Argonne NATIONAL LABORATORY
Advanced Powertrain Research Facility

Downloadable Dynamometer Database (D^3)- Test Summary Sheet

2015 Chevrolet SparkEV

Vehicle architecture	Battery Electric vehicle
Document date	9/1/2015
Revision Number	1
Notes:	

Vehicle Setup Information

Test cell location	ANL APRF Bdg 371
Vehicle dynamometer Input	
Test weight [lb]	3157
Target A [lb]	23.36367
Target B [lb/mph]	0.3946
Target C [lb/mph^2]	0.01245
Test Fuel Information	
Fuel type	**Electricity**
Fuel density [g/ml]	-
Fuel Net HV [BTU/lbm]	-

Test ID [#]	Cycle	Cold start (CS)\ Hot start [HS]	Date	Test Cell Temp [C]	Test Cell RH [%]	Test Cell Baro [inHg]	Vehicle cooling fan speed - Speed Match [SM] or constant speed [CS]	Solar Lamps [W/m2]	Vehicle Climate Control settings	Hood Position [Up] or [Closed]	Window Position [Closed] or [Down]	Cycle Distance [mi]	Cycle Fuel economy [mpg] (Emiss Bag)	Cycle Fuel Consumed [gal] (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			
61508024	UDDS #1, Ph 1+2		08/13/15	-6	30	29	SM	NO	72F	Closed	Down	7.44	-	-	8.226	386.8	3181.21	427.41
61508024	Hwy #1, Ph 3		08/13/15	-5	25	29	SM	NO	72F	Closed	Down	10.25	-	-	7.588	374.1	2838.86	277.05
61508024	UDDS #2, Ph 4+5		08/13/15	-6	36	29	SM	NO	72F	Closed	Down	7.49	-	-	7.186	366.5	2632.78	351.39
61508024	US06 #1, Ph 6+7		08/13/15	-5	22	29	SM	NO	72F	Closed	Down	8.02	-	-	7.688	353.6	2711.44	337.99
61508025	US06 #2, Ph 1+2		08/13/15	-7	22	29	SM	NO	72F	Closed	Down	8.00	-	-	8.070	343.1	2761.99	345.06
61508025	UDDS #3, Ph 3+4		08/13/15	-6	42	29	SM	NO	72F	Closed	Down	7.50	-	-	7.305	333.6	2435.84	324.83
61508025	HWY#2 , Ph 5		08/13/15	-5	30	29	SM	NO	72F	Closed	Down	4.13	-	-	3.040	292.0	887.74	215.20
Full charge test summary											**Totals**	**52.83**			**49.1**		**17450**	
Re-charging information				-5	Temperature during charge [C]													
Level:	2														Charge integrated power [AC Wh]		**19868**	
61508026	UDDS #1, Ph 1+2		08/20/15	-6	24	29	SM	NO	72F	Closed	Down	7.44	-	-	8.819	383.9	3387.51	455.16
61508026	Hwy #1, Ph 3		08/20/15	-4	20	29	SM	NO	72F	Closed	Down	10.23	-	-	7.661	370.7	2840.33	277.57
61508026	UDDS #2, Ph 4+5		08/20/15	-7	27	29	SM	NO	72F	Closed	Down	7.43	-	-	7.150	364.6	2605.57	350.47
61508026	US06 #1, Ph 6+7		08/20/15	-5	18	29	SM	NO	72F	Closed	Down	8.03	-	-	7.730	351.6	2709.65	337.52
61508027	US06 #2, Ph 1+2		08/20/15	-5	21	29	SM	NO	72F	Closed	Down	8.03	-	-	8.188	341.4	2787.11	347.08
61508027	UDDS #3, Ph 3+4		08/20/15	-6	27	29	SM	NO	72F	Closed	Down	7.49	-	-	6.933	329.5	2284.46	305.12
61508027	HWY#2 , Ph 5		08/20/15	-5	20	29	SM	NO	72F	Closed	Down	3.27	-	-	2.519	267.1	672.96	205.53
61508013	UDDS #1, Ph 1+2		08/10/15	23	42	29	SM	NO	OFF	Closed	Down	7.46	-	-	3.402	391.6	1332.35	178.57
61508013	Hwy #1, Ph 3		08/10/15	25	37	29	SM	NO	OFF	Closed	Down	10.24	-	-	4.824	385.4	1859.05	181.61
61508013	UDDS #2, Ph 4+5		08/10/15	20	51	29	SM	NO	OFF	Closed	Down	7.47	-	-	3.325	382.1	1270.53	170.01
