddiesel.com)

Device Under Test: Screamer Performance Turbo 11-16 6.6L GM Duramax LML

Part #: 1045830

Test Vehicle: 2015 Chevrolet Silverado

VIN: 1GC1KVE88FF631191

Engine: 6.6L Turbodiesel

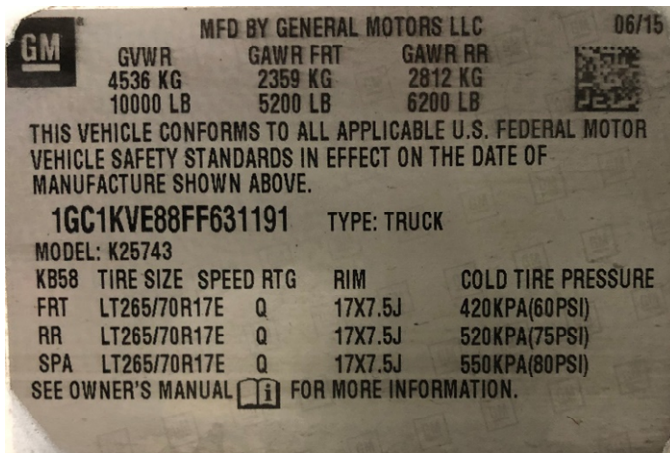
Test Group: FGMXD06.6355

CA Emissions Category: LEV2 ULEV

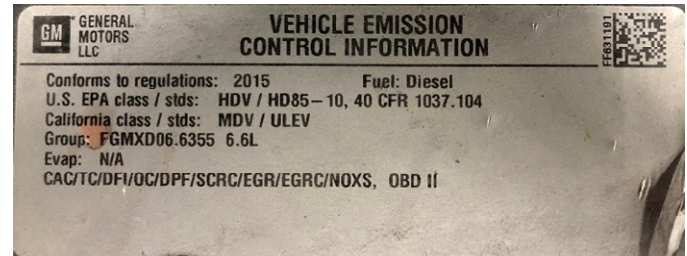
EPA Emissions Category: HDV



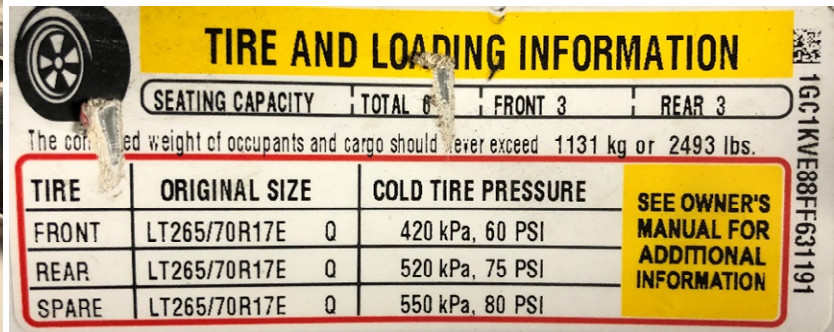
Test Vehicle



VIN Tag



VECI Label



Tire Info



Stock Turbo



BD Screamer Turbo



Product Installed



Peak Boost Pressure

Test Fuel: Certification Diesel

Tire Size: LT265/70R17E

Vehicle Test Weight: 9500 lbs.

Dyno Set Coefficients: A=28.813, B=1.24570, C=0.066029

Dyno Target Coefficients: A=58.310, B=1.73450, C=0.063460

Notes:

- The test vehicle remained in the custody of the SEMA Emissions Lab staff throughout the testing process.
- The product was installed on the vehicle on 08/14/2020.
- Testing parameters taken from EPA CSI document page 4
- All emissions testing was conducted with an AVL road speed fan.

ATTACHMENTS

- Vehicle Check In Form
- OBD Report, Clear
- OBD Report, Post Mileage Accumulation
- Road Load Determination Printouts
- FTP-74 Test Report (Test ID: UDDS_20200914_05_TC1)
- FTP-75 Test Report (Test ID: FTP75_20200915_06_TC1)
- US06 Test Report (Test ID: US06_US06_20200915_07_TC1)
- SC03 Test Report (Test ID: SC03_SC03_20200915_08_TC1)
- FTP-74 Test Report (Test ID: UDDS_20200915_09_TC1)
- FTP-75 Test Report (Test ID: FTP75_20200916_01_TC1)
- US06 Test Report (Test ID: US06_US06_20200916_02_TC1)
- SC03 Test Report (Test ID: SC03_SC03_20200916_03_TC1)
- OBD Report, Post Test

PROCEDURE SEQUENCE

- 08/13/20: Vehicle Check In
- 08/14/20: Product Installed
- 08/20/20: OBD Read and Report, Clear
- 09/11/20: Mileage Accumulation
- 09/11/20: OBD Read and Report, Post Mileage Accumulation
- 09/14/20: Drain and Fill with Test Fuel
- 09/14/20: 6-36 hour soak
- 09/14/20: Road Load Determination
- 09/14/20: Prep for FTP-75 (FTP-74 Precondition w/ no bags, (Test ID: UDDS_20200914_05_TC1)
- 09/14/20: 12-36 hour soak
- 09/15/20: FTP-75 (Test ID: FTP75_20200915_06_TC1)
- 09/15/20: US06 (Test ID: US06_US06_20200915_07_TC1)
- 09/15/20: SC03 (Test ID: SC03_SC03_20200915_08_TC1)
- 09/15/20: Prep for FTP-75 (FTP-74 Precondition w/ no bags, Test ID: UDDS_20200915_09_TC1)
- 09/15/20: 12-36 hour soak
- 09/16/20: FTP-75 (Test ID: FTP75_20200916_01_TC1)
- 09/16/20: US06 (Test ID: US06_US06_20200916_02_TC1)
- 09/16/20: SC03 (Test ID: SC03_SC03_20200916_03_TC1)
- 09/16/20: OBD Read and Report, Post Test
- 09/17/20: Peak Boost Pressure Verification

