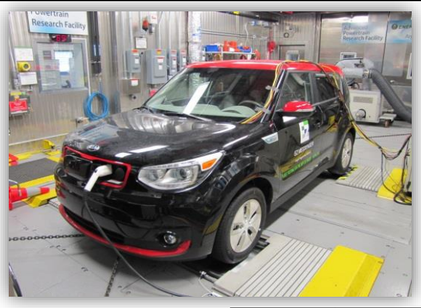
Advanced Powertrain Research Facility



Downloadable Dynamometer Database (D[3])- Test Summary Sheet

2015 Kia Soul Electric

Vehicle architecture	Electric Vehicle
Document date	9/3/2015
Revision Number	1
Notes:	

Vehicle Setup Information

Test cell location	ANL APRF Bdg 371
Vehicle dynamometer Input	
Test weight [lb]	3668
Target A [lb]	25.303
Target B [lb/mph]	0.42884
Target C [lb/mph^2]	0.01654
Test Fuel Information	
Fuel type	Electricity
Fuel density [g/ml]	-
Fuel Net HV [BTU/lbm]	-

Test ID [#]	Cycle	Cold start (CSt) Hot start [HSt]	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/m2]	Veicle 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			
61506048	UDDS #1, Ph 1+2		06/24/15	-6	10	29	SM	0	72	Closed	Closed	7.44			8.672	385.9	3271.00	439.47
61506048	Hwy #1, Ph 3		06/24/15	-2	8	29	SM	0	72	Closed	Closed	10.24			8.606	372.3	3138.00	306.56
61506048	UDDS #2, Ph 4+5		06/24/15	-7	11	29	SM	0	72	Closed	Closed	7.49			6.253	367.8	2256.00	301.06
61506048	US06 #1, Ph 6+7		06/24/15	-4	8	29	SM	0	72	Closed	Closed	8.02			8.224	357.3	2810.00	350.18
61506049	SSS 65MPH, Ph 1		06/24/15	-5	10	29	SM	0	72	Closed	Closed	1.54			1.498	353.6	506.00	328.61
61506049	US06 #2, Ph 3+4		06/24/15	-7	11	29	SM	0	72	Closed	Closed	8.02			8.690	347.9	2904.00	361.92
61506050	UDDS #3, Ph 1+2		06/24/15	-7	10	29	SM	0	72	Closed	Closed	7.45			6.361	345.7	2165.00	290.57
61506050	Hwy #2, Ph 3		06/24/15	-2	7	29	SM	0	72	Closed	Closed	10.23			8.417	337.7	2800.00	273.70
61506050	UDDS #4, Ph 4+5		06/24/15	-8	10	29	SM	0	72	Closed	Closed	7.50			6.683	331.9	2178.00	290.56
61506051	SSS 65 to deplete		06/24/15	-2	7	29	SM	0	72	Closed	Closed	3.27			4.135	303.9	1247.00	380.77
Full charge test summary											**Totals**	**71.21**			**67.5**		**23275**	
Re-charging information				-7	Temperature during charge [C]							Total energy used during days testing [DC Wh]					**23405**	
Level: 2												Charge integrated power [AC Wh]					**27336**	
61506042	UDDS #1, Ph 1+2		06/19/15	23	47	29	SM	0	Off	Closed	Down	7.46			3.790	393.5	1478.00	198.25
61506042	Hwy, Ph 3		06/19/15	25	39	29	SM	0	Off	Closed	Down	10.24			5.958	386.5	2286.00	223.25
61506042	UDDS #2, Ph 4+5		06/19/15	21	52	29	SM	0	Off	Closed	Down	7.45			3.693	383.3	1401.00	187.99
61506042	US06 #1, Ph 6+7		06/19/15	24	39	29	SM	0	Off	Closed	Down	8.01			6.357	375.8	2337.00	291.77
61506043	SSS 65MPH, Ph 1		06/19/15	27	37	29	SM	0	Off	Closed	Down	29.82			23.091	355.4	8230.00	275.95
61506043	US06 #2, Ph 3+4		06/19/15	24	41	29	SM	0	Off	Closed	Down	8.03			6.747	345.7	2276.00	283.51
