

AEROTECH G142

CERTIFIED VALUES

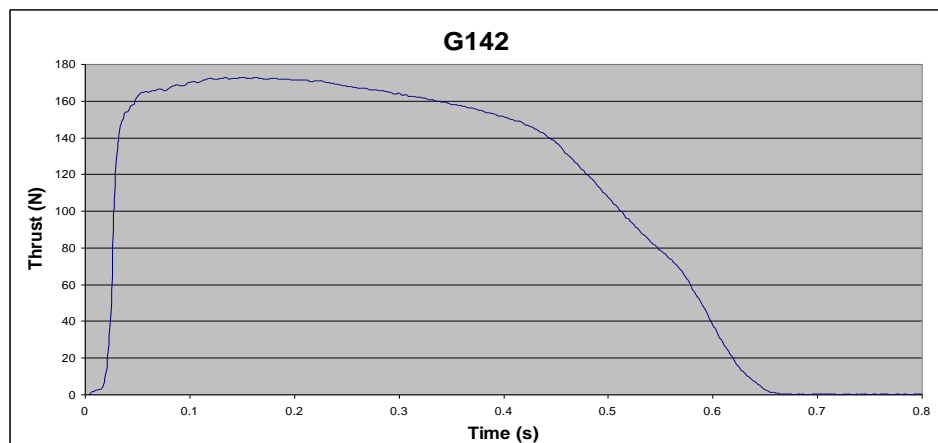
Total Impulse: 84.3 Newton-seconds
Delays: 6, 10, 14
Propellant Type: 8222ALF
Propellant Mass: 38.6 grams
Casing Dimensions: 29mm x 113mm
Certification Date: June 6, 2008
Certification Type: High Power Rocket Motor

STATIC TEST DATA

Date Tested: October 27, 2007
Total Impulse: 84.3 Newton-seconds (σ 1.1)
Peak Thrust: 173.9 Newtons (σ 1.6)
Burn Time: 0.618 seconds (σ 0.006)
Average Thrust: 135.9 Newtons (σ 1.2)
Mass After Firing: 53.9 grams

Delay Time(sec.)	14	10	6
Average Measured Delay(sec.)	12.82	8.43	5.89
Initial Mass (gm.)	98.6	97.4	96.9

TYPICAL THRUST-TIME CURVE



REMARKS

Single Use Motor.
HPR class due to average thrust exceeding 80 N



Data File #	Engine	Total Impulse	Max Thrust	Avg. Thrust	Burn Time	Delay Time	Initial Weight	Fired Weight
071027W13	G142-6	84.26	174.2	137.8	0.611	5.97	97.3	54.2
071027W14	G142-6	84.29	174.8	136.5	0.616	5.73	96.4	53.5
071027W15	G142-6	86.55	175.9	136.0	0.626	5.97	96.9	53.8
071027W16	G142-10	82.65	171.3	134.5	0.614	8.26	97.6	54.1
071027W17	G142-10	83.43	171.1	134.2	0.616	8.41	97.3	53.9
071027W18	G142-10	84.64	174.2	135.6	0.622	8.62	97.4	53.8
071027W20	G142-14	84.15	173.8	137.1	0.613	11.94	98.3	53.6
071027W21	G142-14	84.43	174.4	136.4	0.617	12.99	98.4	53.8
071027W22	G142-14	84.70	175.2	134.8	0.626	13.52	99.0	54.5
Average		84.34	173.9	135.9	0.618		97.6	53.9
Std Dev		1.051	1.634	1.224	0.006			
Std Dev %		1.2%	0.9%	0.9%	0.9%			
Range	Indicated	Actual	Actual	Actual	Actual	Average		
6	4.5 to 7.5	5.97	5.73	5.97		5.89		
10	8.0 to 12.0	8.26	8.41	8.62		8.43		
14	11.2 to 16.8	11.94	12.99	13.52		12.82		

; @File: G142_Typical.txt, @Pts-I: 451, @Pts-O: 32, @Sm: 0, @CO: 5%
; @TI: 84.5422, @Tla: 84.2303, @Tle: 0.0%, @ThMax: 173.4408, @ThAvg: 135.8554, @Tb: 0.62
; Exported using ThrustCurveTool, www.ThrustGear.com
G136 29 113 6-10-14 0.0386 0.0976 Aerotech

0.016 4.06052
0.018 6.53754
0.02 13.44075
0.022 24.4211
0.024 43.7388
0.026 72.8495
0.028 106.9426
0.03 132.0076
0.032 141.5423
0.034 147.6844
0.038 154.1148
0.054 165.5675
0.076 166.3214
0.084 168.7605
0.118 172.9402
0.15 173.3837
0.224 171.8426
0.3 164.7803
0.372 156.6537
0.418 148.9594
0.432 144.9903
0.452 137.0965
0.518 96.8779
0.568 69.3937
0.576 63.1618
0.618 21.4754
0.628 13.57047
0.64 7.98504
0.652 2.92169
0.672 0.966347
0.9 0.687625
0.901 0