

2010 DECEMBER  
1994 BMW 318

ELECTRIC VEHICLE CALCULATIONS  
PREPARED BY  
ELECTRIC VEHICLES OF AMERICA, INC  
(603) 569-2100

VEHICLE DESCRIPTION

INITIAL CURB WEIGHT (LB) 2866  
FINISHED VEHICLE WEIGHT (LB) 3620  
DRAG COEFFICIENT 0.35  
FRONTAL AREA (SQ FT) 18  
TIRE SIZE  
RR RADIAL TIRE 0.01  
REV/MILE (HIGH GEAR) 900

SYSTEM DESIGN

1. MOTOR WarP 9  
2. BATTERY US Battery XVC  
3. 20 HR RATE 155  
75 AMP RATE 77  
C FACTOR 0.93  
4. VOLTAGE 144  
5. MOTOR EFF 0.88  
6. DRIVE EFF 0.9

RESULTS OF CALCULATION (BASED ON 60 MPH - 2% GRADE)	HP REQUIRED 30	*****	*****	*****	*****
	40	50	55	60	65
<b>SPEED (MPH)</b>	40	50	55	60	65
<b>DRAG (LBS)</b>	26	40	49	58	68
<b>ROLLING RESISTANCE (RR)</b>	36	36	36	36	36
<b>TRACTIVE FORCE (0% GRADE)</b>	62	76	85	94	104
<b>GRADE FORCE + Tf</b>					
0% GRADE	62	76	85	94	104
1% GRADE	98	113	121	130	140
2% GRADE	134	149	157	167	177
5% GRADE	243	257	266	275	285
<b>WHEEL TORQUE, FT-LBS</b>	58	71	79	88	97
0% GRADE	58	71	79	88	97
1% GRADE	92	105	113	122	131
2% GRADE	125	139	147	156	165
5% GRADE	227	240	248	257	266
<b>REQUIRED MOTOR HP</b>	7	11	14	17	20
0% GRADE	7	11	14	17	20
1% GRADE	12	17	20	23	27
2% GRADE	16	22	26	30	34
5% GRADE	29	38	43	49	55
<b>CURRENT REQUIRED (AMPS)</b>	43	67	81	99	118
0% GRADE	43	67	81	99	118
1% GRADE	69	98	116	136	159
2% GRADE	94	130	151	174	200
5% GRADE	170	225	255	288	323
<b>AVAILABLE MOTORING TIME (MINUTES)</b>	138	88	71	57	47
0% GRADE	138	88	71	57	47
1% GRADE	85	58	48	40	33
2% GRADE	61	42	36	30	25
5% GRADE	31	22	19	16	14
<b>CALCULATED RANGE(MILES)</b>	92	73	65	57	51
0% GRADE	92	73	65	57	51
1% GRADE	57	48	44	40	36
2% GRADE	40	35	33	30	27
5% GRADE	21	18	17	16	15

