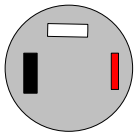
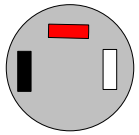
Voltage / current characteristics of Lucas SB5731 37.5 / 60 W sealed beam headlight and a Lucas 75W unit.

V 6.0 15/01/20

1

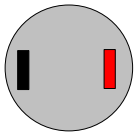
SB5731 37.5W	Current (I)	Voltage (V)	Resistance (ohms)	Power (W)	Visual
Outer dip beam. 	0.40	0.39	0.98	0.16	Cold
	0.50	0.50	1.00	0.25	Cold
	0.80	1.13	1.41	0.90	Cold
	1.00	1.95	1.95	1.95	Just red hot
	1.50	4.33	2.89	6.50	Orange glow
	2.00	7.27	3.64	14.54	Bright orange
	2.50	10.53	4.21	26.33	Bright white
	3.00	14.97	4.99	44.91	Bright white
	Peak current (cold filament) @ 13.5V = 13.5 / 0.98 = 13.7 A				
	Nominal current at 13.5V = 37.5 / 13.5 = 2.77A				

2

SB5731 60W	Current (I)	Voltage (V)	Resistance (ohms)	Power (W)	Visual
Outer main beam. 	0.40	0.11	0.27	0.04	Cold
	0.50	0.14	0.28	0.07	Cold
	0.80	0.29	0.37	0.23	Cold
	1.00	0.50	0.50	0.50	Cold
	1.50	1.49	1.00	2.24	Just red hot
	2.00	2.78	1.39	5.55	Orange glow
	2.50	4.39	1.76	10.98	Bright orange
	3.00	6.14	2.05	18.42	Bright orange
	3.50	8.31	2.37	29.09	Bright white
	4.00	10.67	2.67	42.68	Bright white
	Peak current (cold filament) @ 13.5V = 13.5 / 0.27 = 50.0 A				
	Nominal current at 13.5V = 60 / 13.5 = 4.44A				

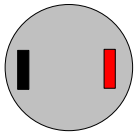
3

Lucas 75W	Current (I)	Voltage (V)	Resistance (ohms)	Power (W)	Visual
Inner main beam	0.40	0.06	0.16	0.03	Cold
	0.50	0.08	0.16	0.04	Cold
	0.80	0.16	0.19	0.12	Cold
	1.00	0.23	0.23	0.23	Cold
	1.50	0.75	0.50	1.13	Just red hot
	2.00	1.65	0.82	3.29	Red hot
	2.50	2.68	1.07	6.70	Orange glow
	3.00	3.87	1.29	11.61	Orange glow
	3.50	5.27	1.51	18.45	Bright orange
	4.00	6.83	1.71	27.32	Bright orange
	Peak current (cold filament) @ 13.5V = 13.5 / 0.16 = 84.3 A				
	Nominal current at 13.5V = 75 / 13.5 = 5.55A				



4

Autopal 55W	Current (I)	Voltage (V)	Resistance (ohms)	Power (W)	Visual
Inner main beam Halogen	0.40	0.11	0.28	0.05	Cold
	0.50	0.14	0.28	0.07	Cold
	0.80	0.25	0.31	0.20	Cold
	1.00	0.35	0.35	0.35	Cold
	1.50	1.17	0.78	1.75	Just red hot
	2.00	2.35	1.17	4.69	Red hot
	2.50	3.78	1.51	9.45	Orange glow
	3.00	5.23	1.74	15.69	Orange glow
	3.50	7.09	2.03	24.82	Bright orange
	4.00	9.21	2.30	36.84	Bright orange
	Peak current (cold filament) @ 13.5V = 13.5 / 0.28 = 48.2 A				
	Nominal current at 13.5V = 55 / 13.5 = 4.07 A				



Lucas Dipped beam. Peak current (cold filaments) @ 13.5 V = 2 x 13.7 A = 27.4 A. 54.8 A /pair peak.