OBD SUMMARY

Date	Mileage	Report Type	Misfire	Fuel System	Component	NMHC Catalyst	NOx Aftertreatment	Boost Pressure	Exhaust Gas Sensor	PM Filtering	EGR/VVT	MIL Status	OBD Codes
8/20/2020	52624	OBD Clear	I	I	C	I	I	I	I	I	I	OFF	None
9/11/2020	53896	Post-Mileage	C	C	C	C	C	C	C	C	C	OFF	None
9/16/2020	53995	Post-Test	C	C	C	C	C	C	C	C	C	OFF	None

C=Monitor Complete

I=Monitor Incomplete

RESULTS SUMMARY (LEV2 Standards)

Full DFs				
NMHC	NOX	CO	PM	HCHO
0.0536	0	0.36	0.001	0

Vehicle Mileage=	53930
Ex. Useful Life=	120000
UL Factor=	0.430

	NMHC	NOx	NMHC+NOx	CO	PM	HCHO
FTP Test Result #1	0.0173	0.1223		0.3066	0.0006	0.0003
FTP Test Result #2	0.012	0.1301		0.2918	0.0006	0.0002
FTP Average	0.0147	0.1262		0.2992	0.0006	0.0003
DAF	0	0.044		0	0.001	
Additive DF	0.0305	0.0000		0.2050	0.0006	0.0000
Result	0.0452	0.1702	0.2154	0.5042	0.0022	0.0003

	NMHC	NOx	CO	PM	HCHO*
FTP UL Std.	0.143	0.2	6.4	0.06	16
Final Result	0.045	0.17	0.5	0.002	0.3
% of Std	31.6%	85.1%	7.9%	3.6%	1.6%
PASS/FAIL	PASS	PASS	PASS	PASS	PASS

RESULTS SUMMARY (LEV3 Standards)

Full DFs				
NMHC	NOX	CO	PM	HCHO
0.0536	0	0.36	0.001	-

Vehicle Mileage=	53930
Ex. Useful Life=	120000
UL Factor=	0.430

	NMHC	NOx	NMHC+NOx	CO	PM	HCHO
FTP Test Result #1	0.0173	0.1223		0.3066	0.0006	0.0003
FTP Test Result #2	0.0120	0.1301		0.2918	0.0006	0.0002
FTP Average	0.0147	0.1262		0.2992	0.0006	0.0003
DAF	0.0029	0.0067		0.01	0.001	-
Additive DF	0.0305	0.0000		0.2050	0.0006	0.0000
Result	0.0481	0.1329	0.1810	0.5142	0.0022	0.0003

US06 Test Result #1	0.0000	1.2897		0.4782	0.4404	*
US06 Test Result #2	0.0000	1.4545		0.4565	0.5371	*
US06 Average	0.0000	1.3721		0.4674	0.4888	*
DAF	0.0029	0.0067		0.01	0.001	*
Additive DF	0.0305	0.0000		0.2050	0.0006	*
Result	0.0334	1.3788	1.4122	0.6824	0.4903	*

SC03 Test Result #1	0.0000	0.1633		0.0000	0.3165	*
SC03 Test Result #2	0.0000	0.1748		0.0000	0.3974	*
SC03 Average	0.0000	0.1691		0.0000	0.3570	*
+20% for AC2	0.0000	0.2029		0.0000	0.4283	*
DAF	0.0029	0.0067		0.01	0.001	*
Additive DF	0.0305	0.0000		0.2050	0.0006	*
Result	0.0334	0.3786	0.4120	0.2150	0.7869	*

	NMHC+NOx	CO	PM	HCHO*
FTP UL Std.	0.250	6.4	0.008	6
Final Result	0.181	0.5	0.002	0.250
% of Std	72.4%	8.0%	27.1%	4.2%
PASS/FAIL	PASS	PASS	PASS	PASS

	NMHC+NOx	CO	PM*
Composite UL Std.	0.800	22.0	10
Final Result	0.611	0.451	0.429
% of Std	76.4%	2.0%	4.3%
PASS/FAIL	PASS	PASS	PASS

Results Summary Notes

- All values shown in grams per mile unless marked with a *, in which case it is milligrams per mile
- Light grey cells with italicized numbers are calculated
- In the absence of LEV2 SFTP standards for the test vehicle, results were compared against FTP and composite standards for the comparable weight class LEV3 vehicle (Test Group HGMXD06.6375) in addition to the LEV2 FTP standards.
- Worst Case Diesel Adjustment Factors were selected from both the LEV2 and the LEV3 information.
- DFs taken from EPA Certificate Summary Data for Engine Family FGMXD06.6355 and adjusted by 43% for vehicle mileage of 53,930