61506044	UDDS #3, Ph 1+2		06/19/15	21	54	29	SM	0	Off	Closed	Down	7.48			3.963	343.8	1347.00	180.04
61506044	Hwy #2, Ph 3		06/19/15	26	41	29	SM	0	Off	Closed	Down	10.27			6.587	337.3	2204.00	214.69
61506044	UDDS #4, Ph 4+5		06/19/15	22	55	29	SM	0	Off	Closed	Down	7.46			4.086	333.2	1344.00	180.26
61506045	SSS 65 to deplete		06/19/15	28	38	29	SM	0	Off	Closed	Down	6.96			6.630	270.4	2069.00	297.34
Full charge test summary											**Totals**	**103.17**			**70.9**		**24972**	
Re-charging information				22	Temperature during charge [C]							Total energy used during days testing [DC Wh]					**24988**	
Level: 2												Charge integrated power [AC Wh]					**29001**	
61506035	SSS 0-80-0, 0 % grade		06/18/15				SM	0	Off	Closed	Down	6.21						
61506036	SSS 0-80-0, 6% grade		06/18/15	24	51	29	SM	0	Off	Closed	Down	6.21						
61506038	WOTsx6		06/18/15	24	50	29	SM	0	Off	Closed	Down	4.80			6.317	351.8	2101.00	438.05
61506039	Passing Manuevers		06/18/15	-39	-78	-46	SM	0	Off	Closed	Down	9.97			15.905	344.1	5252.00	526.55
61506040	25% Grade Speed		06/18/15	22	56	29	SM	0	Off	Closed	Down	1.36			9.394	322.3	2892.00	2132.85
61506052	UDDS #1, Ph 1+2		06/25/15	36	41	29	SM	850	72	Closed	Closed	7.45			4.522	390.2	1748.00	234.53
61506052	Hwy #1, Ph 3		06/25/15	38	32	29	SM	850	72	Closed	Closed	10.23			6.263	383.3	2380.00	232.68
61506052	UDDS #2, Ph 4+5		06/25/15	35	48	29	SM	850	72	Closed	Closed	7.48			4.454	379.6	1675.00	224.03
61506052	US06 #1, Ph 6+7		06/25/15	36	32	29	SM	850	72	Closed	Closed	8.02			6.663	371.4	2420.00	301.91
61506053	SSS 65MPH, Ph 1		06/25/15	39	30	29	SM	850	72	Closed	Closed	23.22			18.646	353.3	6602.00	284.29
61506053	US06 #2, Ph 3+4		06/25/15	35	37	29	SM	850	72	Closed	Closed	8.03			6.881	345.7	2322.00	289.12
61506054	SC03, Ph 1		06/25/15	34	52	29	SM	850	72	Closed	Closed	3.57			2.293	344.3	779.00	218.18
61506054	SC03, Ph 2		06/25/15	35	39	29	SM	850	72	Closed	Closed	3.60			2.428	342.2	820.00	227.96
61506054	Hwy #2, Ph 3		06/25/15	38	32	29	SM	850	72	Closed	Closed	10.26			6.752	336.3	2251.41	219.38
61506054	UDDS #4, Ph 4+5		06/25/15	35	47	29	SM	850	72	Closed	Closed	7.49			4.985	331.0	1634.00	218.07
61506055	SSS 65 to deplete		06/25/15	39	27	29	SM	850	72	Closed	Closed	4.56			4.659	299.7	1428.00	313.42
Full charge test summary											**Totals**	**93.91**			**68.5**		**24059**	
Re-charging information				35	Temperature during charge [C]							Total energy used during days testing [DC Wh]					**24124**	
Level: 2												Charge integrated power [AC Wh]					**29570**	

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

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 for questions, comments, or inquiries.