



2014 BMW i3 BEV							
Vehicle architecture	Electric Vehicle						
Document date	9/2/2015						
Revision Number	1						
Notes:							

## Vehicle Setup Information

Test cell location	ANL APRF Bdg 371									
Vehicle dynamometer Input										
Test weight [lb]	3182									
Target A [lb]	23.6									
Target B [lb/mph]	0.6633									
Target C [lb/mph^2]	0.0117									
Test Fuel Information										
Fuel type	Electricity									
Fuel density [g/ml]	•									
Fuel Net HV [BTU/lbm]	-									

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250		/ 3		Z Z	\ \frac{4}{2}	\ \frac{\pi_{\sqrt{2}}}{\pi_{\sqrt{2}}}	Zonii	/ %	Zojo	/ 🔊		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	25/3		
61505044	Test information  UDDS #1, Ph 1+2	CS	05/20/15	Test	cell inforn	nation 30	Test cell SM	setup 0	Veh	licie setu	p Closed	7.44			11.008	ectric ene 374.0	rgy consur 3897.00	mption 523.73
61505044	Hwy #1, Ph 3	HS	05/20/15	-14	7	30	SM	0	72F / FI Mid		Closed	10.25			9.619	364.7	3347.00	326.58
61505044 61505044	UDDS #2, Ph 4+5 US06 #1, Ph 6+7	HS HS	05/20/15 05/20/15	-18 -13	8 6	30 30	SM SM	0	72F / FI Mid 72F / FI Mid		Closed Closed	7.47 8.03			8.704 9.222	364.4 348.1	3064.00 2997.00	410.04 373.43
61505045	US06 #2, Ph 1+2	HS	05/20/15	-12	6	30	SM	0	72F / FI Mid		Closed	8.01			8.940	332.1	2773.00	346.09
61505045 Full charge tes	UDDS #3, Ph 3	HS	05/20/15	-17	8	30	SM	0	72F / FI Mid	Closed	Closed Totals	1.24 <b>42.44</b>			1.045 <b>48.5</b>	335.9	340.00 <b>16418</b>	274.41
Re-charging in	•			-17	Temperati	ure during	charge [C]				Totals		energy us	ed during o		g [DC Wh]	16626	
Level: 61505039	2 UDDS #1, Ph 1+2	CS	05/15/15	-6	9	29	SM	0	72F / FI Mid	Closed	Closed	7.45	Cha	arge integr	ated power	er [AC Wh] 383.9	<b>20128</b> 3133.56	420.63
61505039	Hwy #1, Ph 3	HS	05/15/15	-4	8	29	SM	-	72F / FI Mid		Closed	10.26			7.790	374.5	2837.00	420.63 276.49
61505039 61505039	UDDS #2, Ph 4+5	HS	05/15/15 05/15/15	-7 -3	9	29	SM SM	0	72F / FI Mid		Closed	7.48			6.526	371.9 363.6	2366.00	316.30 330.04
61505039	US06 #1, Ph 6+7 US06 #2, Ph 1+2	HS HS	05/15/15 05/15/15	-3 -4	7 9	29 29	SM	0	72F / FI Mid 72F / FI Mid		Closed Closed	8.03 8.01			7.726 8.084	363.6 354.4	2651.00 2721.00	330.04 339.75
61505040	UDDS #3, Ph 3+4	HS	05/15/16	-6 -	9	29	SM	0	72F / FI Mid		Closed	7.44			6.087	349.2	2073.00	278.81
61505040 Full charge tes	Hwy #2, Ph 5 st summary	HS	05/15/17	-5	8	29	SM	0	72F / FI Mid	Closed	Closed Totals	6.62 <b>55.29</b>			5.146 <b>49.8</b>	333.8	1685.00 <b>17467</b>	254.56
Re-charging ir				-4	Temperati	ure during	charge [C]					Total		ed during o			17635	
Level: 61505028	2 UDDS #1, Ph 1+2	CS	05/12/15	0	3	29	SM	0	72F / FI low	Closed	Closed	7.44	Cha	arge integr	7.286	385.9	<b>20527</b> 2741.00	368.20
61505028	Hwy #1, Ph 3	HS	05/12/15	4	3	29	SM	0	72F / FI low	Closed	Closed	10.25			6.847	377.5	2522.79	246.10
61505028 61505028	UDDS #2, Ph 4+5 US06 #1, Ph 6+7	HS HS	05/12/15 05/12/15	2 6	3 2	29 29	SM SM	0	72F / FI low 72F / FI low	Closed Closed	Closed Closed	7.50 8.03			5.118 6.671	375.2 369.0	1875.28 2333.72	250.19 290.52
61505029	US06 #1, Ph 1+2	HS	05/12/15	7	2	29	SM	0	72F / FI low	Closed	Closed	8.03			7.068	363.2	2452.14	305.34
61505029 61505029	UDDS #1, Ph 3+4 Hwy Ph 5	HS HS	05/12/15 05/12/15	2 5	3 2	29 29	SM SM	0	72F / FI low 72F / FI low	Closed Closed	Closed Closed	7.49 10.27			5.360 7.071	360.1 346.0	1894.97 2404.51	252.85 234.06
61505029	UDDS #1, Ph 6+7	HS	05/12/15	2	3	29	SM	0	72F / FI low	Closed	Closed	7.48			2.783	337.1	917.10	122.65
61505030 Full charge tes	SSS Depletion 65mph	HS	05/12/15	1	3	29	SM	0	72F / FI low	Closed	Closed	0.07 <b>66.56</b>			0.060 <b>48.3</b>	174.6	20.00 <b>17162</b>	304.64
Re-charging in	•			4	Temperati	ure during	charge [C]				Totals		energy us	ed during o		[ g [DC Wh]	18025	