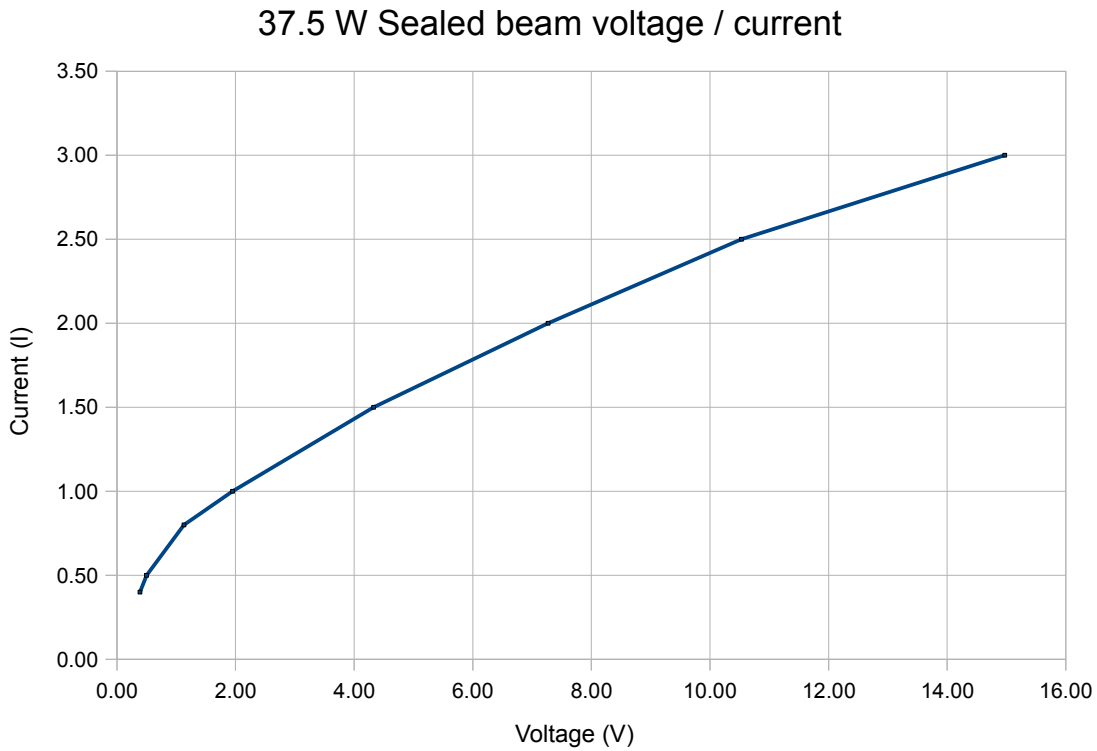
Lucas Main Beam . Peak current (cold filaments) @ 13.5 V = 4 x 50.0A =200A per 4.

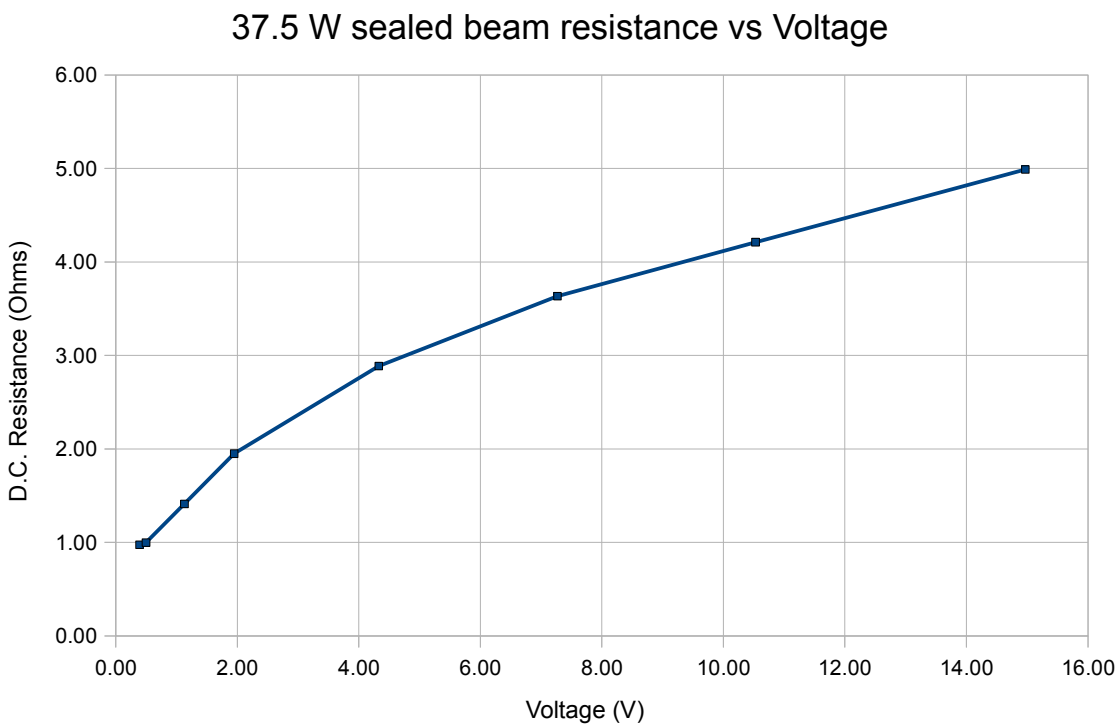
Main Beam 2 x 60W+2 x 75W. Peak current (cold filaments) @ 13.5 V =(2 x 50.0A)= 100A. + (2 x 84.3 A) = 168.6 A = 268.6A per 4

