



Emissions Test Summary – L5P/L5D STEALTH MACH 2 (67) TURBO (2020 - 2023)

Prepared by: John E. Worley

9/12/2023

Performance Test Lab is an emissions testing facility that services the high-performance aftermarket automotive industry located in Woodstock, Illinois at 455 Borden Street. Specializing in testing, consulting, and validating high-performance parts to ensure they're legal for sale in the U.S.

Emissions related drive traces are performed on our Mustang dynamometer. Tailpipe exhaust is analyzed with a 3DATX parSYNC® FLEX and CUBE™ iPEMS (integrated Portable Emissions Measurement System). The parSYNC® FLEX utilizes multiple miniaturized sensors, packaged in patented, replaceable cartridges designed to collect real-time particulate matter and particulate number (PM/PN) performance data from both diesel and gasoline engines. The advanced parSYNC® PLUSRDE unit, in addition to particulate measurement, also incorporates a removable GasMOD™ Sensor Cartridge for NO, NO₂, CO, CO₂ and Hydrocarbon (HC) analysis.

Client: Calibrated Power Solutions (CPS) **Contact:** Tim Mahoney (tim@duramaxtuner.com)

Device Under Test: L5P / L5D Stealth Mach 2 (67) Turbo (2020-2023)

Vehicle Fitment & (Part #'s):

MAKE(s)	MODEL(s)	YEAR RANGE
CHEVROLET, GMC	2500 HD, 3500 HD, 4500 HD, 5500 HD, 6500 HD	2019-2023
SKU/PART NUMBER	NAME	YEAR RANGE
DM1JK1070103000	L5P / L5D STEALTH STR TURBO (2017-2019)	2017 - 2019
DM1JK1070103010	L5P / L5D STEALTH STR W/ ACTUATOR (2017-2019)	2017 - 2019
DM1JK1070203000	L5P / L5D STEALTH MACH 1 (64) TURBO (2017-2019)	2017 - 2019
DM1JK1070203010	L5P / L5D STEALTH MACH 1 (64) W/ ACTUATOR TURBO (2017-2019)	2017 - 2019
DM1JK1070303000	L5P / L5D STEALTH MACH 2 (67) TURBO (2017-2019)	2017 - 2019
DM1JK1070303010	L5P / L5D STEALTH MACH 2 (67) W/ ACTUATOR TURBO (2017-2019)	2017 - 2019
DM1MO1070103000	L5P / L5D STEALTH STR TURBO (2020-2023)	2020 - 2023
DM1MO1070103010	L5P / L5D STEALTH STR W/ ACTUATOR (2020-2023)	2020 - 2023
DM1MO1070203000	L5P / L5D STEALTH MACH 1 (64) TURBO (2020-2023)	2020 - 2023
DM1MO1070203010	L5P / L5D STEALTH MACH 1 (64) W/ ACTUATOR TURBO (2020-2023)	2020 - 2023
DM1MO1070303000	L5P / L5D STEALTH MACH 2 (67) TURBO (2020-2023)	2020 - 2023
DM1MO1070303010	L5P / L5D STEALTH MACH 2 (67) W/ ACTUATOR TURBO (2020-2023)	2020 - 2023

Test Vehicle: 2020 GMC Sierra Denali L5P

VIN: 1GT49REY1LF115699

Engine: Duramax 6.6L Turbo Diesel

Test Group: LGMXD06.6385

CA Emissions Category: MDV / ULEV270

EPA Emissions Category: HDV / T3, 40CFR1037.104



Test Vehicle



VIN Tag / Vehicle Info.



Note: The original air box was damaged during install & a replacement airbox is currently on the vehicle.

VECI Label(s)



Tire Info

Test Fuel: No. 2 Diesel

Tire Size: LT275/65R20

Vehicle Test Weight: 14,000 lbs. (GVWR)

Mustang Dyno Coefficients:

	A	B	C
Road Load	8.283000E+1	7.279000E-1	1.278800E-1
Vehicle Losses	3.555605E+2	6.221188E+0	-9.744880E-2
Net Load	-2.727305E+2	-5.493288E+0	2.253288E-1
Load Error	3.555605E+2	6.221188E+0	-9.744880E-2

Part Information:



L5P / L5D STEALTH MACH 2 (67) TURBO (2020 - 2023)

Notes:

- The test vehicle remained in the custody of the Performance Test Laboratory staff throughout the testing process.
- All emissions testing was conducted with a Northern Blower road speed fan.

Attachments:

- 1) Vehicle Check In Forms
- 2) Mileage Accumulation Log
- 3) OBD-II Summary & Monitor Readiness Reports:
 - a. As Received in stock condition.
 - b. As Received w/CPS Turbo installed
- 4) parSYNC® FLEX Data & VLinker Data Merged
- 5) Dyno Data Capture (Drive Traces & Dyno Setup Information)
- 6) Dyno Emissions Testing Checklists
- 7) HP & Torque Curves – Note: HP testing was not performed on this project.
- 8) 3DATX parSYNC® FLEX Calibration & Instrument Performance Info.
- 9) CPS Parts Information
- 10) Certificate of Conformity w/summary info. & Emissions Standards

Procedure Sequence:

- 7/26/23: Vehicle Check-In – stock condition. The Exhaust Gas Sensor Monitor was not completed. Several attempts were unsuccessfully made by driving the truck on the dyno to simulate the needed conditions for the monitor to complete. Subsequently, it was decided to proceed with emissions testing and track the monitor's status.
- 7/26/23: Vehicle Losses Test Performed.
- 7/26/23: Baseline Emissions Testing performed.
- 7/27/23: Baseline Emissions Testing performed.
- 8/16/23: CPS Turbo installed. The readiness monitors and DTCs were cleared.
- 8/23/23: Vehicle Check-In - OBD Readiness Monitor verification & documentation for testing modified condition. All monitors were completed.
- 8/23/23: Modified Emissions Testing performed.
- 8/25/23: Modified Emissions Testing performed.