Level: 61505019	2 UDDS #1, Ph 1+2	CS	05/08/15	23	51	29	SM	0	Off	Closed	Down	7.45	Ch	arge integr	ated power	er [AC Wh]	<b>20737</b> 1248.00	167.44
61505019	Hwy Ph 3	HS	05/08/15	25	47	29	SM	0	Off	Closed	Down	10.24			4.945	387.1	1897.00	185.31
61505019	UDDS #1, Ph 4+5	HS	05/08/15	21	61	29	SM	0	Off	Closed	Down	7.42			3.029	385.9	1153.00	155.45
61505019 61505020	US06 #1, Ph6+7 SSS 65mph	HS HS	05/08/15 05/08/15	25 26	46 44	29 29	SM SM	0	Off Off	Closed Closed	Down Down	8.00 15.81			5.354 10.376	380.2 371.5	1982.00 3824.00	247.86 241.81
61505020	US06x2, Ph 3+4	HS	05/08/15	25	46	29	SM	0	Off	Closed	Down	8.03			5.499	367.4	1967.00	244.88
61505021 61505021	UDDS #1, Ph 1+2 Hwy Ph 3	HS HS	05/08/15 05/08/15	21 25	60 46	29 29	SM SM	0	Off Off	Closed Closed	Down Down	7.45 10.25			3.196 5.383	366.1 359.4	1155.00 1918.00	155.02 187.06
61505021	UDDS #1, Ph 4+5	HS	05/08/15	21	60	29	SM	0	Off	Closed	Down	7.47			3.346	352.1	1163.00	155.61
61505022 Full charge tes	SSS Depletion 65mph st summary	HS	05/08/15	27	42	29	SM	0	Off	Closed	Down Totals	8.41 <b>90.54</b>			6.396 <b>50.8</b>	336.1	2147.00 <b>18454</b>	255.31
Re-charging in				22	Temperati	ure during	charge [C]					Total	energy us		18564			
Level: 61505014	2 SSS 0-80-0 0% Grade	HS	05/07/15	24	43	29	SM	0	Off	Closed	Down	6.23	Cha	arge integr	ated power 3.584	er [AC Wh] 372.6	<b>21053</b> 1310.00	210.26
61505015	SSS 0-80-0 6% Grade	HS	05/07/15	24	44	29	SM	0	Off	Closed	Down	6.23			10.621	365.9	3773.00	606.02
61505016 61505017	WOTx5 and Dyno Regen Passing Maneuvers 0,3,6% Grade	HS HS	05/07/15 05/07/15	22 25	47 40	29 29	SM SM	0	Off Off	Closed Closed	Down Down	6.37 10.12			-0.990 12.867	361.0 356.4	-594.00 4324.00	-93.18 427.10
61505018	25% Gradeability x2 and Depletion	HS	05/07/15	24	40	29	SM	0	Off	Closed	Down	13.93			3.377	343.6	897.00	64.40
61505024 61505024	UDDS #1, Ph 1+2 Hwy #1 Ph 3	CS HS	05/11/15 05/11/15	35 38	40 31	29 29	SM SM	850 850	72F / FI low 72F / FI low		Closed Closed	7.42 10.25			3.919 5.042	390.4 387.1	1516.00 1936.00	204.32 188.89
61505024	Hwy #1 Ph 3 UDDS #1, Ph 4+5	HS HS	05/11/15 05/11/15	38	48	29 29	SM	850	72F / FI low 72F / FI low		Closed	7.47			3.595	387.1	1936.00	188.89
61505024 61505025	US06 #1, Ph 6+7	HS	05/11/15	38	32	29	SM	850 850	72F / FI low		Closed	8.02			5.751	379.4	2133.00	266.03
61505025 61505025	SSS 65mph US06 #2 Ph 3+4 - Inc- See Notes	HS HS	05/11/15 05/11/15	39 37	33 38	29 29	SM SM	850 850	72F / FI low 72F / FI low		Closed Closed	10.01 6.59			6.466 4.839	372.5 370.0	2388.00 1743.41	238.65 264.66
61505026	SC03 Ph 1	HS	05/11/15	34	51	29	SM	850	72F / FI low	Closed	Closed	3.57			1.855	368.9	675.00	188.92
61505026 61505026	SC03 Ph 2 Hwy #2 Ph 3	HS HS	05/11/15 05/11/15	35 38	39 35	29 29	SM SM	850 850	72F / FI low 72F / FI low		Closed Closed	3.60 10.25			1.977 5.604	367.5 363.0	717.00 2017.00	199.35 196.78
61505026	UDDS #3, Ph 4+5	HS	05/11/15	34	48	29	SM	850	72F / FI low	Closed	Closed	7.47			3.831	356.4	1350.00	180.64
61505027 Full charge tes	SSS Depletion 65mph st summary	HS	05/11/15	39	29	29	SM	850	72F / FI low	Closed	Closed Totals	10.82 <b>85.47</b>			8.157 <b>51.0</b>	289.0	2754.00 <b>18601</b>	254.49
Re-charging information 35 Temperature during charge [C] Total energy used during days testing [DC Wh] 18											18834							
	Level: 2											OI:	arge integr	-11	FA 0 1441 7	21538	1	

## Summary notes

On test 61505025, a drivetran control failure ended the test prematurely. The issue was resolved wiith a key cycle, and testing continued until the full depletion of the battery.

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

Climate Control Settings:

FI low - 72F with fan intensity setting 1, or low level

FI mid - 72F with fan intensity settining 3, or mid level

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:

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