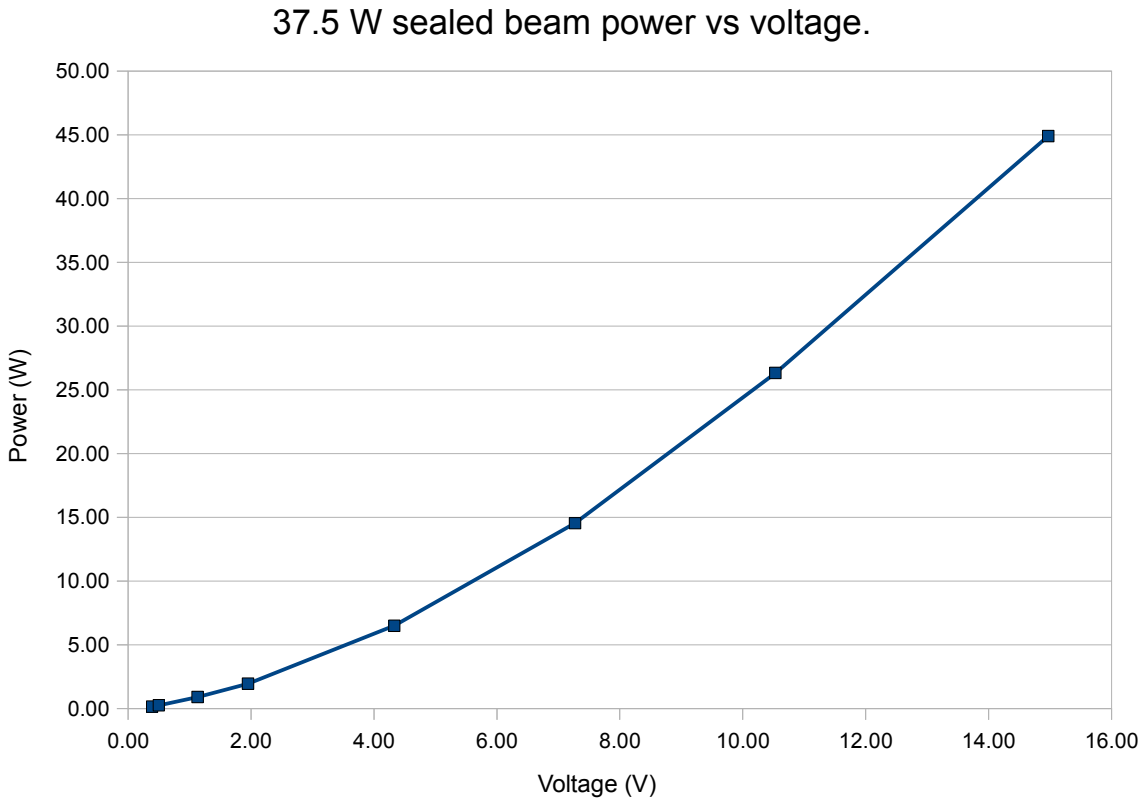
Pair of H1 Halogen inners, Peak Current (cold filaments) = 96.4A or 192.8 A for 4 H1 /H4 bulbs.

Using 4.0 A of pre-heat on the main-beam filaments .R = 13.5 -0.23 V / 4A = 3.31 ohms. P = I^2 R = 52.8W so use 3.3 ohms 100W.

I pk = 13.5 / 0.23 x 2 = 117.4A + 13.5V / 0.5 x 2 = 54A = a total of 171.4A 48W headlamp bulb.


37.5 W Sealed beam voltage / current
Current (I)
Voltage (V)
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00


37.5 W sealed beam resistance vs Voltage
D.C. Resistance (Ohms)
6.00
5.00
4.00
3.00
2.00
1.00
0.00
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
Voltage (V)


37.5 W sealed beam power vs voltage.
Power (W)
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
Voltage (V)