



## Downloadable Dynamometer Database (D<sup>3</sup>)- Test Summary Sheet



### 2013 Ford Cmax Hybrid

Vehicle Architecture	Hybrid
Document Date	5/29/2014
Revision Number	1
Notes:	

### Vehicle Setup Information

Test Cell Location	APRF- Bldg 371
<b>Vehicle Dynamometer Input</b>	
Test weight [lb]	4000
Target A [lb]	21.75
Target B [lb/mph]	0.365
Target C [lb/mph <sup>2</sup> ]	0.01859
<b>Test Fuel Information</b>	
Fuel type	EPA Tier II EEE HF0437
Fuel density [g/ml]	0.741
Fuel Net HV [BTU/lbm]	18359

Test ID [#]	Cycle	Cold start (Cst) Hot start [Hstr]	Date	Test Cell Temp [C]	Test Cell RH [%]	Test Cell Baro [In/Hg]	Vehicle cooling fan speed: Speed Match [SM] or constant speed [CS]	Solar Lamps [W/m <sup>2</sup> ]	Vehicle Climate Control settings	Hood Position [Up] or [Closed]	Window Position [Closed] or [Down]	Cycle Distance [mi]	Cycle Fuel economy [mpg] (Emiss Bag)	Cycle HV battery Integrated net current [DC Ah]	Cycle HV battery Average Zero crossing Voltage [V]	Cycle HV battery Net Energy [DC Wh]	Cycle HV battery Net Energy Consumption [DC Wh/mi]
Test information			Test cell information			Test cell setup			Vehicle setup			Electric energy consumption					
Test sequence purpose: AVTE Standard Testing																	
61309047	UDDS CS	CS	09/11/13	-7	40.8	29.3	SM	0	72	Closed	Closed	7.46	28.5	-0.567	289.4	-164.09	-21.99
61309048	UDDS HS	CS	09/11/13	-7	42.1	29.3	SM	0	72	Closed	Closed	7.47	44.0	0.139	288.2	40.02	5.36
61309049	UDDS HS	HS	09/11/13	-7	41.2	29.3	SM	0	72	Closed	Closed	7.47	48.1	0.143	285.5	41.04	5.49
61309050	HWY	HS	09/11/13	-6	30.7	29.3	SM	0	72	Closed	Closed	10.26	51.7	-0.053	283.6	-15.03	-1.46
61309051	US06	HS	09/11/13	-5	23.0	29.3	SM	0	72	Closed	Closed	8.02	36.7	-0.158	286.8	-46.53	-5.80
61309014	UDDS CS	CS	09/05/13	23	54.3	29.5	SM	0	OFF	Closed	Down	7.46	51.3	0.061	281.3	16.37	2.19
61309015	UDDS HS	CS	09/05/13	22	56.6	29.5	SM	0	OFF	Closed	Down	7.46	60.4	-0.042	281.2	-12.28	-1.65
61309017	HWY	HS	09/05/13	25	43.2	29.5	SM	0	OFF	Closed	Down	10.25	60.9	-0.034	280.2	-9.61	-0.94
61309018	US06	HS	09/05/13	25	42.3	29.5	SM	0	OFF	Closed	Down	8.01	40.0	0.024	282.6	4.16	0.52
61309019	SSS 0%	HS	09/05/13	24	43.5	29.5	SM	0	OFF	Closed	Down	14.16	49.9	-0.727	281.9	-204.93	-14.47
61309020	Passing Manuevers	HS	09/05/13	24	44.4	29.5	SM	0	OFF	Closed	Down	3.04	40.5	0.043	281.6	12.10	3.98
61309027	WLTP	HS	09/06/13	23	57.0	29.5	SM	0	OFF	Closed	Down	14.39	53.8	-0.074	284.2	-20.84	-1.45
61309032	UDDS CS	CS	09/09/13	35	43.4	29.2	SM	850	72	Closed	Closed	7.46	46.6	0.054	281.4	14.45	1.94
61309033	UDDS HS	HS	09/09/13	35	43.7	29.2	SM	850	72	Closed	Closed	7.45	51.9	-0.075	281.6	-21.04	-2.82
61309037	HWY, Ph2**	HS	09/09/13	37	35.7	29.2	SM	850	72	Closed	Closed	10.25	59.8	0.087	281.8	24.39	2.38
61309038	US06	HS	09/09/13	37	37.8	29.1	SM	850	72	Closed	Closed	8.01	39.2	-0.338	282.6	-96.71	-12.07
61309035	SC03, Ph2**	HS	09/09/13	35	43.9	29.2	SM	850	72	Closed	Closed	3.59	47.5	-0.073	280.4	-20.60	-5.75

**Summary notes**

For the highway and US06, SC03, cycles only the second (hot) test results are presented in this summary.

Electric energy consumption:

- HV battery Integrated net current --> Integrated current as reported by power analyzer
- HV battery Average Zero crossing Voltage --> Calculated Average Zero crossing Voltage over the phase or cycle
- HV Net Energy --> Integrated power as reported by power analyzer

Note that HV Net Energy is not equal to the product of HV battery Integrated net current times Average Zero crossing Voltage.

\* Target Coefficients developed during AVTE coast down testing

\*\* For the Highway, and SC03 at 95F the third phase of the test was completed with the AC off

**Advanced Powertrain Research Facility Data referencing:**

The purpose of this website is to provide publicly available data regarding advanced technology vehicles. Derived from independent laboratory testing, the data is intended to enhance the understanding of advanced vehicle technologies for researchers, students, and professionals engaged in energy efficient vehicle research, development and education. Data from this website can only be used with the following attribution: "This data is from the Downloadable Dynamometer Database (<http://www.transportation.anl.gov/D3/>) and was generated at the Advanced Powertrain Research Facility (APRF) at Argonne National Laboratory under the funding and guidance of the U.S. Department of Energy (DOE)" or using a standard bibliographic reference. Please contact [d3info@anl.gov](mailto:d3info@anl.gov) for questions, comments, or inquiries.