Emissions Test Summary – CPS Cummins 6.7L Stealth 64 Turbo

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8/14/2023

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, NO_2, CO, CO_2 and Hydrocarbon (HC) analysis.

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

Device Under Test: Cummins 6.7L Stealth STR Turbo

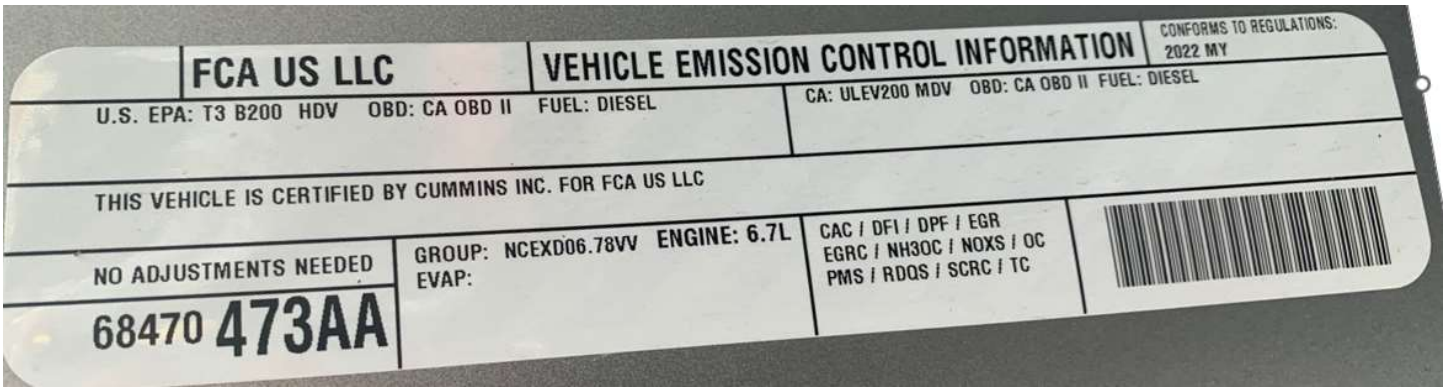
Vehicle Fitment & (Part #'s):

SKU/Part Number	Name	Year Range
DM19A2080103000	Cummins 6.7L Stealth STR (2007.5-2009) HE351VE	(2007.5-2009)
DM1CD2080103000	Cummins 6.7L Stealth STR (2010-2012) HE351VE	(2010-2012)
DM1FJ2080103000	Cummins 6.7L Stealth STR (2013-2018) HE300VG	(2013-2018)
DM1FJ2080203000	HE300VG Stealth Mach 1 64 Turbo (2013-2018)	(2013-2018)
DM19A2080203000	HE351VE Stealth Mach 1 64 Turbo (2007.5-2009)	(2007.5-2009)
DM1CD2080203000	HE351VE Stealth Mach 1 64 Turbo (2010-2012)	(2010-2012)

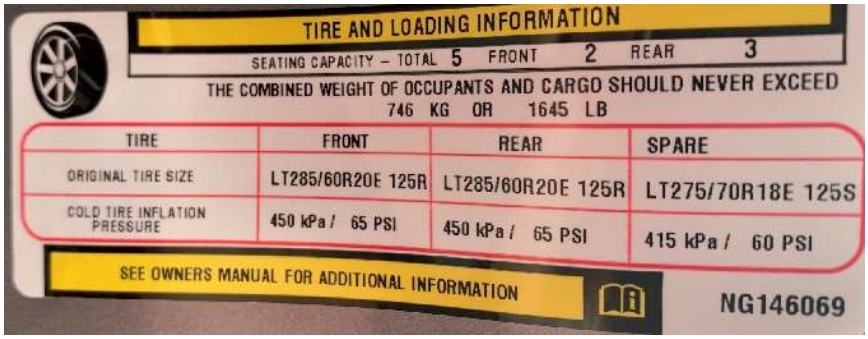
Test Vehicle

VIN Tag

Vehicle Info.