61508013	US06 #1, Ph 6+7		08/10/15	23	39	29	SM	NO	OFF	Closed	Down	8.02	-	-	5.371	373.4	2000.88	249.63
61508014	SSS 65 mph until middle deplete Ph1		08/10/15	26	37	29	SM	NO	OFF	Closed	Down	9.30	-	-	5.939	364.3	2163.49	232.69
61508014	US06 #2, Ph 3+4		08/10/15	22	40	29	SM	NO	OFF	Closed	Down	8.02	-	-	5.566	357.9	3506.50	437.07
61508015	UDDS #3, Ph 1+2		08/10/15	20	50	29	SM	NO	OFF	Closed	Down	7.49	-	-	3.594	353.6	1270.89	169.75
61508015	Hwy #2, Ph 3		08/10/15	25	37	29	SM	NO	OFF	Closed	Down	10.27	-	-	5.341	346.9	1852.59	180.38
61508015	UDDS #4, Ph 4+5		08/10/15	20	50	29	SM	NO	OFF	Closed	Down	7.49	-	-	3.708	340.9	1264.01	168.85
61508016	SSS 65 mph until deplete		08/10/15	26	35	29	SM	NO	OFF	Closed	Down	10.84	-	-	8.269	278.5	2302.99	212.54
Full charge test summary											**Totals**	**86.59**			**49.3**		**18823**	
Re-charging information				22	Temperature during charge [C]													
Level:	2														Charge integrated power [AC Wh]		**20586**	
61508004	SSS 0-80-0, 0% grade		08/07/15	24	37	29	SM	NO	OFF	Closed	Down	6.22	-	-	3.478	382.0	1328.75	213.62
61508006	SSS 0-80-0, 6% grade		08/07/15	23	39	29	SM	NO	OFF	Closed	Down	6.23	-	-	10.783	364.0	3924.75	630.35
61508007	WOTsx6		08/07/15	21	42	29	SM	NO	OFF	Closed	Down	5.25	-	-	6.047	328.6	1986.83	378.53
61508008	Passing maneuvers, 0% grade		08/07/15	24	37	29	SM	NO	OFF	Closed	Down	3.37	-	-	2.761	347.5	959.40	284.38
61508009	Passing maneuvers, 3% grade		08/07/15	25	35	29	SM	NO	OFF	Closed	Down	3.35	-	-	5.001	341.1	1705.84	509.28
61508010	Passing maneuvers, 6% grade		08/07/15	25	35	29	SM	NO	OFF	Closed	Down	3.34	-	-	6.754	344.0	2323.23	695.72
61508011	25% gradability		08/07/15	24	36	29	SM	NO	OFF	Closed	Down	0.63	-	-	4.287	329.3	1411.86	2239.31
61508017	UDDS #1, Ph 1+2		08/11/15	35	47	29	SM	850	72F	Closed	Down	7.45	-	-	4.341	391.3	1698.77	228.02
61508017	Hwy #1, Ph 3		08/11/15	38	31	29	SM	850	72F	Closed	Down	10.22	-	-	5.009	384.7	1927.16	188.52
61508017	UDDS #2, Ph 4+5		08/11/15	34	46	29	SM	850	72F	Closed	Down	7.48	-	-	4.015	380.6	1528.25	204.21
61508017	US06 #1, Ph 6+7		08/11/15	35	26	29	SM	850	72F	Closed	Down	8.02	-	-	5.517	371.5	2045.72	254.99
61508018	SSS 65MPH, Ph 1		08/11/15	38	29	29	SM	850	72F	Closed	Closed	2.81	-	-	1.947	366.2	712.92	253.85
61508018	US06 #2, Ph 3+4		08/11/15	35	27	29	SM	850	72F	Closed	Closed	8.03	-	-	5.687	361.3	3592.14	447.60
61508019	SC03, Ph 2		08/11/15	35	31	29	SM	850	72F	Closed	Closed	3.59	-	-	2.150	353.3	759.56	211.48
61508020	Hwy #2		08/11/15	38	25	29	SM	850	72F	Closed	Closed	10.25	-	-	5.489	348.5	1912.76	186.66
61508021	UDDS #3, Ph 1+2		08/11/15	34	37	29	SM	850	72F	Closed	Closed	7.48	-	-	4.343	342.1	1485.65	198.62
61508022	SSS 65 to deplete		08/11/15	39	21	29	SM	850	72F	Closed	Closed	12.01	-	-	9.197	294.2	2706.00	225.41
Full charge test summary											**Totals**	**77.34**			**47.7**		**18369**	
Re-charging information				32	Temperature during charge [C]													
Level:	2														Charge integrated power [AC Wh]		**21305**	

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