OBD-II Summary:

Date	Mileage	Report Type	Misfire	Fuel System	Component	NMHC Catalyst	Nox Aftertreatment	Boost Pressure	Exhaust Gas Sens	PM Filter	EGR/VVT	MIL Status	OBD Codes	CAL ID(s)	CVN(s)
7/26/2023	24,143	As Received Stock Condition for Baseline Testing.	C	C	C	C	C	C	IC (3)	C	C	OFF	None (1)	24001090, 24052780, 84744979, 84561049, 84561079, 12704709, 12688412, 12708517, 12709156, 12709081, 12666733, 12678346, 12708517, 12709156, 12709081, 12666733, 12678346,	0000CD35, 00007B03, 00007CFF, 00001132, 00009FB0, 00009C94, 000048C1, 000038E0, 0000A952, 0000F255, 0000FB1D, 00009661, 0000DCE4, 000051A6, 000043D2, 000046DC, 0000AAA8, 00000100, 0000FC0D, 00008BA9, 00002B7B
8/23/2023	24,657	As Received Modified Condition (CPS LSP /L5D Stealth 67G2 Turbo).	C	C	C	C	C	C	C	C	C	OFF	None (2)	84735775, 84791375, 13528620, 13526562,	000038E0, 0000A952, 0000F255, 0000FB1D, 00009661, 0000DCE4, 000051A6, 000043D2, 000046DC, 0000AAA8, 00000100, 0000FC0D, 00008BA9, 00002B7B

NOTES:

- (1) 7 DTCs were found, but none were engine or emissions related.
- (2) 9 DTCs were found, but none were engine or emissions related.
- (3) The Exhaust Gas Sensor Monitor has not completed despite repeated efforts to simulated the needed drive cycle conditions on the dyno. Drive cycle information indicates that the Exhaust Gas Sensor Monitor needs the truck to: (1) idle 5 minutes. (2) Accelerate and drive for 1 minute at steady speed above 50 mph. (3) Slow truck down to 20 mph, without using brake. (4) Repeat steps 2 & 3 - 5 times. Subsequently, it was decided to proceed with baseline testing and watch to see if the monitor would successfully complete for modified testing.

C = Monitor Complete

IC = Monitor Incomplete

NS = Monitor Not Supported

EMISSIONS STANDARDS - Equivalent mg/km values for standards expressed as g/mi

		CO	NOx + NMOG	PM
FTP-75 Federal - T3 B270 & California - ULEV270	g/mi	4.2	0.27	0.01
	mg/km	2,610.32	167.81	6.22

Modified Results Comparison to Baseline, Certificate of Conformity & Standard:

FTP-75 #1	NOx ⁽¹⁾ (mg/km)	CO (mg/km)	HC (mg/km)	PM (mg/km)
Baseline	51.82	427.34	47.27	3.19
Modified - w/CPS Stealth 67 Turbo	15.08	48.69	3.72	2.42
Cert. of Conformity	93.38	106.48	14.28	0.30
Standard (Tier 3 Bin 270)	167.81 ⁽¹⁾	2610.32		6.22

FTP-75 #2	NOx ⁽¹⁾ (mg/km)	CO ⁽³⁾ (mg/km)	HC (mg/km)	PM (mg/km)
Baseline	59.77	0.00	0.00	0.00
Modified - w/CPS Stealth 67 Turbo	10.80	417.27	52.50	2.55
Cert. of Conformity	93.38	106.48	14.28	0.30
Standard (Tier 3 Bin 270)	167.81 ⁽¹⁾	2610.32		6.22

US06 ⁽²⁾	NOx ⁽¹⁾ (mg/km)	CO ⁽³⁾ (mg/km)	HC (mg/km)	PM (mg/km)
Baseline	149.67	0.00	0.00	0.00
Modified - w/CPS Stealth 67 Turbo	82.86	0.00	0.00	0.00

NOTES:

(1) The Emissions Standard value is for NMHC + NOx.

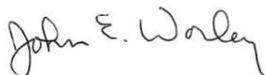
(2) There is not an emissions standard for the US06 drive cycle. Performance Test Lab began collecting this data for the Supplement Federal Test procedure (SFTP) in April 2023 as a comparative/diagnostic tool. The US06 Supplemental Federal Test Procedure (SFTP) was developed to address the shortcomings with the FTP-75 test cycle in the representation of aggressive, high speed and/or high acceleration driving behavior, rapid speed fluctuations, and driving behavior following startup.

(3) Negative results that were encountered while zeroing the FLEX unit with ambient air. The CO values here are indistinguishable from zero and are reported as zero. Future instrument zeroing will utilize zero air.

Conclusion:

Consistent with the provisions and spirit of **§1065.10 Other procedures**, the emissions levels obtained through this testing demonstrate that compliant emissions levels were obtained (for both the baseline and modified testing). Furthermore, the emission levels were far enough below the applicable emission standards so that any errors caused by the greater imprecision or inaccuracy of the PEMS does not affect our ability to state that the CPS aftermarket modification (L5P/L5D Stealth Mach 2 (67) Turbo (2020-2023) meets the applicable emission standards.

This emissions testing was conducted in a manner as to comply with the direction provided by the **USEPA's 11/23/2020 Memorandum on their Tampering Policy (Section D. Emissions Testing)**. To that end, the results of said testing form a "reasonable basis" that the installation and use of these parts does not adversely affect emissions.



John E. Worley
Performance Test Lab