VECI Label



Tire Info

Test Fuel: No. 2 Diesel

Tire Size: LT285/60R20

Vehicle Test Weight: 10,000 lbs. (GVWR)

Mustang Dyno Coefficients:

Curve Values | Window Values

	A	B	C
Road Load	4.974000E+1	1.888200E+0	2.413000E-2
Vehicle Losses	5.368295E+2	1.933390E+1	-1.552800E-1
Net Load	-4.870895E+2	-1.744570E+1	1.794100E-1
Load Error	5.368295E+2	1.933390E+1	-1.552800E-1

Part Information:

CPS Cummins 6.7L Stealth STR (2013 -2018) HE300VG

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:

- 6/29/23: Vehicle Check-In
- 6/29/23: Vehicle returned to stock condition by re-flashing w/stock tune. Readiness monitors and DTCs were reset.
- 7/17/23: Vehicle Check-In - OBD Readiness Monitor verification & documentation for testing baseline condition.
- 7/17/23: Vehicle Losses Test Performed.
- 7/18/23: Baseline Emissions Testing performed.
- 7/20/23: CPS Turbo installed.
- 8/8/23: Vehicle Check-In - OBD Readiness Monitor verification & documentation for testing modified condition.
- 8/9/23: Modified Emissions Testing performed.

OBD-II Summary:

Date	Mileage	Report Type	Misfire	Fuel System	Component	NMHC Catalyst	Nox Aftertreatment	Boost Pressure	Exhaust Gas Sensor	PM Filter	EGR/VVT	Mil Status	OBD Codes	CAL ID(s)	CVN(s)
7/17/2023	9,722	As Received - Stock Condition for Baseline Testing.	C	C	C	IC (3)	C	C	C	NS (4)	C	OFF	None (1)	52370231AF, NOx-SAE14a ATI1, FCA_N_0440 ATO10, 040100400210, 0101030001, 0212070011	A401AEC0, 138973A8, 92FF8935, 48ECA6CB, 56E2AAA2, 03A23973
8/8/2023	10,144	As Received - Modified Condition (CPS 64 Turbo).	C	C	C	C	C	C	C	NS (4)	C	OFF	None (2)	52370231AF, NOx-SAE14a ATI1, FCA_N_0440 ATO10, 040100400210, 0101030001, 0212070011	A401AEC0, 138973A8, 92FF8935, 48ECA6CB, 56E2AAA2, 03A23973

NOTES:

(1) 12 DTCs were found, but none were emissions related . The engine related DTC's were for lost communications with steering column and no info is presented for DTC U0130-00.

(2) 10 DTCs were found, but none were emissions related . The engine related DTC's were for lost communications with steering column and no info is presented for DTC U0130-00. The P2560-00 Low coolant level code initated when the truck was on the ramp incline for the dyno.

(3) The NMHC Catalyst Monitor has not completed dispite nearly 2,000 miles of driving. Including apprx 800 miles of towing. Drive cycle information indicates that the NMHC Catalyst Monitor needs the truck to be in an active regen condition to complete, and the truck has regenerated sevral times during this mileage accumulation period. (at the time) It is not clear if this monitor would complete in the absence of the PM Filter Monitor and it was determined that baseline testing would move forward.

(4) The PM Filter Monitor "Not Supported" is due to the missing computer chip. The manufacture issed an acnowledgement that the truck is missing the needed computer chip for the PM Filter Monitor to work correctly. And that the manufacture would issue a factory recall notice to install the chip once it is available. as of 8/10/23, the recall notice has not being issued. See attached pending recall notice (on the following page).

C = Monitor Complete

IC = Monitor Incomplete

NS = Monitor Not Supported

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

Federal - T3 B200

	CO	NOx + NMOG	PM
g/mi	4.2	0.2	0.008
mg/km	2,610.32	124.30	4.97

California - LEV-III ULEV200

	CO	NOx + NMOG	PM
g/mi	4.2	0.2	0.008
mg/km	2,610.32	124.30	4.97

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	73.12	86.83	0.00	-0.22
Modified - w/CPS Stealth 64 Turbo	67.26	30.69	0.00	0.34
Cert. of Conformity	111.68	497.20		0.06
Standard (Tier 3 Bin 200)	**124.30** [1]	**2610.32**		**4.97**

FTP-75 #2	NOx [1] (mg/km)	CO (mg/km)	HC (mg/km)	PM (mg/km)
Baseline	89.73	316.97	13.31	-2.06
Modified - w/CPS Stealth 64 Turbo	21.70	82.45	0.00	0.64
Cert. of Conformity	111.68	497.20		0.06
Standard (Tier 3 Bin 200)	**124.30** [1]	**2610.32**		**4.97**

US06 [2]	NOx [1] (mg/km)	CO (mg/km)	HC (mg/km)	PM (mg/km)
Baseline	184.91	570.14	65.05	-7.10
Modified - w/CPS Stealth 64 Turbo	27.52	166.19	2.07	0.70

NOTES:

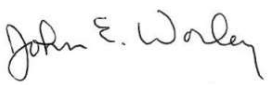
(1) The Emissions Standard value is for NMHC + NOx.

(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.

Consistent with the provisions and spirt 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 (Cummins 6.7L Stealth 64 Turbo) 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.



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